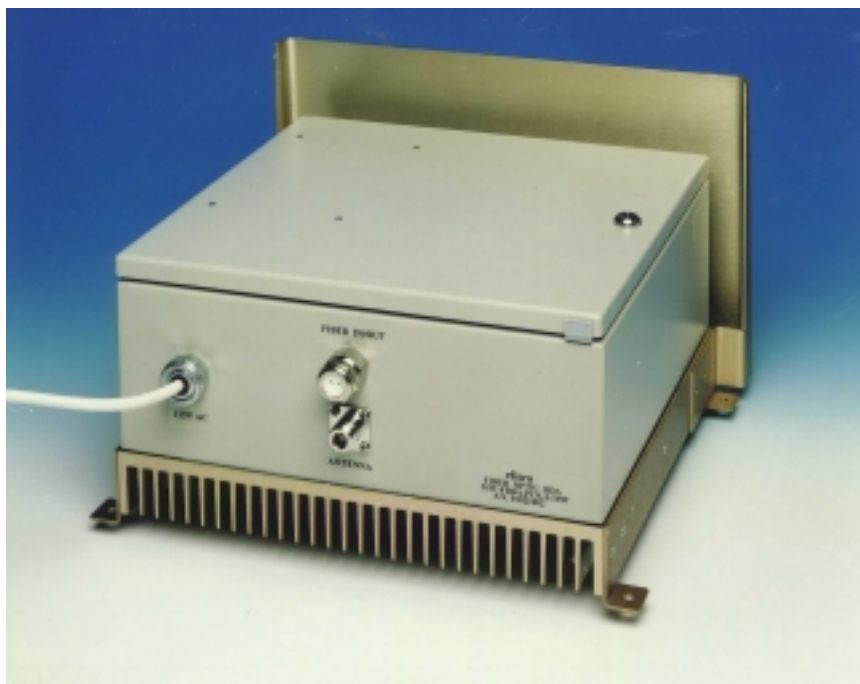


**SPECIFICATIONS**  
  
**for**  
  
**PCS FIBER OPTIC**  
  
**BI-DIRECTIONAL AMPLIFIER UNIT**

Model No. MW-FBDA-PCS-A-10W



## **FIBER OPTIC BDA**

### **GENERAL DESCRIPTION:**

The FBDA is an interface unit between optical signals carrying RF information, and RF antenna covering a defined user area. The system consists of up link and down link paths.

The uplink path receives RF signals from the Mobile antenna and amplifies them and converts them to optical signals. These optical signals are sent to the BTS.

The downlink path receives optical signals from the BTS, converts them to RF signals and amplifies these signals using a high power amplifier. The Mobile antenna transmits these RF signals.

### **Block Diagram Description:**

#### **Uplink Amplifier**

This is a low noise amplifier with a variable attenuator. Typical gain is 45 dB and attenuation up to 20 dB down. To adjust the gain, use a small screwdriver. Turn clockwise for max gain. The Led goes on at 0 dbm.

#### **Variable Step Attenuator**

This is an active step attenuator having 30 dB range with 2 dB steps.

#### **Power Amplifier**

This is a 10-Watt power amplifier. Typical gain is 46 dB.

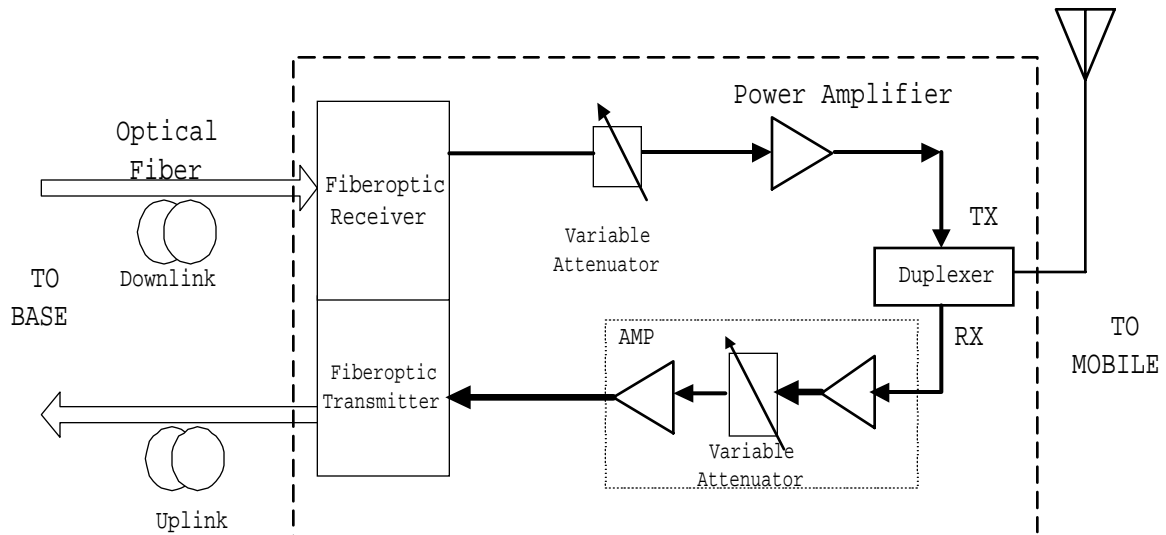
#### **FiberOptic Transceiver**

This unit is made of a Fiber Optic Receiver (Laser to RF) and a Fiber Optic transmitter (RF to Laser).

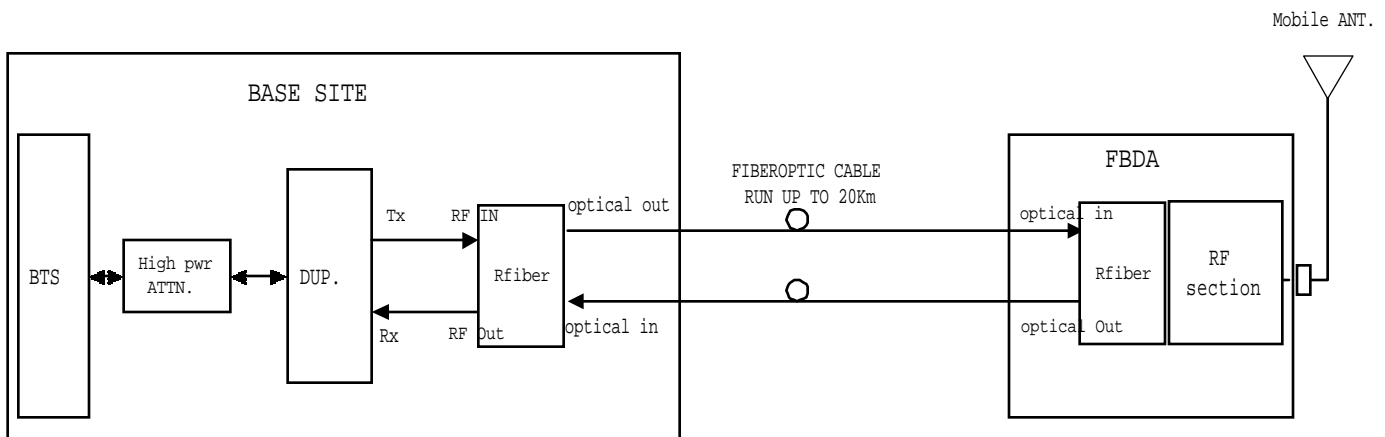
#### **Duplexer**

This duplexer separates the uplink and the downlink path frequencies. It has sharp out of band attenuation for better isolation of receiving and transmitting paths.

## FUNCTIONAL BLOCK DIAGRAM



## FBDA SYSTEM BLOCK DIAGRAM



## ***SPECIFICATIONS:***

Frequency Range	Uplink (RX)	Downlink (TX)
	1850-1865 MHz	1930-1945 MHz
Noise Figure @+25°C @ max gain	: 10.0 dB max	N.A.
Manual Attenuation Range	0 to 16 db continuous	: 0 to 30dB in 2 dB steps
Passband Gain @ min attenuation	: 45 dB Nominal	: 42 dB Nominal
Passband Ripple	: $\pm 1.0$ dB typical	
Up-Link 3 <sup>rd</sup> Order Intermodulation Products @two tones 0 dBm each at Amplifier Output	: 60 dBc typical	N.A.
Down-Link 3 <sup>rd</sup> Order Intermodulation Products @two tones 27 dBm each at Output	N.A.	: 50 dBc typical
Impedance Level	: 50 Ohms	
VSWR In	: 1.5 : 1 typ	
VSWR Out	: 2.0 : 1 typ	

## **FBDA ALARM SPECIFICATIONS**

Remote Fault Indication (Summarized alarm)	: Alarm is sent on the serial data link of the FO transmitter.
Fault List	: Power Supply Over-voltage or Under-voltage
	: Uplink Power Amplifier Over Current or Under Current
	: Downlink Preamplifier Over Current or Under Current
	: Downlink Power Amplifier Over Current or Under Current
	: FO Transceiver Over Current or Under Current
	: FO Receiver Power fall (Bad Optical Connection)
Electrical Fault Indication LED	: Illuminated LED on Monitor Box for each Electrical Fault
Fiber Optic Connection Fault Indication LED	: Illuminated LED on FO Transceiver when Optical Connection is performing Correctly. LED is OFF when FO Receiver Power falls.

## **MECHANICAL SPECIFICATIONS:**

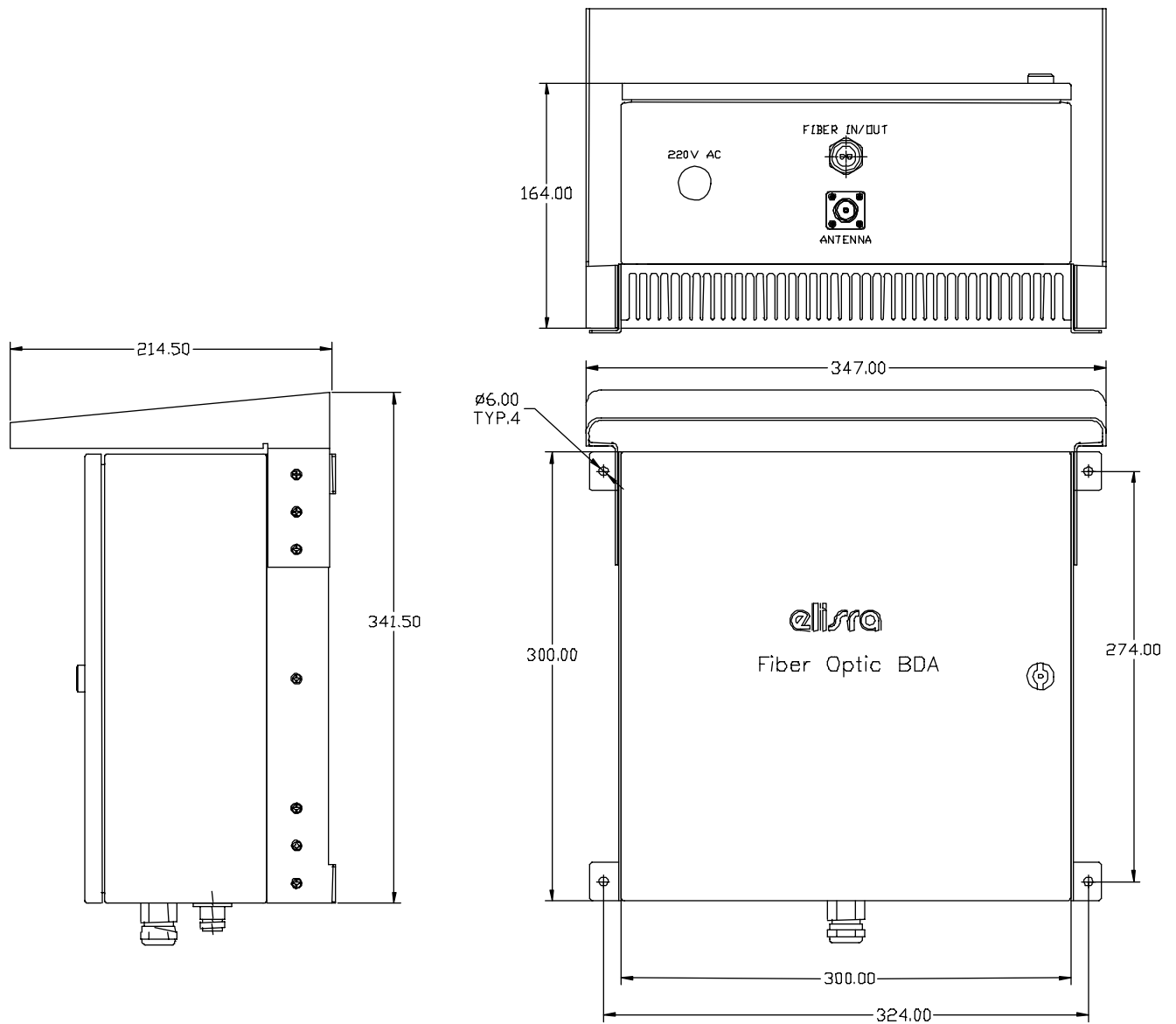
Size	: 300 x 300 x 160 mm approx.
Weight	: 15 kg. Approx.
Type	: Weatherproof Enclosure* for Wall Mounted Installation
Power Supply	: 110 VAC / 1A

## **ENVIRONMENTAL CONDITIONS:**

Operating temperature	: - 30°C to + 50°C
Storage temperature	: - 30°C to + 70°C
Weatherproof conditions	: Protected to IP66

## **GENERAL :**

- AC cable pass through Liquid Tight “Gasket” Fitting.
- Fiber cable pass through Liquid Tight “Gasket” Fitting.
- Additional rain shield for better weather protection.



## MECHANICAL OUTLINE DRAWING