

# FDU-240 - PRECISION FREQUENCY DISTRIBUTION



## 24 Output Low Phase Noise 5MHz / 10MHz Frequency Distribution Unit



AS9100D Certificate Number : C0210021-AS3



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## Product Overview



The FDU-240 Frequency Distribution Unit is a high quality, precision frequency distribution platform offered with a number of functional variants. Applications for the FDU-240 include reliable signal distribution in systems designed for satellite ground stations, secure military communications and range timing.

The FDU-240 base unit model has twenty-four low phase noise sine wave outputs available at the rear panel via BNC connectors in response to one (Ref A) or optionally two (Ref A & Ref B) signal source reference inputs feeding the transfer switch.

For enhanced phase noise performance, an optional clean up oscillator is positioned between the rear panel inputs and the reference inputs of the transfer switch. An optional clean up oscillator(s) may be installed between the reference Inputs A and B or just Input A depending upon preference, application and cost-performance trade offs. When fitted with the optional clean up oscillator, the stability of the output equals that of the input by disciplining the clean up oscillator to the reference input.

A three-position front panel switch facilitates the manual selection of either reference A or reference B or an automatic selection mode. When the automatic AUTO mode is selected the AUTO indicator will be illuminated and Input A will be used by default if it is viable. Should Input A fail then Input B will be chosen automatically.

Front panel indicators show the status of the inputs and which input has been selected along with a power status indication.

Each of the twenty-four outputs is continually monitored and should an output fail for any reason, then a group alarm Fault indicator will illuminate and trigger a rear panel discrete Fault alarm signal that may be used by external equipment to modify the reference and output signal routing and selection.

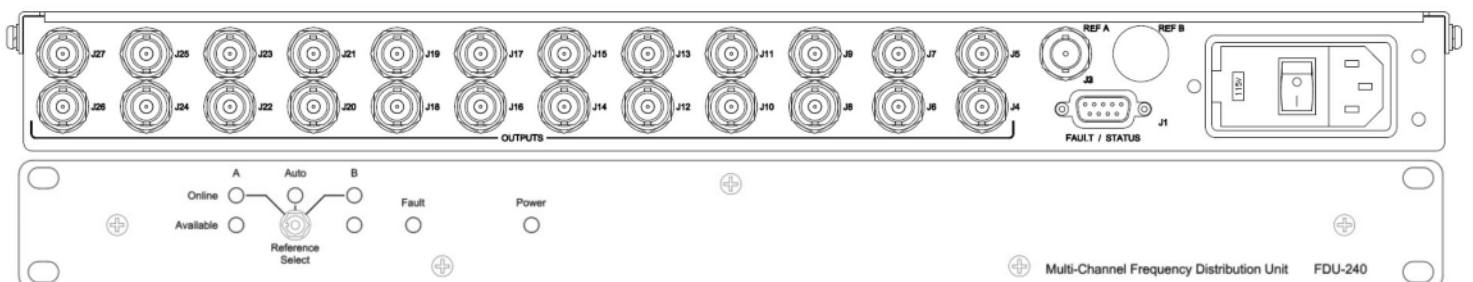
## Key Feature Summary

### Options & Features

- 5 MHz or 10 MHz low phase noise outputs
- One or two reference frequency signal inputs A or A & B
- Optional cleanup oscillators for input references A, B or both
- Automatic reference changeover with reference select input option
- Fault discrete inputs for external reference selection
- Compact 1U, 19" rack mount with front panel status indication

### Signals

- 24 discrete, fault tolerant and fully monitored sine wave outputs on BNC connectors
- Two 5MHz or 10MHz reference signal inputs, A,B or both
- Fault status indication and fault driven reference changeover



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## Specifications

Specifications - FDU-240	
<b>Reference Frequency Inputs</b>	<b>Details</b>
Connectors	2 x Rear panel BNC
Amplitude	0.5 V to 1.0V RMS - Nominally factory set at 1V RMS
Input Impedance	50 Ohms
Frequency	10 MHz
<b>Fault Discrete Input</b>	
Number of inputs	2
Connector	9 Way D Type Socket
Level	TTL
Active Level	Link selectable, high or low to force reference changeover
<b>Sine Wave Outputs 1</b>	
Number of outputs	24
Connectors	BNC
Frequency (MHz)	Same as input, nominally either 5 or 10MHz
Level	+13 dBm, +/- 2dBm into 50 ohms as standard. Options available upon request
Stability with external reference	Same as input
Stability with clean-up oscillator	Temperature: $\pm 3 \times 10^{-9}$ from 0 - 60°C / Aging: $5 \times 10^{-7}$ per year
<b>Harmonics</b>	
Distortion	-45dBc
Cross Talk	-80dBc
Spurious	-80dBc
<b>SSB Phase Noise (with osc option)</b>	<b>dBc/Hz</b>
1 Hz	-90
10 Hz	-110
100 Hz	-140
1000 Hz	-150
10,000 Hz	-160
<b>Environmental</b>	
Temperature	Instrument : -10°C + 50°C / Antenna -40°C to + 85°C
Humidity	95 % non condensing
Power	85VAC - 265VAC 50/60Hz
Power Options	18-36 VDC, 36-72 VDC, - 48VDC
<b>Physical</b>	19" Rack 1U 1.75" (H) x 7.5" (D) x 17" (W) [ 4.4 cm(H) x 19 cm (D) x 43.2 cm (W) ] Weight : 3.5 lb (1.6 Kg)
<b>Compliance</b>	CE Approved - EMC Emissions to EN55022 as EN55024 - FCC Part 15B, Class A EMC Immunity to EN50082-1 as EN61000-4-2 ESD, IEC801-3 HF Field & IEC 801-4

# Satisfied customers include..

ABB Singapore Airbus Defence & Space ASM Technologies Ltd Atkins Babcock International BAE Systems BBC BP CMC Engineering Malaysia	EDF Energy Indian Navy Jakarta Metro Leonardo Electronics Defence And Security London Stock Exchange London Underground MBDA Ltd MTRC Hong Kong National Air Traffic Services	NASA NEC Network Rail Northrop Grumman Park Air Systems Ltd Qinetiq Ltd Raytheon Systems Ltd Rockwell Automation SBS Transit Singapore Siemens Transportation	Singapore Stock Exchange Telent Technology Services Limited Teligent Thales UK Transport For London Viacom
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