Design and operation document for Alcatel-Lucent OmniPCXOffice/Enterprise in Maritime Environments

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Alcatel·Lucent
Enterprise

Table of contents

1 Design document for Alcatel-Lucent OmniPCXOffice/Enterprise in Maritime Environments

1.1 Introduction

This document gives a guideline on how to configure the Alcatel-Lucent OmniPCXOffice/Enterprise Call Server in order to conform to the DNV performance test report:
"Performance Test DNV Type Approval of Alcatel-Lucent OmniPCX Office/Enterprise. – Ref: PerfStnCheckListAlcatel."
This is a supplement to the Expert Documentation, Section 3: User Services.

System references

When installing an Alcatel-Lucent Call server, the system seize is to be declared in this way:

A-L -	O-	XX UAI	4	- YY SLI	4	- ZZ MIX	4/8/4	WW IP
			8		8			
	E-		16		16		4/4/8	

Table 1.1

O = OmniPCXOffice
E = OmniPCXEnterprise
XX = Number of Digital System set interface boards.
YY = Number of analogue internal lines interface boards
ZZ = Number of MIX boards
WW = Number of IP-Touch phones

The system version number is to be specified as

A – B – C

Where

A = Main system version = Common Hardware = 1
B = System Software version = 6 (example)
C = Patch version = 1 (example)

When new Main system version is introduced, A-L will inform DNV.

System features

The main function of the system is the two-way voice communication, ref DNV rules July 2007 Pt.3 Sec. 10. The systems contain many features not relevant for this test. None of these features, except what is described in the restrictions chapter (Chapter 2), have any influence on the two-way communication performance.

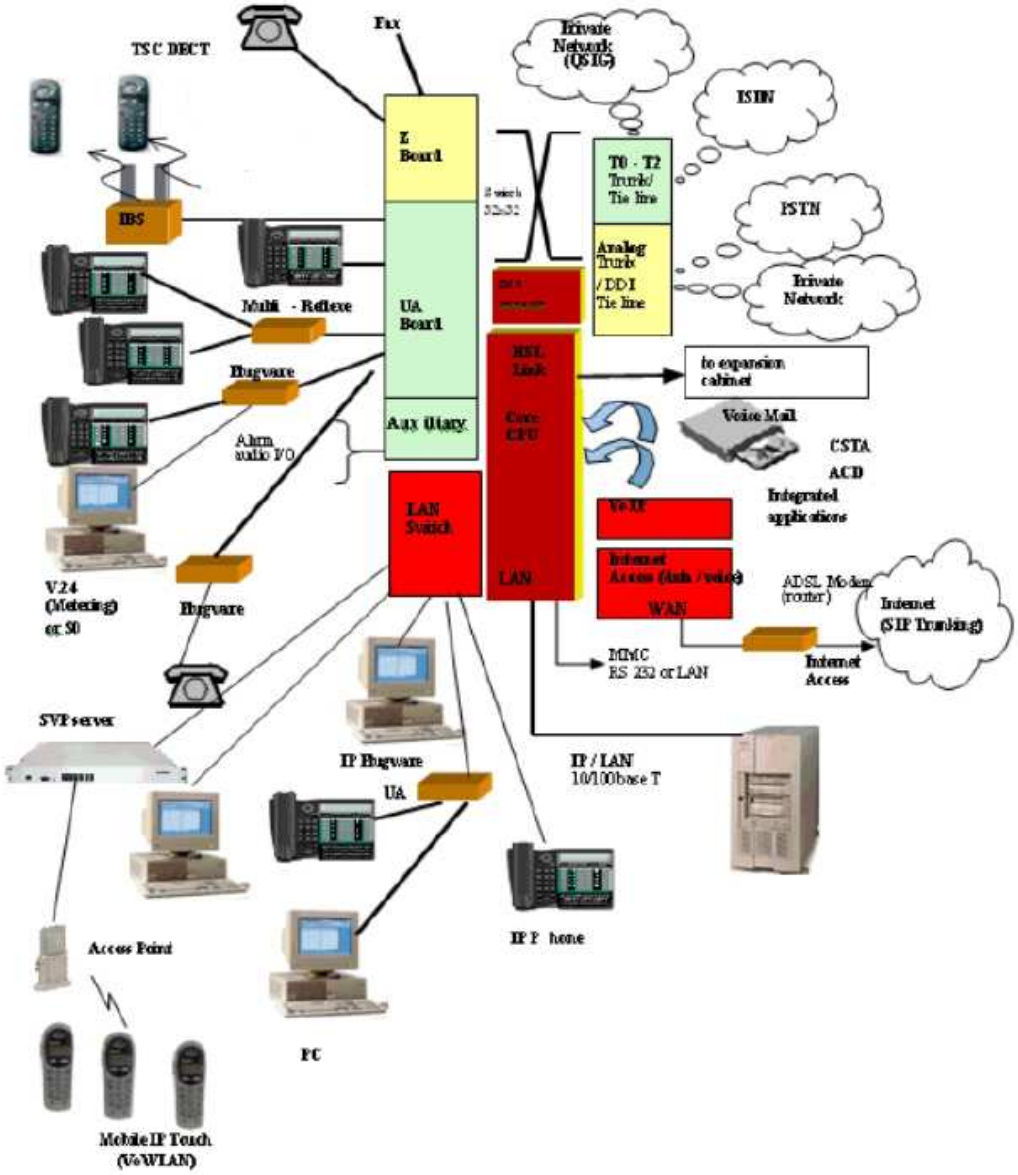


Fig 1-2

The parts of the system involved in two-way communication are:
Z-board = SLI 4, 8 or 16
UA board = UAI 4, 8 or 16
MIX board = MIX 4/8/4 or 4/4/8
LAN switch = SLANX4, LANX8 and LANX16 (for IP phones)
Core CPU and CoCU with VoIP daughterboard (for IP phones)

The T0 and T2 digital trunk boards, and Digital trunks, H323 or SIP, were present and operational during the EMC and Environmental testing, but not part of the two-way communication function testing.

Table 1 : Alcatel OXO – OXE approved Hardware for Maritime Certification:

System sets					
No	Name	Ref	No	Name	Ref
01	First	4004	06	IP Touch	4028
02	IP Touch	4008	07	A-L system set	4029
03	IP Touch	4018	08	IP Touch	4038
04	A-L system set	4019	09	A-L system set	4039
05	Premium	4020	10	IP Touch	4068
Common Interface boards					
01	Digital interface	UAI16-1	08	Analog trunk	APA-2
02	Digital interface	UAI8	09	Analog trunk	APA4
03	ISDN T0	BRA2	10	Analog intf.	SLI16-2
04	ISDN T0	BRA4	11	Analog intf	SLI8-1
05	QSIG T2	DLT2	12	Lan switch	LANX-8.16
06	PRA	T2	13	Slanx	SLANX4
07	MIX	4/8/4	14	MIX board	4/4/8
Common Hardware cabinets					
01	Cabinet L	M3	03	Module link kit	PowerMEX
02	Cabinet M	M2			
OXO Specific Hardware					
01	Processor	PowerCPU	03	ADPCM	ARMADA
OXE Specific Hardware					
01	Call server	CS-2	03	E&M Board	ATL-4
02	Media Gateway	MG			

1.2 Rack and cabinet installation

Rack installation requirements

Alcatel-Lucent OmniPCX Enterprise / OmniPCX Office cabinets are installed in a Rack including or not other type of equipment. To avoid negative influence of vibrations on the Alcatel-Lucent OmniPCX Enterprise / OmniPCX Office cabinets, the Rack must be equipped with four Damping Springs of type Socilec Polycal.

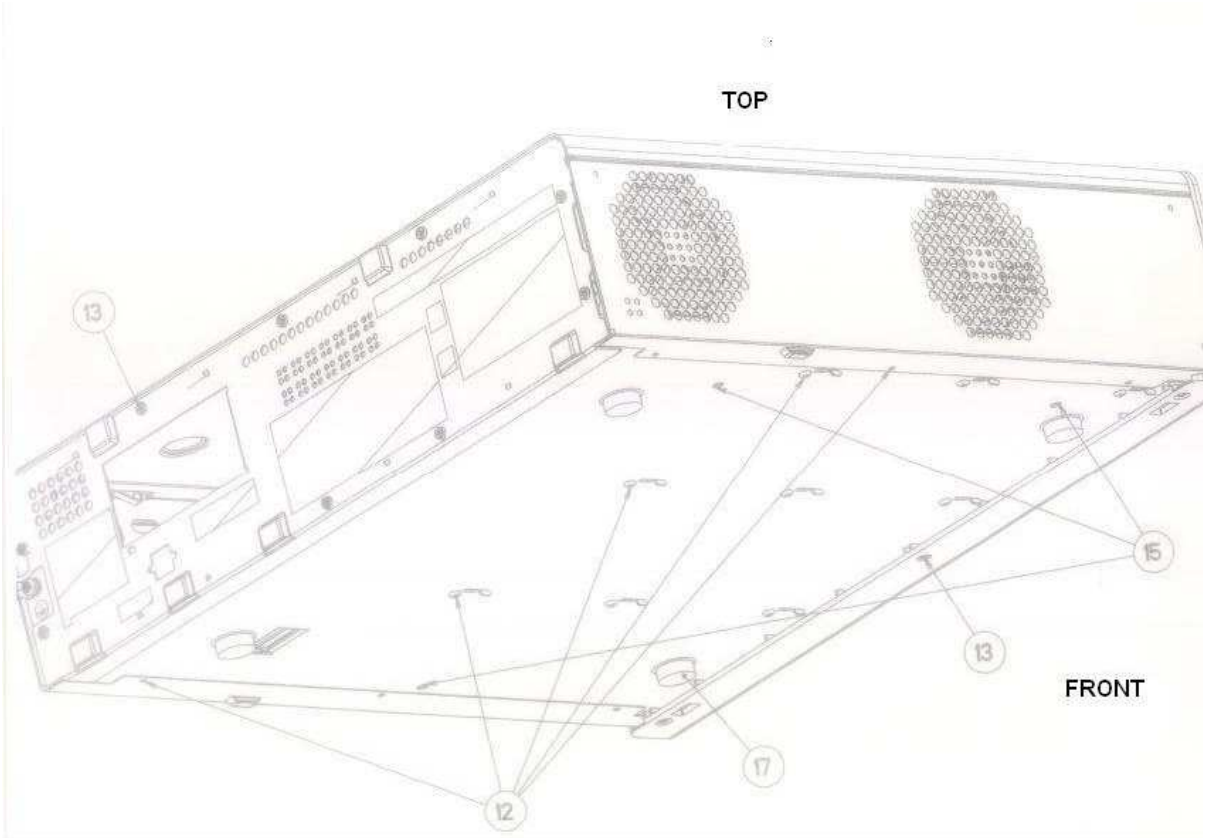
The Spring model is depending on the global weight of the Rack including Equipment (1/4th of global weight per Spring)
See product files on: www.socitec.fr

Cabinet installation requirements

The cabinets must be fixed so that no vertical or horizontal displacement of the Rack induces a cabinet move.

1. Fixing on a horizontal tray

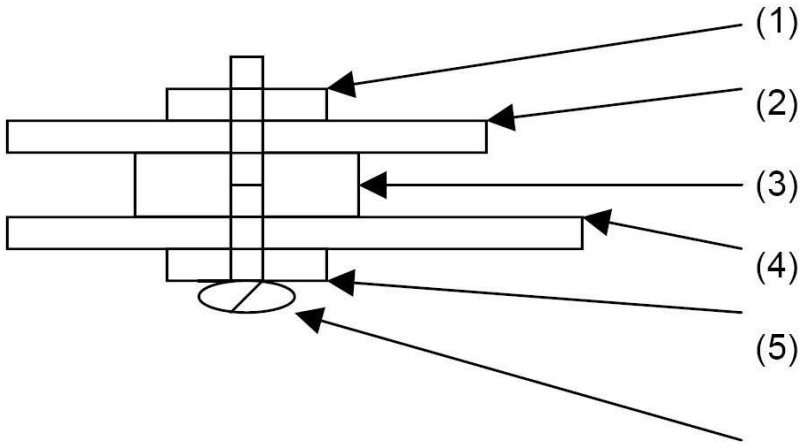
- Bottom plate of the Alcatel-Lucent OmniPCX Enterprise / OmniPCX Office racks



On the bottom plate we can see:
(15) 3x insert nuts
(17) 4x rubber feet

- Standard 19¨cabinet tray (horizontal tray)

The Tray corresponding to the 19¨cabinet is fixed to the 4 vertical supports of the cabinet via screws
The maximum weight of the Alcatel-Lucent OmniPCX Enterprise / OmniPCX Office racks being 15 kg, the chosen tray is dimensioned for a weight up to 75 kg.
Fixing of the Alcatel-Lucent OmniPCX Enterprise / OmniPCX Office rack on the tray

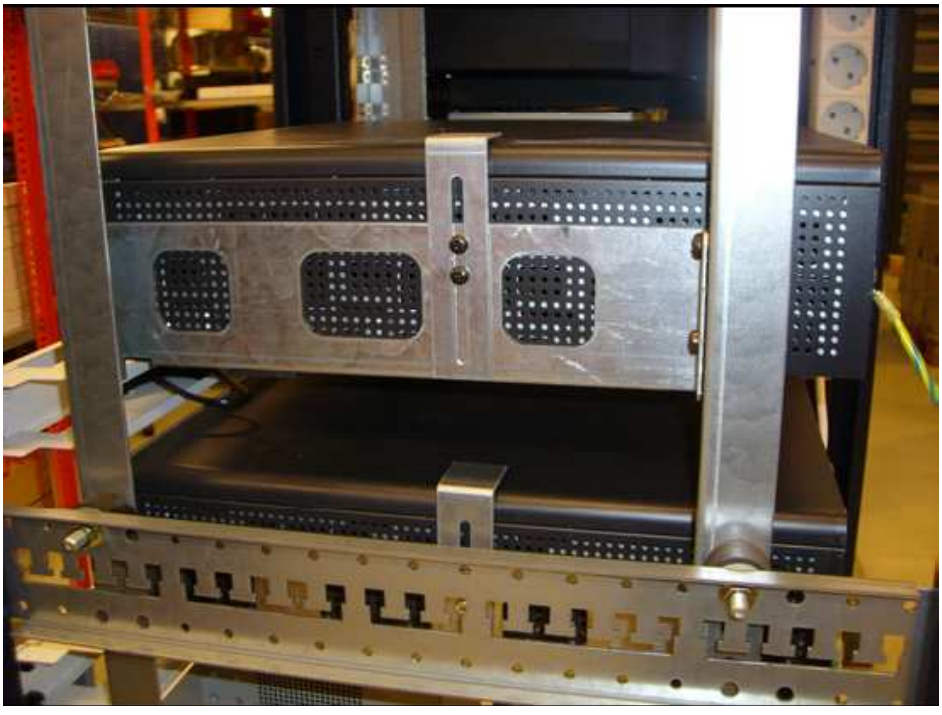


Item No	Type
1	Insert nut of Alcatel-Lucent OmniPCX Enterprise / OmniPCX Office rack
2	Bottom plate of Alcatel-Lucent OmniPCX Enterprise / OmniPCX Office rack
3	Metal Ring e= 7mm; diameters: 5mm int. /12 mm ext.
4	Cabinet Tray
5	Spring washer
6	Screw M4x16

This fixing is done on each of the 3 nuts
Note: The 4x Rubber feet (e= 8 mm) will stay between the bottom plate of the Alcatel-Lucent OmniPCX Enterprise / OmniPCX Office cabinets and the tray.

2. Use of side brackets

The left and right brackets are fixed to the front and back vertical support of the Rack.
The cabinets are supported by the brackets and locked via the locking studs.
Example of fixing with ELPRO rack:



1.3 Hard Disk

The systems delivered from factory are basically equipped with a Hard Disk
To be compliant with Maritime Environment and the corresponding MTBF, the Hard Disk must be replaced with a compatible Flash Disk.
Recommended Model:
2.5-Inch SATA NAND Flash SSD – 50GB
Reference: Micron MTFDDAK050MAR-1 J1AA

1.4 Cabling

The following table shows the requirements about cable choice and cable EMC filter
The cable filter has to be placed around the cable termination.
An example for the cable filter is: Wurth Ref: 742 711 1

Termination	Cable Type	Additional EMC Filter
BRA	STP Cat 5	No
PRA	STP Cat 5	Yes
UA	STP Cat 5	Yes
LANX	STP Cat 5	Yes
ATL	STP Cat 5	No
IP Touch 40x8	STP Cat 5	Yes
40x9	STP Cat 5	Yes
IP Touch 40x8 Power input (if powered without POE)		Yes

1.5 Restrictions

LAN

Alcatel-Lucent IP-Touch phones may be installed only if a separate LAN, used for voice only is available.

Wireless sets

No wireless system phones, Dect or WiFi, may be installed, as this has not been tested in the EMC and Environmental testing – Ref: 2006-3472.

Bluetooth handset

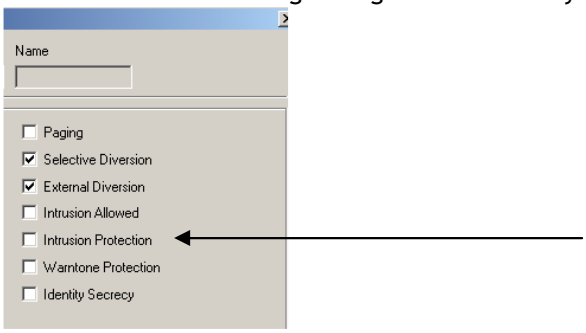
As an option, a “Bluetooth handset” is available for the System set 4068. This may not be used, as it has not been tested in the EMC and Environmental testing – Ref: 2006-3472.

Meet me conference

The “Meet me” conference may not be configured (requires a separate license), as this will be in conflict with the “Priority Intrusion” function being configured for the Priority users.

Protection against Intrusion

No users must be configured with “Protection against Intrusion”, as this will be in conflict with the “Priority Intrusion” function being configured for Priority users.



Emergency power supply

The internal battery capacity is dependent on the number of the lines. Typically 5 – 15 minutes. This does not fulfill the 30 minutes required for class notations, hence UPS is required. The UPS is not supplied by Alcatel-Lucent, but must be a DNV approved UPS.

Emergency light

“All extensions used for compliance with two-way voice communication requirements in DNV Rules July 2007 Pt. 3 Ch. 3 Sec. 10 B100 and C (as amended) shall either be of a type with internal light (type 4068) or to be installed in a location with proper external light.”
A list with the critical phone numbers must be easily available.

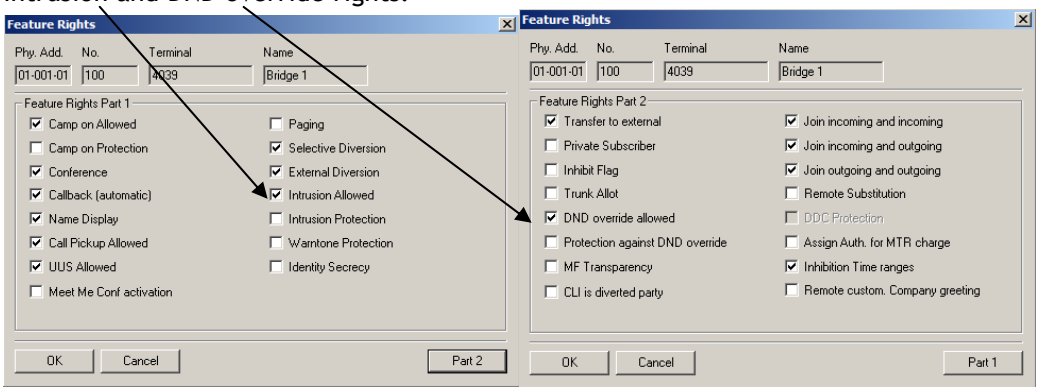
1.6 Priority user configuration

Introduction

A priority user will be able to “ intrude / break in” on an ongoing conversation.
This is done by using a fixed programmed key = F2 configured for this purpose. This key must be clearly marked: **Priority**

Priority Configuration

The priority users are to be configured with:
Intrusion and DND override rights.



In addition to the Softkey = “Intrude”, it is also recommended to configure a fixed key = F2, and clearly label this key “Priority”.

In addition the following System Misc. Other labels are to be modified:
IntuConf is modified from 01 to 00
FlagIntTon is modified from 01 to 00
With this modification, only the intruded party will hear the message given by the priority user.

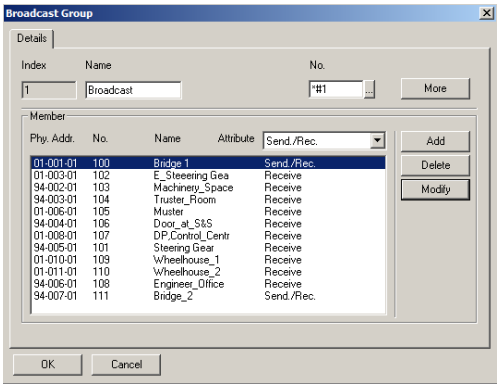
1.7 Broadcast group configuration

Introduction

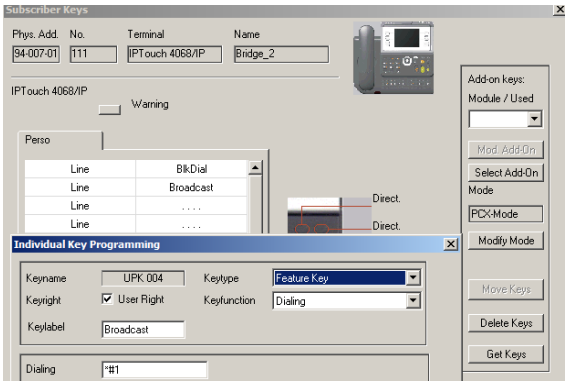
To be able to call all manned areas from bridge, ECR and control stations, a broadcast group containing all manned areas is configured.

Configuration

A broadcast group is configured containing all manned areas:



The sets allowed to activate broadcast are given Send/Receive feature right being the initiator of the call, all others have “Receive” feature right only.
To easy operation, a feature key labeled “Broadcast” may be configured.



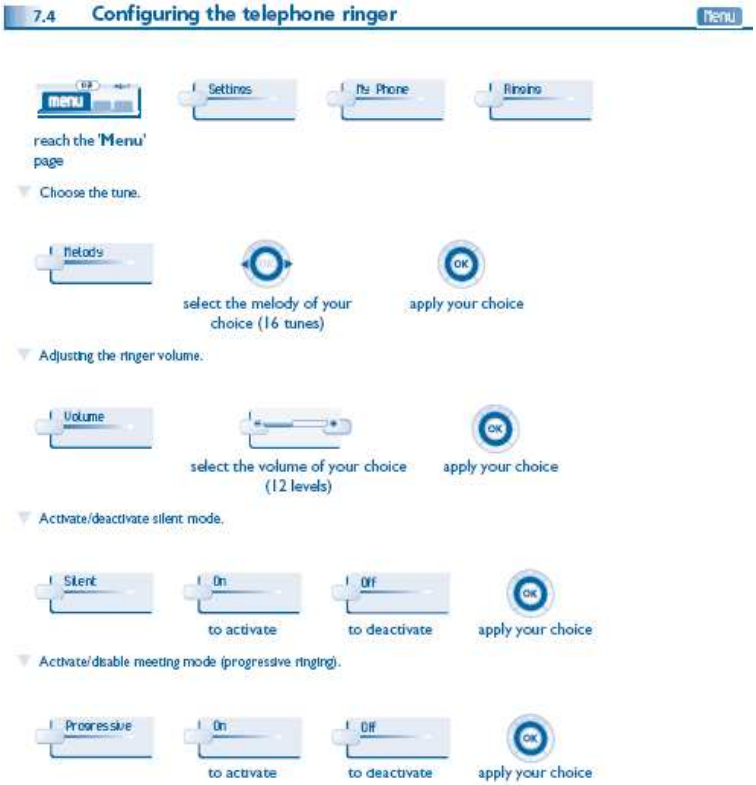
1.8 Two independent stations on the bridge

Introduction

The bridge shall have two independent stations. It shall be possible to distinguish incoming calls to these two stations by different ringing tones or light indications.

Configuration

As described in the user guide for the phone:



From Menu, activate Settings – Phone – Ringing – Melody – Select one of the 16 melodies for Bridge 1, and another one for Bridge 2. Volume may also be adjusted.

1.9 System set audio level

Introduction

The system sets have an audio level adjustments, using the + or – key as described in the sets user guide. To make sure it is possible to receive a message also with minimum level settings, the min. volume shall be increased for all installations (10-20%) and in addition, sound level must be adjusted in order to fit the location.

Configuration

This is done as described in the Alcatel-Lucent Technical Communication 80:
Noteworty_address_ed05.pdf, Section 4.6 page 18. – Gain UA Tab
Com-Type 4 --> Internal digital is to be adjusted.

1.10 Function key configuration

Configuration

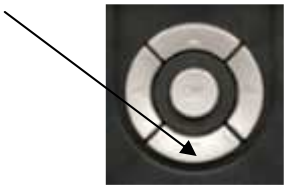
It is possible to configure direct call keys on the system sets to speed up, make more user friendly, internal call between selected system sets. The keys are used for setting up a call, and also to monitor the state of the other part:
Idle or Busy.
A guideline is given for programming keys for different required positions.

For the system sets 4028, 4029,4038,4039 and 4068 the key labels are configured in the system and the text downloaded to the set display.

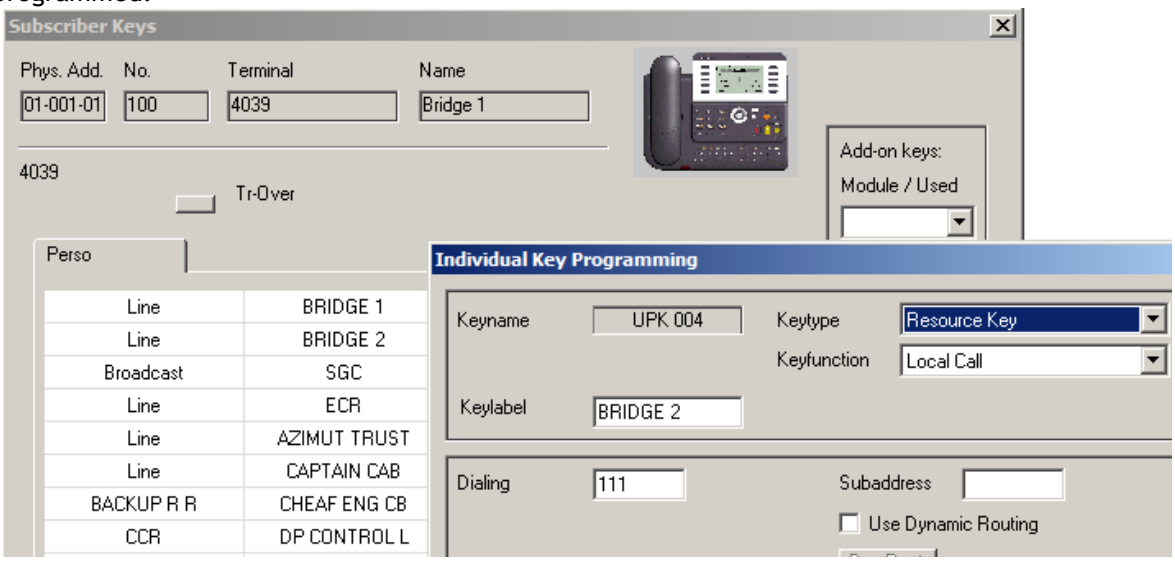
For the system sets 4018, 4019,4020, the keys are programmed, but the text needs to be typed on paper and mounted on the phone set. For details see the sets user guides.

For the system sets 4038,4039 and 4068:

Scroll down using the navigation key to see more names:

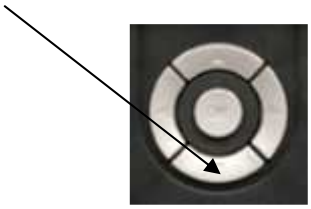


All keys programmed:

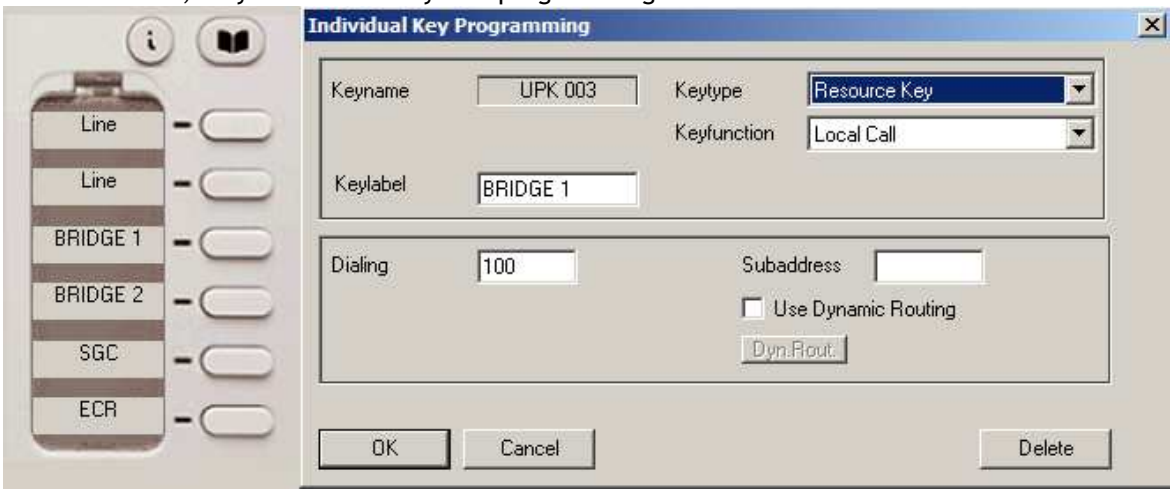


For the system sets 4028 and 4029:

Scroll down using the navigation key to see more names:



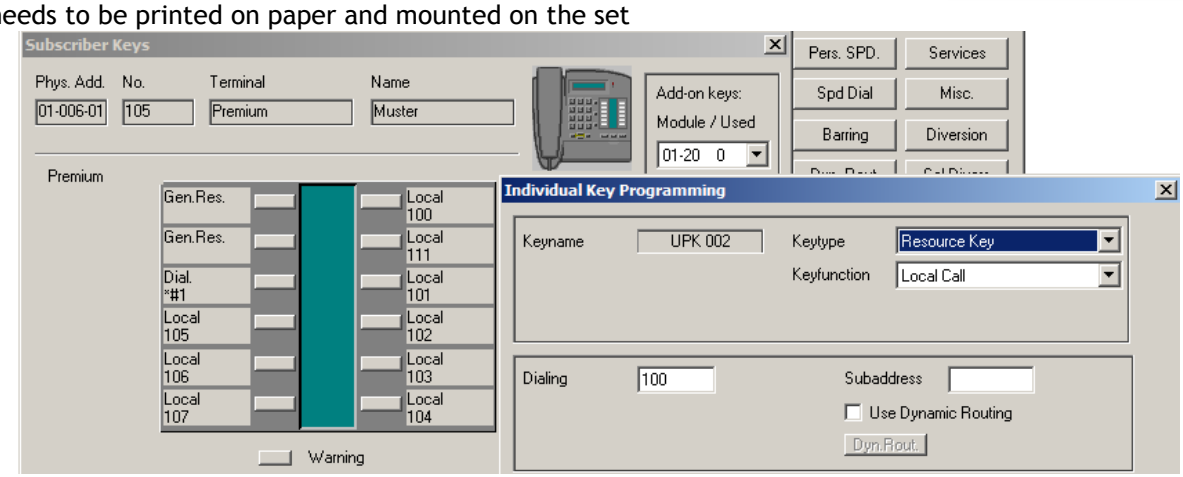
Set types 4018 and 4019, only 4 available keys for programming:



Labels needs to be printed on paper and mounted on the set

Set type 4020:

Labels needs to be printed on paper and mounted on the set



1.11 Two-way communication in Noisy Environment

Alcatel-Lucent do not supply this kind of equipment.
Alcatel-Lucent support interface units where an analogue phones may be connected (SLI 4, 8 and 16).

Sets to be used in noisy environments are normally equipped with special headset with noise cancelling microphone. Dedicated analogue sets connected to the SLI interface unit are used. Additional ringer may also be installed if required.

The sets must conform to the ETSI specifications:

TBR 21 (Electrical specification), and

TBR38 (Acoustic specification)

In addition they must be tested based on IEC60945 or DNV CN 2.4

2 Operation document for Alcatel-Lucent OmniPCXOffice/Enterprise in Maritime Environments

2.1 Introduction

This document is an addition to the standard user guides for the different system sets. It describes how to perform the dedicated features as described in the DNV performance test report:
"Performance Test DNV Type Approval of Alcatel-Lucent OmniPCX Office/Enterprise. – Ref: PerfStnCheckListAlcatel."

Alcatel OXO – OXE approved Hardware for Maritime Certification:

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05	QSIG T2	DLT2	12	Lan switch	LANX-8.16
06	PRA	T2	13	Slanx	SLANX4
07	MIX	4/8/4	14	MIX board	4/4/8
Common Hardware cabinets					
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02	Cabinet M	M2			

OXO Specific Hardware					
01	Processor	PowerCPU	03	ADPCM	ARMADA
OXE Specific Hardware					
01	Call server	CS-2	03	E&M Board	ATL-4
02	Media Gateway	MG			

2.2 Priority Users

The main function of a priority user is the ability to "break-in" on a busy subscriber to deliver a message.

Fig 2-1

The priority user calls the destination using the keypad or one of the programmed call keys (more programmed keys are available by using the "down" key on the navigator).
If the destination user is busy on the phone, this will be indicated in the display. The priority user can press the function key labeled "PRIORITY" and will break into the ongoing conversation.
The following sticker is needed at all extensions with priority: *"NOTE: When Intruding an ongoing call, the 3rd. user is not disconnected."*

2.3 Call all manned areas

Dedicated users (Bridge, ECR and Control Station) will have the feature right to call all manned areas.

The call is established by using the programmed feature key labeled “Broadcast”. 

2.4 Intercom mode

It is possible from a Priority user, to establish a two-way communication even if the called party is unable to answer the call.
During the ringing phase, the caller will see the text “Interphony” in the sets display. By pressing the key next to this text, the called party is automatically put in answer mode, and the caller may give a message through the loudspeaker in the called set.

2.5 Mute function key

This fixed programmed key has two functions:

1. - Microphone mute: By activating this key in conversation state, you will mute your own microphone. This is advised if you have a high background noise, to make it easier to hear the massage given from the called party. Pressing this key once more reconnects your microphone.

2. - Automatic answer mode: By activating this key in idle state, you put your phone in automatic answer mode. Any incoming calls will be automatically answered. Flashing light on the key indicates an activated key.

Fig 5-1 Mute key IP-Touch sets and UA 3G sets

2.6 Nautical Safety

All substations used for compliance with Nautical Safety requirements shall be either of type with internal light (4068) or if not then they should be installed in a location with external lighting independent of mains and emergency sources of power.

3 Priority stations User Guide

1. Call the intended recipient
2. If the recipient is busy, press the PRIORITY key (F2) to make intrusion.
3. Note: When a busy line is intruded the 3rd.person (s) in the previous communication is automatically put on hold. Only the called recipient can hear what the Priority user is saying.
4. When the Priority User station disconnects, the called party is automatically reconnected to the initial conversation.

NOTE:
For this feature to work correct, the
Noteworthy Address – Other Label
IntruConf = 00
FlagIntTon = 00