7880SA
Spectrum Analyzer

The 7880SA module is Evertz' spectrum measurement and analysis module providing high–end performance at a low price. It is available as a 7800 series module as well as an integrated option to Evertz XPRF14–128x128 routing platform. When installed in a 7800 multiframe, it can function as independent spectrum analyzer in a satellite, cable or terrestrial network or as integrated monitoring device with Evertz RF transport and VistaLINK PRO NMS solution.

7880SA uses state–of–the–art digital technology and Fast Fourier Transformations to make lightning fast and accurate measurements. With a very low noise floor and large dynamic range, it is well–suited to measure any type of satellite, cable or terrestrial wireless carrier, including very small carriers, beacon signals and for carrier monitoring applications. 7880SA accepts all signals from 5MHz to 3GHz and input power levels ranging from –110 to +5 dBm. RBW varies from 1Hz to 15MHz. The 7880SA can be connected to an external 10MHz reference for improved frequency accuracy and stability. All data communications with the 7880SA occurs via its built–in Ethernet port.
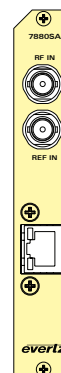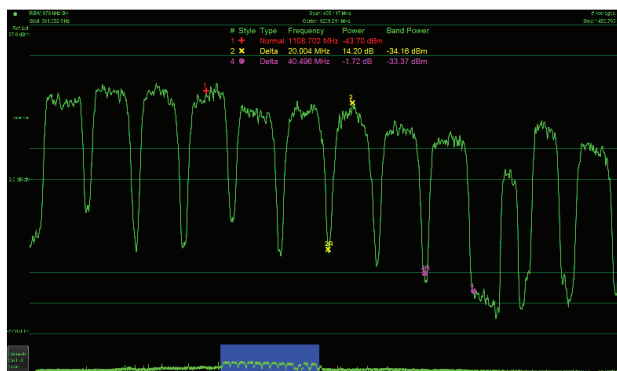
The 7880SA's powerful Graphical User Interface (GUI) is available using any standard web browser, no additional software is required. The GUI is very easy to use and operates like most traditional spectrum analyzers. It provides user–selectable colors for markers and traces, allows storage of multiple traces and provides measurement reporting. The 7880SA GUI also includes a powerful built–in Carrier Monitoring function, which provides notification via email or SNMP of carrier measurements that exceed user–defined limits, offering you peace of mind that up to 100 of your carriers are operating as expected.

The 7880SA provides network access to all technical staff connected to the facility network or a corporate wide area network. This allows all technical staff the ability to monitor feeds and carriers at any time and from any location in the world using only a web browser.

For integration into a satellite terminal or measurement system, the 7880SA can be operated via its built–in GUI or the user can create a separate user interface using the publicly available API. An SNMP status interface is also provided.

▶ Features & Benefits

- Covers full satellite L–band plus cable and wireless bands from 5 MHz–3 GHz
- Built–in Carrier Monitoring function
- External 10MHz reference or internal reference
- Web browser or API control

- SNMP status interface
- Available as 7800 module as well as integrated +SA option on the XPRF router
- Record, store and play back spectrum traces for future analysis

▶ Specifications

RF Input:

Number:	1
Connector:	50Ω BNC
Input Frequency:	5–3000MHz
Input Power:	–110 to +5dBm (aggregate)
Maximum Safe Input:	+15dBm
Noise Floor:	–160dBm/Hz typical at min atten
	–160dBm/Hz typical at max atten
Phase Noise:	–80dBc/Hz at 1kHz offset
(worst case at 3GHz)	–95dBc/Hz at 100kHz offset
	–125dBc/Hz at 1MHz offset

Reference Input:

Number:	1
Connector:	50Ω BNC
Input Frequency:	10MHz, –5dBm to +13dBm

Control:

Number:	1
Connector:	RJ–45, 10/100base–T half or full duplex
Interface:	TCP/IP API, SNMP, HTTP

Electrical:

Voltage:	+12VDC
Power:	18W max.
Temperature:	0–55°C

Physical:

Number of slots:	1

Measurements:

Amplitude Accuracy:	±0.5dB (at 25°C)1
	±1.0dB (0 to 55°C)
Frequency Accuracy:	±2.6 ppm (internal) or as per external reference
Frequency Resolution:	1Hz
Resolution Bandwidth:	1Hz–15MHz
Analysis Bandwidth:	Up to 220MHz
Spurious:	
Images:	< –55dBc (typical)
Aliasing:	< –55dBc (typical)
DC Offset:	< –30dBc (typical)
Averaging:	up to 255 averages

Measurement Speed[3]:

- 500MHz span, 1MHz RBW, 200ms
- 200MHz span, 30kHz RBW, 630ms
- 80MHz span, 100kHz RBW, 170ms
- 3.5MHz span, 8kHz RBW, 90ms

FFT Windows:

- Flattop
- Hanning
- Hamming
- Rectangular
- Blackman–Harris

FFT Sizes:

- 128
- 256
- 512
- 1024
- 2048
- 4096
- 8192

Modes of Operation:

- Raw Snapshot Mode: Number of IQ time samples is approximately 32 million
- Linear Power/Bin (4096 samples, up to 255 averages)
- Log Power/Bin (4096 samples, up to 255 averages)
- Raw IQ Samples — decimated 16–4092 in steps of 4 — sampling frequency up to 3.7MHz
- Selectable Spectral Inversion
- Programmatic measurement and control over Ethernet–based API

Notes:

1. *Measurement conditions: 10 averages, input level between –8dBm and –68dBm, 3 sigma*
2. *Resolution bandwidth auto or manual adjustable*
3. *Expected rates with 10 averages, speed optimization*
4. *All specification at 25°C unless otherwise noted and are subject to change*

▶ Ordering Information

7880SA	5MHz to 3GHz Spectrum Analyzer with Carrier Monitoring

Feature Keys:
SpecAn–FK–CM   Feature key to enable enhanced Carrier Monitoring on RF spectrum analyzer, one license is available per HW module

Rear Plate Suffix:
+3RU   3RU rear plate for use with 7800FR or 7801FR multiframe