FT350 Solution

A Corning MobileAccess Solutions Product

features and benefits |

Comprehensive services support	• 100 MHz to 2.8 GHz band support of wideband services
	• Supports quad-band service bundles per operator
	• OCH/ORU to support VE products leveraging both SMF, MMF and WDM
	• OCH unit to support GX products leveraging WDM
	• OCH unit to support International HX products leveraging MMF or SMF
Flexible and scalable architecture	• SISO & MIMO Support – 8 & 4 remotes respectively
	• Supported fiber optics: MMF, SMF, WDM over SMF
Automatic signal optimization	• FSK Level Adjustment optimizes RF performance, minimizes noise level and interference
	• Automatic end-to-end system adjustment for fiber lengths of up to 16 km
Low deployment cost	• Simplifies large scale MobileAccessVE installations, which can be deployed in a few hours, with minimum enterprise disruption
	• Seamlessly coexists with the Enterprise LAN and does not consume LAN capacity
Carrier-grade management	• Remote end-to-end system monitoring, management and configuration using an MCT Software or SC-450 Management Server

The FT350 Solution offers a fiber optic RF transport backbone that provides a scalable, cost-effective solution for extending MobileAccess solution services using MMF, SMF, or Wave Division Multiplexing (WDM), and low-loss fiber cabling (F/O), transporting RF from a single BTS source to multiple remote locations in a 16 km radius.

The FT350 Solution is an ideal fit for large, campus-style MobileAccess VE, GX, or International HX MIMO or SISO deployments, and the solution generates significant CAPEX and OPEX savings for operators by using existing fiber infrastructure to enable a single BTS to service several buildings on a campus.

The solution consists of the following main components:

- **Optical Central Hub (OCH)** – Headend which can be deployed for VE with the ORU remote or solely to support the MobileAccess GX or International HX solutions.
- **Optical Remote Unit (ORU)** – Service specific unit (model-dependent) providing the optic-to-RF signal conversion at the remote end.

When deployed with the VE solution, each ORU interfaces to a MobileAccessVE Control Unit (VCU). The solution is centrally managed via a Web session to the System Controller (SC-450).

Optical Central Hub and Optical Remote Unit

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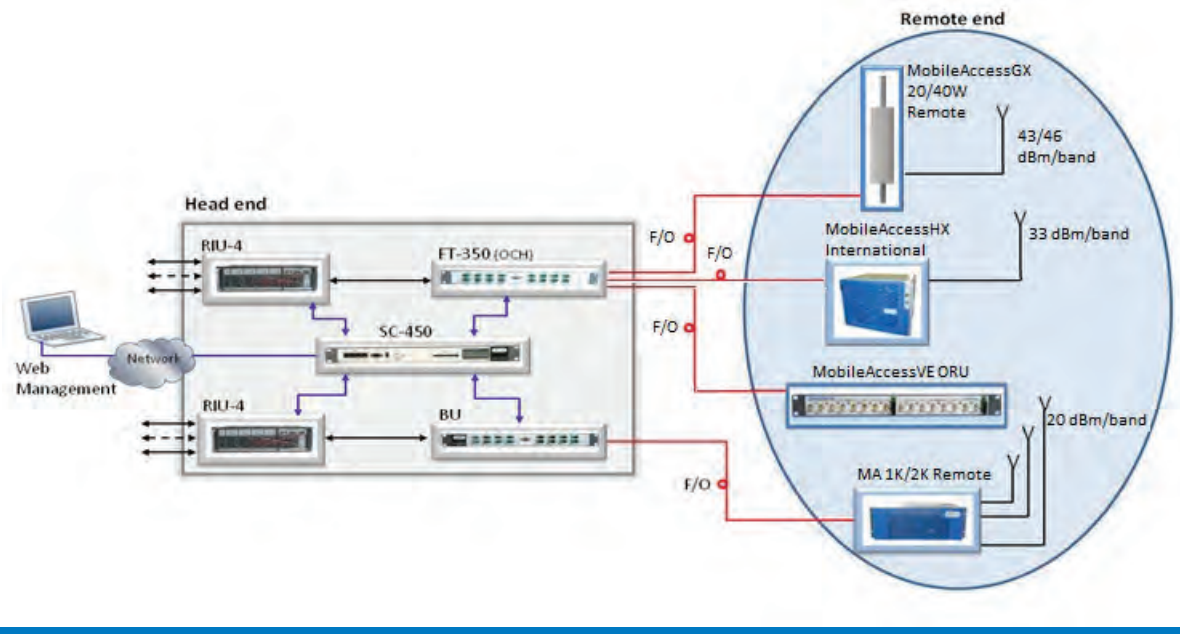
system specifications |



OCH Architecture

OCH Supported Services

Services	Frequency Range (MHz)
Licensed and Unlicensed	100-2800

ORU Supported Services

Services	Frequency Range (MHz)	
	Downlink	Uplink
CELLULAR	869-894	824-849
PCS	1930-1995	1850-1915
LTE700	728-746, 746-757	698-716, 776-787
AWS	2110-2155	1710-1755

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specifications | (continued)

ORU RF Parameters per Service

The RF parameters defined for the OCH and ORU. Transmission parameters based on a zero length fiber optic cable.

LTE 700 MHz			
RF Parameter		**DL**	**UL**
Frequency Range (MHz)		698-716 776-787	728-746 746-757
Max Output Power Per Antenna Port	Simplex	8	-10
	Duplex	8	-10
Mean Gain (dB)	Simplex	28	28
	Duplex	28	28
Gain Flatness (db p-p)	Simplex	2	3
	Duplex	2	2
Max Input Power (dbm)	RIU	-20	-43
	Passive	0	-43
Max Intermod Distortion[1] (dBm)		-40	-85
Input IP3 (dBm) – UL only			-6
Output IP3 (dBm) – DL only		32	
SFDR[2] (dB)			71
Max NF (dB)			16
Typical NF (dB)			14

CELL TDMA/CDMA/WCDMA			
RF Parameter		**DL**	**UL**
Frequency Range (MHz)		869-894	824-849
Max Output Power Per Antenna Port	Simplex	8	-10
	Duplex	8	-10
Mean Gain (dB)	Simplex	28	28
	Duplex	28	28
Gain Flatness (db p-p)	Simplex	2	3
	Duplex	2	4
Max Input Power (dbm)	RIU	-20	-43
	Passive	0	-43
Max Intermod Distortion[1] (dBm)		-40	-85
Input IP3 (dBm) – UL only			-6
Output IP3 (dBm) – DL only		32	
SFDR[2] (dB)			71
Max NF (dB)			16
Typical NF (dB)			14

PCS-G GSM/TDMA/CDMA/WCDMA			
RF Parameter		**DL**	**UL**
Frequency Range (MHz)		1930-1995	1850 - 1915
Max Output Power Per Antenna Port	Simplex	8	-10
	Duplex	8	-10
Mean Gain (dB)	Simplex	28	28
	Duplex	28	28
Gain Flatness (db p-p)	Simplex	4	4
	Duplex	4	5
Max Input Power (dbm)	RIU	-20	-43
	Passive	0	-43
Max Intermod Distortion[1] (dBm)		-40	-85
Input IP3 (dBm) – UL only			-6
Output IP3 (dBm) – DL only		32	
SFDR[2] (dB)			71
Max NF (dB)			16
Typical NF (dB)			14

AWS CDMA/WCDMA 2100 MHz			
RF Parameter		**DL**	**UL**
Frequency Range (MHz)		2110-2155	1710 - 1755
Max Output Power Per Antenna Port	Simplex	8	-10
	Duplex	8	-10
Mean Gain (dB)	Simplex	28	28
	Duplex	28	28
Gain Flatness (db p-p)	Simplex	3	4
	Duplex	3	4
Max Input Power (dbm)	RIU	-20	-43
	Passive	0	-43
Max Intermod Distortion[1] (dBm)		-40	-85
Input IP3 (dBm) – UL only			-6
Output IP3 (dBm) – DL only		32	
SFDR[2] (dB)			71
Max NF (dB)			16
Typical NF (dB)			14

[1]Max intermod distortion is the IMD3 product measured for 2 tone @ 10 dBm composite for DL output and for @ -10 dBm composite for UL output.
[2]SFDR is calculated for 30 KHz demodulation BW.

specifications | (continued)

Temperature

Operating	0°C to +50°C (32°F to 122°F)
Storage	-20°C to 85°C (-4°F to 185°F)

Standards and Approvals

Laser Safety	FDA/CE 21 CFR 1040.10 and 1040.11 except for deviations pursuant to laser notice no. 50 (July 26, 2001) and IEC 60825-1, Amendment 2 (January 2001)
FCC	Radio Equipment and Systems FCC 47 CFR Part 15
Safety	CAN/CSA-C22.2 No.60950

Absolute Maximum Rating

Power Supply	48 V (36 V-57 V) / 1.8A (1.4A – 2.2A)

Optical

Optical Output Power	< 3.0 mW
Max. Optical Budget	2 dB for fiber + 1 dB for connectors (assumed) = 3 dB total. 300 m Multimode 8 dB for fiber + 1 dB for connectors (assumed) = 9 dB total. 16 Km XR (WDM)
Optical Loss Per Mated-pair Connectors	0.5 dB (max)
Optical Connector	SC APC
Fiber Type	• Single-mode: 9/125um – Corning® SMF-28e® or Compatible • Multimode: 50/125 µm or 62.5/125 µm (minimum qualifications with ANSI/TIA/EIA-568-B series, EN50173-1 or ISO/IEC 11801)
Wavelength	• 1310 ± 10 nm (Standard) • 1310 ± 20 nm, 1550 ± 20 nm (WDM Combined)
Maximum Distance OCH and ORU	300 m (MMF), 2 Km (SMF), 16 Km (SMF [WDM])

specifications | (continued)

Fiber Specifications

50/125 or 62.5/125 µm complying with ANSI/TIA/EIA-568-B series, EN50173-1 or ISO/IEC 11801, may be used up to 300 meters in length assuming the following qualifications:

- Both the OCH and ORU must be multimode capable.
- All fiber in a given length of fiber must be of the same core diameter.
- All bulkhead adapters must be single-mode SC APC (Green) adapters.
- All terminations, cross connections, or patches must be direct fusion splice or Corning MobileAccess specified patch cords listed below.

SMF SC APC and LC APC Fiber Jumper Cables for SMF (Dual Core)

444402G5120006F	2-Fiber, SC APC to SC APC riser-rated 2f zipcord, 6 ft, ClearCurve® XB SMF
444402G5120012F	2-Fiber, SC APC to SC APC riser-rated 2f zipcord, 12 ft, ClearCurve XB SMF
224402G5120006F	2-Fiber, LC APC to SC APC riser-rated 2f zipcord, 6 ft, ClearCurve XB SMF
224402G5120012F	2-Fiber, LC APC to SC APC riser-rated 2f zipcord, 12 ft, ClearCurve XB SMF

SMF SC APC and LC APC Fiber Jumper Cables for WDM (Single Core)

444401G2131006F	1-Fiber, SC APC to SC APC riser-rated 2f zipcord, 6 ft, ClearCurve XB SMF
444401G2131012F	1-Fiber, SC APC to SC APC riser-rated 2f zipcord, 12 ft, ClearCurve XB SMF
224401G2131006F	1-Fiber, LC APC to SC APC riser-rated 2f zipcord, 6 ft, ClearCurve XB SMF
224401G2131012F	1-Fiber, LC APC to SC APC riser-rated 2f zipcord, 12 ft, ClearCurve XB SMF

specifications | (continued)

Optical Central Hub (OCH)

Supported Services

Licensed and Unlicensed
Spectrum 100 MHz to 3 GHz

Interface Connections

OCH-4, OCH-GX-4, OCH-HX-4
- (2) QMA Interface Connectors for RIU (1 set for UL/DL)
- OCH-4-MMF/SMF: (4) Pairs of SC APC Optical Connectors
- OCH-4-XR (WDM): (4) Core of SC APC Optical Conenctors

OCH-8, OCH-GX-8, OCH-HX-8
- (4) QMA Interface Connectors for RIU (2 sets for UL/DL Ports)
- OCH-8-MMF/SMF: (8) Pairs of SC APC Optical Connectors
- OCH-8-XR (WDM): (8) Core of SC APC Optical Connectors

(4) RJ-45 ports for Ethernet communication to ORU units
(Not Available on OCH-GX; OCH-HX)
(1) RJ-45 port to SC-450 Controller
(1) DB-9 RS232 Connector for technical support only

Physical Characteristics

- Dimensions (H x W x D): mm (in) 435 x 505 x 44 (17.12 x 19.88 x 1.7)
- Weight: kg (lb) 3.5 (7.7)
- Mounting: 19-in rack-mount brackets preconnected; wall-mount brackets can be ordered separately.

Optical Remote Unit (ORU)

Supported Services

Domestic: CELL, PCS, 700LTE and AWS

Interface Connections

Product Platforms:
- MIMO SMF/MMF - (2) Pairs of SC APC Optical Connectors
- MIMO XR - (1) Pair of SC APC Optical Connectors
- SISO SMF/MMF - (1) Pair of SC APC Optical Connectors
- SISO XR - (1) Core of SC APC Optical Connectors

(4) Pairs of QMA (male) Connectors per supported Band – ORU 4-Port Unit - QMA Duplex or Simplex Connectors for UL/DL
(8) Pairs of QMA (Male Connectors per supported Band – ORU 8-Port Unit - QMA Duplex or Simplex Connectors for UL/DL
(2) RS-232 Connector for management of Corning MobileAccess devices
(4) RJ-45 Connectors for Ethernet communication to remote units

Physical Characteristics

- Dimensions (H x W x D): mm (in) 435 x 505 x 44 (17.12 x 19.88 x 1.7)
- Weight: kg (lb) 4.5 (9.9)
- Mounting: Rack mountable in 19-in rack (mounting brackets included)

ordering information |

Part Number	
Optical Central Hub (OCH) – Domestic and International	
OCH-4-MMF	Optical Central Hub for SISO services, supporting (4) SISO ORUs, MMF
OCH-4-SMF	Optical Central Hub for SISO services, supporting (4) SISO ORUs, SMF
OCH-4-XR	Optical Central Hub for SISO services, supporting extended range up to 20 km, supporting (4) SISO ORUs, SMF (WDM)
OCH-8-MMF	Optical Central Hub for SISO or MIMO Services, supporting (8) SISO ORUs or (4) MIMO ORUs, MMF
OCH-8-SMF	Optical Central Hub for SISO or MIMO Services, supporting (8) SISO ORUs or (4) MIMO ORUs, SMF
OCH-8-XR	Optical Central Hub for SISO or MIMO services, extended range up to 20 km, supporting (8) SISO ORUs or (4) MIMO ORUs, SMF (WDM)
OCH-GX-4-XR	Optical Central Hub for GX, supporting extended range up to 16 km, supporting (4) SISO GX Units, SMF (WDM), Single Core SMF Fiber
OCH-GX-8-XR	Optical Central Hub for SISO or MIMO GX services, extended range up to 16 km, supporting (8) SISO GX Units or (4) MIMO GX Units, SMF (WDM), Single Pair SMF Fiber
OCH-HX-4-SMF	Optical Central Hub for SISO International services, supporting (4) SISO HX Units, SMF
OCH-HX-4-MMF	Optical Central Hub for SISO International services, supporting (4) SISO HX Units, MMF
OCH-HX-8-SMF	Optical Central Hub for SISO or MIMO International Services, supporting (8) SISO HX or (4) MIMO HX Units, SMF
OCH-HX-8-MMF	Optical Central Hub for SISO or MIMO International Services, supporting (8) SISO HX or (4) MIMO HX Units, MMF
Optical Remote Unit (ORU) - Domestic	
ORU-SISO-MMF	Optical Remote Unit for SISO services, US Bands (CELL/PCS/AWS/LTE), MMF
ORU-SISO-SMF	Optical Remote Unit for SISO services, US Bands (CELL/PCS/AWS/LTE), SMF
ORU-SISO-XR	Optical Remote Unit for SISO services, extended range up to 20Km, US Bands (CELL/PCS/AWS/LTE), SMF (WDM)
ORU-MIMO-MMF	Optical Remote Unit for MIMO services, US Bands (CELL/PCS/AWS/LTE), MMF
ORU-MIMO-SMF	Optical Remote Unit for MIMO services, US Bands (CELL/PCS/AWS/LTE), SMF
ORU-MIMO-XR	Optical Remote Unit for MIMO services, extended range up to 20Km, US Bands (CELL/PCS/AWS/LTE), SMF (WDM)
Power Supply and Accessory Kits	
LPS-48V-100W	Local AC/DC Converter 100 W
AK-PWR-CORD-EU	AC Power Cord for 100 W power supplies, European Connector
AK-PWR-CORD-UK	AC Power Cord for 100 W power supplies, UK Connector

notes |

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