

MC9600

MATRA NORTEL COMMUNICATIONS

MC9600

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Titre : **FIXED TERMINAL INSTALLATION HANDBOOK**
NOTICE D'INSTALLATION DES TERMINAUX FIXES

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DOCUMENTS CONNEXES

DOCUMENTS APPLICABLES

Sans objet.

DOCUMENTS DE RÉFÉRENCE

Architecture Physique du Terminal MC9

MC9/TR/DD/0018 01.02/FR

Plan de développement CCP et BER/support simplifiés pour terminaux radio MC9600

MC9/PRO/DPL/0077 01.01/FR

System Requirement specification

PCG/SYS/DD/001 02.01/EN

System Requirement specification

PCG/SYS/DD/001 02.01/EN

Compte rendu de la revue gate 0A du CCP

MC9/PRO/GES/0105 01.01/FR

Technical conditions for radio fixed terminal

MC9/PRO/APR/0066

Référentiel de la documentation exploitant

XXX/PRO/DPL/iiii (selon projet)

Dictionnaire du système

MC9/PRO/APP/0001 03.03/FR

Cahier des charges de rédaction BER large bande

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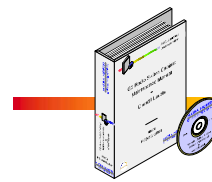
Dossier d'architecture des mobiles LB

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PAGE D'ÉVOLUTION INTERNE

VERSION	DATE	COMMENTAIRES	CHAPITRE CONCERNÉ	AUTEUR
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01.01/FR	18/07/97	Mise à jour suite à vérification du 11/07/97 CRR : MC9/TR/DJD/0174.	0 à 5	G. BOSSON
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01/04/QL	31/10/00	Passage de la notice en version quadrilingue et au format A5. Prise en compte des évolutions suivantes : • introduction du CCP Easy +, micro col de cygne ELNO, alimentation bitension et des terminaux Siemens, • modification de la composition des kits "poste principal" (suppression des guides et mémos), • ajout du § caractéristiques, • introduction des BER référence RA16XX.	0 à 5	G. BOSSON
01.05/01	21/08/01	Introduction du BER large bande version A', version B, CCP alphanumérique.	0 à 5	G. BOSSON
01.05/QL	11/09/01	Prise en compte des remarques suite à la vérification du document (voir compte-rendu MC9/TR/APP/00033 01.05/01/CRR). Ajout des traductions.	0 à 5	G. BOSSON

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Fixed Terminal Installation Handbook

*Notice d'Installation
des Terminaux Fixes*

*Instrucción de Instalación
de los Terminales Fijos*

*Installationsanleitung der
ortsfesten endgeräte*

MC9/TR/APP/00033 01.05/QL

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EQUIPMENT COMPLIANCE TO EUROPEAN STANDARDS

The equipment used for the configurations described in this document complies with the following European directive:

- "Radio Terminal and Telecommunications Equipment" (R&TTE) Directive no. 1999/5/CE.

Tests carried out have proven that the equipment complies with one or more of the following standards related to this directive: EN301489-5, EN55022, EN 55024, EN61000-3-2, EN61000-3-3, EN60950, or EN60335-1 and EN60335-29, EN300113-1/2 and recommendation 1999/519/CE (EMF).

During installation, the correct procedures must be followed in order to maintain compliance with European requirements.



CONFORMITÉ DES ÉQUIPEMENTS AUX DIRECTIVES EUROPÉENNES

Les équipements constituant les différentes configurations décrites dans ce document sont conformes à la directive européenne suivante :

- Directive "Équipements Terminaux Radio et de Télécommunications" (R&TTE) n° 1999/5/CE.

Les tests effectués ont prouvé que les équipements sont conformes à une ou plusieurs des normes suivantes relatives à cette directive : EN301489-5, EN55022, EN55024, EN61000-3-2, EN61000-3-3, EN60950 ou EN 60335-1 et EN60335-29, EN300113-1/2 et recommandation 1999/519/CE (EMF).

Lors des installations, il est impératif de respecter les règles de l'art en matière d'installation afin de conserver la conformité aux exigences européennes.



CONFORMIDAD DE LOS EQUIPOS CON LAS DIRECTIVAS EUROPEAS

Los equipos incluidos en las diferentes configuraciones descritas en el presente documento están en conformidad con la directiva europea siguiente:

- Directiva "Equipos Terminales Radio y de Telecomunicaciones" (R&TTE) n° 1999/5/CE.

Las pruebas efectuadas han demostrado que los equipos son conformes a una o a varias de las normas siguientes, relativas a dicha directiva: EN301489-5, EN55022, EN55024, EN61000-3-2, EN61000-3-3, EN60950 o EN 60335-1 y EN60335-29, EN300113-1/2 y recomendación 1999/519/CE (EMF).

Para efectuar la instalación se debe imperativamente respetar las reglas correspondientes para conservar la conformidad con las exigencias europeas.



ÜBEREINSTIMMUNG DER AUSRÜSTUNGEN MIT DEN EG-RICHTLINIEN

Die Ausrüstungen, aus welchen die verschiedenen in diesem Dokument beschriebenen Konfigurationen aufgebaut werden, entsprechen folgenden EG-Richtlinien:

- Richtlinie "Funkendgerät- und Fernmeldewesenausrüstungen" (R&TTE) Nr. 1999/5/CE.

Die an diesem Material erfolgten Tests weisen nach, daß die Ausrüstungen einer oder mehreren der folgenden Normen in Zusammenhang mit den o. g. Richtlinien entsprechen: EN301489-5, EN55022, EN 55024, EN61000-3-2, EN61000-3-3, EN60950 oder EN60335-1 und EN60335-29, EN300113-1/2 und Empfehlung 1999/519/CE (EMF).

Bei der Installation des Materials muß der Stand der Technik im Bereich der Installationsarbeiten zwingend eingehalten werden, um die Übereinstimmung des Materials mit den EG-Richtlinien zu wahren.

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1 INTRODUCTION

1.1 PURPOSE

The purpose of this handbook is to describe the hardware installation procedure for radio or line connected fixed terminals. The terminals concerned by this handbook are those operated from a CCP or a handset.

This document is applicable as from the phase defined in Document <0> (see Section 1.3).

1.2 DISTRIBUTION

This handbook is intended for specialists in fixed terminal installation.

1.3 REFERENCE DOCUMENTS

- <0> Referential of the Operating and Maintenance Documentation
PSXXXX (according to the project)
- <1> Specifications and Recommendations for the Sites of the PMR
system
MC9/SIT/APP/00003
- <2> TPS Technical Manual
PS8416 or PS8673
- <3> Modem Installation Handbook
PS8335
- <4> G2 Radio Switch Cabinet Description Manual
PS8409
- <5> CCP User Guide
PS8430 or PS8683

Handset User Guide
PS8427 or PS8679

1.4 ABBREVIATIONS

BER	: Boîtier Émission Réception (<i>radio transceiver</i>)
BERF	: Boîtier Émission Réception Filaire (<i>line-connected transceiver</i>)
CCP	: Command and Control Panel
CIF	: Carte Interface Fixe (<i>fixed interface board</i>)
LS	: LoudSpeaker
MSW	: Main SWitch
NS	: Not Shown
PMR	: Professional Mobile Radio
PP	: Poste Principal (<i>desktop set</i>)
RSW	: Radio SWitch
SSW	: Secondary SWitch
SWR	: Standing Wave Ratio
TPS	: Terminal Programming Station
UDT	: User Data Terminal
WB	: Wide Band

2 PRESENTATION

2.1 TERMINAL RANGE

The range of fixed terminals includes:

- the stationary radio terminal
 - the line-connected terminal
- } operated with a CCP
- the stationary radio terminal
 - the line-connected terminal
- } operated with a handset

Each of the fixed terminals above consists of a BER, a wall unit kit and a desktop kit plus any optional equipment.

2.2 COMPOSITION OF THE KITS

Table 2.1 lists the fixed terminal kits supplied by the manufacturer.

Each main kit is then presented in detail with its parts list and a set of illustrations.

Certain components can be supplied locally. These are listed in Section 2.4.

TYPE OF TERMINAL	OPERATING COMPONENT	INSTALLATION COMPONENT		
STATIONARY RADIO TERMINAL TR1004	BER RADIO TRANSCEIVER VERSION A RA1350 or RA1620	WALL UNIT KIT RB1251	HANDSET DESKTOP SET KIT – HT0394	INSTALLATION HANDBOOK – PS8433E
LINE– CONNECTED TERMINAL TR1005	LINE– CONNECTED TRANSCEIVER RA1351 or RA1617	WALL UNIT KIT RB1251	HANDSET DESKTOP SET KIT – HT0394	INSTALLATION HANDBOOK – PS8433E
STATIONARY RADIO TERMINAL TR1012	BER RADIO TRANSCEIVER VERSION B RA1585 ot RA1621	WALL UNIT KIT RB1251	SMART CCP DESKTOP SET KIT – HT1109A, C or D	INSTALLATION HANDBOOK – PS8433E
LINE– CONNECTED TERMINAL TR1013	LINE– CONNECTED TRANSCEIVER RA1351 or RA1617	WALL UNIT KIT RB1251	SMART CCP DESKTOP SET KIT – HT1109A, C or D	INSTALLATION HANDBOOK – PS8433E
STATIONARY RADIO TERMINAL TR1038	BER RADIO TRANSCEIVER VERSION B RA1585 ou RA1621	WALL UNIT KIT RB1251	EASY+ CCP DESKTOP SET KIT– HT1316	INSTALLATION HANDBOOK – PS8433E
LINE– CONNECTED TERMINAL TR1039	LINE– CONNECTED TRANSCEIVER RA1351 or RA1617	WALL UNIT KIT RB125	EASY+ CCP DESKTOP SET KIT – HT1316	INSTALLATION HANDBOOK – PS8433E

Tableau 2.1 FIXED TERMINAL COMPONENTS (1/2)

TYPE OF TERMINAL	OPERATING COMPONENT	INSTALLATION COMPONENT		
WB STATIONARY RADIO TERMINAL TR1050	WB BER RADIO TRANSCEIVER VERSION A' RA1630 to RA1633	WALL UNIT KIT RB1251	HANDSET DESKTOP SET KIT – HT0394	INSTALLATION HANDBOOK – PS8433E
WB STATIONARY RADIO TERMINAL TR1051	WB BER RADIO TRANSCEIVER VERSION B RA1634 to RA1637	WALL UNIT KIT – RB1251	SMART CCP DESKTOP SET KIT – HT1109E or F	INSTALLATION HANDBOOK – PS8433E
WB STATIONARY RADIO TERMINAL TR1052	WB BER RADIO TRANSCEIVER VERSION B RA1634 to RA1637	WALL UNIT KIT – RB1251	EASY+ CCP DESKTOP SET KIT – HT1316	INSTALLATION HANDBOOK – PS8433E

Table 2.1 FIXED TERMINAL COMPONENTS (2/2)

2.2.1 Operating components

2.2.1.1 Description of the different versions of the BER

Two versions of BER radio transceiver are available: the BER radio transceiver and the line connected BER transceiver for each type of link (radio or line connected) between the fixed terminal and the PMR network.

The BER radio transceiver has the following versions:

- The BER radio transceiver version A: this model is the first generation BER and is used with fixed terminals operated using a handset,
- The wide band BER radio transceiver version A', which is a new model using new technology. This BER is perfectly compatible with BER version A and will eventually replace it,
- The BER radio transceiver version B: this model is an upgrade of BER version A; it is used with fixed terminals operated using a CCP,

- The wide band BER transceiver version B, which like the BER version A' is a new model. This BER is perfectly compatible with BER version B and will eventually replace it.

There is only one model of the line connected BER.

All models have a similar physical housing, but have different numbers of connectors on the housing.

There are several references for each BER version depending on the network (encrypted or not), the network frequency band and, for encrypted networks, the type of encryption.

2.2.1.2 BER radio transceiver version A (Plate A-I)

The BER radio transceiver version A (item 1) can be supplied using the reference RA1350 or RA1620. It has five connectors:

- a Sub-D 25-pin male operation connector (item 5),
- a DIN 12-pin female handset connector (item 4) (not used on fixed terminals),
- a Sub-D 9-pin female test connector (item 3) (not used on fixed terminals),
- a Sub-D 9-pin male battery pack connector (item 2) (not used on fixed terminals),
- a TNC female antenna connector (item 6).

2.2.1.3 Wide band BER radio transceiver version A' (Plate A-I)

The reference of the wide band BER transceiver version A' (item 7) is RA1630, RA1631, RA1632 or RA1633. It has four connectors:

- a Sub-D 25-pin male operation connector (item 5),
- a DIN 12-pin female handset connector (item 9) (not used on fixed terminals) protected by a watertight captive plug,
- a Sub-D 9-pin female test connector (item 8) (not used on fixed terminals) protected by a watertight captive plug,
- a TNC female antenna connector (item 6).

The wide band BER radio transceiver version A' has a securing flange (item 10) attached by two cross-head screws (item 12) and washers (item 11). The securing flange is needed when the wide band BER radio transceiver version A' is fitted in the BER support in a mobile terminal and must be removed when fitted in a wall unit.

2.2.1.4 BER radio transceiver version B (Plate A-II)

The BER radio transceiver version B (item 1) can be supplied using the reference RA1585 or RA1621. It has three connectors:

- a Sub-D 25-pin male operation connector (item 3),
- a Sub-D 9-pin female test connector (not used) (item 2) (not used on fixed terminals),
- a TNC female antenna connector (item 4).

2.2.1.5 Wide band BER radio transceiver version B (Plate A-II)

The reference of the wide band BER radio transceiver version B (item 5) is RA1634, RA1635, RA1636 or RA1637. It has three connectors:

- a Sub-D 25-pin male operation connector (item 3) ,
- a Sub-D 9-pin female test connector (item 6) (not used on fixed terminals) protected by a watertight captive plug,
- a TNC female antenna connector (item 4).

2.2.1.6 Line-connected transceiver (Plate A-II)

The line-connected transceiver RA1351 (item 7) has four connectors:

- a Sub-D 25-pin male operation connector (item 3),
- a DIN 12-pin female handset connector (not used) (item 8),
- a Sub-D 9-pin female test connector (not used) (item 2),

The line-connected BER transceiver RA1617 has no DIN 12-pin female handset connector (item 8).

2.2.2 Installation components

2.2.2.1 Radio or line-connected wall unit kit – RB1251 (PlateA–III)

DESIGNATION	QUANTITY	REFERENCE	ITEM
Wall unit chassis assembly	1	HR3766	5
Cover assembly	1	HR3719	1
Securing bracket	1	PA2337	NI
CIF board	1	HJ2653	2
12 V 5 A – 48 V 0,25 A bi-voltage power supply	1	HR1419	10
BER–CIF board shielded multiconductor cable	1	DH158	3
Connection kit containing:	1	HR3715	NI
• 2 phase female mains connector + earth	1		
• STOCKO 2-pin female connector	1		
• STOCKO 8-pin female connector	1		
• elbowed TNC coaxial connector (only for fixed radio terminals)	1		
TNC male – TNC female coaxial cable (for fixed radio terminals only)	1	HG2803	4
Drilling template	1	ME2344	9

Table 2.2 WALL UNIT KIT COMPONENTS

2.2.2.2 Smart CCP desktop set kit – HT1109A, C or D (Plate A–IV)

DESIGNATION	QUANTITY	REFERENCE	ITEM
A25 Smart CCP (25 keys)	1	53.1952.570.00 or 53.1952.571.00 ⁽¹⁾	1
ELNO gooseneck microphone	1	HC1054A	10
or		or	or
Pear-shaped microphone		HC1012	11
CCP desktop support containing:		53.1559.020.00	4
• CCP holder	1		
• securing screws (not used)	2		
• CCP extraction keys	2		
Desktop plate containing:		53.1559.028.00	5
• cast iron plate	1		
• securing screws	2		
Fixed RT / CCP desktop link cable (length: 7m)	1	HG4469A	6

(1) The reference depends on the type of logo on the CCP.

Table 2.3 SMART CCP DESKTOP SET KIT COMPONENTS – HT1109A, C OR D

2.2.2.3 Smart CCP desktop set kit – *HT1109E or F* (Plate A–IV)

DESIGNATION	QUANTITY	REFERENCE	ITEM
A25 Smart CCP (25–key alphanumeric keypad)	1	53.1952.030.00 or 53.1952.035.00 or 53.1952.050.00 or 53.1952.070.00 ⁽¹⁾	2
ELNO gooseneck microphone or Pear–shaped microphone	1	HC1054 or HC1012	10 or 11
CCP Desktop support comprising:	1	53.1559.019.00	4
• CCP holder	1		
• securing screws (not used)	2		
• CCP extraction keys	2		
Desktop plate comprising:		53.1559.028.00	5
• cast iron plate	1		
• securing screws	2		
Fixed RT / CCP desktop link cable (length: 7m)	1	HG4469A	6

(1) The reference depends on the type of logo on the CCP.

Table 2.4 SMART CCP DESKTOP SET KIT COMPONENTS – HT1109E OR F

2.2.2.4 Easy + CCP desktop set kit – HT1316 (Plate A–IV)

DESIGNATION	QUANTITY	REFERENCE	ITEM
A9 Easy+ CCP (9 keys)	1	53.1952.575.00 or 53.1952.040.00	3
ELNO gooseneck microphone	1	HC1054A	10
CCP desktop support containing:	1	53.1559.019.00	4
• CCP holder	1		
• securing screws (not used)	2		
• CCP extraction keys	2		
Desktop plate containing:	1	53.1559.028.00	5
• cast iron plate	1		
• securing screws	2		
Fixed RT / CCP desktop link cable (length: 7m)	1	HG4469A	6

Table 2.5 EASY+ CCP DESKTOP SET KIT COMPONENTS

2.2.2.5 Handset desktop set kit – HT0394 (Plate A–IV)

DESIGNATION	QUANTITY	REFERENCE	ITEM
Handset	1	RA1354	9
Handset desktop set bracket	1	RA1355	8
Fixed RT / CCP desktop handset link cable (length: 5m or 7m depending on the version)	1	HG0511	7

Table 2.6 HANDSET DESKTOP SET KIT COMPONENTS

2.2.3 Loudspeaker kit – HC1040 (optional) (Plate A–V)

The loudspeaker kit can be supplied as an option.

This kit comprises an assembly of two loudspeakers (item 3), each fitted with a cable, four securing screws (item 4) and a positioning template (item 2) with installation instructions (inside flap of the packing box (item 1)).

Note: The loudspeaker kit is used to equip two fixed terminals.

2.3 SPECIFICATIONS

2.3.1 Physical specifications

Dimensions of BER (h x w x d):

- 220 x 43 x 168 mm

Dimensions of CCP (h x w x d):

- 48 x 172 x 51 mm

Dimensions of CCP desktop support (h x w x d):

- 80 x 208 x 45 mm

Dimensions of handset (h x w x d):

- 205 x 53 x 38 mm

Dimensions of handset desktop bracket (h x w x d):

- 215 x 95 x 270 mm

Dimensions of wall unit (h x w x d):

- 450 x 540 x 87 mm

Weight of BER:

- 1.7 kg

Weight of wall unit:

- 6.8 kg without BER
- 8.5 kg with BER

Length of link cable:

- Fixed RT / CCP desktop link cable (HG4469): 7 m
- Fixed RT / CCP desktop handset link cable (HG0511): 5 m or 7 m depending on the reference

Length of handset spiral cable:

- slack: 600 mm

2.3.2 Electrical specifications

Power supply:

- mains: 230 V $\pm$ 15 %, 50 Hz $\pm$ 10 %
110 V $\pm$ 20 % –10 %, 60 Hz $\pm$ 5 %
(wide input range converter)
Power supply rating: TT or TN network

Power supply protection:

- mains: 2 x 2 A time fuses / rated voltage 250 V (type: T 2A H 250V)

2.3.3 Specifications of internal interfaces

Antenna output

- TNC female socket
- Impedance: 50 Ω

2.3.4 Environmental specifications

Operation:

- Dry heat : standard IEC 68–2–2 + 40 °C, 30% RH, 16 h
- Cold : standard IEC 68–2–1 0 °C, 16 h
- Humid heat : standard IEC 68–2–56 + 40 °C, 95 % RH,
21 days

Storage/transport:

- Dry heat : standard IEC 68–2–2 + 70 °C, 30% RH, 72 h
- Cold : standard IEC 68–2–1 – 40 °C, 72 h
- Humid heat : standard IEC 68–2–30 + 25 °C, 98 % RH,
+ 55 °C, 93% RH,
6 cycles 144 h

2.4 EQUIPMENT SUPPLIED LOCALLY

This section gives the characteristics of the equipment which can be supplied locally.

This equipment must be comply with the following standard:

- IEC 1024–1–1 : Protection of structures against lightning.

2.4.1 Antenna (fixed radio terminal)

The antenna is specific to each customer and must be specially adapted to the frequency bands of the PMR system.

The characteristics of the antenna must be as follows:

- permissible power : 20 W,
- SWR : < 1.5,
- impedance : 50 Ω ,
- gain : > 0 dB relative to 1/4 wave whip.

2.4.2 Antenna cable (fixed radio terminal)

The antenna cable must be a coaxial screened double braided cable, RG214 type for example.

The characteristics of the antenna cable must be as follows:

- impedance : 50 Ω ,
- cable loss : < 1 dB,
- connector : TNC male.

2.4.3 Power supply cable

The power supply cable must be a non-screened cable with 3 wires (phase, neutral and ground) of 0.5 mm².

The power supply cable is connected to the power supply via the grounded mains supply connector included in the connection kit.

It is also possible to use a standard PC type cable.

2.4.4 RSW – wall unit link cable (fixed line-connected terminal)

The RSW – wall unit link cable must be:

- a screened simple braided cable, RG250 type for example, for a cable length less than 15 meters,
- a screened simple braided cable with low cable loss, H-KERN type for example, for a cable length more than 15 meters.

It must be a 4-pair cable with screening for a V11 connection.

The cable is connected to the wall unit via the STOCKO 8-pin female connector included in the connection kit and other end of the cable is connected to the MSW/SSW via a Sub-D 9-pin male connector (local supply).

If a modem is used to provide the link, the link cable is supplied with the modem and has the reference SPE17 (see Section 1.3, Document <3>).

2.4.5 External loudspeaker (optional)

The mobile terminal can use an external loudspeaker. The loudspeaker can be supplied either by the manufacturer (see Section. 2.2.3) or locally. If supplied locally, it must have the following characteristics:

- power : 15 W,
- impedance : 4 Ω .

The loudspeaker cable must be an audio screened or non-screened cable with two wires. The cable is connected to the wall unit via the 2-pin STOKO female connector included in the connection kit.

2.4.6 User Data Terminal (optional)

The User Data Terminal is a laptop PC.

The UDT cable must be a screened simple braided cable, RG250 type for example. The cable is connected to the desktop as follows:

- via a Sub-D 9-pin male connector for a desktop set with handset,
- via the HG4280 cable for a desktop set with CCP.

3 SAFETY PRECAUTIONS

This chapter should be read before installing any terminals.

On-site work should be carried out by qualified staff.

No other operations other than those described in this document should be carried out.

The installation site must comply with the specifications given in Document <1> (see Section. 1.3).

The presence of voltages greater than 48 V requires particular attention on the part of Installation engineers who should make sure that these voltages are not present when they are working on equipment (unless otherwise indicated).

For all fixed terminals, the mains supply is derived from the 115 V or 230 V mains supply via the power supply cable.

In case of DANGER, disconnect the power supply cord.

Terminal power supplies are protected by two 250 V – 2 A (5 x 20) time fuses (see Plate A–III, item 6).

Before beginning an installation, determine the locations of the various parts of the terminal (desktop set, wall unit, antenna, cable routing, etc.).

Cable routing should be determined with great care. As far as possible, separate the antenna and desktop set –wall unit link cable routings, in order to avoid coupling effects.

The time devoted to determining the right locations will be compensated for by the time saved in carrying out the work.

Disconnect power supply cables to prevent accidental short-circuits during work on the electrical circuit.

Cables should be laid under plinths or linings to provide effective protection against physical damage. They should be routed well away from electrical cables to prevent induced interference.

Do not lay cables over sharp metal edges or near hot sections.

Do not shorten the cables.

Cables should be secured along their route. Check that they will not be pinched by other moving parts.

When securing the terminal, take account of the coaxial cable bending which should comply with manufacturer standards.

Any radio or line-connected link with one or more external buildings must be fitted with the appropriate line protections at the entry to each building.

4 INSTALLATION

4.1 TOOLS AND PRODUCTS

For fixed terminal installation, the tools and products required are as follows:

- a standard tool kit (screwdrivers, open-end wrenches, crimping pliers, wire strippers, etc.),
- an electric drill with a set of drills,
- a multimeter,
- a TPS (see Section 1.3, Document <2>).

4.2 INSTALLATION BLOCK DIAGRAMS

4.2.1 Fixed radio terminal or line-connected terminal with CCP (Figure 4.1)

The figure below shows the installation block diagram of a fixed radio terminal or line-connected terminal with CCP.

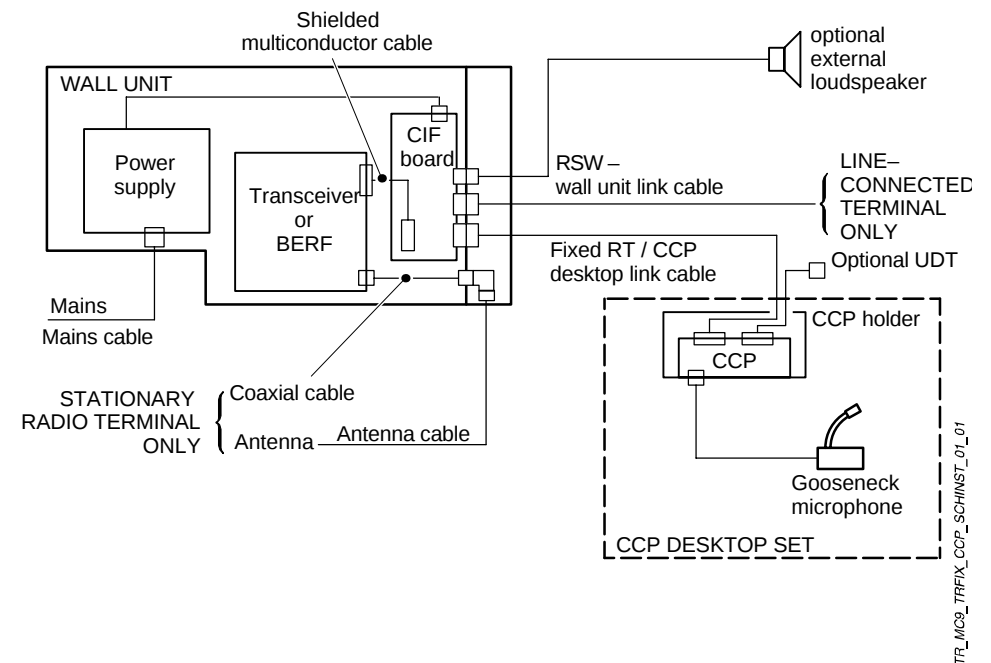


Figure 4.1 FIXED TERMINAL WITH CCP INSTALLATION BLOCK DIAGRAM

4.2.2 Fixed radio terminal or line-connected terminal with handset (Figure 4.2)

The figure below shows the installation block diagram of a fixed radio terminal or line-connected terminal with handset.

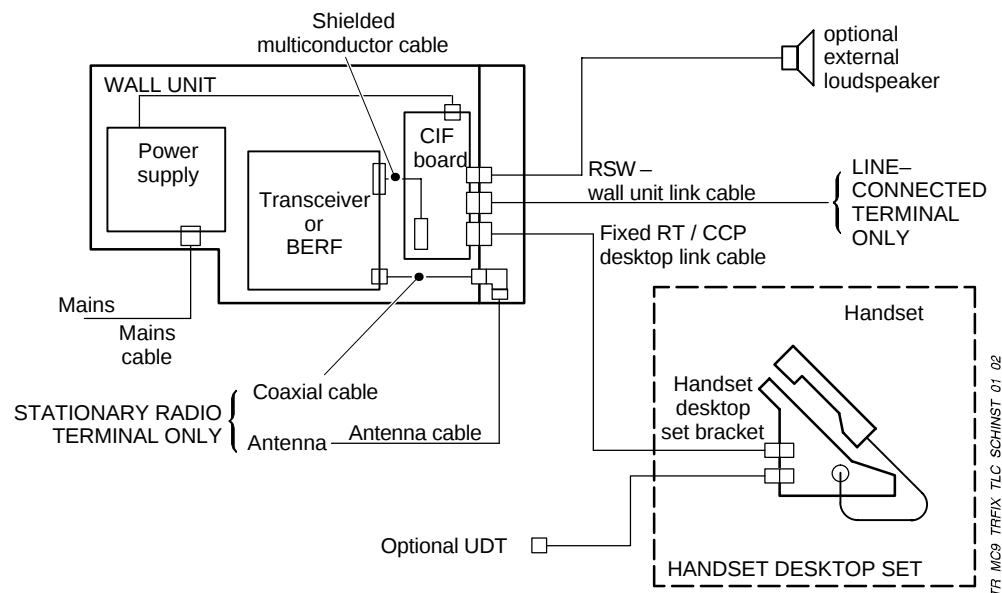


Figure 4.2 FIXED TERMINAL WITH HANDSET INSTALLATION BLOCK DIAGRAM

4.3 EQUIPMENT INSTALLATION PROCEDURES

4.3.1 Antenna (fixed radio terminal)

4.3.1.1 *Recommendations for installing the fixed radio terminal antenna*

The terminal must be associated with a specific antenna for its frequency band. The antenna should be installed in conformity with local climatic standards.

If several antennas are installed on the same building, the antenna location must be chosen according to the instructions detailed in Section 4.3.1.2.

Note: The transceiver is protected in the event of accidental switchover to transmission without an antenna.

CAUTION: Whenever work has been carried out on the antenna circuit, it is essential to check that the SWR (Standing Wave Ratio) remains less than the value 1.5.

4.3.1.2 *Installation of multiple antennas*

When several fixed radio terminals are located on the same site, several antennas must be installed on the same building.

On these multiple installation sites, precautions should be taken to avoid radio links being subjected to interference.

Problems associated with the simultaneous operation of weakly decoupled antennas, generally have three causes:

- intermodulation of two transmitters interfering with the reception of a third transmitter,
antenna decoupling in excess of 18 dB preventing intermodulation,
The background noise emitted in the reception band is:
 - for G1 BERs (radio version A and version B) : – 125 dBm/Hz, i.e. – 86 dBm in one channel,

- for wide band BERs:
 - ◆ – 80 dBm if the duplex gap is between 5 and 10 MHz,
 - ◆ – 87 dBm if the duplex gap is between 10 and 20 MHz,

Ideal scenario: the background noise represents an antenna noise factor of 8 dB (an uncluttered rural area). The decoupling required to prevent any deterioration is 35 dB.

Normal scenario: the background noise represents an antenna noise factor of 20 dB (semi-urban area).

The required decoupling is 30 dB.

- desensitizing of the receiver by the signal transmitted by another radio terminal.

If the radio terminals in question are all operating within the same base station connected communication and are at the limit of the coverage area, the decoupling must be 40 dB for a duplex gap of between 10 and 20 MHz and 50 dB for a duplex gap of between 5 and 10 MHz.

If they are operating within different base station connected communications and are at the limit of the coverage area, the decoupling must be 50 dB for a duplex gap of between 10 and 20 MHz and 60 dB for a duplex gap of between 5 and 10 MHz.

If the site is not located at the coverage limit, the 30 dB requirement may be made less stringent.

Note: Direct mode on multiple installation sites.

It is not possible to make direct mode calls, without desensitizing neighbouring receivers in BS connected mode.

4.3.1.3 Antenna cable

- Route the antenna cable near to the wall unit location following the safety precautions given in Chapter 3.
- On the cable end, connect an elbowed TNC male coaxial connector (local supply).

4.3.2 MSW/SSW – wall unit link cable (line-connected terminal)

Note: If a modem is used, use cable SPE17 supplied with the modem (see Section 1.3, Document <3>).

- Route the cable near to the location of wall unit following the safety precautions given in Chapter 3.
- On the cable ends, connect the STOCKO 8-pin female F connector included in the connection kit and the Sub-D 9-pin male connector (local supply). Follow the connection layout given in Table 4.1.

Note: The length of the cable must not exceed 300 meters.

- Connect the cable to the connector on the radio switch (see Section 1.3, Document <4>) or to the modem (see Section 1.3, Document <3>).

LINE CONNECTED FIXED TERMINAL SIDE STOCKO 8-PIN FEMALE CONNECTOR				RADIO SWITCH SIDE Sub-D 9-PIN MALE CONNECTOR		
NAME OF SIGNAL	I/O	DESIGNATION	PIN NUMBER	PIN NUMBER	NAME OF SIGNAL	
CO-EDP	O	Data (Positive)	1	} 1 pair {	1	TXF
CO-EDM	O	Data (Negative)	2		6	NTXF
CO-RDP	I	Data (Positive)	3	} 1 pair {	2	RXF
CO-RDM	I	Data (Negative)	4		7	NRXF
CO-HRP	I	Clock (Positive)	5	} 1 pair {	4	HRF
CO-HRM	I	Clock (Negative)	6		9	NHRF
Masse		Earth	7	} 1 pair {	3	Masse
Blindage		Shielding	8		8	Blindage

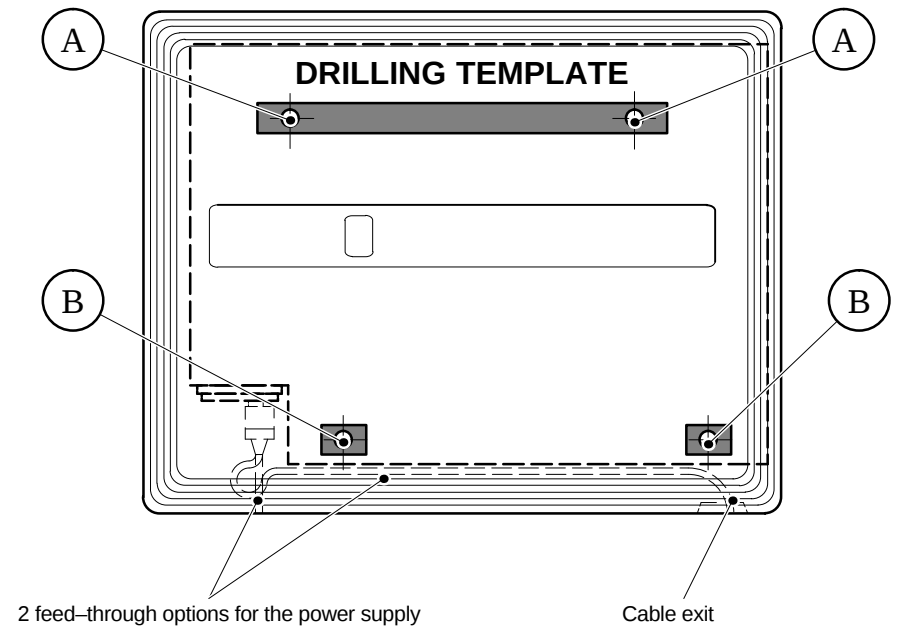
Table 4.1 LINE CONNECTED TERMINAL / MSW/SSW CONNECTION

4.3.3 Wall unit (Figure 4.3)

- Select the location for the wall unit:
 - the wall unit must be located in a sheltered room,
 - the ambient temperature for normal operation, must be between +10°C and +35°C,
 - the wall unit must be installed at least 25 cm. from the floor,
 - the wall unit must be connected to the 110 V/230 V –50 Hz or 60 Hz mains supply (nominal conditions).
- Position the drilling template supplied with the wall unit.
- Drill 4 holes at the locations marked (A) and (B).
- Attach the bracket at the location marked (A).

Note: The type of attachment to be used must be appropriate to the type of partition supporting the wall unit (weight of unit including the BER: 8.5 kg).

- Unscrew the four captive screws of the wall unit cover, then remove the wall unit cover.
- Position the wall unit on the bracket, and then attach by means of two screws at the locations marked (B).



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Figure 4.3 POSITION OF WALL UNIT

4.3.4 Power supply cable

If necessary, connect the female mains connector included in the connection kit to the power supply cable, following the connection indications given in Table 4.2.

NAME	DESIGNATION	PIN NUMBER
Phase	Power supply – phase (indicative)	1
Neutral	Power supply – neutral (indicative)	2
Earth	220 V mains supply – earth	3

Table 4.2 MAINS POWER SUPPLY CONNECTION

4.3.5 Loudspeaker connection (optional)

- When installing an external loudspeaker, follow the manufacturer's installation instructions.
- Route the loudspeaker cable near to the location of the wall unit following the safety precautions given in Chapter 3.
- On the loudspeaker cable, connect the 2-pin female connector following the connection indications given in Table 4.3.

NAME	DESIGNATION	PIN NUMBER
HPP	Loudspeaker (plus)	1
HPM	Loudspeaker (minus)	2

Table 4.3 LOUDSPEAKER CONNECTION

4.3.6 Transceiver (Figure 4.4)

4.3.6.1 Loading, configuring and customizing

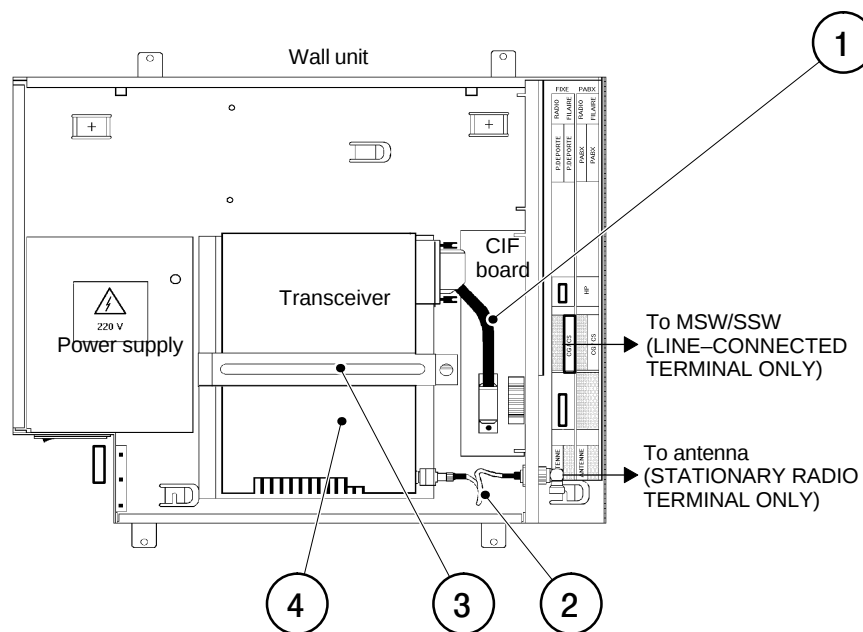
Note: Before installing the transceiver (version A,B, or line connected) it must first be loaded, configured and customized using the TPS (see Section 1.3, Document <2>).

- Connect the Sub-D 25-pin male operation connector and Sub-D 9-pin female test connector to the Sub-D 25-pin female connector on the TPS unit via the transceiver cable supplied with the TPS.
- Load, configure and customize the transceiver (see Section 1.3, Document <2>).
- Disconnect the transceiver from the TPS.

4.3.6.2 Installing the transceiver (Figure 4.4)

Note: Before installing the wide band BER radio transceiver version A' in the wall unit, remove the securing flange (Plate A-I, item 10). To do this:

- unscrew and remove the two screws (item 12) and washers (item 11) securing the flange,
- remove the flange (item 10).
- Remove the transceiver securing jumper (item 3).
- Place the transceiver (item 4) in its location, positioning the antenna and operating connectors on the right-hand side.
- Secure the transceiver (item 4) with the jumper (item 3).
- Connect the Sub-D 25-pin transceiver connector to the Sub-D 25-pin CIF board connector (J3) using the shielded multiconductor transceiver-CIF cable (item 1).
- Connect the coaxial cable (item 2) to the transceiver TNC connector (J2) (fixed radio terminal only).



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Figure 4.4 INSTALLATION OF TRANSCEIVER

4.3.7 Connecting the wall unit

Power supply cable (Plate A–III)

- Check that the On/Off switch of the power supply is set to the off position.
- Connect the power supply cable to the power supply connector (item 7).
- Route the power supply cord through one of the two feed-through possibilities of the wall unit (see Figure 4.3).
- Connect the power supply cable to the mains.

Antenna cable (fixed radio terminal)

- Install the elbowed TNC connector on the wall unit “ANTENNE – ANTENNA” connector.
- Connect the antenna cable to the elbowed TNC connector, observing the safety precautions given in Chapter 3.

RSW – wall unit link cable (line-connected terminal)

- Connect the RSW – wall unit link cable to the wall unit “CG/CS – MSW/SSW”; make sure that the 8-pin female connector is fitted the right way round (keying) and attach the cable to the unit via the RILSAN type clamp provided.

4.3.8 Fixed RT – desktop set link cable

- Connect the fixed RT – desktop set link cable to the wall unit “P.PRINCIPAL – DESKTOP SET” connector. Tighten the two link cable connector screws.
- Route the desktop set–wall unit link cable to the selected location for the desktop set, following the safety instructions given in Chapter 3.

4.3.9 CCP desktop set

4.3.9.1 CCP desktop support (Plate A–VI)

- Place the CCP holder (item 2) on the desktop plate (item 5); the two holes of the holder must be aligned with the two threaded holes of the desktop plate.
- Secure the CCP holder (item 2) using the two screws (item 1) supplied with the desktop plate. Tilt the holder cradle to the rear to facility access to the screws.
- Remove the cable guide ring (item 4) from the rear panel of the CCP holder.
- Insert the Sub–D 25–pin female connector (item 3) of the CCP desk holder–wallunit link cable in the opening of the rear panel of the CCP holder.
- Put the cable guide ring (item 4) on the CCP holder–wall unit link cable. Make sure that the cable guide ring is the right way round.
- Install the cable guide ring (item 4) on the rear panel of the CCP holder.

4.3.9.2 Smart or Easy+ CCP (Plate A–VI)

- Position the CCP (item 8) near its desk holder (item 2).
- Connect and lock the Sub–D 25–pin female connector (item 3) of the CCP desk holder–wall unit link cable to the Sub–D 25–pin male connector of the CCP rear panel (item 8).
- Put the CCP on the desk holder and push it until it is locked on each side.
- Connect the connector (item 7) of the ELNO gooseneck microphone cable to the female connector of the CCP front panel.

Note: Two extraction keys (item 6) are supplied with the CCP. These are used to remove the CCP from its holder. To do this:

- place a key (item 6) on each side of the CCP (item 8) turning the pins inwards,
- insert the two keys (item 6) in the lateral openings of the desktop holder,
- press the keys (item 6) to unclip the CCP on each side,
- remove the keys (item 6) and the CCP (item 8).

4.3.10 Handset desktop set (Plate A–VII)

- Position the handset desktop set bracket (item 2) on the desk.
- Connect the DIN connector (item 3) of the handset (item 1) to the left hand side connector of the desktop set bracket (item 2) and then secure it by screwing the ring of the handset cable connector.
- Install the handset (item 1) on the desktop bracket (item 2).
- Connect the Sub–D 15–pin female connector of the handset desktop set – wall unit link cable to the “COFFRET/UNIT” connector (item 4) of the bracket (item 2).

4.4 CHECKING THE TERMINAL INSTALLATION

Having completed the installation, various checks should be made before putting into service.

Check the:

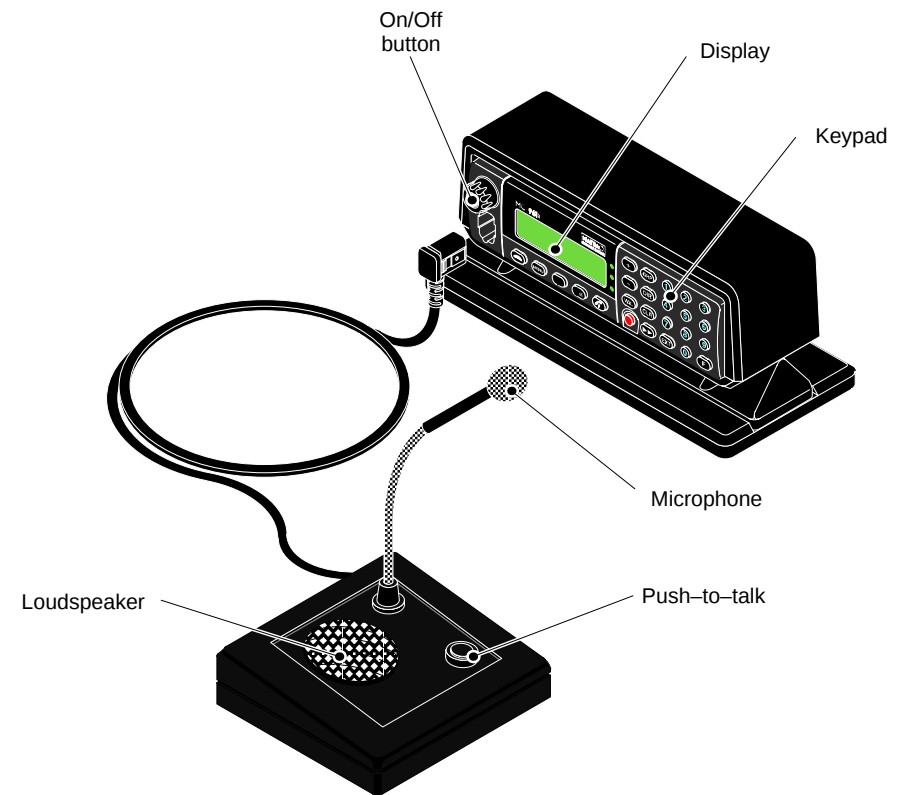
- electrical continuity between the antenna coaxial plug body and the earth,
- insulation resistance between the antenna strand and chassis earth,
- continuity between the antenna and the coaxial plug core,
- external connections to the fixed terminal,
- lighting of the power supply light-emitting diode, by setting the power supply switch to ON.

When these checks have been made, fit the unit cover and secure it with its four captive screws.

5 STARTING UP / SHUTTING DOWN

5.1 PRESENTATION OF THE CCP DESKTOP SET (Figure 5.1)

The figure below shows the main sub-assemblies of the CCP desktop set.

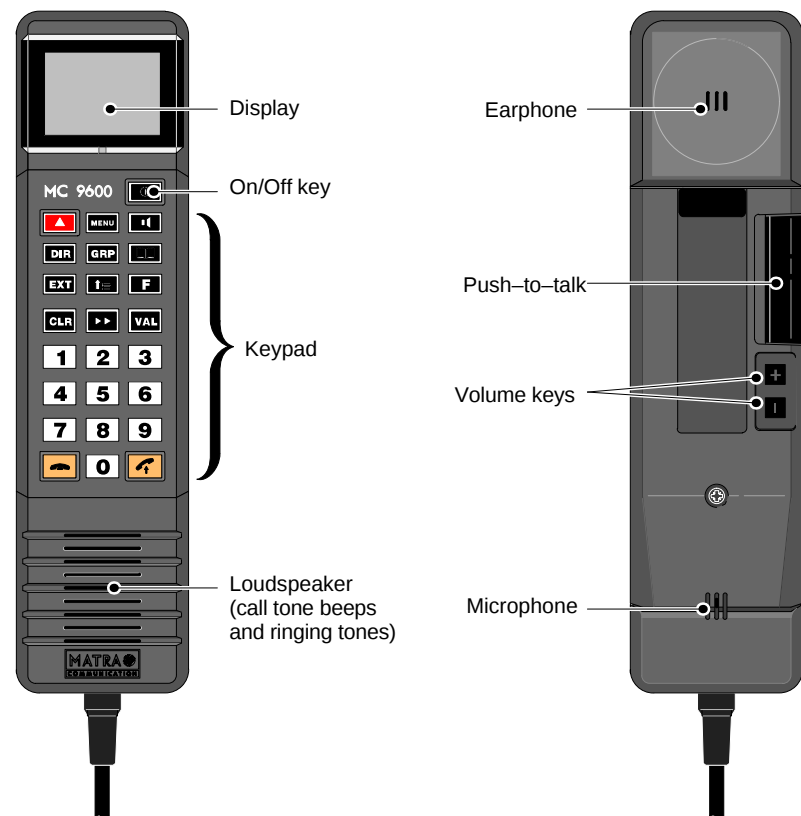


TR_MCS_PP_CCPENQ_FAV_01_01

Figure 5.1 CCP DESKTOP SET

5.2 PRESENTATION OF THE HANDSET (Figure 5.2)

The figure below shows the main sub-assemblies of the handset.



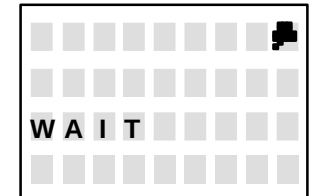
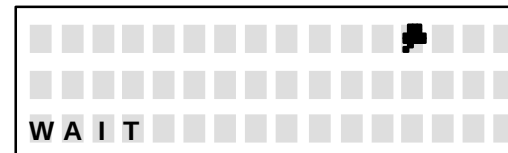
TR_MC9_TLC_FAR_FAV_01_01

Figure 5.2 HANDSET

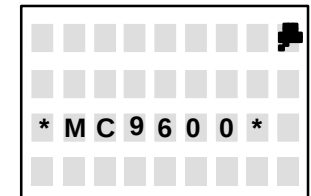
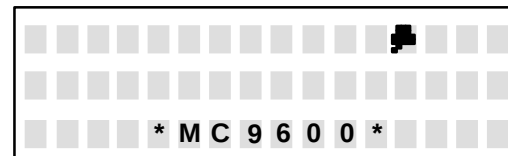
5.3 PUTTING THE TERMINAL INTO SERVICE

- Switch on the fixed terminal by pressing the call selector – On/Off button of the CCP (see Figure 5.1) or the  key of the handset (see Figure 5.2).

The terminal emits two consecutive beeps and the message “WAIT” is displayed for a few seconds,

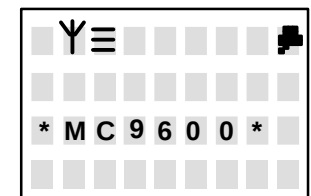
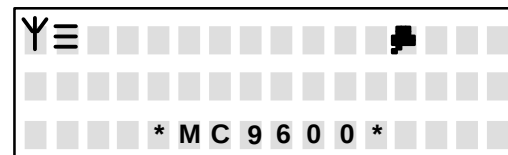


followed by the welcome message



Note: In certain cases the project name replaces the “*MC9600*” message, on the display and on the handset printing.

In the case of a fixed radio terminal, the registration process is initiated until the antenna symbol , and the field level symbol  are displayed.



In the case of a line connected terminal, the line connected registration symbol  replaces the field level symbol .

Legend

- 1 – BER radio transceiver version A
- 2 – Sub-D 9-pin male battery pack connector
- 3 – Sub-D 9-pin female test connector
- 4 – DIN 12-pin female handset connector
- 5 – Sub-D 25-pin male operation connector
- 6 – TNC female antenna connector
- 7 – Wide band BER radio transceiver version A'
- 8 – Sub-D 9-pin female test connector and captive plug
- 9 – DIN 12-pin female handset connector and captive plug
- 10 – Securing flange
- 11 – Washer
- 12 – Cross-head screw

Leyenda

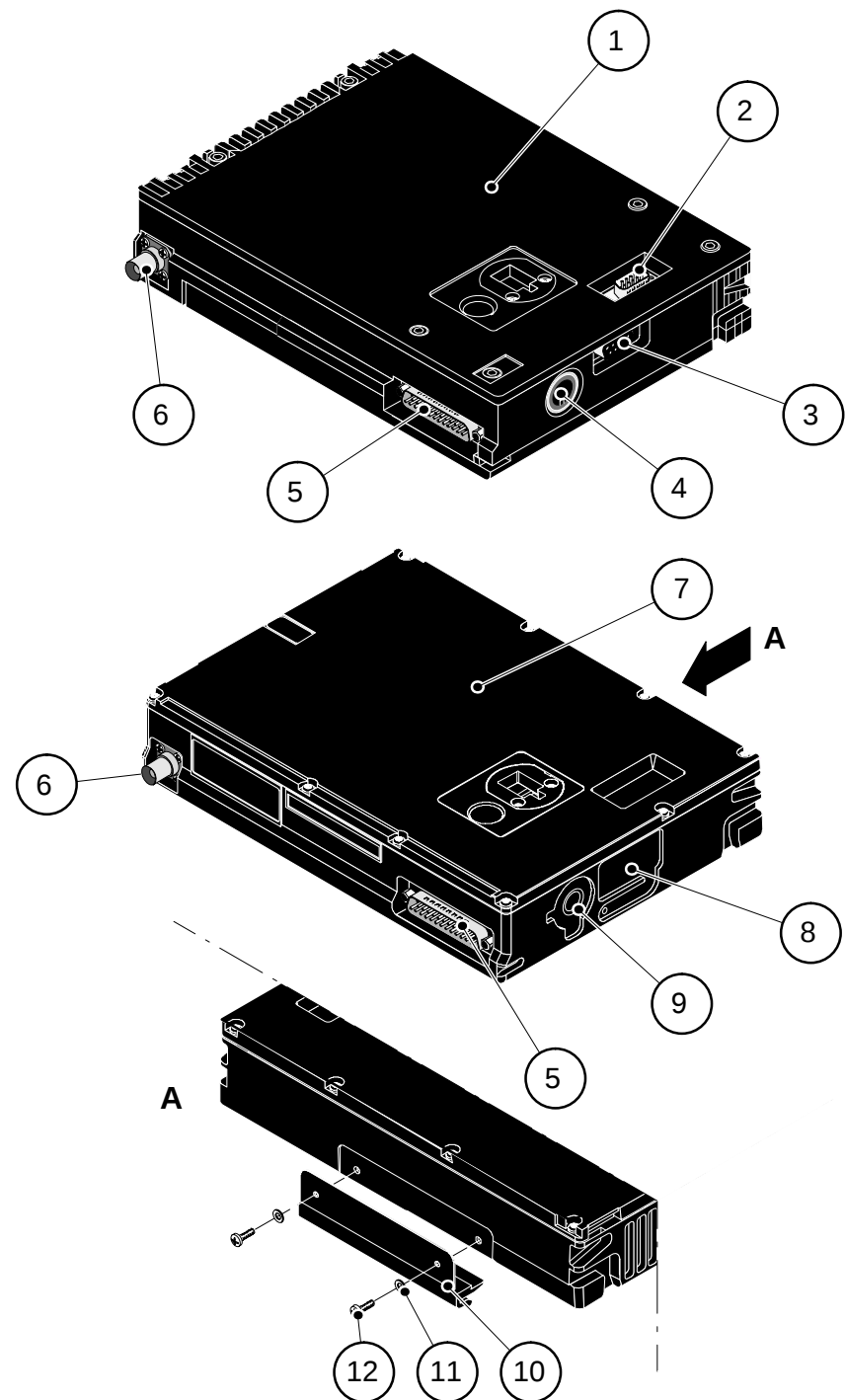
- 1 – BER radio versión A
- 2 – Conector pack batería Sub-D 9 puntos macho
- 3 – Conector de prueba Sub-D 9 puntos hembra
- 4 – Conector telemando DIN 12 puntos hembra
- 5 – Conector operacional Sub-D 25 puntos macho
- 6 – Conector antena TNC hembra
- 7 – BER radio banda extendida versión A'
- 8 – Conector de prueba Sub-D 9 puntos hembra y tapón imperdible
- 9 – Conector telemando DIN 12 puntos hembra y tapón imperdible
- 10 – Brida de calaje
- 11 – Arandela
- 12 – Tornillo cruciforme

Légende

- 1 – BER radio version A
- 2 – Connecteur pack batterie Sub-D 9 points mâle
- 3 – Connecteur de test Sub-D 9 points femelle
- 4 – Connecteur télécommande DIN 12 points femelle
- 5 – Connecteur exploitation Sub-D 25 points mâle
- 6 – Connecteur antenne TNC femelle
- 7 – BER radio large bande version A'
- 8 – Connecteur de test Sub-D 9 points femelle et bouchon imperdable
- 9 – Connecteur télécommande DIN 12 points femelle et bouchon imperdable
- 10 – Bride de calage
- 11 – Rondelle
- 12 – Vis cruciforme

Legende

- 1 – Funk-BER Version A
- 2 – 9-poliger männlicher Sub-D Anschluss für Akku
- 3 – 9-poliger weiblicher Sub-D Testanschluss
- 4 – 12-poliger weiblicher DIN-Fernbedienungsanschluss
- 5 – 25-poliger männlicher Sub-D Betriebsanschluss
- 6 – Weiblicher TNC-Antennenanschluss
- 7 – Breitband-Funk-BER Version A'
- 8 – 9-poliger weiblicher Sub-D Testanschluss und unverlierbarer Stopfen
- 9 – 12-poliger weiblicher DIN-Fernbedienungsanschluss und unverlierbarer Stopfen
- 10 – Haltewinkel
- 11 – Scheibe
- 12 – Kreuzschlitzschraube



Legend

- 1 – BER radio transceiver version B
- 2 – Sub-D 9-pin female test connector
- 3 – Sub-D 25-pin male operation connector
- 4 – TNC female antenna connector
- 5 – Wide band BER radio transceiver version B
- 6 – Sub-D 9-pin female test connector and captive plug
- 7 – Line connected BER
- 8 – DIN 12-pin female connector

Légende

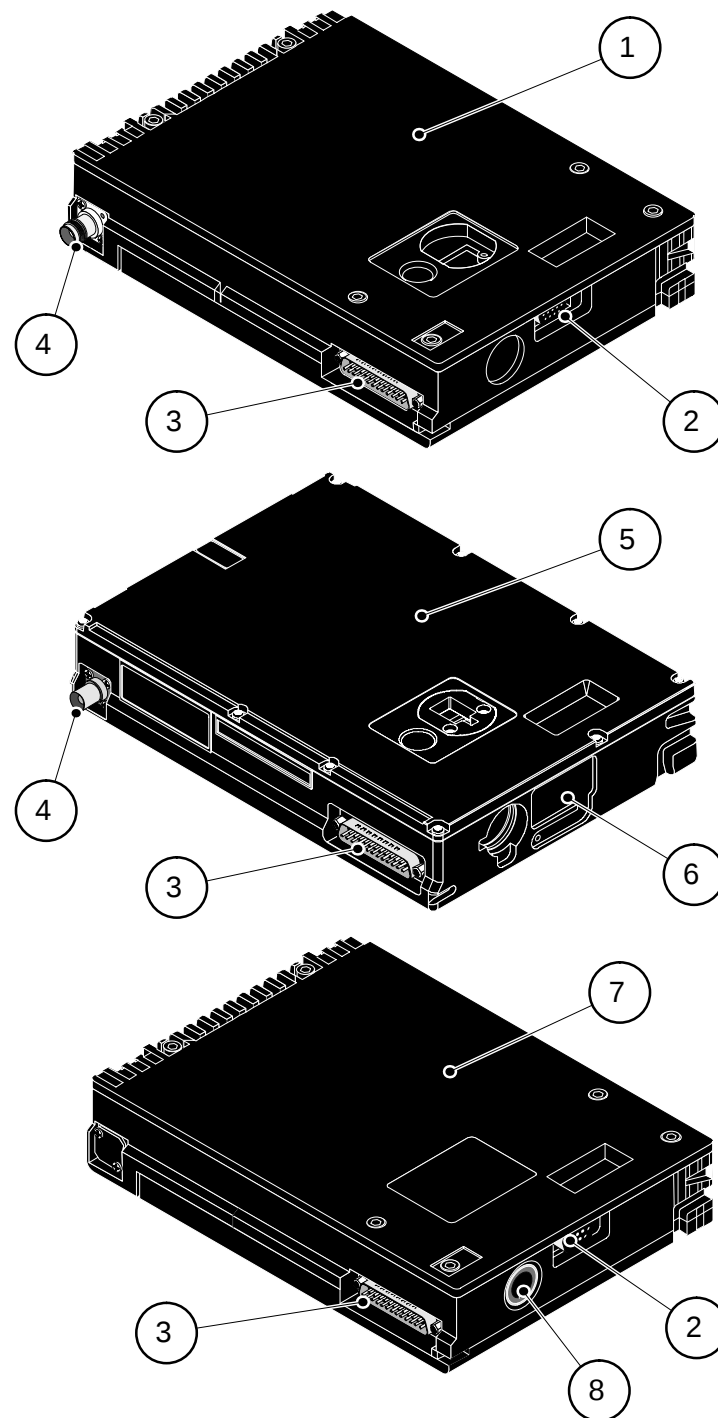
- 1 – BER radio version B
- 2 – Connecteur de test Sub-D 9 points femelle
- 3 – Connecteur exploitation Sub-D 25 points mâle
- 4 – Connecteur antenne TNC femelle
- 5 – BER radio large bande version B
- 6 – Connecteur de test Sub-D 9 points femelle et bouchon imperdable
- 7 – BER filaire
- 8 – Connecteur DIN 12 points femelle

Leyenda

- 1 – BER radio versión B
- 2 – Conector de prueba Sub-D 9 puntos hembra
- 3 – Conector operacional Sub-D 25 puntos macho
- 4 – Conector antena TNC hembra
- 5 – BER radio banda extendida versión B
- 6 – Conector de prueba Sub-D 9 puntos hembra y tapón imperdible
- 7 – BER alámbrico
- 8 – Conector DIN 12 puntos hembra

Leyenda

- 1 – Funk-BER Version B
- 2 – 9-poliger weiblicher Sub-D Testanschluss
- 3 – 25-poliger männlicher Sub-D Betriebsanschluss
- 4 – Weiblicher TNC-Antennenanschluss
- 5 – Breitband-Funk-BER Version B
- 6 – 9-poliger weiblicher Sub-D Testanschluss und unverlierbarer Stopfen
- 7 – Draht-BER
- 8 – 12-poliger weiblicher DIN-Anschluss



Legend

- 1 – Cover assembly
- 2 – CIF board
- 3 – Multiconductor cable
- 4 – Coaxial cable (fixed radio terminal)
- 5 – Wall unit chassis assembly
- 6 – Fuses
- 7 – Power supply connector
- 8 – On/Off button
- 9 – Drilling template
- 10 – Power supply

Légende

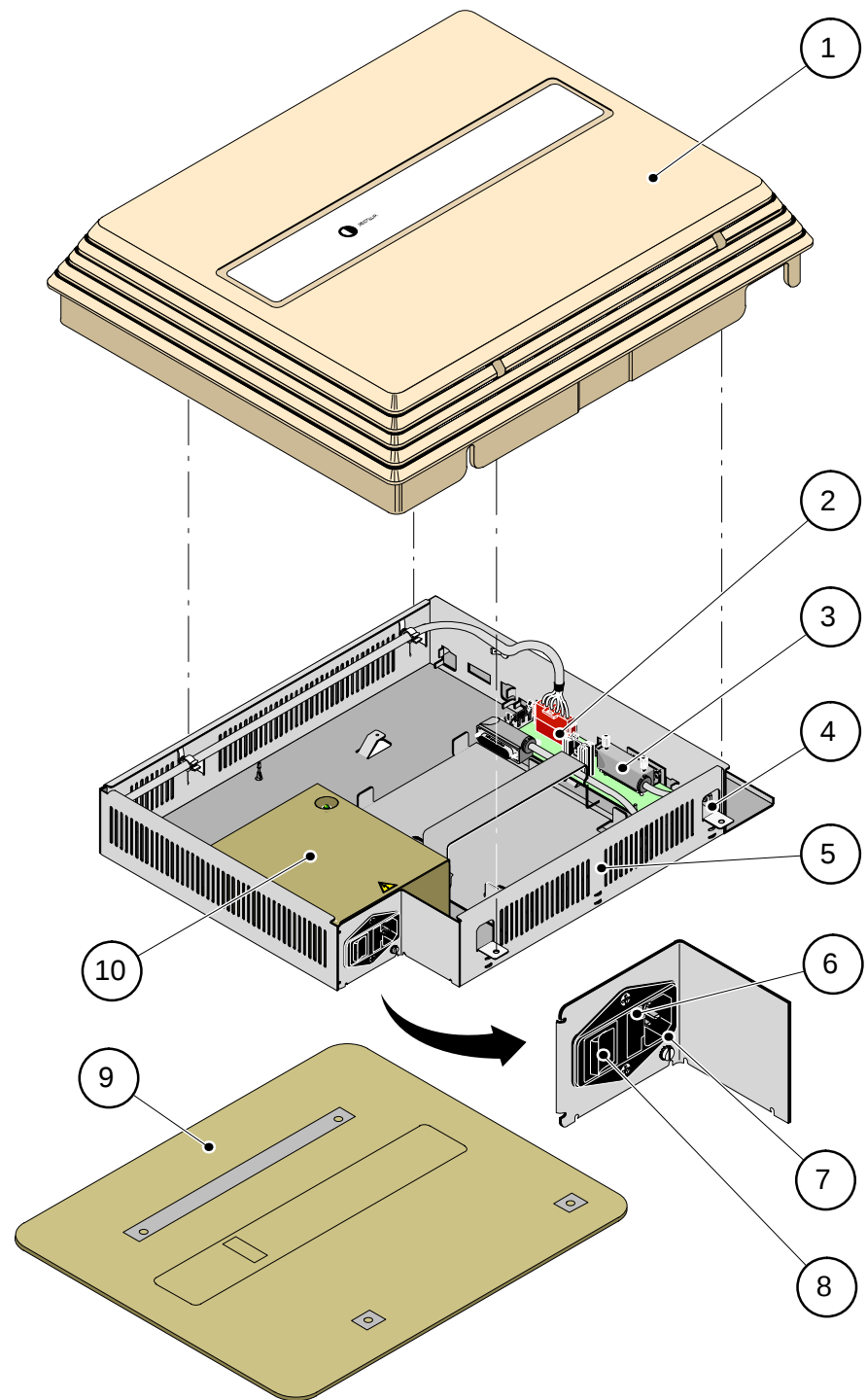
- 1 – Ensemble capot
- 2 – Carte CIF
- 3 – Cordon multiconducteurs
- 4 – Cordon coaxial (terminal fixe radio)
- 5 – Ensemble châssis coffret
- 6 – Fusibles
- 7 – Connecteur alimentation
- 8 – Bouton Marche/Arrêt
- 9 – Gabarit de perçage
- 10 – Alimentation

Leyenda

- 1 – Tapa
- 2 – Tarjeta CIF
- 3 – Cable multiconductores
- 4 – Cable coaxial (terminal fijo radio)
- 5 – Conjunto chasis cofre
- 6 – Fusible
- 7 – Conector alimentación
- 8 – Botón Marcha/Parada
- 9 – Plantilla de perforación
- 10 – Alimentación

Legende

- 1 – Abdeckungseinheit
- 2 – CIF-Karte
- 3 – Mehradriges Kabel
- 4 – Koaxiales-Kabel (ortsfestes Funkendgerät)
- 5 – Gehäuseeinheit
- 6 – Sicherung
- 7 – Stromversorgungsanschluss
- 8 – Ein-/Aus-Taste
- 9 – Bohrschablone
- 10 – Netzteil



Legend

- 1 – CCP Smart (25-key keypad)
- 2 – CCP Smart (25-key alphanumeric keypad)
- 3 – CCP Easy + (9-key keypad)
- 4 – CCP desktop support
- 5 – Support plate
- 6 – Fixed RT / CCP desktop link cable
- 7 – Fixed RT / CCP handset link cable
- 8 – Desktop set support
- 9 – Handset
- 10 – Gooseneck microphone
- 11 – Pear-shaped microphone

Légende

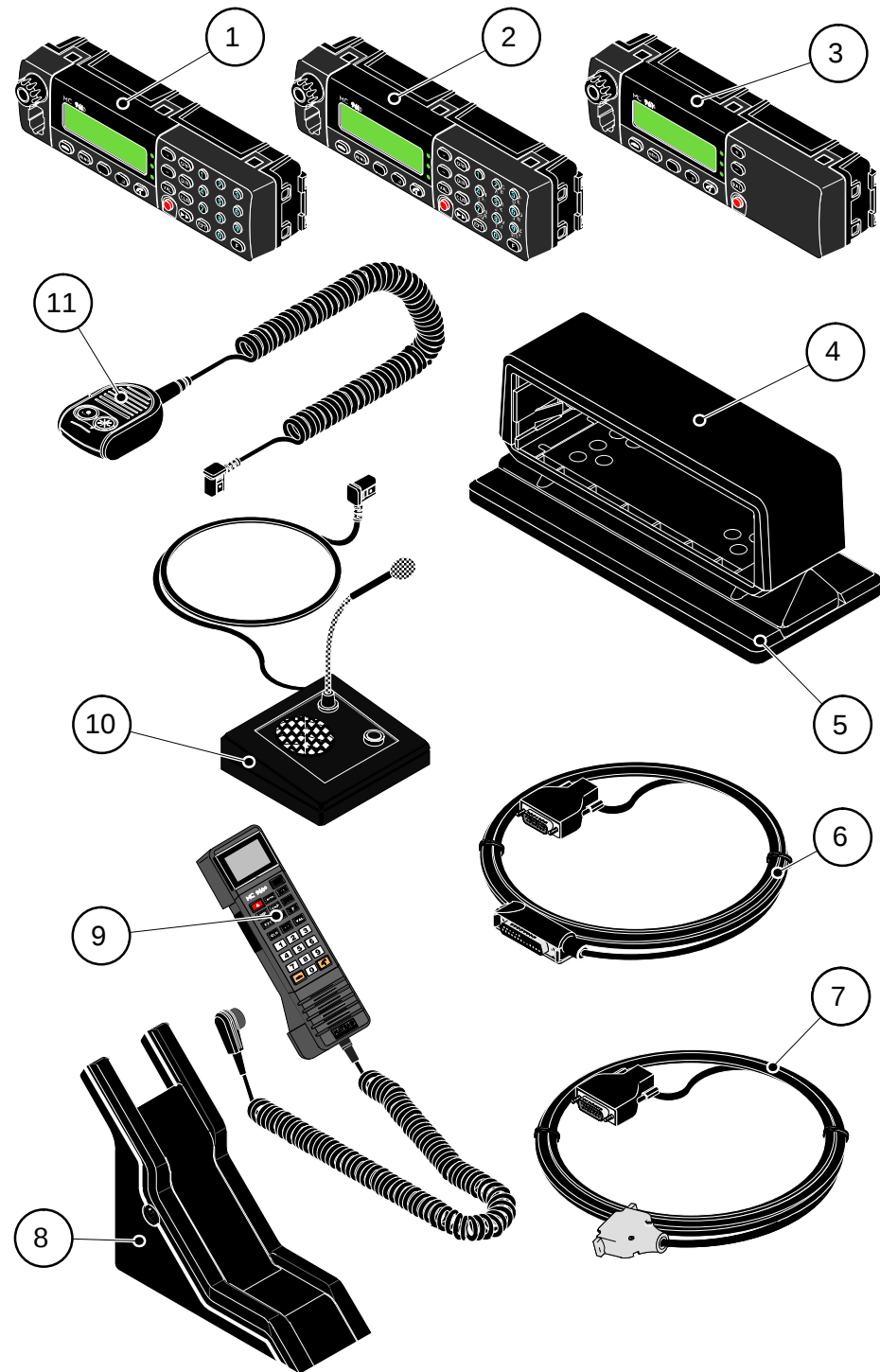
- 1 – CCP Smart (clavier à 25 touches)
- 2 – CCP Smart (clavier alphanumérique à 25 touches)
- 3 – CCP Easy + (clavier à 9 touches)
- 4 – Support bureau de CCP
- 5 – Plaque support
- 6 – Cordon de liaison TR fixe / PP CCP
- 7 – Cordon de liaison TR fixe / PP TC
- 8 – Support de poste principal
- 9 – Télécommande
- 10 – Micro col de cygne
- 11 – Micro poire

Legenda

- 1 – CCP Smart (teclado de 25 teclas)
- 2 – CCP Smart (teclado alfanumérico de 25 teclas)
- 3 – CCP Easy + (teclado de 9 teclas)
- 4 – Soporte oficina de CCP
- 5 – Placa de soporte
- 6 – Cable de enlace TR fijo / PP CCP
- 7 – Cable de enlace TR fijo / PP TC
- 8 – Soporte de puesto principal
- 9 – Telemando
- 10 – Micrófono cuello de cisne
- 11 – Micrófono pera

Legende

- 1 – CCP Smart (Tastatur mit 25 Tasten)
- 2 – CCP Smart (alphanumerische Tastatur mit 25 Tasten)
- 3 – CCP Easy + (Tastatur mit 9 Tasten)
- 4 – CCP-Büroträger
- 5 – Tragplatte
- 6 – Verbindungskabel ortsf. RT / PP CCP
- 7 – Verbindungskabel ortsf. RT / PP TC
- 8 – Hauptkonsolenaufnahme
- 9 – Fernbedienung
- 10 – Standmikrofon
- 11 – Handmikrofon



Legend

- 1 – Packing box
- 2 – Positioning template
- 3 – Loudspeaker
- 4 – Securing screw

Légende

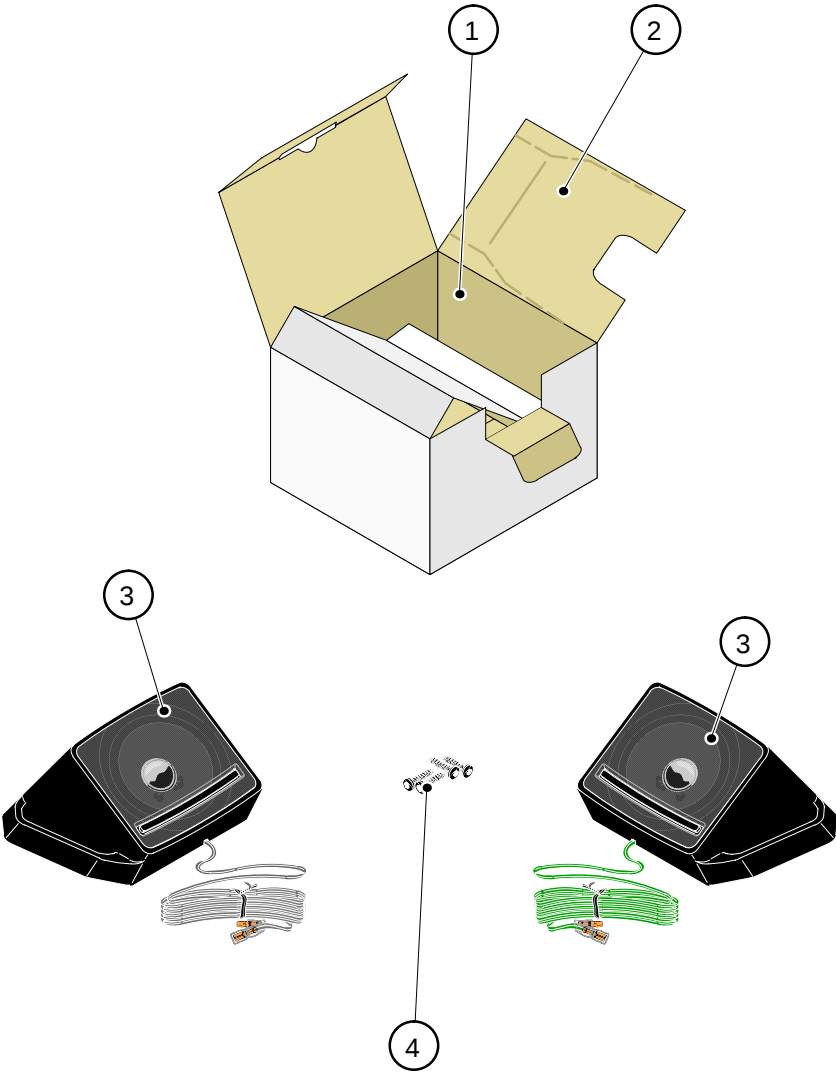
- 1 – Boîte d'emballage
- 2 – Gabarit de positionnement
- 3 – Haut-parleur
- 4 – Vis de fixation

Leyenda

- 1 – Caja de embalaje
- 2 – Plantilla de posicionamiento
- 3 – Altavoz
- 4 – Tornillos de fijación

Legende

- 1 – Verpackungskarton
- 2 – Bohrschablone
- 3 – Lautsprecher
- 4 – Befestigungsschrauben

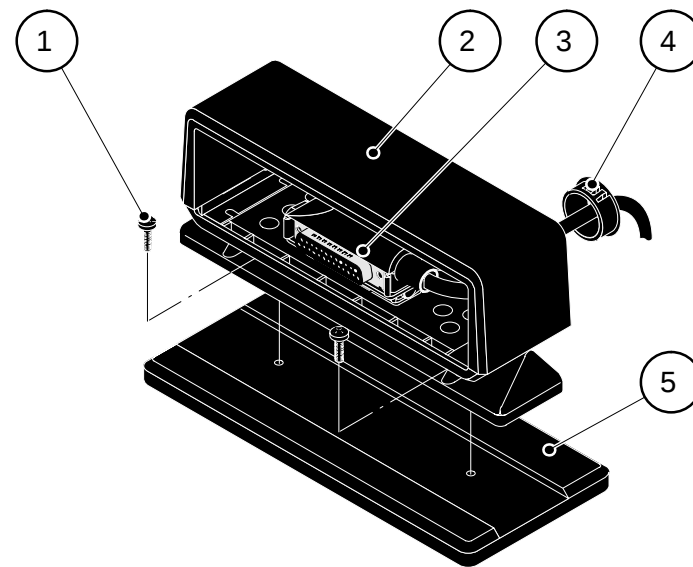


Legend

- 1 – Securing screw
- 2 – CCP desk holder
- 3 – Fixed RT / CCP desktop link cable
- 4 – Cable guide ring
- 5 – Desktop plate
- 6 – Extraction tool
- 7 – LNO gooseneck microphone connector
- 8 – CCP

Légende

- 1 – Vis de fixation
- 2 – Support bureau de CCP
- 3 – Connecteur cordon de liaison TR fixe /PP CCP
- 4 – Bague guide câble
- 5 – Plaque support
- 6 – Clés d'extraction
- 7 – Connecteur micro (col de cygne ou poire) ELNO
- 8 – CCP

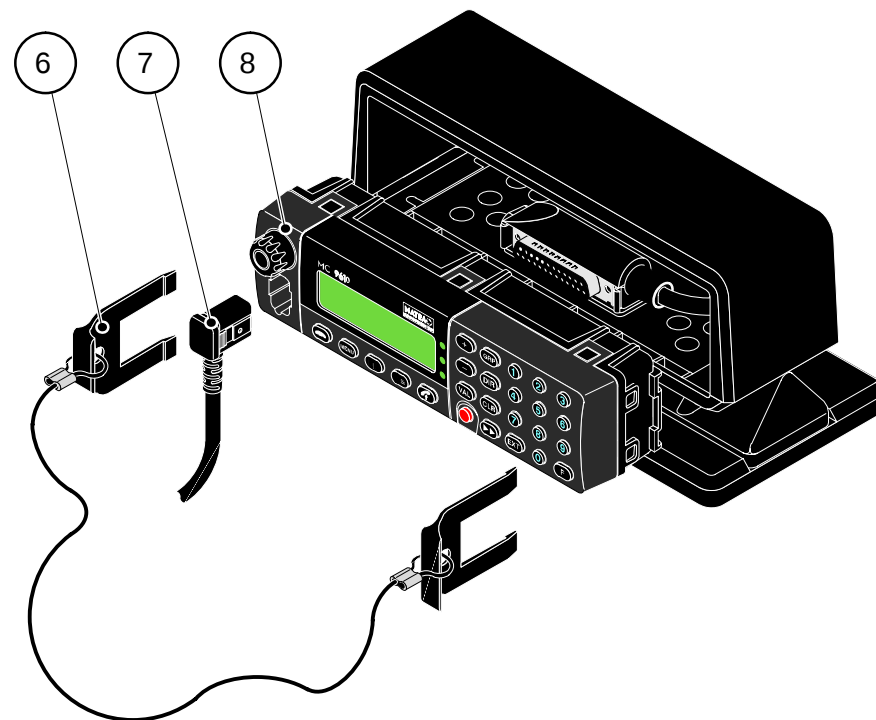


Leyenda

- 1 – Tornillo de fijación
- 2 – Soporte oficina de CCP
- 3 – Conector cable de enlace TR fijo / CCP
- 4 – Anillo guía del cable
- 5 – Placa soporte
- 6 – Llaves de extracción
- 7 – Conector micrófono (cuello de cisne o pera) ELNO
- 8 – CCP

Legende

- 1 – Befestigungsschraube
- 2 – CCP-Büroträger
- 3 – Steckanschluss für Verbindungskabel ortsf. RT – CCP
- 4 – Kabelführungsring
- 5 – Tragplatte
- 6 – Auszieher
- 7 – Stecker ELNO–Standmikrofon
- 8 – CCP



Legend

- 1 – Handset
- 2 – Handset desktop set bracket
- 3 – DIN connector
- 4 – “COFFRET/UNIT” connector

Légende

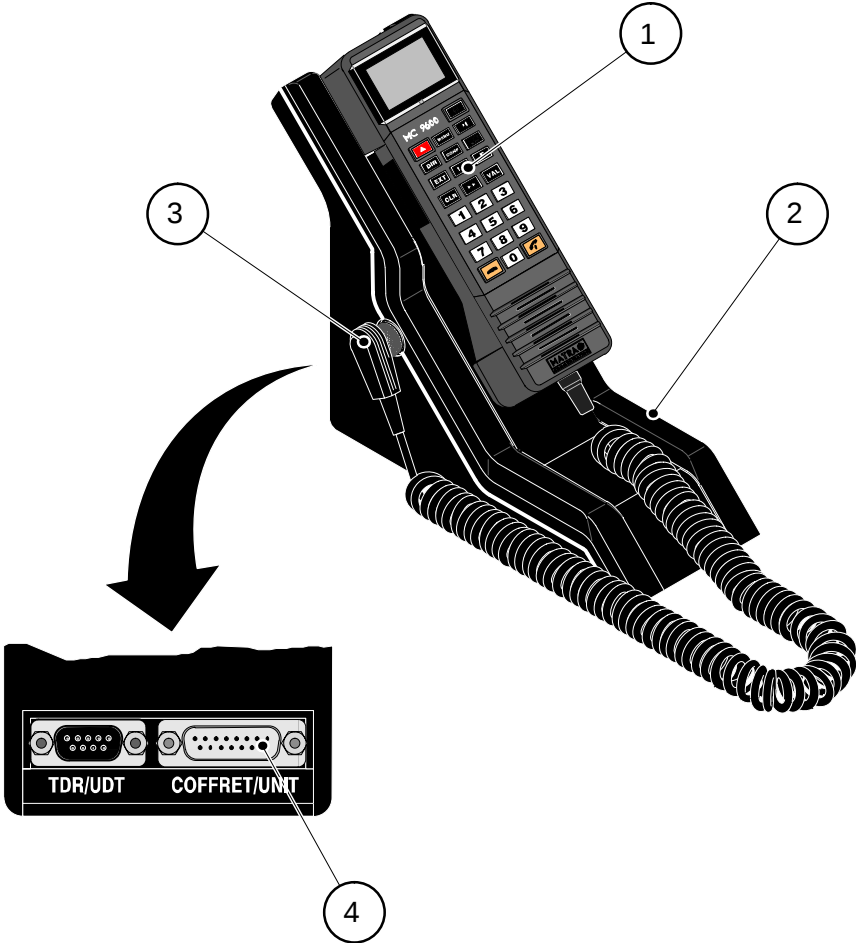
- 1 – Télécommande
- 2 – Support de poste principal
- 3 – Fiche DIN
- 4 – Prise “COFFRET/UNIT”

Leyenda

- 1 – Telemando
- 2 – Soporte de puesto principal
- 3 – Enchufe DIN
- 4 – Enchufe “COFFRET/UNIT”

Legende

- 1 – Fernbedienung
- 2 – Hauptkonsolenaufnahme
- 3 – DIN-Stecker
- 4 – Steckanschluss “COFFRET/UNIT”



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