

BFLx2 is a double RF over Fiber module with selectable filters and remote control interface.



RF over Fiber

For a link without distance limits!
The fiber module allows to replace the coaxial cable and place the antennas miles away.



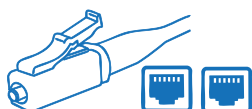
Filter Bank

20 band pass filters and 40 Mhz tunable filter software selectable to increase RF robustness.



Antenna Control

Remote control of Wisycom antennas (LFA, ADFA and BFA)



Remote Control Gigabit Ethernet and Fiber

Monitoring and Control: achieved via two Ethernet ports and one integrated fiber port (SFP)



Wireless Remote Control LORA and Bluetooth

Real-Time Monitoring and Control: adjust parameters via a remote control interface using the Wisycom Manager and Wisycom BT App.



OTHER FEATURES

- Wide RF Bandwidth: 170–1260 MHz
- Antenna Booster: 12V, 220 mA maximum (applicable to the BFL-T2)
- Optical Transmission Power: 6 mW (specific to the BFL-T2)
- Operating Voltage Range: 9–18 VDC
- RF Amplifier Power Supply: Via coaxial cable thru the BFL-R2
- Status Indicators: Two RGB LEDs for RF overload alerts and system status monitoring
- User-Friendly Configuration: High-contrast white OLED display with 4-button navigation

CONFIGURATIONS

FILTER OPTION (only for BFLT1)

F1

Tunable filter: 470-758 MHz, 40MHz of BW
Selectable filter HP: 170/470/518/566/960MHz + LP: 608/698/1160/1260MHz
Fixed filter: 820 ÷ 832 MHz (EU), 733 ÷ 758 MHz (EU), 940 ÷ 960 MHz (USA)

F2

Tunable filter: 470-758 MHz, 40MHz of BW
Selectable filter HP: 170/470/518/566/614MHz + LP: 608/698/714/1260MHz
Fixed filter: 806 ÷ 810 MHz (JP), 927 ÷ 935 MHz (KR), 1240 ÷ 1260 MHz (JP)

INTEGRATED SFP MODULE

D1

standard version for M0/M2 MUX option
SFP Transceiver Module Bidi 1000BASE-BX, SMF, 10km, LC/UPC Simplex
1310nm-TX/1550nm-RX on BFLT2, 1550nm-TX/1310nm-RX on BFLR2

D2

customized version for M0/M2 MUX option
(to link the data ports of 2 BFL thru optical fiber)
SFP Transceiver Module Bidi 1000BASE-BX, SMF, 10km, LC/UPC Simplex
1550nm-TX/1310nm-RX on BFLT2, 1310nm-TX/1550nm-RX on BFLR2

D3

standard version for M5 MUX option
SFP Transceiver Module 1000BASE-CWDM, SMF, 20km, LC/UPC Duplex
1590nm-TX/1610nm-RX on BFLT2, 1610nm-TX/1590nm-RX on BFLR2

OPTION HIGH BOOSTER

HB

High Booster
12V, max 450mA for channels
Required a new power supply PSP15V1A6-H (included)

OPTICAL MUX/DEMUX

M0

Without multiplexer

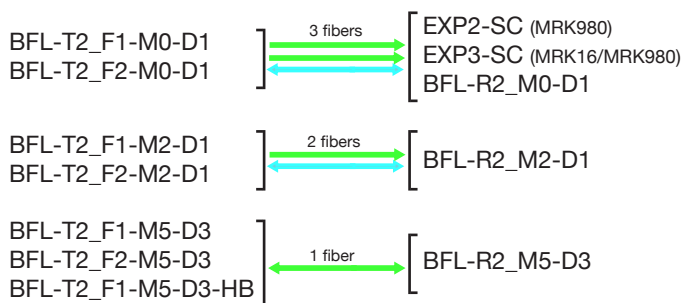
M2

MUX with 2 wavelengths
[1510 nm + 1550 nm] for 2 RF channels

M5

MUX with 5 wavelengths and SFP module
[1510 nm + 1550 nm] for 2 RF channels
[1590 nm + 1610 nm] for Data (remote control)
[1310nm Wideband] for Camera or other application

Configuration link compatibility:



ACCESSORIES & RELATED

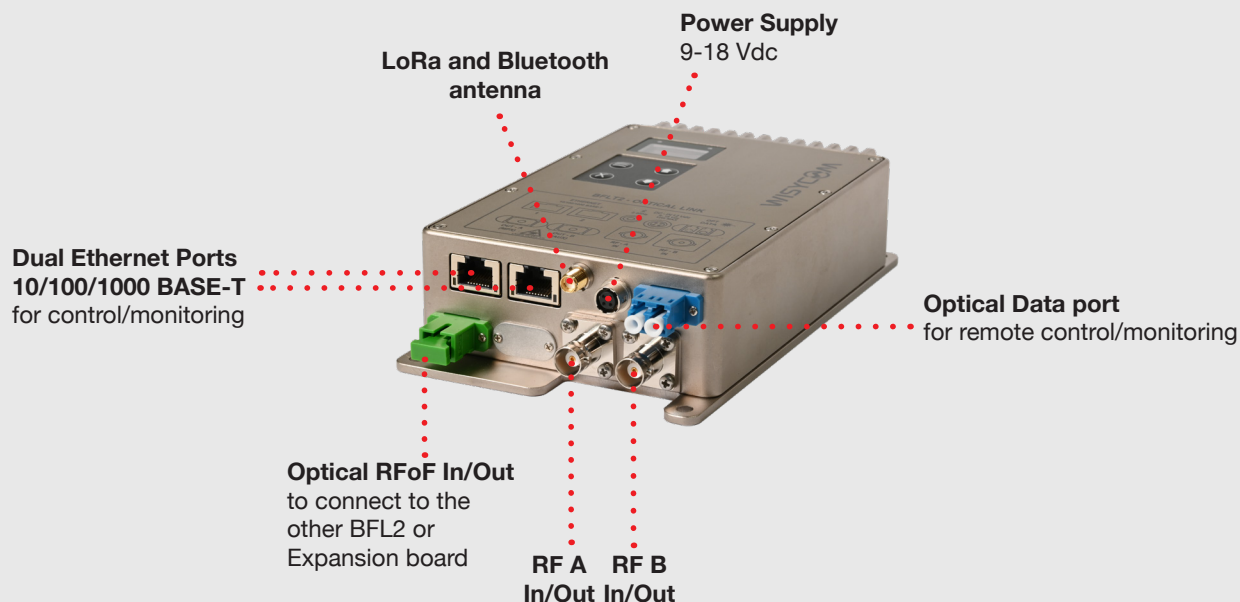


Item: PSP15V1A2-H (included)
AC/DC Power Supply with Hirose 4 pin connector
Input: 90-264 Vac
Output: 15V 1.2mA (18W)
Supplied with EU/UK/USA/AU plug



Item: PSP15V1A6-H (included)
Desktop Power Supply IEC 314 with Hirose 4 pin connector
Input: 90-264 Vac
Output: 15V 1.6mA (24W)
Patch Cord not included

PANEL CONNECTION



TECHNICAL SPECIFICATIONS

RF SPECIFICATIONS

Frequency ranges	170÷1260 MHz			
RF Connector	BNC (N on request)			
Antenna booster (BFL-T2)	+12Vdc, 220 mA max, compatible with Wisycom active antennas (LFA, ADFA, BFA, LBNA2) +12Vdc, 450 mA max (option HB), compatible with the most widely used RF downconverters			
DC power for external amplifier (BFL-R2)	+12Vdc, 220 mA max, compatible with Wisycom active amplifier (PAW, LBP/LNP)			
Tunable Filter	470 ÷ 758 MHz (UHF), 40MHz of bandwidth, 1 MHz step tuning			
Fixed Filter	F1 version: 820-832MHz, 733-758MHz, 940-960 MHz (for Europe, USA and UK) F2: version: 806-810MHz, 927-935MHz, 1240-1260MHz (for Japan and Korea)			
Selectable band pass filter	17 RF filters selectable:			
	F1 version		F2 version	
	HP	LP	HP	LP
	170 MHz	608/698/1160/1260 MHz	170 MHz	608/698/714/1260 MHz
	470 MHz	608/698/1160/1260 MHz	470 MHz	608/698/714/1260 MHz
	518 MHz	608/698/1160/1260 MHz	518 MHz	608/698/714/1260 MHz
	566 MHz	698/1160/1260 MHz	566 MHz	698/714/1260 MHz
	960 MHz	1160/1260 MHz	614 MHz	698/714/1260 MHz

RF to fiber link working modes	ANT (for reception link), IFB (for tranmission link)
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OPTICAL

Optical Connector	SC/APC (LC/APC on request) for RFoF, LC/UPC for Data (remote control) NOTE: all fiber links (RFoF and Data control) require single mode fiber
Optical power (BFL-T2)	6 mW / 4 mW selectable
Wavelength (BFL-T2)	1510 nm for Channel A, 1550 nm for Channel B
Input optical power (BFL-R2)	from -6 dBm to 6 dBm [0.25 mW to 4 mW]
Absolute max optical power (BFL-R2)	10 mW DO NOT EXCEED MAX INPUT OPTICAL POWER!
Wavelength (BFL-R2)	1300 to 1650 nm

OTHERS

Managing interface	Display menu and 4 buttons, Remote Control thru Wisycom Manager or Wisycom App
LEDs	2 multicolour RGB LEDs to easy indicates BFL status (left for channel A, right for channel B): red: RF/optical overload blue: booster enabled green: link active, no alarm off: link disabled
Power supply	9 ÷ 18 Vdc
Power Connector	Hirose 4pin (pin1: GND, pin4: Vdc)
Power consumption	BFL-T2: 5,4 W typical, +1W with 2 Ethernet active, +1,5 W max for each active antenna booster (LFA) BFL-R2: 4,2 W typical +1W with 2 Ethernet active, +2, 8 W max for each active amplifier (PAW)
Display	High contrast OLED white display (128 x 64 pixels)
Mounting	4 holes (for M4 screw type)
Temperature range	-10 ÷ +50 °C
Dimensions	105 mm(L) x 178 mm(H) x 42 mm(D)
Weight	800 g approx.

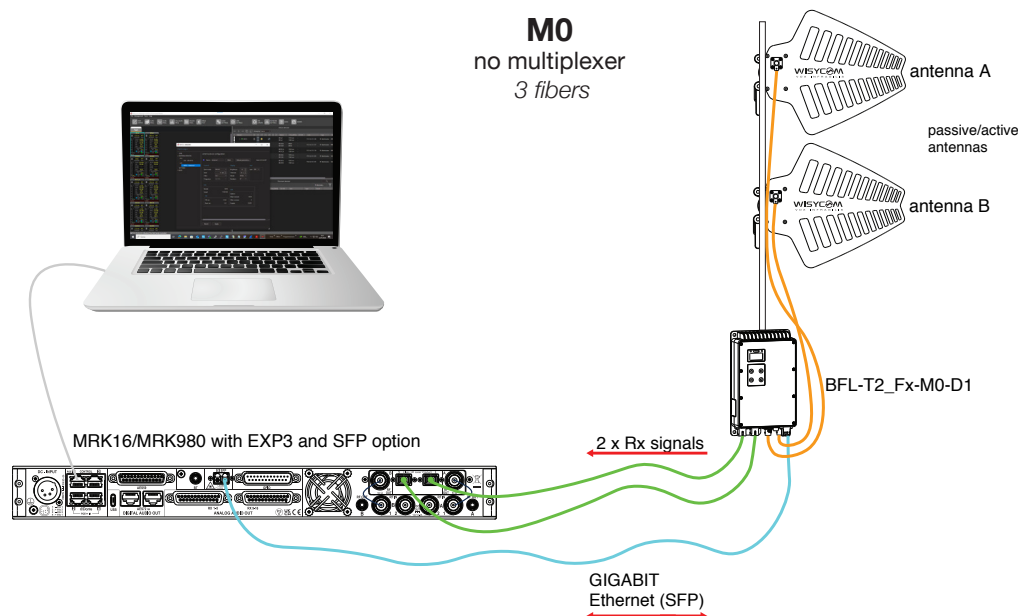


CONFIGURATION EXAMPLE

RECEPTION FIBER LINK (ANT mode) with Wisycom receiver with fiber option:

Using a BFL-T2 without MUX (M0 option), it is possible to receive RF signals over fiber from two diversity antennas installed in a remote location.

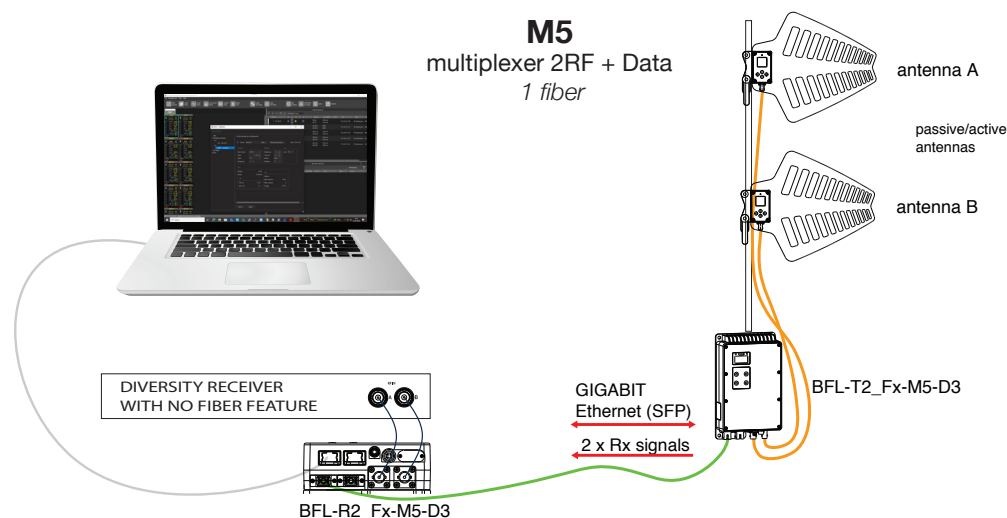
- Connect the two optical ports of the EXP3-SC to the BFL-T2.
- For remote control of the BFL-T2, connect the optical data port of the MRK16 (with the SFP option installed) to the optical data port of the BFL-T2. Then, connect the PC to the Ethernet Control port of the MRK16.



RECEPTION FIBER LINK (ANT mode) with diversity receiver without fiber feature:

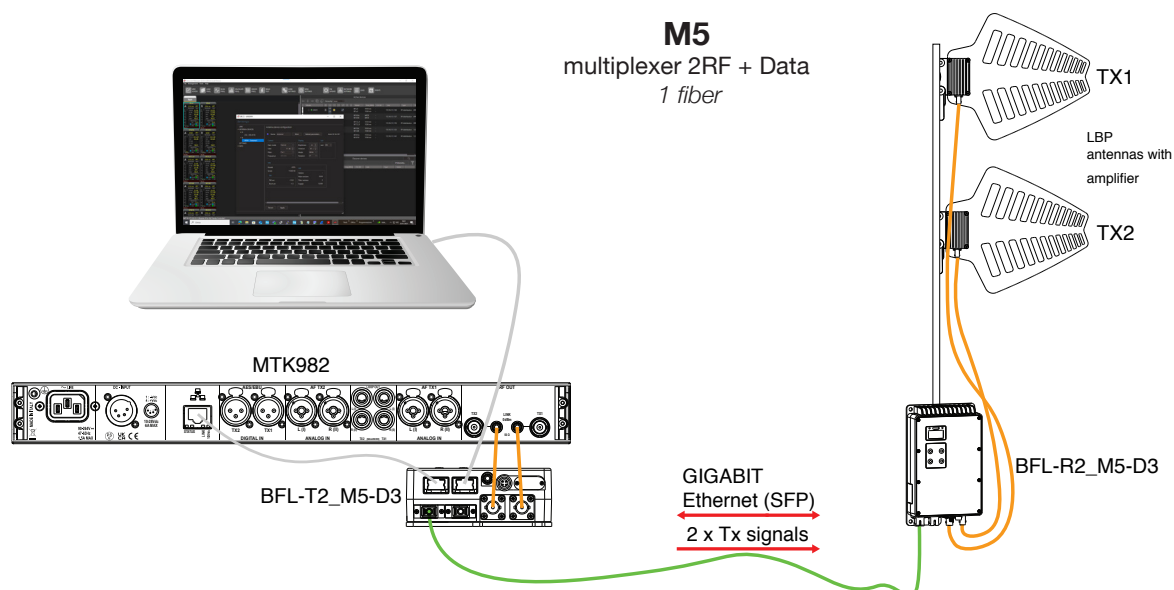
Using a link BFL-T2 and BFL-R2 with MUX (M5 option), it is possible to receive the RF signals from two diversity antennas installed in a remote location and control BFL-T2 and any connected smart antennas (LFA, ADFA, BFA).

- Connect the BFL-T2 and BFL-R2 with a single-mode SC/APC fiber



TRANSMISSION FIBER LINK (IFB mode)

In the M5 option (BFL-T2_M5), two RF-over-Fiber signals and a Gigabit Ethernet signal are multiplexed onto a single optical fiber. By connecting the auxiliary ports of the MTK982 to the BFL-T2 and linking them with a single optical fiber to the BFL-R2, it is possible to transmit two IEM signals to a remote area while also enabling remote control of the BFL-R2.



TRANSMISSION FIBER LINK (IFB mode) across two separate remote zones

If it is necessary to transmit IFB/IEM signals to two remote zones, it is possible to use a 1:2 optical splitter (as shown in the example on the following page).

Please note that since the optical splitter is not bidirectional, control data signals will not be preserved when using a single fiber for both RF and Data (with an M5 multiplexer).

In such configuration, we recommend using BFL2 units with M2 multiplexers, keeping a separate fiber for the Data control section.

As highlighted in the example layout, it is sufficient to connect the Data control fiber for Zone 1 to the first BFL-T2, and the Data control fiber for Zone 2 to the second BFL-T2.

From the local area, it will be possible to monitor and manage the remote BFL-R2 units and any other devices connected to the same network via the Ethernet ports of the BFL-R2.

The configuration in the example allows transmission of 4 IEM/IFB channels (2 MTK982 units) across 3 distinct zones:

- **Local zone:** by combining the main outputs of the transmitters using the CSI16T combiner into a single antenna (LBN2), ensuring a maximum output power of 500 mW per channel.
- **Remote zone1 and zone2:** by connecting the auxiliary outputs (0 dBm) of the MTK982 transmitters to the BFL-T2 units and splitting the optical signal into two remote zones, the configuration enables distribution to remote areas. In each remote zone, the optical signal is converted back to RF, amplified using the MPA4 amplifier, and then combined in pairs. This setup allows transmission of 2 channels per antenna, ensuring an output power of 500 mW per channel.

