



ERZIA

EGSE, SCOE & Test Systems

Space Electronic Systems

UAV Data Links

ERZ-FIBERBOX

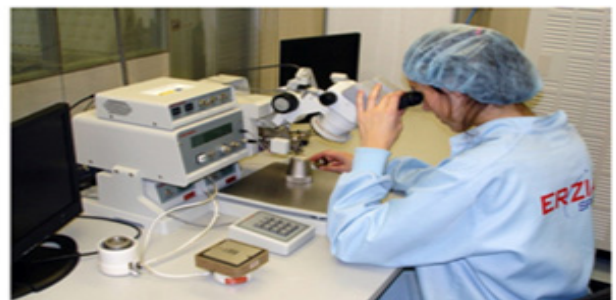
Fiber Box

The ERZ-FIBERBOX is a RF over Fiber system that provides low-loss communication link between Above Deck Equipment (ADE) and Below Deck Equipment (BDE).

MAIN FEATURES:

- Frequency Range: 22 Khz to 2150 MHz
- FSK modem to multiplex the system information (monitoring & control)
- Friendly user interfaces: BDE front panel, Serial User Interface, Web based GUI.
- Typical applications:
 - Industrial / Laboratory
 - Satcom / Telecom

RF & MW Assemblies



RF & MW Assemblies



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Typical Performance

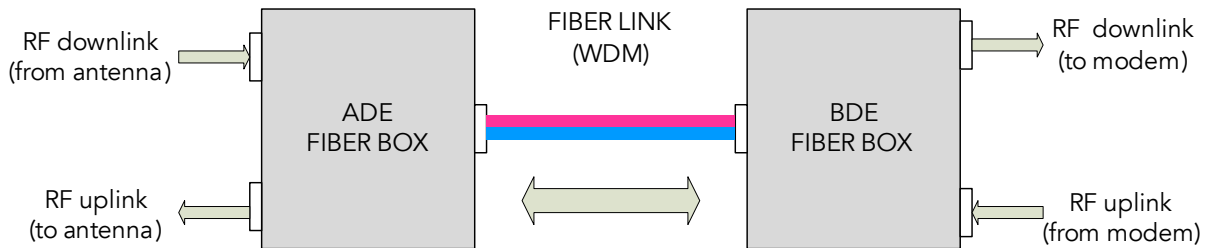
RF Specifications *	
Parameter	Value
Frequency	22 Khz – 2150 MHz
Input and Output Power Range	On demand (Up to 50dB range)
Group Delay	1 ns (L-Band 950-1950 Mhz)
Optical Specifications *	
Parameter	Value
Required Fiber Type	SMF-28 or equivalent (single mode)
Optical Wavelength	1310, 1550 nm
ADE/BDE Optical Power Output	2 mW
Physical Specifications *	
Parameter	Value
ADE Hermeticity Level	IP65
Operation Temperature	[-25, 60] °C
Electrical Specifications *	
Parameter	Value
ADE/BDE Power Requirements	85-260 V AC Autoranging, 47 to 63 Hz, Single Phase
EMC & EMI Specifications *	
Parameter	Value
Radiated Susceptibility	Immunity to electromagnetic radiation from other devices
Conducted Susceptibility	Immunity to electrical noise on power lines
Electrostatic Discharge	Immunity to 6000 volt contact discharge and 8000 volt air discharge
Compass Safe Distance	Isolated against magnetic field radiation that may interfere with compass operations
M&C Alarm and status Specifications *	
Parameter	Value
Temperature Alarm	Alarm over 50°C
L-Band Signal Alarm	Low Signal Threshold
10 Mhz Carrier Alarm	Low Signal Threshold
Tx Gain Attenuation	Configurable from 0 to 31 dB (1 dB step)

- *All specifications are guaranteed by design.

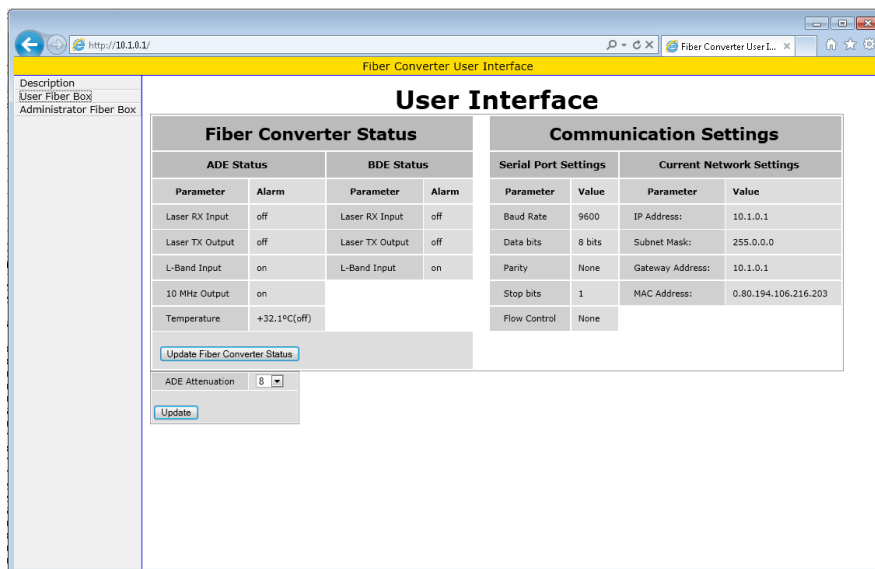
System Architecture

The Fiber Box system is composed by ADE and BDE units that are connected with a single mode fiber link. The full-duplex communication between ADE and BDE is obtained by using wavelength division multiplexing (WDM). To convert RF signals into optical domain, each unit of the Fiber Box system includes an RF to optical transceiver.

Next figure shows the Transmission and Reception paths between the modem placed below deck and the antenna.



- The main feature of the fiberbox system is to provide RF connectivity between ADE and BDE. In addition the Fiber Box system provides monitoring information and remote control of the power sent to the antenna at the ADE output.
- In order to provide monitoring information the Fiber Box system includes a set of alarms presented in the Fiber Box User interfaces (BDE front panel, serial port and Graphic User Interface via Ethernet).
- In addition to the alarms, the Fiber Box system allows remote control of the power transmitted from the ADE to the BUC. This is done by adjusting an 31dB attenuator at ADE output when using the serial interface or the Graphic User Interface via Ethernet, using any Internet browser.

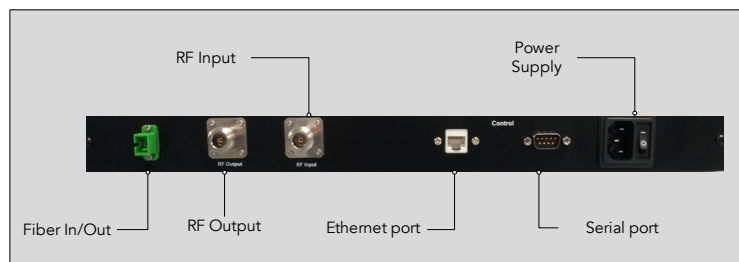


Dimensions and Interfaces

Dimensions & Interfaces Specifications *	
Parameter	Value
ADE Dimensions	13" x 9.14" x 6.15" (L x W x H)
BDE Dimensions	1.75" x 19" x 14" (L x W x H)
RF Connectors ADE/BDE	Type N (f) 50 ohms
Optical Connectors ADE/BDE	SC - APC
Ethernet Connector BDE	RJ45
Serial Connector BDE	DB-9
Power Supply connector BDE	IEC Inlet Filter

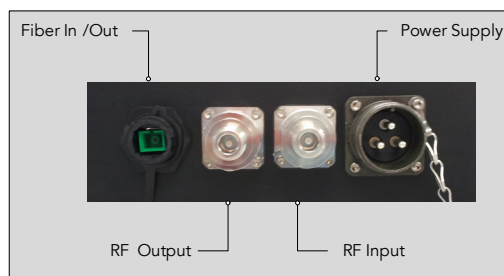
- *All specifications are guaranteed by design.

Next figure shows the interfaces of the BDE unit of the Fiber Box system.



- A Single Mode Fiber Input/Output port: accepts a fiber optic cable with SC/APC connector.
- RF Output port: accepts a 50 ohms coaxial cable with N-type connector.
- RF Input port: accepts a 50 ohms coaxial cable with N-type connector.
- Ethernet port (RJ45): this interface is intended to provide remote access via internet.
- Serial port: this interface is intended to provide access during Fiber Box system installation.
- Power Supply port: with on – off button.

Next figure shows the interfaces of the ADE unit of the Fiber Box system.



- A Single Mode Fiber Input/Output port: accepts a fiber optic cable with SC/APC connector for harsh environment.
- RF Output port: accepts a 50 ohms coaxial cable with N-type connector.
- RF Input port: accepts a 50 ohms coaxial cable with N-type connector.
- Power Supply port: a military power supply socket.