

FDC3300e *Frequency Distribution Chassis*

2x10 Autoswitch Distribution Amplifier

FDC3300e is a dual-input, ten-output, frequency distribution amplifier in a 1U rackmount chassis. The FDC3300e (FDC) provides ten isolated copies of a 10 kHz - 10 MHz input signal. Fault sensing of signal levels is provided on all inputs and outputs and status is easily visible via front-panel LED indicators. The FDC is monitored and controlled via a network port and a serial port. Dual power supplies are optionally available to provide the highest reliability for mission critical applications. The FDC is unique in the industry - no other low-cost system offers this combination of capabilities and performance.



Output Signal Quality

FDC3300e features low-signal distortion and low-additive phase noise along with high isolation between output channels. Power supply voltages are post-regulated and all output buffers are individually regulated, ensuring very low output spurious noise levels. For the ultimate performance in signal distribution, see the [FDC3302e High-Performance Frequency Distribution Chassis](#).

Autoswitching

The FDC's fault-tolerant design supports dual-frequency reference inputs. The health of the input

signals is continuously monitored and if a signal is not present, or the amplitude greatly reduced, it will automatically switch to the other input. This failover feature ensures that your critical signals are always present if one of the inputs becomes unavailable or its level compromised.

Alarm Input

FDC3300e is compatible with the alarm output signal from the Meridian II and Tycho II Precision TimeBase. If the alarm output of the primary Precision TimeBase goes active, the FDC will automatically switch to the backup source. To support bank switching, this alarm input may be cascaded to multiple FDC units with coaxial cable and BNC T-adapters.

Status Indicators

Front panel LEDs provide you at-a-glance status of the distribution chassis. The FDC provides LED indicators for the power supply(ies), the two inputs, all output signals and a summary alarm indicator. The summary alarm is also available as an open-collector output.

Control and Status Monitoring

The FDC can be configured and monitored by means of a network port (SSH) or RS-232 serial port. SNMP monitoring is supported with an Enterprise MIB and traps to interface to a network management system. The web interface is designed with security in mind, so its use is restricted to monitoring status, alarms, and configuration settings. The web interface can be completely disabled for the highest level of security.

Dual Power Supplies

For the highest level of power source and supply fault-tolerance, the FDC supports dual redundant, AC or DC power supplies. The two power supplies can be any combination of AC/AC, AC/DC, or DC/DC.

High Reliability

The FDC uses EndRun's power-efficient, fanless design and thermal packaging to achieve an estimated MTBF up to 30 years. The system is made in America, backed by a two-year warranty, a 60-day money-back guarantee, and supported by EndRun's top-notch technical support team free of charge!

FEATURES

- 10-channel, broadband sine wave distribution (10 kHz to 10 MHz).
- Single input or autoswitching between dual inputs.
- Very low added phase noise.
- High port-to-port isolation.
- Very low distortion.
- Ethernet port for remote control, monitoring and SNMP.
- RS-232 port for local control and monitoring.
- Dual-redundant AC or DC power supply options.
- 2-Year Warranty.
- 60-Day Money-Back Guarantee.
- Free technical support for life.



FDC3300e Frequency Distribution Chassis Specifications



FDC3300e front and rear panel views. Shown with optional dual power supplies.

INPUTS (A and B):

- Frequency Range: 10 kHz to 10 MHz.
- Impedance: 50Ω , SWR <1.1.
- Amplitude: +13 dBm full performance, +3 dBm minimum, +19 dBm maximum.
- A Input to B Input Isolation: > 90 dB, full frequency range.
- Protection: Protected to 24V peak-to-peak.
- Connectors: Rear-panel female BNCs.

OUTPUTS (1 through 10):

- Impedance: 50Ω , SWR <1.3.
- Unity Gain: 0 dB, +/- 1dB.
- Harmonics: < -45 dBc.
- Spurious: < -90 dBc.
- Port-to-Port Isolation: > 70 dB.
- SSB Phase Noise @ 10 MHz and +13 dBm output level:

At 1 Hz	< -120 dBc/Hz.
At 10 Hz	< -140 dBc/Hz.
At 100 Hz	< -150 dBc/Hz.
At 1 kHz	< -155 dBc/Hz.
At 10 kHz	< -155 dBc/Hz.
- Protection: Outputs may be shorted to ground with no damage.
- Connectors: Rear-panel female BNCs.

EXTERNAL ALARM INPUTS (A and B):

- Normal State: TTL low.
- Alarm State: TTL high or high Z (internal 10k pull-up).
- Connectors: Rear-panel female BNCs.

ALARM OUTPUT:

- All fault indicators are summed providing a common alarm output.
- Open collector, 40 VDC max, 100 mA max saturation current.
- High impedance when fault condition exists.
- Connector: Rear-panel female BNC.

NETWORK PORT:

- 10/100 Base-T Ethernet. IPv4/IPv6, SSH, SNMP (v1,2c,3) with Enterprise MIB, DHCP, HTTPS (Web interface), Telnet, NTP (client/server), and SYSLOG. Connector: RJ-45 jack.

SERIAL I/O PORT:

- RS-232 serial port. User selectable port settings. Default: 19200,8,n,1. Connector: DB9M.

SYSTEM STATUS INDICATORS:

- Input LEDs: Green when a valid signal is detected and red when the signal is absent.
- Output LEDs: Green when the output signal is OK and red when a short is detected.
- Power LEDs: Green when the power supply is OK, and red when a fault condition exists.
- Alarm LED: Red when any fault condition exists.
All fault indicators are summed to provide one common fault.

POWER:

- 90-264 VAC, 47-63 Hz, 0.5A Max. @ 120 VAC.
- 110-370 VDC, 0.5A max. @ 120 VDC.
- 3-Pin IEC 320 on rear panel, 2-meter cord included.

SIZE:

- Chassis: 1.75"H x 17"W x 10.75"D.
- Weight: < 5 pounds.

ENVIRONMENTAL:

- Operating Temperature: 0° to +50° C.
- Storage Temperature: -40° to +85° C.
- Operating Humidity: 5% to 90% RH, non-condensing.
- Storage Humidity: 5% to 95% RH, non-condensing.

COMPLIANCE:

- CE, FCC, RoHS, WEEE.

OPTIONS:

- Dual-redundant AC or DC power supplies. Combinations can be AC/AC, AC/DC, or DC/DC.
- DC power supply: -48, +12, +24/28, or +125 VDC.

OTHER DISTRIBUTION CHASSIS:

- FDC3302e High-Performance Frequency Distribution Chassis
- PDC3301e Pulse Distribution Chassis
- TDC3303e Time Code Distribution Chassis

RELATED TIME AND FREQUENCY STANDARDS:

- Meridian II Precision TimeBase
- Tycho II Precision TimeBase

