Providing converged wireless coverage solutions

MobileAccess™ 2000 converged wireless networks solution provides scalable in-building coverage for multiple wireless data and voice services through a single coax and broadband antenna infrastructure. The solution is based on two main elements that are interconnected via fiber optic cable:

- **Remote Cabinets** - distributed over remote sites, the remote cabinets interface to the coax antenna infrastructure. Each cabinet can house up to five Remote Units (RUs) 2000 corresponding to the covered services. MA 2000 Lite provides single operator entry level support.
- **Base Units** - concentrated in the telecom room, the BUs interface to the RF signal source, where each BU performs RF to optic conversion for a number of operator services. Each BU can support up to eight same service RUs.

In addition, **Remote Interface Units** (RIUs) can be used to provide interface to the each BTS, and automatically adjust the output signal to respond to a range of BTS or BDA output power levels.
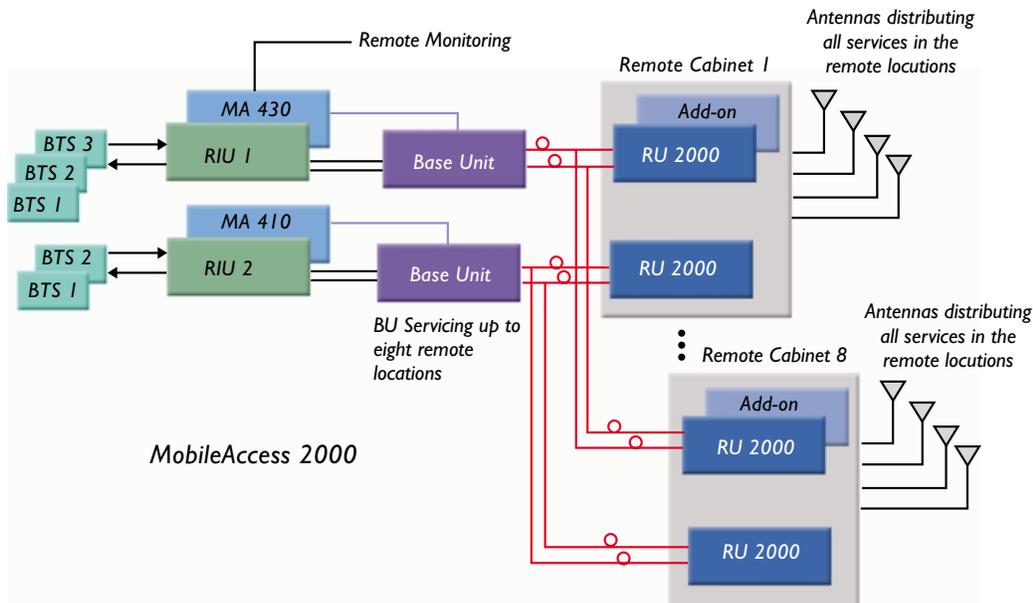
MA 410/430 controllers can be used for remote monitoring of the system elements from a single location via advanced intuitive GUI.

Features

- Each Remote Cabinet can support up to 20 multi-operator services
- Each MA 2000 Lite can support up to 8 services
- All services are distributed through a single coax and antenna infrastructure
- Support for high-power modules
- Support for all current and future technologies such as TDMA, CDMA, WCDMA and GSM, and services such as PCS/CELLULAR, Paging, iDEN and 802.11 (a/b/g) Wireless LAN

- Support for remote monitoring through MA 410/430 controllers
- Scalable and future-safe – additional remote units can easily be installed
- All active components are located in the communication closet/room

Example of MA 2000 system with remote cabinets supporting up to five services: two per RU 2000 and an additional service provided by the Add-on unit.

A single coax and antenna infrastructure services each remote location. Each BU can distribute the signal over up to eight remote locations

MobileAccess 2000

Absolute Maximum Rating	
Total Input RF Power RIU side:	36dBm
Total Input RF Power to BU:	10dBm
Total Input RF Power to RU:	20dBm out-of-band, -10dBm in-band
Power Supply VDC:	60VDC

RF Parameters

RU 2000		TDM A 800		CDMA 800		iDEN 800		GSM 900		SMR / PAGE 900		CDMA 1800		GSM 1800		CDMA 1900		GSM 1900		TDM A 1900	
		D	U	D	U	D	U	D	U	D	U	D	U	D	U	D	U	D	U	D	U
Max Output Power per	1 (comp)	14		14		14		11		14		14		11		14		14		14	
	2 carriers	11		10		11		8		11		10		8		10		11		11	
	4 carriers	8		7		8		5		8		7		5		5		8		8	
	8 carriers	5		4		5		2		5		4		2		4		5		5	
	12 carriers	5		2		5		2		2		2		2		2		3		5	
Mean Gain(dB)*		14	7	14	7	14	7	11	7	14	7	14	3	11	3	14	3	14	3	14	3
Pin (dBm)*		0		0		0		0		0		0		0		0		0		0	
Input IP3 (dBm) AGC OFF Min			-5		-5		-5		-5		-5		-6		-6		-6		-6		-6
Input IP3 (dBm) AGC ON Min			5		5		5		5		5		3		3		3		3		3
SFDR** (dB)			71		67		72		64		71				64		66		64		70
Max Intermod Distortion (dBm)		-13		-13		-13		-36		-13		-13		-30		-13		-13		-13	
Max NF (dB)			20		20		20		20		20		20		20		20		20		20
Gain Flatn. (dB)	±2.0																				

*   Factory set mean gain. May be field adjusted using software provided with unit.
** SFDR for CDMA services is calculated in 100Kb/sec

1200 add-on RF parameters per service

1200 Add-on		CDMA 1900		GSM 1900		TDMA 1900		UMTS	
		D	U	D	U	D	U	D	U
Max Output Power per antenna port	1(composite)	20		21		21		18	
	2 carriers	18		18		18		14	
	4 carriers	13		15		15		11	
	8 carriers	10		12		12		8	
	12 carriers	8		10		10		6	
Mean Gain(dB)*		20	3	20	3	20	3	18	3
Pin (dBM)*		0		1		1		0	
Input IP3 (dBm) AGC OFF Min			-7		-7		-7		-7
Input IP3 (dBm) AGC ON Min			3		3		3		3
SFDR (dB)*			66		64		69		66
Max Intermod Distortion (dBm)			-13		-13		-13		
Nf (dB)			20		20		20		20
Gain Flatness (dB)	±2.0								

Supported Services

TDMA 800/1900
CDMA 800/1800/1900
GSM 900/1800/1900
iDEN 800, SMR 900, Paging 900
WCDMA

Fiber Optic Specifications

Optical output power	≥1.0mW
Max. Optical budget	3dB
Optical loss per	
mated-pair connectors:	0.5dB (max)
Optical Connector	SC/APC
Fiber type	9/125 SM
Wavelength	1310±10nm
Maximum distance between	
Base Unit and Remote Cabinet	2Km

Power

Supply to Base Units, Remote Unit 2000,	
RIUs and MA 410/430:	20-48VDC
Supply to 1200 add-on:	25-48VDC
Consumption:	
- RC chassis	20W
- Base Unit	14W
- Remote Unit 2000	25W
- Add-on MA 1200	50W
- RIU	12W
- MA 410/430	10W

MA 410/430 Remote Management

- Remote SNMP management from a single location
- Client/server management capability over TCP/IP network with enhanced monitoring and control capabilities
- Intuitive GUI that enables end-to-end fault sourcing from RIU to antennas
- GUI includes:
  - System status at a glance through multi-color tree with upward propagation of fault indications
  - Graphical view of system elements including LED status displays and auxiliary connections
  - Multi-color event monitoring display

RF Connections

To RF source
(Base Unit and RIU): N-type Female, 50 ohm
To antennas: N-type Female, 50 ohm
Intermodule: SMA Female, 50 ohm

Physical Specification

Dimensions

- Base Unit	48.26x4.44x29.97cm (19"x1Ux11.8")
- RC (H x W x D)	355x482.6x397mm (13.97"x19"x15.63")
- Radio Interface Unit	48.26x13.32x29.97cm (19"x3Ux11.8")
- MA 410/430	48.26x4.44x29.97cm (19"x1Ux11.8")

Weight

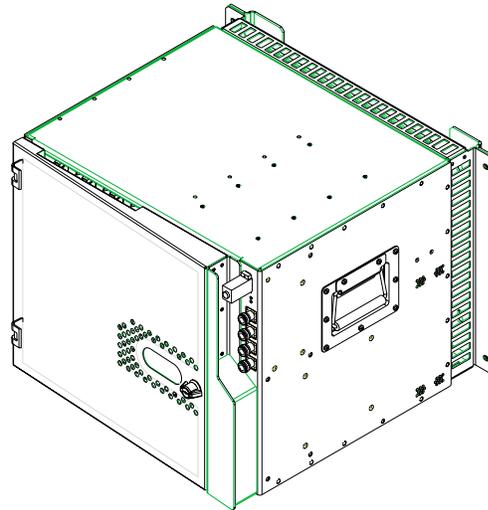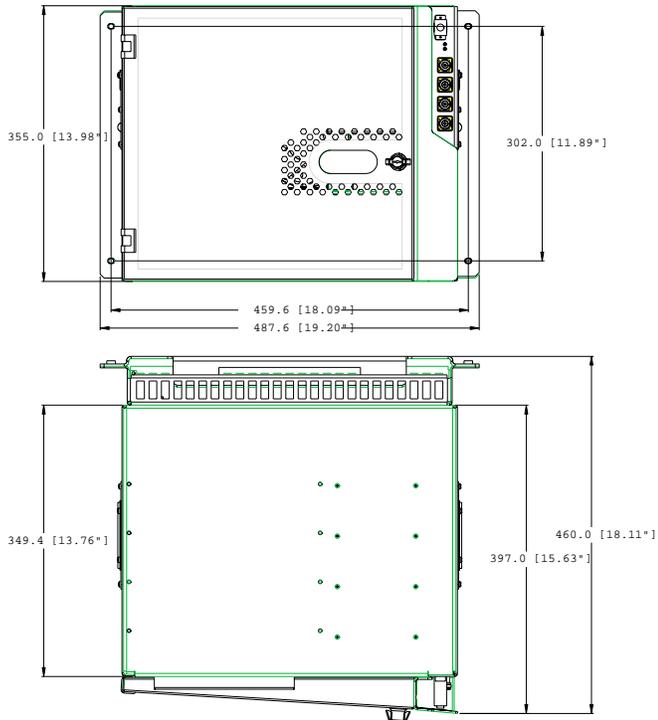|	
- BU 2.82Kg (6.2lb)	
- RC 2000 (chassis)	35 Kg four modules (77lbs)
- RIU (3 BTSC)	8.7Kg (19lb)
- MA 410/430	2.6Kg (5.8lb)

Environmental Specifications

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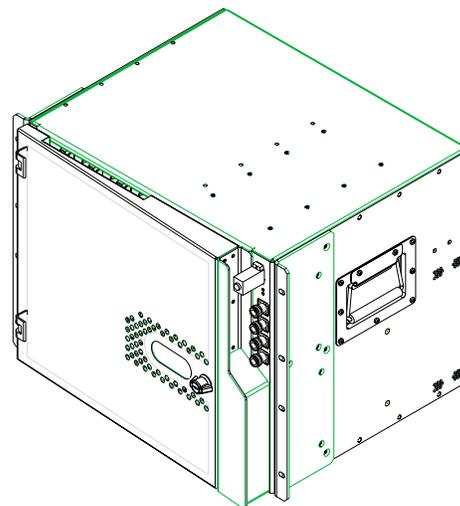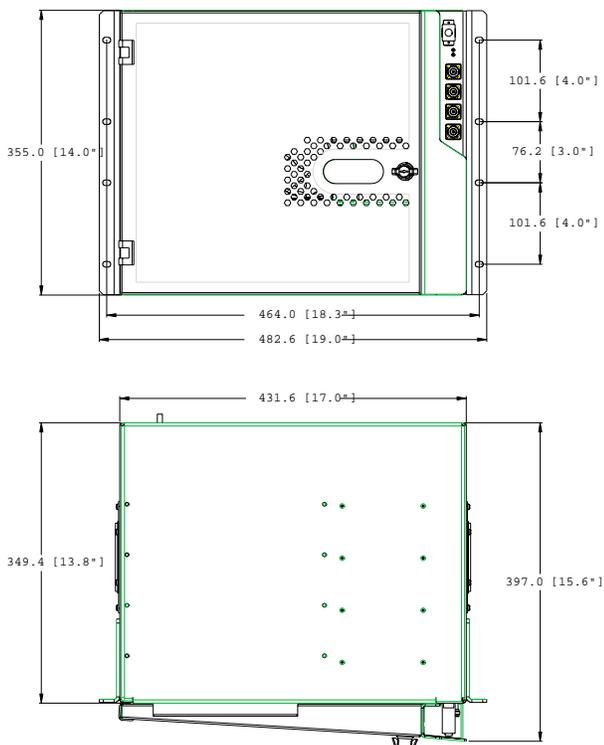Storage   -20°C to 85°C (-4°C to 185°C)

Standards and Approvals
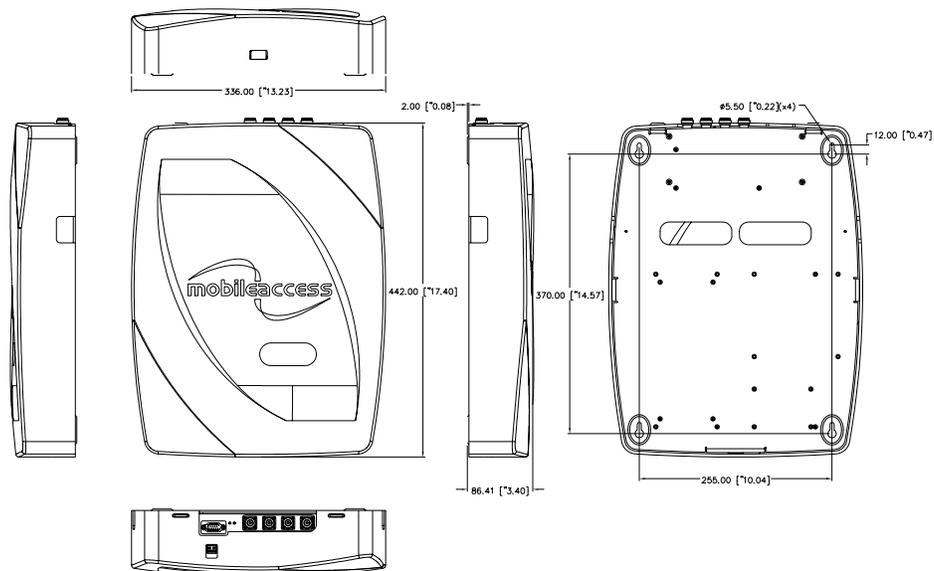
USA - FCC-47CFR, parts 2,15, 22, 24,90
Canada - IC

Wallmount Cabinet

Rackmount Cabinet

2000 Lite

Ordering Information

MobileAccess 2000
Remote Cabinet
2000-RC-RP   - Remote Cabinet, remote powering 2000-RC-LP   - Remote Cabinet, local powering 2000- MINI-ENC   - MA 2000 Lite - supports up to 8 services
Dual Band RF Modules, add-on ready 2000-IDEN-PCS   - Dual Band iDEN/PCS 2000-CELL-PCS   - Dual Band Cell/PCS 2000-GSM-DCS   - Dual Band GSM/DCS 2000-IDEN-SMR   - Dual Band iDEN/SMR-Paging 2000-CELL-DCS   - Dual Band Cell/DCS 2000-CL-M-DCS   - Dual Band Multi-Operator Cellular/DCS 2000-GSM-DCS   - Dual Band GSM/DCS 2000-GSMO-DCS   - Dual Band GSM Orange/DCS

MobileAccess Universal Base Units (support 1000 RHUs, 1200 stand alone and add-on, and 2000 RUs)
WB-B8U -   Wide BU supporting 8 RHUs, RUs **WB-B4U -**   Wide BU supporting 8 RHUs, RUs

MobileAccess 1200 RHUs
1200-PCS-AO   – Add-on RHU - PCS service **1200-UMTS-AO**   – Add-on RHU - UMTS service

Network Controllers
410   – Network Controller - Serial Interface (dial-up) **430**   - Network Controller –Ethernet/IP Interface

Network Management System

NMS-SW-SERVER - GUI and server S/W package (one per site)

NMS-SW-MFEE - NMS annual S/W maintenance fee (per 430-CTLR)

Power Supply

LPS-48V-40W	- Local AC/DC Converter 40W
LPS-48V-100W	- Local AC/DC Converter 100W
RPS-200-N-48	- Non-redundant 200W 110/220V Wall Mount
RPS-500-R-48	- Redundant 500W 110/220V Chassis Mount
RPS-1000-R-48	- Redundant 1000W 110/220V Chassis Mount
RPS-14-50W-48	- Remote power supply,14 modules of 50W,48v
RPS-14-100W-48	- Remote power supply, 14 modules of 100W,48v
RPS-6M-220	- Remote power supply enclosure,6 Modules, 220v in-48VDC
RPS-600W-220	- Remote power supply module, 600W/48VDC,220v
RPS-1200W-220	- Remote power supply module 1200W/48VDC,220v in

Radio Interface Unit

RIU-IM	- Radio- Interface Unit
RIU-BTSC-CELL	- Cellular BTS Conditioner
RIU-BTSC-IDEN	- iDEN BTS Conditioner
RIU-BTSC-PCS	- PCS BTS Conditioner
RIU-BTSC-SMR	- SMR Paging BTS Conditioner
RIU-BTSC-GSM	- GSM 900MHz BTS Conditioner
RIU-BTSC-GSM-O	– GSM 900 (Orange) BTS Conditioner
RIU-BTSC-DCS	- DCS 1800MHz BTS Conditioner
RIU-BTSC-UMTS	- UMTS 2100MHz BTS Conditioner