

**Model CFE1840
Down Converter
18GHz–40GHz**

This low noise, high dynamic range down-converter translates signals in the 18–26.5 GHz and 26.5–40 GHz bands (K and Ka-bands) to the 4–18 GHz band for further processing by a spectrum analyzer or an EMC test receiver such as the DER2018A.

The CFE1840 provides ample gain of RF signals to accommodate long cable runs between the down converter and the EMC test receiver, while maintaining a good noise figure for the system. The CFE1840 has a stable, built-in noise source to facilitate self-test and self-calibration operations.



The CFE1840 integrates seamlessly with the DER2018A EMC test receiver, forming a 20Hz to 40GHz test system. When plugged into the DER2018A using any of the supplied cable sets, the DER2018A senses the presence of the CFE1840 automatically.

The export classification for this equipment is 3A001.b.7. These commodities, technology or software are controlled for export in accordance with the U.S. Export Administration Regulations. Diversion contrary to U.S. law is prohibited.

SPECIFICATIONS, CFE1840 AS STANDALONE PRODUCT

FREQUENCY RANGE, CFE1840 Down-converter.....18–40 GHz

TYPICAL GAIN, NOISE FIGURE, COMPRESSION POINT .See Fig. 1

MODES OF OPERATION

- K-Band Down-convert Mode.....IF Output Frequency = 31GHz minus RF Input Frequency
- Ka-Band Down-convert Mode.....IF Output Frequency = 44GHz minus RF Input Frequency
- Calibrate Mode, K-Band.....Internal Noise source connected to input of K-Band signal path
- Calibrate Mode, Ka-Band.....Internal Noise source connected to input of Ka-Band signal path

STABILITY OF INTERNAL FREQUENCY STANDARD

- Initial setting ±0.2 ppm
- Over operating temperature range ±0.4 ppm
- First year ±0.5 ppm
- First ten years..... ±2.0 ppm

IMAGE REJECTION > 90 dB

IF REJECTION > 90 dB

SPURIOUS RESPONSES WITH NO INPUT < -100 dBm

RF INPUTS 2.9mm (F)

IF OUTPUTS (rear panel) Precision N (F)

OTHER INTERFACES Control port for connection with DER2018A

PRIMARY POWER 90–264 VAC, single phase, 47-63 Hz, 60VA maximum

MODEL CONFIGURATIONS			
Model	Description	Weight	Size (W x H x D)
CFE1840	Base model with cabinet	5.45 kg (12.0 lb)	26.0 x 11.4 x 28.2 cm 10.25 x 4.5 x 11.1 in
CFE1840M1	Same as CFE1840 with enclosure removed for 19" rack mounting, bracket included	2.61 kg (5.75 lb)	20.6 x 8.4 x 25.1 cm 8.1 x 3.3 x 9.9 in

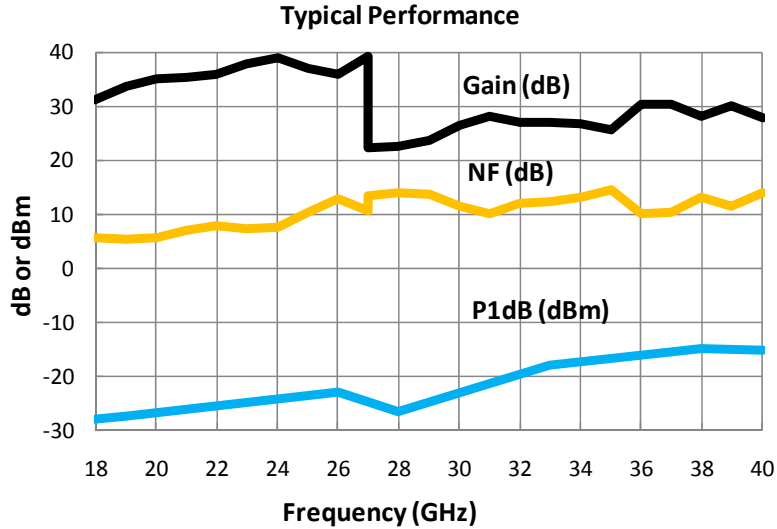


Fig. 1. Typical Performance of the CFE1840 as a standalone product

SPECIFICATIONS, CFE1840 INTEGRATED WITH DER2018A

INTERCONNECTING CABLE LIMITATIONS Recommended insertion loss: less than 20dB (The supplied 20ft/6m cable has 13.5dB insertion loss at 18GHz)

LEVEL MEASUREMENT ACCURACY

Log Detector (Swept Frequency Mode) Peak responding, 18–40 GHz: 3.0 dB
 Linear Detector (Receiver Mode) PK, AVG, QP, RMS-AVG responding, 18–40 GHz: 3.0 dB

SENSITIVITY – Peak Displayed Noise Level (PDNL) See Fig. 2 for typical PDNL and Average Displayed Noise level (ADNL)

Log detector (Swept Frequency Mode, DER2018A IF BW = 1MHz, Input Attenuator = 20dB, short interconnecting cable)
 K-Band < -90 dBm
 Ka-Band < -87 dBm

Linear detector (Receiver Mode, DER2018A IF BW = 1MHz, Input Attenuator = 20dB, short interconnecting cable)
 K-Band < -90 dBm
 Ka-Band < -87 dBm

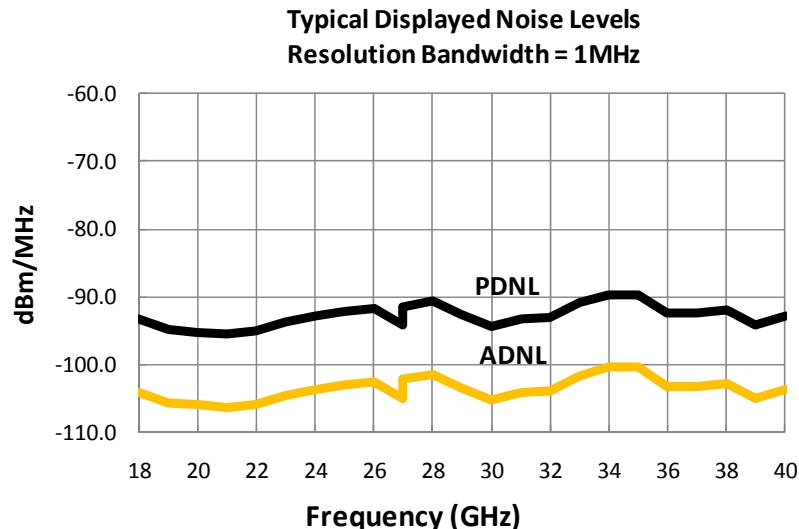


Fig. 2. Typical Displayed Noise Levels when integrated with the DER2018A