

TNC In-Series Adapters

232, 8688 & 8678 Series

Description

Because TNC interfaces vary from maker to maker, compatibility must be verified before connectors of different specification types are mated. Mating different specification types degrades electrical performance and risks damage to connector interfaces. Maury application note 5A-031 discusses the most common TNC connectors and compatibility issues that arise if specification types are mixed. See also Maury data sheet 5E-057A to check the compatibility of your TNC connectors.

TNC Connector Descriptions

Maury offers three precision TNC connector designs:

MPC/TNC - Precision TNC connectors that mate with most commercially available TNC connectors and specifically with MIL-C-39012/26/27 test connectors or MIL-T-81490 connectors. This design is used in the 232A11/B11/C11 models and – with some modifications – in the 232A2/B2/C2 models.

Models 232A11/B11/C11 are designed per the Maury 5E-053 interface standard and are intended for general purpose precision test applications. These adapters are recommended for use with dielectrically loaded TNC interfaces. Because they are ideal for use in VNA application these adapters are provided in Maury 8650E series VNA calibration kits (see page 28).

Models 232A2/B2/C2 are designed per the Maury 5E-053A interface standard; an improved MPC/TNC version that is mating compatible with all common military and IEC specification TNC connectors. This includes MIL-STD-348A standard and test connectors (which replace MIL-C-39012 connectors), MIL-T-81490, and IEC 169-17 G0 and G2 connectors.

All 232 series adapters exhibit low VSWR when properly mated and are usable to 18 GHz.

AFTNC - Fully compliant with MIL-C-87104/2 "AFTNC" design standards. Mating dimensions are tightly controlled to ensure low VSWR from DC to 20 GHz. In this design, the male connector utilizes a solid outer conductor configuration to provide consistent measurement results. For long life and reliability, connector bodies are fabricated from solid



stainless steel, with gold-plated, heat treated beryllium copper contacts. See Maury data sheet 5E-056 for interface dimensions.

This design is used in the 8688A/B/C in-series adapters (listed below). For optimum performance, models 8688A/B/C should only be used with other MIL-C-87104/2 connectors.

TNCA - Fully compliant with MIL-STD 348A with tightly controlled interface dimensions to ensure low VSWR from DC to 20 GHz. This design is used in the 8678A/B/C in-series adapters listed below. In the 8678A/B/C models, the male connector utilizes a solid outer conductor configuration to provide consistent measurement results. When properly mated, these adapters exhibit low VSWR from DC to 20 GHz. When mated to TNC connectors governed by other specifications, reduced performance can be expected. Connector bodies are made from stainless steel, and contacts are made from gold-plated, heat treated beryllium copper to ensure long life and reliability. See Maury data sheet 5E-058 for interface dimensions.

Available Models

MODEL	ADAPTS		FREQUENCY RANGE (GHz) AND MAXIMUM VSWR				NOMINAL IMPEDANCE	INSERTION LENGTH	
	SIDE A	SIDE B				INCHES		(CM)	
232A11	TNC female ¹	TNC female ¹	DC	—	4.0	≤ 1.06	50 ohm	1.35	(3.43)
232B11	TNC male ¹	TNC male ¹	4.0	—	7.0	≤ 1.10	50 ohm	1.35	(3.43)
232C11	TNC female ¹	TNC male ¹	7.0	—	18.0	≤ 1.14	50 ohm	1.35	(3.43)
232A2	TNC female ²	TNC female ²	DC	—	4.0	≤ 1.06	50 ohm	1.35	(3.43)
232B2	TNC male ²	TNC male ²	4.0	—	7.0	≤ 1.10	50 ohm	1.35	(3.43)
232C2	TNC female ²	TNC male ²	7.0	—	18.0	≤ 1.14	50 ohm	1.35	(3.43)
8688A	AFTNC female ³	AFTNC female ³	DC	—	4.0	≤ 1.04	50 ohm	2.10	(5.33)
8688B	AFTNC male ³	AFTNC male ³	4.0	—	8.0	≤ 1.08	50 ohm	1.95	(4.95)
8688C	AFTNC female ³	AFTNC male ³	8.0	—	20.0	≤ 1.12	50 ohm	2.00	(5.08)
8678A	TNCA female ⁴	TNCA female ⁴	DC	—	4.0	≤ 1.04	50 ohm	2.10	(5.33)
8678B	TNCA male ⁴	TNCA male ⁴	4.0	—	8.0	≤ 1.08	50 ohm	1.95	(4.95)
8678C	TNCA female ⁴	TNCA male ⁴	8.0	—	20.0	≤ 1.12	50 ohm	2.00	(5.08)

¹ Precision TNC per Maury data sheet 5E-053.

² Precision TNC per Maury data sheet 5E-053A.

³ Precision TNC per Maury data sheet 5E-056.

⁴ Precision TNCA per Maury data sheet 5E-058.

Key Literature: Maury data sheets 2B-007, 2B-046.