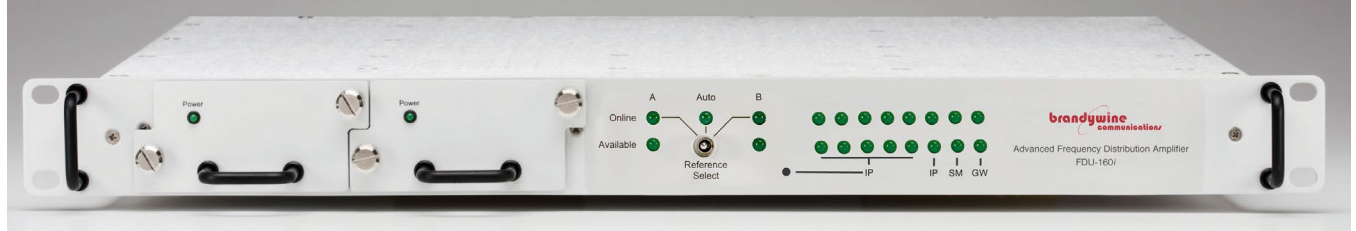![brandywine communications logo]

FDU-160*i*

Advanced Frequency Distribution Amplifier

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**

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 (5 MHz) 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.

FDU-160i Specifications

Frequency Inputs

Frequency	5 MHz, +/- 5PPM
Amplitude & Impedance	$.5_{min}$ 1.0_{max} V_{RMS} 50Ω
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 5MHz (std),
Output Level	5dBm to +13dBm, short-circuit proof
Set accuracy between limits	±2.0dBm
Connector Type	BNC
Harmonic Distortion	-40 dBc
Cross Talk	-80 dBc
Spurious	-80 dBc

Additive Phase Noise@ 5 MHz**

1Hz	TBD
10 Hz	TBD
100 Hz	TBD
1 kHz	TBD
>10 kHz	TBD

Specification valid when levels are set to +15 dBm

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

Environmental and Safety

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

Ordering Information

Advanced Frequency Distribution Amplifier
Basic Unit Includes Dual AC Power Supplies
022050002   2 i/p 5MHz, 16 output 5MHz
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

* No Auto-switch applicable to 022050004
** Not applicable to 022050005

© Brandywine Communications 2012