

Quad Band B31 B5, n78, n79 23dBm Digital RF Mini Repeater

Model No: MR-45853547-23W70



Features:

- 5G off-the-air Digital Repeater supporting both TDD and FDD; quad-band design enables rapid network deployment across 450, 850, 3500, and 4700 MHz.
- Compliant with **ETSI TS 138 113 - V15.5.0**, delivering up to **23 dBm composite output power**.
- Integrated **digital SDR module** allows flexible selection of sub-bands within supported frequency ranges.
- Built-in **5G Dynamic TDD Synchronization Detection Module** for automatic network search, cell detection, and wireless signaling processing.
- **Smart Automatic Level Control (ALC)** ensures optimal and stable output power.
- **Auto isolation testing** between service and donor antennas; supports **IMOP (Isolation Measurement and Oscillation Protection)**.
- Quick installation using external AC-DC adapter; optional **IP67-rated enclosure** for harsh environments.
- **RJ45 port** supports local management via laptop or remote supervision through an IP-based **Network Management System (NMS)**, including real-time status monitoring and alarm reporting.
- **Optional for a design to meet MIL-STD-810G**

Introduction

The **EMTS 23 dBm Quad-Band Digital Mini Repeater (MR)** offers a cost-effective solution for indoor signal coverage issues caused by weak signal levels, architectural interference, or signal attenuation. Designed for easy installation, this compact repeater helps mobile operators extend coverage with minimal infrastructure investment.

Operating between the **Base Transceiver Station (BTS)** and mobile devices, the repeater captures the BTS signal through a donor antenna, linearly amplifies it, and retransmits it indoors via a service antenna. This bi-directional process ensures coverage in dead zones and weak signal areas, while also relaying the mobile signal back to the BTS.

Supporting **5G NR**, this commercial-grade indoor repeater is built to meet **ETSI standards**. It supports both TDD and FDD 4G/5G networks and uses **advanced synchronization** for reliable communication. With built-in **IMOP functionality**, it ensures stable operation even in challenging RF conditions. The **5GPR** boosts capacity and network performance, helping carriers stay competitive in fast-paced 5G deployment environments.



EMTS Telecom Services offers a comprehensive portfolio of enhanced coverage solutions for the Wireless Networks. Based on advanced technologies, EMTS proven, indoor and outdoor solutions solve a wide range of network challenges including interference and oscillation problems, challenging coverage holes, rapid response deployment and inadequate in-building coverage. Regardless of the technology or frequency, EMTS can provide customized coverage solutions that address any combination of unique and complex network needs for the Wireless Networks.

Electrical Specifications

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		B31 (450)	B5 (850)	N78 (3500)	N79 (4700)
Frequency Range (adjustable)	Uplink	452.5–457.5MHz	824–849 MHz	3300–3800MHz	4400–5000MHz
	Downlink	462.5–467.5MHz	869–894 MHz	3300–3800MHz	4400–5000MHz
Number of Sub-bands		1	1	1	1
Bandwidth per Sub-band (adjustable)		0.2-5 MHz	0.2-25 MHz	5-100 MHz	5-100 MHz
Max. Gain	Uplink	70±2 dB	70±2 dB	70±2 dB	70±2 dB
	Downlink	75±2 dB	75±2 dB	75±2 dB	75±2 dB
Manual Gain Control		31 dB in step of 1 dB			
Automatic Gain Control		≥ 20 dB			
Gain Flatness (per sub-band)		≤ ±2.5 dB (peak-to-peak)			
Max. Input Power Without Damage		0 dBm			
Output Power	Uplink	20±2 dBm	20±2 dBm	20±2 dBm	20±2 dBm
	Downlink	23±2 dBm	23±2 dBm	23±2 dBm	23±2 dBm
Out of Band Gain		2.5≤f_offset_CW< 5.0 MHz ≤60 dB			
		5.0≤f_offset_CW<10.0 MHz ≤45 dB			
		10.0 MHz≤f_offset_CW ≤35 dB			
Spurious Emission	9KHz-1GHz	≤ -36dBm			
	1GHz-12.75GHz	≤ -30dBm			
ACRR	±10/20MHz	≤-36dBc/30KHz			
	±20/40MHz	≤-40dBc/30KHz			
EVM		≤6%	≤6%	≤3.5%	≤3.5%
Frequency Stability		±0.01 ppm			
Noise Figure		≤6 dB			
VSWR		≤2.5			
System Delay		≤8 μs			



About EMTS Telecom Services Ltd.:

EMTS is a leading supplier of high-quality RF coverage solutions designed to maximize wireless network coverage in difficult RF environments and complex settings. The company specializes in extending RF radio coverage to rural areas, office buildings, subways, tunnels and shadowed areas. The EMTS coverage solution supports all major mobile technologies and standards of wireless Networks.

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Note: All specifications subject to change without notice.

Mechanical & Environmental Specifications

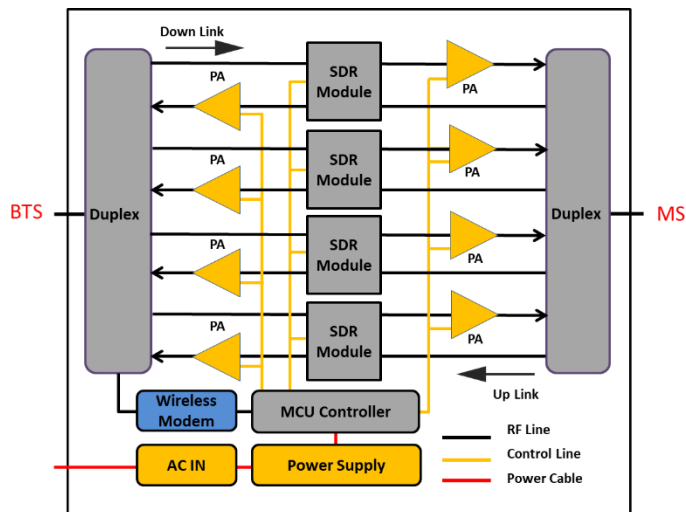
RF Connector	N-Female
Impedance	50 Ω
Power Supply	Input: AC 100~240 V, 50/ 60 Hz; Output: DC 24 V/ 4.2 A
Power Consumption	≤ 85 W
Dimensions	330*258*95 mm
Weight	≤ 9 kgs
IP Rating	IP67
Operating Temperature	-10 °C to 50 °C

Monitoring

NMS	Local	Via USB Type-C
	Remote	Via Cloud-based NMS (optional)

Certification and standards

Standard	Comply with CE and ETSI Standards: Safety: EN 60950 EMC : ETSI 301 489-50, ETSI 301 489-1, Radio: ETSI 301 908-11, ETSI 301 908-15 and ETSI TS 136 106 V15.0.0 / ETSI TS 136 143 V15.0.0
CE	CE comply



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