

8800SX “Freq Flex” Calibration



8800SX

Freq-Flex Operation

- Freq-Flex Basics
 - The 8800SX supports use of an external 10 MHz reference directly but when going to a location that does not have an external reference available, the 8800SX offers the ability to fine tune the internal 10 MHz reference to a greater accuracy.
 - The internal timebase of the 8800SX has an aging spec of 0.5 ppm/year for the first year and 0.3 ppm/year, after the first year.
 - Freq-Flex enables a user calibration to eliminate any error in the timebase due to aging.
 - When performed and used after warm-up (about 15 minutes), Freq-Flex also eliminates the timebase temperature uncertainty.
 - After performing Freq-Flex the error is just +/- 0.5 Hz from Freq-Flex calibration frequency.
 - For example:
 - If Freq-Flex is performed with a 10 MHz reference, the error is 0.05 ppm (parts per million).
 - With a 1 GHz reference, the error is only **0.0005 ppm!**

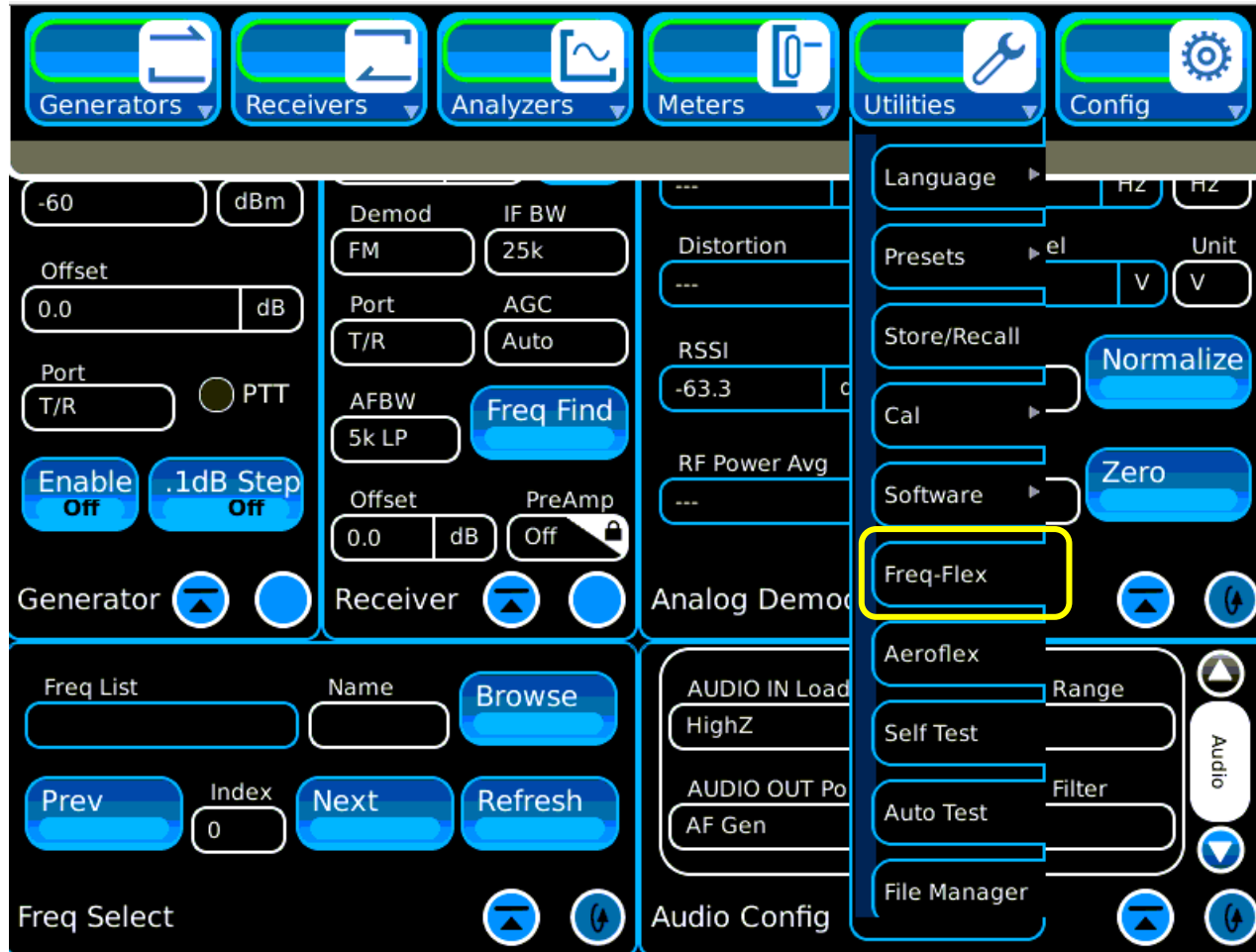
8800SX

Freq-Flex Steps

- The following steps should be followed to perform a Freq-Flex:
 1. Select Freq-Flex from the Utilities Menu.
 2. In the Freq-Flex window “Frequency” Field, enter the frequency of the external reference that you are using to calibrate the 8800SX. This can be any **CW** RF signal, with any frequency from 2 MHz to 1 GHz. The signal **must** be unmodulated.
 3. In the Freq-Flex window “Port” Field, select the port used to connect to the external reference. The T/R Port should be used for signals between -10 and +20 dBm, and the ANT Port for signals between -50 and +10 dBm.
 4. Connect the external reference to the selected port.
 5. Press the “Start Calibration” button.
 6. The on-screen instructions will lead you through the rest of the process. (See next several slides for example).

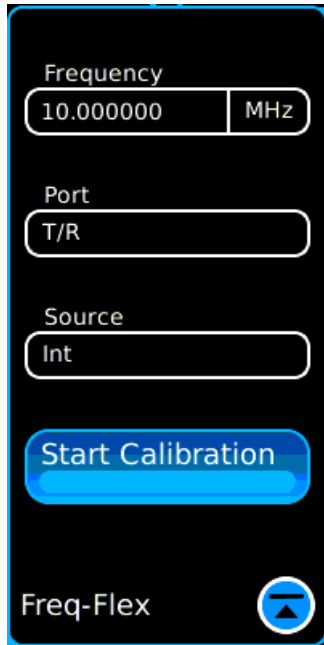
8800SX

Selecting Freq-Flex



8800SX

Enter Frequency and Port and Press “Start Calibration”.



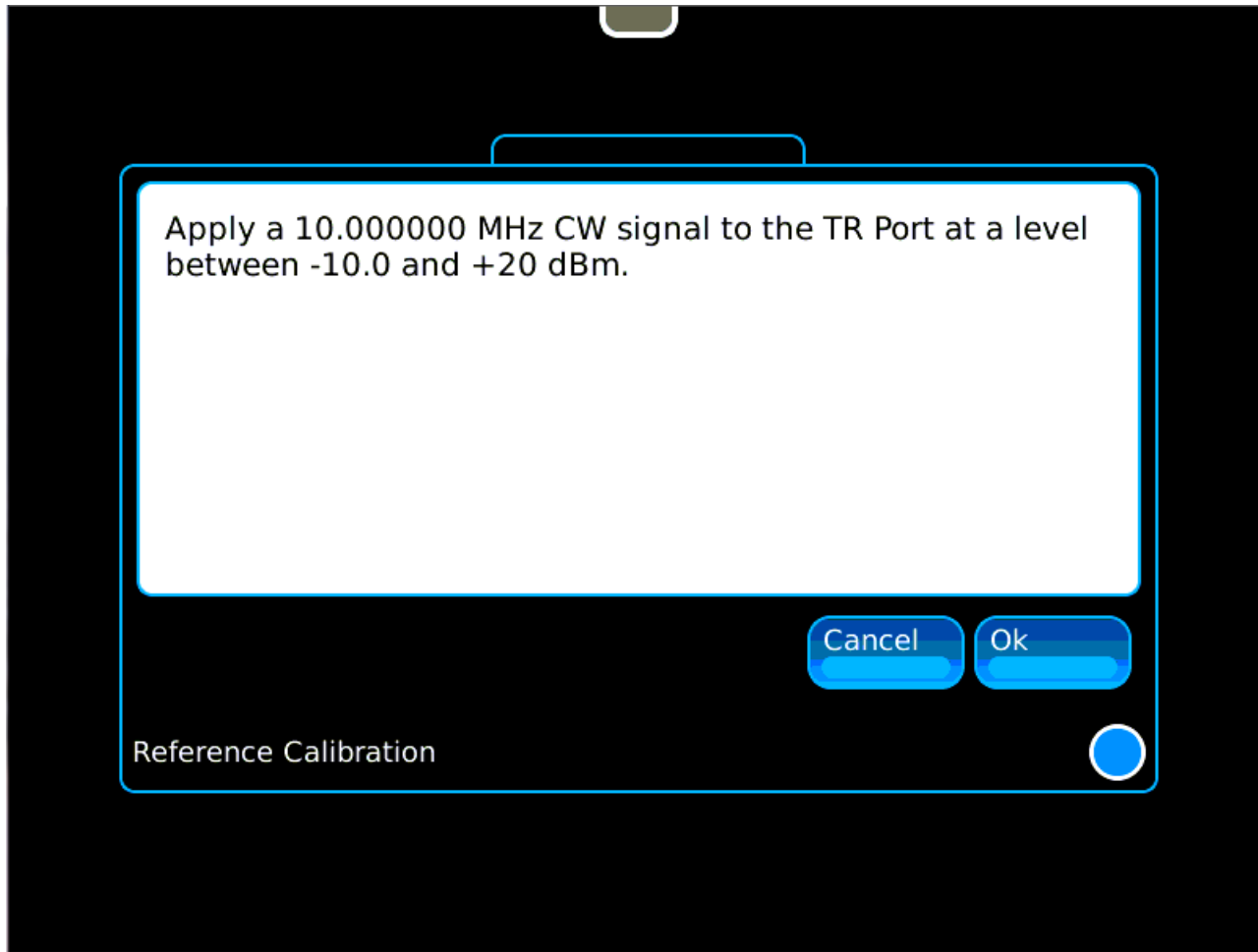
- Frequency
Enter the Frequency of the external CW Reference signal.
(Calibration accuracy is better at higher frequencies)
- Port
TR – For signal levels from -10 to +20 dBm
ANT – For signal levels from -50 to +10 dBm
- Source
Int – Internal Timebase
EXT – Available after Freq Flex calibration is complete
- Start Calibration
Begin the calibration process



External Reference
Input

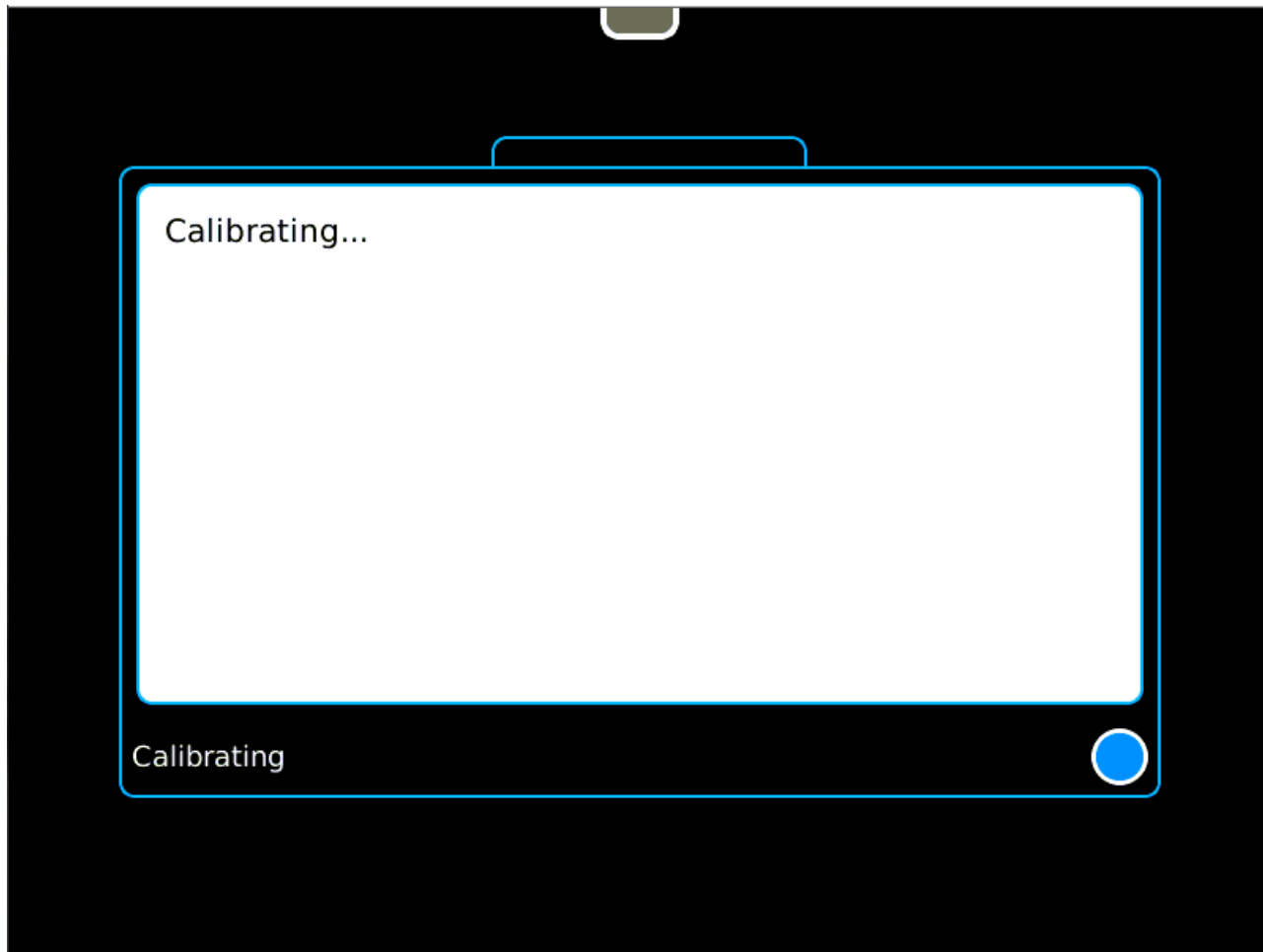
8800SX

Apply the external reference CW signal to the selected port and press Ok.



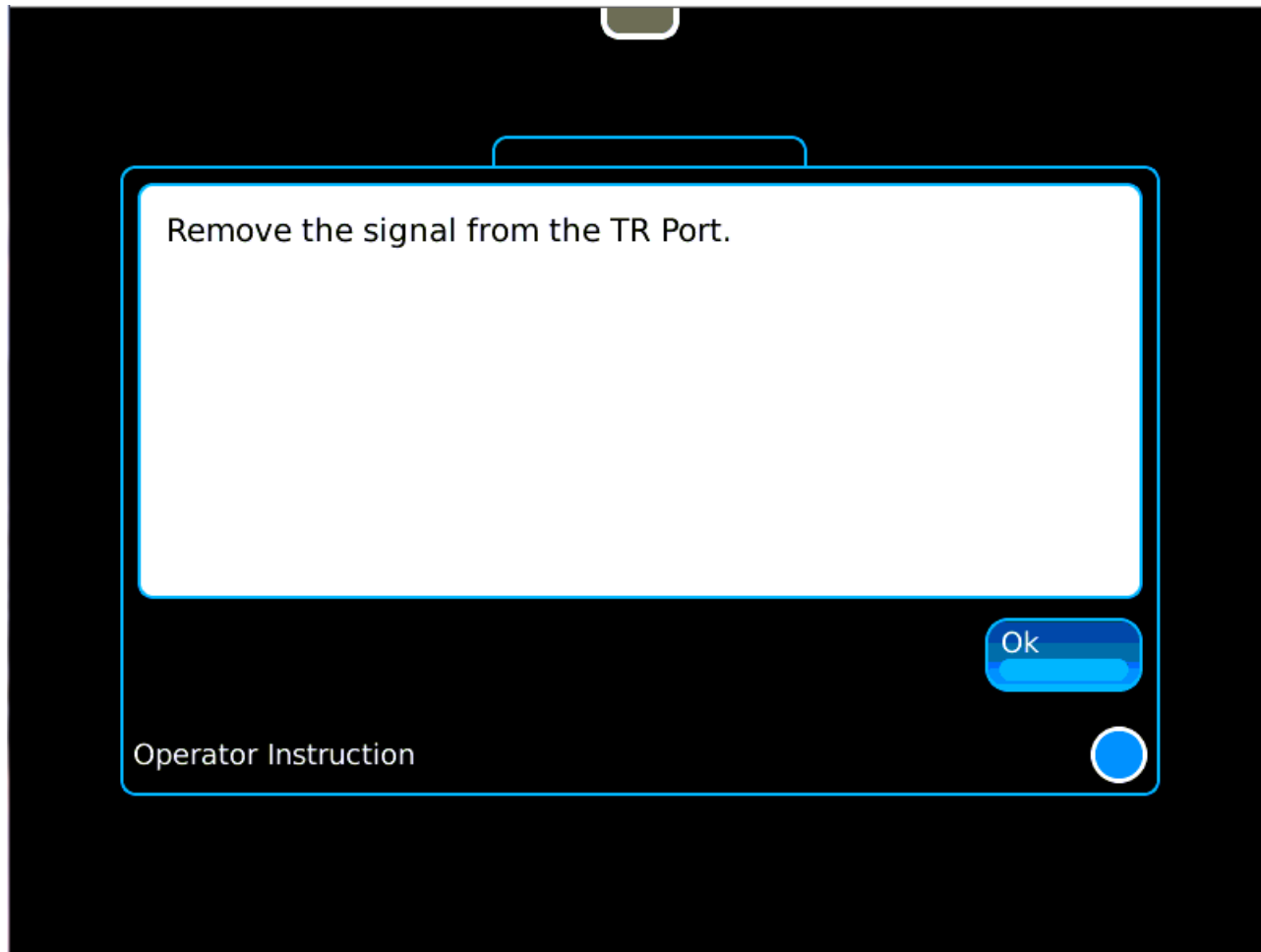
8800SX

Calibration takes about 1 minute.



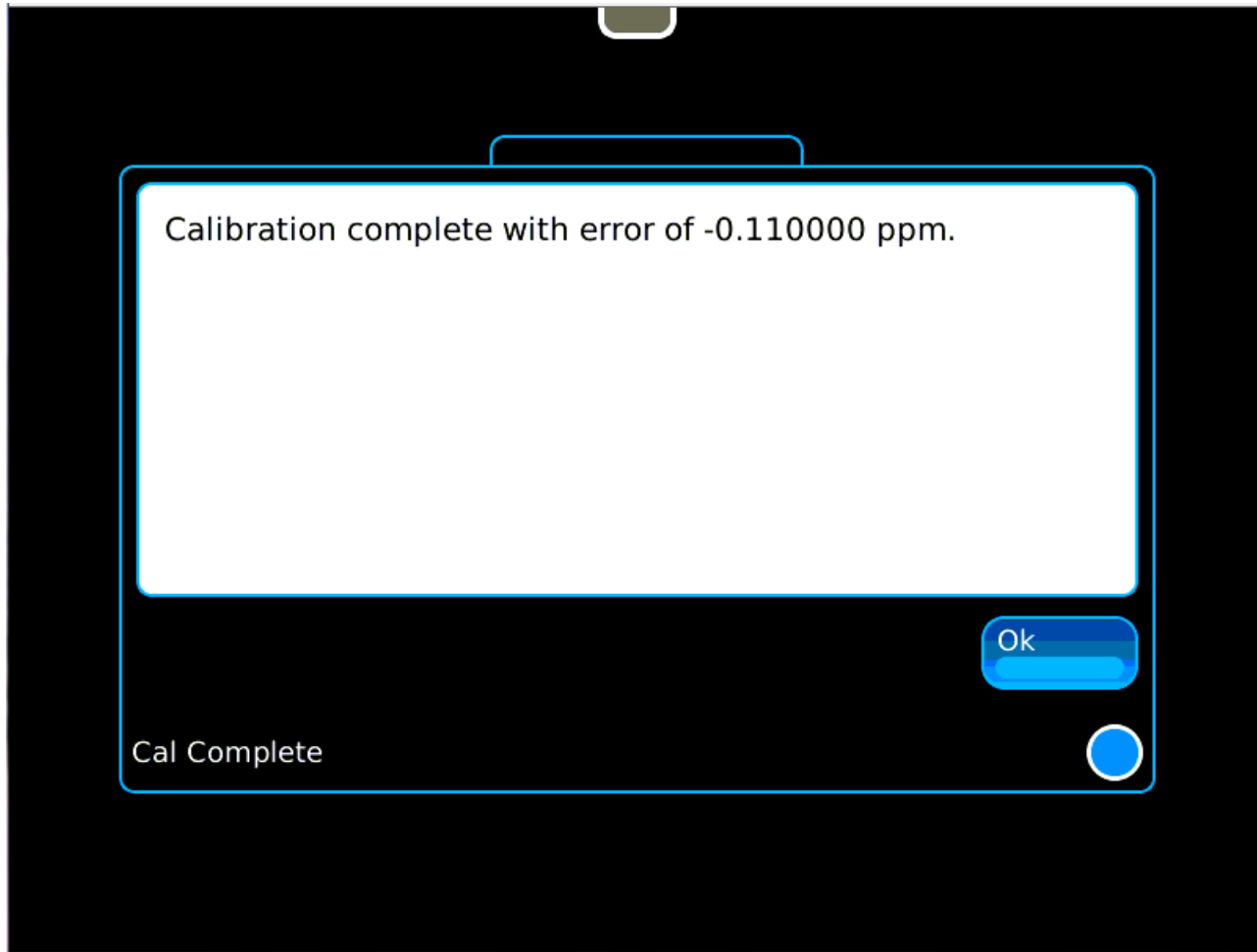
8800SX

Calibration is complete, so remove the external reference signal.



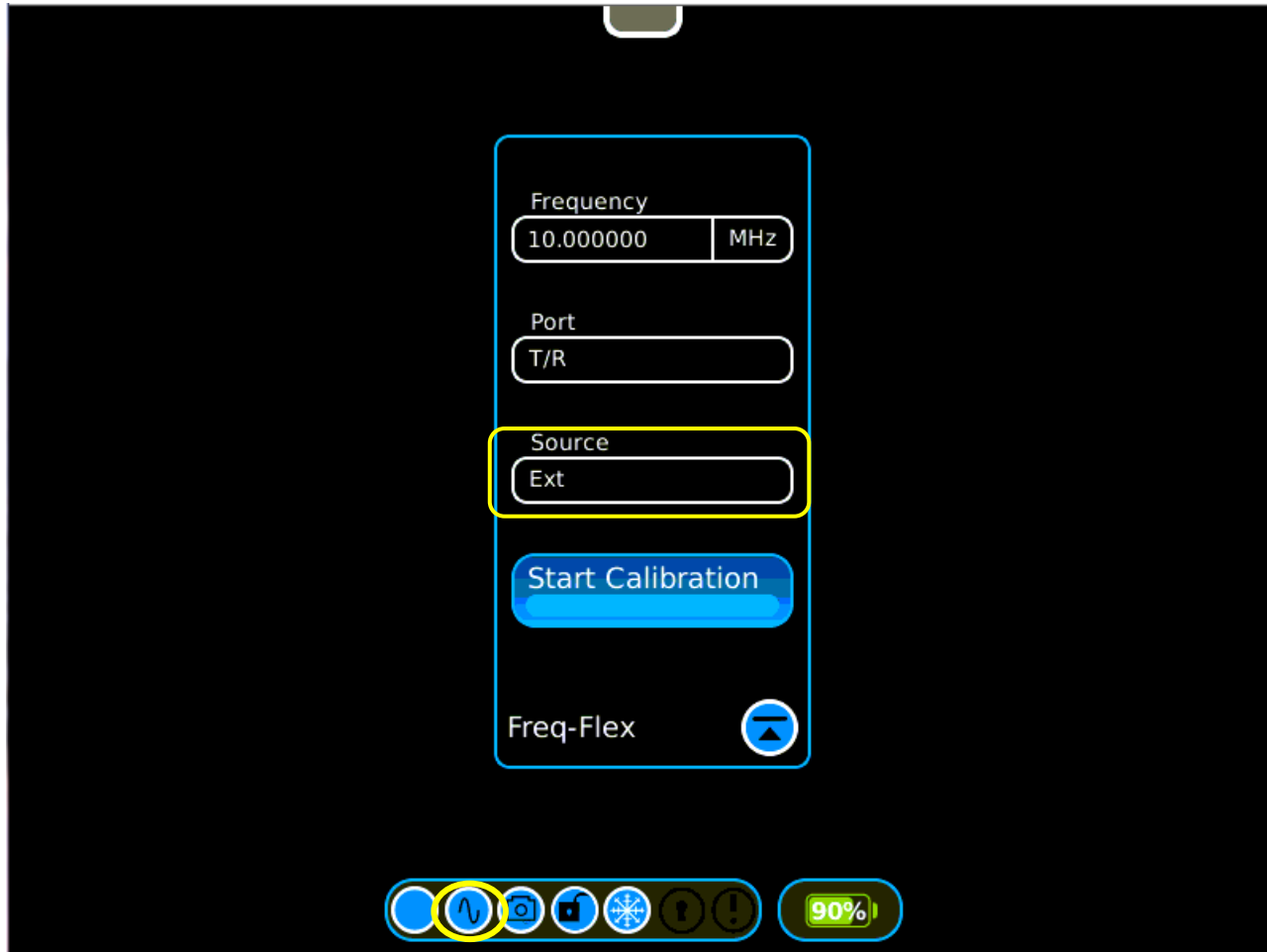
8800SX

A note at completion indicates the correction factor that will be used.



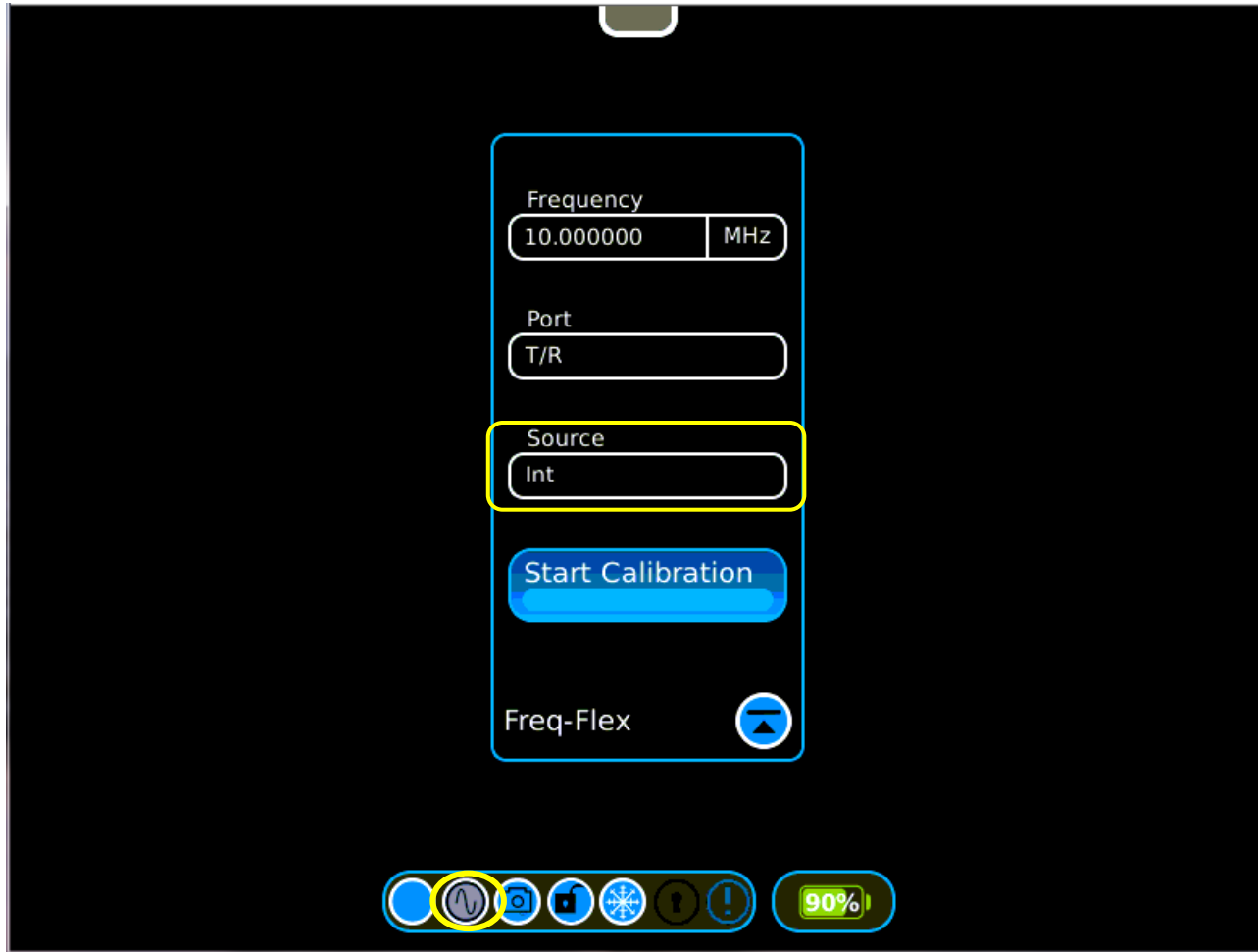
8800SX

A blue sine wave icon indicates the Freq-Flex is on.



8800SX

A gray sine wave icon indicates Freq-Flex is off. Pressing the icon toggles the state.



8800SX Options and Accessories

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139942 8800SX Digital Radio Test Set

Standard Accessories

Fuse, 5 A, 32 V, Mini Blade	Power Supply
AC Power Cord - USA	AC Power Cord - China
AC Power Cord - Europe	AC Power Cord - UK
Adapter, N(m) to BNC(f), Qty 3	Front Cover
Internal Battery	

Options

113334	8800OPT01	DMR
113335	8800OPT02	dPMR
113336	8800OPT03	nXDN
113337	8800OPT04	P25
138895	8800OPT05	P25 Phase 2
140215	8800OPT06	DMR Repeater Test
113338	8800OPT09	ARIB T98
113339	8800OPT10	Tracking Generator
113340	8800OPT11	Occupied Bandwidth
113309	8800OPT12	Internal Precision Power Meter (Meter + Sensor)
113342	8800OPT13	External Precision Thru-Line Meter (for use with Bird WPS Sensor)
113343	8800OPT14	PTC
113344	8800OPT15	AAR Channel Plan
139836	8800OPT20	R&S NRT-Z Power Sensor Support
139837	8800OPT21	Selectable Notch Filters
139838	8800OPT22	SNR Meter
138525	8800OPT101	Kenwood NXDN Auto-Test
138526	8800OPT102	Kenwood 5X20 P25 Series Auto-Test
138527	8800OPT103	Motorola APX Auto-Test
138528	8800OPT104	Motorola MOTOTRBO™ Auto-Test
139315	8800OPT105	Motorola ASTRO® 25 XTS®/XTL™ Auto-Test

Languages

113350	8800OPT300	Simplified Chinese
113351	8800OPT301	Traditional Chinese

113352	8800OPT302	Spanish
113353	8800OPT303	Portuguese
113354	8800OPT304	Malay/Indonesian
113355	8800OPT305	Korean
113356	8800OPT306	Arabic
113357	8800OPT307	Polish
113358	8800OPT308	Russian
113359	8800OPT309	Japanese
113360	8800OPT310	German
113361	8800OPT311	French
139625	8800OPT312	Italian

Accessories

138313	Calibration Certificate - 8800 Series
82560	AC27003 Attenuator - 20 dB/150 W
67076	Spare Internal Battery
114479	External Battery Charger
114477	Hard Transit Case
114478	Soft Carrying Case
114475	Antenna Kit
114348	Precision DTF/VSWR Accessory Kit for 8800
63927	AC25081 Site Survey Software
92793	5017D Bird Power Sensor
114312	Mounting Bracket
112861	Microphone
62404	DC Cord/Cigarette Adapter
63936	AC24009 DMM Test Leads
112277	10 AMP Current Shunt, 0.01 Ohm
67411	Scope Probe Kit

Extended Warranties

114481	Extended Standard Warranty 36 Months
114482	Extended Standard Warranty 60 Months
114483	Extended Standard Warranty 36 Months with Scheduled Calibration
114484	Extended Standard Warranty 60 Months with Scheduled Calibration

Select 8800SX Accessories Overview

Soft Case 114478

The soft case allows full operation of the 8800SX while inside the case. The laptop style design is lightweight and provides extra protection during field operation. Storage pockets provide extra space for spare batteries, test cables, etc.



Hard Transit Case 114477

The hard transit case features form-fitted slots for the 8800SX, protective cover, precision VSWR/DTF Kit, power supply, 150 W attenuators, spare battery, and more.



Precision DTF/VSWR Accessory Kit 114348

This accessory kit provides all items necessary for accurate and VSWR, Return Loss, and Distance-to-Fault measurement. The kit includes a case, return loss bridge, power divider, 50 Ω calibrator, and two N-type test cables specifically designed for the 8800SX.



Bird 5017D Thru-Line Power Sensor 92793

The 8800SX also supports the Bird 5017D Thru-Line Power Sensor as an external power meter for users that already have the 5017D. This capability requires 8800OPT13 and provides simultaneous forward and reverse power measurements up to 500 W and VSWR measurements that are displayed on the 8800SX screen.



Questions or Comments?

Contact Information

For information about pricing for our products, contact the sales office by calling VIAVI Solutions at (800) 835-2352 or emailing AvComm.Sales@viavisolutions.com.

For technical/product support, calibration, maintenance and general customer service inquiries, you can contact our help desk by [clicking here](#), calling (800) 835-2350, or emailing Service.Americas@aeroflex.com.

[Click here](#) for more information on the 8800SX and latest software versions and training materials.