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Quality System  
according to  
DS/EN ISO 9001:2000

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## **VHF Voice Coastal Station Operator Manual**

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**Issue:** 002

**Author:** AR

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**Approved:**

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## 1. Revision History

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### **3. Disclaimer**

#### **Please note:**

Any responsibility or liability for loss or damage in connection with the use of this product and accompanying documentation is disclaimed.

The information in this manual is furnished for informational use only, is subject to change without notice and represents no commitment whatsoever.

This agreement is governed by the laws of Denmark.

#### **Warning:**

Danphone A/S can not guarantee proper operation of the GMDSS software delivered for this project, if other programs are loaded onto the computers or other programs are started up together with our programs or other computers are connected to the network between our computers.

Transmitting, when the Standing Wave Ratio is higher than 2, will stress the components of the Power Amplifiers. Although the Amplifiers are protected against excessive SWR transmitting, an SWR of more than 2 will reduce the life time of the Amplifiers.

Therefore it is strongly recommended that use of transmitters, when SWR is higher than 2 should be avoided.

#### **Warranty note:**

Warranty will not be valid if:

- Any change or modifications are done to the system or part of it, without written approval from Danphone A/S, Denmark.
- Any change made in the software not authorised by Danphone A/S, Denmark.
- If new software is installed without authorisation from Danphone A/S, Denmark.
- If a virus is introduced into the computers.

#### **FCC Compliance:**

The DCB9140 transceiver used for this project complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

#### **Part 15.21**

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**NOTE:** The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

## 4. Terms and Abbreviations used in this Document

GMDSS	Global Maritime Distress and Safety System
IMO	International Maritime Organisation
NMS	Network Monitoring System
VUI	Voice User Interface
UI	User Interface

## 5. Reference Documents

SDM Ver. 003	Corpus Christi VHF Communication Project 20063 System Design Manual

## 6. Introduction

The objective of this document is to give a comprehensive overview of the procedures required to operate the VHF Voice Coast Station User Interface and NMS User Interface. Although there are some common aspects, the 2 programs are separate applications and should be treated as such. It is assumed that the user has a good knowledge to the operations of Windows 2000.

## 7. Power on

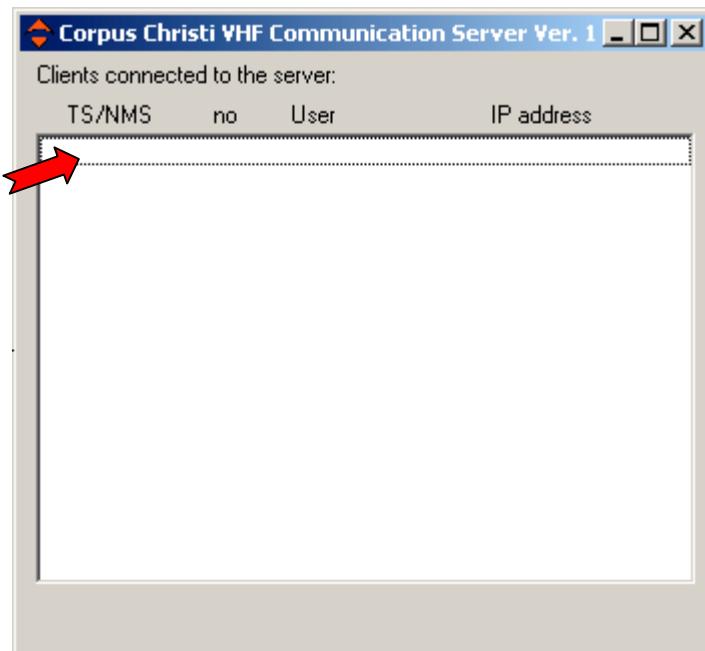
### 7.1 Server PC:

Turn on the computer and login.

Double click on the icon "Shortcut to NMS Server".



The following window is displayed and the NMS Server Application is now running.



It is in this window, where the Clients (Operators), who are logged onto the server will be displayed.

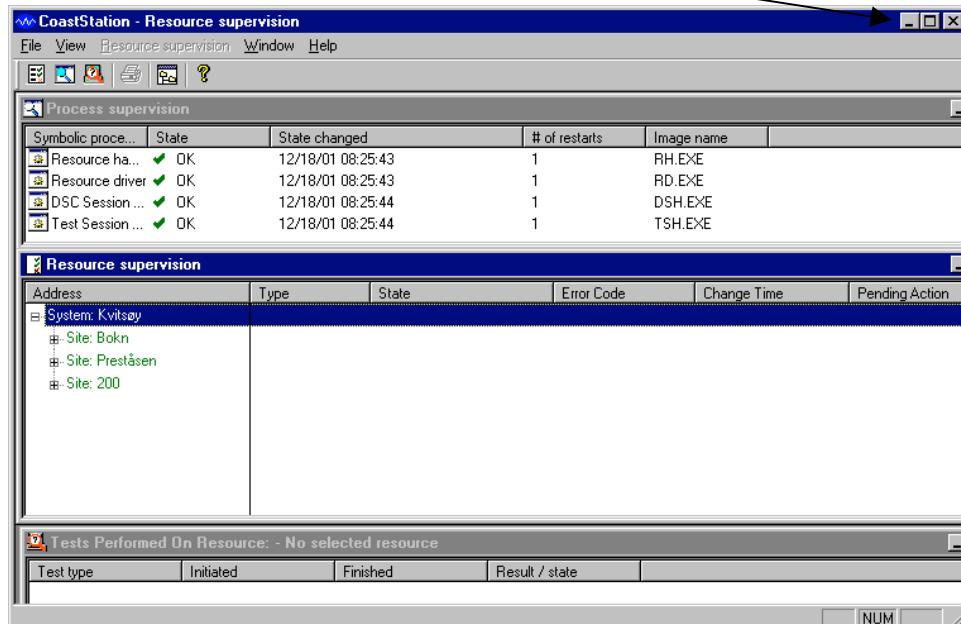
Double click on the icon "Shortcut to Coast Station".



Now the Coast Station programme is running

Wait for one minute.

Minimize the Coast Station programme.



## 7.2 Operator PCs

Turn on the computers and login.

Double click on the icon "Shortcut to VUI" on all Operator PC's.

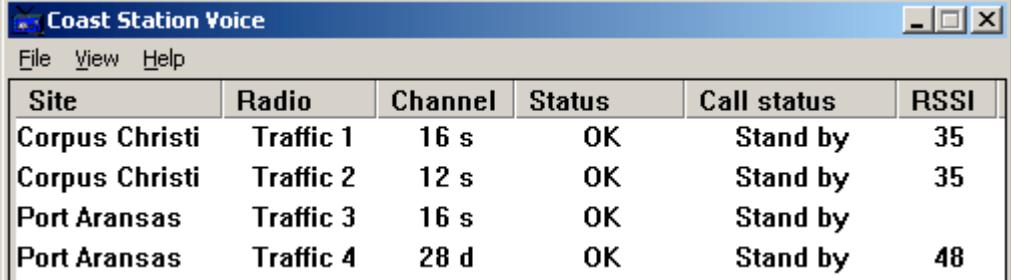


Now all the software for the voice application is running.

## 8. Voice User Interface (VUI)

The following are examples of the VUI's graphical representations.

### 8.1 Coast Station Voice Window.

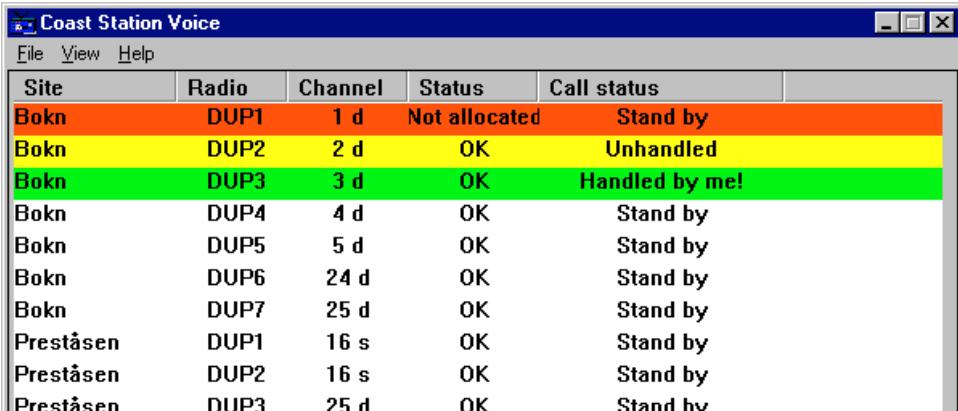


Site	Radio	Channel	Status	Call status	RSSI
Corpus Christi	Traffic 1	16 s	OK	Stand by	35
Corpus Christi	Traffic 2	12 s	OK	Stand by	35
Port Aransas	Traffic 3	16 s	OK	Stand by	
Port Aransas	Traffic 4	28 d	OK	Stand by	48

Indication of lost Data connection to a Radio. (RED)

Indication of incoming call. (YELLOW)

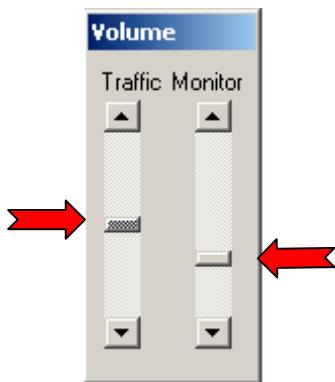
Incoming call handled by an operator. (GREEN)



Site	Radio	Channel	Status	Call status
Bokn	DUP1	1 d	Not allocated	Stand by
Bokn	DUP2	2 d	OK	Unhandled
Bokn	DUP3	3 d	OK	Handled by me!
Bokn	DUP4	4 d	OK	Stand by
Bokn	DUP5	5 d	OK	Stand by
Bokn	DUP6	24 d	OK	Stand by
Bokn	DUP7	25 d	OK	Stand by
Preståsen	DUP1	16 s	OK	Stand by
Preståsen	DUP2	16 s	OK	Stand by
Preståsen	DUP3	25 d	OK	Stand by

## 8.2 Volume Control

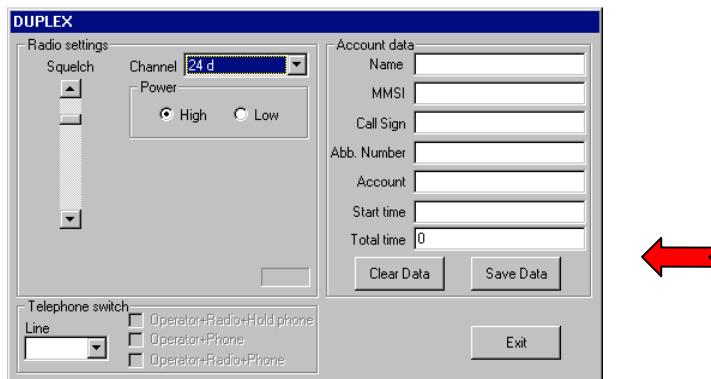
Adjustment of the audio levels to the Traffic and Monitor loudspeakers is achieved by adjustment of the on-screen volume control. This is done by using the mouse to scroll up and down on the relevant volume control.



## 9. VHF Radio Control

### 9.1 Selecting a radio

Double click with the left mouse button on the radio line or choose the first radio with Function key F1, second radio with F2 and so on. Now you will have this window:

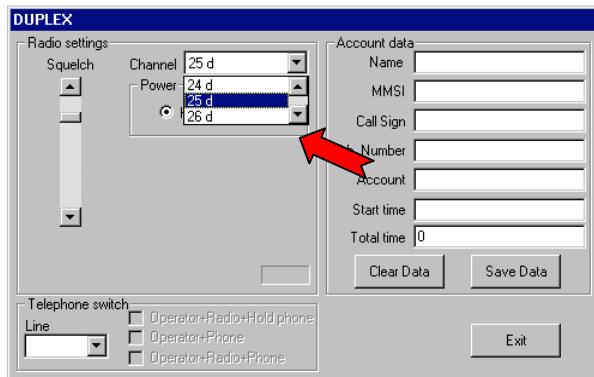


**Note.** Power, Telephone switch and account data are not part of the delivered system.

## 9.2 Change of Channel.

### 9.2.1 Change of Channel with the mouse.

Click with the mouse in the channel window. Click on the wanted channel, or scroll by means of the up/down arrows until the wanted channel is displayed.

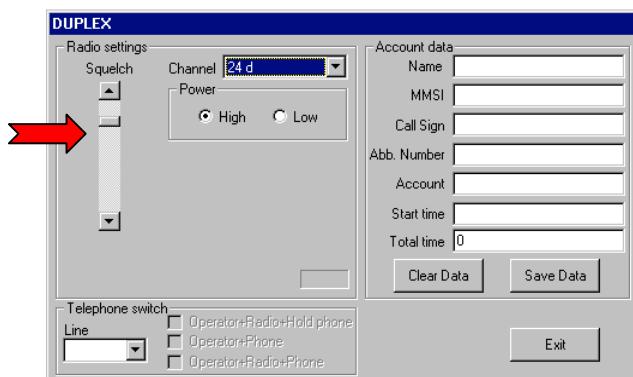


### 9.2.2 Change of channel by the function keys.

By hitting the keys F1 to F12 you can change channel. Which channel belongs to which key is set by the software.

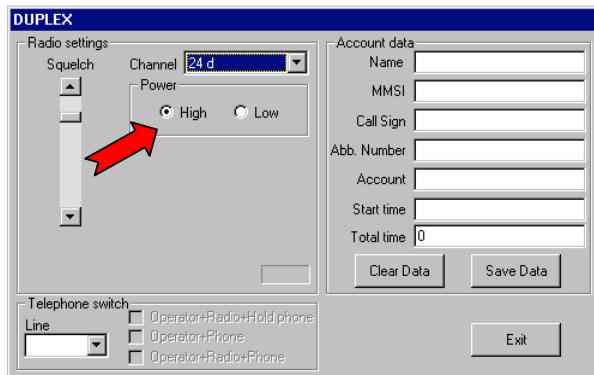
## 9.3 Squelch open level.

Place the mouse on the bar and then hold the left mouse button down. Now you can move the bar /squelch up and down. Or you can click with mouse on the up/down arrows.



## 9.4 Output Power settings.

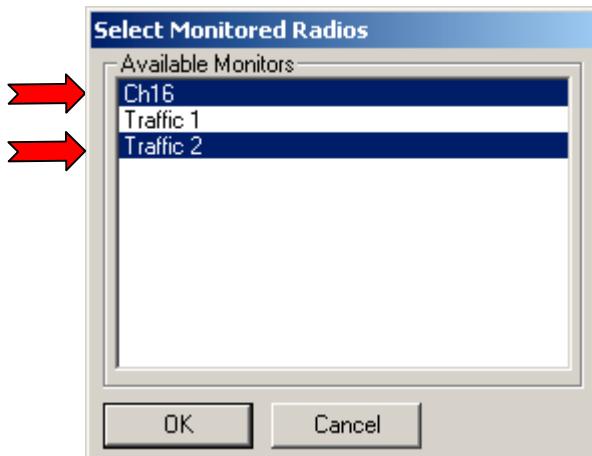
These settings are not active via the VUI. (For power settings see NMS)



## 9.5 Setting the Monitor Line.

By choosing the Monitor Lines, which are available in your system, the audio from the selected VHF's is sent to your Monitor loudspeaker. Select "View" from main menu followed by "Select radios".

To select, with the mouse, highlight the lines you want and click on "OK".



## 9.6 Operate the Broadcast transmission.

Select "View" followed by "Broadcast" from the main VUI menu.

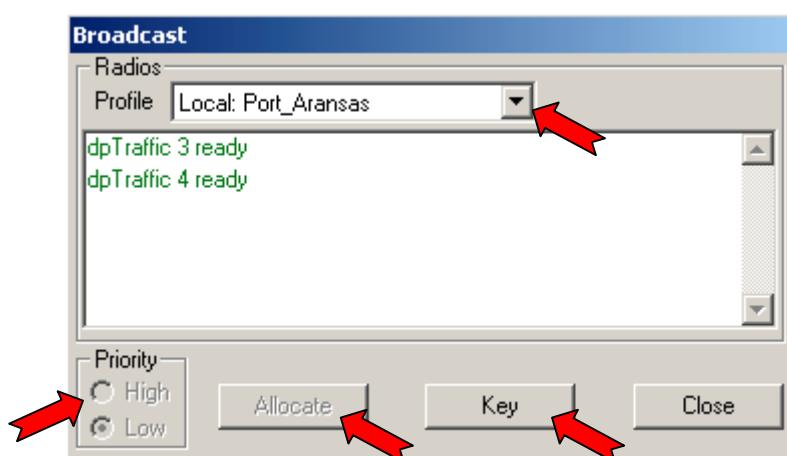
In the scroll down menu "Profile", choose the set of VHF's (dependent upon how many radios are available) you want to use for the Broadcast transmission.

Click on "Allocate" to prepare the VHF's to the Broadcast transmission.

Click on "Key". The VHF's are now keyed.

Press your PTT to enable operator panel audio routing and speak out your message.

**Important:** When your message is transmitted, click on the "DeKey" and close the Broadcast window.



If one or more of the transceivers are being used by other operators it will be necessary to select "priority High" to take over control of them.

## 10. Network Monitoring System (NMS)

On Operators PC double click on the icon "Shortcut to NMS"



The NMS user application is now running. The following guide illustrates examples of the NMS graphical representation of the supplied system.

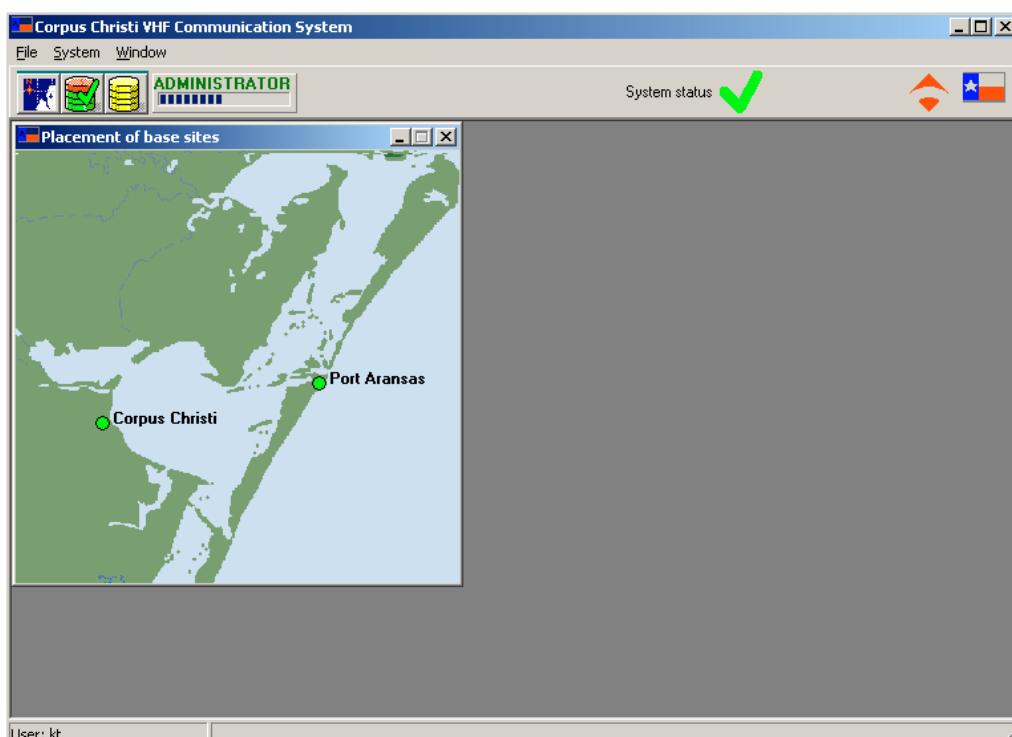
### 10.1 System Level

The System level includes the following main windows:

- Main Window (incl. Menu etc.)
- Site map
- System database
- Alarm database

and a number of dialogs:

- Swap user
- Renew user rights
- Add user (Administrator only)



System level view

## 10.2 Main window

The main window consists of the following compartments:

### 10.2.1 Title bar

A standard Windows title bar with system menu, application title, minimise, maximise, and close buttons.

### 10.2.2 Menu bar

The menu bar shall have the following entries:

- File | Close application. Same as < alt + F4 >.
- System | Swap user < ctrl + U >. Logs on a different user, e.g. change to supervisor mode.
- System | Renew user rights < ctrl + R >. When logged on as Supervisor or above, rights will automatically time out if not renewed.
- Window | Map < ctrl + M >. Opens map view.
- Window | Database. Opens database view.
- Window | Open all with errors or warnings. Opens all sites and units with ERROR or WARNING status.
- Window | Close all | Sites and Trc. Closes all sites and transceivers views.

### 10.2.3 Toolbar

This bar consist of icons for fast access to the map and database views and indicates the status of the external alarm. It displays “SUPERVISOR”, “TECHNICIAN” or “ADMINISTRATOR” when in one of these modes.

Extended rights (Supervisor etc.) will automatically time out after a specified number of minutes. When in supervisor mode the timer can be reset by a click on the countdown graphics or via: System | Renew user rights < ctrl + R >.

The total system status is visualised as:

- a red X <=> ERROR
- a yellow V <=> WARNING
- a green V <=> OK

On the right system icons are displayed.

### 10.2.4 Multiple document area

This compartment shall hold all main windows such as:

- Map view,
- Database view (two of them),

- Site views,
- Transceiver views.

### 10.2.5 Status bar

At the bottom a system status bar shall be displayed with the following sub-compartments:

- User name for last login.
- Status during communication with server

### 10.2.6 Site map

The map illustrates a rough representation of the placement of the various sites.

Clicking the site opens the corresponding site view.

The sum up status on each site is indicated by the colour of the site bullet:

- red <=> ERROR,
- yellow <=> WARNING,
- green <=> OK.

Ongoing communication with a site is indicated by the site bullet flashing.

### 10.2.7 System database

The NMS shall has a single database but two different access views to it. These are called:

- Database,
- Alarm database (event acknowledge view).

#### 10.2.7.1 *Database fields*

Both views display the following information for each event:

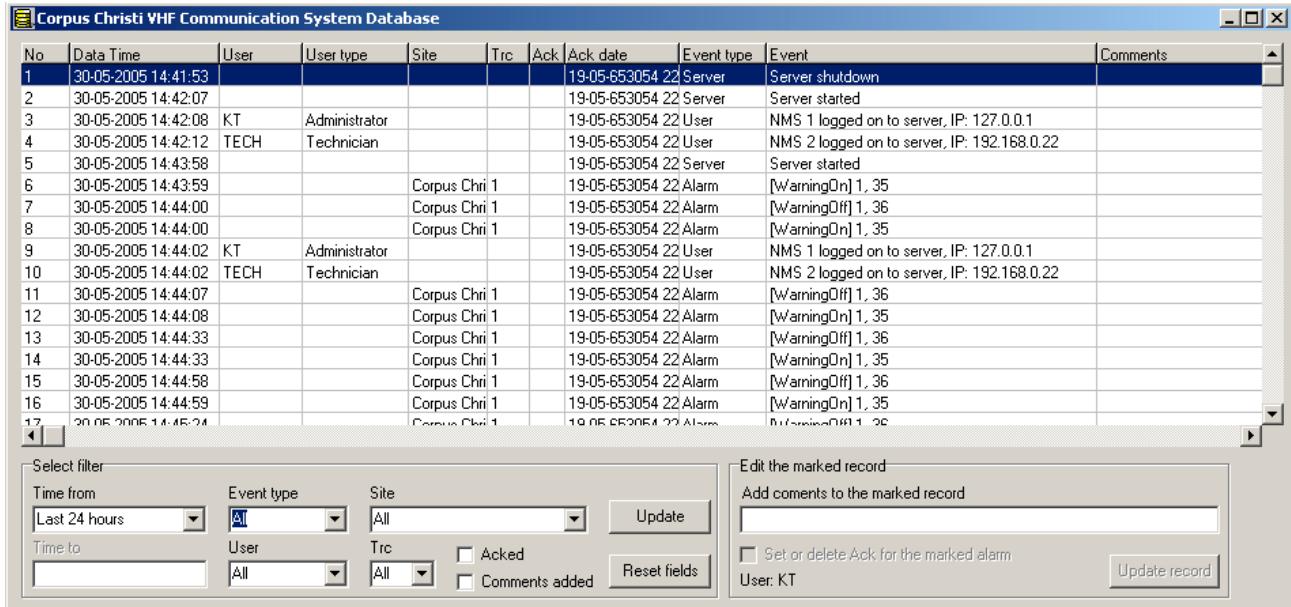
- Date and time. Timestamp of the event.
- User. The user logged on when the event occurred.
- Site. The originating site. This could also read "NMS" to indicate that the event originated at the NMS itself.
- Unit. The originating unit (TRAN1..TRANx, Input/output module). If the event relates to the whole site "SITE" is indicated.
- Event type. The kind of event (System, Site state, Unit state, or Parameter state).
- Event. This field explains the actual event (e.g. "Lock detection Receiver ERROR").
- Comment. This field is reserved for the user, and can be filled in via the Alarm database view.

**NOTE** Other fields not shown to the user shall exist in the underlying database.

### 10.2.7.2 Standard database view

In the standard database view it is possible to perform a search. If e.g. the site filter has been set to a particular Site, only events originating from this site are viewed. Likewise for all other filter parameters.

**NOTE** After setting up a new filter parameter the [Update] button, must be pressed in order for the filter to take effect.



The screenshot shows a Windows application window titled "Corpus Christi VHF Communication System Database". The main area is a grid table with the following columns: No, Data Time, User, User type, Site, Trc, Ack, Ack date, Event type, Event, and Comments. The data grid contains 17 rows of event logs. Below the grid are two filter panels: "Select filter" and "Edit the marked record".

**Select filter** (Left Panel):

- Time from: Last 24 hours
- Event type: All
- Site: All
- Update button
- Time to: (empty)
- User: All
- Trc: All
- Acked
- Comments added
- Reset fields button

**Edit the marked record** (Right Panel):

- Add comments to the marked record: (text input field)
- Set or delete Ack for the marked alarm
- User: KT
- Update record button

Standard Database view

### 10.2.7.3 Alarm database view

This view into the database shows events, which have not yet been acknowledged by the user. Most (but not all) events must be acknowledged.

Enabling the "Set or delete Ack for the marked alarm" will, for each mouse click on "Update record", acknowledge that event and as a result the event will disappear from the list (it shall still be possible to view the event from the Database view). "Set or delete Ack for the marked alarm" will be automatically disabled by the system, when leaving the database.

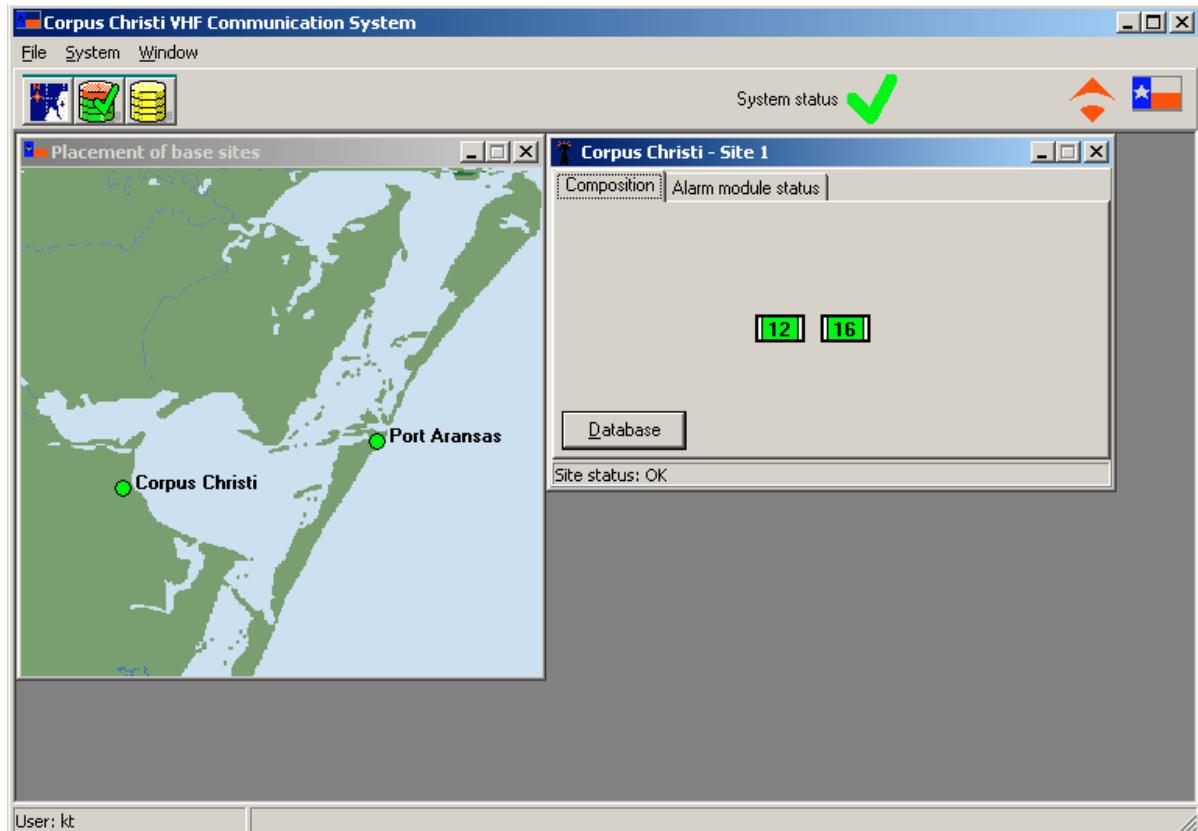
Using the up and down keys with the shift key down shall allow for a whole block of events to be acknowledged in one go by pressing the "Update record" button. This action must be confirmed by the user.

The user can apply a comment to each event by writing a text into the Comment edit control and pressing "Update record". The text will be applied to the event currently having focus (blue bar).

**NOTE** It is not possible to apply a comment to all events in a marked group.

## 10.3 Site Level

Each site has a base site window:



Site Level

## 10.4 Base sites

A base site shall be visualised by a tapped notebook with the following pages:

- Composition page
- Alarm module page (not used in this system)

And a Database button

## 10.5 Site composition

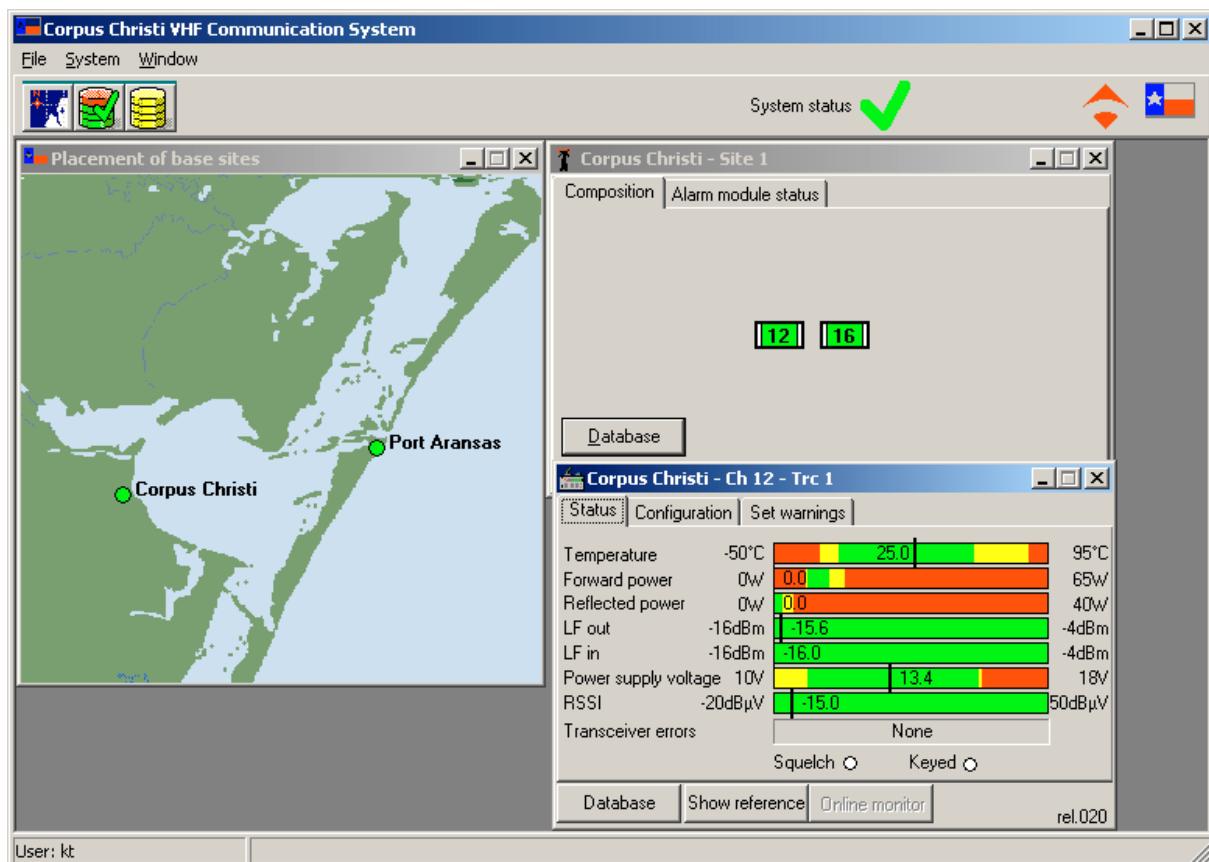
This page shall illustrate an overview of the site composition. A site consists of a number of transceivers and a dialogue window for indicating the status of the site and error/warnings. The transceivers shall indicate, which channel they are configured to. A single mouse click on a transceiver will open the transceiver status level.

### 10.5.1 Database button

[Database] will open the database with the filter set to this site.

## 10.6 Transceiver Level

Each transceiver unit has its own associated window:



Unit Level

## 10.7 Base sites units

A Transceiver unit is visualised by a tapped notebook with the following pages:

- Status page
- Configuration page
- Set warnings (a user alarm configuration page)

### 10.7.1 Transceiver unit - status

The Transceiver status page consists of the following:

#### 10.7.1.1 *Meter graphics*

A meter consists of three parts:

- The red area (possibly in both ends) shall signify the transceiver hardware alarm limits. These are factory settings. If these limits are exceeded the transceiver will automatically take action. The site contacts the NMS, where this is defined as an ERROR
- The yellow areas are specified by the user. If these limits are exceeded the site shall contact the NMS. This is defined as a WARNING. The user is able to adjust the transceivers warning limits (within the hardware limits) see para. 10.7.3. These limits are coloured yellow.
- Green area indicates normal operation.

#### 10.7.1.2 *Transceiver status*

The following components are monitored by the transceiver:

- Temperature,
- Forward power,
- Reflected power,
- LF out,
- LF in,
- Power supply voltage,
- RSSI for receiver,
- Transceiver errors,

If the transceiver was keyed or squelch was detected during a status poll, green bullets are shown.

#### 10.7.1.3 *Dialogue buttons*

- [Database] will open the database with the filter set to this site and this Transceiver.

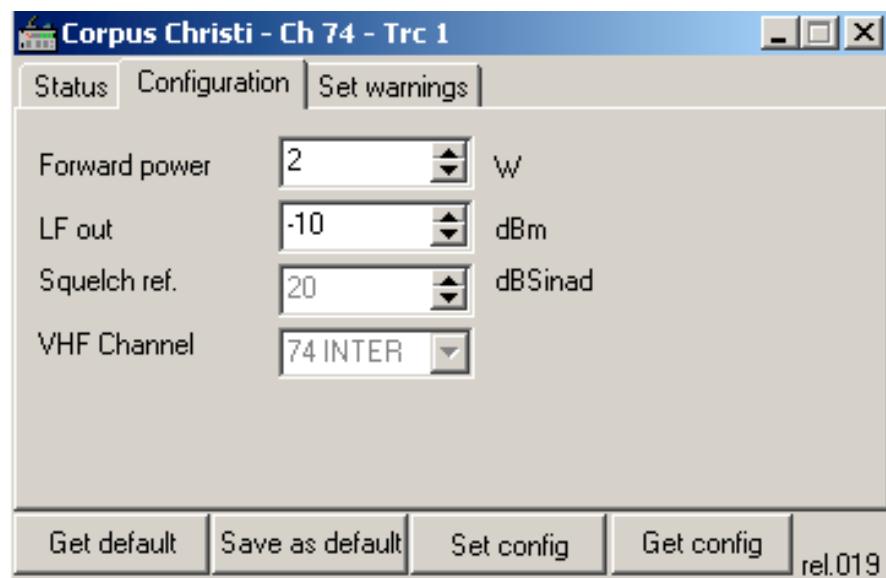
- [Online monitor] (TBD) will continuously ask the site for a status update on this transceiver unit only. By selecting [On-line monitor] for the other transceivers on the same site, they too can be monitored. Only one site can be monitored at any one time. The status is updated every 1-2 seconds until the button is pressed again (or another online terminating event occurs).
- [Show reference] will draw a grey reference line on the “Forward power” and “LF out” meters corresponding to the settings on the configuration page.

### 10.7.2 Transceiver unit - configuration

This window displays the current transceiver configuration. The following configuration can be set on each transceiver in the system:

- Forward power (2 to 50 W),
- LF out (-16 to -4 dBm),
- Squelch reference (not in this system, controlled via the VUI),
- VHF channel. (not in this system controlled via the VUI)

Rel.019 indicates, which software version the transceiver has installed.



Transceiver configuration view

**It is not possible to alter the configuration of a transceiver, when it has been selected for “monitor or traffic” by one of the Operator Positions in the Control Centre.**

Any alteration of the above values will cause the “Set config” button to be coloured red; configuration of the transceiver will only occur after this button is selected.

The “Save as default” button will save the above configuration settings as default for this transceiver. At the same time an entry will be made into the database containing; user name, time/date and new transceiver configuration values.

“Get default” will retrieve the last saved default configuration from the ini file.

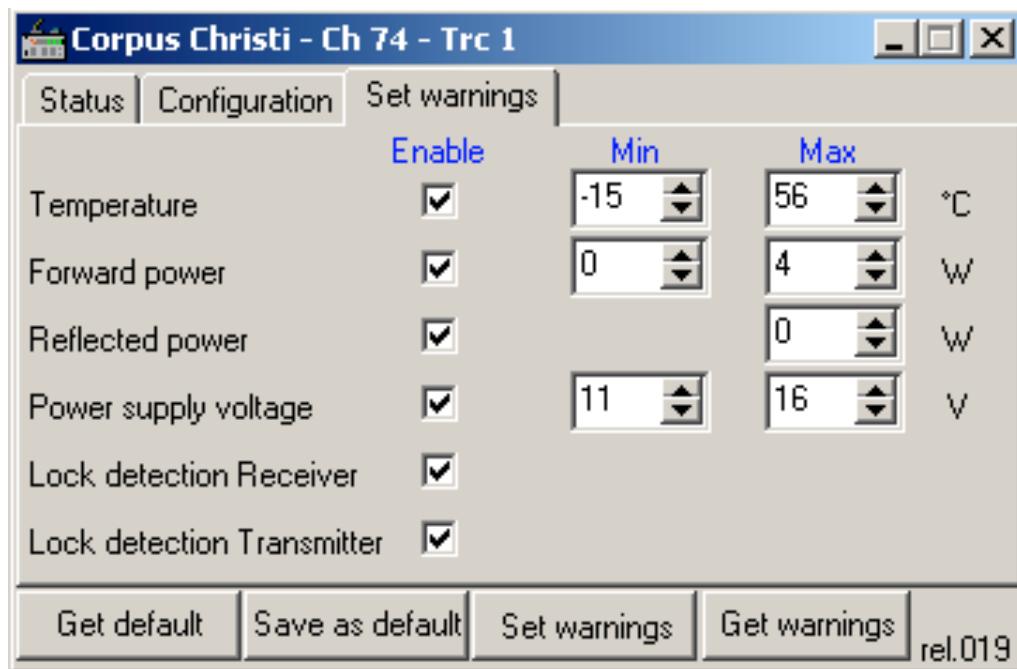
“Set config” will send the new configurations to the transceiver and in addition ask the transceiver for its current status. **NOTE** this configuration update will not include any changes from “Alarm settings” (see para. 10.7.3).

“Get config” will show the present transceiver configuration.

### 10.7.3 Transceiver unit - user warning settings

All supervised status measurements shown on the status page can be disabled by the user by clicking off the “Enable” setting. When “Disabled” the site still contacts the server and the server still sends this warning data to the database and to the NMS. However, The warning is not displayed by the NMS. i.e. it is just a fast way of locally setting the NMS user warnings equal to the hardware alarms.

If enabled the supervisor can set up the warning areas by adjusting the min. and max. values. The values can not exceed the hardware settings for the transceiver and the maximum value must always be at least 1 unit greater than the minimum value.



Transceiver alarm settings view

**NOTE** When selecting a new output power level, the user alarm settings for min and max output power will automatically be altered to – 29,2 % and + 12,2 % (ca. -1.5dB and +0.5dB) of the new selected level. Furthermore the alarm for max reflected shall also be altered to 13 % (ca. 9 dB) of the new output level. Hardware settings also change with

configuration to -35,0 % and +20,0 % (ca -4.5dB and +0.75dB) of the new selected level. For example, a new forward power setting of 40 W will change the limits of both measured forward power and reflected power.

**NOTE** Hardware settings are different for each transceiver (although quite similar).

The “Save as default” button will save the above user warning settings as default for this transceiver. At the same time an entry will be made into the database containing; user name, time/date and new transceiver warning values.

“Get default” will retrieve the last saved default user warning settings from the ini file.

“Set warnings” will send the new warning settings to the transceiver and in addition ask the transceiver for its current status.

“Get warnings” will show the present transceiver warning settings.

## 10.8 Add new user

This facility is only assessable, when logged on as “Administrator”.

Select “System”, “Add user”. The following window is now displayed.

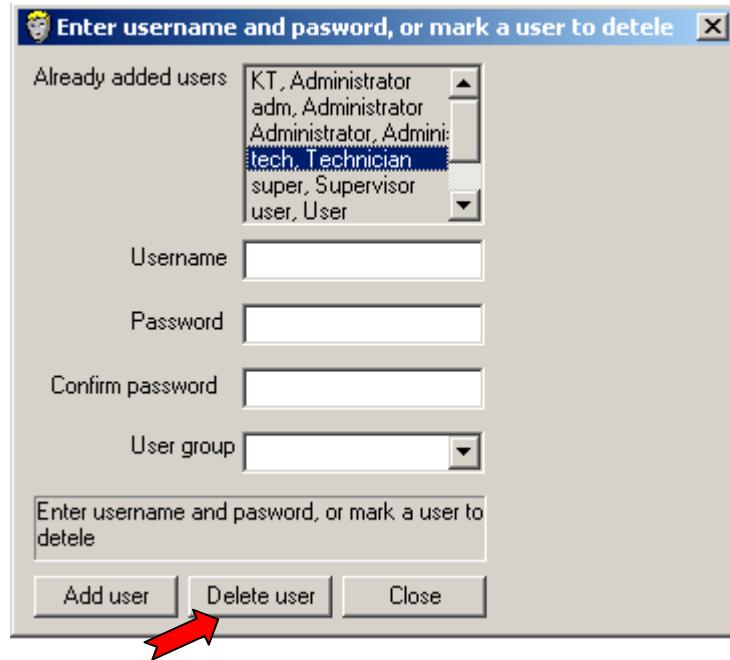


Add new user view

Fill out the dialogue boxes as directed, followed by clicking on “Add user”. The new user is now created.

## 10.9 Remove user

To remove a user, highlight with the mouse the relevant user and select “Delete user” the user is now removed.



Remove user view