Launching and Operating CobaltFx



Launching Software

- 1. Turn on computer and launch the S2VNA software application.
- 2. Turn on the Cobalt VNA.
- 3. Select System/Misc Setup/Frequency Extender and select the required system.
- 4. The system will re-launch and operate in the chosen band.
- 5. To shut down the system, turn off the VNA and shut down the S2VNA application.



Operating the Software

• All settings are available to the user from the top menu bar.

Trace/Channel	Stimulus	Response	Display	Calibration	Markers	Analysis	Save/Recall	System
---------------	----------	----------	---------	-------------	---------	----------	-------------	--------

- Use low IF Bandwidths (<300 Hz) for when high dynamic range is required (high free space loss, high rejection filters, etc.).
- Use high IF bandwidths (>100 Hz) for when speed of the measurement is priority (real time filter tuning, some antenna near, and far field measurements – 1 kHz typically).
- Set the stimulus power frequency range, IF bandwidth, and number of points before the calibration.
- Allow the system to warm up for at least 1h prior to calibration.

Calibrating CobaltFx

COPPER MOUNTAIN® NDIDGIE

Calibrating the CobaltFx Frequency Extension System

- Select a blank position at the bottom of the calibration kit table. •
- Load calibration kit definition file supplied on memory stick with calibration kit (Calibration/Cal Kit/Load From File...). •
- The file will appear on the calibration kit file list at the bottom of the screen where you have selected. •
- Check the box to select the required calibration kit. •

Calibration Markers Ar	nalysis Save
Correction Calibrate	•
Cal Kit	
Power Calibration Receiver Calibration Mixer/Converter Calibrat Port Extensions System Z0 AutoCal	tion 🕨

Cal Kit
Select
Define STDs
Specify CLSs >
Erase Cal Kit
Save To File
Load From File

- Select Calibration/Calibrate to start calibration.
- Connect one calibration kit standard at a time to the chosen waveguide port and click on associated softkey.
- Offset short is made up of flush short + offset piece.
- Each measurement will be confirmed with a tick • mark.
- After completing full calibration press "Apply". •



33	T4311	RPC-2.92 40 GHz SOLT Cal Kit [Jack] (CMT)	
34	Z5411	RPC-2.40 50 GHz SOLT Cal Kit [Jack] (CMT)	✓
35	FEK-10	Farran Technology WR-10 Calibration Kit	
36	FEK-12	Farran Technology WR-12 Calibration Kit	
37	FEK-15	Farran Technology WR-15 Calibration Kit	

		FEN-16
		Port1 Open Offset Short
Calibration Markers Analysis	Save/Recall System	Port1 Short
Correction		Flush Short
Calibrate	Response (Open)	Port1 Load
Cal Kit	Response (Short)	Broadband Load
Currin	Response (Thru)	Port2 Open
Power Calibration	Full 1-Port Cal	Offset Short
Receiver Calibration	One Path 2-Port Cal	Port2 Short
Mixer/Converter Calibration	Full 2-Port Cal	Flush Short
Port Extensions	2-Port TRL Cal	Port2 Load
System Z0	Adapter Removal	Broadband Load
AutoCal		Port1-2 Thru
		Thru

C4209 FEV Connection Guide



COPPER MOUNTAIN[®] TECHNOLOGIES

What's Required:

- C4209 with S2VNA_v16.1.3 or newer software
- (2) FEV-15, FEV-12, or FEV-10
- Set of RF cables (4 IF cables, 4 RF-LO cables)
- (2) DC cables
- WR-15, WR-12, or WR-10 cal kit
- Windows PC/Laptop



IF TEST CobaltFx - A IN C4209, IF REF CobaltFx - R1 IN C4209 (blue SMA cables) RF INPUT CobaltFx- PORT 1 C4209, LO INPUT CobaltFx- LO 1 OUT C4209 (orange 3.5 mm cables) USB cable for C4209 - laptop (omitted here)

C4209 FET Connection Guide



OPPER MOUNTAIN[®] Technologies

What's Required:

- C4209 with S2VNA_v18.2.0 or newer software
- (2) FET1854 Modules
- Set of RF cables (4 IF cables, 2 RF cables, 2 LO cables)
- (2) DC cables
- T4311 or Z5411 calibration kit
- Windows PC/Laptop



IF TEST CobaltFx - A IN C4209, IF REF CobaltFx - R1 IN C4209 (blue N to SMA cables) RF IN CobaltFx- PORT 1 C4209, LO IN CobaltFx- LO 1 OUT C4209 (grey SMA cables) USB cable for C4209 - laptop (omitted here)

C4220 FEV Connection Guide



PPER MOUNTAIN®

What's Required:

- C4220 with S2VNA_v16.1.3 or newer software
- (2) FEV-15, FEV-12, or FEV-10
- Set of RF cables (4 IF cables, 4 RF-LO cables)
- (2) DC cables
- (2) PNMD3.5F Adapters
- WR-15, WR-12, or WR-10 cal kit
- Windows PC/Laptop



IF TEST CobaltFx - A IN C4220, IF REF CobaltFx - R1 IN C4220 (blue SMA cables) RF INPUT CobaltFx- PORT 1 C4220, LO INPUT CobaltFx- LO 1 OUT C4220 (orange 3.5 mm cables) USB cable for C4220 - laptop (omitted here)

C4220 FET Connection Guide



OPPER MOUNTAIN[®] Technologies

What's Required:

- C4220 with S2VNA_v18.2.0 or newer software
- (2) FET1854 Modules
- Set of RF cables (4 IF cables, 2 RF cables, 2 LO cables)
- (2) DC cables
- (2) PNMD3.5F Adapters
- T4311 or Z5411 calibration kit
- Windows PC/Laptop



IF TEST CobaltFx - A IN C4220, IF REF CobaltFx - R1 IN C4220 (blue N to SMA cables) RF IN CobaltFx- PORT 1 C4220, LO IN CobaltFx- LO 1 OUT C4220 (grey SMA cables) USB cable for C4220 - laptop (omitted here)

C4409 FEV Connection Guide



DPPER MOUNTAIN[®] Technologies

What's Required:

- C4409 with S2VNA_v16.1.3 or newer software
- (2) FEV-15, FEV-12, or FEV-10
- Set of RF cables (4 IF cables, 4 RF-LO cables)
- (2) DC cables
- WR-15, WR-12, or WR-10 cal kit
- Windows PC/Laptop



IF TEST CobaltFx - A IN C4409, IF REF CobaltFx - R1 IN C4409 (blue SMA cables) RF INPUT CobaltFx- PORT 1 C4409, LO INPUT CobaltFx- LO 1 OUT C4409 (orange 3.5 mm cables) USB cable for C4409 - laptop (omitted here)

C4409 FET Connection Guide



JPPER MOUNTAIN[®] rechnologies

What's Required:

- C4409 with S2VNA_v18.2.0 or newer software
- (4) FET1854 Modules
- Set of RF cables (8 IF cables, 4 RF cables, 4 LO cables)
- (4) DC cables
- T4311 or Z5411 calibration kit
- Windows PC/Laptop



IF TEST CobaltFx - A IN C4409, IF REF CobaltFx - R1 IN C4409 (blue N to SMA cables) RF IN CobaltFx- PORT 1 C4409, LO IN CobaltFx- LO 1 OUT C4409 (grey SMA cables) USB cable for C4409 - laptop (omitted here)

C4420 FEV Connection Guide



PPER MOUNTAIN®

What's Required:

- C4420 with S2VNA_v16.1.3 or newer software
- (4) FEV-15, FEV-12, or FEV-10
- Set of RF cables (8 IF cables, 8 RF-LO cables)
- (4) DC cables
- (4) PNMD3.5F Adapters
- WR-15, WR-12, or WR-10 cal kit
- Windows PC/Laptop



IF TEST CobaltFx - A IN C4420, IF REF CobaltFx - R1 IN C4420 (blue SMA cables) RF INPUT CobaltFx- PORT 1 C4420, LO INPUT CobaltFx- LO 1 OUT C4420 (orange 3.5 mm cables) USB cable for C4420 - laptop (omitted here)

C4420 FET Connection Guide



COPPER MOUNTAIN®

What's Required:

- C4420 with S2VNA_v18.2.0 or newer software
- (4) FET1854 Modules
- Set of RF cables (8 IF cables, 4 RF cables, 4 LO cables)
- (4) DC cables
- (4) PNMD3.5F Adapters
- T4311 or Z5411 calibration kit
- Windows PC/Laptop



IF TEST CobaltFx - A IN C4420, IF REF CobaltFx - R1 IN C4420 (blue N to SMA cables) RF IN CobaltFx- PORT 1 C4420, LO IN CobaltFx- LO 1 OUT C4420 (grey SMA cables) USB cable for C4420 - laptop (omitted here)