



Integrated Headend Unit, or remote Optical Repeater

Applications:

- In-building
- Tunnels
- Warehouses
- Parking Garages
- Airports
- Justice Centers
- Manufacturing Facilities
- Stadiums
- Convention Centers
- Universities

RF ON FIBER® Signal Distribution products for In-building coverage extension applications.

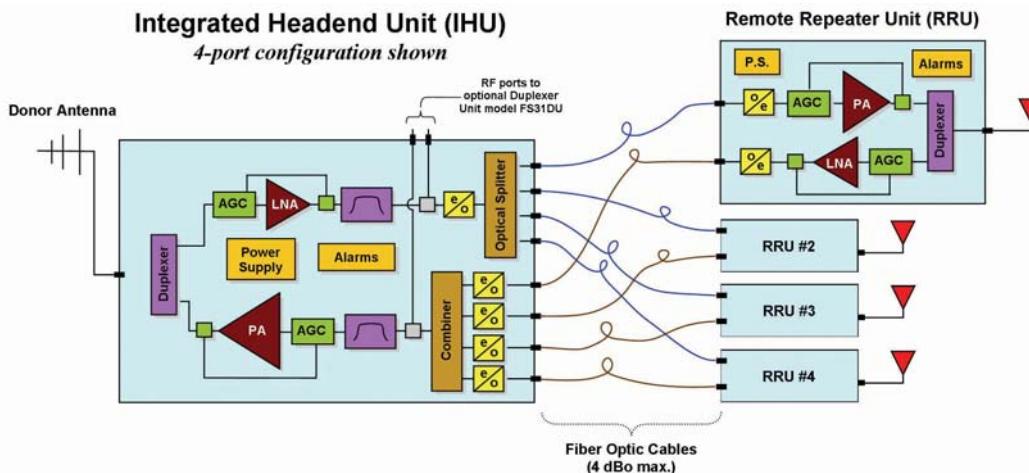
FEATURES:

- Fully Integrated Headend Configuration
- Designed Specifically for Off-Air applications
- RF Power Options: 1/2, 1, 5, 10, 20 Watt
- Low Noise & High Dynamic Range
- RF & Alarm Monitoring over same fiber
- Support for up to 8 Remote Units
- Battery Back-up Options

Fiber-Span's FS31X Series is a first of its kind in the industry to fully integrate the traditional Bi-directional Amplifier (BDA), combining/splitting sub-system and fiber optic transceivers all into a single wall-mount enclosure. Fiber-Span's FS31X product line is designed to be the most cost-effective Fiber Optic solution for off-air coverage extension applications. This integrated approach is easy to implement and can be configured to support up to 8 Remote Repeater Units (RRU).

In addition to the fiber optic interface, all FS31X series Headend units feature separate transmit and receive RF ports for compatibility with conventional coaxial cable Distributed Antenna Systems (DAS). A separate FS31DU duplexer unit is available for applications where transmit and receive signals must be duplexed onto a common coaxial cable distribution system.

Each RRU can be configured with a 1/2, 1, 5, 10 or 20 Watt downlink amplifier, giving system designers the flexibility to "size-up" the remote unit for optimum performance over a single antenna system or a network of indoor antennas.



RF Specifications

Typical Specs for a 4-port configuration using IHU model: FS31X-48-1.5-4-WM, and RRU model FS31RS-48-C-1.5-WM

Frequency Bands	470-490 MHz, 3 MHz TX-to-RX Separation. 1.5 MHz Pass Bands	
Net Link Gain @ 4 dBo optical path loss	75 dB (downlink)	75 dB (uplink)
OIP3	RRU: +45 dBm (downlink)	IHU: +43 dBm (uplink)
AGC	IHU: +20 dB (downlink)	RRU: +20 dBm (uplink)
Gain Adjustment (manual)	RRU downlink: 10 dB in 1 dB increments	IHU uplink: 20 dB in 2 dB increments
Uplink Noise Figure	≤ 10 dB (@ Max. Gain)	
Max. Output Power per 25 KHz FM Channel	RRU downlink: +30 dBm, 1 carrier +20 dBm, 4 carriers +25 dBm, 2 carriers +15 dBm, 8 carriers	IHU uplink: +29 dBm, 1 carrier +19 dBm, 4 carriers +24 dBm, 2 carriers +14 dBm, 8 carriers
VSWR	<2:1	
Spurious Emission	-13 dBm	

Optical Parameters	
Wavelength	1310 nm
Laser Type	DFB (downlink), FP (uplink)
Max Optical Loss	4 dBo
Fiber Type	Single-Mode 9/125um
Connector Type	FC/APC

Electrical	IHU	RRU
AC Power	50/60 Hz, 115-230 VAC	
Power Consumption	<200 Watts	<150 Watts
Alarms	Dry Contact Relay Alarms	

Environmental	
Operational Temperature Range	-5 to +50 deg C
Humidity	10 to 95 %

Mechanical Specifications

IHU (Model: FS31X-48-1.5-4-WM)

RRU (Model: FS31RS-48-C-1.5-WM)

Dimensions (W x H x D) inches	20 x 16 x 8	16 x 12 x 8
Weight	<80 lbs.	< 40 lbs.
RF Connector Type	N-Female	

ORDERING INFORMATION

IHU- Integrated Headed Unit Number Key:

FS31X-GG-BB-J-YY

RM=Rack Mount Version
WM=Wall Mount Version (no NEMA rating)
65=Wall Mount IP65 enclosure type
66=Wall Mount IP66 enclosure type
4X=Wall Mount NEMA 4X enclosure type
40=Wall Mount NEMA 4 enclosure type

40=380-430 MHz
46=450-470 MHz
48=470-490 MHz
50=490-512 MHz

Frequency
Sub-band

1.0=1 MHz Passbands
1.5=1.5 MHz Passbands
3.0=3 MHz Passbands (406-470 MHz only)
5.0=5 MHz Passbands (406-470 MHz only)

Bandwidth
Selections

Enclosure
Type

1=1 TX & RX ports **5**=5 TX & RX ports
2=2 TX & RX ports **6**=6 TX & RX ports
3=3 TX & RX ports **7**=7 TX & RX ports
4=4 TX & RX ports **8**=8 TX & RX ports

RRU- Remote Repeater Unit Number Key: **FS31RS-CC-Z-BB-YY**

40=380-430 MHz
46=450-470 MHz
48=470-490 MHz
50=490-512 MHz

Frequency
Sub-band

A=1/2 Watt Version
B=1 Watt Version
C=5 Watt Version
D=10 Watt Version
E=20 Watt Version

RF Output Power

Enclosure
Type

RM=Rack Mount Version
WM=Wall Mount Version (no NEMA rating)
65=Wall Mount IP65 enclosure type
66=Wall Mount IP66 enclosure type
4X=Wall Mount NEMA 4X enclosure type
40=Wall Mount NEMA 4 enclosure type

1.0=1 MHz Passbands
1.5=1.5 MHz Passbands
3.0=3 MHz Passbands (406-470 MHz only)
5.0=5 MHz Passbands (406-470 MHz only)

Bandwidth
Selections

The model numbers and specifications listed above are for a typical UHF configuration with 3 MHz channel separation. Consult the factory to receive specification data for configurations not listed, or to receive an application-specific data sheet.

Laser Warning: Invisible Laser Radiation emitting from optical connector.

Avoid direct exposure to beam. 20 mW max. @ 1300 and 1550 nm. CDRH Class IIIB.

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