

# REPEATERS (BDAs)

## 800MHz REPEATERS Band Selective

FIPLEX BDA85S Series of Band Selective (Fixed) Repeaters are cost effective and reliable solutions designed to extend and improve the coverage area of 800MHz telecommunications systems, like TETRA, P25, iDEN, EDACS, MPT1327 and others.

Band Selective (Fixed) Repeaters amplifies in both directions, uplink and downlink a continuous bandwidth, factory tuned.

The presence of a FIPLEX Repeater provides to the system with a high channel occupancy rate, since coverage is extended beyond site coverage. Typical applications of this line of repeaters are indoor situations such as tunnels, buildings, subways, and outdoor scenarios such as stadiums, rural areas and dense urban areas. Its rugged construction and easy field maintenance reduces operational costs and ensures a high MTBF.



### Features & Benefits

**Auto diagnostics:** Repeaters are equipped with a microprocessor module that controls the unit operational parameters. This self check capability provides an instantaneous alarm output under failure situation, via local LEDs. Microprocessor module verifies amplifiers status, PA status, power supply status, intermediate filters status, battery backup status and temperature levels.

**Antenna isolation control:** Units are provided with a built in, microprocessor controlled, antenna isolation control. This feature verifies the real antenna to antenna isolation (donor antenna to service antenna/s), and adjust the maximum available repeater gain to avoid antenna feedback and oscillation, increasing system reliability.

**Control:** Repeaters can be controlled locally via the control panel or via RS-323, and can be remote controlled using FIPLEX OMS (Operation and Maintenance Software) via wireless connection. In both situations, local and remote, Repeaters parameters can be adjusted (UL gain, DL gain, ON/OFF, intermediate filters characteristics) and alarms can be supervised (amplifiers status, PA status, power supply status, battery backup status, temperature)

**Manual gain control:** Uplink and Downlink gain levels can be adjusted to meet system planning requirements. Both chains (UL and DL) can be adjusted independent, digitally, in 1dB steps. This gain control can be done locally via tac switches, via RS232 (FIPLEX OMS) or can be done remote via wireless connection (FIPLEX OMS). Gain values are shown via built-in digital displays, for an easy and fast reading.

**Automatic Gain Control (AGC):** Repeaters are equipped with Automatic Gain Control (AGC) that acts in both Uplink and Downlink chains independent. The presence of an AGC allows a maximum power operation with low intermodulation generation, and provides a lineal operation that ensures a high quality signals amplification.

**Battery backup:** Repeaters can be powered with AC or DC. Battery backup mode is available for continuous operation in case of AC or Power Supply failure, or when no AC is available.

**Weatherproof enclosure:** Units are equipped with IP68 enclosures, to allow a simple and easy installation procedure since no special weather protection are required. Standard fixing method is wall mounting. Pole mounting brackets are available as optional.

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Repeaters (BDA)

Tower Mounted Amplifiers (TMA)

Products for iDEN

Products for Tetra / Tetrapol

Transmitters Combiners

Duplexers

R.F. Components

Broadcasting

#### RF Specifications

Frequency range	<b>BDA85S Series</b> , 806 – 869 MHz
Type	Band Selective (Fixed) Repeater
Passband BW	18.0 MHz
Downlink to Uplink separation	45.0 MHz
Gain, maximum	80 dB
Passband ripple	+/- 2.0 dB
Gain, manual control, Uplink and Downlink	25dB range, digitally controlled in 1dB steps
Antenna isolation control, gain adjustment	0 to 30 dB
AGC range	0 to 30 dB
Composite output power, Downlink	<b>BDA85S-1B4LC</b> +40 dBm (10 W) <b>BDA85S-1B3LC</b> +37 dBm (5 W) <b>BDA85S-1B2LC</b> +30 dBm (1 W)
Composite output power, Uplink	+30 dBm (1 W)
IM generation	FCC compliant or ETSI compliant (based on output power levels)
Noise figure, in dB	3.0 max at maximum output power
Impedance	50Ω
Group delay	1uS max
Connectors	N(f) as standard
VSWR at operating frequencies	1.5:1 max

#### Supervising Specifications

Self diagnostic platform	Microprocessor based
Alarms	Yes, amplifiers status, power amplifiers status, power supply failure, battery backup failure, temperature, AGC, RF overload, poor antenna isolation.
Local management and supervising	Built-in gain adjustment interface and alarms / status LEDs. PC access via RS -232 (FIPLEX OMS)
Remote management and supervising	Remote access via wireless modem, option RC (FIPLEX OMS)

#### Electrical & Mechanical Specifications, Master and Slave

AC Supply	110/220 VAC
DC Supply	24 VDC
Housing	IP65
Temp range	-30 to +60 °C
Size, WxDxH, in mm	<b>BDA85S-1B4LC</b> and <b>BDA85S-1B3LC</b> 595 x 535 x 258 <b>BDA85S-1B2LC</b> 547 x 350 x 167
Weight	<b>BDA85S-1B4LC</b> and <b>BDA85S-1B3LC</b> 35Kgs <b>BDA85S-1B2LC</b> 25Kgs
Mounting	Wall mounting as standard. Option PK for pole mounting.
Fiber optic links	Available as option FO, intended for multiple repeaters configuration and/or long distance runs.

Model	Pass band BW, in MHz	UL – DL separation, in MHz	Gain, in dB	DL Composite power dBm
<b>BDA85S-1B2LC</b>	18.0	45.0	80	+30
<b>BDA85S-1B3LC</b>	18.0	45.0	80	+37
<b>BDA85S-1B4LC</b>	18.0	45.0	80	+40

#### Fiplex Argentina

Ph. +54 351 456 8263 · Fax +54 351 456 2507 · S. Cabral 1242, C.P. 5006, Córdoba, Argentina · E -mail: [info@fiplex.com](mailto:info@fiplex.com)

#### Fiplex USA

Ph. +1 305 884 8991 · Fax +1 305 8844041 · 7331 NW 54 St-Miami FL 33166-USA · E-mail: [info@fiplex.com](mailto:info@fiplex.com)

#### Fiplex Europe

Ph. +34 91 662 58 66 · Fax +34 91 662 34 08  
E-mail: [europe.sales@fiplex.com](mailto:europe.sales@fiplex.com)