

5G NR TDD Band N78 Fiber DAS Remote Unit Supporting 4X4 MIMO

Model No: FRU-T35-23W10



Features

- 5G RF Extension 4 x4 MIMO system supports TDD technology
- Allows fast 5G NR network deployment
- Designed to comply with ETSI 3GPP TS 38.106
- Supports NSA (Non-Standalone) and SA (Standalone) 5G network
- One Master Unit can support 2 Extension Units (EU), and One EU can support Up to 8 Fiber Remote Units (FRU) to maximize the utilization of fiber optical cable (a star topology is formed between EU and FRUs)
- Composite cable plug and play, remote power supply
- Built-in Antenna, easy installation, easy maintenance
- Can be managed through EMTS OMT/NMS

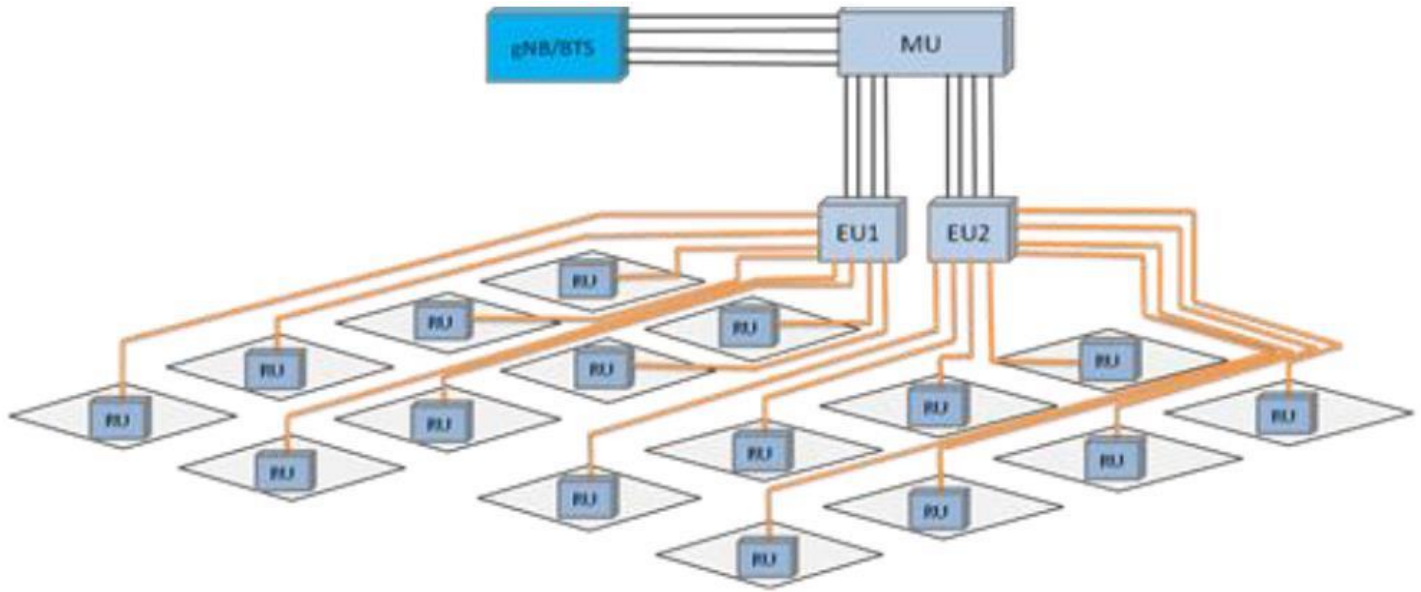
Introduction

The EMTS Telecom Services Ltd. F/O DAS solution provides an affordable solution for multi-operator 5G indoor signal coverage problems for multi-operator deployment. The Master Unit (MU) is based on POI, Attenuator box, and Fiber Conversion Box Unit (FCB). One Master Unit (MU) is connected to 2 Extension Units (EU). Each EU is connected to 8 Fiber Remote Units (FRU) via fiber optic cables. The gNB RF signals of all 4 operators are fed to the 5G POI. The POI combines all 4 operators into 4 MIMO streams. The combined RF signal is attenuated using an attenuator box and fed into the FCB. The MU converts the RF signal to an optical signal, 1 signal per MIMO stream. The optical signal is connected to the Extension Unit (EU) through F/O cables. One MU supports 2 EU. The EU splits the optical signal from the MU into 8 optical signals for the fiber Remote Unit (RU) via fiber optic cable. The fiber RU will reconvert the optical signal into an RF signal and provide the signal to the areas where network coverage is inadequate. The mobile signal is also amplified and retransmitted to the BTS via the opposite direction. The EMTS 5G Fiber Optic Repeater system is designed to support MIMO 4X4 topology. The EMTS Telecom Services 5G DAS solutions boost network performance to stay ahead of the fast-moving 5G multi-operator deployments & get a fast ROI simultaneously.



EMTS Telecom Services offers a comprehensive portfolio of enhanced coverage solutions for 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 Wireless Networks.

System Distribution & Architecture



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 Telecom Services coverage solution supports all major mobile technologies and wireless networks' standards.

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Electrical Specification:

Item	Specifications
Supported Bandwidth	270MHz
Frequency Range	3300~3570MHz
Frequency Stability (+/-0.01ppm)	$\leq 0.01\text{ppm}$
Signal Mode(Analog/Digital)	Analog
Support 4X4 MIMO	YES
Max Conducted Output Power @	$\geq 23\text{dBm}$
Optical Output Power	$3\pm 2\text{dBm}@1310\text{nm}$
Max Gain @ DL/UL	$31\pm 2\text{dB}$
Antenna	Antenna Integrated (Omni)
Antenna Gain	$\geq 2\text{dBi}$
Gain Flatness	$\leq \pm 3\text{dB}$
AGC/ALC Function	Supported
ALC Range	$\geq 10\text{dB}$
Gain Adjustment Range	0~15dB/Step 1dB
ACLR	3GPP TS 38.106 / 45dB
Noise Figure@ Max.Gain(UL)	$\leq 8\text{dB}$
Gain Flatness	$\leq \pm 3\text{dB}$
Optical Receiver Sensitivity	-12dBm
Maximum Input Power(Non-Destructive)	-10dBm
Input VSWR	≤ 2.0
Spurious and Emission	3GPP TS 38.106, Category A -13dBm
Intermodulation	3GPP TS 38.106, <30dBm
Out of Band Gain	3GPP TS 38.106, Per the standard
EVM	3GPP TS 38.106, < 3% @ 256 QAM
Group(System) Delay (μs): MU->EU->RU	$\leq 1.5\mu\text{s}$
Ingress Protection	IP65(Outdoor)/IP30(Indoor)
Cool Function	Heat Sink
Local Monitoring Interface	Via USB and WiFi Hotspot
Remote Monitoring Interface	Through MU via Fiber Optical Cable
Output RF Connector Type	4.3-10 Female
Antenna	Built-In 4*4 MIMO Antenna
Room Operating Temperature	-10 to +45°C
Operating Humidity	$\leq 95\%$



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Item	Specifications
Dimension(H x W xD)(mm)	200mm×200mm×80mm @ IP30
	220mm×220mm×88mm @ IP65
Weight (Kg)	≤3kg @IP30
	≤6kg @IP65
Mounting Type	Celling, Wall or Pole
Power Supply	40 ~ 56 VDC

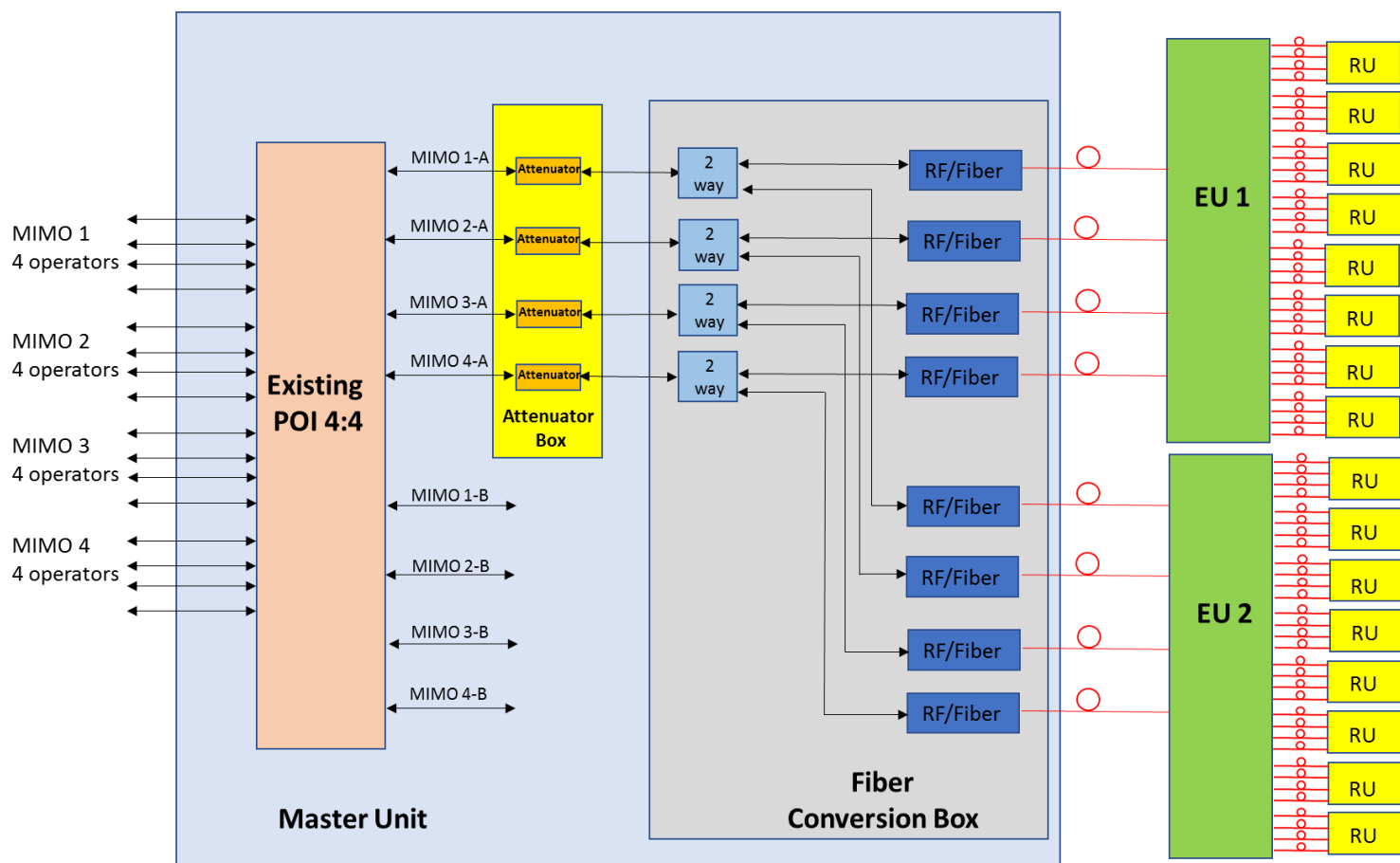


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System Architecture



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