



REV.2022.A

3dB VHF Compact Coupler

MODEL CW-32

OUTLINE DRAWING

UNIT: INCH



L = 12.5 inches at Center Frequency 160 MHz

*Please note other frequency bands available.

TYPICAL ELECTRICAL SPECIFICATIONS	BANDWIDTH OPTIMIZATION NARROW		
	COUPLING	3.0±0.25	dB
COUPLING, UNBALANCE	0.50	dB (Typical)	
VSWR	1.30:1	(Typical)	
ISOLATION	18.0	dB (Typical)	
INPUT POWER	200.0	Watt (Avg.)	
	2.0	kW (Peak)	
PHASE UNBALANCE	3.0	Deg. (Typical)	
DIELECTRIC BREAKDOWN	500.0	V RMS (Typical)	
MECHANICAL SPECIFICATIONS	C/L BEND RADIUS	0.500	inches
	STANDARD LENGTH	58.0	inches
	A DIELECTRIC DIAMETER	0.118	inches
	B OUTER SHIELD DIAMETER	0.141	inches
	D WIRE DIAMETER	0.020	inches
OUTER SHIELD PLATING	BARE COPPER		
PHYSICAL SPECIFICATIONS	OPERATIONAL TEMP	55 to 155°C	



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Specification Materials

Specifications - Materials

1. Copper wire per QQ-W-343.
2. Polyimide film per insulation MIL-P-46112 with FEP binder per ASTM-3368.
3. Polytetrafluoroethylene (PTFE) inner jacket material per ASTM-D1457.
4. Outer shield material (seamless copper alloy tube): copper.
5. Outer shield plating:
Bare/unplated
6. VHF Compact Coupler is RoHS compliant when outer shield is Bare / unplated.

Computing the Length of Cut & Trimmed VHF Compact Coupler dB Quadrature Hybrids:

To determine the length "L" of a 3 dB VHF Compact Coupler quadrature hybrid:

1. Compute the quarter wavelength frequency (center frequency of your band of use) as follows:

$$F_q \text{ (MHz)} = (F_{\min} + F_{\max}) / 2$$

2. Compute the hybrid length "L" as follows:

$$\text{"L" (inches)} = 2000 / F_q \text{ (MHz)}$$

Ordering Information

VHF Compact Coupler can be purchased in bulk (5) five foot lengths or precut and trimmed ready for installation. For trimmed lengths, use the formulas in the prior section to determine the length corresponding to your center frequency and coupling values. Contact ETI for other than straight cut & trimmed lengths.



Performance Graphs at 160MHz, 12.5" Length

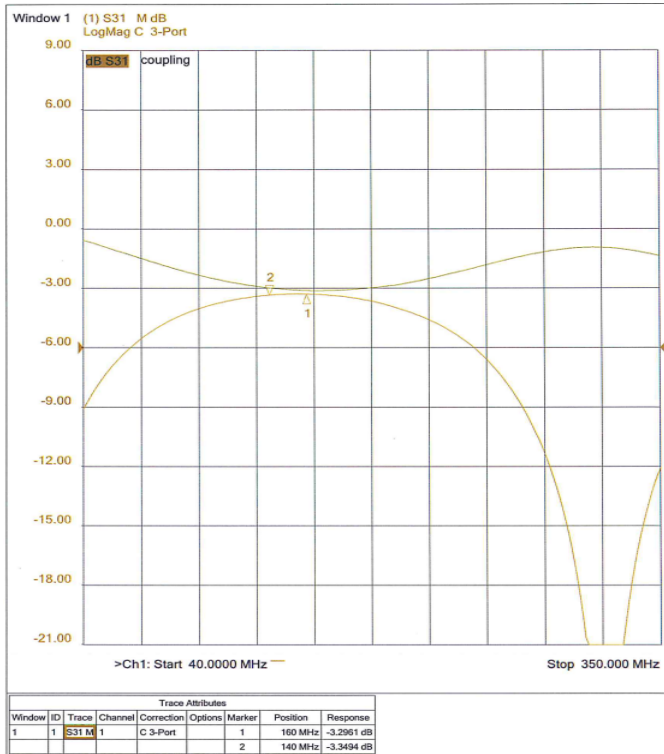


Figure 1: Coupling at 160 MHz and 12.5" Length

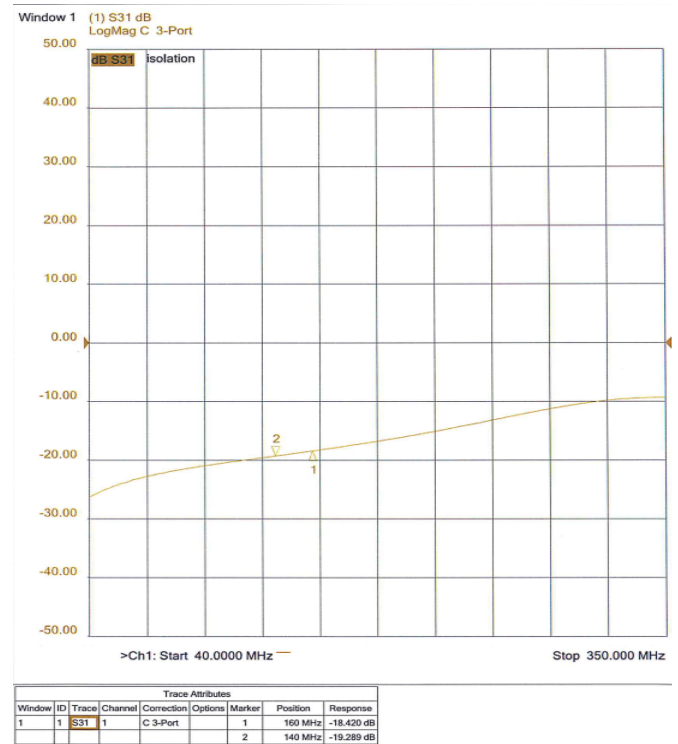


Figure 2: Isolation at 160 MHz and 12.5" Length

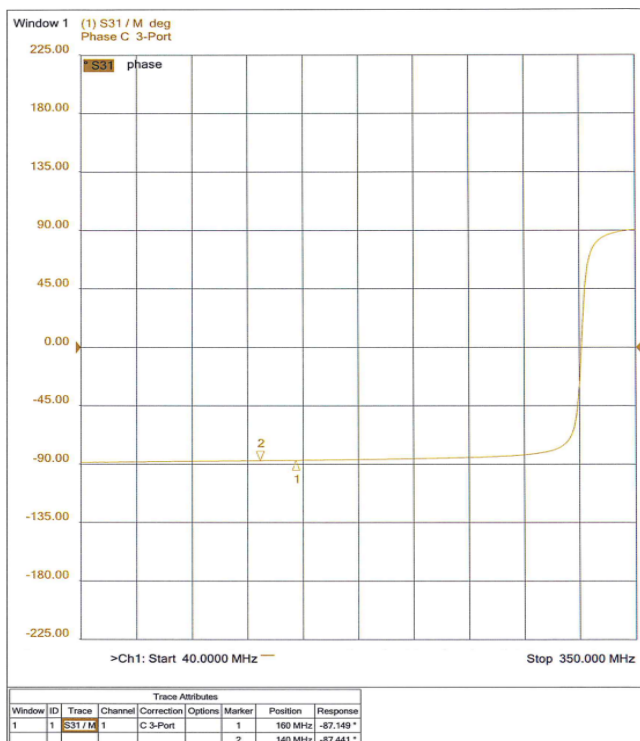


Figure 3: Phase at 160 MHz and 12.5" Length

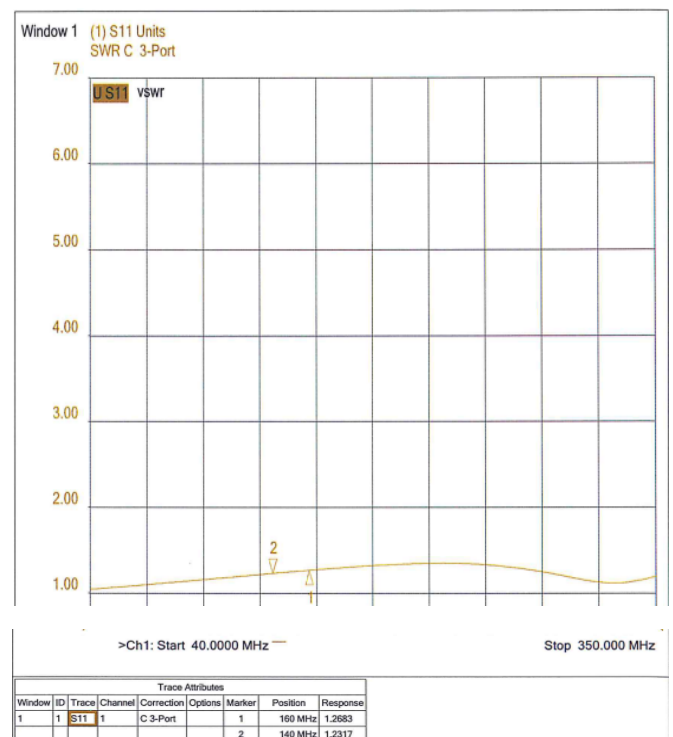
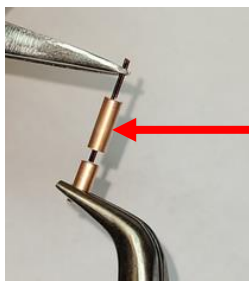


Figure 4: VSWR at 160 MHz and 12.5" Length



Work Instructions for Trimming Short VHF Compact Coupler

1. When the length of the VHF Compact coupler is less than 15mm, care must be taken not to dislodge the inner connector.
2. When removing the jacket of the trimmed end of the VHF Compact coupler, hold the inner conductor while force is applied to the trim to remove the trim. See below.



VHF Compact Coupler Main Body

3. DO NOT AT ANY TIME HOLD THE VHF COMPACT COUPLER MAIN BODY WHILE REMOVING THE TRIM END.
4. No force or torque shall be applied to the main body as this will force the main body to be detached from the inner conductor. And, as such, the inner conductor will no longer be secured.