



MC 9620

S Single unit Charger

MC 9620 EN CBU G2



User benefits

- Easy plug-in and removal of the radio with one-hand.
- Rapid charging of one MC9620 handportable or one stand-alone battery.

Some functionalities presented on this sheet depend on the MC 9600 software system version used



MC 9620

Functionalities

- Rapid charging of one MC9620 handportable or one stand-alone battery: the charging time is about 1h00 for a 1400 mAh battery.
- Smart power management by SMBUS standard protocol.
- Sharp battery charging level status on the S handportable display.
- Go/nogo battery charging level status by LEDs.

Environmental specifications (IEC STD TESTING)

Standard	Severity
Operating temperature	IEC 68-2 Dry heat +40°C/30%RH Cold +5°C Damp heat +40°C/85%RH
Storage temperature	IEC 68-2 Dry heat +70°C/30%RH Cold -40°C Damp heat cycle +25/55°C/98/90%RH
Dust and Water protection	IEC 529 IP 20
Free fall	IEC 68-2 Height = 0.8 m on concrete
Security	IEC 950 / IEC 335-2-29

Also meets

CE label conform to European directives 89/336/ CE and 73/23/CE (CEM and low voltage) + amendments

Components & interfaces

- A red LED indicates that the battery is being charged.
- The red LED blinking indicates any defect
- A green LED indicates that the battery is fully charged

Technical specifications

Size	250x150x80mm	Power	15 W maximum
Power supply	110/220V, 50/60 Hz	Control protocol	SMBUS

Some functionalities presented on this sheet depend on the MC 9600 software system version used

MC 9620

Handportable Multi-Unit Charger

MC 9620 EN CPA G2



User benefits

- Rapid recharging of between 1 and 6 items: MC9620 handportables or autonomous batteries.
- Radio can be easily installed and removed with one hand.
- Discharge cycles to increase length of battery life.
- Battery data displayed for maintenance purposes.

MC 9620

Functionalities

- Rapid recharging of 6 items (MC9620 handportables or autonomous batteries): the recharge time for a 1400mA.h battery is about 1h.
- Smart charging via SMBUS standard protocol.
- Exact level of charge displayed on charger.
- "go/nogo" LEDs to indicate battery charge level.
- Provides refresh cycles (charge/discharge) which delete the memory: the length of the cycle is between 8 and 13 hours depending on the initial charge level.
- Maintenance features: the charger indicates faults and information concerning the batteries.

Environmental specifications (IEC standards)

Standard		Severity	
Operating temperature	CEI 68-2	Dry heat	+45°C/30%RH
		Cold	0°C
		Humid heat	+40°C/85%RH
<i>Battery temperature range authorising charge: 12°C < T < 50°C</i>		<i>(maintenance current for 0°C < T < 12°C)</i>	
Storage temperature	CEI 68-2	Dry heat	+70°C/30%RH
		Cold	-40°C
		Humid heat	cycle +25/55°C/98/90%RH
Dust and water protection	CEI 529	IP20	
Security	CEI 335-2-29 / CEI 950		

Also meets

CE marking in accordance with European directives 89/336/CE and 73/23/CE (EMC and low voltage) + amendments

Components & interfaces

- An LCD display gives information relating to each battery (relative and absolute capacity, number of cycles, date of manufacture of battery, technology, supplier identity, etc.): this enables optimum battery management by the user.
- The refresh cycle is launched using a special key.
- For each item:
 - A red LED indicates that the battery is being charged
 - A red flashing LED indicates that there is a fault
 - A green LED indicates that the battery is fully charged
 - An orange LED indicates that a refresh cycle is in progress

Technical specifications

Dimensions :	700x150x80mm	Power :	100 W maximum
Power supply:	110/220V, 50/60 Hz	Display:	LCD

MC 9622

S Desktop Adapter

MC 9622 DA G2



User benefits

- S handportable operational at the office
- Enhances comfort of use
- Easy plug-in and removal of the radio
- Automatic connection to peripheral equipment (data terminal, headset, gooseneck micro, external antenna, etc.)
- S handportable power supplying and charging of its battery and one spare battery
- Smart battery fast charging by SMBUS standard protocol with accurate charging level status on the S handportable display
- Easy installation on the desk.
- Automatic switch between private mode (with handset) and group mode (loudspeaker and group microphone)

MC 9622 DA G2 Version 2.2 06/07/00

Some features detailed in this product description are dependent on the implemented MC 9600 system software version

MATRA NORTEL
COMMUNICATIONS

MC 9622

Features

- Ensures an ergonomic positioning of the handportable.
- Ensures a perfect support of the handportable on desk.
- Gives free access to all the controls (PTT, key pad, emergency call, ...).
- Fast and easy plug-in/removal with automatic connections to peripheral equipment.
- Small size makes it easy to integrate on the desk.
- Rapid charger function.
- Accurate battery charging level status on the handportable display.
- Front-leds for go/nogo indication of battery charging level status.
- Makes possible the use of the handportable even when the battery is empty by supplying simultaneously power and charging.
- Can support and charge one stand alone spare battery
- Includes amplifier loudspeaker for speaker use and the management of peripheral equipment (gooseneck micro, headset with micro, data terminal, external antenna, foot PTT...).
- Provides handset for private use.
- Automatic switching of audio signals from loudspeaker to handset since handset is picked-up (loudspeaker can be activated manually by front-key).
- Front-PTT for easy push-to-talk.

Environmental specifications (IEC STD TESTING)

Standard	Severity	
Operating temperature	IEC 68-2	Dry heat +40°C/30%RH
		Cold -0°C
		Damp heat +40°C/93%RH
Storage temperature	IEC 68-2	Dry heat +70°C/30%RH
		Cold -40°C
		Damp heat cycle +25/55°C/98/90%RH
Vibration	IEC 68-2	

Other compliances

IEC 335-2-29 & UNO #21
CE label EMC & low voltage

MC 9622

Components & interfaces

Kit content

- Desktop adapter
- Handset
- Power supply
- Installation guide

Technical specifications

Interfaces

Handset :	RJ 6 points
Headset :	RJ 6 points
Gooseneck microphone :	SUBD 15 points
Foot PTT :	RJ 4 points
Data :	SUBD 9 points / RS 232
Antenna :	50 Ohms

Acoustics

Loudspeaker : 2W rms

Power

Power supply : 110/220V 50/60Hz

Options not delivered with MC9622 DA G2

- Gooseneck microphone
- Headset with microphone
- Foot PTT
- Antenna MC9622 AN G2



MC 9621

Car Adaptor
MC 9621 CA G2



User benefits

- S handportable operational on board a vehicle.
- Enhances ease of use.
- Easy plug-in and removal of the radio with one hand.
- Automatic connection to peripheral equipment (data terminal, audio accessories, car antenna, etc.).
- Supplies power to the S handportable.
- Smart rapid battery charging by SMBUS standard protocol with charging level status on the S handportable display.
- Easy and safe installation (DIN compatible, front connections for accessories).

MC 9621 CA G2 Version 2.1 10/22/99

Some functionalities presented on this sheet depend on the MC 9600 software system version used

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COMMUNICATIONS



MC 9621

Functionalities

Car holder

- Ensures safe and ergonomic positioning of the handportable.
- Ensure a perfect support and protection for the handportable on board
- Leaves access free to all the controls (PTT, attenuation key, emergency call, etc.)
- Fast and easy plug-in/removal of automatic connections to peripheral equipment
- Small size makes it possible to hide it in a reduced space (such as a glove box)

Vehicle interface box

- Rapid charger function (about 1h for 1400mAh battery)
- Smart power management by SMBUS standard protocol
- Battery charging level status on the handportable display.
- Makes it possible to use the handportable even with an empty battery, by providing both power supply and charging at the same time.
- Includes the audio amplifier and management of peripheral equipment (speaker micro with PTT, handset, external loudspeaker, data terminal, roof antenna, etc.)
- Provides alarm and silent mode for external commands.
- S handportable can be connected directly to the BIV without the holder if required.

Environmental specifications (IEC standards)

Standard		Severity	
Operating temperature	CEI 68-2	Dry heat Cold Humid heat	+55°C/30%RH -20°C +40°C/95%RH
Storage temperature	CEI 68-2	Dry heat Cold Humid heat	+70°C/30%RH -40°C cycle +25/55°C/98/90%RH
Dust and Water protection	CEI 529	IP20	
Vibration	CEI 68-2	Random and sinusoidal vibrations	
Bumps	CEI 68-2	25g/6ms, 1000/axis & direction 30g/18ms, 3/axis & direction	

Also meets

CE label in accordance with European directives 89/336/CE and 73/23/CE. Conforms to UNO regulation #21

MC 9621

Components & interfaces

Contents of Kit:

- Vehicle interface box (BIV)
- Car holder
- Power supply cable
- Installation guide

Accessories (optional):

- Speaker/microphone MC9621 SM G2
- External loudspeaker MC9621 AA 15W G2
- Handset MC9621 AA HD G2
- Antenna MC9621 AN G2
- Data cable MC9621 EC1 G2



Power supply: 13.2V (vehicle battery)

Technical specifications

Mechanical design

Dimensions:(height x width x depth; mm)
BIV: 150x70x25

Construction:

Holder: plastic
BIV: aluminium

Interfaces

Loudspeaker: 5W rms (15W max)
Speaker micro: 1mV rms (micro),400mW
Distortion: > 5% (speaker)
Antenna: 50 Ohms
Data: RS232

Power

Power supply: 13.2V \pm 20%

M9621 CAB G2

Car adapter with 10W booster (Smart VIB)



User benefits

- ✓ Optimal radio-electric use of M9620 S/M G2 handportables in a vehicle: 10W booster function.
- ✓ Easier to manipulate: M9620 S/M G2 handportables can be inserted and removed easily and quickly with one hand.
- ✓ Automatic connection of peripherals (data terminal, audio accessories, car antenna, etc.).
- ✓ M9620 S/M G2 handportables powered directly by the vehicle battery thus ensuring optimum handportable battery charge.
- ✓ Quick, intelligent battery recharging using standard SMBUS protocol, with display of charge level on G2 handportables.
- ✓ Easy, secure installation.
- ✓ Compact size: flexible accessory installation.
- ✓ Can be highly unobtrusive: covert civil assignments.

NB. : Available in 380-430Mhz band only



M9621 CAB G2

Car adapter with 10W booster (Smart VIB)

Features

Car interface box

- ✓ The rated HF power of the booster is 10W, the same as that of the M9610 CS/CM G1 car mobile.
In direct mode, five power levels can be selected via the terminal MMI (100mW, 400mW, 1W, 2W or 10W).
A backup channel routes the HF to the roof antenna (2W) if the booster function fails.

- ✓ Enables the handportable to be used even when the battery is empty, by supplying power to the handportable while charging the battery.
Handportable powered up by the SMART VIB in a mode allowing the battery charge to be monitored.
Intelligent charge using standard SMBUS protocol: charge time is about 1 hour for a 1450 mAh battery.
Charge level permanently displayed on the handportable display, lit or unlit, while connected to the SMART VIB, whether the handportable button is set to "ON" or "OFF" (M9620 S/M G2 only).

- ✓ User-friendly, covert ergonomics: optional LEDs, which can be installed separately from the SMART VIB, giving the configuration status.
 - 1 handportable presence LED,
 - 2 handportable battery charge LEDs,
 - 1 alarm indicator LED.

- ✓ VIB box easy and quick to install and remove,

- ✓ Remote audio amplification.

- ✓ Includes peripheral equipment interfaces (micro with PTT function, external loudspeaker through audio PA module, data terminal, roof antenna, etc...).

Car support

- ✓ Houses the embedded terminal.

- ✓ Allows free access to all the control functions (keypad, display, volume adjustment, emergency calls).

- ✓ Terminal easy and quick to remove.

NB : M9620 S/M G2 handportables can be connected directly to the M9621 CAB G2 car adapter without the support.



M9621 CAB G2

Car adapter with 10W booster (Smart VIB)

Components and interfaces

Components :

- ✓ 1 Smart vehicle interface box (VIB)
- ✓ 1 connection kit (fuses, power cable, ...)
- ✓ 1 strip of 4 LEDs + 4 individual LEDs: handportable presence, battery supply, alarms,
- ✓ Handportable connection cable
- ✓ Operating cable (accessories, power supply, etc.)

Audio PA unit interfaces :

- ✓ Smart VIB: 6 pins
- ✓ External LS: 2 pins

Smart VIB interfaces :

- ✓ Antenna: 50 Ohm female TNC
- ✓ Power supply (13.2V) + LED + sundry interfaces (MUTE for car radio output, communication detection): SUBD 44
- ✓ Audio PA unit: 6 pins
- ✓ Audio accessories: SUBD 15.
- ✓ Data RT: 4 pins to data cable, with armoured single braid
- ✓ Connection to G2 handportable with 20-pins connector + coax.

Additional essential elements to be ordered separately

- ✓ **M9621 AN G2 UL** antenna,
- ✓ The G2 handportable must contain the product software version (not specific to the booster) which includes the booster option so that the Smart VIB functions can be used.

Options to be ordered separately

- ✓ 1 holder for G2 handheld
 - 1 fixation square
 - installation notice
- ✓ A pear-shaped microphone with PTT command: **M9621 SM G2** or **M9621 SM2G2**
- ✓ 15 W LS: **M9621 AA 15W G2** (only 1 LS can be connected to the car interface box (VIB))
- ✓ A standard covert accessory kit containing:
 - a wired earpiece,
 - a PTT command,
 - a sun visor microphone,
 - a programmable key (end of communication),
 - a remote transmit LED,
 - an amplified listening LED,
- ✓ 15W audio PA box + 1switch LS
- ✓ Data terminal,
- ✓ Cable for data terminal and connections with integrated TTL/RS 232 conversion,
- ✓ GPS control-box **M9610 GPS**,
- ✓ Kit for securing the VIB to the vehicle

M9621 CAB G2

Car adapter with 10W booster (Smart VIB)

Technical specifications

Mechanical :

Dimensions: (lengthxwidthxdepth; mm)
10 W box 150x145x28
Support: 158x104x27
Audio PA unit: 52x52x32

Max. handportable cable length: 1,5 m
Max. handportable power cable length: 3,7 m

Weight of 10W box: about 1 kg

Interfaces :

LS with audio PA: 10 W rms
Pear-shaped micro: 400 mW nominal
Additional distortion: < 1%
Antenna: 50 Ohms, Rloss<-12dB
Data: RS232 with data terminal cable

Power :

Power supply: 13,2 V \pm 20%
Consumption (with charge):
On standby on control channel: 1.3 A
Reception: 2 A
Transmission: 6.5 A
Without handportable: < 5 mA

Radio specifications :

Transmitter

Power 10 W
Frequency stability Better than \pm 2.5 ppm
Spurious emissions Less than -36 dBm
Adjacent channel power Less than -60 dBc

Access mode: FDMA

Transmission type Half duplex (network mode)
Simplex (direct mode)

Data interface: RS 232 9.6 kbps
With data terminal cable

Audio specifications:

Vocoder: RP-CELP

Receiver

Static sensitivity Less than -119 dB
Dynamic sensitivity Less than -111 dB
Adjacent channel selectivity Greater than 60 dB
Spurious response rejection Greater than 70 dB
Spurious radiation Less than -57 dBm

Frequency band (MHz)

Sub-bands between 380 and 430 MHz

Duplex separation: +/- (5 and 15) MHz

Channel spacing: 10 or 12.5 kHz

Modulation: 0.25 GMSK

Channel bit rate: 8 kbit/s

Technology: Fully digital

Encryption: End to end

CE marking in accordance with directive R&TTE 1999/5/CE

ISO 7637 (car power supply)

"e" marking in accordance with car directive 9554/CE concerning equipment added to vehicles after manufacture.

Rounded shape in accordance with (UNO) directive 21.

Standard

Standard		Severity
Operating temperatures	CEI 68-2-1	-30°C
	CEI 68-2-2	+60°C
Thermal shock	CEI 68-2-14	-25°C / +30°C
Storage temperatures	CEI 68-2-1	-40°C
	CEI 68-2-2	+70°C
Humid heat variation (functional)	CEI 68-2-56	+40°C/95%RH 21 days
Dust and water protection Salt spray	CEI 529	IP 54
	CEI 68-2-52	Severity 2
Vibration (functional)	CEI 68-2-6, CEI 68-2-36	Random and sinusoidal vibrations
Shock (functional)	CEI 68-2-29	25g/6ms, 1000/axis & direction



M9623 MIB BT G2

G2 Handheld motorbike installation with 10W booster and bluetooth helmet



User benefits

- ✓ Complete freedom of movement with the Bluetooth link to the helmet which allows also to communicate until 10 m around the motorbike
- ✓ Very good acoustic performance at high speed
- ✓ Wide radio coverage with the 10W booster
- ✓ The G2 handheld configuration allows also to use the radio terminal alone out of the motorbike (under 2W coverage)

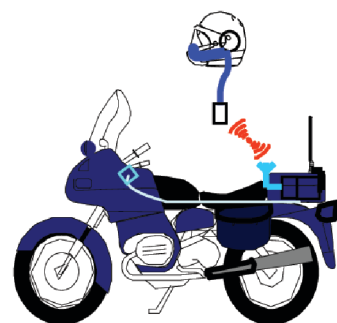
M9623 MIB BT G2

G2 Handheld motorbike installation with 10W booster and bluetooth helmet

Functions

- ✓ Fully digital communication (voice and data) provide by the G2 Handheld
- ✓ Automatic connection of all accessories (audio, 10W booster, data terminal *, hand micro-loudspeaker *) when the Handheld is inserted in its cradle
- ✓ The wireless communication between the helmet and the motorbike is automatically activated when the Bluetooth Biker Box is plugged on the helmet
- ✓ Pairing of the Bluetooth Biker Box by simple connection on the Motorbike Interface Box (after the pairing, the link between the MIB and the BBB is exclusive)
- ✓ Charging of the Bluetooth Biker Box by simple connection on the Motorbike Interface Box or through a 230V-AC travel charger *
- ✓ Possibility to connect a cable * to reload the Bluetooth software for maintenance
- ✓ Functions available on the handlebar : PTT, activation of the external loudspeaker, volume control (both external loudspeaker and helmet earpiece, state of the configuration (by LEDS), second PTT to activate the output audio link (megaphone function)
- ✓ Functions available on the Bluetooth Biker Box : PPT, volume control of the helmet earpiece, Bluetooth pairing

* optional equipments



Components & interfaces

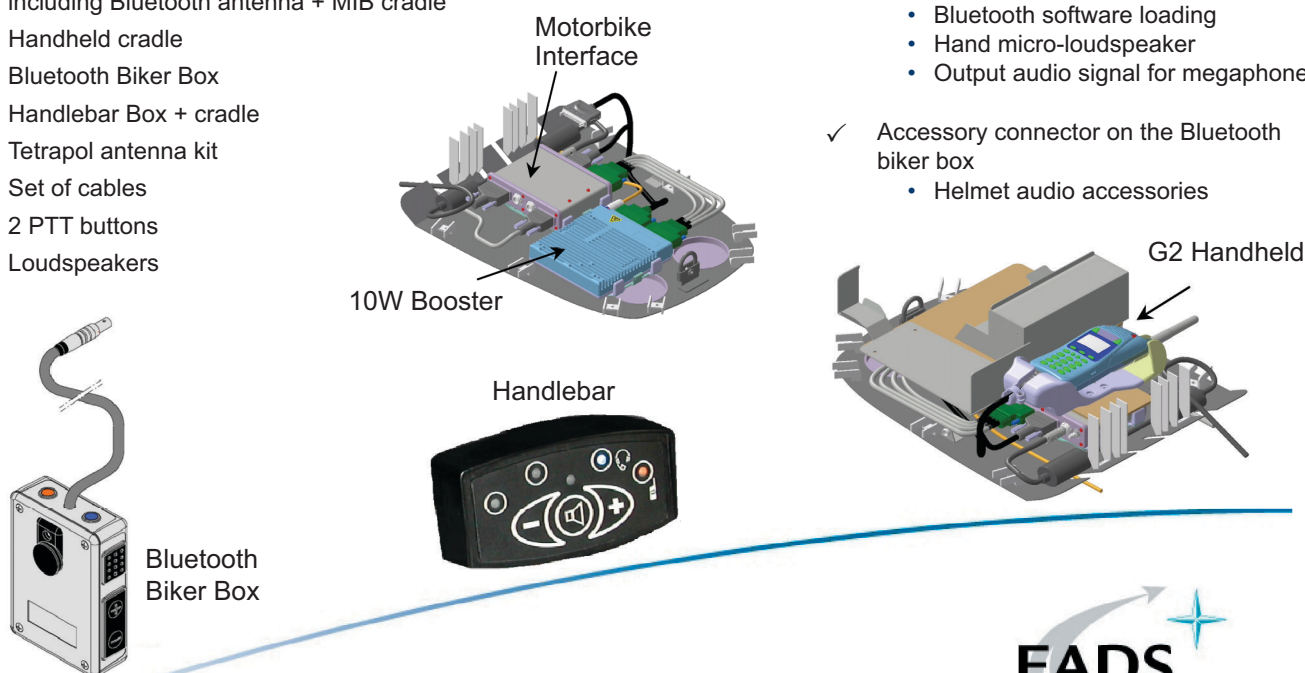
The ready-made motorbike solution contains the following elements:

Components :

- ✓ 10W Booster + cradle
- ✓ Motorbike Interface Box (MIB) including Bluetooth antenna + MIB cradle
- ✓ Handheld cradle
- ✓ Bluetooth Biker Box
- ✓ Handlebar Box + cradle
- ✓ Tetrapol antenna kit
- ✓ Set of cables
- ✓ 2 PTT buttons
- ✓ Loudspeakers

Interfaces :

- ✓ Accessory connectors on the MIB :
 - Data transmission
 - Bluetooth charging and pairing
 - Bluetooth software loading
 - Hand micro-loudspeaker
 - Output audio signal for megaphone
- ✓ Accessory connector on the Bluetooth biker box
 - Helmet audio accessories



M9623 MIB BT G2

G2 Handheld motorbike installation with 10W booster and bluetooth helmet

Additional essential elements to be ordered separately

- | | |
|--|-------------------------|
| ✓ Smart or Easy+ Handheld | M9620 S G2 / M9620 M G2 |
| ✓ Audio accessories (micro and earphones) for helmet | M9623 AA MH G2 |

Options to be ordered separately

- | | |
|--|-----------------|
| ✓ Hand micro-loudspeaker | M9621 AA SM G2 |
| ✓ Travel charger for Bluetooth Biker Box | M9623 EN BTC G2 |
| ✓ Data Terminal cable | |
| ✓ Bluetooth loader (software + cable), needed only for upgrading | |

Technical specifications

The technical characteristics and system features are those of the G2 handheld + booster configuration

The mechanical kit has been developed for the BMW R 850RT. It fits also the BMW R1200RT design. It could be adapted easily for other models

CE mark in accordance with R&TTE European directive CE/99/5

"e" marking in accordance with the European directive for motorbikes CE/97/24

Standard		Severity	
Operating temperature	IEC 60068-2	Dry heat	+55°C/30%RH
		Cold	-20°C
		Humid heat	+40°C/95%RH
Storage temperature	IEC 60068-2	Dry heat	+70°C/30%RH
		Cold	-40°C
Dust and water protection	IEC 60529		IP 56 (Handlebar Box)
			IP 54 (all equipments in the top case)
Random vibrations	IEC 60068-2		3.10 ⁻² g ² /Hz (5-100 Hz) 1.10 ⁻² g ² /Hz (100-500 Hz)
Bumps	IEC 60068-2		10g/11ms, 100/axis & direction
Chocks	IEC 60068-2		30g/6ms, 1000/axis & direction
Free fall	IEC 60068-2		3 falls on concrete / 1 m

