Corning® Optical Network Evolution (ONE™) Solutions Mid-Power Remote Expansion Unit (MxU)

features and benefits |

Supported service	Supports the 2.5 GHz LTE (TDD) band.
Supported channels	Supports three contiguous 20 MHz channels.
Expands mid-power remote unit (MRU) services	Expands MRU support to eight services per coverage area over the same footprint.
Optical fiber savings	All eight services are routed over a single optic fiber pair.
Design and deployment flexibility	MxU available in AC or DC power supply options. Antenna splitting schemes are possible due to the higher-power output capability.
Scalable Design	Scalable design enables future support of additional band via connection to additional expansion unit without disruption to existing services.
Simple installation and maintenance	All connections and status LEDs located on front panel. Rack and wall-mountable installation Field upgradable
Management and control	MxU management and control are supported by Corning® optical network evolution (ONE™) solution software v3.2 and higher. Management and control via the MRU

The mid-power remote expansion unit (MxU) is a new addition to the Corning ONE solution mid-power product line which enables medium-power transmission for the 2.5 GHz band (TDD). The MxU is a 1U add-on unit that enhances the scalable multiservice MRU solution, adding additional service support at a relatively low cost.

The MxU expands the MRUs service distribution at remote locations to include the 2.5 GHz LTE (TDD) band, enabling up to eight operator services (with the MRU) to be distributed over a single-broadband infrastructure.

The MxU interfaces to the MRU, providing broadband frequency support over UL/DL RF expansion ports. It supports the 2.5 GHz frequency band in a single enclosure and includes a future option for connecting additional add-on units for even more band support.

All eight services are distributed over the same infrastructure: routed to the MRU over a single optic fiber, distributed over the same footprint, and managed as a single element via a web session to the headend control module (HCM) — as the MRU.

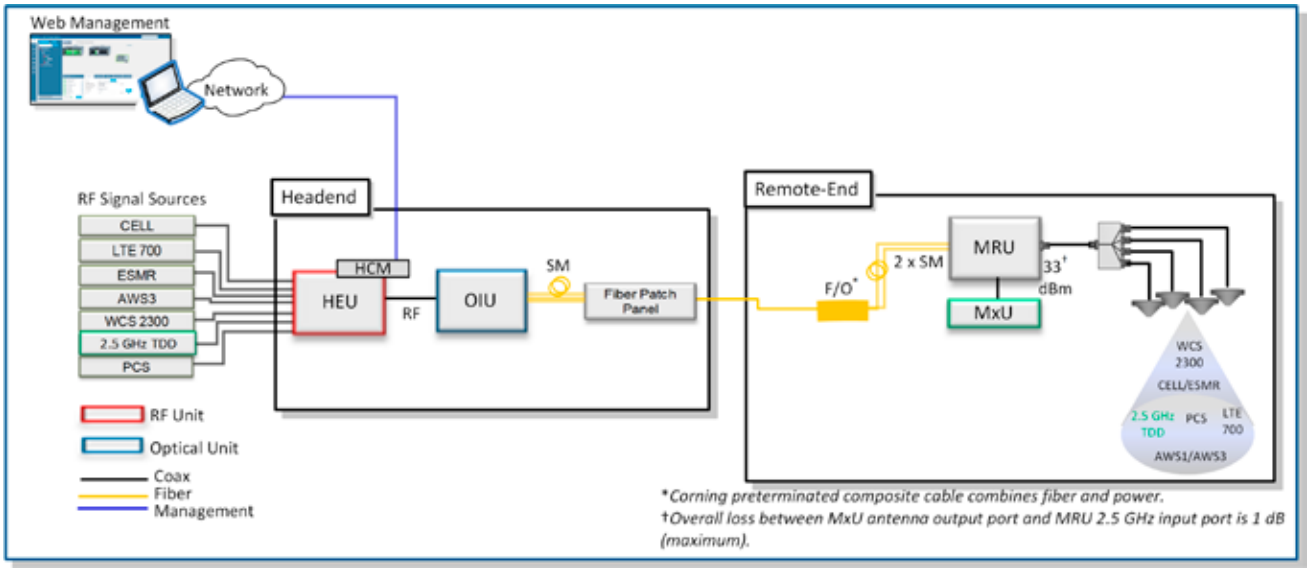
Mid-Power Remote Expansion Unit (MxU) | Figure 1

Corning® Optical Network Evolution (ONE™) Solutions Mid-Power Remote Expansion Unit (MxU)

system description |

In the downlink, at the headend, BTS/BDA RF signals are conditioned by service-specific RIMs installed in the headend unit (i.e., HEU/IHU), ensuring a constant RF level. All eight conditioned signals (MRU + MxU) are then forwarded to the optical interface unit (OIU) and converted by the OIMs to an optical signal for transporting over single-mode fiber to the MRU at the remote location.

The services supported by the MRU are filtered and amplified by the MRU, whereas the 2.5 GHz band is filtered and amplified by the MxU. All eight services are combined and distributed via the MRU antenna port over the broadband antenna infrastructure installed at the remote locations. In the uplink, the process is reversed.



MxU System Description | Figure 2

Corning® Optical Network Evolution (ONE™) Solutions Mid-Power Remote Expansion Unit (MxU)

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specifications |

System Level RF Parameters per 2.5 GHz Service

Service/Band	LTE 2500 MHz TDD	
RF Parameter	DL	UL
Frequency Range (MHz)	2496-2690	
Maximum Output (dBm)	33	
Maximum Loss between MxU and MRU	1.0 dB	
Input Power (dBm)	-11 to 37	
UL Gain Range (dB)		-19 to 15
SFDR (dB)		60*
Maximum Intermod Distortion (dBm)	≤ -13	
UL NF (dB) (Typical)		12
Gain Flatness/Ripple (dB)	± 2.0	

*For 5 MHz bandwidth

Environmental Specifications

Operating Temperature	-40˚C to 65˚C (-40˚F to 149˚F)
Storage Temperature	-30˚C to 85˚C (-22˚F to 185˚F)
Humidity	5 percent to 85 percent RH
MTBF	15 years

Standards and Approvals

EMC/Radio	FCC 47 CFR Part 15, Subpart B FCC 47 CFR Part 27, Subpart C – TDD 2500 MHz frequency band FCC Part 2
Safety	IEC 60950-1 UL 60950-1, Second edition, Information technology equipment TUV safety certifications
NEBS	OSP Class 2

Corning® Optical Network Evolution (ONE™) Solutions Mid-Power Remote Expansion Unit (MxU)

specifications | (continued)

Physical Specifications

Interfaces	One 4.3-10 DIN male type duplexed RF antenna port One UL QMA output connector One DL QMA output connector One RJ45 MGMT (local) connection – used for MxU-to-MRU management connection One two-hole, standard-barrel grounding lug; for use with stranded copper wire conductors; 10-14 AWG; holes — 1/4-in DC IN connectors (for models with PSM-DC) — four-pin terminal block connector supporting 12-16 AWG for both Class 1 and Class 2 power connections One QMA input connector for EXP UL (future option) One QMA output connector for EXP DL (future option)	
Power	AC:	Power Input: 100-240 VAC/50-60 Hz Maximum power consumption: 128 W Maximum current consumption: 2.5 A
	DC:	Power input: DC Class 1: 48 VDC (40-60 VDC) 9 A maximum DC Class 2: 30 to 60 VDC Power consumption: • First pair: 50 W • Second pair: 78 W Maximum power consumption: 131 W Maximum current consumption: • First pair: 2.1 A • Second pair: 3.3 A
Management	Managed via RJ45 Ethernet connection to the MRU Management and control capabilities supported by Corning® optical network evolution (ONE™) solution software v3.2 and higher	
Physical Characteristics	Weight:	16.5 lb (7.5 kg) (including power supply module)
	Mounting:	19-in rack (1U rack height) Wall-mountable (separately ordered accessory kit)
	Dimensions (H x W x D):	1.75 x 19 x 17.7 in (44.4 x 482.6 x 449.5 mm)
	Cooling feature:	Active heat dissipation (fan)

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ordering information |

MxU Assembly Configurations

Part Number	Description
MRU-ASM-AO-AC	MRU Add-On Assembly with AC power supply module supporting the 2.5 GHz (TDD) band
MRU-ASM-AO-DC	MRU Add-On Assembly with DC power supply module supporting the 2.5 GHz (TDD) band

Table 1. Part Numbers for MxU Assembly Configurations

Extended Radio Interface Module

Part Number	Description
RIMe-25T	Extended Radio Interface Module supporting the 2.5 GHz (TDD) band; RF input — -11 to 37 dBm

Table 2. Part Number for Supported Headend Unit RIMe

Accessories

Part Number	Description
AK-AO-WALL-MK	MRU Add-On Wall-Mounting Kit
AK-AO-MRU-MK	MRU Add-On MRU Mounting Kit
AK-MRU-AO-CBL	MRU Add-On Cable Accessory Kit

Table 3. Part Number for MxU Accessory Bracket

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P/N CE0011301 A00