

**PRODUCT  
SPECIFICATION**



ION® is the unified platform for all conceivable optical distribution scenarios.

The ION optical distribution system leads the industry in flexibility while minimizing the overall deployment cost.

CommScope's ION-M17EHP/19P is a multi-band multi-operator remote unit. It is used in conjunction with a master unit in the ION optical distribution system. This system transports multiple frequency bands simultaneously (1900 MHz and 1700/2100 MHz), providing a cost-effective solution for distributing capacity from one or more base stations. By supporting the entire AWS-3 spectrum, faster and more reliable wireless service is ensured and network quality can be improved.

The ION-M17EHP/19P transports signals on the RF layer in a very inexpensive manner. This means that multiple operators and multiple technologies are

## ION-M17EHP/19P

### Multi-band, Multi-operator Remote Optical System Support of AWS-3 Spectrum

moved simultaneously from a cluster of base stations to a remote location over the same fiber.

The ION optical distribution system is a cost-effective coverage solution for dense urban areas, tunnels, subway, airports, convention centers, high-rise buildings and other locations where physical structures increase path loss. It has been specifically designed to reduce zoning problems and to provide homogeneous coverage. The compact, mechanical design is specifically architected to mount inside of poles or along side structures in such a way that it has a minimal visual impact.

The ION-M17EHP/19P is available in a multi-band configuration supporting 1900 MHz and 1700/2100 MHz in parallel and with extension option 700 MHz additionally. It has been specifically tested and optimized for GSM, CDMA2000, WCDMA, and LTE signals. Furthermore it is provisioned for future modulation schemes and frequency bands.

The ION is easily set-up and supervised via a graphical user interface (GUI). Remote units can be commissioned through the use of built-in test equipment. An auto-levelling function compensates for the optical link

loss making installation easy and quick. The entire system as well as complete network of systems can be managed remotely most efficiently by CommScope's A.I.M.O.S, which includes alarm monitoring, task automation, inventory management and many more features. Should a sophisticated interface not be required, the master unit can be directly connected to the alarm interface of a base station via relay alarming.

- Multi-band, multi-operator support
- Reduced visual impact form factor
- Efficient, high power amplifier
- Single fiber for multiple bands and multiple remotes
- Comprehensive operations and management system for configuration and alarming
- OMC with SNMP according to X.733 standard
- With reference to 3GPP TS25.143/ TS25.106/ TS36.143/ TS36.106 and 3GPP2C.S0051-0
- Easy installation and commissioning

# ION-M17EHP/19P - Product Specification

## Electrical

Mains power, Vac	nominal . . . . .	100 to 240
	operating . . . . .	85 to 264

Vdc mains power not possible.

Power consumption, W	max. temp., fully loaded . . . . .	770
	room temp., idle . . . . .	400

## Optical Link

Connectors	E2000/APC 8°	
Optical return loss, dB	45 min.	
Fiber type,mm	Single mode E9/125	
Optical link budget, dB	0 to 10	
Input power @ OTRx master side, dBm		
	1900 MHz . . . . .	+2.5 composite
	1700/2100 MHz . . . . .	+5.5 composite
	700 MHz . . . . .	+3 composite

Minimum BTS Input power, dBm		
	1900 MHz . . . . .	-19.5
	1700/2100 MHz . . . . .	-16.5
	700 MHz . . . . .	-19

Additional DL gain (22 dB) available in case of low power BTS

## RF Interface

### Master Unit

Number of connectors		
	1900 MHz . . . . .	4
	1700/2100 MHz . . . . .	4
	700 MHz . . . . .	4

System optimized for BTS power, dBm		
	. . . . .	33
	. . . . .	43

### Antenna Port of Remote Unit

Connector	N Female
Output power	See band specification
Return loss, dB	15 typical

## 1700/2100 MHz (AWS)

Frequency range, MHz		
	Uplink . . . . .	1710 to 1780
	Downlink . . . . .	2110 to 2180

RF output power per carrier *, dBm				
<b>Number of Carriers</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>8</b>
CDMA	45.5	42.5	39.5	36.5
UMTS	45.5	42.5	39.5	36.5
LTE	45.5	42.5****	39.5	36.5

Spurious emission	<-13 dBm / 1 MHz	
DL output tolerance over frequency, dB	±1	
DL output tolerance over temperature, dB	±0.5**	
UL Input ICP3, dBm		
	ICP3 optimized . . . . .	-12 min.
	Noise figure optimized . . . . .	-18 min.
UL Noise figure, dB		
	ICP3 optimized . . . . .	8
	. . . . .	11 max.
	Noise figure optimized . . . . .	4.5
	. . . . .	6 max.

## 1900 MHz

Frequency range, MHz		
	Uplink . . . . .	1850 to 1915
	Downlink . . . . .	1930 to 1995

RF output power per carrier \*, dBm

<b>Number of Carriers</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>8</b>
GSM	42.5	39.5	36.5	33.5
CDMA	42.5	39.5	36.5	33.5
UMTS	42.5	39.5	36.5	33.5
LTE	42.5	39.5****	36.5	33.5

Spurious emission	<-13 dBm / 1 MHz	
DL output tolerance over frequency, dB	±1	
DL output tolerance over temperature, dB	±0.5**	
UL Input ICP3, dBm		
	ICP3 optimized . . . . .	-12 min.
	Noise figure optimized . . . . .	-18 min.
UL Noise figure, dB		
	ICP3 optimized . . . . .	8
	. . . . .	11 max.
	Noise figure optimized . . . . .	4.5
	. . . . .	6 max.

## System Supervision and Control

Commands	RF on/off
	External control ports
Alarms	Summary
	Power supply
	Optical UL and DL failure
	Temperature
Supervision	Output power on a per-channel and per-band basis (optional)

## Mechanical\*\*\*

Height, width, depth mm (in)	831 x 156 x 147 (32.7 x 6.1 x 5.8)
Weight, kg (lb)	20 (44)

## Environmental

Operating temperature range	-33° C to +50° C
Ingress protection	RF part . . . . . IP67
	Fan part . . . . . IP55

## Minimum SW Requirements for Basic Support

ION-M SW V7.0.1

## Ordering Information

ION-M17EHP/19P	7714210
Depending on the selected options and the configuration the ordering material number contains an identifying suffix.	

## Extension Unit Options

ION-M7P EU	7601170
Other Extension Units possible on request	

- \* PAR 7.5 dB @ 0.1 %
- \*\* With active cooling
- \*\*\* Spacing required 40 mm (1.58 in) around unit
- \*\*\*\* 2 dB reduction of Pout @ carrier bandwidth < 5 MHz

All figures are typical values unless otherwise stated.

# ION-M17EHP/19P - Product Specification

## 700 MHz Extension Unit ION-M7P EU

Frequency range, MHz

Uplink	698 to 716
	776 to 787
Downlink	728 to 757

RF output power per carrier \*, dBm

<b>Number of Carriers</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>8</b>
LTE	43	40***	37	34

Spurious emission <13 dBm / 1 MHz

DL output tolerance over frequency, dB ±1

DL output tolerance over temperature, dB ±0.5\*\*

UL Input ICP3, dBm

ICP3 optimized	-11 min.
Noise figure optimized	-18 min.

UL Noise figure, dB

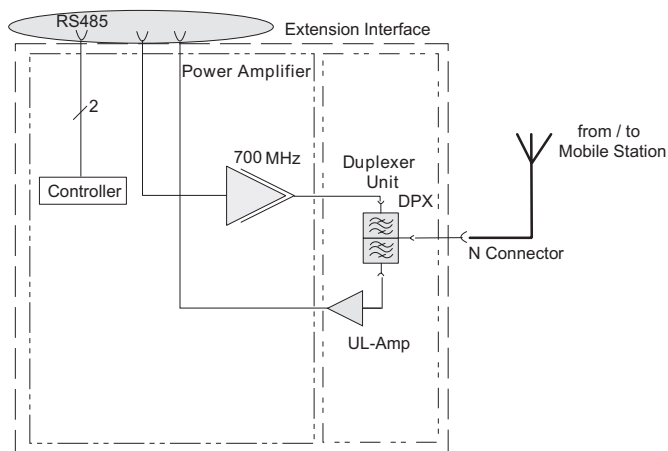
ICP3 optimized	7
	10 max.
Noise figure optimized	4.5
	6 max.

\* Applicable to single modulation mode only

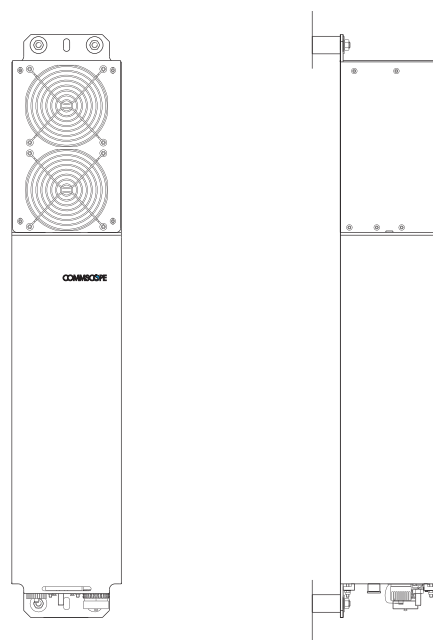
\*\* With active cooling

\*\*\* 2 dB reduction of Pout @ carrier bandwidth < 5 MHz

All figures are typical values unless otherwise stated.

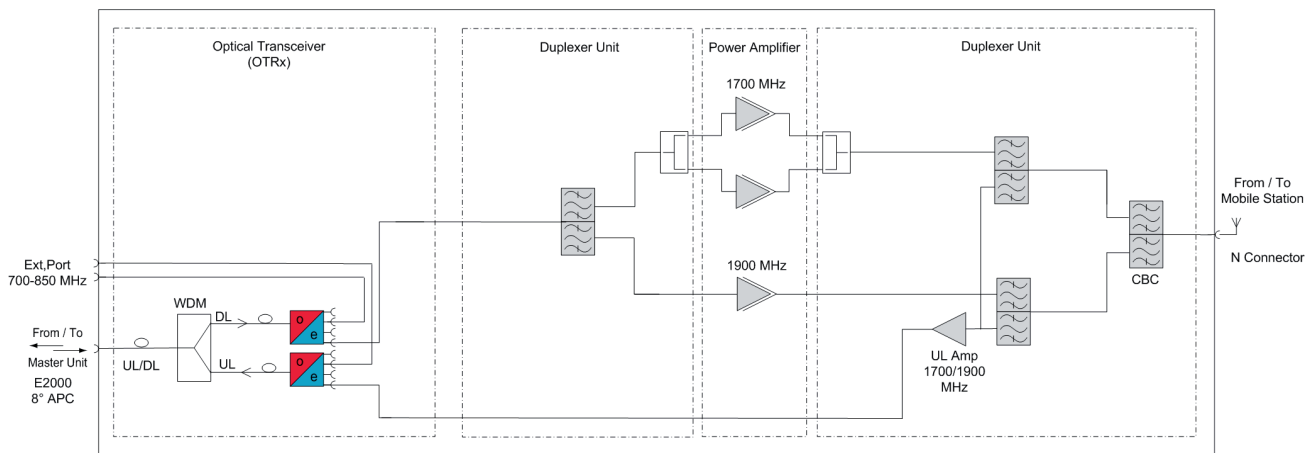


ION-M7P Extension Unit

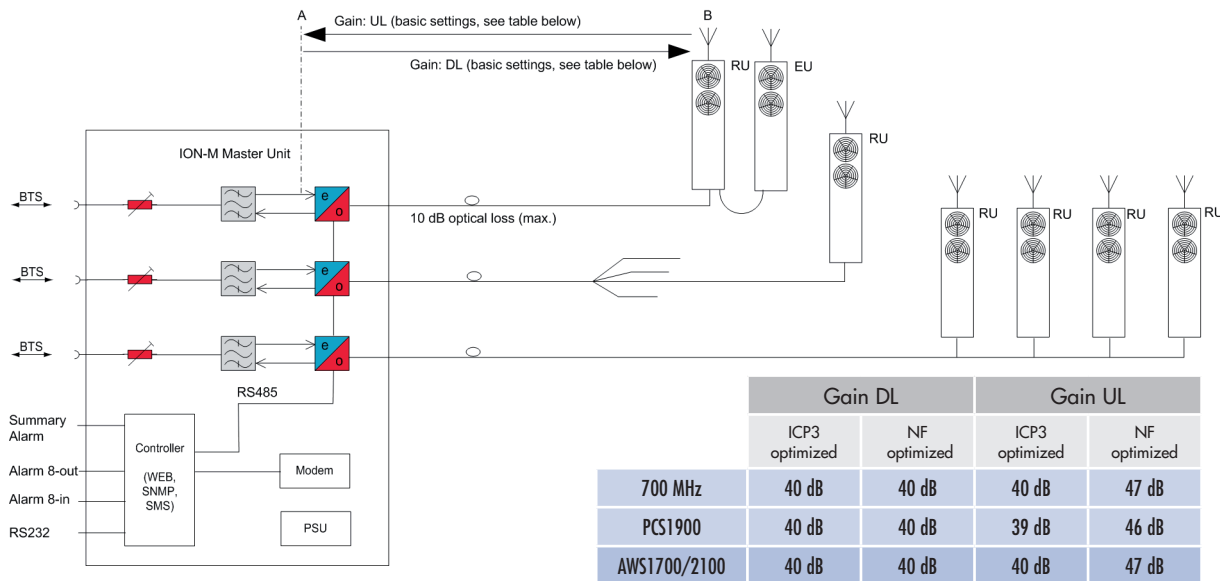


ION-M17EHP/19P Remote Unit Cabinet Drawing

# ION-M17EHP/19P - Product Specification



ION-M17EHP/19P Remote Unit Design Principle



Design Principle ION System

**WARNING:**  
 This is NOT a CONSUMER device. It is designed for installation by FCC LICENSEES and QUALIFIED INSTALLERS.  
 You MUST have an FCC LICENSE or express consent of an FCC LICENSE to operate this device.  
 Unauthorized use may result in significant forfeiture penalties, including penalties in excess of \$ 100,000 for each continuing violation.



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Bulletin PA-109873-EN.GB (11/15)