

# FDU-160i

## Advanced Frequency Distribution Amplifier



The FDU-160i is a high performance signal distribution amplifier designed for use with Brandywine high precision time and frequency sources.

The FDU-160i is contained in a compact IU rack-mount chassis. The FDU accepts two sets of inputs, comprising the reference frequency (typically 10MHz) and status from the source. The FDU provides automatic changeover should one of the on-line source inputs fail. Manual source select override is available on the front panel, or through the Ethernet interface.

A variety of status indicators are located on the front panel for instant visual feedback, together with manual controls for source selection.

A 10/100 base T Ethernet interface provides full control over the functionality of the system, including reference selection and output amplitude (on a per channel basis).

User control of the unit is via a built-in Web Browser with user-friendly graphical interface, or via SNMP for system applications.

Applications for the FDU-160i include secure communications systems, satellite ground stations, digital television broadcasting and any system requiring highly reliable frequency outputs.

### Applications

- Satellite Communications
- Broadcasters
- Microwave Terminals

### FEATURES

- **Network Enabled Frequency Distribution Amplifier**
- **Dual Frequency Inputs with Auto Failover**
- **Low Phase Noise Reference Frequency Outputs**
- **Programmable per channel amplitude**
- **1U 19" rack mount**
- **Redundant Hot Swappable Power Supplies**

### Key Benefits

- Low Phase Noise 10 MHz Outputs
- 2x Frequency Input to 16x Frequency Output
- Optional Cleanup Oscillator
- Designed for High Availability & High Reliability operation

# Specifications

## Frequency Inputs

Frequency	10 MHz, +/- 5PPM
Amplitude & Impedance	0.5-1Vrms, 50 Ω
Isolation	Transformer coupled
Number of Inputs	2
Connector Type	BNC
Input Selection	Manual, Auto

## Fault Inputs

Number of Inputs	2
Signal Type	TTL
Active Level	Selectable for active high or low
Action	Forces on-line changeover

## Frequency Outputs

Number of Outputs	16
Frequency	Same as Input, 10MHz (std), 1-20, 1, 5 MHz
Optional	
Output Level	10dBm to +13dBm, short-circuit proof
Connector Type	BNC
Harmonic Distortion	-30 dBc
Cross Talk	-80 dBc
Spurious	-80 dBc

## Network Interface

Interface Type	10/100 base T
Protocols	HTTP, DHCP, SNMP V2c, IPV4
Connector	RJ45

## Console Port

Interface Type	RS232
Parameters	115200, N, 8, 1
Connector	DB9

## Display

Display Type	16 bicolor LED
Functions	Output status, Ethernet settings

## Status Output (Alarm)

Type	Dry relay form C contacts Ethernet SNMP trap
Alarm Function	Summary of all input/output alarms (relay) Individual input, output, power (Ethernet)

## Power

Redundancy	Dual redundant
Voltage	Single supply maintains complete unit 90-240 VAC 50/60Hz (std) 18-36V DC Optional 36-72VDC Optional
Power Consumption	<15W

## Environmental and Safety

Temperature	Operating -10 to +55°C non condensing Storage -40 to +85°C
Product Safety	EN60950-1: 2006 + A11-2009 +A1:2010 A12:2011
Designed to Meet:	EN55022 Class A EN50082-2 FCC Chapter 15 Class A

## Physical

Size:	19" rack-mount 1U high (1.75") 12" deep
Weight:	15lbs nominal

## Ordering Information

Advanced Frequency Distribution Amplifier	
<i>Basic Unit Includes Dual AC Power Supplies</i>	
022050001	2 i/p 10MHz, 16 output 10MHz
022050002	2 i/p 5MHz, 16 output 5MHz
022050003	2 i/p 1MHz, 16 output 1MHz

### Power Options (order separately)

022060001	Substitute 18-36 DC power for AC
022060002	Substitute 36-72 DC power for AC

The FDU-160i may be used with many of Brandywine's precision frequency sources such as the RG 2111 for distribution of precision frequency outputs.

RG 2111 part number 001-0230