

450-850-3500-4700MHz Quad Band Fiber Optic DAS 4G/5G MIMO at B31, B26, n78, n79



Model No: FDS-45853547-MIMO

Features

- Compact size Remote Unit supporting Four bands – Suitable for indoor installations, designed for space-efficient mounting
- Supports MIMO Topologies in all bands – MIMO 2:2 in FDD bands (450 / 850 MHz), and MIMO 2:2 for TDD band (3500,4700 MHz)
- Built-in antenna at the RU- easier rollout of the DAS system avoiding installation of coaxial cable
- Low Optical Transmission Loss – Ideal for large-scale installations
- LTE and 5G Compliance – Fully compatible with industry standards for current and next-generation networks
- Built-In 5G Dynamic TDD Sync Detection Module – Automatically completes 5G network cell search and wireless signaling processing
- Digital Bandwidth Adjustment – Allows seamless adaptation to varying frequency band requirements
- Master-Unit includes POI to combine the supported bands
- One Master Unit (MU) supports up to 8 Remote Units (RUs) via star topology to optimize fiber resource usage
- Tx/Rx and Alarm over Single Fiber – Control and alarm data transmitted through the same fiber used for signal relay.
- Donor Signal Monitoring – Enables real-time optimization and fault detection.
- 4G Modem Connectivity – Enables remote communication with the EMTS NMS (Network Management System)
- USB Port Access – Supports direct laptop connection for local supervision.
- IP-Based NMS Support – Remote status monitoring and parameter configuration via Ethernet



EMTS Telecom Services Ltd. 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.

Introduction

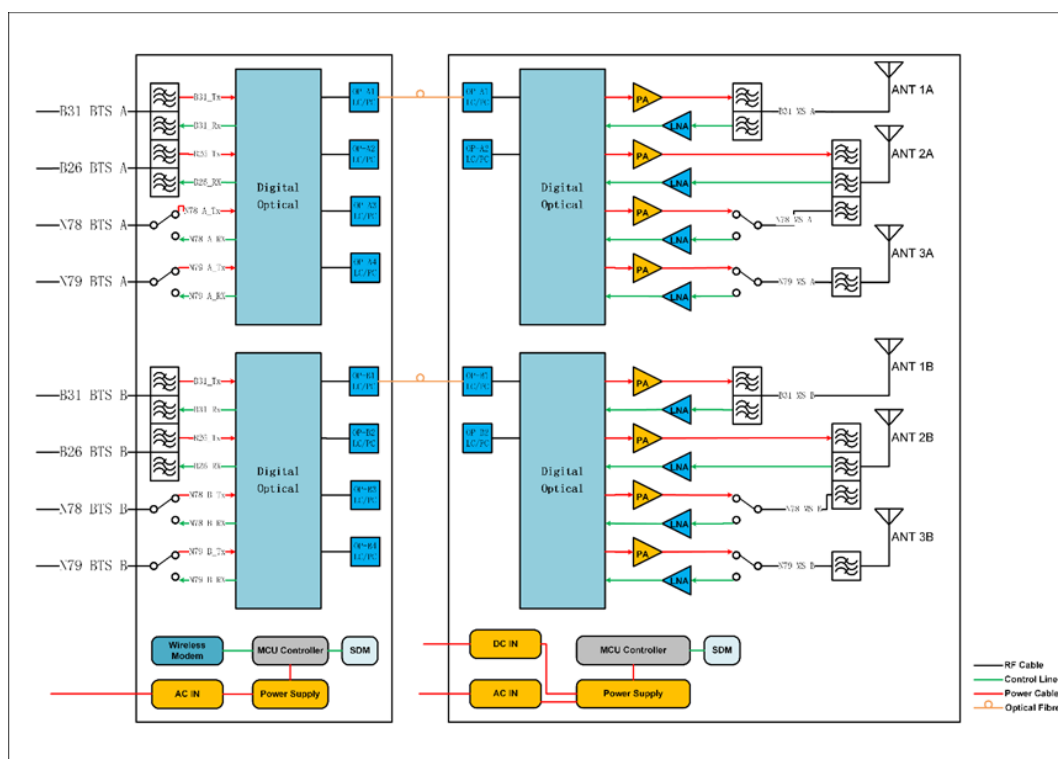
The EMTS Telecom Services Quad-Band Fiber Optic Repeater System is a high-performance solution designed for private 4G and 5G networks, supporting both FDD and TDD modes. Built to resolve mobile signal challenges in areas remote from the Base Transceiver Station (BTS), this system leverages existing fiber optic infrastructure to deliver robust and extended wireless coverage.

The system consists of two key components: a Master Unit (MU) and one or more Remote Units (RU). The MU captures the BTS signal via a donor antenna, converts it into an optical signal, and transmits it over fiber to the RU. The RUs then reconvert the signal back to RF for broadcast in areas with weak or no coverage. The system also supports full bi-directional communication, amplifying and relaying uplink signals back to the BTS.

The Master Unit, housed in 19" enclosure includes an integral POI (Point of Interface), streamlining BTS connectivity and minimizing the need for external components. The RU is compact to ease the installation process.

Operating across the 450 / 850 / 3500 / 4700 MHz bands - MIMO 2:2 for FDD and MIMO 2:2 for TDD - the system complies fully with LTE and 5G standards. It is ideally suited for environments such as tunnels, airports, underground facilities, mining operations, hotels, and large enterprise campuses, particularly where underground fiber infrastructure is in place.

With a strong track record in multi-band fiber DAS deployments, EMTS offers end-to-end solutions that are reliable, scalable, and engineered for long-term performance in complex RF environments.



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.

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Technical Specifications:

Electrical Specifications			
		MU	RU
Frequency Range	B31 (450) Uplink	452.5–457.5MHz (adjustable)	452.5–457.5MHz (adjustable)
	B31 (450) Downlink	462.5–467.5MHz (adjustable)	462.5–467.5MHz (adjustable)
	B26 (850) Uplink	814–849 MHz (adjustable)	814–849 MHz (adjustable)
	B26 (850) Downlink	859–894 MHz (adjustable)	829–894 MHz (adjustable)
	N78 (3500) UL 4T4R	3300–3800 MHz (adjustable)	3300–3800 MHz (adjustable)
	N78 (3500) DL 4T4R	3300–3800 MHz (adjustable)	3300–3800 MHz (adjustable)
	N79 (4700) UL 2T2R	4400–5000 MHz (adjustable)	4400–5000 MHz (adjustable)
	N79 (4700) DL 2T2R	4400–5000 MHz (adjustable)	4400–5000 MHz (adjustable)
Number of Sub-bands		1 per band	1 per band
Bandwidth (per sub-band)	B31 (450)	0.2-5 MHz (adjustable)	0.2-5 MHz (adjustable)
	B26 (850)	0.2-35 MHz (adjustable)	0.2-35 MHz (adjustable)
	N78 (3500) 4T4R	5-100 MHz (adjustable)	5-100 MHz (adjustable)
	N79 (4700) 2T2R	5-100 MHz (adjustable)	5-100 MHz (adjustable)
Number of Units		1	≤ 8
Gain		≥ 45 ±3dB	
Manual Gain Control		31 dB in step of 1 dB	
Automatic Gain Control		≥20 dB	
Gain Flatness		+/- 3 dB	
Max. Input Power Without Damage	Uplink	-10 dBm	
	Downlink	-10 dBm	
Output Power	Uplink	-10 ± 2dBm per band	
	Downlink	23 ± 2dBm per band	
Noise Figure		UL: ≤ 6 dB (Except for central frequency point)	
EVM		LTE≤6%; NR≤3.5%	LTE≤6%; NR≤3.5%
VSWR		≤1.8	
System Delay		≤6 μs	
RF Connector		N-Female	N-Female
Impedance		50Ω	



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	MU	RU
Optical Output Power	≥ 0 dBm	
Optical Wavelength	1270 nm/1310 nm (WDM)	
Fiber	Single Mode	
Fiber Connector	LC/PC*8	LC/PC*4 – 2 for MU connection , additional 2 for cascading option
Power Supply	DC -48 V	DC -48 V
Power Consumption	≤ 75 W	≤ 100 W
Mechanical Specifications		
Dimensions	422*352*44 mm	330*260*100mm
Weight	≤ 10 kg	≤ 8 kg
Environmental Specifications		
IP Rating	IP40	IP40
Operating Temperature	-10~50°C	-25~55°C
Local and Remote-Control Specifications		
NMS	Local	Via USB Type-C
	Remote	Remote Unit: Through MU via Fiber Optical Cable Master Unit: Via Cloud-based NMS (optional)
Comply with Standards		
Safety	EN 62368-1 General, EN 50385 General	
EMC	EN 301 489-1, EN 301 489-50	
Radio	ETSI - ETSI EN 303 609 & ETSI EN 301 908-11 3GPP - 3GPP TS 36.143 & 3GPP TS 36.106	
CE	Compliant with relevant EU directives	



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