

FS51C

2 thru 32 Channel Bi-directional Amplifier System

- < 32 μ sec Delay
- 700 MHz Ready
- Highly Stable Gain
- Full-Duplex
- Wide Range of Input Signal Levels
- Scalable Channel Capacity
- Modular Design Supports Custom Configurations



INTRODUCTION:

Fiber-Span's Channelized Bi-directional Amplifiers will enable your 2-way communications system to provide coverage in areas that are normally beyond your system's reach. These Class A amplifier systems, which meet or exceed the FCC Part 90 requirements, provide a high degree of filtering, low noise, Automatic Gain Control and a wide range of frequency selections. All sensitivity settings, frequency controls, and power outputs are under computer control. The group delay specification for this narrowband product is <32 μ secs. This very low RF delay, which is required for most trunked repeater systems, is unique to this amplifier. This State of the Art unit is truly field programmable for site specific operation.

DESCRIPTION:

The standard Multi-Channel Bidirectional Amplifier configuration consists of 8 uplink and 8 downlink channel modules (Tx/Rx) configured as an 8-channel, full duplex repeater. Sixteen synthesized

LO's are field programmable allowing for a highly flexible system design. Each channel is independently programmed for key line time-outs and shutdown procedures. System monitoring software provides self diagnostics, fault detection, and protection from undesired operations and is locally connected to the unit via an Ethernet network (IP Addressable).

The Multi-Channel Bidirectional Amplifier has a flexible and scalable design and can be configured to support up to a 32-channel bi-directional repeater system. Consult the factory for systems requiring more than 32 channels.

MONITORING CONTROL AND STATUS SOFTWARE:

The controller card offers a convenient serial port for locally monitoring and controlling each system module and other system components. The controller's Ethernet communications port can be used to interface with Fiber-Span's Network Management System software,

or other third-party NOC software via SNMP traps. The following is a brief description of the GUI Software interface that comes standard with this product.

The main screen layout consists of 3 tabs for convenience in switching between the three software control panels - System Status Overview, Diagnostics, and Maintenance and Configuration. The System Status Overview is used for monitoring the status of the active and backup systems. The Diagnostic function allows entering commands for diagnosing problems. The Maintenance and Configuration function is used to configure the system parameters such as assigning a service frequency to a chassis and slot, setting the gain, turning channels on or off and other control features. If it is preferred to limit access to the configuration and diagnostic functions, they can be programmed to be menu driven. In either case, the Configuration and Diagnostic function screens can be password protected to prevent unauthorized access.

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.

Description	Specifications
Frequency Range	698-941 MHz
Minimum data/voice Channel Bandwidth	25 kHz, 12.5 kHz, 6.25 kHz
RF Frequency Accuracy	Tracks input signal exactly
60 dB Bandwidth @ Channel Bandwidth	80kHz @ 25kHz, 40 kHz @ 12.5 kHz, 20 kHz @ 6.25 kHz
RF Output Power (Downlink)	+25 dBm/carrier, maximum (8 Ch'l, 5 W Configuration)
RF Output Power (Uplink)	+26 dBm/carrier, maximum (8 Ch'l, 5 W Configuration)
Variation of Output Power w/input level	± 1.0 dB
Maximum Passband Ripple Across Full Band (Across 100kHz)	2 dB (0.1 dB)
Max. Input Signal Level (no damage)	+10 dBm
Propagation Delay	<32 microseconds @ any channel bandwidth
Intermodulation/Cross-modulation Distortion at Full Output Power	-60 dBc
Channel to Channel Isolation	-70 dB
Min. Receive Signal to achieve max RF Output Power	-100 dBm
AGC Control Range (Uplink & Downlink)	+80 dB
Duty Cycle	Continuous
RF Spurious Output, @ < 800MHz but > 1000MHz	-60 dBc, Maximum
RF Spurious Output, @ > 800MHz but < 1000MHz	-85 dBc, Maximum
Operating Temperature Range	-20°C to +60°C
System Noise Figure	<9 dB
Input/Output Impedance	50 Ohms, nominal
Input/Output VSWR	1:35:1, worst case
Input/Output Connectors	Type "N" Female ¹
Power Requirements	95-132 VAC, 45-64 Hz, 200 Watts (8 Ch'l configuration)
Amplifiers are unconditionally stable	Under all operating conditions
Alarms	Loss of Power Supply, DC, Change in current draw of +/- 20% for each internal amplifier

Ordering Information

Identification	Part Number
FS51C	FS51C- FF 1 2 DDUU 3 456
	Where: FF =Frequency Band Where: 1 =Downlink PA (A= 1/2 Watt, C=5 Watt, N=No PA) ²
	72 = 698-746 MHz 2 =Uplink PA (A= 1/2 Watt, C=5 Watt)
	78 = 746-806 MHz DD =Downlink (Number of channels up to 32)
	85 = 806-869 MHz UU =Uplink (Number of channels up to 32)
	87 = 824-894 MHz 3 =Mobile Side Duplexer (N= No Duplexer, D= Duplexer) ³
	90 = 896-941 MHz 4 =Controller (N= No Card, C=Controller)
	5 =Mounting (F= Full Cabinet, H= Half Cabinet, W= Wall-Mount) ⁴
	Example: FS51C-85CC1616DCF 800 MHz SMR Channelized BDA, 5 watt uplink and downlink PAs, 16 channels uplink, 16 channels downlink, duplexed output port, controller card included, full equipment rack cabinet.

¹ SMA-Female connector on portable side when No Duplexer option is selected.

² No Downlink PA is required for configurations that interface with a Fiber Distribution System.

³ Choose "N" to keep TX and RX ports separated for interfacing with a Fiber Distribution system (not included).

⁴ Wall-Mount version available for configurations with 8 channels or less.