



ION[™]-B Series

Optimized Multiband, Multi-Operator Cost-Effective Solutions

The demand for better coverage and additional capacity as well as the deployment of 3G networks, which enable media-rich broadband applications, fuels a rapidly growing global market for coverage products and services like those provided with Andrew Intelligent Optical Network (ION) Series. Andrew ION Series is the industry-leading optical distribution system that covers the full range of power levels, sending signals loss-free at distances ranging from 100 m to 20 km.

ION™-B Series - The optimized and cost-effective ION™ solution

Wireless operators have the ultimate solution for their coverage and capacity problems with ION-B Series from Andrew Corporation.

ION-B Series is a Radio-over-Fiber (RoF) distributed antenna system which meets all distribution needs from the simplest to the most complex applications. It is capable of transporting frequencies from 800 to 2500 MHz, from traditional cellular to Wi-Fi signals, regardless of protocol or modulation.

ION-B Series has two main components: the master unit and the remote unit. The master unit is collocated with the base station (or a repeater) and connected via an RF interface (coaxial cable).

RF signals are transported to the remote units via single mode fiber at 1310 nm. The remote units, which can be up to 3 km (about 2 miles) away, are available in three different power classes and with different frequency combina-

tions to meet any distribution need. The system includes an automatic gain control (AGC) that avoids field adjustments and reduces design, installation, and optimization time. The ION-B Series can be easily commissioned and supervised via a web-based graphical user interface (GUI). The entire system may be monitored and remotely configured via the Andrew operation and maintenance center (OMC), A.I.M.O.S.



ION-B Series master unit: maximum flexibility for different demands

Developed to assure the greatest degree of flexibility, the ION-B Series master unit is available both as a standalone version and as a rack-based one.

The standalone version (master unit Fast), which supports up to four remote units, provides plug-and-play coverage to small and medium areas.

The rack-based master unit modular layout provides the designer with the maximum flexibility and allows an easy upgrade enabling the operator's business development, as well as investment scalability. Wi-Fi interface and interconnect link options complete the choice making the rack-based master unit a versatile solution suitable to the most complex and demanding applications. The ION-B Series is provided with a comprehensive web-based management system available locally or via remote connection.

ION-B Series remote units: more band and power combinations

ION-B Series remote units are available in three different power classes (low, medium, and high power) and in single-band, dual-band, or triple-band versions.

Available bands are shown below.

Band	UL/DL	MHz
LMR700	Uplink	788 to 806
	Downlink	758 to 776
LMR800	Uplink	806 to 824
	Downlink	851 to 869
Cellular850	Uplink	824 to 849
	Downlink	869 to 894
LMR900	Uplink	896 to 902
	Downlink	935 to 941
GSM900	Uplink	890 to 915
	Downlink	935 to 960
EGSM900	Uplink	880 to 915
	Downlink	925 to 960
AWS1700	Uplink	1710 to 1755
	Downlink	2110 to 2155
GSM1800	Uplink	1710 to 1785
	Downlink	1805 to 1880
PCS1900	Uplink	1850 to 1910
	Downlink	1930 to 1990
PCS1900 Extended	Uplink	1850 to 1915
	Downlink	1930 to 1995
UMTS2100	Uplink	1920 to 1980
	Downlink	2110 to 2170

ION-B Series rack-based master unit: designing the best coverage system

The rack-based master unit provides a single-band, dual-band, or triple-band modular and virtually unlimited solution through a wide choice of cards that can be housed into the intelligent master unit subrack.

Option	Description	Function
TPRNx4 4HE subrack	Hosts up to 12 active or passive boards. Microcontroller and I2C are integrated into the back-plane to process the alarms of all cards	Hosts all modular master unit elements
TFLN Optical TRX	Wideband optical TRX driving up to four remote units	Electrical-to-optical and optical-to-electrical signal conversion
TDPN DL/UL duplexer	Frequency dependent duplexer combining DL and UL signals	Interface with duplexed BTS
TMPx10 power limiter	Wideband module to monitor downlink input power	Protection from operator overdrive
TBSI base station interface	Two independent variable attenuators adjusting the signal level between BTS and ION-B system	Level adjustment
TLDN/TLIN cross band coupler	Two/Tri band combiner and divider for dual or triple band applications	Combines two or three RF bands in downlink and filters the same bands in uplink
TLCNx splitter/combiner	Provides a splitting section for downlink and a combining one for uplink	Distribution of the signals coming from a BTS to more optical TRXs
TSUNx remote supervision	PC-based hardware providing a high alarm and control platform to up to 14 fully populated sub-racks	Remote configuration and alarm management

The ION-B Series is provided with different levels of system management:

- Visual alarms (LED) and summary alarm relays
GUI-based local management via local maintenance terminal (LMT) software
- Web-based remote supervision and high level alarm management. The TSUN supports the TCP/IP protocol, SNMPv2, FTP, HTTP, Telnet, and is fully compatible with general purpose SNMP managers. The software supports standard and enterprise management information bases (MIB). Alarm notification can be forwarded via SNMP trap, SMS, or summary dry contacts.

	Visual Alarm LED	Summary Alarm Relay	GUI-based Local Management via LMT Software	Web-based Remote Supervision
	STANDARD	STANDARD	STANDARD	OPTIONAL
Summary major/critical alarms	•	•	•	•
Summary minor/warning alarms	---	•	•	•
Automatic system scan and device mapping	---	---	•	•
Integrated inventory info (SN, firmware rel, hw rel, etc.)	---	---	•	•
Troubleshooting capabilities (detailed alarm info)	---	---	•	•
Remote control and management via LAN or external dial-up modem	---	---	---	•
High level alarm management via SNMP trap, SMS messages, or dial-up	---	---	---	•
Integration into Andrew OMC	---	---	---	•
Integratable into 3rd parties OMC	---	---	---	•
Summary dry contact of a sub-rack chain	---	---	---	•

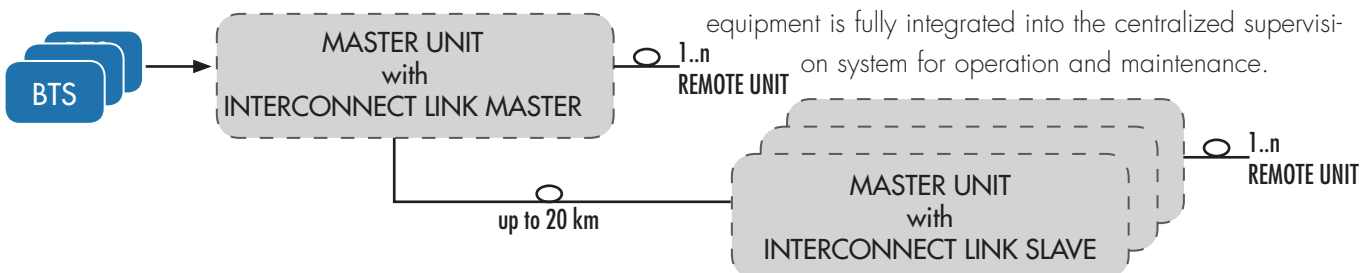
ION-B Series Wi-Fi Interface: more services on the same fiber

The auxiliary channel supports flexible system expandability. Wi-Fi signals (802.11b/g) can be distributed through the ION-B Series system by way of the relevant interface card and booster.

ION-B Series Interconnect Link: more and more distance

The interconnect link enables the grouping of a cluster of remote coverage systems at a common BTS hotel providing consistent advantages in terms of management and maintenance. Master and slave interconnect link modules enable

multiband signal distribution up to 20 km away from the ION-B master station. Different interconnect link kits are available, providing single-sector or multi-sector remotization through one or two fibers. The built-in AGC and the optical link gain help assure a true transparency. All remote equipment is fully integrated into the centralized supervision system for operation and maintenance.



REMOTE UNITS

	UHF Carrier Wave	GSM900 GSM standard	EGSM900 GSM standard	GSM1800 GSM standard	UMTS2100 W-CDMA standard	LMR700 CW standard	LMR800 TDMA standard	Cellular850 GSM standard	CDMA standard	W-CDMA standard	LMR900 TDMA standard	AWS1700 W-CDMA standard	PCS1900 GSM standard	CDMA standard	PCS1900 Ext. GSM standard	CDMA standard	Case	RF Port	Product Code	Bulletin Code	
Low Power	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	B	2	TFAN 40	PA-102129-EN	
	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	B	2	TFAN 50	PA-101343-EN	
Medium Power	---	---	---	---	16	---	---	---	---	---	---	---	---	---	---	---	B	2	TFAM 20	PA-100592-EN	
	---	17	---	---	15	---	---	---	---	---	---	---	---	---	---	---	B	2	TFAM 90/20	PA-100582-EN	
	---	---	17	---	15	---	---	---	---	---	---	---	---	---	---	---	B	2	TFAM 91/20	PA-100583-EN	
	---	---	---	18	15	---	---	---	---	---	---	---	---	---	---	---	B	2	TFAM 18/20	PA-100584-EN	
	---	---	---	20	19	---	---	---	---	---	---	---	---	---	---	---	B	2	TFAM 18/20P	PA-102128-EN	
	---	---	23	24	25	---	---	---	---	---	---	---	---	---	---	---	R2	1	TFAM 91/18/20	PA-101508-EN	
	---	---	---	---	---	25	27	---	---	---	---	---	---	---	---	---	B	2	TFAM 70/80P	---	
	---	---	---	---	---	---	23	---	---	---	---	---	23	20	---	---	B	2	TFAM 80/19	PA-100801-EN	
	---	---	---	---	---	---	---	23	20	15	---	---	---	23	20	---	---	B	2	TFAM 85/19	PA-100805-EN
	---	---	---	---	---	---	---	---	---	---	---	---	15	21	18	---	---	B	2	TFAM 17/19	PA-101848-EN
	---	---	---	18	---	---	---	23	20	15	---	---	---	---	---	---	---	B	2	TFAM 85/18	PA-100808-EN
	---	---	---	---	15	---	---	23	20	15	---	---	---	---	---	---	---	B	2	TFAM 85/20	PA-100809-EN
	---	---	---	24	25	---	---	26	25	22	---	---	---	---	---	---	---	R2	1	TFAM 85/18/20	PA-102111-EN
	---	---	---	---	---	---	16	---	---	---	16	---	---	---	22	19	B	2	TFAM 80/92/19E	PA-101058-EN	
High Power	---	---	---	---	---	27	---	---	---	27	---	---	---	---	30	28	R2	1	TFAM 80/92/19EP	PA-102127-EN	
	---	---	---	---	33	---	---	---	---	---	---	---	---	---	---	---	R	1	TFAM 20	PA-101507-EN	
	---	---	---	---	---	28	31	---	---	---	---	---	---	---	---	---	R2	1	TFAM 70/80	---	
	---	---	---	---	---	---	---	31	29	26	---	---	---	---	31	29	R2E	1	TFAM 85/19E	---	
	---	---	---	---	---	---	---	31	29	26	---	27	---	---	31	29	R2E	1	TFAM 85/17/19E	---	
	---	---	---	---	---	---	31	31	29	26	29	27	---	---	31	29	R2E	1	TFAM-USB	PA-102126-EN	

RF BOOSTERS

Bands	Composite Output Powers*, dBm	Product Code	Bulletin Code
AWS1700	W-CDMA standard: +24 (1port), +20 (2 ports)	TFBM17	PA-102073-EN

(*) Multi-carrier output powers in different modulation technologies are provided with the relevant bulletins.

MASTER UNITS

Bands	Rack Dimensions (W x H x D)	Bulletin Code
Fast Minirack	19" x 1HE x 286mm	PA-100596-EN
ION-B Master Elements (Rack-based Master Unit)	19" x 4HE x 350mm	PA-100596-EN

ION-B OPTIONS

Option	Product Code	Bulletin Code
ION-B Interconnect Link	see the dedicated brochure	BR-102130-EN
ION-B Wi-Fi Interface	see the dedicated brochure	PA-100928-EN

For more information about IONTM-B Low-band Options, please refer to bulletin:PA-101525-EN.



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