

# FS3IX

## Integrated Headend Unit (IHU)

- Fully Integrated Headend Configuration
- Designed Specifically for Off-Air applications
- 5 Watt Composite Power
- Low Noise & High Dynamic Range
- Fault-over-Fiber Feature
- Support for up to 4 Remote Units
- Battery Back-up Options



RF on Fiber® technology offers a new and flexible layer to traditional Distributed Antenna System (DAS) design. Fiber optic cable is not only less expensive to purchase and install than its coaxial counterpart, but it is virtually bandwidth unlimited, making it ideal for multi-service solutions and applications where long runs of coax become cost prohibitive.

Fiber-Span offers a broad range of RF-on-Fiber product to fit most wireless applications. Fiber-Span's FS3IX Series of product is designed to offer a reliable, low cost, and easy to implement solution for in-building, in-tunnel, and outdoor DAS applications.

Fiber-Span's FS3IX 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 FS3IX 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 4 Remote Repeater Units (RRU).

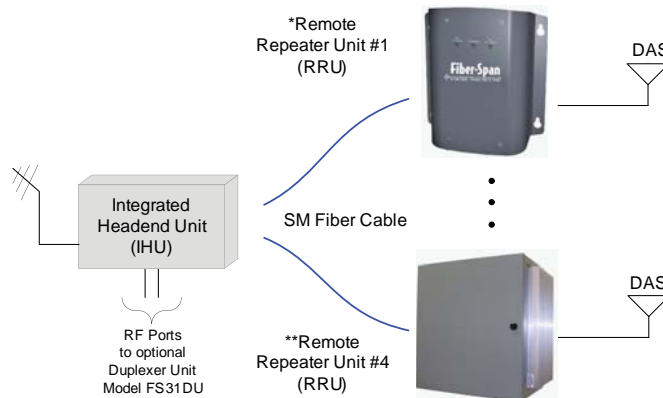
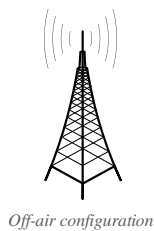
In addition to the fiber optic interface, all FS3IX series Headend units feature separate transmit and receive RF ports for compatibility with traditional coaxial

cable Distributed Antenna Systems (DAS). A separate FS3IDU duplexer unit is available for applications where transmit and receive signals must be duplexed onto a common coaxial cable distribution system.

Fiber-Span offers fiber optic RRUs in low-power and high-power versions. Low-power RRUs generally cover 50,000-100,000 square feet, while the high-power units are intended for areas > 100,000 square feet. Consult the factory for advice on which unit is best suited for your application.

### Applications:

- Shopping Malls
- Warehouses
- Parking Garages
- Airports
- Justice Centers
- Manufacturing Facilities
- Stadiums
- Convention Centers
- Universities



\*Refer to data sheet FS31RC-1544N for specification on low-power RRUs.

\*\*Refer to UHF data sheets FS31R-40C, FS31R-46C, FS31R-48C, & FS31R-50C for specifications on high-power RRUs.

Fiber-Span is a world-leading manufacturer of RF ON FIBER® Communication Network Products for in-building, in-tunnel and outdoor coverage extension systems serving the Commercial Wireless, Public Safety, Government and Military markets.

Typical Specs for a 4-port configuration using  
IHU Model: FS3IX-48I.24WMN and RRU Model: FS3IR-48CI.2WMN

Parameter	Downlink	Uplink
Operational Range	470-490 MHz, 1.2 MHz Passbands	
Net Link Gain @ 4 dBo optical path loss	80 dB	80 dB
Composite Out put Power	RRU: +37 dBm	IHU: +37
ALC	RRU: 20 dB	IHU: 20 dB
Gain Adjustment (manual)	RRU: 20 dB continuous	IHU: 30 dB in 2 dB increments
Uplink Noise Figure	< 10 dB @ Max. Gain	
Max. RF Output Power per 25 KHz FM Channel	<b>RRU:</b> 1 Carrier: +37 dBm, 2 Carriers: +34 dBm, 4 Carriers: +31 dBm, 8 Carriers: +28 dBm	<b>IHU:</b> 1 Carrier: +37 dBm, 2 Carriers: +34 dBm, 4 Carriers: +31 dBm, 8 Carriers: +28 dBm
VSWR	<2:1 dBm	
Spurious Emission	-13 dBm	

### Environmental

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

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

### Fiber Optic Parameters

Wavelength	1310 nm
Laser type	DFB (downlink & uplink)
Max. Optical Budget	Downlink: 4 dBo
Fiber Optic Cable Type	Single-Mode 9/125um
Connector Type	SC/APC

Mechanical Specifications	IHU (Model: FS3IX-48I.24WMN)	RRU (Model: FS3IR-48CI.2WMN)
Dimensions (W x H x D) inches	24 x 24 x 9.5	24 x 24 x 9.5
Weight (approx.)	< 100 lbs.	< 100 lbs.
RF Connector Type	N-Female	

### Ordering Information

Identification	Part Number
FS3IX	FS3IX- <b>GG</b> . <b>B</b> . <b>J</b> <b>YY</b> <b>X</b>
	Where: <b>GG</b> = Frequency Sub-bands (see table)
	<b>B.B</b> = Bandwidth Options (see table)
	<b>J</b> = # of Fiber Optic Ports (see table)
	<b>YY</b> = Enclosure Type (see table)
	<b>X</b> = W or N (see WDM table)

#### Frequency Sub-bands

<b>40</b> =380-430 MHz	<b>48</b> =470-490 MHz
<b>46</b> =450-470 MHz	<b>50</b> =490-512 MHz

#### Bandwidth Options

- 0.5**=0.5 MHz Passbands - Applicable to sub-bands "40" and "46" only
- 1.2**=1.2 MHz Passbands - Applicable to sub-bands "48" and "50" only
- 2.0**=2.0 MHz Passbands - Applicable to sub-band "46" only
- 3.0**=3.0 MHz Passbands - Applicable to sub-bands "40" and "46" only
- 5.0**=5.0 MHz Passbands - Applicable to sub-band "40" only

#### # of Fiber Optic Ports (Number of RRUs supported)

<b>1</b> =1 TX & 1 RX ports	<b>3</b> =3 TX & 3 RX ports
<b>2</b> =2 TX & 2 RX ports	<b>4</b> =4 TX & 4 RX ports

#### Enclosure Type

- WM**=Wall Mount (indoor rating)
- 4X**=Wall Mount NEMA 4X enclosure

#### WDM - Wavelength Division Multiplexing

- W**=Tx & Rx signals are multiplexed onto a single fiber.
- N**=Tx & Rx signals are on separate fiber strands.

LITERATURE ORDER CODE: FS3IX-UHF-0509v2