

FS61C-85

DIGITAL Narrowband Signal Booster

- Ideally suited for Public Safety applications
- 20 Watts Linear Composite Output Power
- Up to 20 full duplex channels in 6U rack space
- 120 dB System Gain per channel
- NFPA 72 Compliant (wall-mount Version)
- Individual AGC and Squelch settings per channel
- Fiber-Fed DAS Configurations
- Programmable Filters Bandwidth, Selectivity & Group Delay



Fiber-Span's FS61C-85 Narrowband Digital Technology integrates uplink and downlink programmable front-end narrowband filters with broadband Multi-Carrier Power Amplifiers (MCPAs), to deliver a Bi-Directional Narrowband Signal Booster.

The FS61C-85 uplink amplifiers can be specified as truly channelized narrowband filters tuned to transmit only your licensed channels, in compliance with the FCC definition for Class-A Signal Boosters. It can be configured with up to 10 or 20 fully programmable filters per path, Uplink and Downlink. The downlink path filters can be broader for reduced delays to accommodate the digital modulation signals timing constraints in the overlap coverage areas. Each filter-window has an input

sensitivity of -105 dBm and 120 dB of available gain.

The FS61C-85 is a patent-pending design for multi-carrier two-way rebroadcast systems, where significantly high dynamic range is required on a channel-per-channel basis, while delivering lower & flatter group delay. The individual AGC per channel feature essentially eliminates the uplink near-far concern prevalent in many Public Safety broadband DAS systems.

The filter's bandwidths & selectivity can be specified by the user in order to achieve very narrow filters windows, such as, for example, 70 dB rejection at 200 kHz offset for less than 13 μ sec, or 70 dB rejection at 75 kHz offset at the expense of 30 μ sec delay. The individual

receive threshold level (RF Squelch) per filter ensures clean output spectrum with no amplified noise if in-active.

A variety of pre and post-rebanded internal duplexer options are available for additional interference protection and multi-service/multi-band compatibility over broadband DAS systems. Also available are configuration options that exclude the portable side duplexer and downlink MCPA for direct compatibility with Fiber Optic DAS systems.

Consult Fiber-Span Sales team for custom Bi-Directional Amplifier configurations and fiber optic options including WDM. Refer to separate data sheets for VHF & UHF bands.

Applications:

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

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	806-824 MHz / 851-869 MHz range The overall system bandwidth per path (UL & DL) could be specified as 3, 7, 10, 15 or 18 MHz.
Narrowband filters Selectivity – Adjacent Channel Rejection (ACR)	20-70 dB, The Filters Response-Type, Group Delay, Bandwidth and Selectivity are software-defined.
Absolute Group Delay	10-120 uSec, Software Selectable
NOTE: Absolute Group Delay, Selectivity and Response-type are software selectable off a standard library of filters or custom-filters upon order. Lower group delays are feasible at greater channel bandwidths. For example, one option can deliver ~30 uSec with 70 dB rejection @ 75KHz offset, and another option delivers < 13 uSec with 70 dB rejection at 200 KHz offset. Please consult Sales with your specific requirements.	
System net gain per filter window	50 dB
Automatic Gain Control (AGC) range, on a per filter-window basis	45 dB
Constant Output level regardless of input level variations, per filter	+/- 2 dB
Broadband Input Automatic Level Control (IALC) range to prevent front-end undesired saturation, per path UL/DL	20 dB
Broadband input power attenuator adjustment range, per path UL/DL	15 dB
Maximum input power (composite) for no-damage, per path UL/DL	-30 dBm
System OIP3	> +58 dBm
System Composite Output Power:	20 Watts
System Output Power Automatic Level Control (ALC), composite, factory limited for compliance with FCC Signal Boosters maximum power = 5W.	variable set-point 32 ~ 37 dBm (5 Watts)
Composite output power level adjustment range	20 dB
Input (Rx) IM Rejection	>60 dB
Spurious & harmonics outputs	<-36 dBm (EU), <-13 dBm (US)
RF Input & Output impedance (typ)	1.5:1 VSWR, built-in output circulators for infinite mismatch open load protection.

Mechanical & Environmental

Rackmount 19 in. shelf. (Optional wallmount enclosure upon request)	Up to 10 channels per path: 4RU enclosure, 22 inches depth Up to 20 channels per path: 6RU enclosure, 22 inches depth
Weight	4U enclosure: 44 lbs. (20 Kg), 6U enclosure: 55 lbs. (25 Kg)
Operating ambient temperature range	-30 to +50° Celsius
MTBF	> 90,000 hours, > 70,000 hours (fiber-fed versions)
Power Requirements, 100-240 Vac 50/60Hz	300W

Interface and Alarms

Human-Machine-Interface	LCD display with 7-button keypad, LED Indicators
Computer Interface, Ethernet port	Graphical User Interface (GUI)
Summary Alarms Discrete I/O	4 Form-C Relays, 4 Opto-isolated inputs (dry-contacts)

Ordering Information

Identification	Part Number
FS61C	FS61C-85XEDDYYZMM
	Where: X=Downlink MCPA (E=20Watt, N=No MCPA) ¹ YY=Number of channels (08=8 ch's, 16=16 ch's)
	DD=Duplexer Bandwidth: Z=Mobile Side Duplexer (N= No Duplexer, D= Duplexer) ²
	3A=3 MHz, 806-809/851-854 MHz
	3B=3 MHz, 821-824/866-869 MHz
	07=7 MHz, 817-824/862-869 MHz
	09=9 MHz, 806-815/851-860 MHz
	15=15 MHz, 806-821/851-866 MHz
	18=18 MHz, 806-824/851-869 MHz
	MM=Mounting (RM= Rack-mount, 4X= Nema 4X Wall-mount)
	Example: FS61C-85EE3A10NRM 800 MHz SMR Channelized BDA, 20 watt uplink and downlink PAs, 3 MHz Passbands, 10 channels uplink, 10 channels downlink, non-duplexed output port, rack-mount configuration.

¹ No Downlink MCPA is required for configurations that interface with a Fiber Distribution System.

² Choose "N" to keep TX and RX ports separated for interfacing with a Fiber Distribution system (not included). LITERATURE ORDER CODE: FS61C-85-01-0110v1