

Voice Communication System VCS 3020X Rel. 5.0



User Manual CI0E03 EN505.10

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History Chart

Rev.	Date	Changed Page(s)	Cause of Change	Implemented
0.0	2006-04-07	All sections	Draft for NZL-FAT	I. Lenger
0.1	2006-05-29	All sections	Update for product release acc. to C10E03EN606.11	I. Lenger
0.2	2006-06-09	All sections	POS CHECK removed; Inputs NZL: orientation everywhere (touch panel/sub-window icon); ext. substitute, frequency forward	I. Lenger
0.3	2006-06-14	All sections	Extensions acc. to requirements list; review inputs	I. Lenger
1.0	2006-06-27	All sections	comments	I. Lenger

No.	Action	Name	Signature	Date	Department
1	Prepared	I. Lenger		2006-06-27	TCI
2	Approved	P. Leydold		2006-06-28	SYSE
3	Approved	R. Heidvogel		2006-06-28	UIC
3	Released	W. Pestitschek		2006-06-28	PDM

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1. Introduction

1.1. Purpose

This User Manual gives the trained user instructions on how to use the user interface at the operator position of the FREQUENTIS VCS 3020X Rel. 5.0. It describes all functions necessary for system operation, and functional interactions.

1.2. Target Group

The User Manual is intended for persons who work with the user interface of the FREQUENTIS VCS 3020X Rel. 5.0, and apply the functions of this system. These persons have to be trained according to the regulations of their national (air traffic control or other) authorities and have to attend a relevant training through FREQUENTIS or an authorised partner.

1.3. Warranty

This manual includes warnings, recommendations and safety precautions which must be observed. Violation or evasion of these commitments limits the warranty provided by FREQUENTIS.

1.4. References

All information received by 2006-06-26 was included in this manual.

1.4.1. FREQUENTIS Documents

The User Manual is based on:

- FREQUENTIS User Interface Specification (CI0E03EN606)
- Data Item Description User Manual (99A40 E502)
- Data Item Description Layout (99A40 E500)
- Arbeitshandbuch Dokumentation (Working Instructions Documentation).

1.4.2. Non-FREQUENTIS Documents

- The User Manual follows the standard [IEEE 1063™](#).

Tailoring:

- Sub-clause 5.3: The use of text smaller than 3 mm (approximately 7.5 points) is possible.
- Sub-clause 5.4: Warnings in FREQUENTIS documents do not contain a flag word.

1.4.3. Other References

The User Manual reflects the system functions provided by panel and system software Rel. 5.0, as observed during the last functional system check on 2006-06-23.

1.5. Usage

1.5.1. Usage Mode

The document structure supports the instructional mode of the User Manual. Hence, the User Manual includes primarily procedures structured according to the system user's tasks.






1.5.2. Structure of Document

The User Manual describes the following topics:

- Quick links to major chapters
- Presentation of the operator position: layout of touch panel, operating modules, preparations for and start of operation, settings
- Position features
- Telephone functionality
- Radio functionality
- Abbreviations and acronyms
- Glossary
- Appendices
- Index

1.5.3. Description of Warnings

The User Manual contains warnings, recommendations and safety precautions presented as defined in ISO 3864-1984 (E).

	Interdict.
	Risk of an electric shock.
	Risk of serious injury or of severe damage to equipment.
	Mandatory for operation.
	This symbol emphasises extra i nformation.

1.5.4. Typographical Conventions



Find contextual information in the blue *Information Box*.

The User Manual uses plain text, diagrams, tables and figures. Colour graphics are used to describe colour touch panel screens or **PC**-screens, and show key texts in the functional descriptions. Colours and key texts shall be regarded as examples.

SET

Key text.

refer to page: 1-2.

Cross-references, hyperlinks.

Message on a display

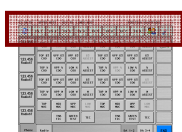
Display messages.



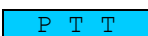
Loudspeaker.



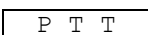
Headset.



Frame for quick orientation.



Press PTT.



Release PTT.



Sample of the selected chime tone.



A/G-communications.



Audio signal.



Zoom on an area or a key.

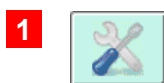


Wait until ...

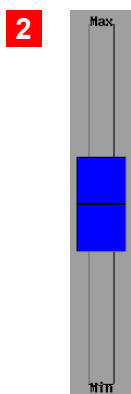


Data is copied/exported.

Instructional steps are consecutively numbered; for instance:



Open the settings window.



Move the slider up to increase, or down to decrease ...



Optional (sub-)step.

The end of a procedure or a list is marked by a line.

1.5.5. Synonyms or Alternative Spellings (if applicable)

The following terms on the left can be considered synonymous to the terms on the right:









Operator Position	Controller Working Position
OP	CWP
A/G-Communications	Radio Communications
G/G-Communication	Telephone Communications
Project Specification	System Configuration
Touch Entry Device	Touch Panel
Manual Dialling	Dial Pad
Administrator	System Administrator, Maintenance Engineer, Technical Staff

Tab. 1-1: Synonyms

1.6. Warnings for System Users

This chapter contains recommendations and warnings, and safety precautions concerning the correct handling of the user interface.

Relevant warnings, cautions, and notes shall immediately precede each applicable instructional step or group of steps.

	In case of failure or malfunction consult the system engineers.
	To avoid damages to your hearing due to high volume levels, set the volume level of your headset or handset to minimum before you start working.
	For cleaning the panel, put some standard glass cleaning agent on a cloth and wipe the panel with it. To avoid seal corrosion, do not pour the glass cleaner directly on the panel.
	To avoid damage to the equipment, do not spill any liquid over operating or audio modules.
	To avoid damage to the touch panel, do not touch the keys with edgy or sharp objects.
	To avoid damage to the equipment, do not disassemble any portion of the system. If necessary, consult your system engineers.
	To avoid damage to cable or plug, do not pull at the cable when exchanging headset or handset.
	Make sure not to bruise your or anyone else's fingers when putting your push-pull panel from an upright to a flat position.

If available, find a list of all messages on page [12-1](#).

----- END OF SECTION -----

2. Quick Links

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		Receive	<i>page 6-7</i>
		Transmit	<i>page 6-9</i>
Operator position overview	<i>page 3-1</i>	Touch panel basics	<i>page 3-2</i>
		Role handling	<i>page 3-7</i>
		Settings	<i>page 3-19</i>
		Start of operation	<i>page 3-7</i>
Position features	<i>page 3-27</i>	Function codes	<i>page 4-2</i>
		Short-term recording	<i>page 4-15</i>
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Abbreviations	<i>page 7-1</i>		
Index	<i>page 13-1</i>		

----- END OF SECTION -----

3. Operator Position

The user interface at your operator position allows you to work with the FREQUENTIS voice communication system VCS 3020X Rel. 5.0.

It consists of:

- The touch panel:
a touch sensitive user interface with customised keys, sliders, displays and list boxes for the actual control of telephone and radio functionality
- Peripheral and audio instruments:
audio and other peripheral equipment necessary for communications

This chapter introduces the physical equipment at an operator position, and describes the start-up procedures.

3.1. Touch Panel

Functions:

- Controls radio communications
- Controls telephone communications
- Offers dedicated functions for the operator position, and for radio and telephone operation
- Offers a page for adjusting touch panel settings (volume levels, screen brightness, etc.)
- Offers displays for various information and data

Basic Structure

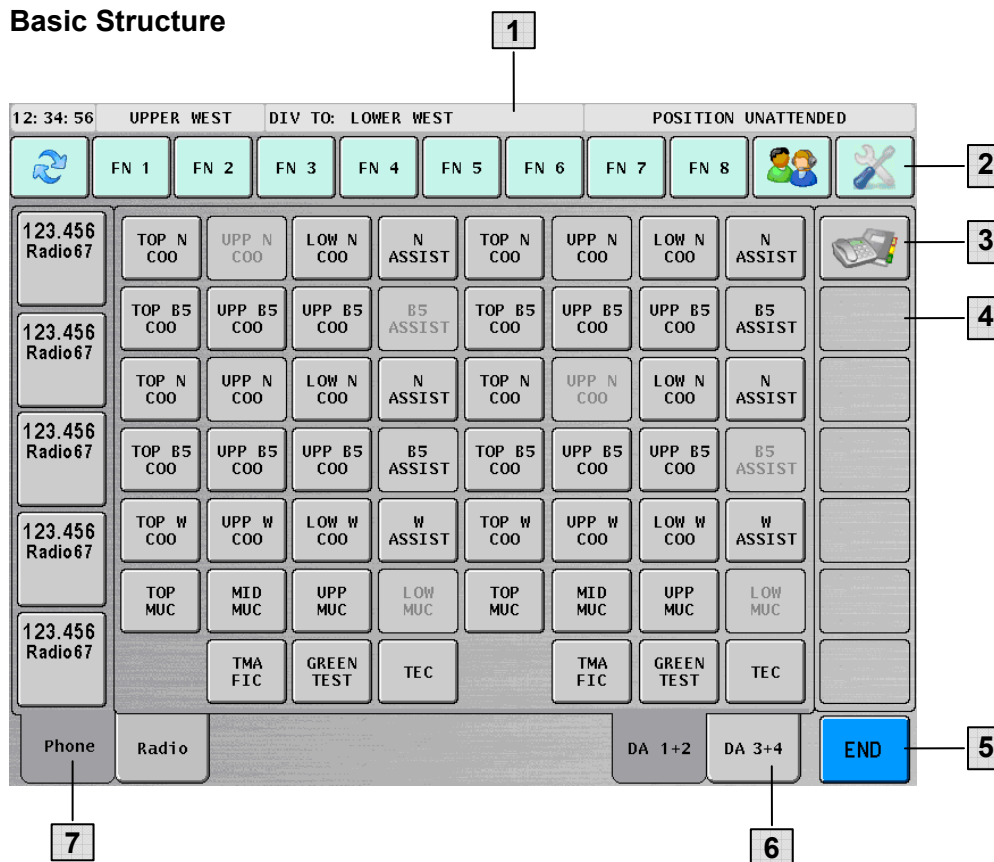






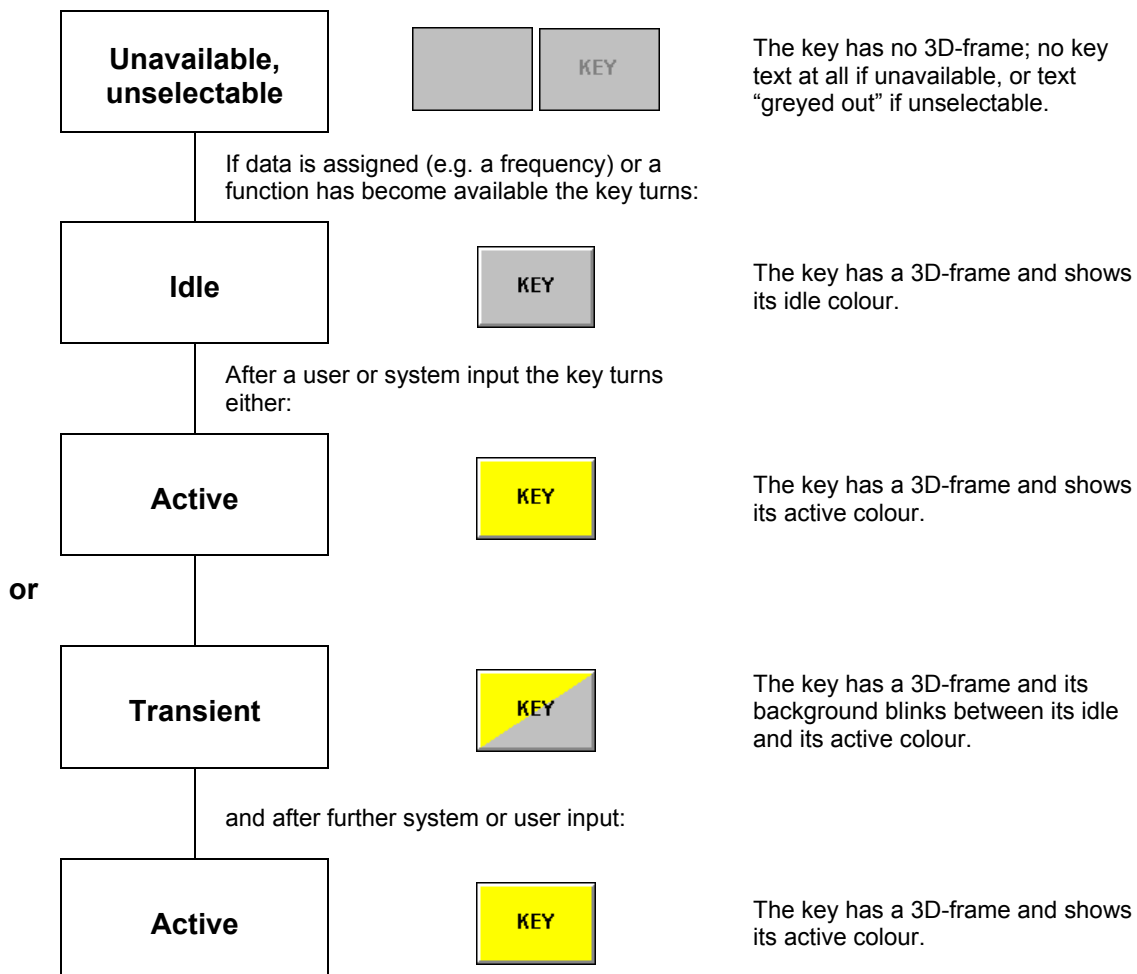
Fig. 3-1: Basic Layout Structure

1	Displays for: <ul style="list-style-type: none"> - Time - Role name - Status messages (e.g. diversion, monitoring) - Messages (e.g. caller-ID, error messages, SBUS OFF)
2	Function keys: <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="text-align: center;">  Toggle key for function key rows </div> <div style="text-align: center;">  Role key to open role window </div> <div style="text-align: center;">  Set key to open settings window </div> <div style="text-align: center;">  Customised keys </div> </div>
3	Call agent key: <ul style="list-style-type: none"> - Dial pad - Call list - Personal directory - System directory
4	Incoming call queue
5	End-all-calls key
6	Toggle between layers of direct access keys
7	Switch between phone and radio page

3.1.1. Keys on the Touch Panel

The touch panel offers keys and sliders to control the VCS-functions.

Basically, keys can have four states:



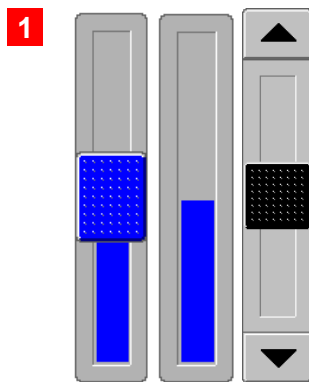
For details on all other additional key states refer to pages:

[5-1](#) and [6-1](#)

3.1.2. Basics on the Use of Keys



Windows can always be closed with this key.



Sliders are used:

- For adjusting levels either stepwise within a defined range
- For level indication only
- For scrolling through lists



Press an idle function key to activate the function.



Press an active function key to deactivate a function.



Any blinking function key requires further input. In this case, the target for call transfer has to be selected.



Press an idle DA-key to set up an outgoing call.



Press a blinking CA- or DA-key to accept an incoming call.






3.2. Peripheral and Audio Instruments

- The **foot switch** (if equipped at your operator position) is directly connected to the position electronics. It can be used instead of a common PTT-key on the microphone to activate PTT. If one headset is connected to the plug-in panel: press the foot switch to activate the connected headset's PTT. If operator/trainee and coach headset are connected to the plug-in panel: press the foot switch to activate operator PTT.
- **Headsets, handsets, microphones and hand pieces** (if equipped at your operator position) are connected to the position electronics (via the plug-in panel; see below) and serve for direct audio G/G- and A/G-communications. Turn the volume to minimum level before you use headset or handset. If the instrument has a PTT-switch, you can use it to activate PTT.

If you have a special handset equipped with a magnetic element and a suitable cradle the system provides a configuration to terminate an active telephone call by putting the handset back on its cradle.

- **The PTT-switch** (if equipped at your operator position) is connected to the position electronics. Use the switch to activate/deactivate PTT.
- Headset, handset, microphone and hand piece for operator/trainee and the coach are connected to **plug-in panels**. Different types are available. Type PIP offers double jacks to connect operator/trainee and coach. Type PIP-S is necessary for split headset operation. Type PIP-S can also be a dedicated plug-in panel offering a connector for mentor boxes, or for relief briefing. Type GNM allows the connection of a gooseneck microphone. For details on equipment and configuration consult your administrator.
- The **loudspeaker modules** (if equipped at your operator position) are directly connected to the position electronics. They offer a loudspeaker unit with volume control, a mono amplifier, and an indicator for incoming speech. Use the control to adjust the volume. Also check the volume sliders on the settings window which also reflect your current adjustments.

3.3. Before You Start Working

	<p>Check whether or not your audio instruments are connected to the plug-in panel and the position electronics, respectively.</p>
	<p>Set the volume level of your headset or handset to minimum before you start working. This avoids damage to your hearing due to high volume levels.</p>
	<p>If your operator position is equipped with a push-pull mechanism to adjust the panel to a flat or an upright position, keep your fingers strictly to the front of the panel frame to avoid any injury while adjusting the panel.</p> <p>Whenever you press down on the panel make sure not to bruise anybody's fingers or hand.</p>
	<p>Press here to put your panel in an upright and flat position, respectively.</p>
	<p>To avoid damages to the panel display, press only the panel frame and never the display itself.</p>

3.4. Start of Operation

Your administrator and/or supervisor prepare the layout and role you work with. Power-up operations or log-in procedures are not necessary.

Reset

During a reset of the touch panel, the display shows **Initializing**. Wait until the layout is completely set up before you start operation.

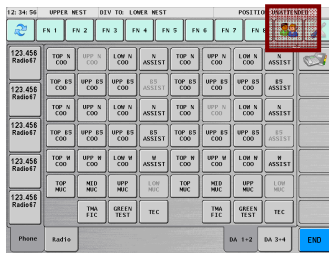
3.4.1. Role Handling

A role configuration defines the assignment of communication resources, access to functions or functional restriction, a layout type, etc. You can activate a new role during normal operation. Typically, a new role is also sent when the VCS is reconfigured. Any new role has, however, effects on the panel layout.

When your position is unattended any new role is loaded automatically.

This chapter describes:

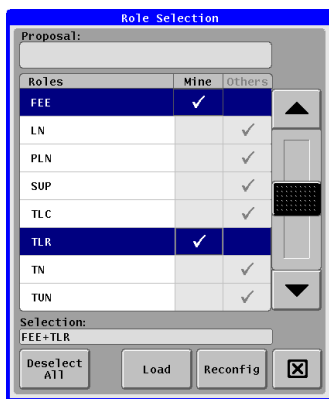
- Load a role
- Deselect a role
- Accept proposed roles
- Role update
- Unassigned roles



1



Press to open the role window.



Role window open.

Role Window

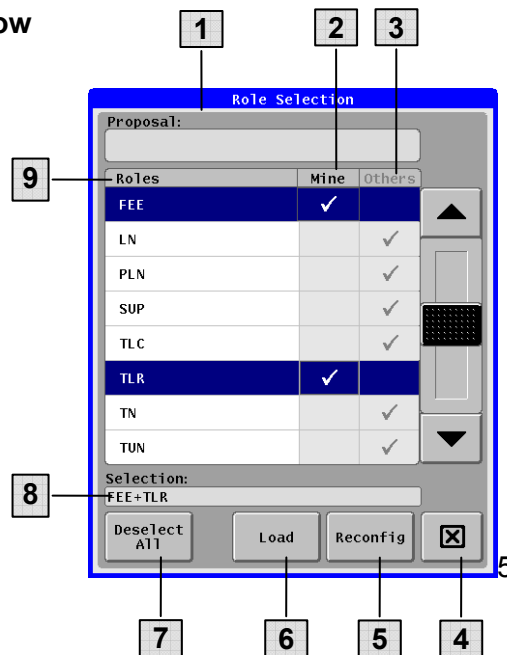
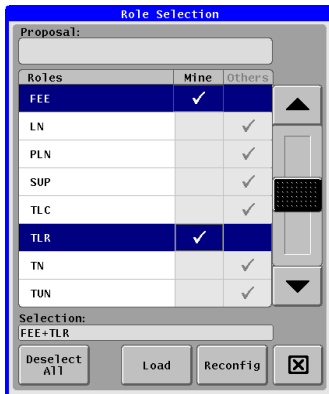


Fig. 3-2: Role Window

1	Proposal display shows role proposed by system.
2	Mine list shows roles assigned to your operator position.
3	Others list shows roles assigned to other operator positions.
4	Closes role window.
5	Reconfigures the layout for your operator position; it shows the active role name when role is being loaded or a mission is sent from the TMCS to the operator position. (page 3-11)
6	Loads the proposed or selected role. (page 3-10)
7	Deselects roles highlighted blue. (page 3-13)
8	Selection display shows all currently assigned roles plus selected roles; if any roles are deselected, minus these deselected roles.
9	List of available roles.

3.4.1.1. Load a Role (or Role Combination)



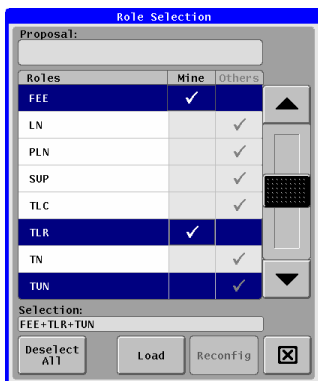
Situation: The checkmarks (✓) in the *Mine* list show the roles currently assigned to your operator position.

The *blue highlights* show roles that are loaded as soon as you press **Load**. Currently assigned roles are pre-selected by default.

The *selection display* shows assigned roles plus selected roles and minus deselected roles. Names for role combinations are defined on the TMCS.

1 TUN

Press to select this role.

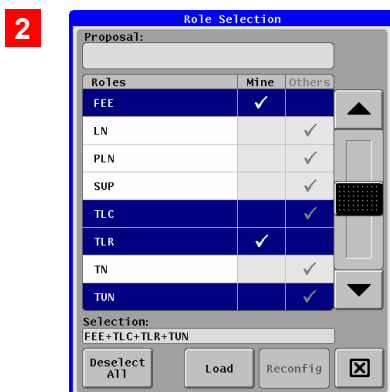


TUN has been added to the selection, as is also shown on the *Selection display*.



Press at this stage to close the role window without changes.

or



Add further roles to your selection as described in step **1**.



Press to load your selection.

continues on next page

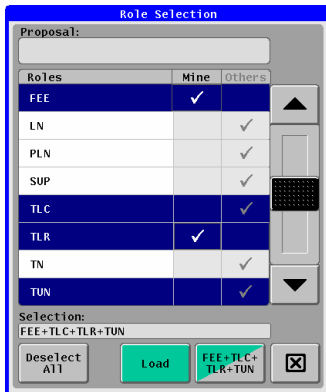


Is available during loading process.



Role loading has been finished.

4



The blinking reconfiguration key shows the name(s) of the role(s) that are to be loaded.

Press the blinking reconfiguration key to load the role(s) to this operator position.

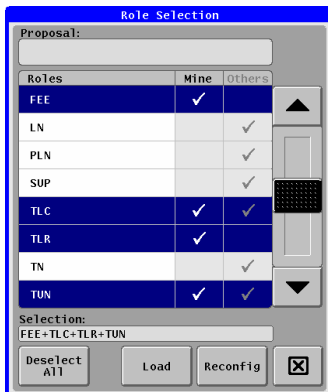
The window closes automatically.



The currently assigned role (or role combination) is shown on the message display.

Check Role Assignments

1



Open the role window to check the newly assigned roles.

Situation: The checkmarks (✓) in the *Mine* list show the roles currently assigned to your operator position.

The *blue highlights* show roles that are loaded as soon as you press **Load**. Currently assigned roles are pre-selected by default.

The *selection display* shows assigned roles plus selected roles. Names for role combinations are defined on the TMCS.

2

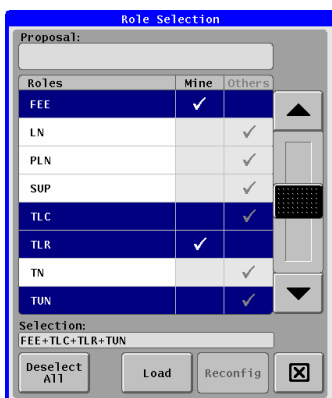


Close window as usual.



Any settings you may have customised before the reload are overwritten.

3.4.1.2. Deselect Roles



Situation: The role window is open.

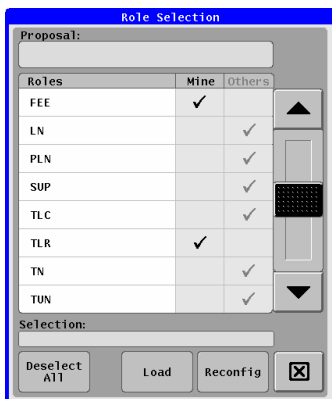
The checkmarks (✓) in the *Mine* list show the roles currently assigned to your operator position.

The *blue highlights* show roles that are loaded as soon as you press **Load**. Currently assigned roles are pre-selected by default. In this example, two additional roles have been selected.

The *selection display* shows assigned roles plus selected roles. Names for role combinations are defined on the TMCS.



Press to remove all selections (blue highlight).

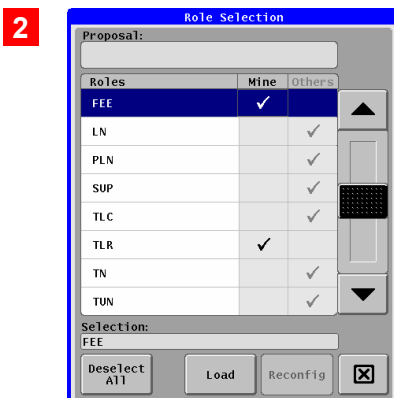


The selections have been removed; the keys **Deselect All**, **Load** and **Reconfig** become unavailable (because at least one role has to be assigned to an operator position).



Close the role window.

or



Select at least one role, to make the function keys available again.



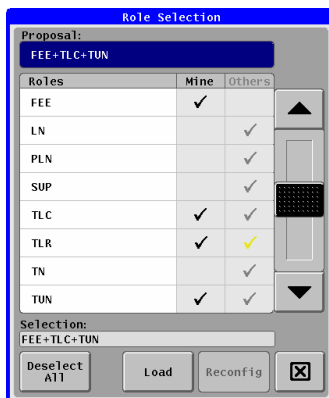
Close role window as usual, or load role (or role combination as described).

3.4.1.3. Accept a Proposed Role

1



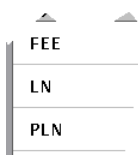
If changes in the *Other* list occur, the blinking role key on the main page shows that a new role is proposed. Press to open the role window.



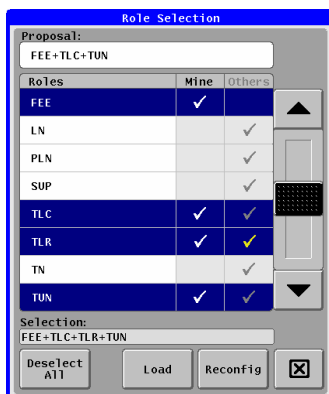
Situation: The yellow checkmark(s) (✓) in the *Others* list show(s) roles added at another operator position.

The *proposal display* is highlighted and shows the proposed role (or role combination), i.e. the most suitable role for your operator position as calculated by the system; the *proposal display* is selected by default. The *selection display*, on the other hand, is deselected.

2



Touch the *role list* to remove the focus from the proposal display, if you do not want to accept the proposal.



The proposal display turns white.

or

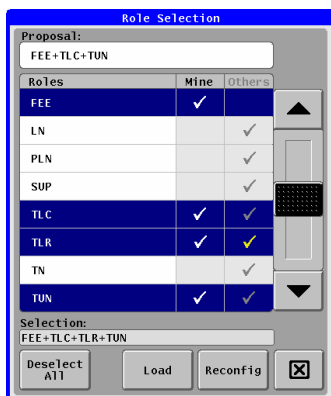
2



Press to load the role proposal. For details on loading refer to page: [3-10](#).



Press any time to cancel the action and close the role window.



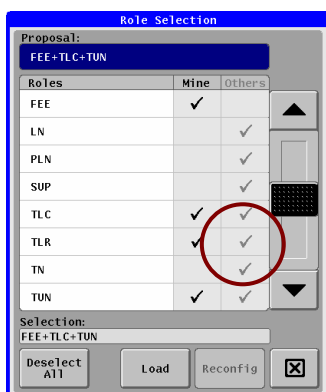
The colour of the checkmarks in the *Others* list depends on whether or not the role window has been closed and re-opened.



Close the role window.



Press to re-open it.



The checkmarks in the *Others* list are no longer yellow; they have turned grey.

The role proposal is still available; the *proposal display* is still selected by default.

4

Treat as described above.

3.4.1.4. Role Update



The blinking role key on the main page shows that a role proposal or a role update is sent.

A role update means that the configuration of a particular role was changed by an administrator.

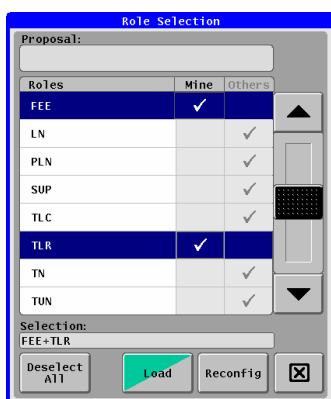


A role update cannot be cancelled.

1



Press to open the role window.



Situation: The role window shows the currently assigned roles.

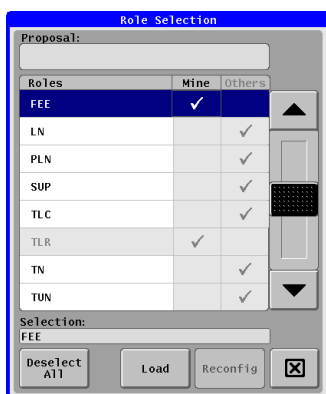
Load shows the pending update; the update will not be started until you press **Load**.

The selection display shows the currently assigned roles plus additional selections or deselections.

2



Press to start the update. For details on loading [refer to page: 3-10](#).



If the update brings about a newly defined role list, roles that are no longer available for you are marked with a grey background (**TLR** in this example).

Recommendation: Keep this role anyway until it is checkmarked in the *Others* list.

3.4.1.5. Unassigned Roles

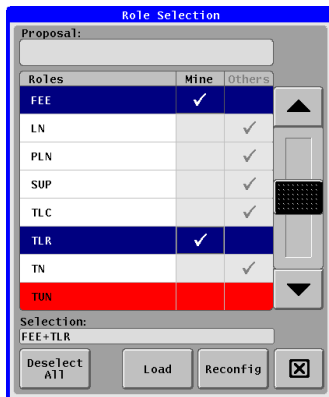


The red blinking role key on the main page shows all operators that a *single* role is currently not assigned to any operator position within the system.

1

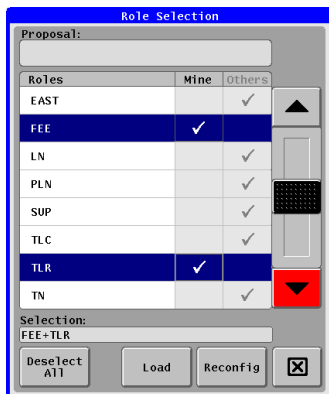


Press to open the role window.



The unassigned role is highlighted in red.

Note: Your administrator can configure specific roles that are not considered for unassigned role calculation.



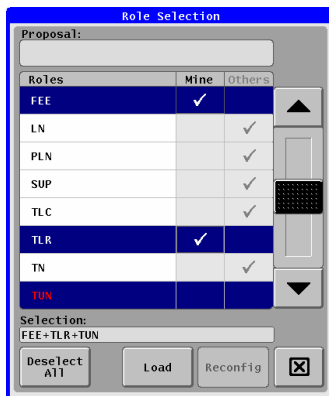
If the unassigned role is at the bottom of the list, the up (or down) arrow turns red.

2



Press to select the unassigned role.

continues on next page



The role is selected (highlighted in blue).

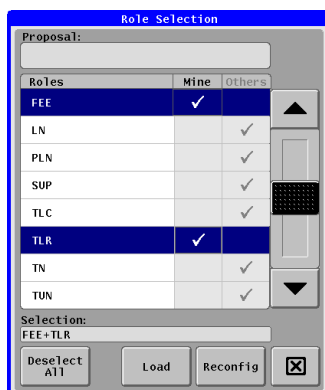


Press to start loading the unassigned role. For details on loading [refer to page: 3-10](#).



As soon as you press the reconfiguration key, all red indications disappear (from all operator positions concerned).

3.4.2. Reset Frequency/Radio Settings and Assignments



On the role window:



Press the **Load** key to reload your original role and reset the original radio channel settings.



Press to start the load.
For details on loading a role [refer to page: 3-10](#).

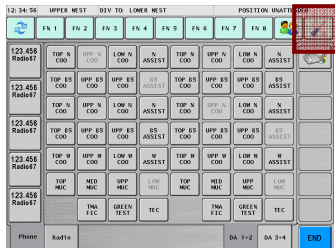


Any settings you have customised before the reload are then overwritten by the reloaded role.

3.5. Settings Window for Brightness and Volume Control

The settings window offers sliders and keys for:

- Volume level
- Brightness level
- A/G-G/G-balance
- Touch panel calibration
- Touch panel cleaning
- POS-status and audio check window
- Loading/saving personal settings

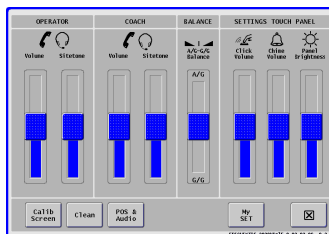


From the function keys:

1



Open the settings window.

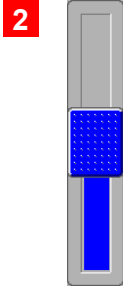


Depending on the system configuration, the settings window of your VCS may look differently. Operation and behaviour of the keys and sliders remain the same.

For details on the different layouts [refer to page: 9-1.](#)

continues on next page

Settings Window for Brightness and Volume Control



The settings window offers a series of sliders. Move the sliders up to increase, or down to decrease:



Headset volume and side tone for coach and operator/trainee



Click volume of the virtual keys



Chime volume



Panel brightness

Move the slider up towards A/G, or down towards G/G to adjust:



A/G-G/G balance

Note:


Set the loudspeaker volume directly on the loudspeaker module.



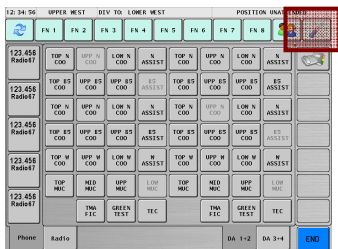
Press to exit the page, and return to normal operation.

3.5.1. Calibration of the Touch Panel Screen

If your touch panel screen needs re-calibration, consult your administrator for support. Calibration may take about 25 seconds.



Improper calibration might make the panel unusable.
Therefore: Never calibrate your touch panel while you are working!

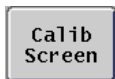
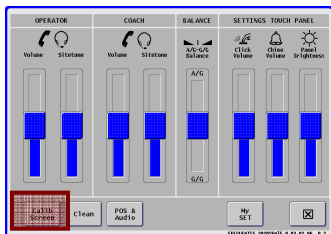


From the function keys:

1



Press to open the settings window, where the calibration key is located.

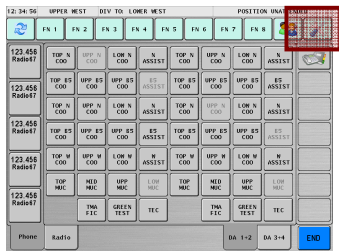


Press to open the calibration keypad.



For any further steps consult your administrator.

3.5.2. Clean the Touch Panel (FN 35)

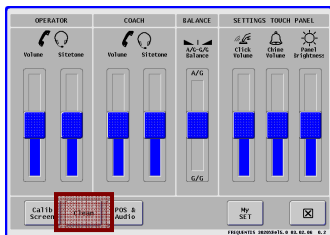


From the function keys:

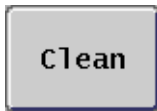
1



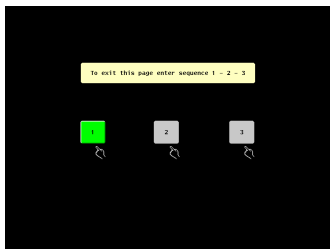
Press to open the settings window, where the calibration key is located.



2



Press to open the cleaning page.

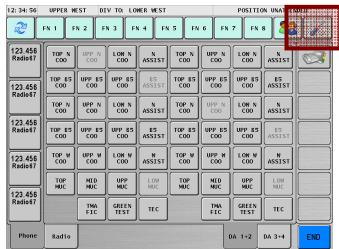


Cleaning page. The screen is ready to be cleaned.

3

Press **1, 2, 3** to return to exit the cleaning page again.

3.5.3. Open the POS Status Window

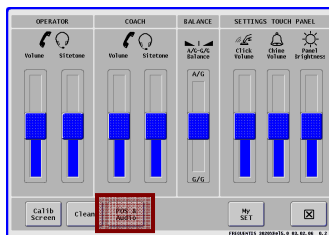


From the function keys:

1



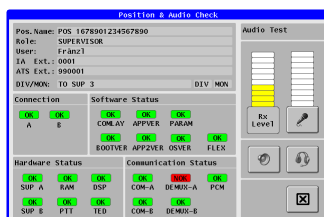
Press to open the settings window, where the calibration key is located.



2



Press to open the window that gives a status overview of the operator position and access to audio test keys.



POS status window is open.

POS Status Window

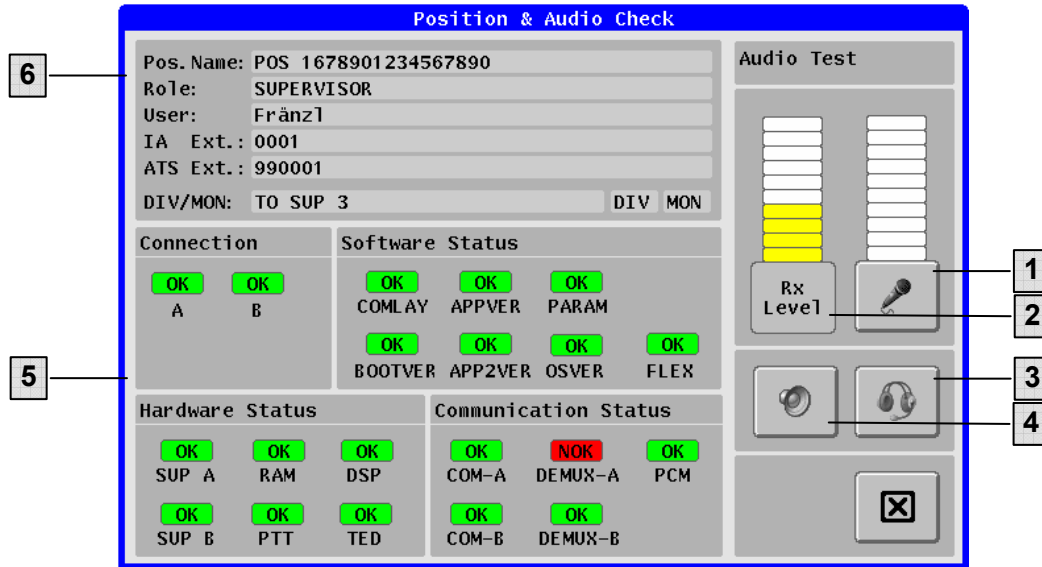


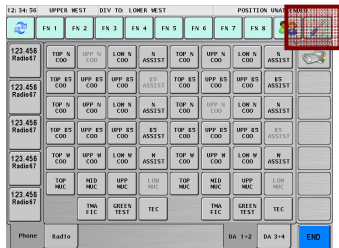
Fig. 3-3: POS Status Window

1	Press the key to test the intensity of noise when PTT is active.		Low noise intensity.
			High noise intensity.
2	The Rx-Level bar shows the strength of the Rx-audio signal on this operator position.		
3	Press the key to generate a tone and send it to all connected handsets or headsets (is not transmitted on air).		
4	Press the key to generate a tone and send it to all loudspeakers and all recording output devices (is not transmitted on air).		
5	Area displaying status overviews:		Status okay.
			Status unknown.
			Status not okay.
6	Area displaying position data.		

If the overall system status is unknown () or not okay () reliable communications might be endangered. Therefore, consult your administrator immediately.

3.5.4. My Settings

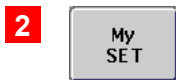
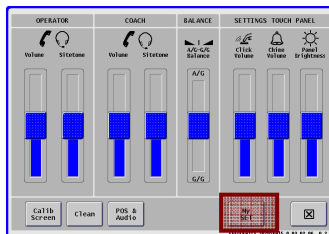
Load Settings



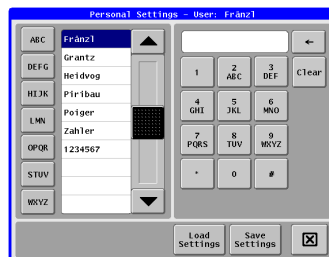
From the function keys:



Press to open the settings window, where the calibration key is located.



Press MY SET on the settings window to open the personal settings window.



The personal settings window shows:

- A list of all available users
- A dial pad for entering a 4-digit number as password



In order to load personal settings, select a user from the list.



Press to load the settings stored for the selected user including the entries in the *Personal Directory*.

The window closes automatically.

or



Press to cancel the action and close the window.

Save Settings

1

In order to save your personal settings select your user name from the list (if not already selected).

2 1234

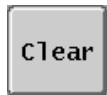
Enter a 4-digit password.

1



Press to remove the last digit.

1



Press to clear the display.

3



Press to save the settings.

The window closes automatically.

or

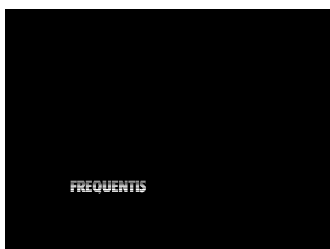
3



Press to cancel the action and close the window.

3.6. Screensaver

The screensaver appears after a period configured by the administrator; it can also be deactivated.



The screensaver is active; brightness is on a minimum level.

The following events deactivate the screensaver again:

- Incoming A/G- or G/G-call
- Squelch
- Blinking **Load** key
- New role proposal
- Any change of a CA- or DA-key or the CD
- Radio out-of-service
- RRC-error
- Loss of connection to the VCS
- Touching the screen
- Loop check error
- PTT

4. Position Features



The VCS 3020X Rel. 5.0 offers a series of functions to configure the panel, and to facilitate your work with the panel. Each function that is configured for your VCS can be assigned to a dedicated key, but it can also be activated with a function code.

This chapter describes:

- Function codes
- Position functions configured for your VCS

For details on telephone communications refer to page:

[5-1](#)

For details on radio communications refer to page:

[6-1](#)

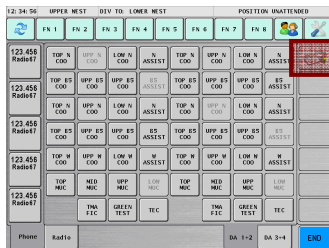
4.1. 4-Digit Function Codes (FN 72)

On the dial pad, enter:

- Shortcut key **FN**, then enter the 2-digit function code
- Or press **IA**, and then the complete 4-digit function code always starting with 50

In this User manual the FN-codes are added to the chapter headings. For a complete list of function codes consult your administrator.

Activate a Function



Use the call agent key:

1



Press to open the sub-window that contains the dial pad.



The dial pad is opened by default.

Note: If the system or the personal directory, or the call list is open, press the tab **Manual Dialling** to open the dial pad.

2

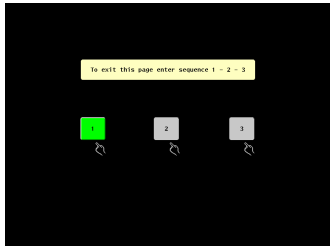


Press **FN**.

continues on next page

3 35

Enter the desired function code, e.g. 35, which is the FN-code for touch panel cleaning.



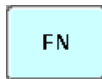
In this example, the cleaning page opens.

The function is activated. The dial pad closes automatically.

4

After cleaning the page, close the cleaning page (press **1, 2, 3**).

1



In this example a de-activation of the function is not necessary.

If, however, a function needs to be de-activated, simply re-enter the FN-code.

Press **FN**.

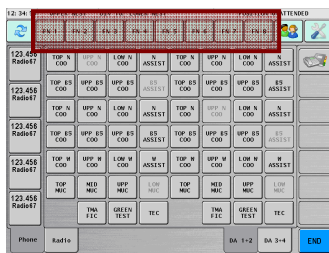
2 XX

Enter the code on the dial pd.

The function is de-activated.

4.2. Emergency Menu (FN 02)

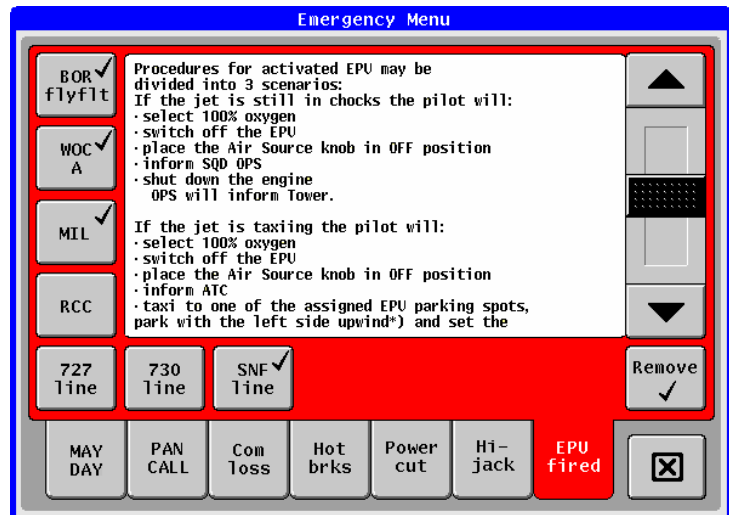
The emergency menu offers procedure information and pre-configured dedicated DA-keys for emergencies.



From the function keys:



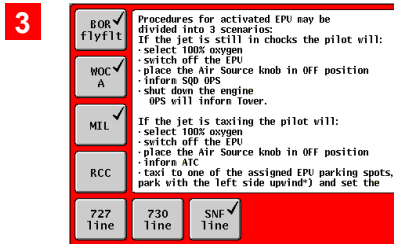
Press to open the emergency menu.



Press any of the tabs to open a page with a pre-defined emergency procedure.

Note: These tabs show the actual status of hidden pages. If, for instance, there is an incoming call on page Hot brks, this is indicated on the respective tab.

continues on next page



Each page offers seven DA-keys. These keys are references to DA-keys on the DA-layers.

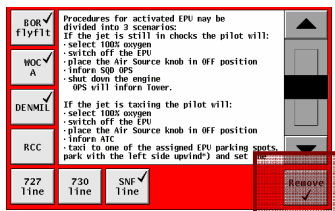
Press any of the DA-keys to set up a call.



As soon as a DA-key is active, it shows a checkmark which is visible on all emergency pages and all operator positions.

Outgoing calls are indicated in parallel on the emergency menu and on the DA-key (if any is assigned).

Note: Checkmarks are only visible on a page that has been used, and not automatically on every page that might be assigned with this particular DA-key.



As soon as the first checkmark is visible, the **Remove** key on the emergency menu becomes available.



Press to remove all checkmarks from all emergency menus at your operator position and, as a result, also at all other operator positions.



5

In order to close or hide the emergency page press:

- Any other tab, or



-



-



-

Incoming Emergency Calls for Moving or Static Call Queue Type I



All incoming calls are indicated in the **CQ**.

Calls that were set up on the emergency menu of another operator position are indicated in the **CQ**.

1

Treat the incoming and the active call as usual.

Incoming Emergency Calls for Moving or Static Call Queue Type II



Calls that were set up on the emergency page of another operator position or with an ordinary DA-key are indicated on the assigned DA-key and the emergency menu in parallel.

*Note: If the emergency menu is closed, the **EMERGENCY** key shows the incoming call.*

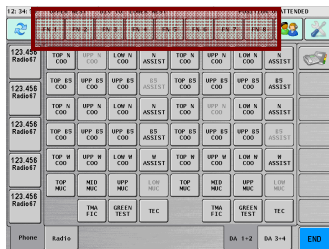
1

Treat the incoming and the active call as usual.

4.3. Single or Steady Chime Tone (FN 09)

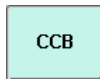
For each operator position within the VCS, the TMCS can define if the chime rings once (default) or steadily.

Note: The selected chime may be a single tone or a series of tones.



From the function keys:

1



Press to toggle between single and steady chime (single in this example).



Continuous chime.



After a reset of the operator position **CCB** is always active.

4.4. Split Position Operation (FN 13)

Activate the function split position if you want to split the workload of a combined radio/telephone position into an A/G-G/G- and a telephone part.

A dedicated key on the touch panel is necessary to activate splitting. The VCS accepts inputs coming from this key only if:

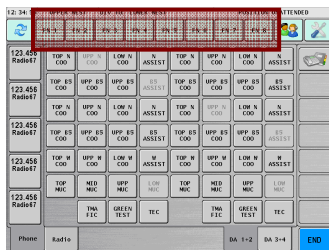
- your position is pre-configured as split position, and
- at least one headset is connected to the plug-in panel.

The plug-in position of your audio instrument defines the use of the panel:

- A/G-communications remains with the operator.
- G/G-communications changes to the operator connected to the coach's jack.



Activating split position releases split headset operation.
Active calls are not affected by splitting.



From the function keys:



If available, press the dedicated key to activate split position.



- A/G-communications at the operator's jack
- G/G-communications at the coach's jack

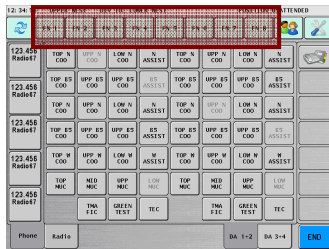


Press the active key to release split position operation.

The configuration is as it was prior to splitting.

4.4.1. Permanent Split Position

Split position can be set to a permanent active state. In this state, you cannot de-activate the function.



From the function keys:

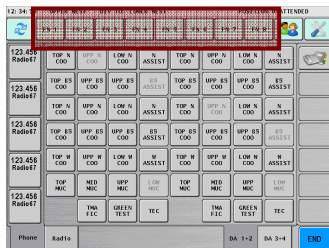


Split position is active.

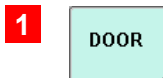


If this key is active, and you cannot de-activate it, permanent split position is selected. Consult your administrator if necessary.

4.5. Door Release (FN 14)



From the function keys:



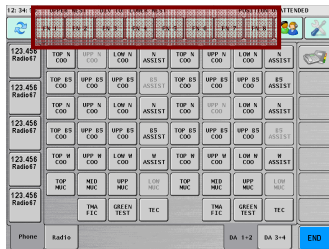
Press to activate the door opener.



Press again to deactivate the function.

4.6. Select One of Multiple Chime Types (FN 17)

Choose among up to 16 different chime sounds for incoming telephone calls.



From the function keys:



Press to scroll through the available chime sounds.



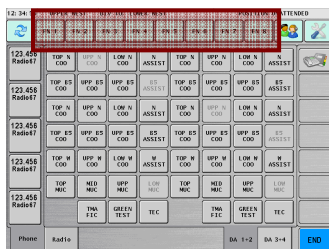
Hear a sample of the selected chime (single chime tone or series of tones).



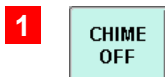
Enter the code again, or press the key once more to scroll through the chimes.

Stop at the chime type you want to select for call indication.

4.7. Mute the Chime for Incoming Calls (FN 20)



From the function keys:



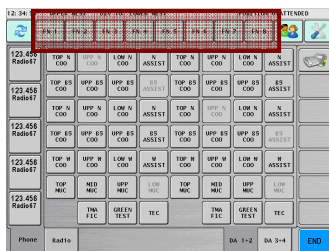
Press to mute the chime that indicates incoming calls at your position.



Press the active key, or re-enter the function code, to make the chime audible again.

4.8. Relief Briefing (FN 21)

Use relief briefing to set up two-way communications between the coach and the trainee. Relief briefing is typically used for passing on information to colleagues during a change of shifts. Relief briefing does not interrupt any other G/G- or A/G-communications.



From the function keys:

1



Press to establish a two-way connection with the colleague who continues your work.



Two-way connection is active. Brief your colleague.

Relief briefing audio is always recorded.

2

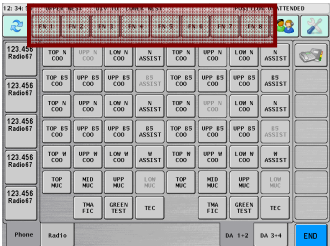


Press the active key, or re-enter the function code to release the two-way connection again.

4.9. Hook Flash Signal (FN 26)

Use the function to select a manual ring circuit. The **HOOK FLASH** key sends ringing voltage to the telephone circuit, or applies a hook flash signal on the line.

The signal can be used for service features like, for instance, recall. On LB-lines the hook flash signal is used to initiate a ringing signal when pressed.



From the function keys:



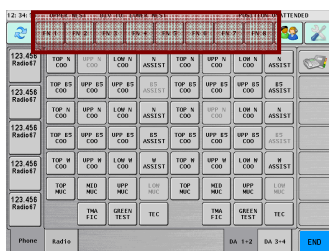
Press to send a hook flash signal to an open external line.

Note: This feature is only available for telephone circuits providing loop start for outgoing signals.

4.10. CLIP/CLIR (FN 47)

CLIP = calling line identification presentation for ISDN-lines means that the identity of the calling party is indicated on your panel, and your identity is transmitted when you set up an outgoing call (activated on the TMCS).

CLIR = calling line identification restriction for ISDN-lines means that you can activate/deactivate this identification from your position to the PSTN-party on your position.



From the function keys:

1



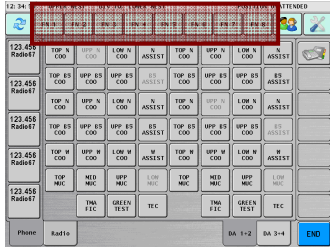
Press to activate the function *CLIR*, i.e. inhibit the identity.

2



Press again to deactivate the function.

4.11. Runway Incursion (FN 48)



From the function keys:



Press this key in this state to switch the runway incursion from OFF to ON.



Runway incursion is ON, and **no incoming squelch** is present at the operator position.



Any **incoming squelch** on one of the activated frequencies is indicated visually and acoustically as long as squelch is present.

Note: Runway incursion acts as a reminder of a blocked runway.



Press in either state to deactivate the function again.

or



If PTT-lockout should occur simultaneously, only the PTT-lockout tone can be heard.

4.12. Short-Term Recording (FN 60)

Note: The feature short-term recording works only with a dedicated hardware). If necessary, consult your administrator.

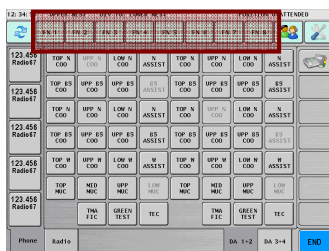
Short-term recording serves for recording active A/G- and G/G-calls to or from the operator position, and the play-back of these recordings. The feature can be enabled/disabled per operator position at the TMCS.

The FREQUENTIS short-term recording system records one hour of conversation (i.e. 30 minutes of A/G and 30 minutes of G/G-communication).

Recording is triggered by:

- squelch
- PTT-activation
- activation/deactivation of a telephone call

If there is an active radio and telephone call at the same time, both calls are recorded. If the memory is full, the first recorded call is cleared. Supervisor positions can also play back records of other operator positions.



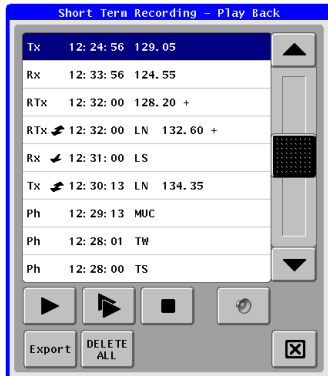
From the function keys:



Press to open the play-back window which contains a list of the most recent radio and telephone calls (for details refer to the table *Record entry structure* below).



continues on next page



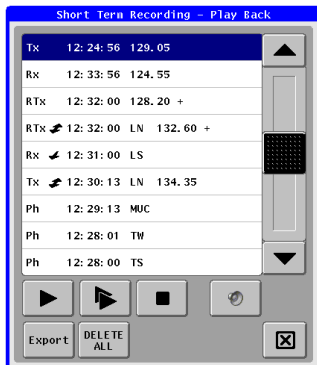
Play-back window is open.

Default setting: the latest record is selected.

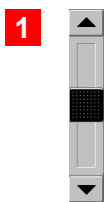
Record entry structure

Type:	
Tx	- Transmission (background shows that entry is selected)
Rx	- Reception
RTx ↔	- Reception and re-transmission in a coupling group (duplex symbol)
RTx ↔	- Reception and transmission in a coupling group (duplex symbol)
Rx ↔	- Reception in a coupling group (simplex symbol)
Tx ↔	- Transmission (duplex symbol)
Ph	- Phone call
Time:	Shows the start time of the record.
ID:	Shows: <ul style="list-style-type: none"> ● Frequency (max. three frequencies; if more frequencies were involved in the record a "+" is displayed) ● Name/number of connected telephone party ● <i>CONF</i> if the telephone call was a master conference

4.12.1. Navigate and Start Play-back



On the play-back window:



Scroll up and down if you are looking for a particular record.



Press to select a particular record.



Press to play the selected radio or telephone call record in real-time.



Play-back is active.

or



Press to play all calls starting with the selected entry in real-time.



Play-back all is active.

You hear the playback in your headset. As long as it is active A/G- and G/G-calls are routed to the loudspeaker.



Press to route audio to the loudspeaker.



Audio is put out on the loudspeaker.

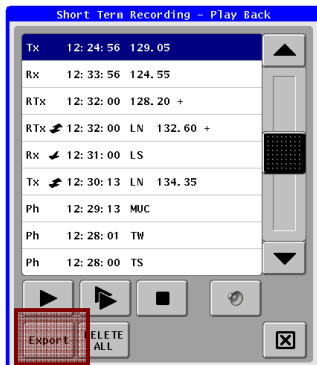


Press to stop the play-back session.



Press to close the play-back window.

4.12.2. Export Records



On the play-back window:



Press to initiate an audio export.

Note: While exporting audio from a supervisor position to another operator position the supervisor position cannot be monitored.



Export ready.



Press to start export of selected record.

or



Press to start export of all records.



All audio that is being played while **Export** is active, is copied to a flashcard and stored in a wav-file that may be downloaded via the TMCS.



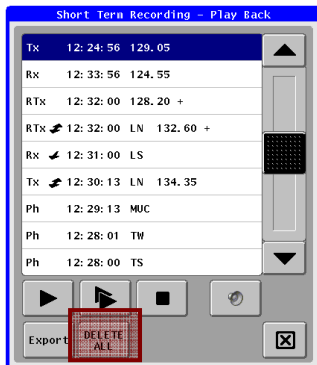
Press to stop the export.

or



Wait until the export is automatically stopped after 15 minutes.

4.12.3. Delete Records



On the play-back window:



Press to delete all records.



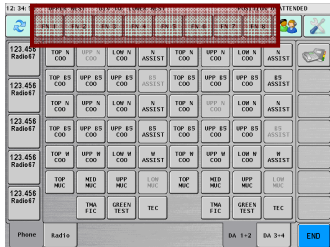
2

On the confirmation window, press **Delete** to delete all records, or **Cancel** to cancel the action.

3

Close the window as usual.

4.12.4. Supervisor Play-back



From the function keys:

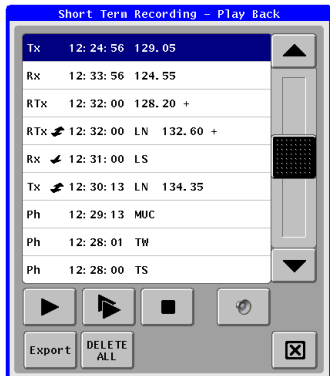
At a supervisor position:

Press to start a play-back session.



Select the DA-key (assigned to a particular operator position) to open the play-back window of this operator position.

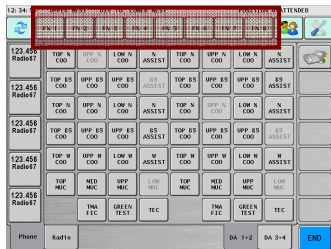
Play-back window open.



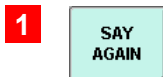
3

Treat as described on page [4-17](#).

4.12.5. SAY AGAIN (FN 71)



From the function keys:



SAY AGAIN plays back the latest radio call entry of the play back list once.

Note: A squelch signal or an active call also stop a current playback session.



Press the active key to stop the current playback.

or



Wait until the play back is finished.

Note: **SAY AGAIN** is only functional if you have a function key for short-term recording (**PLAY BACK**) on your touch panel.

4.13. Training Sessions in Coach/Trainee Mode

To make training sessions between coach and operator/trainee possible, the audio instrument connected to the coach's jack on the plug-in panel overrides the seconds jack (trainee).

For example:

The trainee has a telephone call active; the coach has to interrupt the ongoing call by pressing his PTT-key. In this case, the coach is now talking to both, the trainee and the other party.

4.14. Temporary Chime Mute

For each position within the VCS, the TMCS can mute the chime temporarily during active G/G-calls. As long as you have an active call, further incoming calls are not indicated acoustically. When you release your active call, the acoustic indication of the incoming call is resumed.



Situation:

You have an active call at your operator position (on the CD or on a DA-key).



New incoming call without acoustic indication.

Optionally, the VCS can be configured to generate a single warning beep in you headset/handset to indicate incoming calls.



Release the active call.



Acoustic indication is audible again.

4.15. Position Unattended

At the TMCS it is possible to enable/disable the operator positions to detect whether or not any headset/handset/microphone is connected. If no audio instrument is connected, a position is considered as unattended. The state **Unattended** is indicated on the display, and is also reported to the TMCS.

- Outgoing call set-up and all function keys are out of service.
- Opening and closing of windows, and settings is still possible.
- For a period defined at the TMCS incoming audio is put out on the loudspeaker, then all connections are released, and all frequencies are deselected.
- Incoming calls are still indicated, but cannot be answered.
- HS/LS-routing is not possible.
- There is no special indication if you call an unattended position, or a position turns unattended during an active call.
- It is possible to define that operator positions maintain radio monitoring.
- The VCS may also be configured to forward incoming calls from an unattended to another operator position.

4.16. G/G-Communications with or without PTT

The standard VCS-configuration uses no PTT for G/G-communications.

P T T

For ordinary G/G communications you **do not** have to press PTT.

1

P T T

If you press PTT during an active G/G-call,



all audio is routed to your active A/G-call, only.

Optionally, the VCS may be configured to use PTT for G/G-communications.

1

P T T

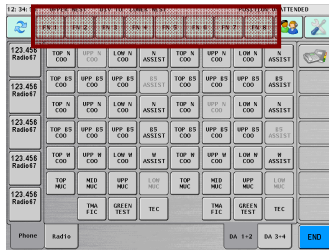
Press PTT if you want to talk during your G/G-call.

Release your active G/G-call, or put it on hold before an A/G-call can go on air.



For hotline calls PTT is not necessary.

Radio Priority for G/G-Communications with PTT (FN 65)



From the function keys:

1



Press to assign PTT-priority to A/G-communications.



Radio priority is active.

2



Press to deactivate the function.

4.17. G/G-Communications with PTT-Mute

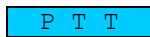
If you work at an operator position in preferred telephone mode, the PTT-switch on your audio instrument may be configured as mute switch (on the TMCS).

If you are in doubt about your configuration, consult your administrator.



Have an active G/G-call (on the CD or on a DA-key).

1



Press PTT to mute your microphone and keep pressed as long as necessary.

The other party cannot hear you any longer.

4.18. Split Headset Operation



The feature split headset allows hearing both, A/G- and G/G-communications, on one headset. Each is assigned to one earpiece.

Split headset mode is only available for the coach during training sessions. Volume is controlled, as usual, on the settings window.

For details on coach/trainee sessions refer to page:

[4-22](#)

If split headset is not configured at your position, find

off-boom  boom



radio and
telephone

on your monaural headset,

radio and
telephone



radio and
telephone

on your binaural headset.

If configured you hear both, telephone and radio communications, at the same time. The table shows the possible configurations.



or



if a telephone call is active, and Rx is selected (monitor mode, default).



if no telephone call is active, and Rx is selected.



if a telephone call is active, and Rx is not selected.

When you have PTT active:

You can either hear the

- A/G side tone in both earpieces or
- A/G in one earpiece and G/G cut off.

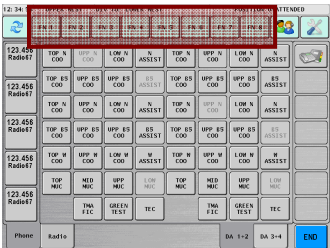
If necessary, consult your administrator to check which setting is active at your VCS.

4.19. Line Privacy

On the TMCS particular lines may be configured for line privacy. Line privacy prevents a line from being accessed by other operators while it is being used. Consult your administrator to check which line(s) is/are configured for line privacy.

4.20. System Watch (FN 70)

System Watch shows the overall status of the VCS.



From the function keys:

1



Press to acknowledge the system status indication (green: VCS OK).



or









1





Press to acknowledge the system status indication (red: VCS is not OK).

4.21. Audio Signals

This table contains a short description of the signal tones and symbols used in this manual:

	Symbol	Tone	rings when ...
Telephone		Chime	a telephone call comes in
	 OOS	Out of Service, End of automatic call repetition	e.g. a non-existing telephone number is called
	 BUSY	Busy	the called party is busy
	 FREE	Audible ring	as long as a free party has not answered the call
	 INTRUSION	Intrusion tone	a hotline-, priority call comes in; a party enters a conference call
	 DIAL	Dial tone	prompts you to dial a number
	 HOLD	Hold tone	indicates the hold status to the party which is put on hold
	 RWY INC	Runway incursion tone	indicates incoming squelch while runway incursion is on

Radio	 LOCKOUT	PTT-lockout	a position is locked from PTT
	 STUCK PTT	Stuck PTT error	if PTT is active for more than minute/configurable period

Tab. 4-1: Audio Signals

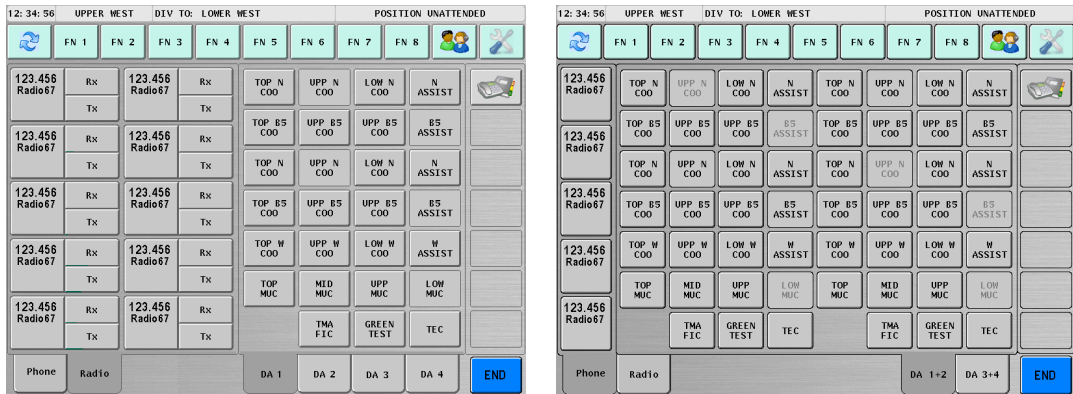
Note: Tones are customised for Europe/United States of America.

----- END OF SECTION -----

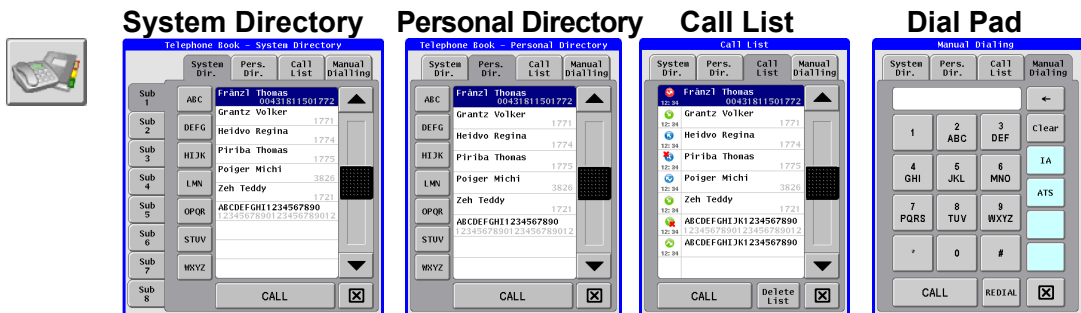
5. Telephone Operation

5.1. Keys for Telephone Operation

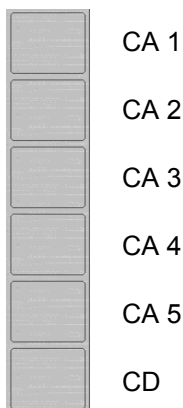
1. Direct Access Keys: 28 keys on four layers or 56 keys on two layers.



2. Call Agent Key: Opens window that gives access to:



3. Call Queue: consists of common answer (CA) keys which indicate incoming calls and a call display (CD) that displays outgoing, active or held calls.



5.1.1. Dial Pad

5.1.1.1. Default Dial Pad

The dial pad gives access to the following functions:

IA: set up an indirect access call

ATS: enter an ATS-number

REDIAL: re-dial the last number

Optionally, other functions like pause, hook flash or manual ring may be assigned.

Before you can enter any number press one of these function keys. If you do not select any manually, **IA** is used as default selection.

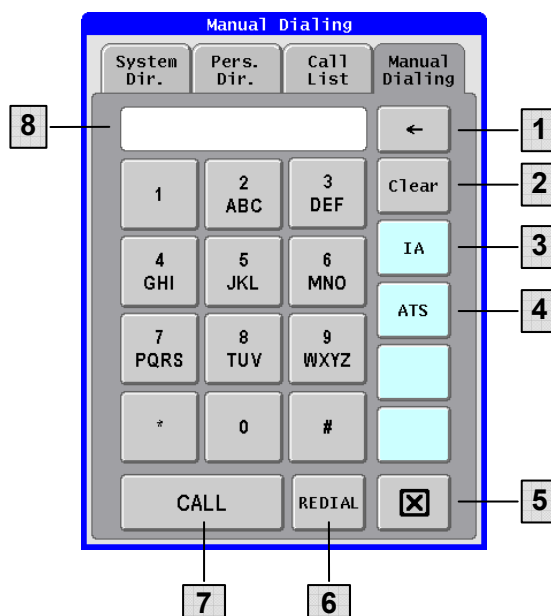


Fig. 5-1: Default Dial Pad

1	Clears last digit
2	Clears all digits on the display
3	Starts set-up of an indirect access call
4	Starts set-up of an ATS-call
5	Closes dial pad
6	Re-dials the last number
7	Dials the entered number
8	Displays entered number

5.1.1.2. Extended Dial Pad

The dial pad gives access to the following functions:

IA: set up an indirect access call

ATS: enter an ATS-number

REDIAL: re-dial the last indirect access number

SHRT: dial speed-dial numbers (optional)

FN: enter a function code (optional)

Optionally, other functions like pause, hook flash or manual ring may be assigned.

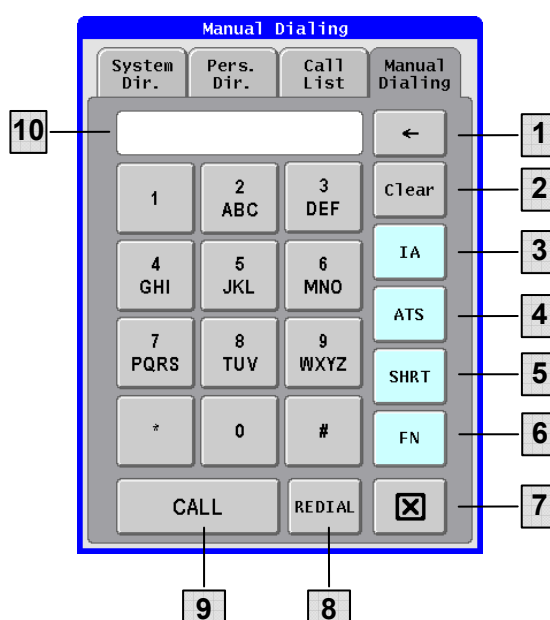
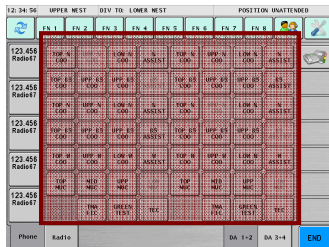


Fig. 5-2: Extended Dial Pad

1	Clears last digit
2	Clears all digits on the display
3	Starts set-up of an indirect access call
4	Starts set-up of an ATS-call
5	Starts set-up of speed-dial calls
6	Starts entry of a function code
7	Closes dial pad
8	Re-dials the last number
9	Dials the entered number
10	Displays entered number

5.2. Basic Call Handling

5.2.1. DA-Call Set-up



On the DA-key area:

1



Press a DA-key to set up a call.



The key shows an outgoing call.



The key shows that the call is active.

2

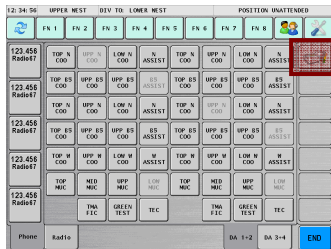


Press to release the active call.

The same procedure works for:

- Voice paging calls: the function voice paging is assigned to a particular DA-key to talk to any paging equipment in the building
- Voice calls: for a defined period incoming voice calls are indicated visually on a dedicated DA-key, the caller's voice is immediately put out on the loudspeaker.

5.2.2. IA-Call Set-up



Use the call agent key:

1



Press to open the sub-window that contains the dial pad.



The dial pad is opened by default.

Note: If the system or the personal directory, or the call list is open, press the tab **Manual Dialing** to open the dial pad.



IA is selected by default.

Note: If any other function key is selected, press **IA** to select it for the call set-up, or press **ATS** to set up an ATS-call.

2

1234

1234

Enter the target number. The number is shown on the display.

Note: IA-numbers have four digits, ATS-numbers have six digits, and speed dial numbers may have up to 22 digits.

On the dial pad:



Press to clear the last entered digit.

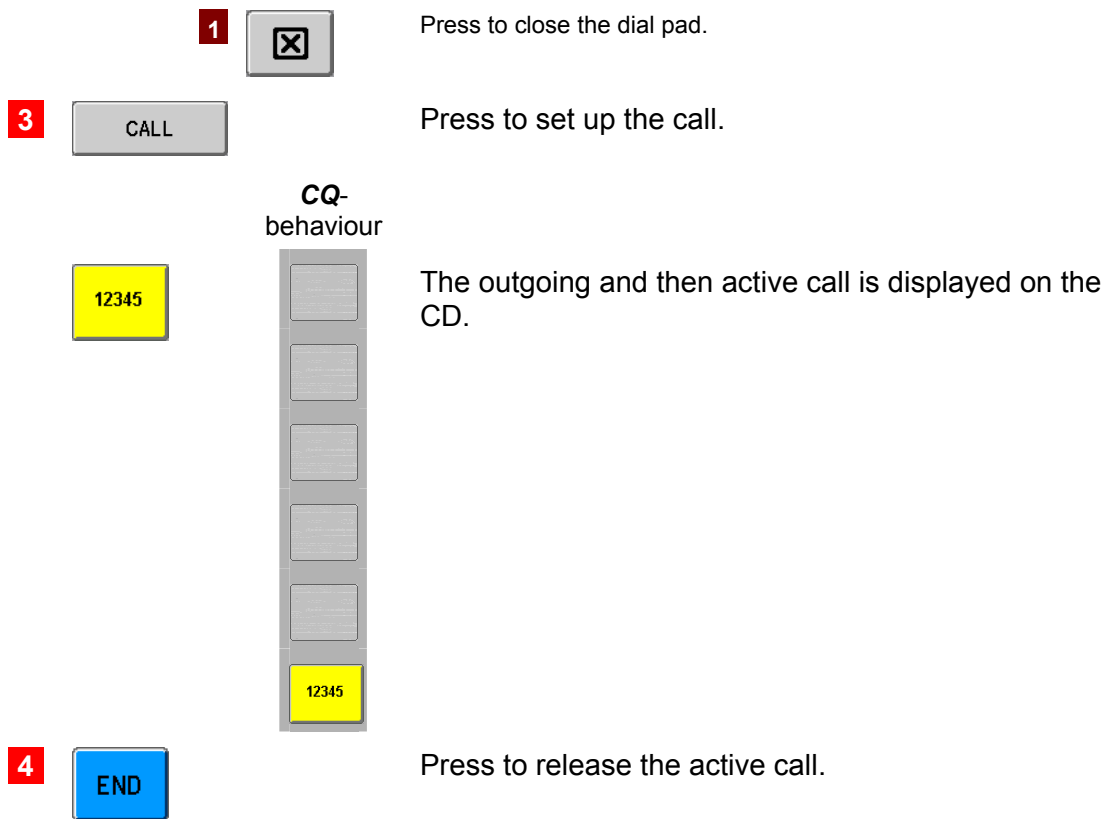
or



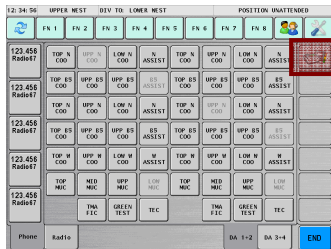
Press to clear the complete entry.

or

continues on next page



5.2.3. IA-Call Set-up on an Extended Dial Pad



Use the call agent key:

1



Press to open the sub-window that contains the dial pad.



The dial pad is opened by default.

*Note: If the system or the personal directory, or the call list is open, press the tab **Manual Dialing** to open the dial pad.*



IA is selected by default.

*Note: If any other function key is selected, press **IA** to select it for the call set-up.*

2

12345

12345

Enter the target number. The number is shown on the display.

On the dial pad:



Press to clear the last entered digit.

Or



Press to clear the complete entry.

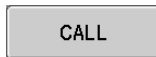
Or



Press to close the dial pad.

continues on next page

3



Press to set up the call.



CQ-
behaviour



The outgoing and then active call is displayed on the CD.

4



Press to release the active call.

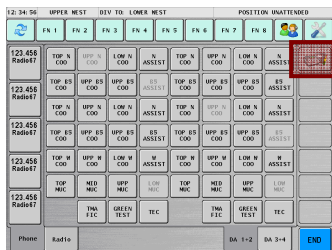
5.2.3.1. Shortcut Keys

Find two shortcut keys, **SHRT** and **FN**, on the dial pad.

- **SHRT** pre-defines the first two digits of a stored telephone number.
- **FN** dials the first two digits of a 4-digit access code (also refer to page: 4-2).

5.2.3.2. Short Code Dialling (FN 73)

Use for dialling a telephone number without entering the complete number.



Use the call agent key:

1



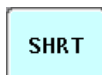
Press to open the sub-window that contains the dial pad.



The dial pad is opened by default.

*Note: If the system or the personal directory, or the call list is open, press the tab **Manual Dialling** to open the dial pad.*

2



Press **SHRT**.

continues on next page

40

The code for short code dialling appears automatically on the display.

3 11

Enter the desired storage number, e.g. 11. The number is dialled immediately. The dial pad closes automatically.

4011

The display shows the complete number.

4

Treat and release the call like any other IA-call.

5.2.3.3. Function Code (FN 72)

For operational details on function codes refer to page:

[4-2](#)

5.2.4.1. Incoming Group Calls (Selective and Non-Selective)

Selective

A selective call is an incoming call with a definite number as destination. Selective calls can be assigned to position groups. Position groups are configured on the TMCS. All group members have a dedicated DA-key at their positions.

Non-Selective

Non-selective calls are incoming calls without a definite number.

Master/Slave Group Calls

If master/slave operator positions are configured for a group, calls to a group are indicated with an acoustic and visible indication on the master position, and with a visual indication on the slave positions.

Selective



An incoming group call is indicated at all operator positions of the group that have a **group DA-key**.

1



Press to accept the group call and set up a two-way connection.



Active call.



The other group members get a visual *line busy* indication.

2

Treat and release the call as usual.

Non-Selective



An incoming group call is indicated at all operator positions of the group that have a **group DA-key**.

1

Treat and release the call as usual.

Master/Slave



An incoming group call is indicated acoustically and visually at the master operator position.



It is indicated with a visual indication at the slave operator positions.

1

Treat and release the call as usual (at the master position).

or

1

Treat and release the call as usual (at the slave position(s)).



Non-selective calls cannot be picked up.

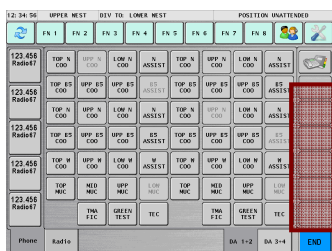
5.3. Moving Call Queue I

For details on all key states (DA, CA, CD) refer to page:

[11-1](#)

5.3.1. Incoming Calls

All incoming calls, be it direct access calls (DA-calls) or common answer calls (CA-calls), are indicated in the call queue (**CQ**).



In the **CQ**:

CQ-
behaviour

1



Press to accept the incoming call.



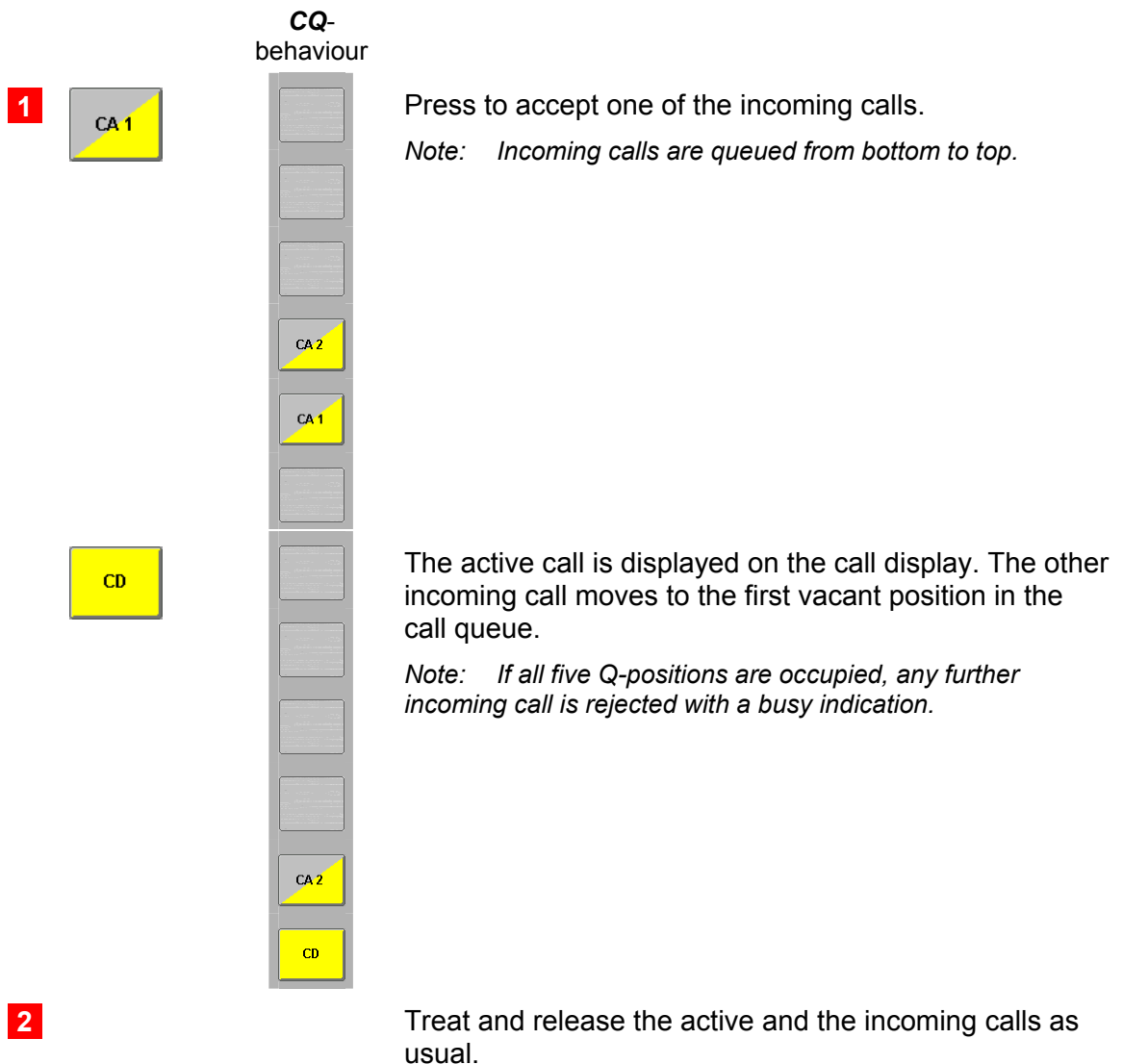
The active call is displayed on the call display.

2



Press to release the call.

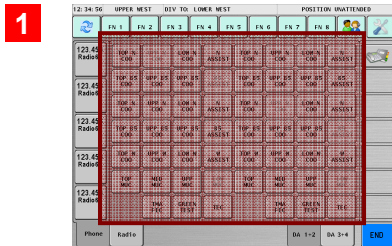
Several Incoming Calls



5.3.2. Outgoing Calls

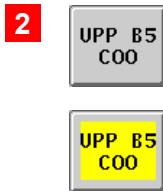
Outgoing DA-calls are indicated on the DA-keys AND, in parallel, on the CD.
 Outgoing and active IA-calls are indicated on the CD.

Outgoing DA-Calls



Select your target from the DA-keys.

CQ-
behaviour



Press to set up an outgoing DA-call.



The call state *outgoing* is indicated on the DA-key as well as on the CD.

continues on next page

UPP B5
C00



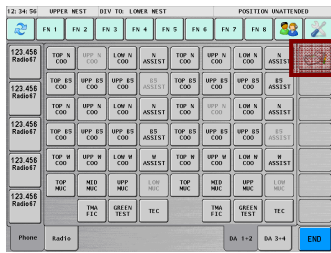
The active call is indicated on the DA-key as well as on the CD.

3

END

Press to release the active call.

Outgoing IA-Calls



Use the call agent key:

1



Press to open the sub-window that contains the dial pad.



The dial pad is opened by default.

Note: If the system or the personal directory, or the call list is open, press the tab **Manual Dialing** to open the dial pad.



IA is selected by default.

Note: If any other function key is selected, press **IA** to select it for the call set-up.

2 1234

1234

Enter the target number. The number is shown on the display.



Press to clear the last entered digit.

or



Press to clear the complete entry.

or



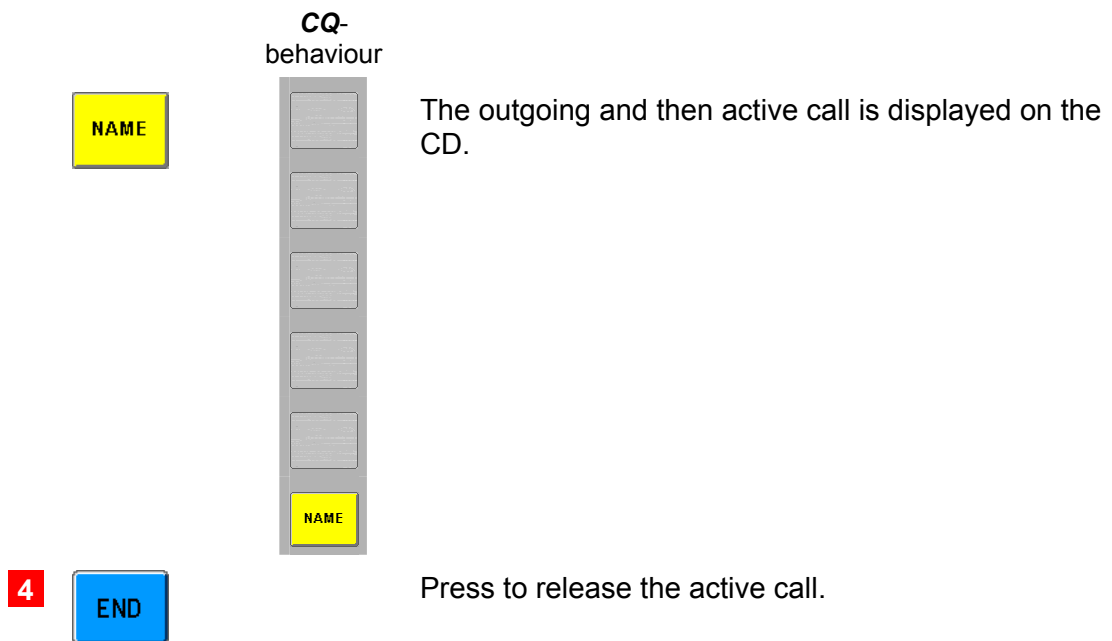
Press to close the dial pad.

3



Press to set up the call.

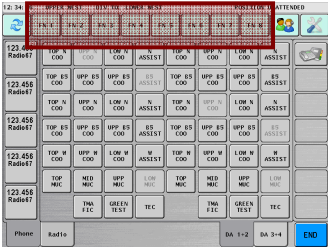
continues on next page



5.3.3. Hold a Call (FN 07)

Situation: You have an active call at your operator position. The active call may be a DA-, a CA-, an IA- or a conference call.

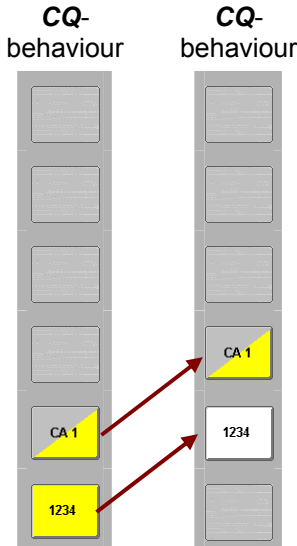
From the function keys:



Press to put the active call on hold.



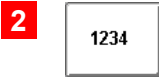
HOLD is active.



The indication of the call moves from the CD back to the CQ. Any pending incoming call or any other held call is moved upwards.

If all CQ-keys are occupied, you cannot hold a call (HOLD becomes unselectable).

You can hold up to three calls.



Press the held call to resume it.

Note: If you resume a held call while you are having another active call the active call is automatically released.



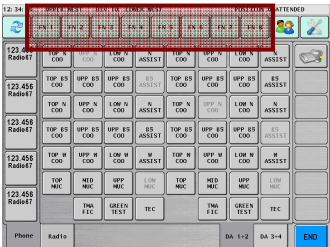
Press to release the active call.

Note: The VCS may also be configured for automatic hold. In this case an active call is automatically put on hold if you accept an incoming call.

5.3.4. Conference Calls (FN 03)

Situation: You have an active call at your operator position.

From the function keys:



1



Press to initiate a conference call.



2



Select another conference party.



The conference call is active.

The DA-keys of the conference members are active.

1



Press DA-key to remove this individual party from the conference.



The function key is also active.

CQ-behaviour



The CD shows CONF.

1



Press to remove the last party that entered the conference call (FN 37).








3



Press to release the conference call.

5.3.4.1. Automatic Conference

Your system may also be configured for automatic conferences. If enabled, an automatic conference call is set up whenever you set up an outgoing call while already having an active call at your position.

	<p>Situation: You are having an active call. Automatic conference is enabled.</p>	
<p>1</p> 	<p>Press, for instance, a DA-key to set up a DA-call.</p>	
		<p>As soon as the outgoing call is accepted you have two active calls at your position.</p>
	<p>The active conference key shows that you are in a conference call now. DROP is not available.</p>	
<p>2</p> 	<p>You can add another four parties to this conference call.</p> <p>Press any active key to release the connection to this particular party.</p>	
<p>or</p>		
<p>2</p> 	<p>Press to release the connection to all parties.</p>	

5.3.4.2. 3rd Party Call Entry

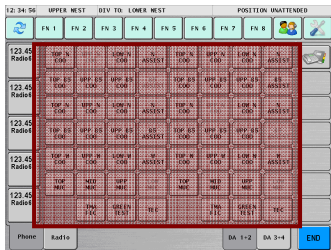
The VCS may also be configured for conference calls type 3rd party call entry. A third operator can join two parties having an active conversation.

Join either:

- ongoing internal telephone calls between two non-tied operator positions
- ongoing external telephone calls from the operator position (except for trunk line types such as MFC, ISDN, L1Q23)

Only one operator can join this conversation at a time. Every operator trying to access later will be routed to the call queue.

Both original parties of the active conversation hear an intrusion tone, if the third party joins the conversation, but there is no special visual indication for 3rd party call entry. If a 3rd party call entry is not possible for technical reasons, the display shows you the error message **CALL ENTRY NOT ALLOWED**.



In the DA-key area:

CQ-behaviour



1




Situation: Your touch panel shows an active call between two parties.

You can now press this key to join the conversation. The key remains in the same state.

continues on next page



The CD shows **CONF**.

 Both other parties of the conversation hear an intrusion tone.



Terminate the call as usual.

or



Press the active key to return to the busy state.



5.4. Moving Call Queue II

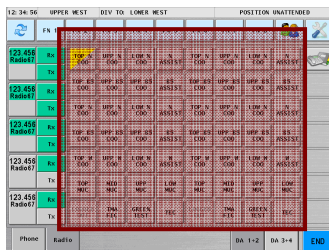
For details on all key states (DA, CA, CD) refer to page:

[11-1](#)

5.4.1. Incoming Calls

Incoming DA-calls are indicated on the DA-keys.
 Incoming CA-calls are indicated in the call queue (**CQ**) and on the CD.

Incoming DA-Calls



In the DA-key area:

1



Press to accept the incoming call.



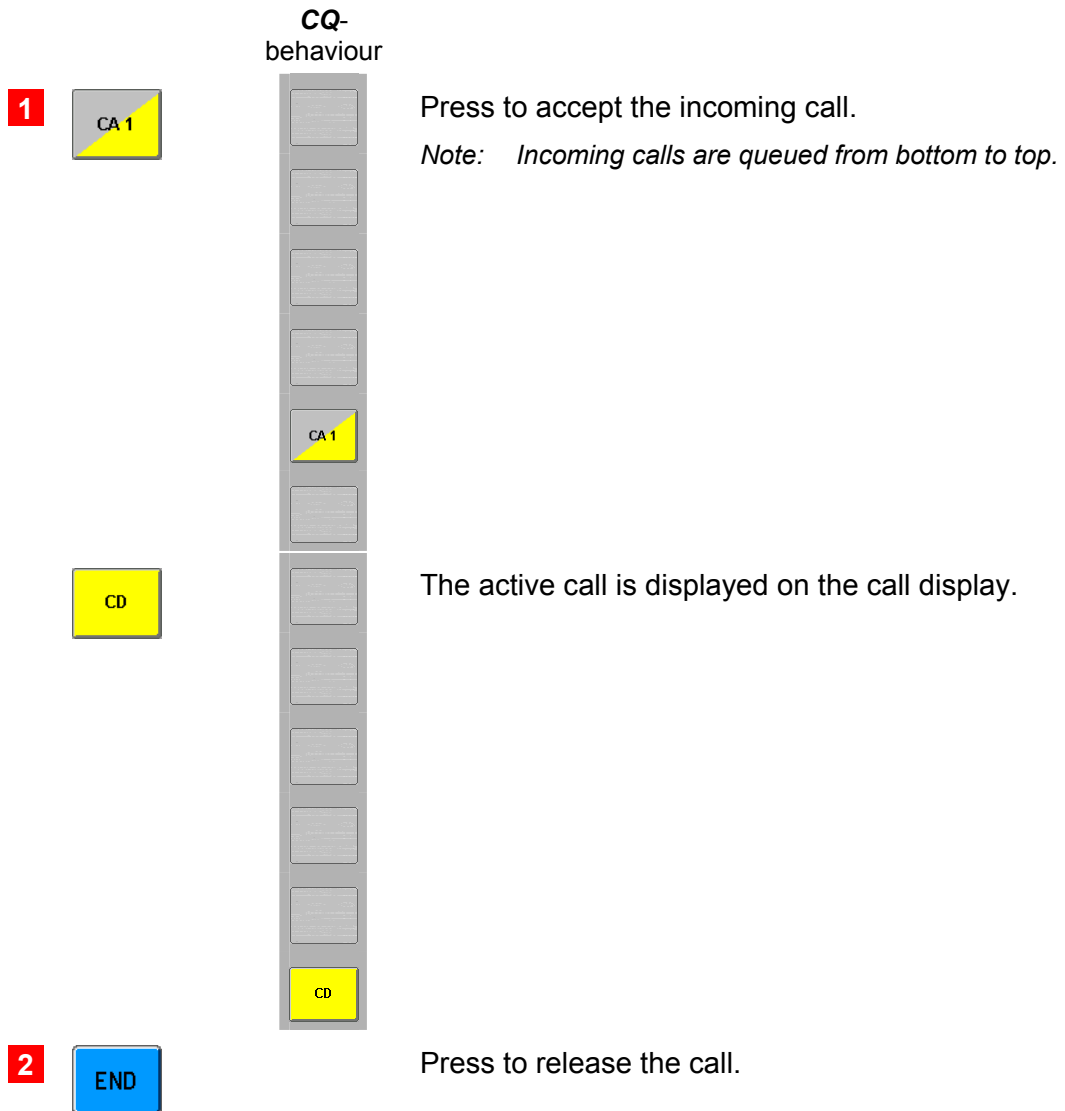
The active call is indicated on the DA-key.

2

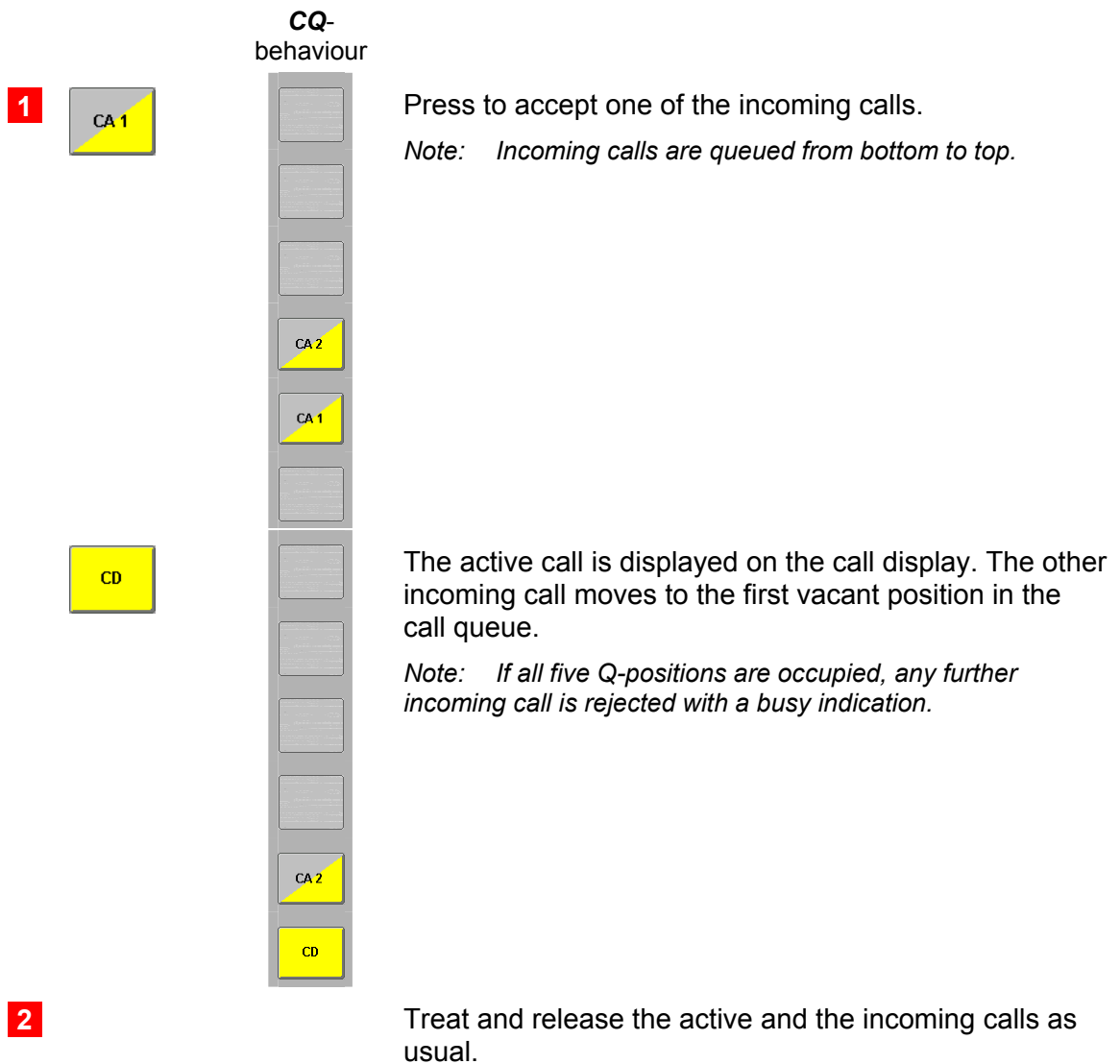


Press to release the active call.

Incoming CA-Calls



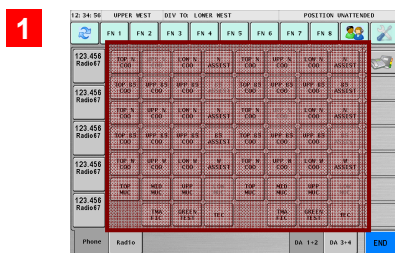
Several Incoming Calls



5.4.2. Outgoing Calls

Outgoing DA-calls are indicated on the DA-keys.
Outgoing and active IA-calls are indicated on the CD.

Outgoing DA-Calls



Select your target from the DA-keys.



Press to set up an outgoing DA-call.



The outgoing DA-call is indicated on the DA-key.

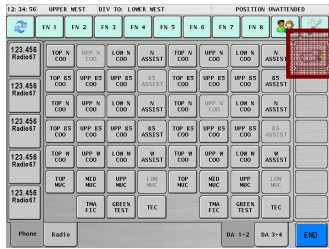


The active DA-call is indicated on the DA-key.



Press to release the active call.

Outgoing IA-Calls



Use the call agent key:

1



Press to open the sub-window that contains the dial pad.



The dial pad is opened by default.

Note: If the system or the personal directory, or the call list is open, press the tab **Manual Dialling** to open the dial pad.



IA is selected by default.

Note: If any other function key is selected, press **IA** to select it for the call set-up.

2 1234

1234

Enter the target number. The number is shown on the display.



Press to clear the last entered digit.

or



Press to clear the complete entry.

or

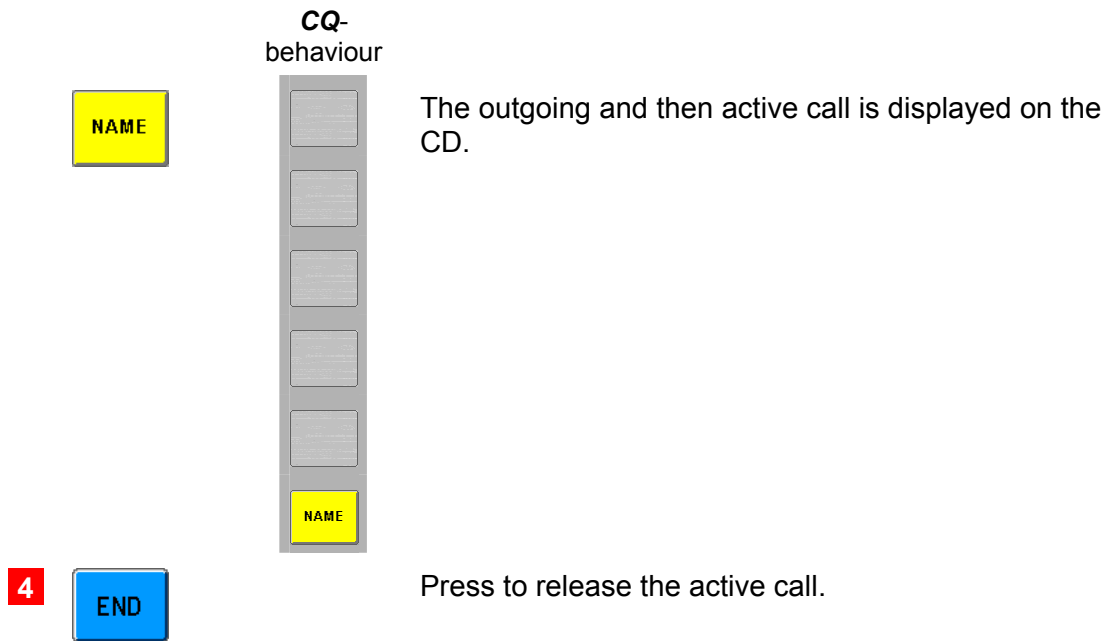


Press to close the dial pad.

3

Press to set up the call.

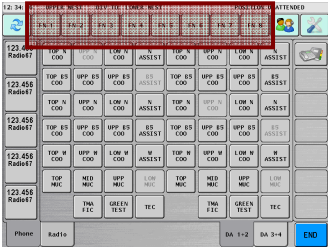
continues on next page



5.4.3. Hold a Call (FN 07)

Situation: You have an active call at your operator position. The active call may be a DA-, a CA-, an IA- or a conference call.

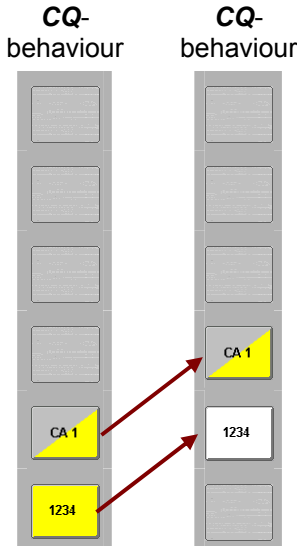
From the function keys:



Press to put the active call on hold.



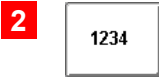
HOLD is active.



The indication of the call moves from the CD back to the CQ. Any pending incoming call or any other held call is moved upwards.

If all CQ-keys are occupied, you cannot hold a call (HOLD becomes unselectable).

You can hold up to three calls.



Press the held call to resume it.

Note: If you resume a held call while you are having another active call the active call is automatically released.



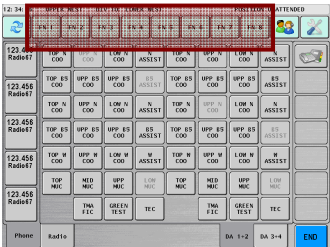
Press to release the active call.

Note: The VCS may also be configured for automatic hold. In this case an active call is automatically put on hold if you accept an incoming call.

5.4.4. Conference Calls (FN 03)

Situation: You have an active call at your operator position.

From the function keys:



1



Press to initiate a conference call.



2



Select another conference party.



The conference call is active.
The DA-keys of the conference members are active.

1



Press DA-keys to remove this individual party from the conference.



The function key is also active.

CQ-behaviour



The CD shows CONF.

1



Press to remove the last party that entered the conference call (FN 37).








3



Press to release the conference call.

5.4.4.1. Automatic Conference

Your system may also be configured for automatic conferences. If enabled, an automatic conference call is set up whenever you set up an outgoing call while already having an active call at your position.

	<p>Situation: You are having an active call. Automatic conference is enabled.</p>	
<p>1</p> 	<p>Press, for instance, a DA-key to set up a DA-call.</p>	
		<p>As soon as the outgoing call is accepted you have two active calls at your position.</p>
	<p>The active conference key shows that you are in a conference call now. DROP is not available.</p>	
<p>2</p> 	<p>You can add another four parties to this conference call.</p> <p>Press any active key to release the connection to this particular party.</p>	
<p>or</p>		
<p>2</p> 	<p>Press to release the connection to all parties.</p>	

5.4.4.2. 3rd Party Call Entry

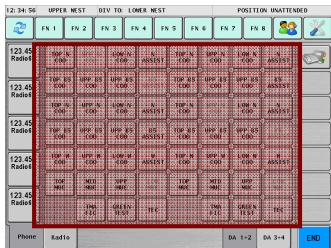
The VCS may also be configured for conference calls type 3rd party call entry. A third operator can join two parties having an active conversation.

Join either:

- ongoing internal telephone calls between two non-tied operator positions
- ongoing external telephone calls from the operator position (except for trunk line types such as MFC, ISDN, L1Q23)

Only one operator can join this conversation at a time. Every operator trying to access later will be routed to the call queue.

Both original parties of the active conversation hear an intrusion tone, if the third party joins the conversation, but there is no special visual indication for 3rd party call entry. If a 3rd party call entry is not possible for technical reasons, the display shows you the error message **CALL ENTRY NOT ALLOWED**.



In the DA-key area:

CQ-behaviour



Situation: Your touch panel shows an active call between two parties.

1




You can now press this key to join the conversation. The key remains in the same state.

continues on next page



The CD shows **CONF**.

 Both other parties of the conversation hear an intrusion tone.



Terminate the call as usual.

or



Press the active key to return to the busy state.



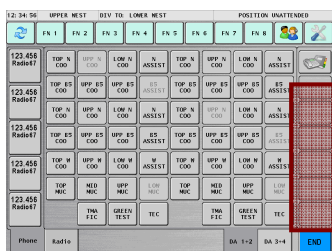
5.5. Static Call Queue I

For details on all key states (DA, CA, CD) refer to page:

[11-1](#)

5.5.1. Incoming Calls

All incoming calls, be it direct access calls (DA-calls) or common answer calls (CA-calls), are indicated in the call queue (**CQ**).



In the **CQ**:

CQ-
behaviour

1



Press to accept the incoming call.



The active call is displayed where it was originally indicated as incoming call.

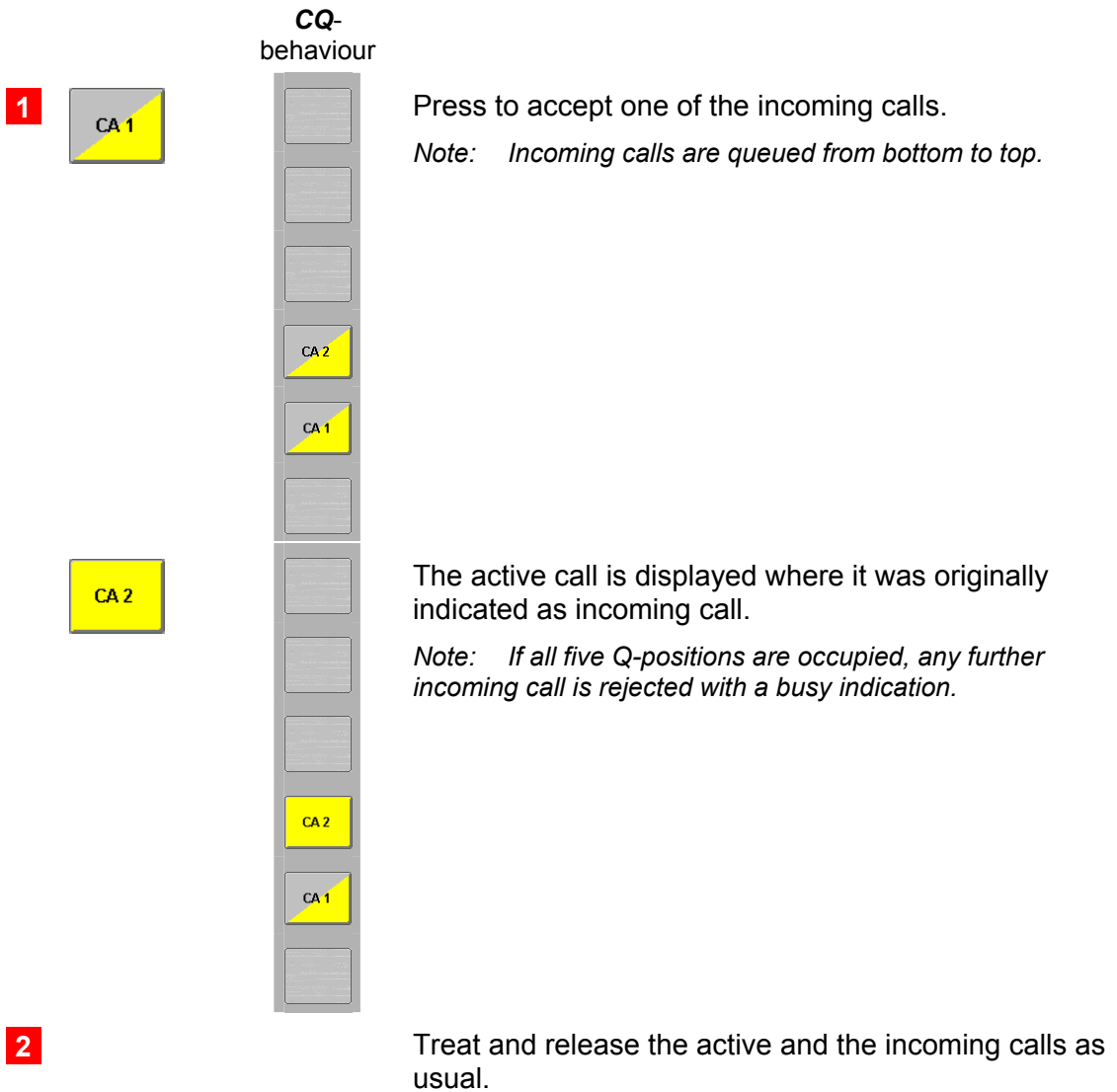


2



Press to release the call.

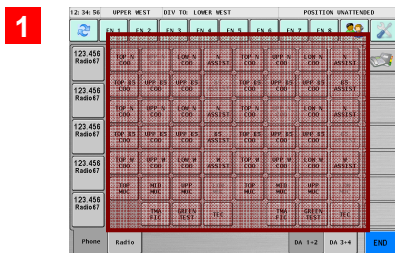
Several Incoming Calls



5.5.2. Outgoing Calls

Outgoing DA-calls are indicated on the DA-keys.
 Outgoing and active IA-calls are indicated on the CD.

Outgoing DA-Calls



Select your target from the DA-keys.



Press to set up an outgoing DA-call.



The outgoing DA-call is indicated on the DA-key.

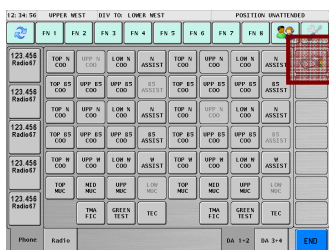


The active DA-call is indicated on the DA-key.



Press to release the active call.

Outgoing IA-Calls



Use the call agent key:

1

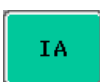


Press to open the sub-window that contains the dial pad.



The dial pad is opened by default.

Note: If the system or the personal directory, or the call list is open, press the tab **Manual Dialling** to open the dial pad.



IA is selected by default.

Note: If any other function key is selected, press **IA** to select it for the call set-up.

2 1234

1234

Enter the target number. The number is shown on the display.



Press to clear the last entered digit.

or



Press to clear the complete entry.

or



Press to close the dial pad.

3

Press to set up the call.

continues on next page

CQ- behaviour



The outgoing and then active call is displayed on the CD.

Note: No DA-key assigned to this call target.

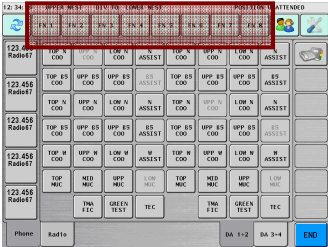
4



Press to release the active call.

5.5.3. Hold a Call (FN 07)

Situation: You have an active call at your operator position. The active call may be a DA-, a CA-, an IA- or a conference call.



From the function keys:

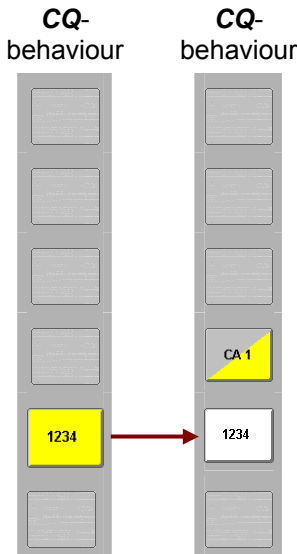
1



Press to put the active call on hold.



HOLD is active.



A held CA-call remains at the position in the CQ where it was originally indicated. Further incoming calls are indicated on the first vacant position in the CQ.

You can hold up to three calls. If all CQ-keys are occupied, you cannot hold another CA-call (HOLD becomes unselectable).

If a call on a DA-key is held it is also indicated in hold state.

2



Press the held call to resume it.

Note: If you resume a held call while you are having another active call the active call is automatically released.



3



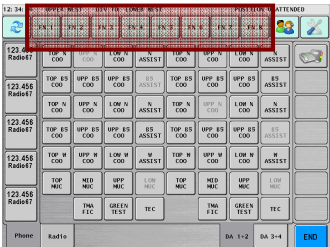
Press to release the active call.

Note: The VCS may also be configured for automatic hold. In this case an active call is automatically put on hold if you accept an incoming call.

5.5.4. Conference Calls (FN 03)

Situation: You have an active call at your operator position.

From the function keys:



1



Press to initiate a conference call.



2



Select another conference party.



The conference call is active.

The DA-keys of the conference members are active.

1



Press DA-key to remove this individual party from the conference.



The function key is also active.

CQ-behaviour



The CD shows CONF.

1



Press to remove the last party that entered the conference call (FN 37).








3



Press to release the conference call.

5.5.4.1. Automatic Conference

Your system may also be configured for automatic conferences. If enabled, an automatic conference call is set up whenever you set up an outgoing call while already having an active call at your position.

	Situation: You are having an active call. Automatic conference is enabled.	
1 	Press, for instance, a DA-key to set up a DA-call.	
		As soon as the outgoing call is accepted you have two active calls at your position.
	The active conference key shows that you are in a conference call now. DROP is not available.	
or		
2 	Press any active key to release the connection to this particular party.	
2 	Press to release the connection to all parties.	

5.5.4.2. 3rd Party Call Entry

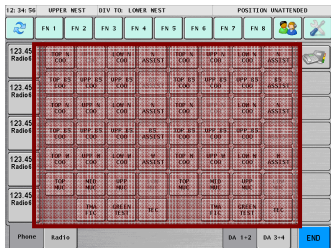
The VCS may also be configured for conference calls type 3rd party call entry. A third operator can join two parties having an active conversation.

Join either:

- ongoing internal telephone calls between two non-tied operator positions
- ongoing external telephone calls from the operator position (except for trunk line types such as MFC, ISDN, L1Q23)

Only one operator can join this conversation at a time. Every operator trying to access later will be routed to the call queue.

Both original parties of the active conversation hear an intrusion tone, if the third party joins the conversation, but there is no special visual indication for 3rd party call entry. If a 3rd party call entry is not possible for technical reasons, the display shows you the error message **CALL ENTRY NOT ALLOWED**.



In the DA-key area:

CQ-behaviour



Situation: Your touch panel shows an active call between two parties.

1

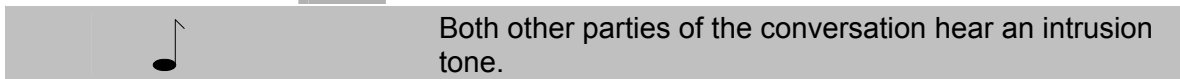


You can now press this key to join the conversation. The key remains in the same state.

continues on next page



The CD shows **CONF**.



Terminate the call as usual.

or



Press the active key to return to the busy state.



5.6. Static Call Queue II

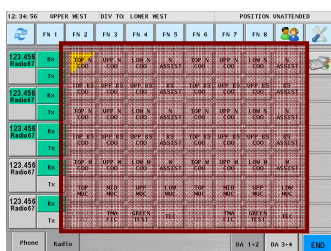
For details on all key states (DA, CA, CD) refer to page:

[11-1](#)

5.6.1. Incoming Calls

Incoming DA-calls are indicated on the DA-keys.
 Incoming CA-calls are indicated in the call queue (**CQ**) and on the CD.

Incoming DA-Calls



From the DA-keys:

1



Press to accept the incoming call.



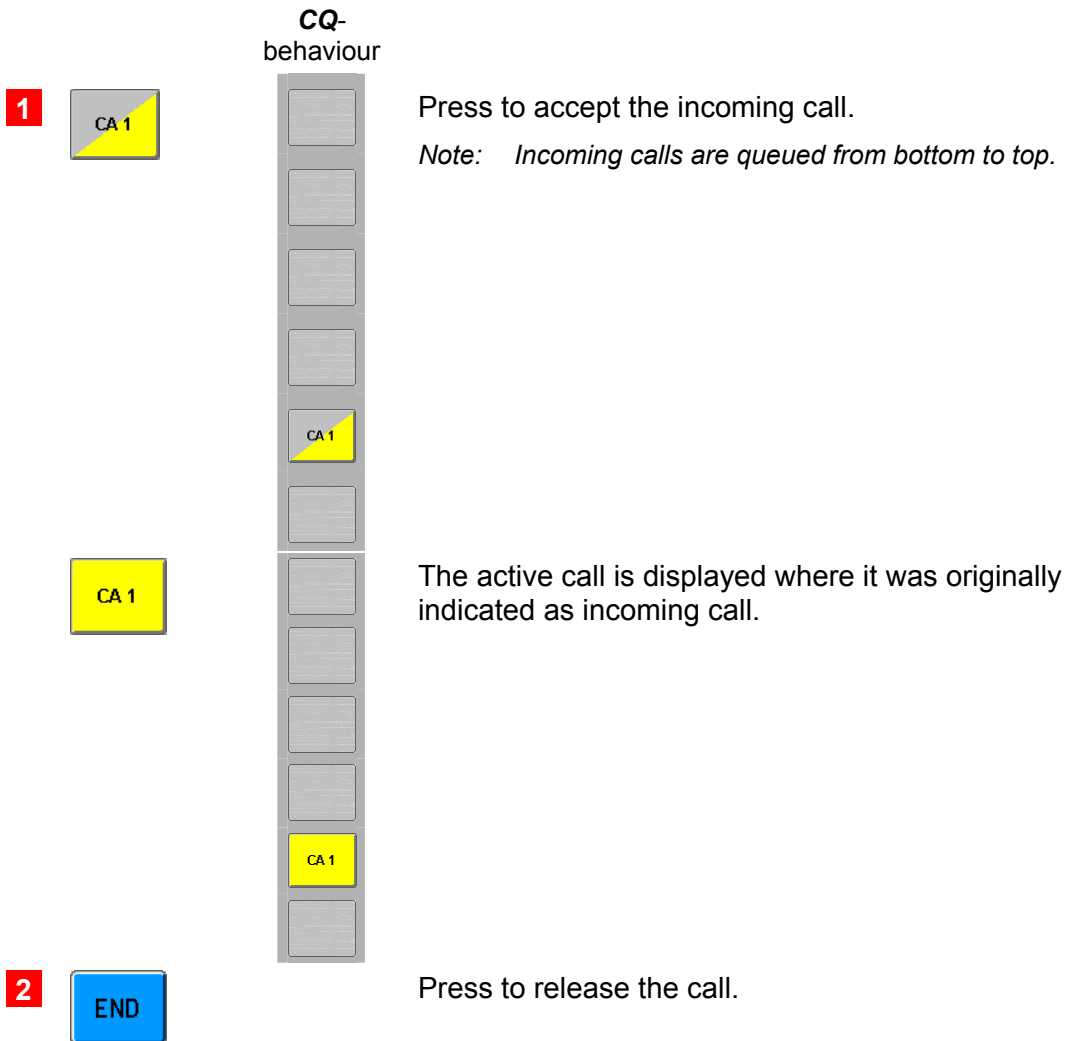
The active call is indicated on the DA-key.

2

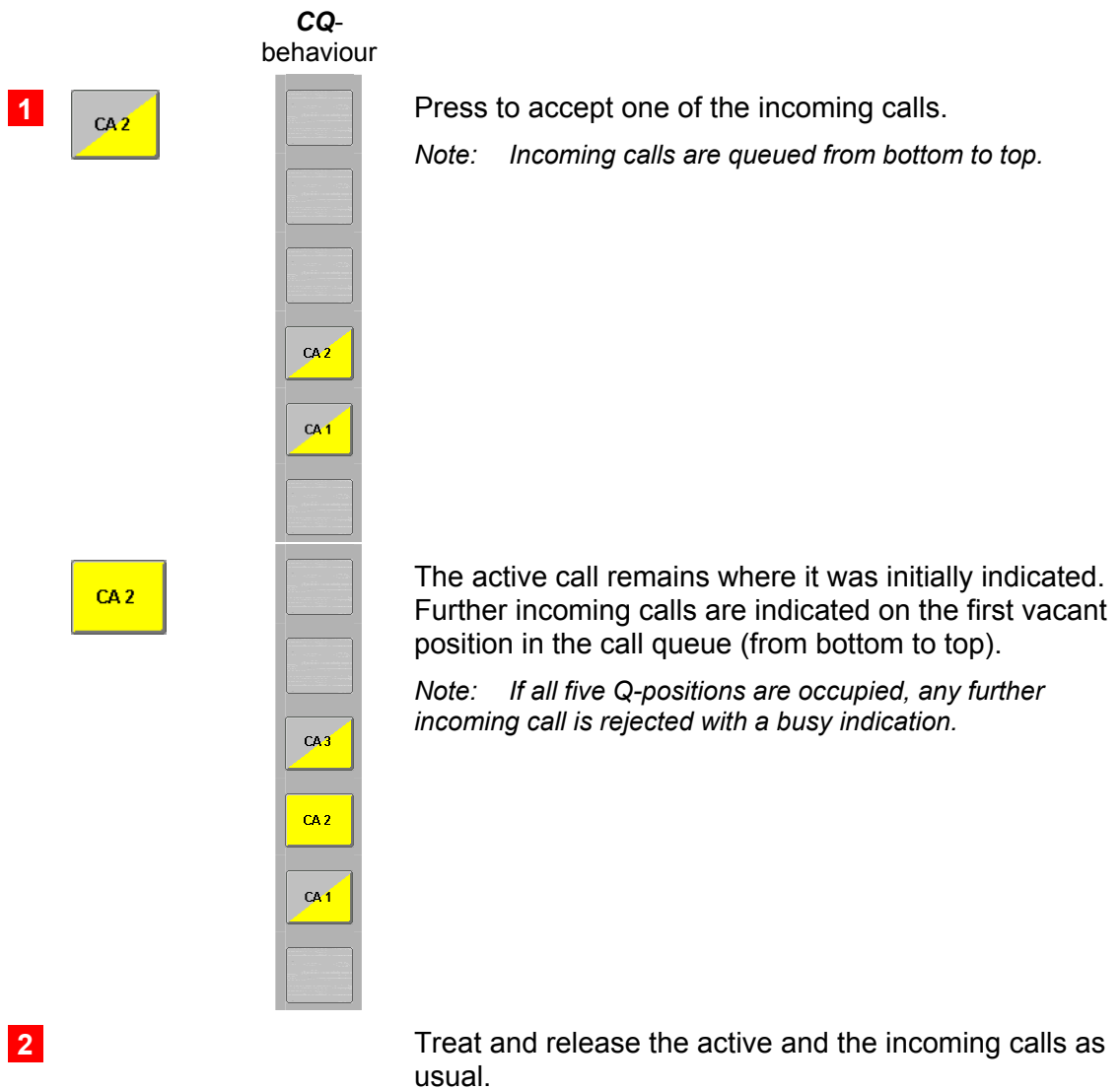


Press to release the active call.

Incoming CA-Calls



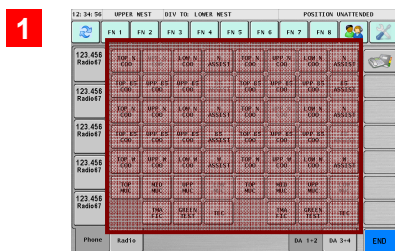
Several Incoming Calls



5.6.2. Outgoing Calls

Outgoing DA-calls are indicated on the DA-keys.
 Outgoing and active IA-calls are indicated on the CD.

Outgoing DA-Calls



Select your target from the DA-keys.



Press to set up an outgoing DA-call.



The outgoing DA-call is indicated on the DA-key.

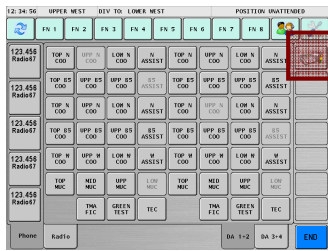


The active DA-call is indicated on the DA-key.



Press to release the active call.

Outgoing IA-Calls



Use the call agent key:

1

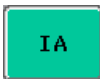


Press to open the sub-window that contains the dial pad.



The dial pad is opened by default.

Note: If the system or the personal directory, or the call list is open, press the tab **Manual Dialling** to open the dial pad.



IA is selected by default.

Note: If any other function key is selected, press **IA** to select it for the call set-up.

2 1234

1234

Enter the target number. The number is shown on the display.



Press to clear the last entered digit.

or



Press to clear the complete entry.

or



Press to close the dial pad.

3

Press to set up the call.

continues on next page

CQ- behaviour



The outgoing and then active call is displayed on the CD.

Note: No DA-key assigned to this call target.

4

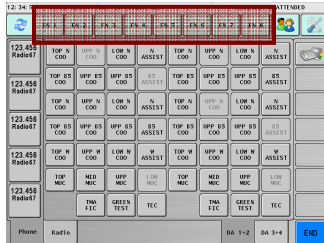


Press to release the active call.

5.6.3. Hold a Call (FN 07)

Situation: You have an active call at your operator position. The active call may be a DA-, a CA-, an IA- or a conference call.

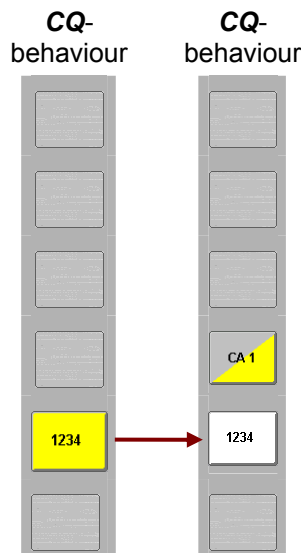
From the function keys:



Press to put the active call on hold.



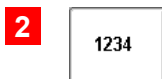
HOLD is active.



A held CA-call remains at the position in the **CQ** where it was originally indicated. Further incoming calls are indicated on the first vacant position in the **CQ**.

You can hold up to three calls. If all **CQ**-keys are occupied, you cannot hold another CA-call (**HOLD** becomes unselectable).

If a call on a DA-key is held it is also indicated in hold state.



Press the held call to resume it.

Note: If you resume a held call while you are having another active call the active call is automatically released.



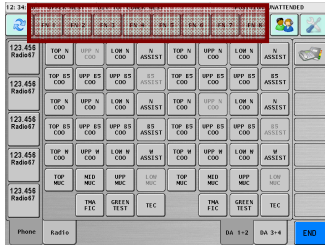
Press to release the active call.

Note: The VCS may also be configured for automatic hold. In this case an active call is automatically put on hold if you accept an incoming call.

5.6.4. Conference Call (FN 03)

Situation: You have an active call at your operator position.

From the function keys:



1



Press to initiate a conference call.



2



Select another conference party.



The conference call is active.

The DA-keys of the conference members are active.

1



Press DA-keys to remove this individual party from the conference.



The function key is also active.

CQ-behaviour



The CD shows CONF.

1



Press to remove the last party that entered the conference call (FN 37).

3



Press to release the conference call.

5.6.4.1. Automatic Conference

Your system may also be configured for automatic conferences. If enabled, an automatic conference call is set up whenever you set up an outgoing call while already having an active call at your position.



Situation: You are having an active call. Automatic conference is enabled.



Press, for instance, a DA-key to set up a DA-call.



As soon as the outgoing call is accepted you have two active calls at your position.



The active conference key shows that you are in a conference call now. **DROP** is not available.

You can add another four parties to this conference call.



Press any active key to release the connection to this particular party.

or



Press to release the connection to all parties.

5.6.4.2. 3rd Party Call Entry

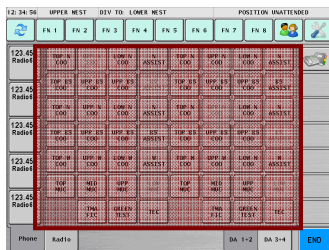
The VCS may also be configured for conference calls type *3rd party call entry*. A third operator can join two parties having an active conversation.

Join either:

- ongoing internal telephone calls between two non-tied operator positions
- ongoing external telephone calls from the operator position (except for trunk line types such as MFC, ISDN, L1Q23)

Only one operator can join this conversation at a time. Every operator trying to access later will be routed to the call queue.

Both original parties of the active conversation hear an intrusion tone, if the third party joins the conversation, but there is no special visual indication for 3rd party call entry. If a 3rd party call entry is not possible for technical reasons, the display shows you the error message **CALL ENTRY NOT ALLOWED**.



In the DA-key area:

CQ-
behaviour



1



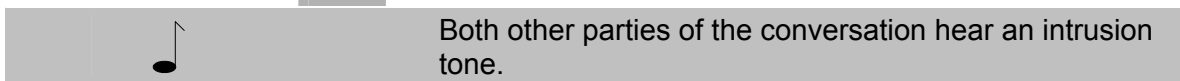
Situation: Your touch panel shows an active call between two parties.

You can now press this key to join the conversation. The key remains in the same state.

continues on next page



The CD shows **CONF**.



Terminate the call as usual.

or

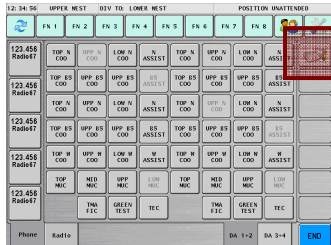


Press the active key to return to the busy state.



5.7. Additional Telephone Functionality

5.7.1. Call List



Use the call agent key:

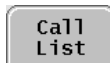
1



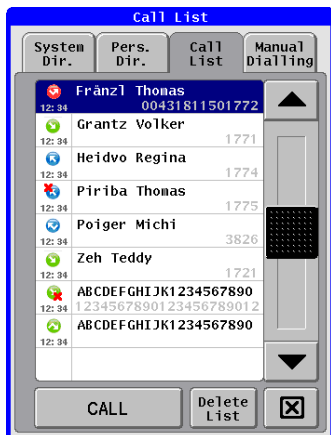
Press the call agent key.



2



Press to open the Call List.



The call list shows a list of the 20 last calls.

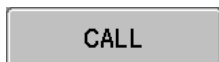
- Incoming call
- Incoming call
- transferred
- diverted
- substituted
- Incoming call, not accepted
- Outgoing call
- Outgoing call
- transferred
- diverted
- Outgoing call, not accepted

3



Search the desired call and select it.

4



Press to set up the call.

5

Treat and release the active call as usual.

or

continues on next page

3  Press to delete the whole list.

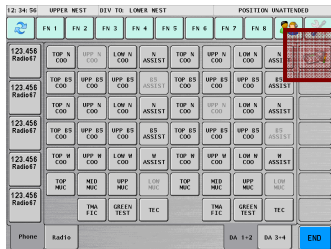


4  Press to confirm deletion.

or

4  Press to cancel the action.

5.7.2. Phone Book



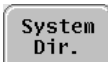
Use the call agent key:

1



Press the call agent key.

2

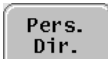


Press to open the system directory.

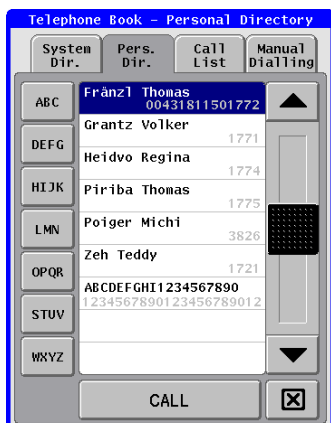


or


2



Press to open the personal directory.



continues on next page

- 3**  Use the sub-tabs of the system directory to open the respective sub-directory, and the letter tabs and the slider to find the desired entry and select it.

Note: As for the letter tabs, press once to, for instance, select parties starting with an "A", press twice for parties starting with a "B", and so forth.



Press to set up the call to the selected party.



- 5**

 Treat and release the active call as usual.

5.7.3. Hotline Calls

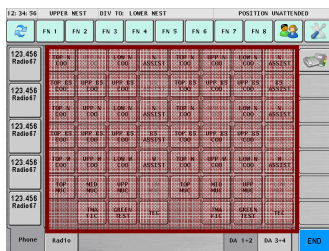
Hotline keys set up intercom connections which have defined parties on both ends. Hotline connections can be set up between individual parties, or groups and individual parties. The function may also be configured for external targets; if necessary, consult your administrator.

A hotline connection is active as long as the hotline key is pressed. Hotline calls are never indicated in the **CQ** but only directly on hotline keys.

	An incoming hotline call does not interrupt active PTT. If PTT is released, the hotline call can be answered.
	Hotline calls cannot be put on hold or be taken into a conference! Diversion of hotline calls is supported only if the target position has a hotline key for the caller.

Set up an Outgoing Hotline Call

1:1



In the DA-key area:



Press and keep a hotline key pressed to set up a 1:1 intercom-call (from one individual party to another).



Active hotline call. Keep pressed. The connection allows immediate two-way communications.

You immediately hear all active calls currently in progress at the target position.



Release the hotline key to release the call.



Accept an Incoming Hotline Call

1:1



The incoming hotline call is indicated.



You immediately have two-way communications with the calling party.



Active hotline call.

2



Release the hotline key to release the call.



1:many



Press and keep a hotline key pressed to set up a 1:many intercom-call (from one individual party to a group).



Active hotline call. Keep pressed. The connection allows only one-way communications.



Release the hotline key to release the call.



Accept an Incoming Hotline Call



The incoming hotline call is indicated at all operator positions having assigned a dedicated DA-key.



Press to set up two-way communications with the calling party.



Active hotline call.



Release the hotline key to release the call.

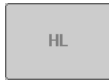


Other Indications on a Hotline Key



Busy hotline key indicates:

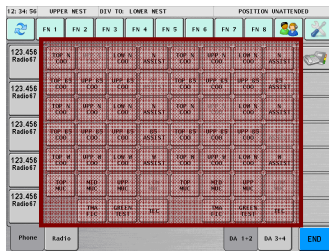
- An incoming hotline call has been accepted by another party within the same group.
- The accepted hotline call has been released by the group member but a member of the other group is still calling.
- An outgoing hotline call has been set up by another party within this group.
- The hotline key is out-of-service.
- Access to hotline key rejected (cut-in is active).
- The target role is not selectable.



5.7.4. Override Calls

Override calls set up immediate two-way intercom communications with the called party. Thereby, you join any call currently in progress at the called party's operator position. Internal and external call targets are possible.

Set up an Outgoing Override Call



In the DA-key area:

1



Press and keep the key pressed to set up immediate two-way communications with the called party.

1



Active override call. Keep pressed.

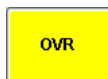
2



Release the key to terminate the override call.



Incoming Override Call



An override call with immediate two-way communications is indicated at your position.



The override call has been released.

Other Indications on an Override Key

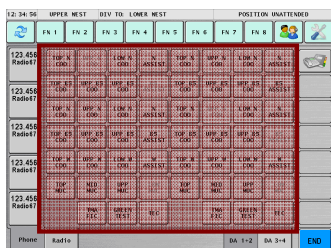


OVR has been pressed but access is not allowed.

5.7.5. DSP-Calls

DSP-calls are intercom calls set up with latching keys; the target party has to accept an incoming DSP-call to set up two-way communications.

Set up an Outgoing DSP-Call



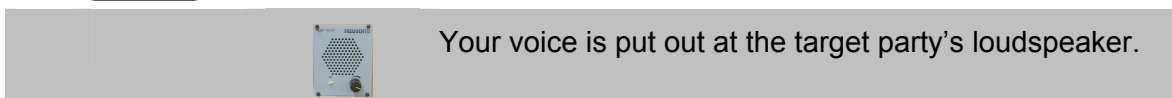
In the DA-key area:



Press to set up a DSP-call.



Active DSP-call, i.e. one-way communications.



Press to release the DSP-call.

Incoming DSP-Call











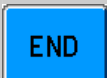
Audio of this incoming DSP-call is put out on your loudspeaker.

If you do not accept the incoming call the connection remains one-way communications.





The key will return to its idle state as soon as the calling party releases the call.

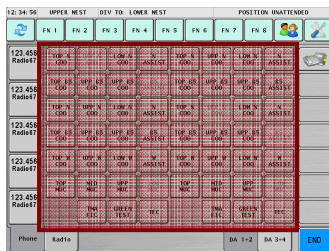
Accept an Incoming DSP-Call

			Incoming DSP-call. Audio is put out on your loudspeaker.
1			Press to set up two-way communications with the calling party.
			Active two-way communications. Audio is now put out on your headset.
2			Press to release the two-way connection.
			The other position now shows the incoming DSP-call indication. Your audio is now put out on the other party's loudspeaker.
2			Eventually, the call is terminated when the other party releases the call.

Other Indications on a DSP-Key

	DSP has been pressed but access is not allowed.
	The target role is not available.

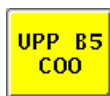
5.7.6. Manual Ring Line (FN 06)



In the DA-key area:



Press one or several dedicated DA-keys to call an external party via a manual ring line.



The call is set up, but the external party/parties get(s) **no ringing indication** yet.



Press to send a ringing signal. The signal rings for a defined period whenever you press the key.

If you have set up a conference or an automatic conference, all parties involved can hear the ringing signal.



Treat and release the active call as usual.

5.7.7. Priority Calls (FN 08)

- Use **PRIO** to make any conventional G/G-call (except intercom call) a priority call.
- Press **PRIO** before call initiation, or
- Press **PRIO** right after call initiation **but BEFORE the call is set up**.

Use whenever priority or emergency call set-up is necessary, and the desired party is busy.

Two priority configurations are available:

- An incoming priority caller can be heard immediately on the loudspeaker (except PABX/PSTN and ISDN/QSIG circuits).
- Incoming priority calls are not heard immediately if configured as *priority call without intrusion*. Consult your administrator for details.

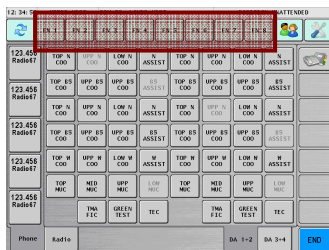


Remember: If you press **PRIO** right after call initiation prioritising works only if the call is not set up at that point!



Third parties receive no visual or acoustic indication.

Set up an Outgoing Priority Call



From the function keys:

1



Press to initiate a priority call.



2



Select a target (DA or IA).



Outgoing priority call.

3



Active priority call.

4

Treat and release the active call as usual.

Accept an Incoming Priority Call

Priority calls may be configured to come in at the target position:

- Without intrusion
- With intrusion
- As priority conference call

Additionally, your administrator may define whether or not an incoming priority call shall have

- No influence if **CQ** is full
- Terminate an active call if **CQ** is full

For details on the configuration at your operator position consult your administrator.

Without Intrusion

1



Press to accept an incoming priority call.

Note: Incoming priority calls are indicated at all operator positions configured in a group (i.e. having the same number). If necessary, consult your administrator to check on details.



Active priority call.

2

Treat and release the active call as usual.

With Intrusion



INTRUSION

Any incoming DA- or CA-priority call can be **heard immediately** on the loudspeaker (except PABX/PSTN and ISDN/QSIG-circuits).

As long as you do not accept the priority call, only the calling party can release it.



Active calls at your position remain uninterrupted until you accept the priority call.

1

Release the active call or put it on hold.

2



Press the blinking key to answer the call and **set up two-way** communications.

3



Treat and release the active call as usual.

With Priority Conference



Situation: You have an active call at your operator position.

Any incoming DA- or CA-priority call immediately establishes a conference call.

The function key turns active.

CQ-
behaviour



The CD shows **CONF**.

1



Treat and release the active call as usual.

Situation: You do not have an active call at your operator position.

1



Press to accept an incoming priority call.



Active priority call.

2



Treat and release the active call as usual.

5.7.8. Call Transfer (FN 30)

Use call transfer to transfer:

- an active call, or
- an incoming call

from your operator position to

- another operator position or
- an external party.

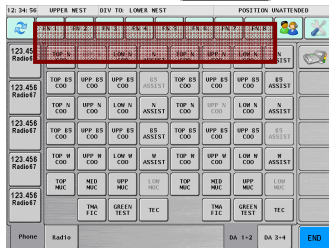
This function can only be initiated when an active call is present; otherwise the transfer key is unavailable.

Set up a Call Transfer



Situation: You have an active call at your position (or an incoming call).

From the function keys:



Press to initiate the function.



Note: Press the blinking key at this stage to cancel the call transfer.



Select the transfer target (via DA or IA).



The key shows that the active call is *selected for transfer*.



Press the key to transfer the call without contacting the target party.

or



Wait until the call to the target party is set up.



Then press to transfer the call to the target party.

Receive a Transferred Call

1



Receive a transferred call like any other call.

2

Treat and release the active call as usual.

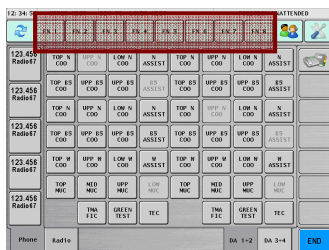
5.7.9. Call Diversion (FN 04)

Use call diversion to divert G/G-calls from your operator position to another one, or, if configured, to external targets.

Call diversion can also be initiated and released from the Technical Monitoring and Control System (TMCS). A central call diversion launched at the TMCS may override all existing de-central (local) call diversions. Changing a central diversion afterwards at the operator position is, however, possible. The TMCS always shows the actual status of all diversions. For details consult your administrator.

If master/slave operator positions are configured, call diversion is only valid for calls appearing on the master position. If necessary, consult your administrator.

Set up a Call Diversion



From the function keys:



Press to initiate the function.



Note: Press the key at this stage to cancel the call diversion.



Select the operator position that is to take over your G/G-calls.



Press either a DA-key, or dial an IA-number on the dial pad to select the target position.

TO TARGET

Active diversion. All G/G-calls are now diverted to the target position.

1234567890

The message display shows the selected target (selected via DA-key).

If the target was selected by an IA-call the auxiliary display shows the target number.



Press the active **DIV** key to de-activate the function.

Calls that are in progress remain, however, with the target position.

Receive a Call Diversion and a Diverted Call

A call diversion from another operator position is automatically established.

DIV

Situation: If you receive a call diversion, i.e. the G/G-calls of another operator position:

Your display shows **DIV**.



G/G-calls coming in from the other position are indicated as usual showing the diversion icon.

Press to accept the incoming call.



Active call.

2

Treat and release the active call as usual.

Chaining of Call Diversions

DIV

Situation: Your display shows that your position is already target of a call diversion, i.e. you receive the G/G-calls of another operator position.



If you now want to divert your own position including the calls you receive from another position, press **DIV** to initiate the function.



Select the new target position.



Active diversion.

T0 TARGET / DIV

The display shows the new target position.

Diversion Loop

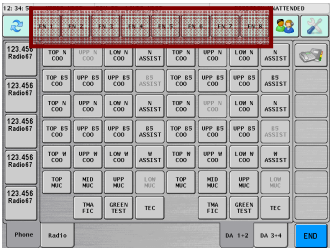
The VCS prevents diversion loops. In this case the display shows an error message indicating that loops are not possible.

3

Treat and de-activate the diversion as usual.

5.7.10. Monitoring (FN 01)

Use to monitor radio and/or telephone communications of up to three other operator positions (or up to three lines). The monitored positions get no indication that they are being monitored.



From the function keys:



If available, press this key to initiate the function.



Select the position to be monitored.

Note: For line monitoring, enter the number on the dial pad.



Monitoring is active.



All audio to and from the selected operator position is monitored.

If necessary, repeat step 1 and 2 to add further operator positions (up to three).

While monitoring is active, your position is ready for outgoing as well as incoming communications.

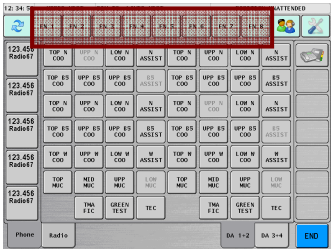
Any active call suspends monitoring for the duration of the call.



Press to terminate monitoring.

Privacy Mode for Monitored Supervisor Positions (FN 24)

Supervisor positions are assigned with a dedicated key to de-activate monitoring for this position.



From the function keys:



Press to de-activate or activate monitoring for your supervisor position.



Positions in privacy mode cannot be monitored. Each attempt to monitor positions that are in privacy mode is rejected.

A grey rectangular box containing a yellow rectangular button with the text 'UPP B5 COO' in black on the left, and the text 'If you select a supervisor position for monitoring, a DA-key with a blinking frame shows that this operator position is in privacy mode.' on the right.

Note: Only supervisor positions support the recording of monitored positions for documentation purposes. Standard operator positions provide monitoring function without recording.

Active G/G-Call during Line Monitoring



If you have an active G/G-call during line monitoring, **monitoring is muted.**



Release the telephone call.

Line monitoring is resumed.

5.7.11. Monitoring with Cut-In (FN 49)

Supervisor positions may be assigned with a dedicated key for cut-in. Cut-in allows to monitor telephone calls, and cut in (i.e. join the call), if necessary, by establishing a conference call.

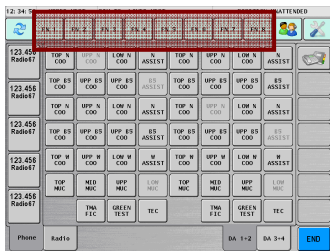
Note that *privacy mode* does not prevent monitoring with cut-in (refer to page: 5-78).

Cut-in works for operator positions and lines with active calls. Idle operator positions or lines are not available for cut-in. If you try to cut-in the attempt is automatically terminated. In order to monitor idle operator positions or lines use monitoring (refer to page: 5-77).

Initiate Cut-in



Situation: One key indicates an active call.



From the function keys:



Press to Initiate the function.



Select the busy key.



The selected call is monitored.



CUT-IN is active.

Note: Cut-in is only active as long as the target position has an active call.



CONF is active at the target position.

Cut in



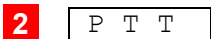
Situation: You are now monitoring active call.



As supervisor, press PTT in order to interrupt the conversation and join the call.



Cut-in is active.



Release PTT to terminate cutting in.



Monitoring is resumed.



Press to terminate monitoring session with cut-in.

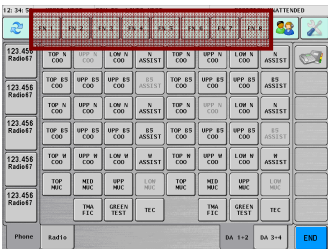
5.7.12. De-select a DA-Key (FN 41)

If necessary, you can suppress individually for each DA-key the

- visual and acoustic indication, or
- acoustic indication only

of incoming calls.

Consult your administrator to check which setting is active for your VCS.



From the function keys:



Press to initiate the function.



Press the DA-key you want to de-select.



The symbol indicates a de-selected DA-key. From now on you get no visual or acoustic indication on this key when a call comes in.

	There is no warning beep for incoming calls on de-selected DA-keys.
	If you are the last operator position that has a particular DA-key selected, de-selection will not be allowed (message on the display). Consult your administrator to check whether or not this feature is activated.

Accept a Call on a Deselected DA-Key



If the VCS has been configured to show neither visual nor acoustic indication, incoming calls are not indicated at all.



If the VCS has been configured to show a visual incoming indication, but gives no acoustic alert, you get a standard incoming indication on your deselected DA-key.



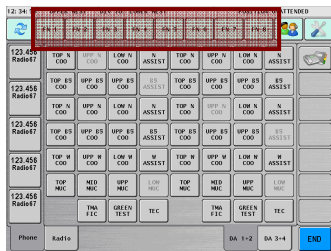
Press to accept the call.

Treat and release as usual.

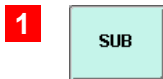
5.7.13. Substitute (FN 19)

This function allows you to take over calls waiting at one (or up to ten) other operator position(s), i.e. to act as substitute. Any operator position can be substituted by two others. Intercom and hotline calls cannot be substituted.

Activate the Substitution



From the function keys:



Press to activate the function.



Select the operator position to be substituted.



This position is now substituted. Any call coming in at the substituted position will be indicated there and also at your operator position.

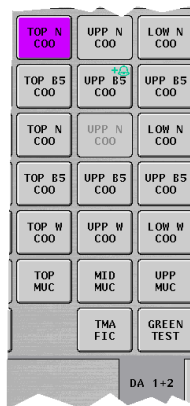
The substituted position shows no indication of the substitution.

Answer Incoming Substituted Calls



Situation: Calls coming in at the substituted position are indicated:

- At the substituted position (normal incoming call indication); for details refer to next procedure;
- At your position in the **CQ** or on the **DA-key** (depending on the queue type configured for your system) with a special colour (customised)



Press to accept the substitute call.



Active call.

2

Treat and release the call as usual.

At the Substituted Position



At the substituted position an incoming call is indicated as usual.

1



If you accept the incoming call the operator who started substitution gets the following indications:



Busy indication for the caller (if assigned to a DA-key).



Busy indication for the substituted position.

2



Treat and release the active call as usual.

End the Function

1



Press **SUB** and the DA-key of the substituted position to end the substitution.



The function can also be ended at the TMCS.

Substitute in Case of a Priority Call



Situation:

You act as substitute for another operator position.



The other position receives a priority call. **The operator there has an active call.**

Priority intrusion occurs at the other operator position.

You cannot answer this call. It is not indicated.



Situation:

You act as substitute for another operator position.



The other position receives a priority call.

1



In this case the incoming call is indicated at your position. Answer the call.

2

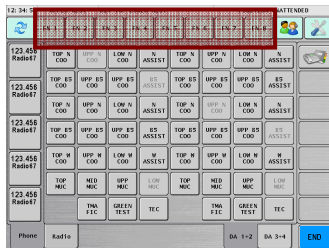
Treat and release the call as usual.

For details on priority calls refer to page:

[5-69](#)

5.7.14. Wireless (FN 63)

Use your wireless telephone to answer calls coming in while you are not at your operator position.



From the function keys:



Press to initiate the function.



Press the DA-key that acts as interface to your wireless telephone.



The function is now activated (if allowed).

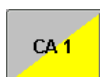
or



If you have no permission to use the function, **WIRELESS** will remain in this state.



The symbol shows that from now on any key coming in at your operator position will be redirected to your wireless telephone.



Incoming call indication at your position.

Note: You can also answer the call pressing the DA-key at your position. In this case, treat and release the call as usual.



Accept the call on your wireless telephone.

continues on next page



Active call indication at your position.

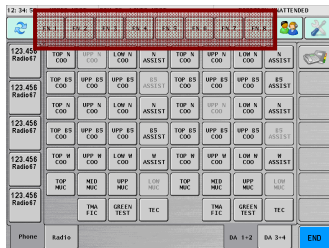
4



Release the call on your wireless telephone.

5.7.15. Call Pick-up (FN 31)

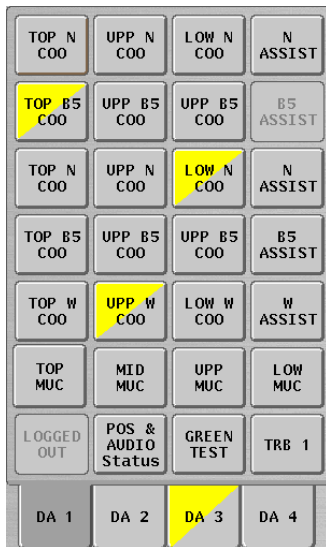
Use **PICK UP** to pick up pending calls from other operator positions.



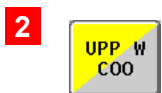
From the function keys:



Press to initiate the function.



All operator positions with pending calls show an incoming call indication.



Press to select this operator position. All pending calls are now routed from **UPP W COO** to the **CQ** at your position.



The pick-up calls are indicated as usual. Treat and release the active call as usual.

Note: If the queue-keys are all occupied any further incoming pick-up call gets a busy indication.

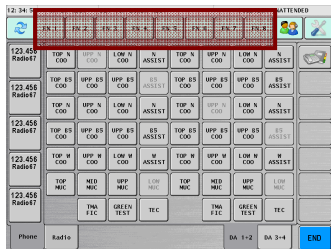


Press to stop the pick-up function again. The indications on the DA-keys disappear again.

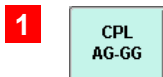
Note: You cannot pick up a call from another position? -->

First check whether or not you and the other position are members of a group call group. Members of a group cannot pick up calls indicated within their group. The incoming call is indicated on all positions of the group anyway. Then check whether the call to be picked up is any non-selective call. This call type cannot be picked up.

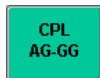
5.7.16. Couple A/G- to G/G-Communications (FN 22)



From the function keys:



Press to couple an A/G-call to a G/G-call (one-way coupling).

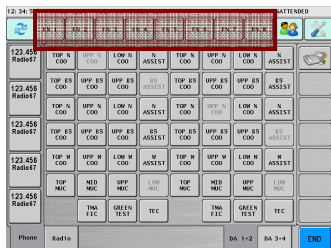


Coupling active. A/G-audio is transmitted to the telephone.

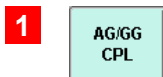


Press to deactivate the function again.

5.7.17. Couple A/G- and G/G-Communications (FN 66)



From the function keys:



Press to couple A/G-calls and G/G-calls (two-way coupling).



Coupling active. G/G-audio is transmitted to the air.



Press to deactivate the function again.

----- END OF SECTION -----

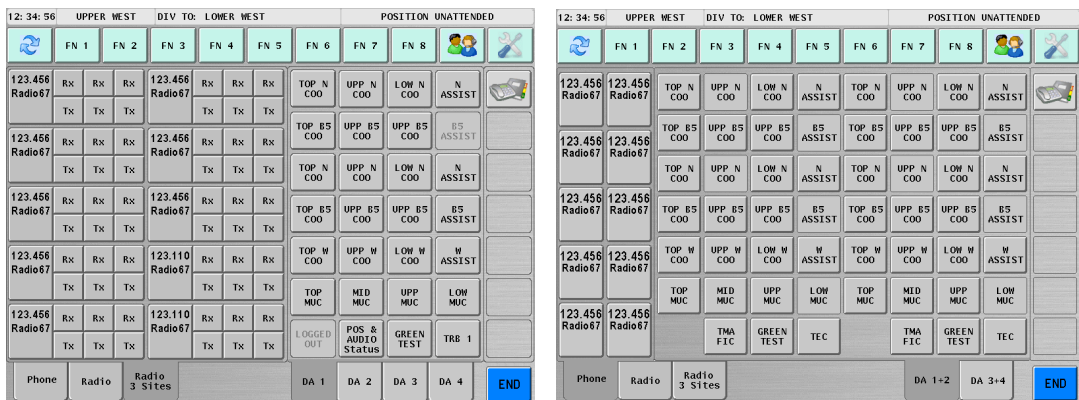
6. Radio Operation

6.1. Keys for Radio Operation

1. Frequency Objects: displayed as frequency objects or as status displays.

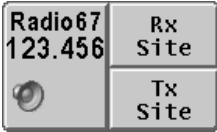





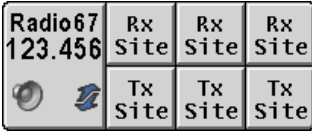







Press the tabs **Phone** and **Radio** to switch between the mixed layout and the telephone layout. The layout coverage with ten radios offers an additional page: **Radio 3 Sites**.



For further layout details refer to page: [9-1](#).

Frequency object Status display Description

			No coverage
			
			Triple coverage
			

For details on detailed key states of the frequency object refer to page:

[11-3](#)

Display area

Radio67	Radio name (for RRC only)
123.456	Radio frequency (for RRC only)
Radio67 123.456	Radio display
Radio67 123.456	Radio display in Tx-mode (traffic mode)
Radio67 123.456	Radio name and frequency during deletion

RRC only

	Radio equipment OK
	Radio equipment in stand-by mode
	Radio equipment out-of-service

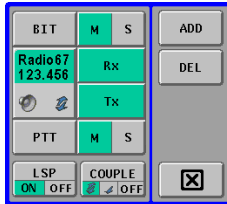
Symbols

	Loudspeaker is on
	Loudspeaker 1 is on
	Loudspeaker 2 is on
	Loudspeaker is off
	Duplex pre-coupling
	Duplex coupling active
	Duplex coupling active elsewhere
	Simplex pre-coupling
	Simplex coupling active
	Simplex coupling elsewhere

Tab. 6-1: Frequency Object Symbols and States

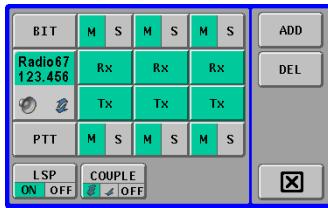
2. **Frequency Control Windows:** for frequency/radio handling, loudspeaker control and radio functions.

Layout

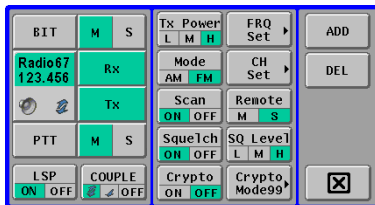


Configuration

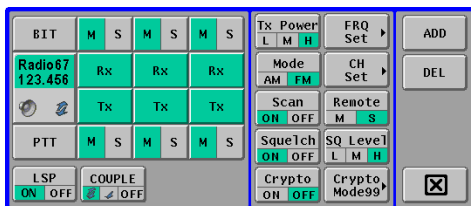
No coverage



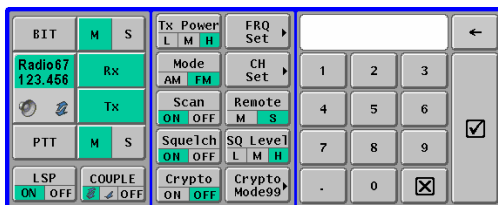
Triple coverage



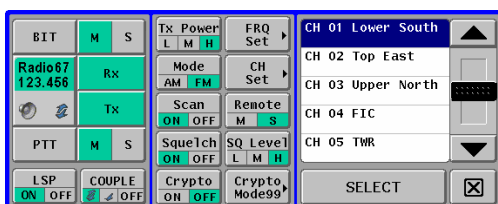
No coverage, with radio remote control (RRC)



Triple coverage, with radio remote control (RRC)



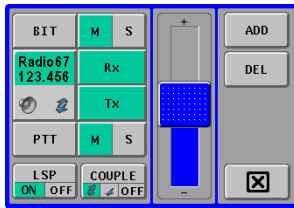
No coverage, with open number pad (after pressing **FRQ SET** or **CRYPTO MODE**)



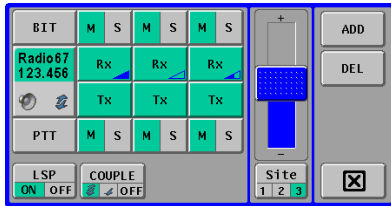
No coverage, with open channel list (after pressing **CH SET**)

Layout

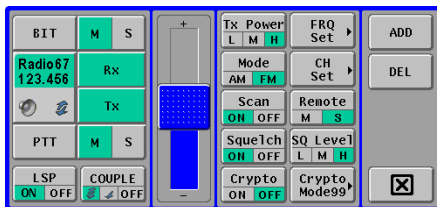
Configuration



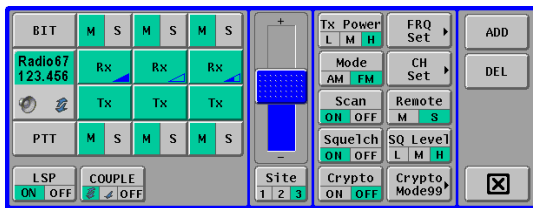
No coverage, with frequency volume control



Triple coverage, with frequency volume control



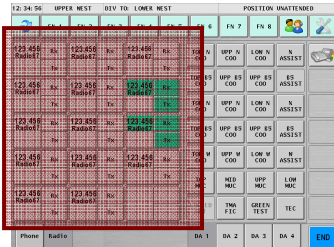
No coverage with frequency volume control and RRC



Triple coverage with frequency volume control and RRC

Tab. 6-2: Layouts of the Frequency Control Window

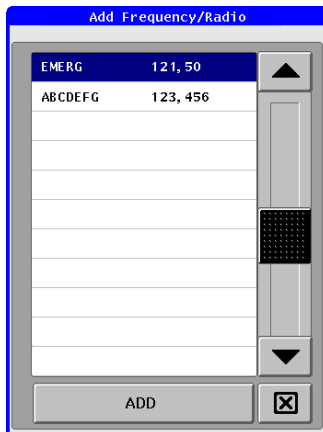
6.2. Assign a Frequency



In the radio area:



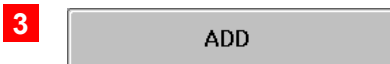
Press on an empty frequency object to open the frequency list.



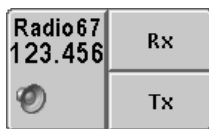
The frequency list contains all frequencies that are available to you.



Select a frequency from the list.



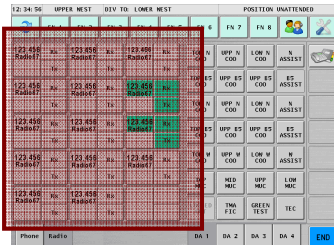
Press to add the selected frequency/radio to the frequency object.



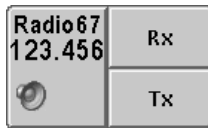
123.456 is in idle mode.

6.3. Receive

For details on all key states of the frequency object refer to page: [11-3](#)



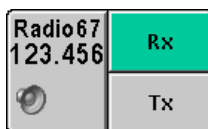
In the radio area:



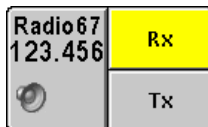
123.456 is in idle mode.



Press to set the frequency to monitor mode.



123.456 is in monitor mode.



Incoming squelch is indicated.

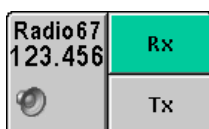
Note: It is possible to have one frequency object assigned with an ATIS-frequency that provides continuous transmission of weather data coming

6.3.1. Unmonitored Channel Prevention

This feature prevents that a frequency remains unmonitored without anyone recognising this state. Unmonitored channel prevention has to be selected at the TMCS.



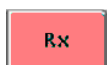
In the radio area:



123.456 is in monitor mode.



Press to switch back to *idle* (no reception, no transmission possible).



If you are the last operator position monitoring this frequency, you get this warning indication on the frequency object.



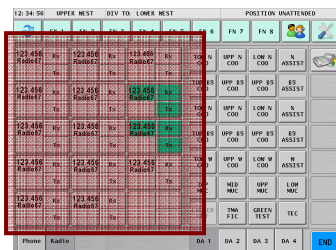
The key changes to

- Idle mode automatically after one minute (if configured), or
- Idle mode, if this frequency is activated at another position, or
- Monitor mode as soon as it is activated again,
- Or it becomes unselectable if the channel goes out-of-service

6.4. Transmit

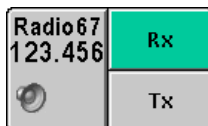
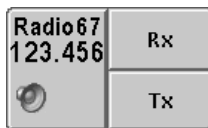
Use the traffic mode (or Tx-mode) in order to start transmission whenever you press PTT. Your VCS may also be configured with the *exclusive traffic mode* which allows only one frequency in traffic mode. If your operator position is configured as a *monitor only* position, you get the following message on the display when you try to select Tx-mode: **Tx not allowed**.

For details on all key states of the frequency object refer to page: [11-3](#)

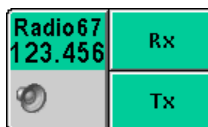


In the radio area:

123.456 is in idle or monitor mode.



Press to set the frequency to traffic mode.



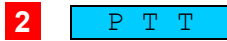
123.456 is in traffic mode.

Note: Any operator position can have all frequencies in Tx-mode. Each transmission is then done in parallel via all these frequencies.

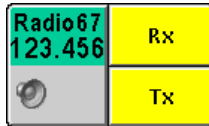
continues on next page



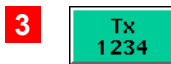
Incoming squelch is indicated.



Press PTT to transmit.



PTT and squelch are indicated.



Press to switch back to idle mode.

6.4.1. Stuck PTT

Situation: 123.456 is in traffic mode.



Press PTT to transmit.



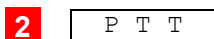
- If you press PTT for more than a minute (time can be configured on the TMCS), or
- if PTT gets stuck by accident

You will get an acoustic alarm and the display shows an error message:



Error message on the auxiliary display.

The error is also reported to the TMCS.

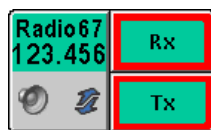


Release PTT to terminate the error.

6.4.2. Loop Check Error



In the radio area:



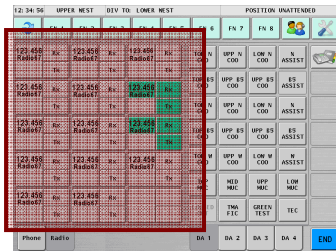
Situation: 123.456 shows a loop check error.

Note: The VCS periodically checks whether PTT generates a squelch signal and generates an error messages whenever this test fails.



A loop check error shows that your radio transmissions might fail. Contact your administrator immediately.

6.4.3. Emergency Frequencies in Traffic Mode

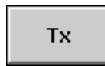


In the radio area:

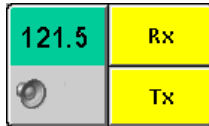


Emergency frequency in a permanent monitoring state.

1



Press **Tx**, and keep it pressed, to activate PTT and allow transmission **only** on this frequency.



6.4.4. PTT-Lockout



The VCS allows only one operator to have PTT active on a specific frequency. Therefore, all other PTT-selections have to be locked out as long as PTT is active.

Lockouts occur per frequency. Frequencies not being used by other operators transmit normally. The locked out operator gets a visual and acoustic indication at the concerned frequency object. PTT-lockout is closely related to your pre-emption rights defined on the TMCS.

Pre-emption Rights

- No pre-emption rights:

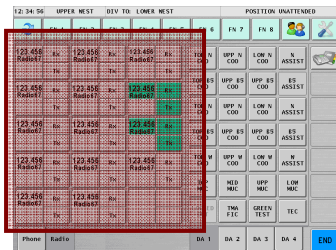
As an operator without pre-emption rights you cannot override any other operator with active PTT.

- Pre-emption rights:

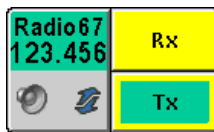
As an operator with pre-emption rights you can override any other operator's active PTT. Pre-emption-PTT is not locked out. But as soon as you have PTT active, you lose your pre-emption right until PTT is released or overridden.

If you are in doubt, consult your administrator.

6.4.4.1. PTT-Lockout with Pre-emption Rights



In the radio area:




Situation: 123.456 is in traffic mode. PTT is active elsewhere. PTT elsewhere and squelch are indicated.

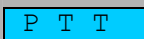


Press PTT to override the currently active PTT and transmit.



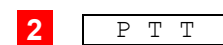
PTT and squelch are indicated.

 Remember that you lose your pre-emption rights as long as your PTT is active!

1  Therefore, another position with pre-emption rights may now override and transmit on this frequency.



This immediately puts you in a state of **PTT-lockout** indicated on your frequency object, and you hear the additional warning tone as long as the lockout remains.



Release PTT and wait until the frequency is free.

6.4.4.2. PTT-Lockout without Pre-emption Rights



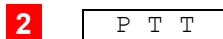
Situation: 123.456 is in traffic mode. PTT is active elsewhere. PTT elsewhere and squelch are indicated.



Press PTT.



This immediately puts you in a state of **PTT-lockout** indicated on your frequency object, and you hear the additional warning tone as long as the lockout remains.



Release PTT and wait until the frequency is free.

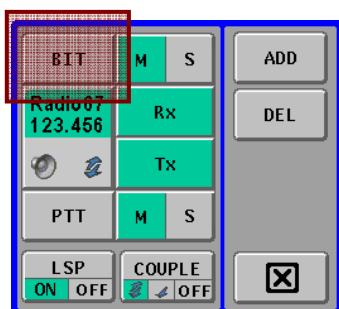
6.5. Functions on the Frequency Control Window

6.5.1. BIT (Radio Test)

1



Press to open the frequency control window (e.g. no coverage layout).



1



Press to initiate a radio test (the system sends a deliberate error).



The area showing the radio equipment status turns red.



The frequency object has to return to the original state showing that the radio equipment status is okay.

The test has been successful.



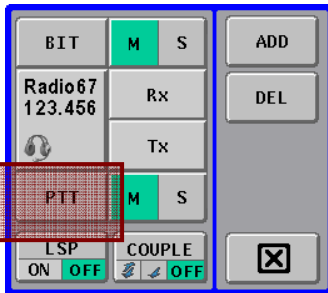
If the frequency object remains red, the test has failed. In this case, consult your administrator.

6.5.2. PTT

1



Press to open the frequency control window (e.g. no coverage layout).



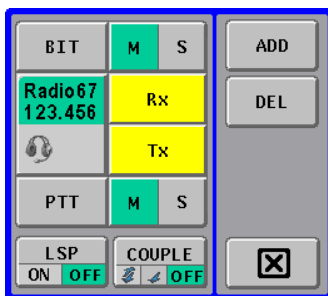
123.456 is in idle mode.

Note: The frequency/radio may also be in another mode.

2



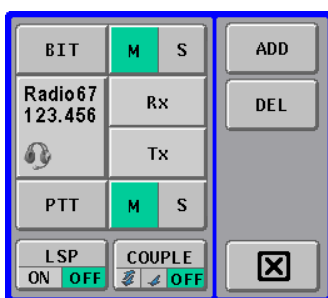
Press to activate **PTT** for this single frequency. The frequency is automatically set to traffic mode as long as **PTT** is active.




PTT and squelch are indicated as long as **PTT** is active.

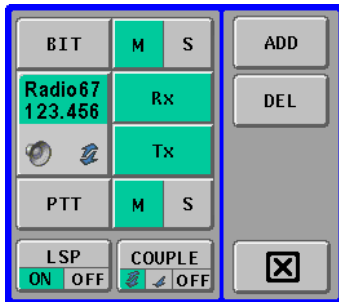
3

Release PTT to return to idle mode.



6.5.3. Main/Stand-by

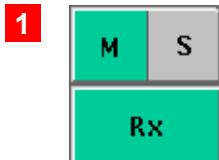
	M/S-switch-over for Tx during active PTT is not possible.
---	---



The frequency control window is open (e.g. no coverage layout). **M** shows that main receiver and transmitter are selected.

Note: For main/stand-by switching either monitor or traffic mode has to be activated.

You cannot switch between main and stand-by transmitters while PTT is active. You can, however, switch between main and stand-by receivers while PTT is active.



Press **S** to switch the receiver to stand-by.

Note:



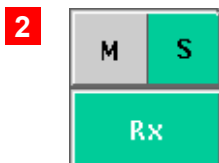
Missing "S" shows that there is no stand-by receiver available, or switching is not allowed.



Missing "M" shows that there is no stand-by transmitter available, or switching is not allowed.



S shows that now the stand-by receiver is selected. The text turns white.



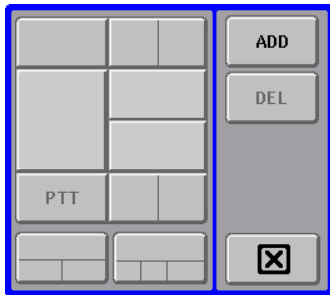
Press **M** to switch the receiver back to the main equipment.



Repeat steps **1** and **2** for the transmitters if you need the stand-by equipment.

Note: Main/standby switching may also be configured to switch Tx and Rx at the same time. If necessary, consult your administrator for details.

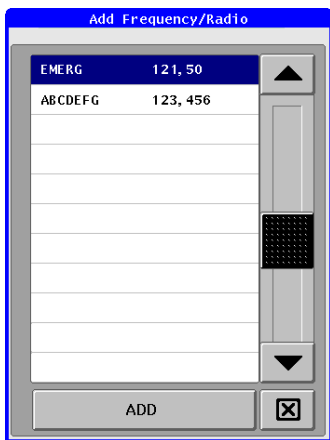
6.5.4. Add a Frequency



There is no frequency assigned to this slot.



Press to open the frequency list.



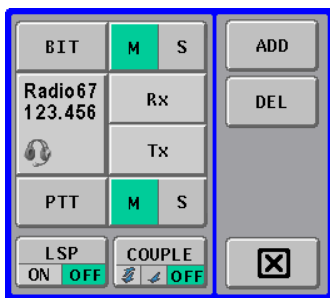
The frequency list contains all frequencies that are available to you.



Select a frequency from the list.



Press to add the selected frequency/radio to the frequency object. The frequency list closes automatically.



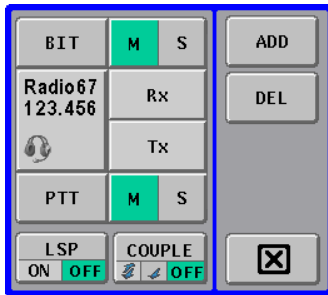
123.456 is in idle mode.

or



Press to cancel the action and close the frequency list.

6.5.5. Delete a Frequency



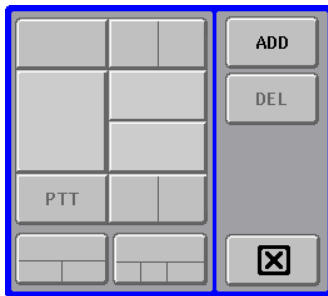
Frequency control window is open.



Press to initiate the function. The key text changes to **CANCEL DEL**.



Press on the blinking key to confirm the deletion.



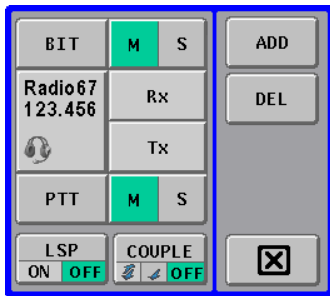
The frequency slot is empty.

or



Press to cancel the action.

6.5.6. Loudspeaker ON/OFF



Frequency control window is open.

Function key shows Frequency key shows

1



One loudspeaker is connected; it is OFF.

1



One loudspeaker is connected. Press to switch between ON and OFF

1



Two loudspeakers are connected. Loudspeaker 1 is active.

Press to toggle between LSP 1, 2 and OFF.

1

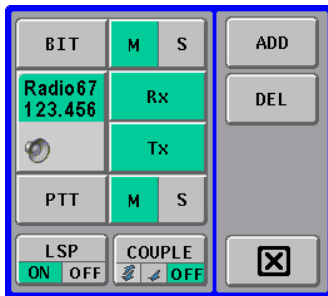


Loudspeaker two is active.



Loudspeaker is off.


6.5.7. Coupling




Frequency control window is open.


COUPLE
shows

Frequency
key shows



- 

123.456 is in traffic mode, coupling is not active.
- 

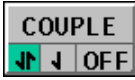

123.456 is in traffic mode, simplex coupling is active elsewhere.
- or



123.456 is in traffic mode, duplex coupling is active elsewhere.
- 1**








Coupling is off; duplex coupling is active elsewhere.
Press **COUPLE** to switch to duplex pre-coupling.
Note: If coupling is not active elsewhere, you switch directly to duplex coupling.
- 2**






Duplex pre-coupling is active.
- or



continues on next page


2   Coupling is off; simplex coupling is active elsewhere.
Press **COUPLE** twice to switch to simplex pre-coupling.
Note: If coupling is not active elsewhere, you switch directly to simplex coupling.

  **Simplex pre-coupling is active.**


  If coupling is deactivated elsewhere, the state pre-coupling turns into coupling active at your position.
Duplex coupling is active.

or

  **Simplex coupling is active..**

3  Press **COUPLE** to switch coupling off.

or

3  Press **COUPLE** twice to switch coupling off.



Coupled Frequencies and Exclusive Traffic Mode



Coupling and Transmission Rules (exclusive traffic mode active)

Note: for details on exclusive traffic mode [refer to page: 6-9](#)

If exclusive traffic mode is active at your operator position and there are frequencies currently coupled, you cannot – as usual – select **TX** of a frequency to add the frequency to the existing coupling group. In exclusive traffic mode press Tx to put this frequency into traffic mode and switch the coupling group to a temporary “passive” coupling state.

For example:

If frequency 1 is in traffic mode, press **TX** on frequency 2 to switch frequency 1 back to monitor mode.

If frequency 1 is in traffic mode, press **CPL** on frequency 2 to switch frequency 1 back to monitor mode.

If frequency 1 (or several frequencies) have coupling active, press **CPL** on frequency 2 to add it to the coupling group.

If frequency 1 (or several frequencies) have coupling active, press **TX** on frequency 2 to switch frequency 1 and all other coupled frequencies back to monitor mode.

Note: A “passive” coupling state remains active in the background; there is no retransmission within the coupling group.

At this stage press **TX** on frequency 1 to switch frequency 2 back to monitor mode, and resume the formerly “passive” coupling state of frequency 1 and all other coupled frequencies again.

Note: If you press **CPL** on a frequency that is in “passive” coupling state, the frequency is permanently removed from the coupling group, and in monitor mode.

Functions on the Frequency Control Window

123.456 Radio67	RX Tx	123.456 Radio67	RX Tx
123.456 Radio67	RX Tx	123.456 Radio67	RX Tx
123.456 Radio67	RX Tx	123.456 Radio67	RX Tx
123.456 Radio67	RX Tx	123.456 Radio67	RX Tx
123.456 Radio67	RX Tx	123.456 Radio67	RX Tx

Situation: You have coupled three frequencies at your position; one frequency is in monitor mode.



Press **Tx** on the fourth frequency to switch it from monitor to traffic mode.

123.456 Radio67	RX Tx	123.456 Radio67	RX Tx
123.456 Radio67	RX Tx	123.456 Radio67	RX Tx
123.456 Radio67	RX Tx	123.456 Radio67	RX Tx
123.456 Radio67	RX Tx	123.456 Radio67	RX Tx
123.456 Radio67	RX Tx	123.456 Radio67	RX Tx

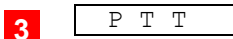
The fourth frequency is switched to traffic mode.

The formerly coupled frequencies are switched to a “passive” coupling state, which means that there is **currently no retransmission** within the coupling group, but coupling remains active in the background.



Press PTT at this stage to transmit on frequency 4 (in this example).

123.456 Radio67	RX Tx
--------------------	----------

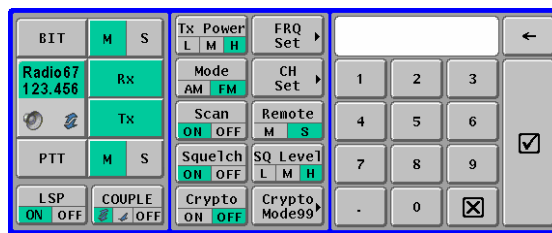
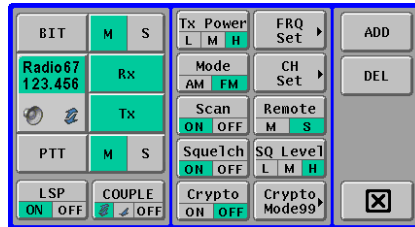


Release PTT to stop transmission.



Press **Tx** on one of the frequencies in “passive” coupling state to resume traffic and coupling mode.

6.6. Radio Remote Control on the Frequency Control Window



number pad opened



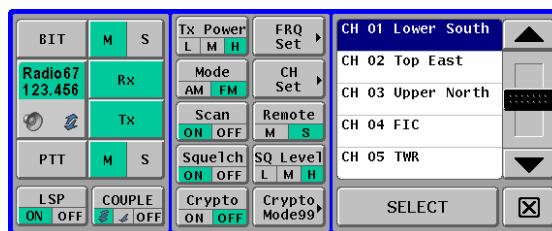
delete digit



accept entry and close number pad



enter a decimal point



channel list opened

1



Press to cancel any entry and close the frequency control window.

1



Press **Tx Power** to toggle the Tx-output power between LOW, MEDIUM, and HIGH (HIGH active)..

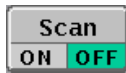
1



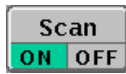
Press **Mode** to toggle between AM- and FM-mode (FM active).

Radio Remote Control on the Frequency Control Window

- 1**



Press **Scan** to toggle scan mode between ON and OFF.



The scan mode is active, the channels are scanned. The current channel is shown on the multi-display key.

Have the scan mode active as long as necessary.

- 2**



Press to turn the scan mode off.

- 3**

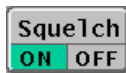


Close the frequency control window as usual.



If neither monitor nor traffic mode are activated, you will not hear any audio.

- 1**



Press **Squelch** to toggle squelch between ON and OFF (SQU ON).


- 1**



Press **Crypto** to toggle the encryption mode between ON and OFF (CRYPTO ON).

Radio Remote Control on the Frequency Control Window

1  Press **FRQ Set** to open the number pad.

2  Enter the number to select a pre-defined frequency.
Enter a maximum of seven digits.

Use the following input format:

MMM.kkk

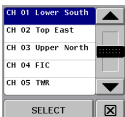
M MHz


k..... kHz

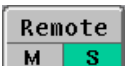
The VCS converts 6-digit frequency entries into 8-digit frequencies. For the frequency spacings 5 kHz, 8.33 kHz, 12.5 kHz, and 25 kHz, enter frequencies according to the following conversion rules:


The last digit	is converted into:
123.45 0	123.45 000
123.45 1	123.45 166
123.45 2	123.45 250
123.45 3	123.45 333
123.45 5	123.45 500
123.45 6	123.45 666
123.45 7	123.45 750
123.45 8	123.45 833

1  Press **CH Set** to open the channel list.


2  Select the desired channel from the list

3  Press to confirm the select channel. The new selection is indicated on the frequency object display.

1  Press **Remote** to toggle between main and standby (standby active). A white background on the multi-display key indicates the standby state.

- 1**  Press **SQ Level** to toggle the squelch detection level between LOW, MEDIUM, and HIGH (MEDIUM active). Also refer to **Squelch ON/OFF** – squelch has to be ON to allow changes here.

- 1**  Press **Crypto Mode xx** to open the number pad.

- 2**  Enter the number to select one of the ten crypto modes.
Enter a maximum of two digits.

- 3** Accept the entry or cancel.
-

- 1** In order to **cancel** a number pad entry, press **FRQ Set**, **CH Set** or **Crypto Mode**, or any other key that opens the number pad.
-

6.7. Frequency Coverage

Coverage allows you to work with several independent receiver and transmitter stations, and with 5, 10, 15 or 25 radios.

You can either

- work with automatic receiver/transmitter assignment, or
- select the best receiver/transmitter manually (for details consult your administrator).

Coverage also allows separate M/S-switching for each receiver and transmitter. Unmonitored channel prevention occurs when *all* channels are deselected.

Frequency Object and Layout


Radio67 123.456	Rx Site	Rx Site	Rx Site
 	Tx Site	Tx Site	Tx Site

Fig. 6-1: Example of a Frequency Object with Triple Coverage

123.456 Radio67	Rx	Rx	Rx	123.456 Radio67	Rx	Rx	Rx
	Tx	Tx	Tx		Tx	Tx	Tx
123.456 Radio67	Rx	Rx	Rx	123.456 Radio67	Rx	Rx	Rx
	Tx	Tx	Tx		Tx	Tx	Tx
123.456 Radio67	Rx	Rx	Rx	123.456 Radio67	Rx	Rx	Rx
	Tx	Tx	Tx		Tx	Tx	Tx
123.456 Radio67	Rx	Rx	Rx	123.110 Radio67	Rx	Rx	Rx
	Tx	Tx	Tx		Tx	Tx	Tx
123.456 Radio67	Rx	Rx	Rx	123.110 Radio67	Rx	Rx	Rx
	Tx	Tx	Tx		Tx	Tx	Tx
Phone	Radio	Radio 3 Sites					

Fig. 6-2: Example of a Frequency Layer

12:34:56		UPPER WEST		STU TO		LOWER WEST		POSITION UNATTENDED	
FN 1	FN 2	FN 3	FN 4	FN 5	FN 6	FN 7	FN 8		
123.456 Radio67	123.456 Radio67	TOP N COO	UPP N COO	LOW N COO	N ASSIST	TOP N COO	UPP N COO	LOW N COO	N ASSIST
123.456 Radio67	123.456 Radio67	TOP ES COO	UPP ES COO	LOW ES COO	ES ASSIST	TOP ES COO	UPP ES COO	LOW ES COO	ES ASSIST
123.456 Radio67	123.456 Radio67	TOP N COO	UPP N COO	LOW N COO	N ASSIST	TOP N COO	UPP N COO	LOW N COO	N ASSIST
123.456 Radio67	123.456 Radio67	TOP ES COO	UPP ES COO	LOW ES COO	ES ASSIST	TOP ES COO	UPP ES COO	LOW ES COO	ES ASSIST
123.456 Radio67	123.456 Radio67	TOP W COO	UPP W COO	LOW W COO	W ASSIST	TOP W COO	UPP W COO	LOW W COO	W ASSIST
123.456 Radio67	123.456 Radio67	TOP REC	UPP REC	LOW REC	TOP REC	UPP REC	LOW REC	TOP REC	UPP REC
123.456 Radio67	123.456 Radio67	TNA FIC	GREEN TEST	TEC	TNA FIC	GREEN TEST	TEC	TNA FIC	GREEN TEST
Phone	Radio	Radio 3 Sites						DA 1-2	DA 3-4

A coverage page with ten radios offers an additional reduced view of the frequencies. The single Rx-/Tx-key on this reduced view shows a sum status of all radio and transmitter sites.

Open the frequency control window to view all three sites.



Best Signal Selection

Coverage operates in different modes, either

- based on BSS (best signal selection), or
- based on your manual input.

Best signal selection evaluates which incoming radio signal is the best, and which receiver should therefore be active. As long as the evaluation process is on, the frequency display shows **?**. When BSS is active, it uses four levels to evaluate the signal quality:

- no squelch
- bad
- fair
- very well

Best Signal Selection Override

If you deselect a receiver manually although BSS is active, you override the BSS-results.

For the next squelch signal BSS considers the remaining receivers only! Override is indicated on the display.

Press **Rx** once more to go back to standard BSS-mode.

6.7.1. BSS Modes

Manual Selection of Receivers and Transmitters (BSS is Disabled)

Situation: BSS is *not* active.

1



Press to manually select the receiver.

Radio67 123.456 	Rx Site	Rx Site	Rx Site
	Tx Site	Tx Site	Tx Site

Radio67 123.456 	Rx Site	Rx Site	Rx Site
	Tx Site	Tx Site	Tx Site

Squelch is indicated.

2



Press to manually select the transmitter.

Radio67 123.456 	Rx Site	Rx Site	Rx Site
	Tx Site	Tx Site	Tx Site

Radio67 123.456 	Rx Site	Rx Site	Rx Site
	Tx Site	Tx Site	Tx Site

PTT and Squelch are indicated.

Best Signal Selection/Receiver Voting

Situation: BSS is active.

1



Press to manually select the transmitter.

Radio67 123.456 	Rx Site	Rx Site	Rx Site
	Tx Site	Tx Site	Tx Site

Radio67 123.456 	Rx Site	Rx Site	Rx Site
	Tx Site	Tx Site	Tx Site

BSS then automatically selects the best receiver.

Transmitter Follows Best Receiver

Situation: BSS is active.

Press to manually select the transmitter.



Radio67 123.456	Rx Site	Rx Site	Rx Site
	Tx Site	Tx Site	Tx Site

2

Radio67 123.456	Rx Site	Rx Site	Rx Site
	Tx Site	Tx Site	Tx Site

In this mode BSS selects the best receiver, the transmitter then automatically follows the best receiver.

3



A **manual override is possible** by selecting another transmitter.

4

Radio67 123.456	Rx Site	Rx Site	Rx Site
	Tx Site	Tx Site	Tx Site

Transmitter Follows Best Receiver with Default Tx

Situation: BSS is active.

1



Press to manually select a transmitter, which is treated as default transmitter.

Radio67 123.456	Rx Site	Rx Site	Rx Site
	Tx Site	Tx Site	Tx Site

BSS selects the best (signal) receiver.

Radio67 123.456	Rx Site	Rx Site	Rx Site
	Tx Site	Tx Site	Tx Site

2

Radio67 123.456	Rx Site	Rx Site	Rx Site
	Tx Site	Tx Site	Tx Site

The transmitter follows the best receiver.

Radio67 123.456	Rx Site	Rx Site	Rx Site
	Tx Site	Tx Site	Tx Site

After a period (defined at the TMCS) the transmitter automatically returns to the default transmitter that you selected before.

3



Press to select a new default transmitter, if necessary.

Offset mode (BSS)

Situation: BSS is active.



Press to manually select any transmitter.

Radio67 123.456	Rx Site	Rx Site	Rx Site
	Tx Site	Tx Site	Tx Site

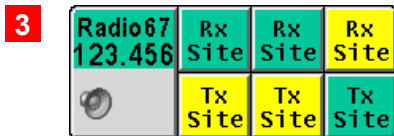


All transmitters may be selected (in any order).

Radio67 123.456	Rx Site	Rx Site	Rx Site
	Tx Site	Tx Site	Tx Site

Radio67 123.456	Rx Site	Rx Site	Rx Site
	Tx Site	Tx Site	Tx Site

BSS selects the best receiver.



If you press PTT the VCS automatically prevents that transmitters without offset are used.

Note: Offset values are entered by your administrator at the TMCS.

6.8. Functions Initiated By Function Keys

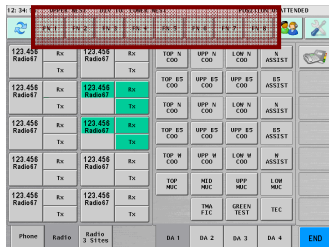
6.8.1. Frequency Forward (FN 05)

Use this function to forward frequencies from your position to another one.
PTT has to be inactive.



A position with frequency forwarding active (forwarding or forwarded-to) is not allowed to initiate or accept *further* forwarding.

Forward Frequencies



From the function keys:

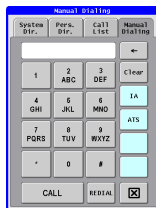
1



Press to initiate the function.



2



Dial the number of the target position on the dial pad.



Wait for the confirmation of the target position (see next paragraph).



Confirmation is indicated.

The frequencies have been forwarded to another position.

Send Forwarded Frequencies Back

1



Press the active key to initiate the function.

2



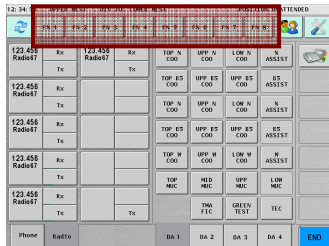
The display shows **FRQ FWD CANCEL**. Press the blinking key to send the frequencies back to the origin position.



The key is available again.

6.8.2. Frequency Intercom (FN 33)

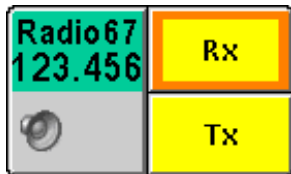
Use this function to set up a communication channel to all other positions that you and the other positions have in monitor or Tx-mode.



From the function keys:



Press and keep it pressed to set up immediate position-to-position communications.



Your voice is routed to all positions having these frequencies in monitor or traffic mode.

PTT and SQU are indicated.



Frequency intercom indication at another operator position that has the frequency in monitor mode.



Frequency intercom indication at another operator position that has the frequency in traffic mode.



Release the key to stop the intercom call.



Voice is not transmitted to A/G.

6.9. Shared Radios

Operator positions on different sites, for instance, TWR and APP, can share one single radio equipment. For this purpose, one site is directly connected to the equipment; the other one has access via the connected system.

Radio operation works as usual

- Operators on both sites can override operators transmitting on the same frequency on the other site. Pre-emption rights are valid for both sites.
- Unmonitored channel warning works per site, you get no monitoring information from the other site.
- PTT-indication on all operator positions works for both sites. Transmission audio is heard on all positions in monitor or traffic mode as well (except *side tone muted* is configured).
- The state *Tx elsewhere* on a frequency object is only indicated locally.



Follow the defined ATC-procedures when coupling shared frequencies. The VCS does not indicate or prevent coupling of the same frequency at different sites.

Features only available to the directly connected site

You have to work at the site directly connected to the radio equipment to:

- Select a transmitter for transmission on coverage channels.
- Select main/standby Rx, Tx (the other site gets no indication of your selection).
- Have access to radio remote control.

When the radio equipment fails, shared frequencies are not available on either site.

6.10. Radio Networking

The VCS 3020X also supports radio networking via 2 MBit/s links. Radio operation works as usual, for operational limitations refer to the paragraph **Features only available to the directly connected site** (Shared Radios, page [6-41](#)).

6.11. IP-Gateway for Radio Connections



The VCS 3020X also supports radio operation within an IP-environment connected via an IP-gateway. Radio operation works as usual, for operational limitations refer to the paragraph **Features only available to the directly connected site** (Shared Radios, page [6-41](#)).

----- END OF SECTION -----

7. Abbreviations and Acronyms

A/G	Air-Ground Communications
A/G LS	Function Key for Air-Ground Headset/Loudspeaker Selection
BIT	Built-in Test
BSS	Best Signal Selection
CA	Common Answer
CLIP	Calling Line Identification Presentation
CLIR	Calling/Connected Line Identification Restriction
CLIR	Function Key for Activating CLIR
CONF	Function Key for Conference
CPL AG-GG	Function Key for Air-Ground/Ground-Ground Coupling
CQ	Call Queue
DA	Direct Access
DAI LS	Function Key for Direct Access Intercom Headset/Loudspeaker Selection
DEL	Delete
DE-SELECT	Function Key for the De-Selection of DA-Keys
DID	Data Item Description
DIV	Function Key for Call Diversion
DOOR	Function Key for Door Release
DSP	Direct Speech
FRQ FWD	Function Key for Frequency Forwarding
G/G	Ground-Ground Communications
GG LS	Function Key for Headset/Loudspeaker Selection
HS	Headset
i.e.	id est: that means
IA	Indirect Access
IIP	Internal Interphone
IP	Internet Protocol
IEEE	Institution of Electrical and Electronic Engineers (US)
ISDN	Integrated Services Digital Network
LS	Loudspeaker
LSP	Loudspeaker

MASTER LS	Function Key for Master Loudspeaker Transfer
MFC	Multi Frequency Coding
MIL-STD	Department of Defense Military Standard (US)
MON	Function Key for Monitoring
OOS	Out of Service
OVR LS XFR	Function Key for the Override of Headset-Loudspeaker Transfer
PICKUP	Function Key for Call Pick-up
POS CHECK	Function Key for Position Confidence Test
PRIO	Function Key for Priority
PRIV	Function Key for Privacy Mode
PTT	Push-to-Talk
R	Function Key for Hook Flash
Rel.	Release
RELIEF BRIEF	Function Key for Relief Briefing
RUNWAY INC.	Function Key for Activating Runway Incursion
Rx	Receiver
SPLIT	Function Key for Split Position
STR	Short-Term Recording
SQU	Squelch
TMCS	Technical Monitoring and Control System
Tx	Transmitter
UI	User Interface
VCS	Voice Communication System
XFR	Function Key for Call Transfer

----- END OF SECTION -----

8. Glossary

Air/Ground-Ground/Ground Coupling

When this feature is activated at the operator position, all partners of an active telephone call can listen to the operator positions incoming A/G-audio. The audio from the telephone call is not routed on air. ⁱⁱ⁾

Automatic Conference

The automatic conference function automatically activates a conference after accepting or activating the second telephone call. There is a limit of at least seven lines in a conference (including the originator). The function can be activated/deactivated at the TMCS. It is valid for selective calls, unselective calls and voice calls. ⁱⁱ⁾

Automatic Redialling for Busy Subscribers

If you set up an indirect access (IA-) call but receive a busy indication, the system will automatically redial this number five seconds after the unsuccessful call attempt. Automatic redialling is supported for internal indirect intercom calls and calls over ATS-QSIG, MFC-R2 or MFC-No.5 trunks. At the end of this automatic redialling you receive a signal tone to indicate the stop of redialling. ⁱⁱ⁾

Auto-Release

The auto release feature automatically terminates a currently active call when you try one of the following:

- Initiation of an outgoing call
- Acceptance of an incoming call ⁱⁱ⁾

Best Signal Selection

Within a frequency coverage group, several receivers usually will pick up receptions from an aircraft in parallel. Depending on the location of the aircraft, but also on the quality of individual receivers and the quality of the landlines to the centre, some receptions have better audio quality than others. To free the operator from switching manually between multiple receivers, the VCS automatically calculates which reception among the received ones is the best. ⁱⁱ⁾

Briefing

Activating the Relief briefing function starts a local conference between the operator and the coach, allowing two operators to brief each other during shift hand-over. Briefing audio is sent to the voice recorder outputs of the operator position. ⁱⁱ⁾

Call Diversion

Call diversion enables automatic re-direction of incoming ground/ground calls to another operator position.

Chaining of call diversions (i.e. the “diverted to” operator position diverts to another position which eventually diverts again) is also supported. ⁱⁱ⁾

Call Hold

Call hold allows you to cut off an active call without releasing it (“put on hold”), so that the call can be continued later. Depending on the actual system configuration it is possible to initiate up to four calls simultaneously, with three of these four connections on hold. The calls put on hold are displayed either on the DA-keys or in the call queue keys. ⁱⁱ⁾

Call Release via DA-/CA-key

By pressing the DA- or CA-key you can also release an active call. If a conference is active, a conference party can be dropped by pressing the corresponding DA-key. ⁱⁱ⁾

Call Release/End Key

By means of the call release function (End key) you can release active calls as well as calls that have been initiated but not yet answered. ⁱⁱ⁾

Call Transfer

Call transfer allows you to transfer an active or pending G/G-call to another destination. ⁱⁱ⁾

Coach/Operator Override

Each plug-in panel provides two jacks for the connection of audio instruments, labelled “Operator” and “Coach”. The PTT of the coach always overrides any PTT-action of the operator. Whenever Coach-PTT is activated the Operator-PTT is overridden, thereby inhibiting transmission from the operator. ⁱⁱ⁾

Common Answer

Common Answer (CA) enables you to accept an incoming call that has been initiated by means of Indirect Access (IA). ⁱⁱ⁾

Conference

By means of the conference function several parties can share a common communication channel that enables them to talk to each other simultaneously. ⁱⁱ⁾

Context-Sensitive Layout

The context-sensitive layout calculates the availability of each function key depending on the operational needs and the availability of other functions on the position. Whenever a state changes due to operator inputs or system events, the layout is recalculated. ⁱⁱ⁾

Direct speech call (DSP)

DSP-calls are intercom calls set up with latching keys; the target party has to accept an incoming DSP-call to set up two-way communications.

Emergency frequency

Within the VCS radio channels can be configured as emergency frequencies. All emergency frequencies are permanently in monitor mode at all operator positions that have this frequency assigned. There is no possibility for Rx-activation or de-activation. Voice is immediately transmitted on air when pressing the non-latching TX-key (PTT is automatically activated). ⁱⁱ⁾

Flash Signalling

The flash function allows you to send a flash signal into an external open line. ⁱⁱ⁾

Frequency

Frequency is the logical term that describes a communication channel that is used by operators to communicate with individual aircrafts, or in an individual airspace. Frequencies may be indicated to the operator either by frequency value (e.g. MHz) or a configurable name. ⁱⁱ⁾

Frequency Coupling/Retransmission

Coupling of frequencies allows operating them as if they were a single frequency. With coupling enabled, an aircraft communicating on one radio channel is able to directly talk and listen to aircraft on other radio channels and vice versa. ⁱⁱ⁾

Frequency Coverage

Frequency coverage is used to cover a large area with one frequency or to overcome difficult geographic conditions, such as signal absorption in certain areas caused by mountains. Several transmitters and receivers are distributed over the area and operate on the same frequency. Coverage frequencies comprise several radio channels. ⁱⁱ⁾

Frequency Deselection Blocking

It is possible to block certain frequencies from being deselected at an operator position. ⁱⁱ⁾

Frequency Intercom (On Channel Intercom)

If you have selected one or more frequencies in traffic mode, you can establish an intercom call to all other operators that have selected these frequencies in monitoring or traffic mode. The audio connection is established immediately.

The other positions will receive this intercom call like a normal A/G-call, but with different visual indication. Voice is not transmitted on air. ⁱⁱ⁾

Group Call

By means of the group call function incoming G/G-calls on selective interfaces can simultaneously be indicated at a predefined group of operator positions. ⁱⁱ⁾

Handset Answer/Remote Answer Key

Pressing the handset answer/remote answer key ("PTT-key" on the handset) allows answering the first incoming call in the incoming queue. After answering the call, the remote answer key works again as PTT-key until the call is terminated. ⁱⁱ⁾

Hotline Call

Hotline calls are intercom connections between groups, or groups and individual parties. Hotline keys are non-latching and set up one-way communications and two-way communications, respectively, as soon as

an incoming hotline call is accepted.

Incoming Common Answer (CA-) Call

Any incoming call for which no DA-key is available. ⁱ⁾

Incoming Direct Access (DA-) Call

Any incoming call for which a DA-key is available. ⁱ⁾

Indication of Caller Name and Caller Identification Number

The origin number of a call or the name of the caller (if it is available) will by default be indicated on the call queue keys. ⁱⁱ⁾

Loudspeaker Routing for unattended Operator Positions

The operator positions are able to detect whether there are any headsets/handsets (or microphones) connected to the plug-in panels. If all headset/handset sockets of a position are empty, this position is considered to be unattended and hence its display (e.g. message display of the touch panel) reads **Unattended**.

If an operator position is unattended, incoming calls are still indicated, but no call can be answered. Call initialisation is also inhibited, and all function keys are out of service. If a position becomes unattended during an active call all subsequent incoming G/G- and A/G-audio is redirected to the position loudspeaker before the touch panel becomes inoperable. After 30 seconds, all G/G calls are automatically released and all frequencies in monitoring or traffic mode are de-selected. ⁱⁱ⁾

Manual ring

If you select the manual ring line via a DA-key, there is no ringing indication at the external target party. A ringing signal is sent only then if a dedicated function key is pressed. Each touch of this key generates a ring. If a conference has been activated, the ring signal is sent to all participants. ⁱⁱ⁾

Monitor Mode (Rx)

Frequencies selected in monitor mode are prepared for presenting received audio from this frequency to the operator position upon detection of squelch (carrier detection) or voice detection. Each radio channel can be selected individually for monitoring. All operator positions in the system can select a specific frequency in monitor mode at the same time. ⁱⁱ⁾

Moving call queue

The queue of incoming calls is reorganised whenever a call has been answered in order to maintain the arrival order of the remaining calls. If the call on the first position of the queue is answered, the call which has been presented formerly on the second position moves to the first position and so on. ⁱⁱ⁾

Multiple Layout Pages

The default layout of the touch panel provides multiple pages to allow ergonomic operation in different operational situations. Via the page selector you can choose either a mixed A/G-G/G-page or a G/G-page with status indication for the A/G-part. Each of the pages is optimised for controller, assistant or combined operation. ⁱⁱ⁾

Outgoing Direct Access (DA-) Call

Any call set up directly with a DA-key, or from the phone book, or the dial pad although there is a DA-key available. ⁱ⁾

Outgoing Indirect Access (IA-) Call

Any call set up from the phone book, or the dial pad; there is no DA-key available. ⁱ⁾

Override Call

Override calls set up immediate two-way intercom communications with the called party. Additionally, you join any call in progress at the called party's operator position.

Phone Book

The phone books (personal and system directories) comprise 1000 entries, which are available to all operator positions. Select any desired target party and dial directly from the phone book. ⁱⁱ⁾

Position Monitoring

Position monitoring allows you to listen to the combined audio of G/G- and A/G-communications of up to three different operator positions. Additionally, the supervisor cut-in function allows to break in on an active G/G-call. ⁱⁱ⁾

Pre-set Conference

Up to five operator positions or external parties can be pre-assigned to a single pre-set Conference (up to 100 pre-set conferences can be defined system-wide).

A re-set Conference is initiated by pressing a dedicated DA-key whereupon all conference members are automatically called and the necessary connections are set up. ⁱⁱ⁾

Priority Call

Priority calls allow you to contact another party even when the desired subscriber is currently engaged, or is indicated as "busy". ⁱⁱ⁾

PTT-Lockout

The system will allow only one operator to transmit on a certain frequency at any one point in time. All additional PTT-selections on this radio channel will be inhibited (locked out) for the duration of the active PTT. Lockout is indicated at all operator positions, which attempt to transmit on a frequency, which currently is keyed by means of a visual and audible indication. ⁱⁱ⁾

PTT-Pre-emption

Each operator position can be assigned pre-emption rights on certain frequencies. Operators with pre-empting rights override mutually active PTTs from other operator positions. ⁱⁱ⁾

Radio channel

One individual receiver/transmitter combination is referred to as a radio channel. A frequency may comprise one or more radio channels (coverage of radio channels). ⁱⁱ⁾

Radio Channel Loop Check

If the radio channel loop check feature is activated, specific radio interfaces check if a squelch signal has been received following a PTT-activation on this channel. In case no valid squelch signal is detected, a loop check error is indicated at the TMCS and at the operator position. ⁱⁱ⁾

Reset of Radio Channel Settings

It is possible to reset all radio channel settings by pressing the re-configure key at the touch panel. This means that all modifications made concerning radio channel configuration (i.e. select/deselect frequency) will be reset to the initial role configuration. ⁱⁱ⁾

Runway Incursion

A runway incursion is any occurrence in the airport runway environment involving an aircraft, vehicle, person, or object on the ground that creates a collision hazard or results in a loss of required separation with an aircraft taking off, intending to take off, landing, or intending to land. ⁱⁱⁱ⁾
The function key on the touch panel shall help avoiding any such occurrence.

Selective Answer in Call Queue

At the touch panel, for each pending CA-call a dedicated call queue key indicating the identity (if available) of the caller is provided. You can accept pending CA-calls in any order. ⁱⁱ⁾

Selective Call Pick-up

Selective call pick-up allows you to pick up calls that are pending at other positions. ⁱⁱ⁾

Sidetone

The term sidetone describes the audio feedback signal received by the operator during his own transmission. Sidetone is used to verify a successful transmission. To avoid acoustic feedback, the VCS typically attenuates sidetone information.

The VCS provides configurable sidetone routing:

- Remote side tone
- Local side tone
- Receiver muting

Incoming side tone audio can be attenuated separately for headset and loudspeaker reception. ⁱⁱ⁾

Split Headset Operation

Split headset operation allows you to listen to incoming audio of both, telephone and radio communication at the same time. Prerequisite for this feature is the presence of binaural operator headsets. ⁱⁱ⁾

Split Position Operation

Split position operation allows workload splitting of a combined radio/telephone position into a dedicated radio and a dedicated telephone part. Activating split position causes all A/G-audio (incoming and outgoing) to be routed to the operator socket, while G/G-audio remains at the coach socket.

If two plug-in panels are installed, activating the split position function will route A/G-audio to the first plug-in panel, and G/G-audio to the second one. ⁱⁱ⁾

Substitute

The substitute function allows you to answer calls that are waiting to be answered at another operator position. If activated, the incoming call queue of the selected operator position is transferred into the call queue of your own operator position. Incoming calls are indicated at both, the initiating and the substituted operator position. Hotlines and intercom calls cannot be substituted. ⁱⁱ⁾

Supervisor Cut-in

This function allows the supervisor to break in on an existing telephone call on another operator position (valid for calls to another operator position as well as to external parties). ⁱⁱ⁾

Traffic Mode

Radio channels selected in traffic mode are prepared for transmission upon activating Push-to-Talk (PTT) at the operator position. Activating traffic mode always causes parallel activation of the monitor mode. Each frequency can be selected for traffic mode separately. ⁱⁱ⁾

Unmonitored Frequency Alarm

Frequencies, which must be monitored at all times, can be configured with a “last monitoring alarm” (also “unmonitored channel prevention”) attribute. If such a frequency is monitored only by one operator, the de-selection of this frequency from this position will cause an alarm at the TMCS, and a visual warning indication at the operator position. ⁱⁱ⁾

Wireless Phone Interface

Each operator position can be equipped with a wireless telephone to accept incoming calls without being physically present at the position. ⁱⁱ⁾

----- END OF SECTION -----

9. Appendix A: Touch Panel Layouts

9.1. Touch Panel

The touch panel layouts may be customised to customer requirements. This chapter contains an overview of possible layouts.

The following layout types may be selected on the TMCS:

- Non-coverage 5 frequencies
- Non-coverage 10 frequencies
- Non-coverage 15 frequencies
- Non-coverage 25 frequencies
- Triple coverage 5 frequencies
- Triple coverage 10 frequencies
- Triple coverage 15 frequencies
- Triple coverage 25 frequencies

9.1.1. Non-Coverage 5 Frequencies

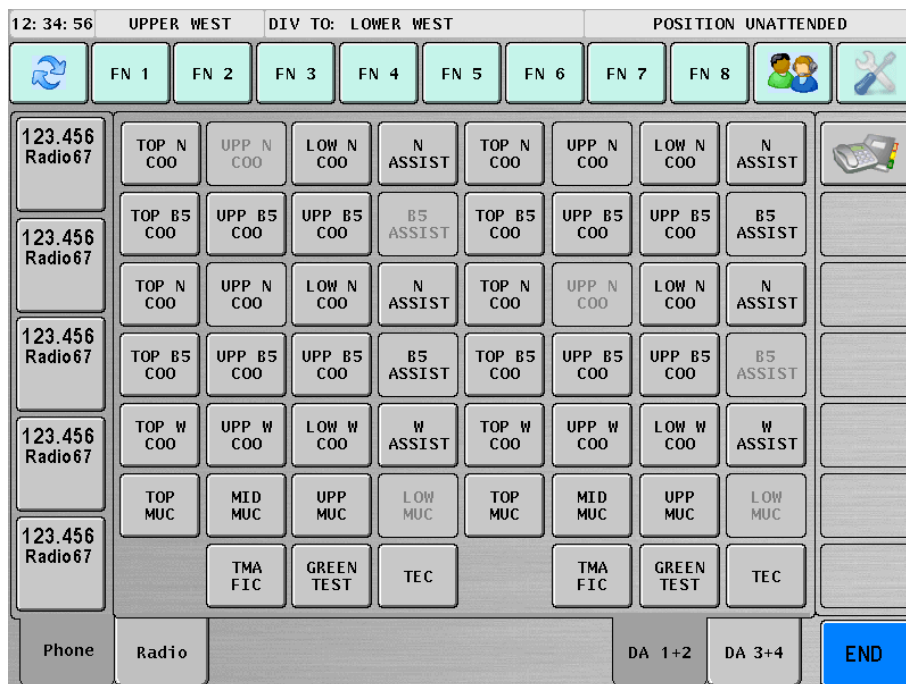


Fig. 9-1: Non-Coverage, 5 Frequencies, Telephone Mode

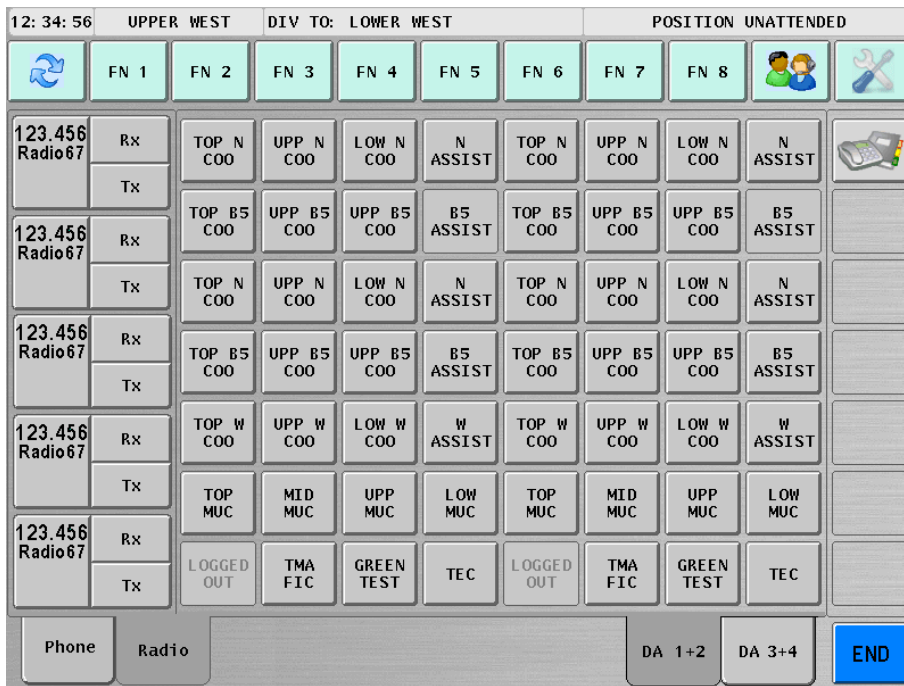


Fig. 9-2: Non-Coverage, 5 Frequencies, Radio Mode

9.1.2. Non-Coverage 10 Frequencies



Fig. 9-3: Non-Coverage, 10 Frequencies, Telephone Page



Fig. 9-4: Non-Coverage, 10 Frequencies, Radio Page

9.1.3. Non-Coverage/Coverage 15 Frequencies

12: 34: 56		UPPER WEST		DIV TO: LOWER WEST				POSITION UNATTENDED			
	FN 1	FN 2	FN 3	FN 4	FN 5	FN 6	FN 7	FN 8			
123.456 Radio67	123.456 Radio67	TOP N COO	UPP N COO	LOW N COO	N ASSIST	TOP N COO	UPP N COO	LOW N COO	N ASSIST		
123.456 Radio67	123.456 Radio67	TOP B5 COO	UPP B5 COO	UPP B5 COO	B5 ASSIST	TOP B5 COO	UPP B5 COO	UPP B5 COO	B5 ASSIST		
123.456 Radio67	123.456 Radio67	TOP N COO	UPP N COO	LOW N COO	N ASSIST	TOP N COO	UPP N COO	LOW N COO	N ASSIST		
123.456 Radio67	123.456 Radio67	TOP B5 COO	UPP B5 COO	UPP B5 COO	B5 ASSIST	TOP B5 COO	UPP B5 COO	UPP B5 COO	B5 ASSIST		
123.456 Radio67	123.456 Radio67	TOP W COO	UPP W COO	LOW W COO	W ASSIST	TOP W COO	UPP W COO	LOW W COO	W ASSIST		
123.456 Radio67	123.456 Radio67	TOP MUC	MID MUC	UPP MUC	LOW MUC	TOP MUC	MID MUC	UPP MUC	LOW MUC		
123.456 Radio67		LOGGED OUT	TMA FIC	GREEN TEST	TEC	LOGGED OUT	TMA FIC	GREEN TEST	TEC		
Phone	Radio					DA 1+2	DA 3+4	END			

Fig. 9-5: Non-Coverage/Coverage, 15 Frequencies, Telephone Page

12: 34: 56		UPPER WEST		DIV TO: LOWER WEST				POSITION UNATTENDED			
	FN 1	FN 2	FN 3	FN 4	FN 5	FN 6	FN 7	FN 8			
123.456 Radio67	Rx Tx	123.456 Radio67	Rx Tx	123.456 Radio67	Rx Tx	TOP N COO	UPP N COO	LOW N COO	N ASSIST		
123.456 Radio67	Rx Tx	123.456 Radio67	Rx Tx	123.456 Radio67	Rx Tx	TOP B5 COO	UPP B5 COO	UPP B5 COO	B5 ASSIST		
123.456 Radio67	Rx Tx	123.456 Radio67	Rx Tx	123.456 Radio67	Rx Tx	TOP N COO	UPP N COO	LOW N COO	N ASSIST		
123.456 Radio67	Rx Tx	123.456 Radio67	Rx Tx	123.456 Radio67	Rx Tx	TOP B5 COO	UPP B5 COO	UPP B5 COO	B5 ASSIST		
123.456 Radio67	Rx Tx	123.456 Radio67	Rx Tx			TOP W COO	UPP W COO	LOW W COO	W ASSIST		
123.456 Radio67	Rx Tx	123.456 Radio67	Rx Tx			TOP MUC	MID MUC	UPP MUC	LOW MUC		
						LOGGED OUT	TMA FIC	GREEN TEST	TEC		
Phone	Radio					DA 1	DA 2	DA 3	DA 4	END	

Fig. 9-6: Non-Coverage/Coverage, 15 Frequencies, Radio Page

9.1.4. Non-Coverage/Coverage 25 Frequencies



Fig. 9-7: Non-Coverage/Coverage, 25 Frequencies, Telephone Page



Fig. 9-8: Non-Coverage/Coverage, 25 Frequencies, Radio Page

9.1.5. Coverage Mode 5 Frequencies

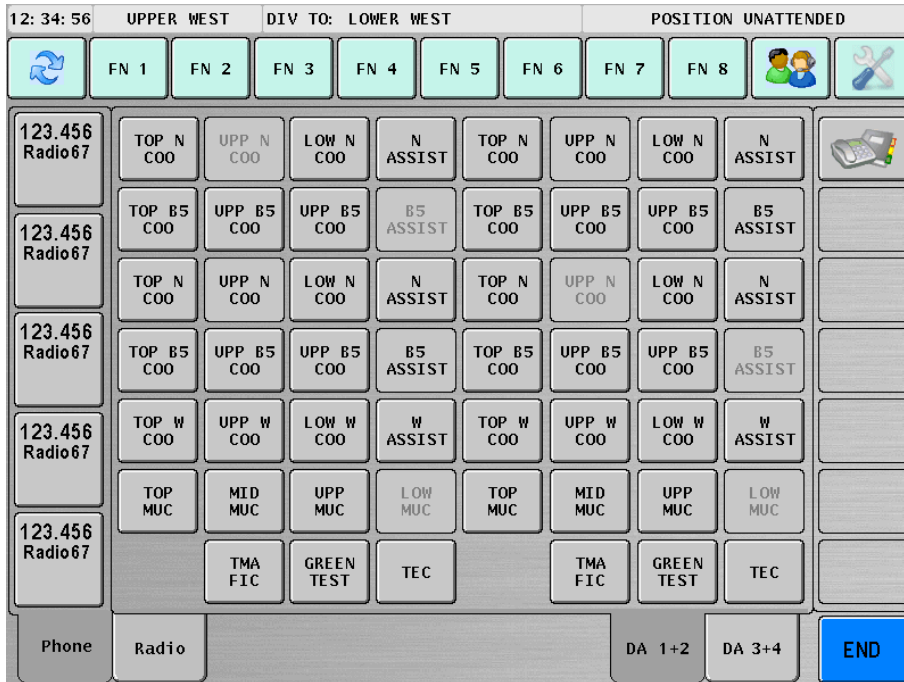


Fig. 9-9: Triple Coverage, 5 Frequencies, Telephone Page



Fig. 9-10: Triple Coverage, 5 Frequencies with Radio Sites, Radio Page

9.1.6. Coverage Mode 10 Frequencies



Fig. 9-11: Triple Coverage, 10 Frequencies, Telephone Page



Fig. 9-12: Triple Coverage, 10 Frequencies, Radio Page



Fig. 9-13: Triple Coverage, 10 Frequencies and Radio Sites, Radio 3-Sites Page

9.2. Settings

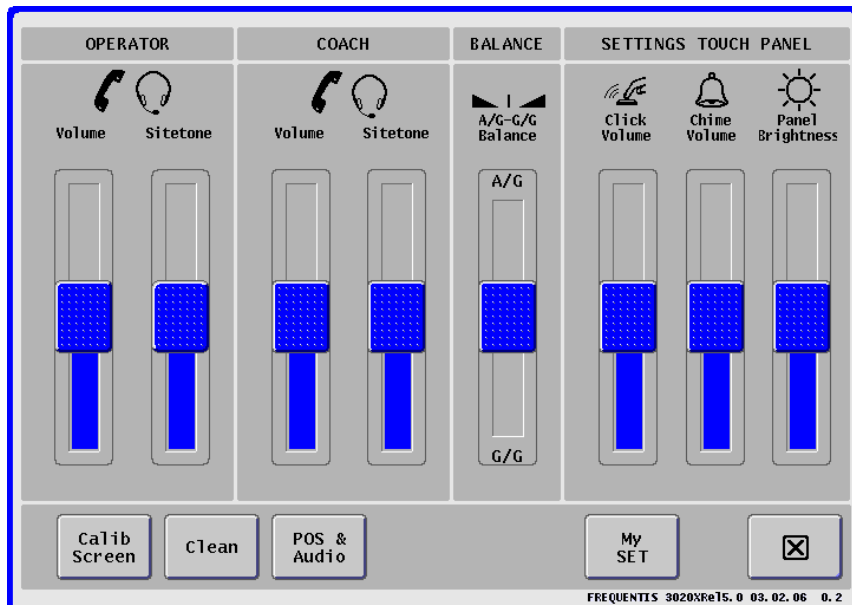


Fig. 9-14: Settings Window (one Plug-In Panel, no Split Headset)

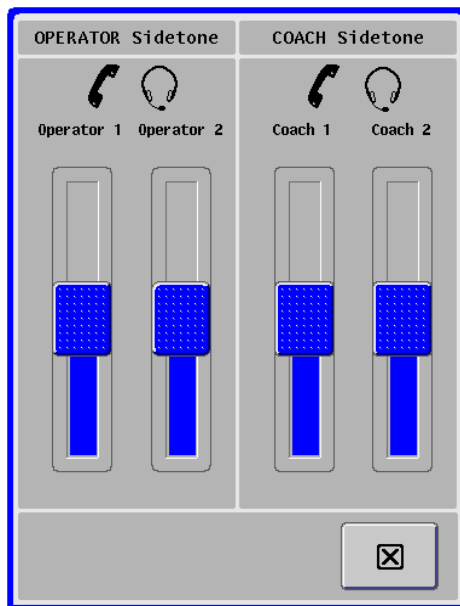
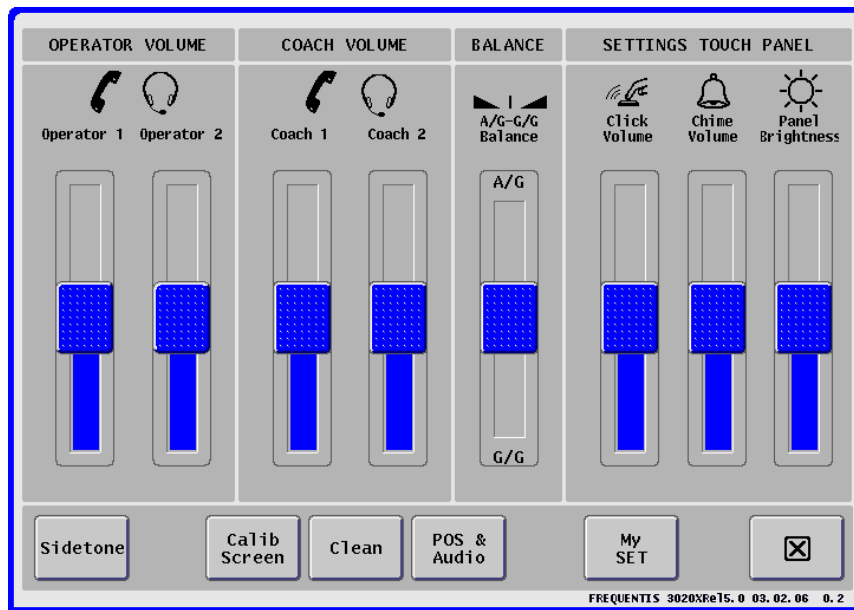


Fig. 9-15: Settings & Sidetone Window (two plug-in panels, no Split Headset)

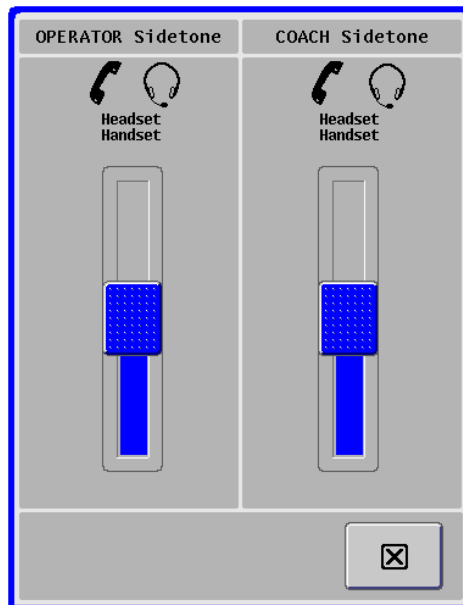
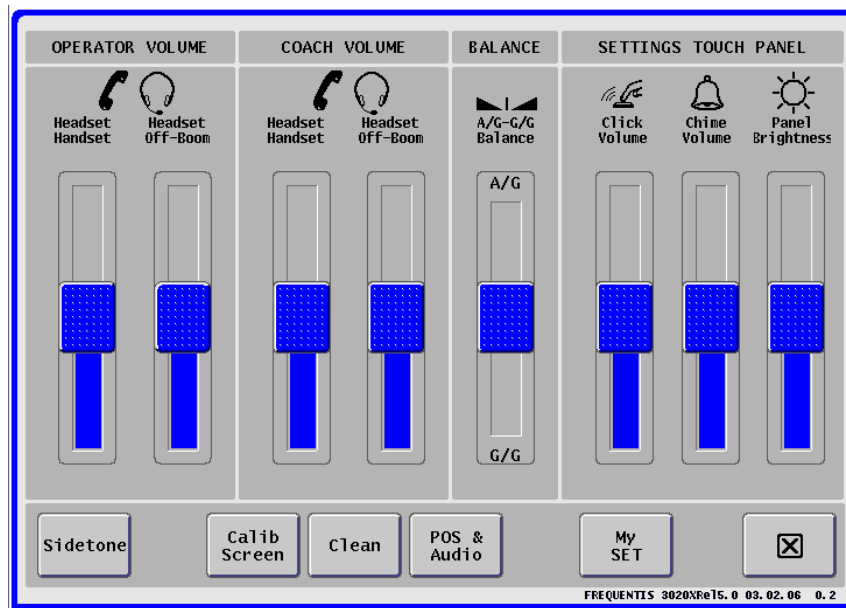


Fig. 9-16: Settings & Sidetone Window (one plug-in panel for splitting, Split Headset)

----- END OF SECTION -----

10. Appendix B: Audio Routing

10.1. Multiple Loudspeakers

You can have up to two loudspeakers for A/G- or G/G-calls, or any conference of these two at your operator position. Each loudspeaker has its own volume control.

The audio output is predefined according to the following table. There are nine different standard LSP-routings. They are the basis of all further headset/loudspeaker routings you may set at your operator position.

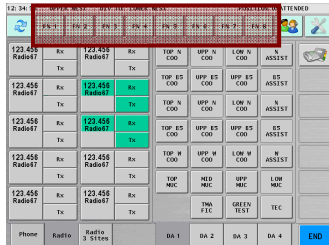
LSP-Mode	Number of LSPs at operator position	Output at LSP 1	Output at LSP 2
0	1	Rx, Tx, G/G	
1	2	Rx, Tx	G/G
2	2 OP not split	Tx	Rx, G/G
	2 Split position	Rx, Tx	G/G
3	2	Rx, Tx, Voice call, Hotline	G/G
4	2	Rx	G/G, MON
5	2 OP not split	Tx,	Rx, G/G
6	1	Rx, Tx, G/G, MON	
7	2	Rx, Tx, G/G	Specific Frequency
8	2	Rx, Tx	Rx, Tx, G/G

G/Gall incoming ground/ground audio
 Rx.....audio of all frequencies in monitor mode
 Tx.....audio of all frequencies in traffic mode

Tab. 10-1: Loudspeaker Routing

10.2. How to Route Audio to Headset or Loudspeaker

10.2.1. For Incoming Intercom Calls (FN 34)



From the function keys:

1



Press to route all incoming hotline calls either to the headset or to the loudspeaker.



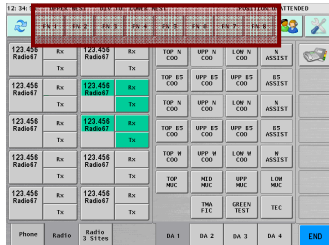
Audio routed to loudspeaker.

2



Press again to de-activate the function.

10.2.2. For All Audio (FN 11)



From the function keys:

1



Press to route all audio to either handset or loudspeaker.



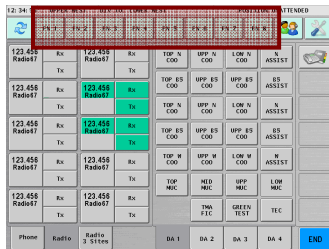
Audio routed to loudspeaker.

2



Press again to de-activate the function. Audio routed to handset/headset.

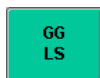
10.2.3. For G/G-Communications (FN 15)



From the function keys:



If available, press a dedicated key to route G/G-communications either to handset or to loudspeaker.

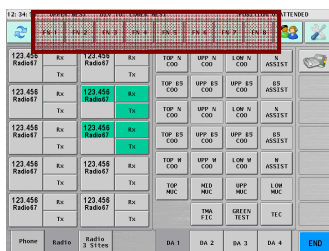


Audio routed to loudspeaker.

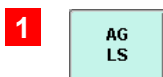


Press again to de-activate the function.

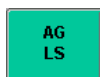
10.2.4. For A/G-Communications (FN 23)



From the function keys:



If available, press a dedicated key to route A/G-communications either to handset or to loudspeaker.

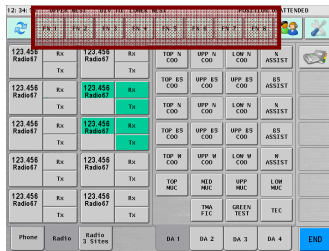


Audio routed to loudspeaker.

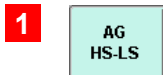


Press again to de-activate the function.

10.2.5. All A/G-Communications to Handset and Loudspeaker (FN 40)



From the function keys:



If available, press a dedicated key to route A/G-communications to handset **and** loudspeaker.

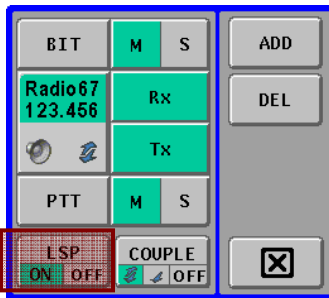


A/G-communications routed to headset and loudspeaker.

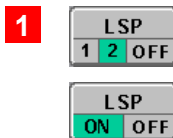


Press again to de-activate the function.

10.2.6. For a Selection per Frequency



On an open frequency control window:



Press **LSP** in the frequency control window to select for each frequency if voice is routed to loudspeaker 1 or 2, or the loudspeaker is turned OFF = voice routed to headset.

If only one loudspeaker is available, the key toggles between **ON** and **OFF**.

10.2.7. Automatic Transfer of A/G-Audio to Loudspeaker During G/G-Calls

The VCS offers a configuration that automatically routes A/G-calls to the loudspeaker whenever a G/G-call is active (except hotline-calls).

If G/G without PTT is configured at your position, the active PTT overrides this automatic transfer.



This function is not available when split headset is active.

VCS configured for G/G calls with PTT



Situation: You have an active G/G-call.



Automatic transfer: Incoming A/G-communications use the loudspeaker.

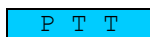
VCS configured for G/G-calls without PTT



Situation: You have an active G/G-call.

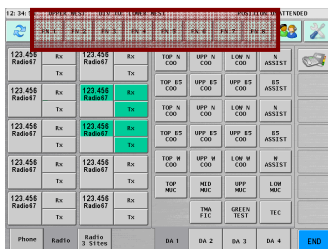


Incoming A/G-communications use the loudspeaker.



Override automatic transfer: Press PTT to use your headset/handset/hand microphone for outgoing A/G-communications.

10.2.8. Override for Automatic Transfer (FN 12)



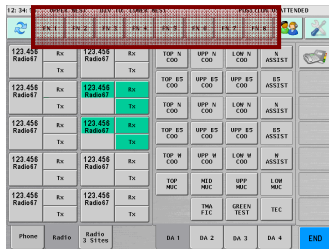
From the function keys:



Press to override (= disable) and enable the automatic transfer feature described above.

10.2.9. Permanent Loudspeaker Routing

Each of the following functions can be set to a permanent active state = permanent routing of audio to loudspeaker:



The function key row shows:



A/G-audio routed to loudspeaker.



G/G-audio routed to loudspeaker.



Hotline audio routed to loudspeaker.



All audio routed to loudspeaker.



If any of these keys is in this active state, and you cannot de-activate it, permanent loudspeaker routing is selected. Consult your administrator if necessary.

10.3. A/G-Audio Routed to G/G

If configured for your system, and if selected at the TMCS, A/G-audio can be routed to your active G/G-call whenever you press PTT.



Situation: You have frequencies in Tx-mode **and** an active G/G-call at the same time.



An aircraft-initiated call comes in and you have to respond.



Press PTT to transmit.



Your outgoing radio audio is also transmitted to the G/G-party.


























Treat and release your active G/G-call as usual.

----- END OF SECTION -----

11. Appendix C: Key States

11.1. Key States for DA- and CA-Keys and the Call Display

State	Colour	Moving Call Queue I			Moving Call Queue II			Static Call Queue I			Static Call Queue II		
		DA	CA	CD	DA	CA	CD	DA	CA	CD	DA	CA	CD
<i>Unavailable</i>		✓			✓			✓			✓		
<i>Unselectable</i> (target cannot be reached)		✓			✓			✓			✓		
<i>Idle</i>		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Busy (resource)</i>		✓		✓	✓		✓	✓		✓	✓		✓
<i>Busy & rejected</i> (called Target for trunk lines) <i>Held elsewhere</i> (for operator positions)		✓		✓	✓	✓	✓	✓		✓	✓		✓
<i>Outgoing call</i>		✓		✓	✓		✓	✓		✓	✓		✓
<i>Incoming call</i>			✓		✓	✓			✓		✓	✓	
<i>Active call - initiated</i>		✓		✓	✓		✓	✓		✓	✓		✓
<i>Active call - incoming and accepted</i>				✓	✓		✓		✓		✓	✓	
<i>Outgoing priority call</i>		✓		✓	✓		✓	✓		✓	✓		✓
<i>Incoming priority call</i>			✓		✓	✓			✓		✓	✓	
<i>Active priority call</i>		✓		✓	✓		✓	✓	✓	✓	✓	✓	✓

State	Colour	Moving Call Queue I			Moving Call Queue II			Static Call Queue I			Static Call Queue II		
		DA	CA	CD	DA	CA	CD	DA	CA	CD	DA	CA	CD
<i>Hold</i>		✓	✓		✓	✓		✓	✓	✓	✓	✓	✓
<i>Held</i>		✓		✓	✓		✓	✓	✓	✓	✓	✓	✓
<i>Monitoring</i>		✓			✓			✓			✓		
<i>Cutting In (active)</i>		✓			✓			✓			✓		
<i>Cut In (passive)</i>		✓		✓	✓		✓	✓	✓	✓	✓	✓	✓
<i>Selected for Transfer (incoming calls)</i>			✓		✓	✓			✓		✓	✓	
<i>Selected for Transfer (accepted calls)</i>		✓		✓	✓		✓	✓		✓	✓		✓
<i>Out Of Service & Reject</i> (when END is pressed, state changes to OOS (unreachable target))		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Hotline (configured on DA-key)</i>		✓			✓			✓			✓		
<i>Hotline busy</i>		✓			✓			✓			✓		
<i>Incoming hotline call</i>		✓			✓			✓			✓		

Tab. 11-1: Key States for DA-, CA-Keys and Call Display

11.2. Optional Colours for DA-Keys in Idle State

DA-keys in the state *idle* may have the following colours:



11.3. Key States of the Frequency Object

Frequency Object	Small FRQ-Objects	Description
		Frequency/radio is not configured
		Idle mode
		PTT elsewhere and idle squelch states are indicated as sum
		Idle mode Tx elsewhere
		Rx-mode
		Rx-mode, unmonitored channel prevention
		Rx-mode incoming squelch
		Tx-mode (main, standby)




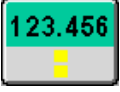

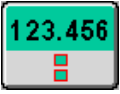
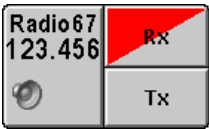

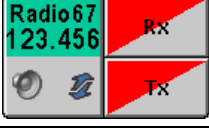





Frequency Object	Small FRQ-Objects	Description
		Tx-mode incoming squelch
		Tx-mode PTT & squelch
		Tx-mode Loop check error (if PTT does not generate squelch)
		Rx-mode Out-of-service
		Tx-mode Out-of-service
		Radio remote control error
		PTT-lockout

Fig. 11-1: Frequency Object Key States

----- END OF SECTION -----

12. Appendix D: System and Error Messages

Message	Description
Add not allowed	Your attempt to add a frequency to an empty slot was rejected. Consult your administrator for permission rights.
Already assigned	You tried to add a frequency that is already assigned to a slot.
Already used	You tried to load a role that must not be used twice within the VCS, and that is already assigned to another operator position.
Autoconf not allowed	You tried to answer an incoming call from another operator position while having an active call; to answer the incoming call, release your active call or put it on hold.
Call Entry Not Allowed	Your attempt to enter an ongoing conversation between two other operator positions was rejected for technical reasons.
Call forward denied	Your attempt to transfer a call was rejected by the target position.
Conference Full	You have reached the maximum number of conference members.
Conference in progress	A conference call is active.
Data server oos	The data server at the position electronics is out of service. You cannot load a new role. Consult your administrator.
Deselect not allowed	Your attempt to deselect a certain frequency/radio was rejected because this frequency/radio was blocked for deselection at the TMCS.
DIV	The G/G-calls of another operator position have been diverted to this operator position.
DIV TO	The message shows that this operator position has been diverted to <TO>.
Diversion loop	Your attempt to divert a call diversion back to the original operator position was rejected.
Forward not allowed	The function frequency forward is not allowed for this role.
Frequency forward active	The function frequency forward is active.
Frequency forward cancel	The function frequency forward was cancelled.
Frequency forward rejected	Your attempt to forward frequencies from your operator position to another was rejected. Consult your administrator.

Message	Description
Function not allowed	You tried to activate a function with its function code without adequate permission rights. Consult your administrator.
Hold not possible	The function call hold is not possible (e.g. the CQ is full).
IIP Conf Full	You have reached the maximum number of conference members (internal interphone).
Initializing...	The touch panel is being reset. Wait until the layout is completely set up before you start normal operation.
Invalid code	You tried to enter an invalid function code. Consult your administrator.
Last Monitoring	This is the last operator position that monitors a particular frequency.
MON	This operator position is being monitored.
Monitoring not allowed	Your attempt to monitor another operator position was rejected. Consult your administrator for check your access rights.
New Mission	The message shows that a new mission is sent by the TMCS – only valid for VCSs that have a mission system (push principle) configuration, and have no dedicated function key for mission acceptance.
No connection	The operator position has not connection to the VCS. Consult your administrator.
Number blocked	You tried to dial a telephone number that is blocked by the VCS. Consult your administrator.
Parameter off	This message shows that your operator position has received no parameters or that this role has been set to OFF at the TMCS. Consult your administrator.
Phone Unattended	Message - only when operator position is in split position mode - to indicate that all telephone handsets were unplugged
Playback Transfer rejected	Your attempt to reach a target for playback transfer was rejected (target out of service, or invalid target) – only valid for a system configuration that enables playback transfer from another operator position.
Radio Unattended	Message - only when operator position is in split position mode - to indicate that all radio handsets were unplugged
RRC Error	This message indicates that in split position mode all radio handsets are unplugged.

Message	Description
Software download	Software is being downloaded from the TMCS to your touch panel. Wait until download is finished.
STR export already in progress	More than one operator position tried to activate the export of a recording. Try again.
STR export error	The current export of a recording produced an error. Try again or consult your administrator.
Stuck PTT Error	PTT has been activated for more than a minute; release PTT.
TO TARGET	The G/G-calls of this operator position are diverted to <i>target</i> .
Too many monitored	Your attempt to monitor more than three other operator positions/lines was rejected.
Too many Subst	Your attempt to substitute more than ten operator positions was rejected.
TX not allowed	This operator position is configured for monitoring only.
Unattended	The operator position is unattended, i.e. no audio instrument is connected, therefore, the operator position is inactive.
Unattended RAD monitoring	Message shows that radio is still monitored at this operator position although the position is unattended (refer to Unattended).
Wrong digit	Response to wrong number entry on the dial pad; check number and try again; if necessary consult your administrator.

Tab. 12-1: List of System and Error Messages

----- END OF SECTION -----

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i) FREQUENTIS User Interface Specification, 03A54 E504
 ii) FREQUENTIS VCS 3020X Rel. 4.1 SSDD, 04A28 E603

iii) <http://www.faa.gov/runwaysafety/>, 2006-06-22