

FDC3302 *Frequency Distribution Chassis*

High-Performance, 2x10 Autoswitch Distribution Amplifier

The FDC3302 is a high-performance, dual-input, ten-output, frequency distribution amplifier in a 1U rackmount chassis. FDC3302 provides ten isolated copies of a 100 kHz - 30 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. FDC3302 is monitored and controlled via a serial port and optional Ethernet network port. Dual power supplies are optionally available to provide the highest reliability for mission critical applications. FDC3302 is unique in the industry - no other low-cost system offers this combination of capabilities and performance.



Output Signal Quality

FDC3302 excels at reproducing and preserving the spectral purity of the input signal. Each output channel has a dedicated buffer to minimize additive phase noise and distortion. The input-output circuits are optimized to keep propagation delay low and ensure high isolation between outputs as well as the inputs. Power supply voltages are post-regulated and all output buffers are individually regulated, ensuring very low output spurious noise levels.

Autoswitching

FDC3302's fault-tolerant design supports dual frequency reference inputs. The health of the input

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

Alarm Input

FDC3302 is compatible with the alarm output signal from the Meridian II and Tycho II Precision TimeBase. If one of these time and frequency standards is sourcing the FDC3302 and its alarm output goes active, FDC3302 will automatically switch to the backup source. This alarm input may be cascaded to multiple FDC3302 units to support bank switching by simply connecting the inputs with coaxial cable and BNC T-adapters.

Status Indicators

Front panel LEDs provide you at-a-glance status of the distribution chassis. FDC3302 provides LED indicators for the power supply(ies), two inputs, all output signals and a summary alarm. The summary alarm is also available as an open-collector output on a rear-panel BNC.

Control and Status Monitoring

FDC3302 can be configured and monitored by means of an RS-232 serial port. Both switch status and output status can be monitored in this way. For remote control and monitoring, a network port is available as an optional upgrade.

Dual Power Supplies

For the highest level of power source and supply fault-tolerance, the FDC3302 Frequency Distribution Chassis 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

FDC3302 uses EndRun's power-efficient, fanless design and thermal packaging that achieves an estimated MTBF of over 20 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 (100 kHz to 30 MHz).
- Autoswitching between dual inputs.
- Ultra-low additive phase noise.
- Ultra-high port-to-port isolation.
- Ultra-low distortion.
- RS-232 port for control and monitoring.
- Ethernet port option for remote control and monitoring.
- Dual-redundant AC or DC power supply options.
- 2-Year Warranty.
- 60-Day Money-Back Guarantee.
- Free technical support for life.



FDC3302 High-Performance Frequency Distribution Chassis



FDC3302 rear panel view. Shown with optional dual power supplies and Ethernet interface.

INPUTS (A and B):

- Frequency Range: 100 kHz to 30 MHz.
- Impedance: 50Ω, SWR <1.1.
- Amplitude: +13 dBm full performance, +2 dBm minimum, +15 dBm maximum.
- A to B Input Isolation: >105 dB.
- Protection: Protected to 24V peak-to-peak.
- Connectors: Rear-panel female BNCs.

OUTPUTS (1 through 10):

- Impedance: 50Ω, SWR <1.8 @ 100 kHz.
SWR < 1.2 @ 1 MHz.
SWR < 1.3 @ 10 MHz.
SWR < 1.8 @ 30 MHz.
- Unity Gain: 0 dB, +/- 2 dB.
- Harmonics: <-40 dBc @ 13 dBm and 100 kHz <= F <= 20 MHz,
<-35 dBc @ 13 dBm and F > 20 MHz,
<-30 dBc @ 15 dBm.
- Spurious: <-110 dBc.
- Port-to-Port Isolation: See chart.
- SSB Phase Noise @ 10 MHz and +13 dBm output level*:
At 1 Hz <-135 dBc/Hz.
At 10 Hz <-145 dBc/Hz.
At 100 Hz <-153 dBc/Hz.
At 1 kHz <-160 dBc/Hz.
At 10 kHz <-163 dBc/Hz.
* See chart for typical additive phase noise performance.
- 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 together providing this common alarm output.
- Open Collector, 40 VDC Max, 100 mA max saturation current.
- High impedance when fault condition exists.
- Connector: Rear-panel female BNC.

CONSOLE PORT:

- RS-232 serial port on DB9M connector for control and status information.
- User-selectable port settings: 9600 to 57600 baud; 7 or 8 data bits; odd, even or no parity; 1 or 2 stop bits. Factory default settings: 19200,8,n,1.

SYSTEM STATUS INDICATORS:

- Input LEDs: Green when a signal is detected on the input channel. 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.
- 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/Humidity: 0° to +50° C / 5% to 90% RH, non-condensing.
- Storage Temperature/Humidity: -40° to +85° C / 5% to 95% RH, non-condensing.

COMPLIANCE:

- CE, FCC, RoHS, WEEE.

OPTIONS:

- Network Port: Ethernet 10/100Base-T; RJ-45 connector. Protocols include: SSH, DHCP, Telnet, and SNMP MIB II (management variables only).
- 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.

RELATED TIME AND FREQUENCY STANDARDS:

- Meridian II Precision TimeBase. Tycho II Precision TimeBase.

