

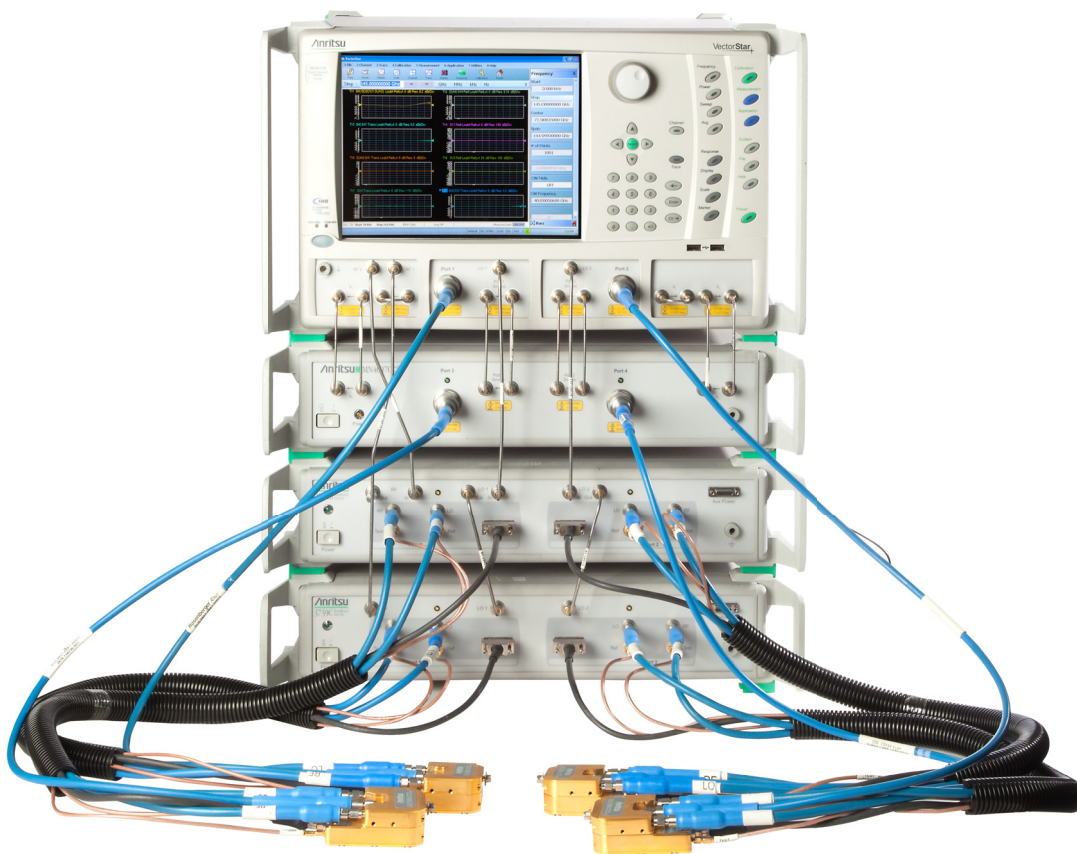
Quick Start Guide

VectorStar™ ME7838D4/G4 Multiport Broadband/Banded mmWave System

High Performance Modular Broadband/Banded mmWave Vector Network Analyzer (VNA) Multiport Measurement System

ME7838D4, 70 kHz to 145 (150) GHz

ME7838G4, 70 kHz to 220 (226) GHz



Anritsu

High Performance Modular Broadband/Banded mmWave Vector Network Analyzer (VNA) Measurement System

This guide provides quick setup instructions for the ME7838D4 and ME7838G4 Multiport Broadband/Banded mmWave VNA System assemblies. For additional safety and compliance information, and for more details about the assembly, configuration, setup, and initial testing of the equipment, refer to the *VectorStar™ ME7838x4 Series Multiport Broadband Vector Network Analyzers Installation Guide – 10410-00734*.

This and all other documentation that supports the ME7838D4 and ME7838G4 is available on the ME7838x4 product web page:

<http://www.anritsu.com/test-measurement/products/me7838a4>

On this web page, you can select various tabs for more information about your instrument. Included is a Library tab which contains links to all the latest technical documentation related to this instrument.

1. ME7838D4 and ME7838G4 Main Components

ME7838D4 Broadband Systems

The ME7838D4 Multiport Broadband system consists of the following components:

- MS4647A or MS4647B VNA with Option 007 (Receiver Offset) and Option 08x (Modular Broadband Connection Capability)
- MN4697C Multiport Test Set
- 3736B Broadband Test Set
- 3739C Broadband Test Set
- Four MA25300A mmWave Modules
- Front and rear panel cables

ME7838G4 Broadband Systems

The ME7838G4 Multiport Broadband system consists of the following components:

- MS4647B VNA with Option 007 (Receiver Offset) and Option 08x (Modular Broadband Connection Capability)
- MN4697C Multiport Test Set
- 3736B Broadband Test Set
- 3739C Broadband Test Set
- Four MA25400A mmWave Modules
- Front and rear panel cables

ME7838D4 Banded Systems

The ME7838D4 Multiport Banded system consists of the following components:

- MS464xA/B VNA with Option 08x
- MN4694C Multiport Test Set
- 3736B Broadband Test Set
- 3739C Broadband Test Set
- Four 3744A-EE, 3744A-EW, or four OML/VDI mmWave Modules
- Front and rear panel cables

ME7838G4 Banded Systems

The ME7838G4 Multiport Banded system consists of the following components:

- MS464xB VNA with Option 08x
- MN4694C Multiport Test Set
- 3736B Broadband Test Set
- 3739C Broadband Test Set
- Four 3744A-EE, 3744A-EW, or four OML/VDI mmWave Modules

Caution



A MS464xA/B VNA unit is heavy. To avoid personal injury, it must be lifted and maneuvered by at least two people during installation.

If mounting on a workbench surface, first position the 3739C Broadband Test Set with access to its front and rear panels. Stack the remaining test sets on top of one another, then finally the VNA.

If mounting into rack or console, make sure the Test Sets have been installed, and that the rack/console is carefully positioned on a flat and level surface. If equipped, make sure any casters are locked. Use two people to lift the VNA unit and two to guide it into its shelf rails.

The test loops on the front and rear panels of the VNA are delicate. Be careful not to bump or bend the test loops.

2. Rear Panel Connections Between System Components (MS464xA VNA)

In this section, connect the cables between the VNA and the Test Sets as shown in [Figure 1](#) and [Table 1](#).

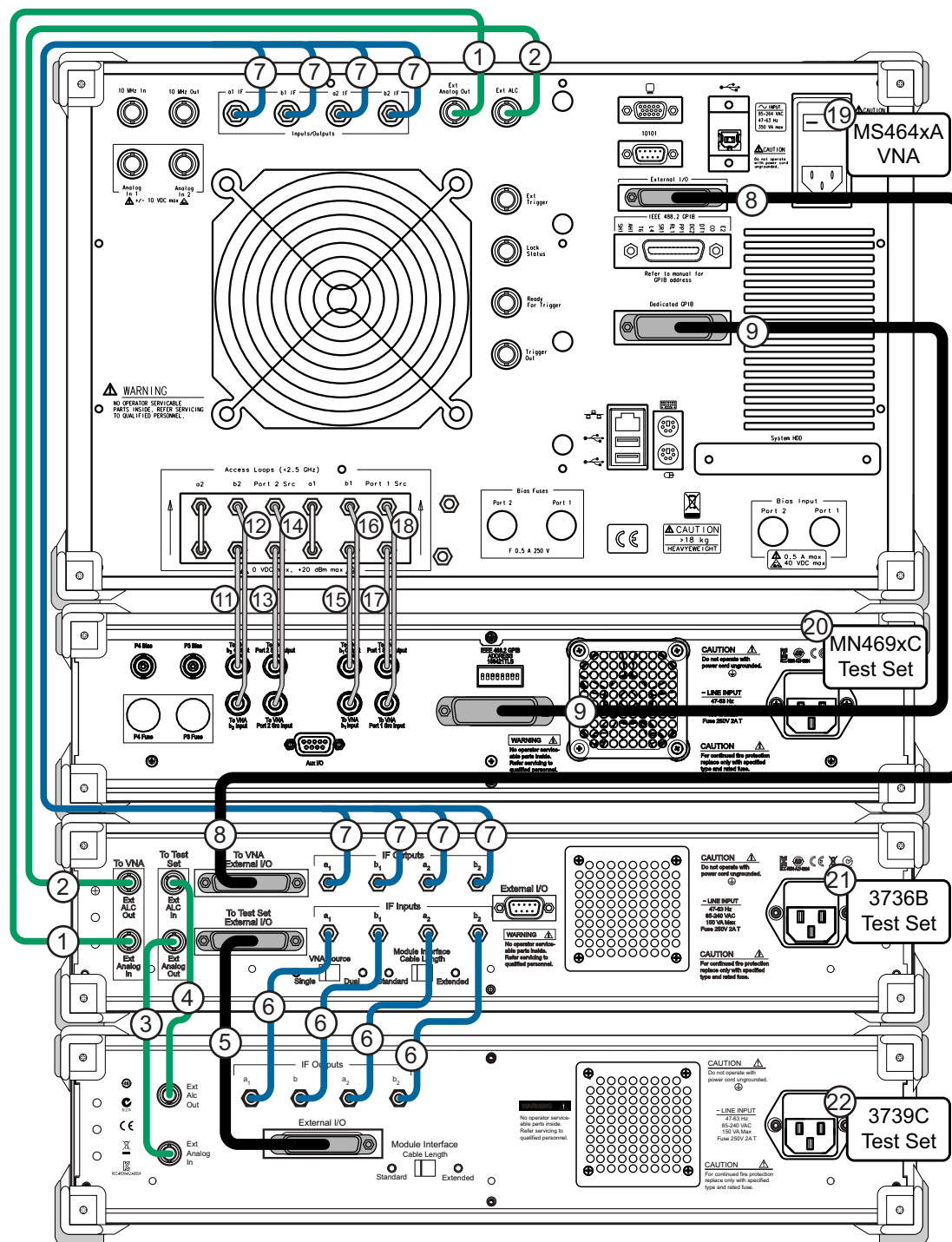


Figure 1 ME7838D4 – Rear Panel Cable Connections (MS464xA VNA)

2. Rear Panel Connections Between System Components (MS464xA VNA)

Table 1. ME7838D4 Multiport Rear Panel Cable Connections (1 of 2)

Index	Part Number	Cable Description	Connection From	Connection To
1	3-806-225	BNC (male-male), 24 in	MS464xA port labeled: Ext Analog Out	3736B port labeled: EXT ANALOG IN
2	3-806-225	BNC (male-male), 24 in	MS464xA port labeled: Ext ALC	3736B port labeled: EXT ALC OUT
3	3-806-225	BNC (male-male), 24 in	3736B port labeled: (To Test Set) EXT ANALOG OUT	3739C port labeled: EXT ANALOG IN
4	3-806-225	BNC (male-male), 24 in	3736B port labeled: (To Test Set) EXT ALC IN	3739C port labeled: EXT ALC OUT
5	3-73598-1 ^a (5 cable bundle)	DB-25	3736B port labeled: TO TEST SET EXTERNAL I/O	3739C port labeled: EXTERNAL I/O
6		SMA male-male flexible: 3-72243-1 3-72243-2 3-72243-3 3-72243-4	3736B ports labeled: (IF INPUTS) a1 b1 a2 b2	3739C ports labeled: (IF OUTPUTS) a1 b1 a2 b2
7		SMA male-male flexible: 3-72243-21 3-72243-22 3-72243-23 3-72243-24	MS464xA ports labeled: (Inputs/Outputs) a1 IF b1 IF a2 IF b2 IF	3736B ports labeled: (IF OUTPUTS) a1 IF b1 IF a2 IF b2 IF
8		DB-25	MS464xA port labeled: External I/O	3736B port labeled: TO VNA EXTERNAL I/O
9	2100-1-R	GPIB, 1 m	MS464xA port labeled: Dedicated GPIB	MN469xC port labeled: IEEE 488.2 GPIB
11	3-62112-81 ^a	SMA male-male semi-rigid	MS464xA port labeled: b2 loop out	MN469xC port labeled: TO VNA b2 OUTPUT
12	3-62112-80 ^a	SMA male-male semi-rigid	MS464xA port labeled: b2 loop in	MN469xC port labeled: TO VNA b2 INPUT
13	3-62112-81 ^a	SMA male-male semi-rigid	MS464xA port labeled: P2 source loop out	MN469xC port labeled: TO VNA Port 2 Src OUTPUT
14	3-62112-80 ^a	SMA male-male semi-rigid	MS464xA port labeled: P2 source loop in	MN469xC port labeled: TO VNA Port 2 Src INPUT
15	3-62112-81 ^a	SMA male-male semi-rigid	MS464xA port labeled: b1 loop out	MN469xC port labeled: TO VNA b1 OUTPUT
16	3-62112-80 ^a	SMA male-male semi-rigid	MS464xA port labeled: b1 loop in	MN469xC port labeled: TO VNA b1 INPUT
17	3-62112-81 ^a	SMA male-male semi-rigid	MS464xA port labeled: P1 source loop out	MN469xC port labeled: TO VNA Port 1 Src OUTPUT

2. Rear Panel Connections Between System Components (MS464xA VNA)

Table 1. ME7838D4 Multiport Rear Panel Cable Connections (2 of 2)

Index	Part Number	Cable Description	Connection From	Connection To
18	3-62112-80 ^a	SMA male-male semi-rigid	MS464xA port labeled: P1 source loop in	MN469xC port labeled: TO VNA Port 1 Src INPUT
19	MS464xA VNA			
20	MN469xC Test Set			
21	3736B Test Set			
22	3739C Test Set			

a. Tighten each cable in this group using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in).

3. Rear Panel Connections Between Components (MS464xB VNA)

In this section, connect the cables between the VNA and the Test Sets as shown in [Figure 2](#) or [Figure 3](#), and [Table 2](#).

Cable Connections (Systems with Option 031 Dual Source Architecture)

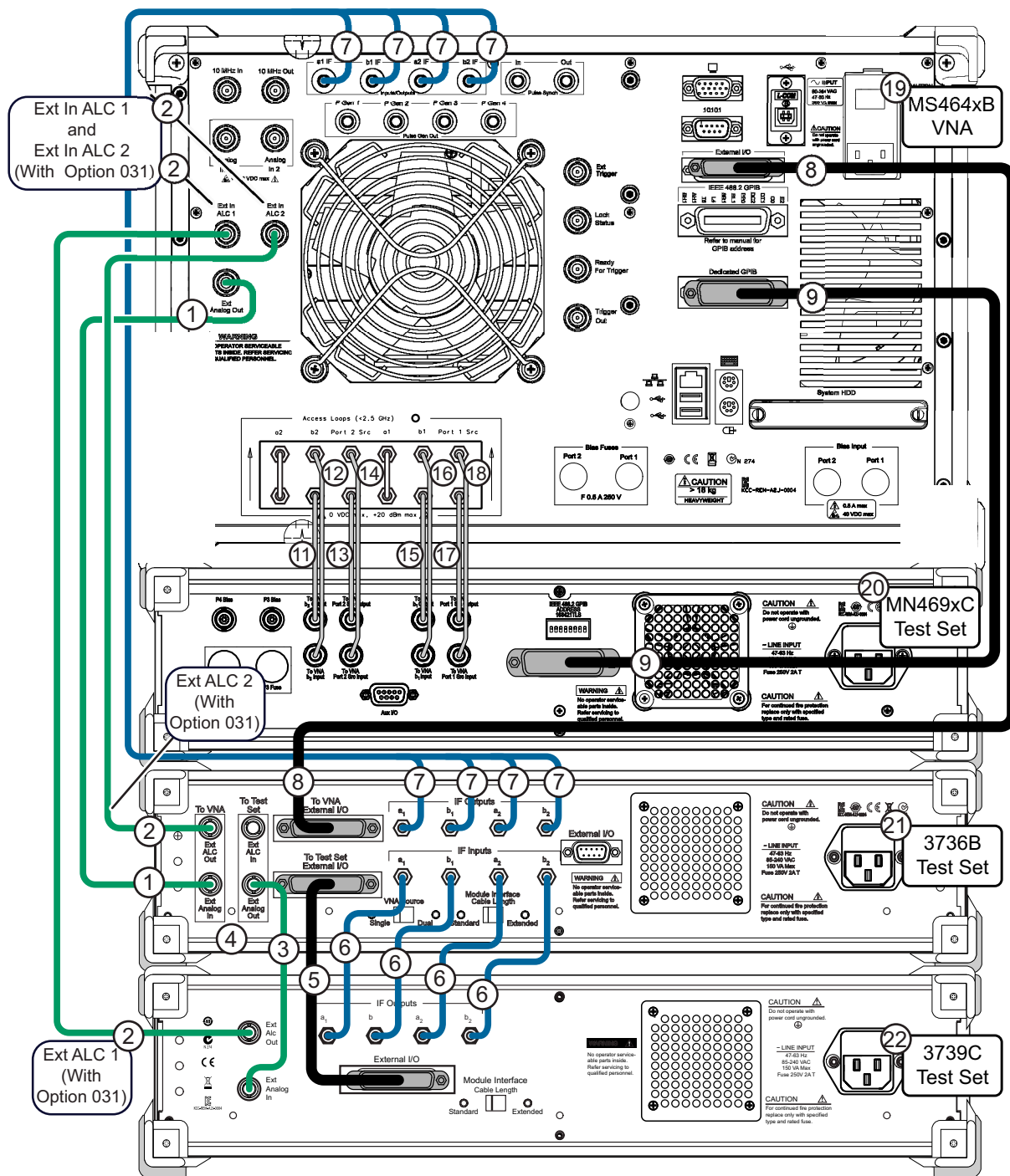


Figure 2 ME7838D4/G4 Multiport BB/mmW VNA System – Rear Panel Cables (With Option 031)

3. Rear Panel Connections Between Components (MS464xB VNA)

Cable Connections (Systems without Option 031)

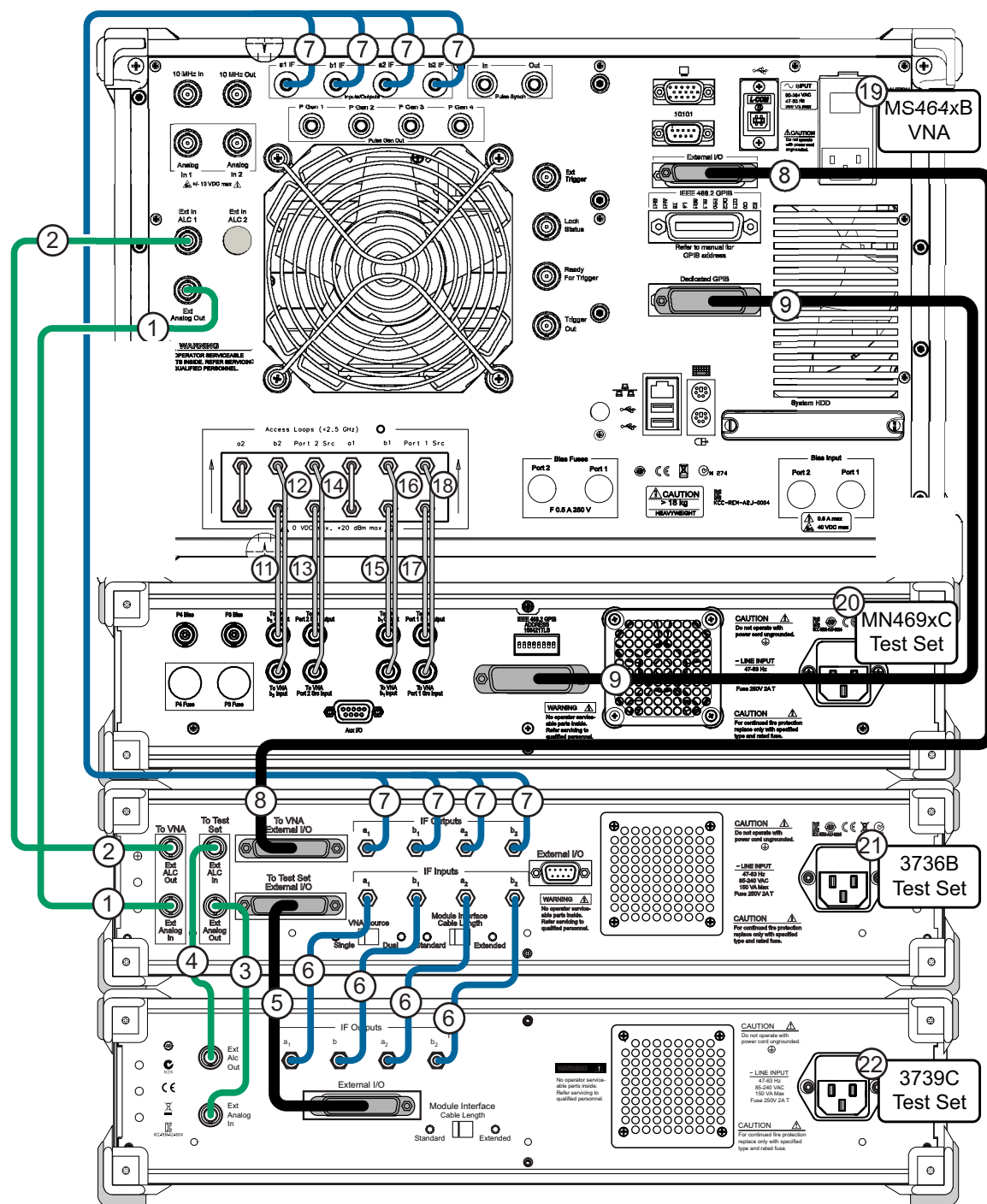


Figure 3 ME7838D4/G4 Multiport BB/mmW VNA System – Rear Panel Cables (No Option 031)

Table 2. ME7838D4/G4 Multiport Rear Panel Cable Connections (MS464xB) (1 of 2)

Index	Part Number	Cable Description	Connection From	Connection To
1	3-806-225	BNC (male-male), 24 in	MS464xB port labeled: Ext Analog Out	3736B port labeled: EXT ANALOG IN
2	3-806-225	BNC (male-male), 24 in	VNA port labeled: Ext In ALC 1 (No Option 031) (Figure 3)	3736B port labeled: EXT ALC OUT
	3-806-225	BNC (male-male), 24 in	VNA port labeled: Ext In ALC 1 (With Option 031) (Figure 2)	3739C port labeled: EXT ALC OUT
	3-806-225	BNC (male-male), 24 in	VNA port labeled: Ext In ALC 2 (With Option 031) (Figure 2)	3736B port labeled: EXT ALC OUT
3	3-806-225	BNC (male-male), 24 in	3736B port labeled: (To Test Set) EXT ANALOG OUT	3739C port labeled: EXT ANALOG IN
4	3-806-225	BNC (male-male), 24 in	3736B port labeled: (To Test Set) EXT ALC IN (Figure 3) (Not used with Option 031)	3739C port labeled: EXT ALC OUT
5	3-73598-1 ^a (5 cable bundle)	DB-25	3736B port labeled: TO TEST SET EXTERNAL I/O	3739C port labeled: EXTERNAL I/O
6		SMA male-male flexible: 3-72243-1 3-72243-2 3-72243-3 3-72243-4	3736B ports labeled: (IF INPUTS) a1 b1 a2 b2	3739C ports labeled: (IF OUTPUTS) a1 b1 a2 b2
7		SMA male-male flexible: 3-72243-21 3-72243-22 3-72243-23 3-72243-24	MS464xB ports labeled: (Inputs/Outputs) a1 IF b1 IF a2 IF b2 IF	3736B ports labeled: (IF OUTPUTS) a1 IF b1 IF a2 IF b2 IF
8		DB-25	MS464xB port labeled: External I/O	3736B port labeled: TO VNA EXTERNAL I/O
9	2100-1-R	GPIB, 1 m	MS464xB port labeled: Dedicated GPIB	MN469xC port labeled: IEEE 488.2 GPIB
11	3-62112-81 ^a	SMA male-male semi-rigid	MS464xB port labeled: b2 loop out	MN469xC port labeled: TO VNA b2 OUTPUT
12	3-62112-80 ^a	SMA male-male semi-rigid	MS464xB port labeled: b2 loop in	MN469xC port labeled: TO VNA b2 INPUT
13	3-62112-81 ^a	SMA male-male semi-rigid	MS464xB port labeled: P2 source loop out	MN469xC port labeled: TO VNA Port 2 Src OUTPUT

3. Rear Panel Connections Between Components (MS464xB VNA)

Table 2. ME7838D4/G4 Multiport Rear Panel Cable Connections (MS464xB) (2 of 2)

Index	Part Number	Cable Description	Connection From	Connection To
14	3-62112-80 ^a	SMA male-male semi-rigid	MS464xB port labeled: P2 source loop in	MN469xC port labeled: TO VNA Port 2 Src INPUT
15	3-62112-81 ^a	SMA male-male semi-rigid	MS464xB port labeled: b1 loop out	MN469xC port labeled: TO VNA b1 OUTPUT
16	3-62112-80 ^a	SMA male-male semi-rigid	MS464xB port labeled: b1 loop in	MN469xC port labeled: TO VNA b1 INPUT
17	3-62112-81 ^a	SMA male-male semi-rigid	MS464xB port labeled: P1 source loop out	MN469xC port labeled: TO VNA Port 1 Src OUTPUT
18	3-62112-80 ^a	SMA male-male semi-rigid	MS464xB port labeled: P1 source loop in	MN469xC port labeled: TO VNA Port 1 Src INPUT
19	MS464xB VNA			
20	MN469xC Test Set			
21	3736B Test Set			
22	3739C Test Set			

a. Tighten each cable in this group using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in).

4. Semi-rigid Cable Connections Between System Components

Make the semi-rigid cable connections as shown in [Figure 4](#) or [Figure 5](#), and in [Table 3](#).

If your system has Option 031 Dual Source Architecture (MS464xB only), use [Figure 4](#). If your system does not have Option 031, use [Figure 5](#).

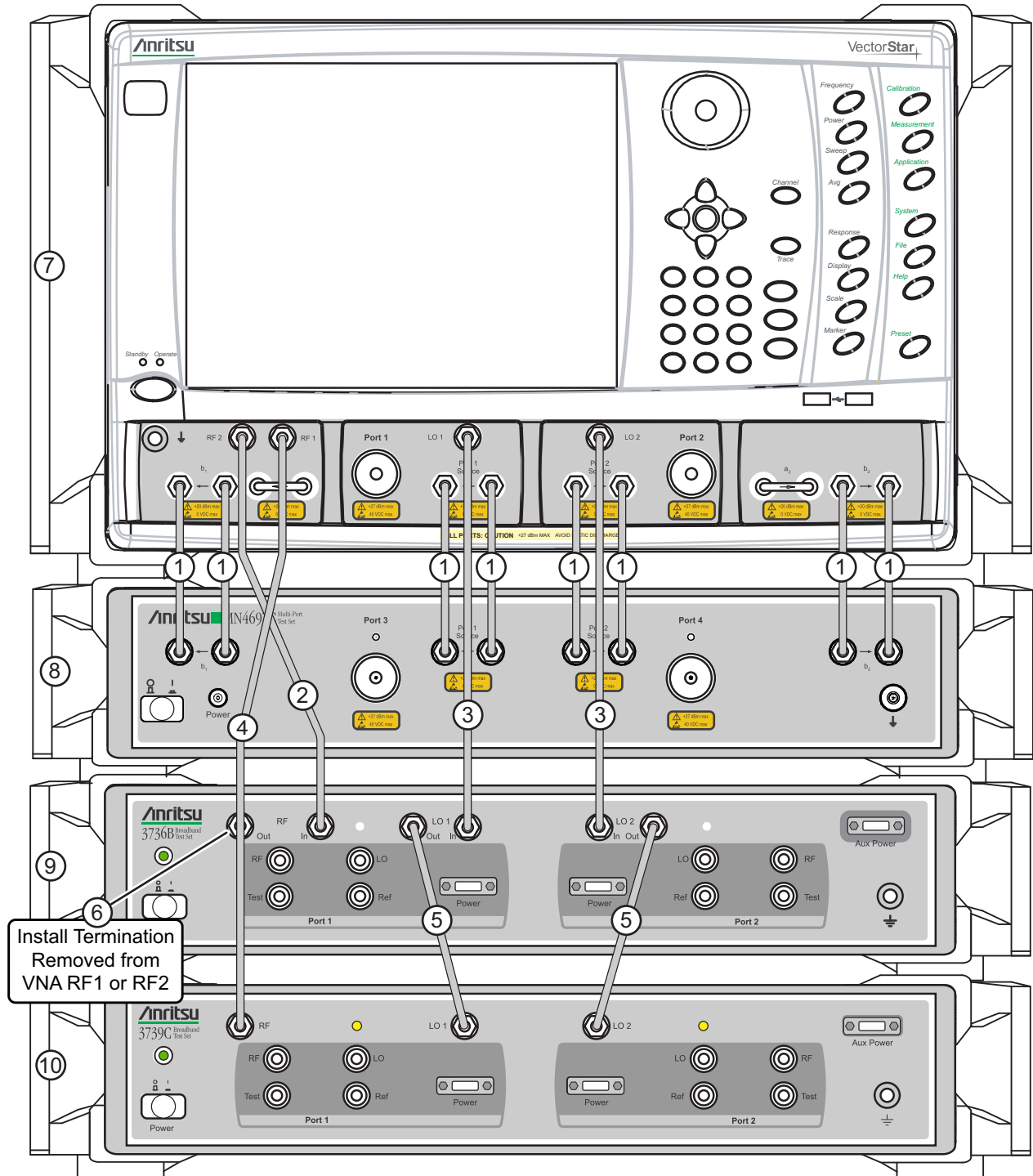


Figure 4 ME7838D4/G4 Multiport Semi-rigid Cable Connections (with Option 031 Dual Source Architecture)

4. Semi-rigid Cable Connections Between System Components

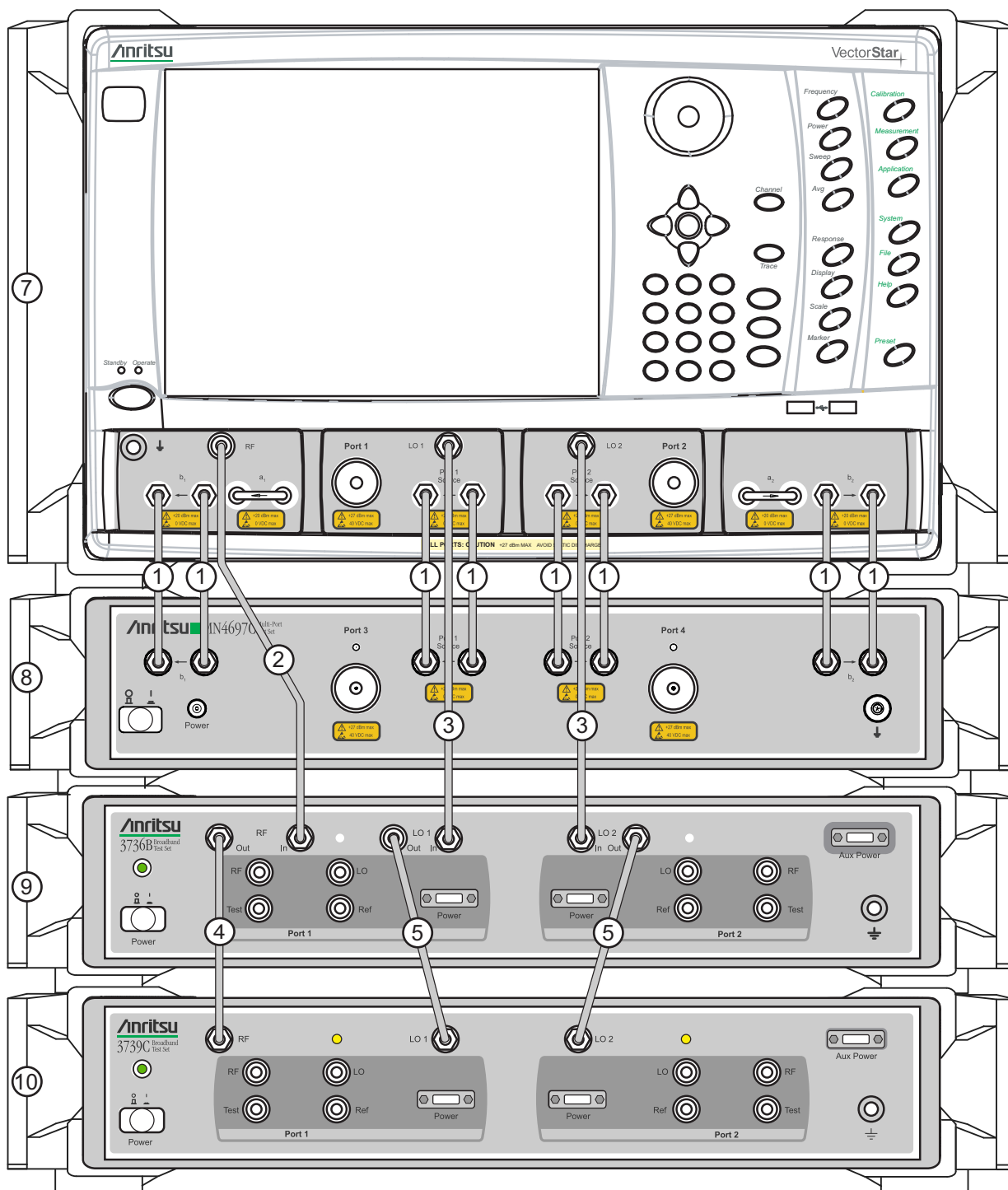


Figure 5 ME7838D4/G4 Multiport Semi-rigid Cable Connections (No Option 031)

Table 3. ME7838D4/G4 Multiport Semi-rigid Cable Interconnect Part Numbers and Locations (1 of 2)

Index	Part Numbers	Description/Torque	Connection From	Connection To
1	3-62109-42 V (m-m) (MN4697C) 3-67357-38 K (m-m) (MN4694C)	Front Panel RF Cable (4 each) V or K male-male semi-rigid Tighten using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in).	VNA port labeled: b1 (In)	MN469xC port labeled: b1 (In)
			VNA port labeled: b1 (Out)	MN469xC port labeled: b1 (Out)
			VNA port labeled: Port 1 Source (In)	MN469xC port labeled: Port 1 Source (In)
			VNA port labeled: Port 1 Source (Out)	MN469xC port labeled: Port 1 Source (Out)
			VNA port labeled: Port 2 Source (In)	MN469xC port labeled: Port 2 Source (In)
			VNA port labeled: Port 2 Source (Out)	MN469xC port labeled: Port 2 Source (Out)
			VNA port labeled: b2 (In)	MN469xC port labeled: b2 (In)
			VNA port labeled: b2 (Out)	MN469xC port labeled: b2 (Out)
2	3-67357-230	Front Panel RF Cable K male-male semi-rigid Tighten using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in).	VNA port labeled: RF 2 (Figure 4) (With Option 031)	3736B Test Set port labeled: RF In
			VNA port labeled: RF (Figure 5) (No Option 031)	3736B Test Set port labeled: RF In
3	3-67357-231	Front Panel LO Cable (2 each) K male-male semi-rigid Tighten using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in).	VNA port labeled: LO 1	3736B Test Set port labeled: LO 1 In
			VNA port labeled: LO 2	3736B Test Set port labeled: LO 2 In
4	3-67357-232 (With Option 031)	Front Panel RF Cable K male-male semi-rigid Tighten using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in).	VNA port labeled: RF 1 (Figure 4) (With Option 031)	3739C Test Set port labeled: RF
	3-67357-18 (No Option 031)		3736B Test Set port labeled: RF Out (Figure 5) (No Option 031)	3739C Test Set port labeled: RF
5	3-67357-19	Front Panel LO Cable (2 each) K male-male semi-rigid Tighten using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in).	3736B Test Set port labeled: LO 1 Out	3739C Test Set port labeled: LO 1
			3736B Test Set port labeled: LO 2 Out	3739C Test Set port labeled: LO 2
6	V210	Termination (With Option 031) Tighten using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in).	Remove from VNA port labeled: RF 1 or RF 2 (With Option 031)	Add to 3736B Test Set port labeled: RF Out

4. Semi-rigid Cable Connections Between System Components

Table 3. ME7838D4/G4 Multiport Semi-rigid Cable Interconnect Part Numbers and Locations (2 of 2)

Index	Part Numbers	Description/Torque	Connection From	Connection To
7	MS464xA VNA	Option 051, 061, or 062, and 08x (Banded)		
	MS464xB VNA	Option 051, 061, or 062, and 08x (Banded)		
	MS4647A VNA	Option 051, 061, or 062, and 08x (Broadband)		
	MS4647B VNA	Option 051, 061, or 062, and 08x (Broadband)		
8	MN4694C Test Set	(Banded)		
	MN4697C Test Set	(Broadband)		
9	3736B Test Set			
10	3739C Test Set			

5. Front Panel Cable Connections

Make the cable connections as shown in [Figure 6](#) and in [Table 4](#).

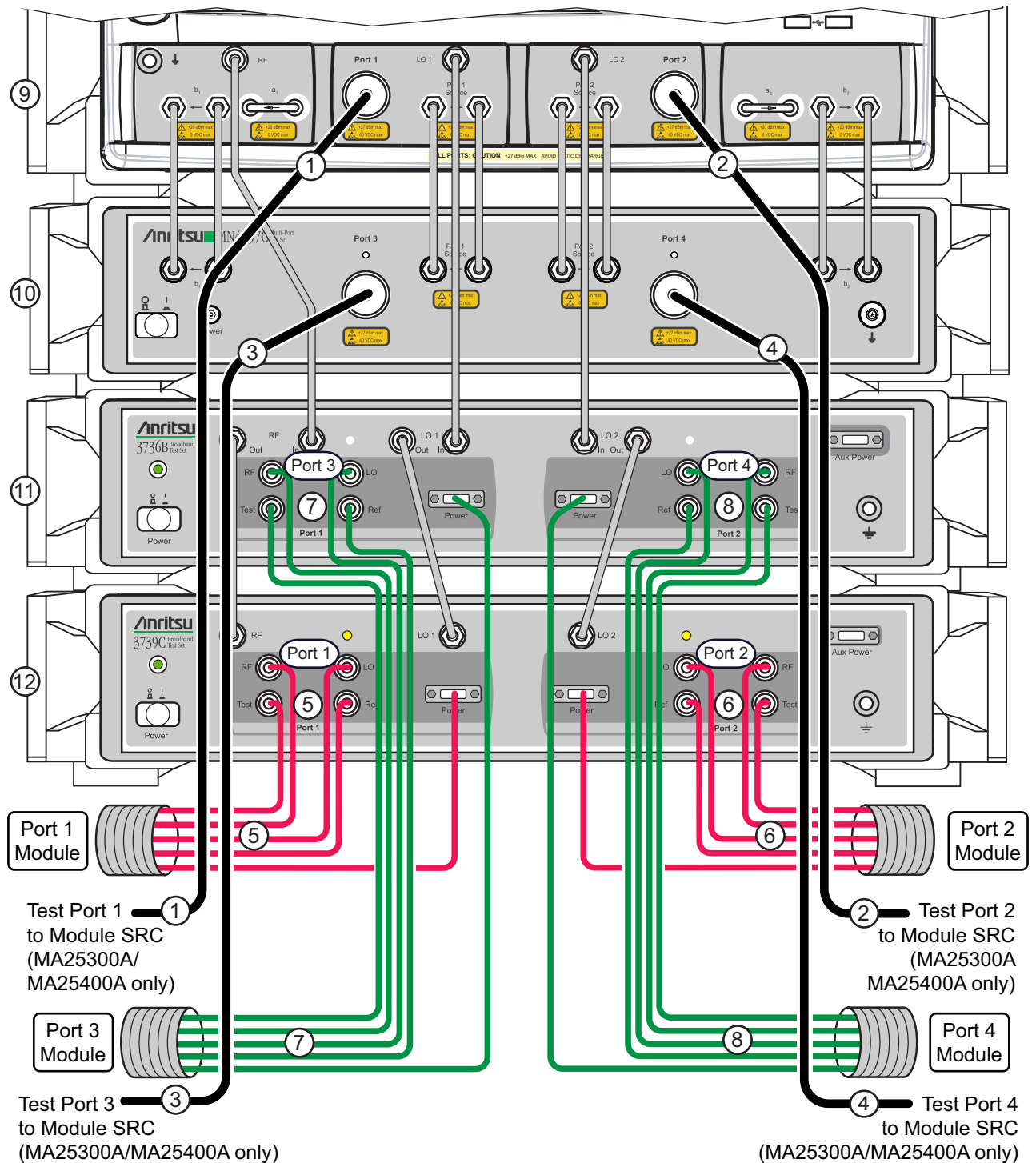


Figure 6 Front Panel to mmWave Module Connections

Note

The cables for Test Port 1 through Test Port 4 to Module SRC are not used with mmWave modules 3744A-EE, 3744A-EW, or 3744A-Rx.

5. Front Panel Cable Connections

Table 4. ME7838D4/G4 Cable Interconnect Part Numbers and Locations (1 of 2)

Index	Part Number	Description	Connection From	Connection To
1 2 3 4	806-209-R ^{a,b}	Coaxial Cable (4 each) V male-female flexible, 36 in Used with MA25300A and MA25400A Broadband Modules only Tighten at Test Set using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in).	MN469xC port labeled: Port 1 Port 2 Port 3 Port 4	MA25300A/ MA25400A port labeled: (Port 1 Module) SRC (Port 2 Module) SRC (Port 3 Module) SRC (Port 4 Module) SRC
5 6 7 8	3-75685-1 ^a	mmWave Module Interface Cables (for MA25300A, MA25400A, 3743A/AX, 3744A-EE, 3744A-EW modules) Group of 5 cables for each port Tighten at Test Set using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in).	3739C Test Set: Port 1, Port 2 RF, LO, Test, Ref, Power/Signal 3736B Test Set Port1, Port 2 (Port 3, Port 4) RF, LO, Test, Ref, Power/Signal	mmWave Modules: Port 1, Port 2 Modules RF, LO, Test, Ref, Power/Signal mmWave Modules Port 3, Port 4 Modules RF, LO, Test, Ref, Power/Signal
5 6 7 8	3-75685-2 ^a	OML Module Interface Cables Group of 4 cables for each port Tighten at Test Set using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in). VDI Module Interface Cables Group of 4 cables for each port Tighten at Test Set using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in).	3739C Test Set Port 1, Port 2 RF, LO, Test, Ref 3736B Test Set Port1, Port 2 (Port 3, Port 4) RF, LO, Test, Ref 3739C Test Set Port 1, Port 2 RF, LO, Test, Ref 3736B Test Set Port1, Port 2 (Port 3, Port 4) RF, LO, Test, Ref	OML Modules Port 1, Port 2 Modules RF, LO, Test IF, Ref IF OML Modules Port 3, Port 4 Modules RF, LO, Test IF, Ref IF VDI Modules Port 1, Port 2 Modules RF Input, LO Input, Meas. IF, Ref IF VDI Modules Port 3, Port 4 Modules RF Input, LO Input, Meas. IF, Ref IF
5 6 7 8	3-75685-3 ^a	mmWave Module Interface Cables (for 3744A-Rx modules) Group of 3 cables for each port Tighten at Test Set using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in).	3739C Test Set Port 1, Port 2 LO, Test, Power/Signal 3736B Test Set Port1, Port 2 (Port 3, Port 4) LO, Test, Power/Signal	Rx Modules Port 1, Port 2 Modules LO, Test, Power/Signal Rx Modules Port 3, Port 4 Modules LO, Test, Power/Signal

Table 4. ME7838D4/G4 Cable Interconnect Part Numbers and Locations (2 of 2)

Index	Part Number	Description	Connection From	Connection To
9	MS464xA VNA – Option 051, 061, or 062, and 08x (Banded)			
	MS464xB VNA – Option 051, 061, or 062, and 08x (Banded)			
	MS4647A VNA – Option 051, 061, or 062, and 08x (Broadband)			
	MS4647B VNA – Option 051, 061, or 062, and 08x (Broadband)			
10	MN4694C Test Set (Banded)			
	MN4697C Test Set (Broadband)			
11	3736B Test Set			
12	3739C Test Set			

a. Do not yet connect the cable ends to the mmWave modules. Module connection instructions follow this section.

b. The 806-209-R Coaxial Cable is not included or required when using the 3744A-EE, 3744A-EW mmWave modules, or the 3744A-Rx Receiver Module.

6. Front Panel to mmWave Module Connections

Connect the 3739C Broadband Test Set Port-1 and Port-2 cables to the MA25300A, MA25400A, 3743A/AX, 3744A-EE, 3744A-EW, or 3744A-Rx Modules as shown below, observing the correct torque limits for each connector. See [Figure 7](#) and [Table 5](#). Route the cable assemblies through the cable restraint.

For ease of connection, the module can be removed from the bracket, then reinstalled after cables are secured. Observe torque instructions where indicated.

Each module (except the 3744A-Rx) is characterized for absolute power for a specific VNA Serial Number and VNA Test Port as designated on the module port assignment label. Ensure the module matches the correct VNA and Test Set port.

Note

If an alternative MA25300A, MA25400A, or 3743 series mmWave module is used there will be approximately 1 dB of absolute power inaccuracy, which can be corrected by performing a power calibration.

For more detailed information on the modules including DUT Waveguide (WG) connection alignment and custom bracket mounting, refer to *10410-00311 – VectorStar Broadband/Banded mmWave Modules Reference Manual*.

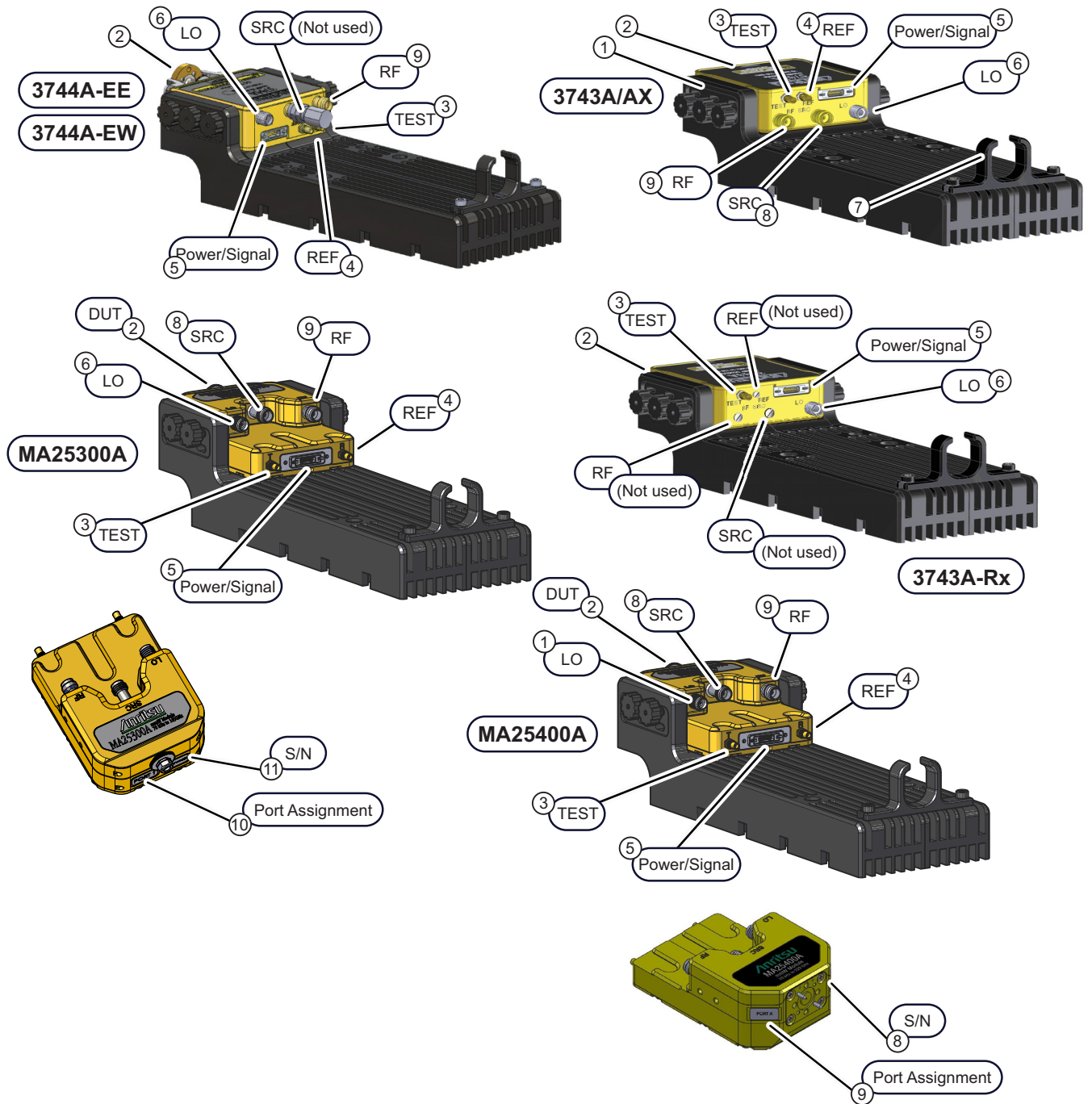


Figure 7. mmWave Module Connections

6. Front Panel to mmWave Module Connections

Table 5. mmWave Module Connections

Cable P/N	Index	Description
N/A	1	mmWave Module in bracket
DUT Connector	2	0.8 mm Connector (MA25300A module) - Tighten using a torque end wrench and a plain end wrench. 6 mm Torque End Wrench set to 0.45 N·m (4 lbf·in). Recommended is Anritsu 01-524. 6 mm / 7 mm Open End Wrench. Recommended is Anritsu 01-525. 0.6 mm Coaxial Flange Connector (MA25400A module) - Flange screws should be tightened using a hex torque wrench set to 6 cN·m (0.5 lbf·in). - Recommended is Anritsu 01-530-R. W1 - 1 mm Connector (3743A/AX, 3744A-Rx modules) - Tighten using a torque end wrench and a plain end wrench. 6 mm Torque End Wrench set to 0.45 N·m (4 lbf·in). Recommended is Anritsu 01-504. 6 mm / 7 mm Open End Wrench. Recommended is Anritsu 01-505. WR-10 or WR-12 to 1 mm connector (3744A-EE, 3744A-EW modules) - Use Waveguide Adapter Toolkits (3-74394-2, 3-74394-3, or 3-74394-4). - Tighten using a torque end wrench and a plain end wrench. 6 mm Torque End Wrench set to 0.45 N·m (4 lbf·in). Recommended is Anritsu 01-504. 6 mm / 7 mm Open End Wrench. Recommended is Anritsu 01-505.
3-75685-1 ^a or 3-75685-3 ^{b,c}	3	TEST – SSMC Connector (Connected on all Modules) - Tighten using a 4 mm (5/32 in) torque end wrench set to less than 0.17 N·m (1.5 lbf·in). - Recommended is Anritsu 01-529-R torque wrench.
	4	REF – SSMC Connector (Connected on all Modules except 3744A-Rx) - Tighten using a 4 mm (5/32 in) torque end wrench set to less than 0.17 N·m (1.5 lbf·in). - Recommended is Anritsu 01-529-R torque wrench.
	5	Power/Signal Latching Bi-Lobe™ Connector (Connected on all modules)
	6	LO – K Connector (Connected on all Modules) - Tighten using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in). - Recommended is Anritsu 01-201.
	7	Module Power and I/O Cable Restraint
806-209-R ^d	8	SRC – V Connector (Connected on MA25300A, MA25400A, and 3743A/AX only) - Tighten using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in). - Recommended is Anritsu 01-201.
3-75685-1 ^a	9	RF – V Connector (Connected on all Modules except 3744A-Rx) - Tighten using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in). - Recommended is Anritsu 01-201.
N/A	10	Factory Calibrated Port Assignment Label
N/A	11	Module Serial Number Label

a. Cable assembly 3-75685-1 is used on MA25300A, MA25400A, 3743A/AX, 3744A-EE, and 3744A-EW modules.

b. The REF cable is not used in the 3-75685-3 cable assembly.

c. Cable assembly 3-75685-3 is used on the 3744A-Rx module.

d. The 806-209-R Coaxial Cables are used only with the MA25300A, MA25400A, and 3743A/AX modules.

Inverting a Module

If necessary, a module can be turned over in the bracket to change the height of the DUT connector. To turn the module over:

1. Remove the six Knurled Head Thumbscrews $M2 \times 8$ mm (four $M3 \times 8$ mm on the MA25300A or MA25400A).
2. Turn the module over
3. Install the cable assembly then install the module into the bracket.
4. Install the thumbscrews.

mmWave Module Operating Environment

The modules require use of heatsink with adequate air circulation. The following notes should be considered before operating the MA25300A, MA25400A, 3743x, 3744x-xx, and 3743x-Rx mmWave Modules:

- Thermal heat sinking similar to the supplied mounting brackets of the mmWave Module should be considered in custom mounting applications.
- Each MA25300A and MA25400A Module consumes a maximum of 12 watts.
- Each 3743x Module consumes a maximum of 12 watts.
- Each 3744x-EE and 3744x-EW Module consumes a maximum of 12 watts.
- Each 3744x-Rx Module consumes a maximum of 7 watts.
- The primary heat sinking path for the module is on the two external side surfaces used to mount to the support brackets.
- With the attached cable mounting brackets, the case temperature rise is approximately 15 °C to 20 °C above ambient.

7. Front Panel to OML/VDI Module Connections

Connect the front panel cables between the 3736B and 3739C Test Sets, and the OML or VDI frequency extension modules as shown in [Figure 8](#), [Figure 9](#), and [Figure 10](#), and as described in [Table 6](#), [Table 7](#), and [Table 8](#).

Caution To avoid connector damage, observe torque requirements where indicated.

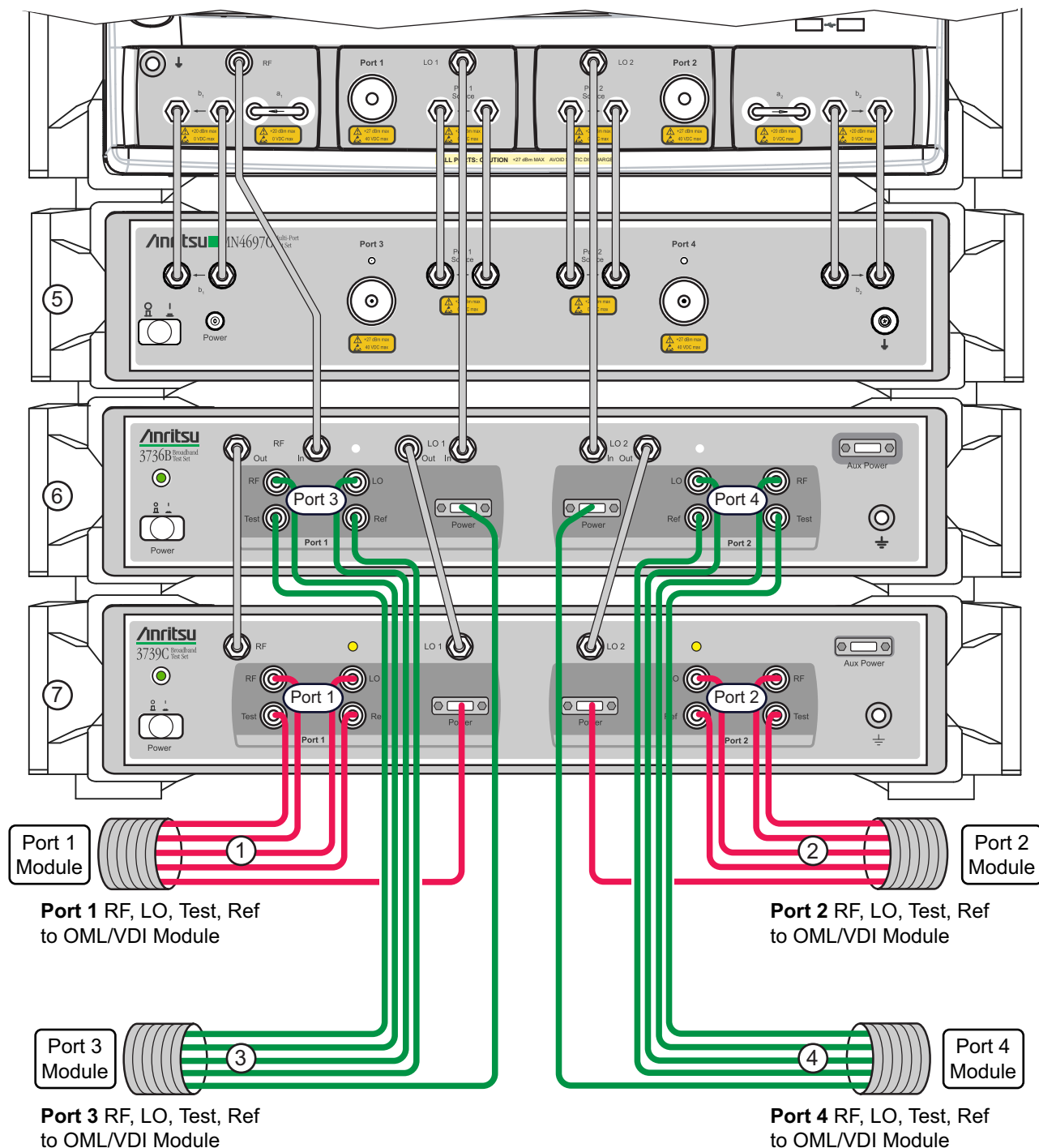


Figure 8 Cable Connections between 3736B, 3739C Test Sets, and OML or VDI Frequency Extension Modules

Table 6. ME7838D4/G4 OML/VDI Cable Interconnect Part Numbers and Locations

Index	Part Number	Description	Connection From	Connection To
1	3-75685-2 (2 each)	OML Module Interface Cable Assembly Group of 4 cables for each port	3739C Test Set Port 1, Port 2 Ref RF LO Test	OML Modules: Port 1, Port 2 Modules Ref IF RF Input LO Input Test IF
2		OML Module Interface Cable Assembly Group of 4 cables for each port	3736B Test Set Port 1, Port 2 (Port 3, Port 4) Ref RF LO Test	OML Modules: Port 3, Port 4 Modules Ref IF RF Input LO Input Test IF
3	3-75685-2 (2 each)	VDI Module Interface Cables Assembly Group of 4 cables for each port	3739C Test Set Port 1, Port 2 RF Ref Test LO	VDI Modules: Port 1, Port 2 Modules RF Input Ref. IF Meas. IF LO Input
4		VDI Module Interface Cables Assembly Group of 4 cables for each port	3736B Test Set Port 1, Port 2 (Port 3, Port 4) RF Ref Test LO	VDI Modules: Port 3, Port 4 Modules RF Input Ref. IF Meas. IF LO Input
5	MN469xC Test Set			
6	3736B Test Set			
7	3739C Test Set			

7. Front Panel to OML/VDI Module Connections

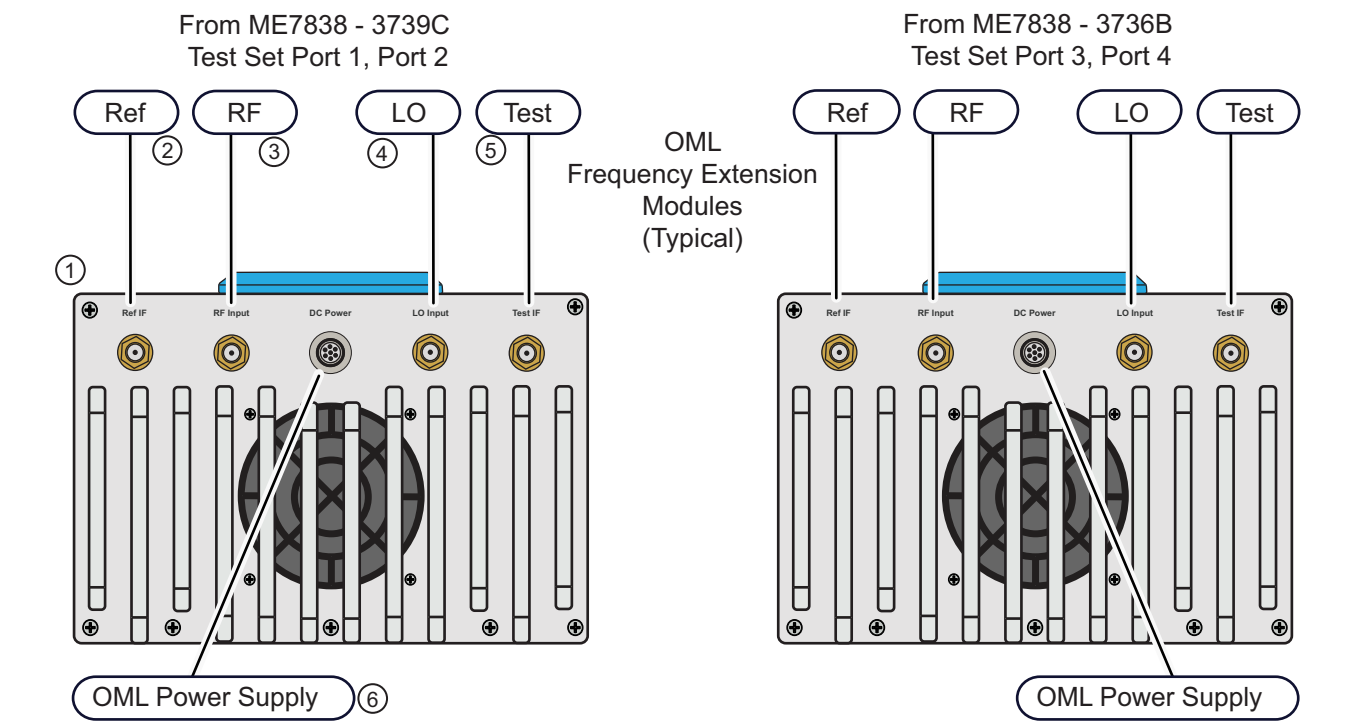


Figure 9 VNA/ Test Set Cable Connections to OML Modules

Table 7. OML Module Connections

Index	Cable P/N	Description
1	N/A	OML Module
2	3-75685-2	Ref IF – SMA Connector • Tighten using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in). • Recommended is Anritsu 01-201.
3		RF Input – SMA Connector • Tighten using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in). • Recommended is Anritsu 01-201.
4		LO Input – SMA Connector • Tighten using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in). • Recommended is Anritsu 01-201.
5		Test IF – SMA Connector • Tighten using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in). • Recommended is Anritsu 01-201.
6	N/A	OML Module Power Supply Connector

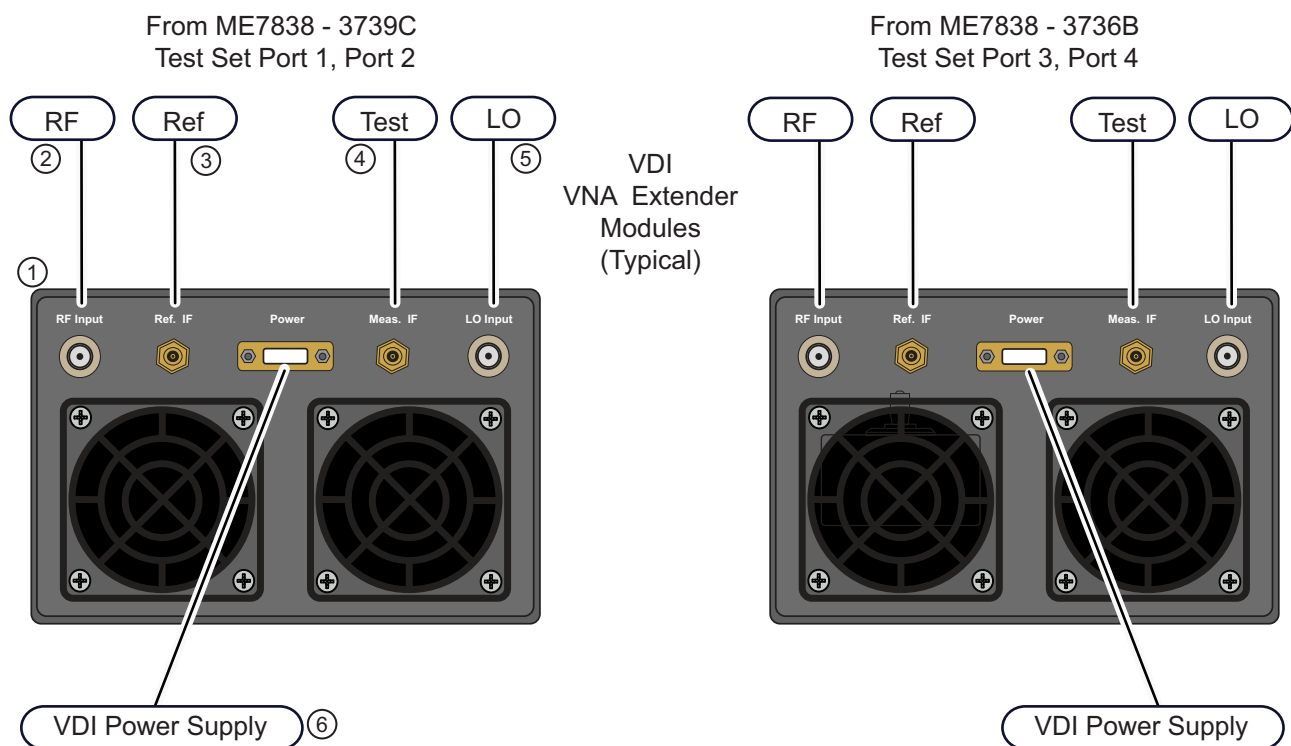


Figure 10 VNA/ Test Set Cable Connections to VDI Modules

Table 8. VDI Module Connections

Index	Cable P/N	Description
1	N/A	VDI Module
2	3-75685-2	RF Input – K (2.92 mm) Connector • Tighten using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in). • Recommended is Anritsu 01-201.
3		Ref. IF – SMA Connector • Tighten using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in). • Recommended is Anritsu 01-201.
4		Meas. IF – SMA Connector • Tighten using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in). • Recommended is Anritsu 01-201.
5		LO Input - K (2.92 mm) Connector • Tighten using an 8 mm (5/16 in) torque end wrench set to 0.9 N·m (8 lbf·in). • Recommended is Anritsu 01-201.
6 ^a		VDI Module Power Supply Connector

a. The VDI module connectors may differ slightly than on the illustration shown above. For example, depending on the model and date built, the power supply connector may be round instead of rectangular.

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