

# FS31H-48C

## Headend Repeater Unit (HRU)

- 470-490 MHz Frequency Range
- 5 Watt Composite Output Power
- 1.2 MHz Passbands
- Fiber DAS Ready



Fiber-Span's Headend Repeater Unit (HRU) is similar in functionality to a Bi-directional Amplifier, or Signal Booster Device as the FCC refers to it, with one minor difference: the HRU features an extra set of RF ports designed specifically to interface with a Fiber-based signal distribution system. These base-to-portable (downlink) and portable-to-base (uplink) ports couple RF signals off the downlink path and onto the uplink path before they reach the internal duplexer. The advantage here is that no external directional coupler or duplexer is required to split TX from RX. This design approach takes the hassle out of connecting to a fiber Distributed Antenna System (DAS) by eliminating the need for an external duplexer and coupler, which can add up to considerable cost savings depending on frequency separation

and pass bands. All HRUs include a duplexed port on the portable side to feed a traditional RF only DAS.

Fiber-Span offers a broad range of HRUs, including channelized (narrowband) systems, and RF-on-Fiber products to fit most wireless applications. Fiber-Span's FS31H 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.

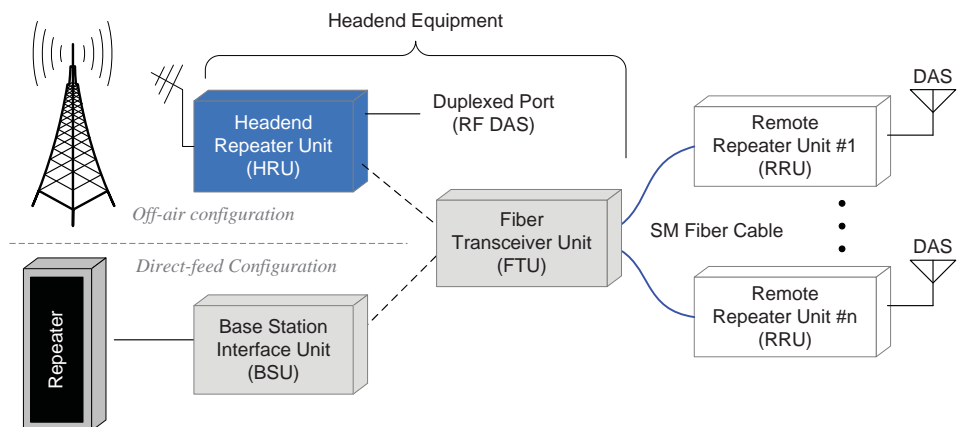
The FS31H-48C Headend Repeater Unit (HRU) is part of Fiber-Span's FS3100 family of products and is designed to deliver up to +37 dBm of base-to-portable and portable-to-base output power in the 470-490 MHz band. It features high gain, low distortion

Silicon LDMOS Power Amplifiers, and high Q bandpass duplexers. The standard filter option for this model is 1.2 MHz pass bands with 3 MHz TX to RX channel separations.

As depicted in the diagram below, when the HRU is used to feed a Fiber DAS, a Fiber Transceiver Unit (FTU) is required to perform the RF-to-optical conversion at the headend. The FTU can be ordered in 1-port, 2-port, or 4-port configurations for supporting up to 4 Remote fiber optic Repeater Units (RRUs). Multiple FTUs connected in parallel can be used to support any number of RRUs. Refer to data sheet DS31F-01 for determining which FTU model number best fits your application. Consult Fiber-Span Sales and Engineering staff for assistance in designing your RF or Fiber DAS.

### Applications:

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



*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.*

Parameter	Downlink	Uplink
Operational Range	470-490 MHz	
Passbands	1.2 MHz	
Guardband	1.8 MHz	
Gain	+70 dB	+70 dB
Composite Output Power	+37 dBm	+37 dBm
Gain Reduction (manual)	60 dB (2 dB increments)	60 dB (2 dB increments)
AGC	40 dBm	
Max. RF Input Level	-10 dBm	-10 dBm
Uplink Noise Figure	≤9 dB	≤9 dB
Max. RF Output Power (per 25 KHz FM Channel)	1 Carrier: +37 dBm, 2 Carriers: +34 dBm, 4 Carriers: +31 dBm, 8 Carriers: +28 dBm	

### Environmental

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

### Mechanical Specifications

Dimensions (W x H x D) inches	Wall-mount: 24 x 24 x 9.5
Weight (approx.)	Wall-mount: < 150 lbs.
RF Connector Type	N-Female

### Ordering Information

Identification	Part Number
FS3IH-48C	FS3IH-48CC1.2YY
	Where: YY = Enclosure Type (see table)

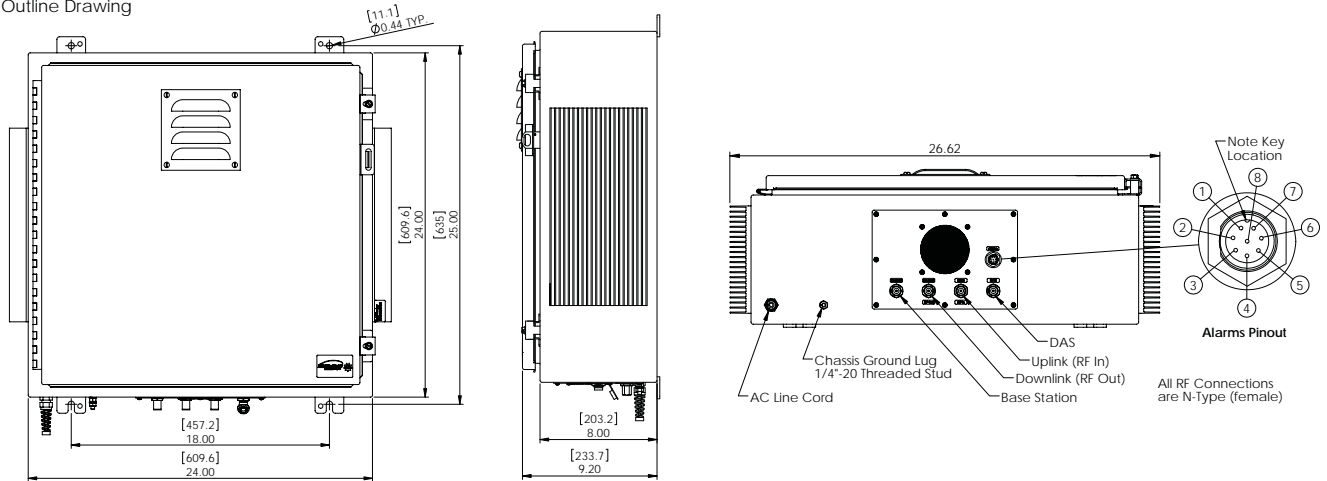
### Electrical

AC Power	50/60 Hz, 115-230 VAC
Power Consumption	< 150 Watts
Alarms:	<ol style="list-style-type: none"> <li>1. Downlink Amp RF Power Output</li> <li>2. Uplink Amp RF Power Output</li> <li>3. Door Alarm</li> <li>4. Fan Alarm</li> </ol>

### Enclosure Type

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

Outline Drawing



LITERATURE ORDER CODE: FS3IH-48C-01-0509v2