

MILLIMETER-WAVE AUTOMATED TUNERS

33 TO 110 GHz

U.S. Patent No. 5,910,754

Features

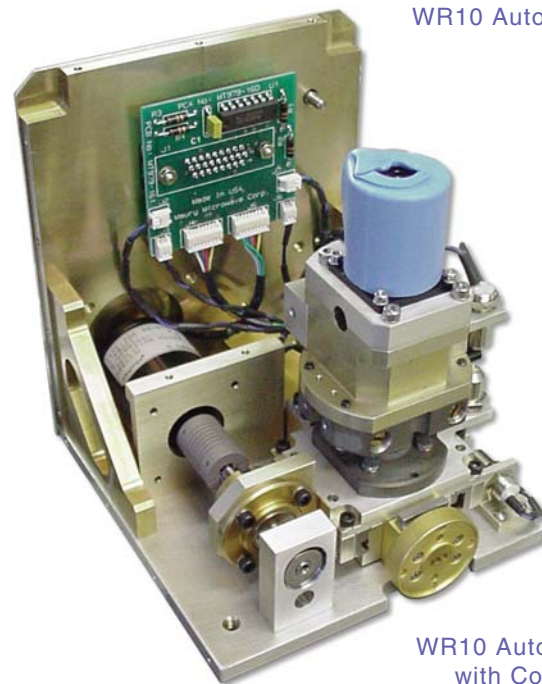
- Optimized for WR22 to WR10 Millimeter-Wave Noise and Power Applications
- High matching Range for GaN, InP, InGaP, GaAs, LDMOS, Si, and CMOS and BiCOMOS Device Characterization
- Simultaneous High Matching and Ultra-Low Vibration for High-Power On-Wafer Applications
- Ideal for Broad-Band Noise Parameter Extraction and Noise and large-Signal Nonlinear Model Verification
- DLL Environment for Automated Applications

Applications and Benefits Overview

The MT97x series of automated tuners are optimized for a broad class of microwave and mm-wave applications requiring flexibility, broad frequency coverage and ease of use. Based on Maury's patented ultra-high matching range technology, these waveguide high-performance tuners deliver high VSWR with superb accuracy and reliability. An integral component of Maury's Device Characterization Solutions, these PC-based automated tuners are controlled using Maury's family of Device Characterization Software tools including the ATS Version 4 (or later) interactive environment and the DLL-based measurement automation environment. The ATS interactive environment is an integrated device characterization environment providing comprehensive calibration and device characterization tools for power and noise optimization. The DLL environment enables direct interface with common programming tools such as Agilent VEE™, NI Labview™, MS Visual Basic & C/C++, and Mathworks MATLAB™. With a tuning resolution in excess of a million impedance points and accuracy better than -50 dB over the entire Smith Chart, Maury automated tuners give you the device characterization answers you need with the accuracy necessary to make engineering decisions with confidence. Typical applications include load-pull for CW, and pulsed or modulated WR22 to WR10 mm-wave applications such as on-wafer load-pull for Collision Avoidance RADAR, high-capacity



MT979A
WR10 Automated Tuner



MT979A
WR10 Automated Tuner
with Cover Removed

WLAN/WPAN/WMAN networks, military applications, low noise characterization and mm-wave noise and power model verification.

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Specifications

Frequency Range See **Available Models Table**
 VSWR Matching Range ... See **Available Models Table**
 Step Size (Probes)..... 0.5 microns¹
 Step Size (Carriage) 0.5 microns¹
 Flanges MPF10, MPF12, MPF15, or MPF22²

Accessories Provided

One (1) each MT982C12 tuner control cable and one (1) operating manual.

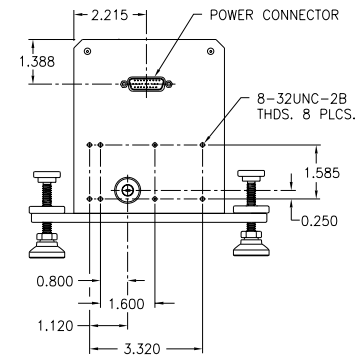
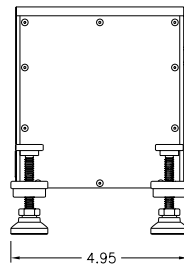
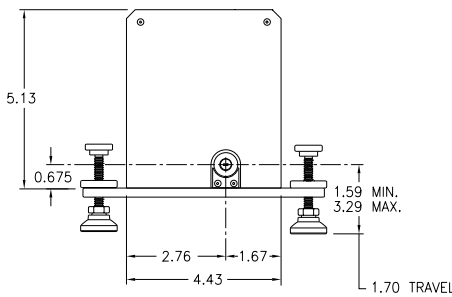
Recommended Accessories

MT1020C USB controller power hub
 MT900 Probe station integration

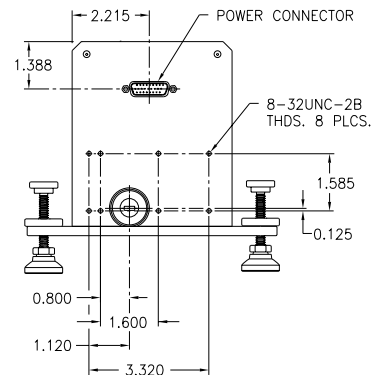
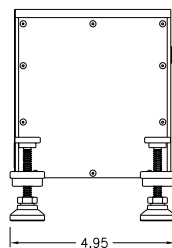
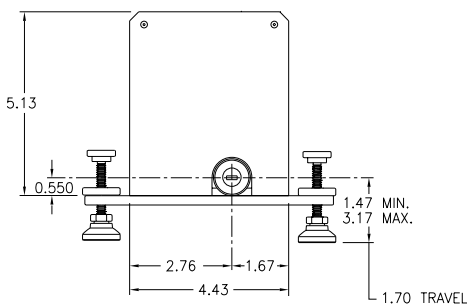
Available Models

Model	Frequency Range (GHz)	Matching Range		Power Capability ⁴	Vector Repeatability (Minimum)	ΔGt (Typical)	VSWR ⁵ (Maximum)	Insertion Loss ⁵ (Maximum)	Dissipative Loss ⁶ (Maximum)
		Minimum	Typical ³						
MT975A	33.0 — 50.0	30:1	40:1	20 W CW 200 W PEP	-50 dB	± 0.1 dB	1.04:1	0.45 dB	7dB
MT977A	50.0 — 75.0	20:1	35:1				1.06:1	0.65 dB	
MT978A	60.0 — 90.0								
MT979A	75.0 — 110.0								

Dimensions (Inches) for MT977A, MT978A & MT979A Tuners



Dimensions (Inches) for MT975A Tuners



¹ Based on 1/2 stepping the drive motors.
² Maury Precision Flanges (MPF) equiv. to IEEE WR10, WR12, WR15, WR19 or WR22 sizes.
³ Defined as the maximum VSWR within 20% of the peak VSWR.

⁴ Power rated at maximum VSWR.
⁵ With probes fully retracted.
⁶ At maximum VSWR.