

## M9665 C G2 EDO Independent Digital Repeater (IDR)



- Compact and resistant to severe operating constraints, the IDR is the perfect solution for any projected mission either within or outside BS connected network coverage.
- Simple to use and operational in less than a minute, it allows you to establish a high quality secure group communication over a wide area.
- A versatile tool, the IDR can be transported by one person, can be installed anywhere, without any preparation of the site for fixed use or in a moving vehicle.
- All the accessories necessary for the installation of the IDR are cleverly stored in the top of the case and are always available.

## Features

- Portable equipment
  - . Coverage extension
  - . Installation inside or outside network coverage area
- Tx output power : 4 Levels selectable by the user : 15 W, 10W, 6 W or 2 W operation.
  - . 15 W : Radio link budget is balanced for mobile (M9610 mobiles product range) operation
  - . 6 W, 10 W : Intermediate levels
  - . 2 W : Radio link budget is balanced for Hand-Portable (M9620 mobiles product range) operation meaning that 15 W operation does not increase Hand-Portable coverage compared to 2 W operation.
- Compatible with all types of MC 9600 terminals
- Open Channel in half-duplex mode , channels dedicated to IDR mode
- Voice communications independent from network communications
- In order to offer best operational performances through maintaining communications as long as possible according to temperature range and user environment, the IDR supports a clever self-protecting feature driving the TX output level.
- In case outside temperature of the IDR is higher, the self-protecting feature decreases the RF power if necessary, and displays the new RF power on the IDR control panel. If the outside temperature decreases to acceptable level (hysteresis), then the IDR returns automatically to the initial programmed RF output level.

## Standard configurations

Reference	Description
<b>M9665 C G2 EDO UL</b>	IDR for 380-430 MHz
<b>M9665 C G2 EDO UM</b>	IDR for 440-490 MHz

Availability according to frequency sub-bands and relevant duplexers (see technical specs below).

Standard sub-band available : uplink : 380-385 Mhz / downlink : 390-395 Mhz

## Components and interfaces

- The IDR can be installed in various configurations:
  - . Indoor or outdoor in the range of authorized temperatures,
  - . Plugged into the mains (115/230 V AC),
  - . Powered in a vehicle either by the vehicle-battery or cigarette-lighter (12 V DC),
  - . In autonomous mode by its own battery,
  - . With its own magnetic antenna or connected to an external antenna.
- The IDR does not need any additional accessory. Following items and connection cables are located in the top case removable cover and are supplied with the product:
  - . One magnetic antenna,
  - . One mains power supply cable,
  - . One DC power supply cable with cigarette-lighter connector,
  - . One DC power supply cable with eye terminals,
  - . One DC power supply cable with crocodile clips.
- A TPS (Terminal Programming Station) with its connection cable is required to configure the IDR. This equipment is not supplied with the IDR.

## Options to be ordered separately

Options are not mandatory and depend on the customer's requirements.

Reference	Description
M9665 C OPT TROL	Trolley case
M9665 C OPT KC SCT B	Mains cable (US)
M9665 C OPT KC SCT C	Mains cable (UK)
M9665 C OPT DP AN	Antenna extension cable
M9665 C OPT PFRD A	CE lightning conductor plug
M9665 C OPT PFDR B	UK lightning conductor plug

## Technical specifications

<b>Size (mm):</b>	530x440x225	<b>Applicable standards:</b>	<b>Receiver</b>
<b>Weight:</b>	25 kg	➤ TETRAPOL PAS	Static sensitivity: better than -118 dBm
<b>Power supply:</b>	12V DC 115/230 V AC 50 Hz/60 Hz	➤ ETSI EN 300-113	Typical sensitivity: -120 dBm
<b>Consumption:</b>	9.5 A max (Tx 15 W) on 12 V DC	<b>Radio specifications:</b>	Dynamic sensitivity: better than -112 dBm
<b>Battery back up</b>	0.25 Hour autonomy (100 % TX 15 W), @20°C	<b>Transmitter:</b>	Adjacent channel selectivity:
<b>Construction:</b>	Carbon fibre Decompression valve	Power: 2 W/ 6W/10W /15 W	➤ step 12.5 kHz: better than 60 dB
<b>Cables:</b>	DC Cable (2.5 m) with cigarette lighter connector DC Cable (3 m) with Vehicle battery connector AC cable (2.5 m) Ground cable (3 m)	Frequency stability: better than $\pm 2$ pm	➤ step 10 kHz: better than 45 dB
		Spurious emissions: better than -36 dBm	Spurious response rejection: better than 70 dB
		Adjacent channel power:	Spurious emissions: better than -57 dBm
		➤ step 12.5 kHz: better than -60dBc	<b>Frequency band (MHz):</b>
		➤ step 10 kHz: better than -33dBc	380-385/390-395 MHz
		<b>Access mode:</b> FDMA	Sub-bands (duplexer) within 380 -430 MHz
		<b>Transmission type:</b> duplex	Sub-bands (duplexer) within 440 -490 MHz
		<b>Antenna:</b> magnetic $\lambda/4$ , 0 dBi gain, N type connector, Cable (7.5 m) Lightning protection on antenna connectors	<b>Duplexer :</b>
			<b>Duplex spacing :</b> between 5 and 15 MHz (10 MHz typical)
			<b>Bandwidth:</b> between 1.5 MHz (duplex spacing = 5 Mhz) and 5 MHz (duplex spacing = 10 Mhz)
			<b>Channel spacing:</b> 10 or 12.5kHz
			<b>Modulation:</b> 0.25 GMSK
			<b>Channel bit rate:</b> 8 kbit/s
			<b>Technology:</b> Digital
			<b>Encryption:</b> End to end

## Environmental specifications (IEC Standards)

<b>Standard</b>	<b>Severity</b>		
Operating temperature	IEC 68-2	Dry heat	+55°C, unlimited time, 30% RH, power supply and cover removed, without solar ray
		Cold	+45°C, unlimited time, 30% RH, C power supply and cover removed, without solar ray
Storage temperature	IEC 68-2	Dry heat	-20°C
		Damp heat	+70°C/30% RH
		Cold	+55°C/90%RH
Dust and water protection	IEC529	IP54	+25°C/98%RH
Salt spray protection	IEC 68-2	5% Na Cl, +35°C	-40°C
Free fall	IEC 68-2	Height = 0.25m onto concrete	
Mechanical (functional)	IEC 68-2	Bump, random and sinusoidal vibrations	