

Anritsu envision : ensure

Atomic Clock

External Frequency Reference for Anritsu
Handheld Analyzers

MA25401A
10 MHz, 0 dBm



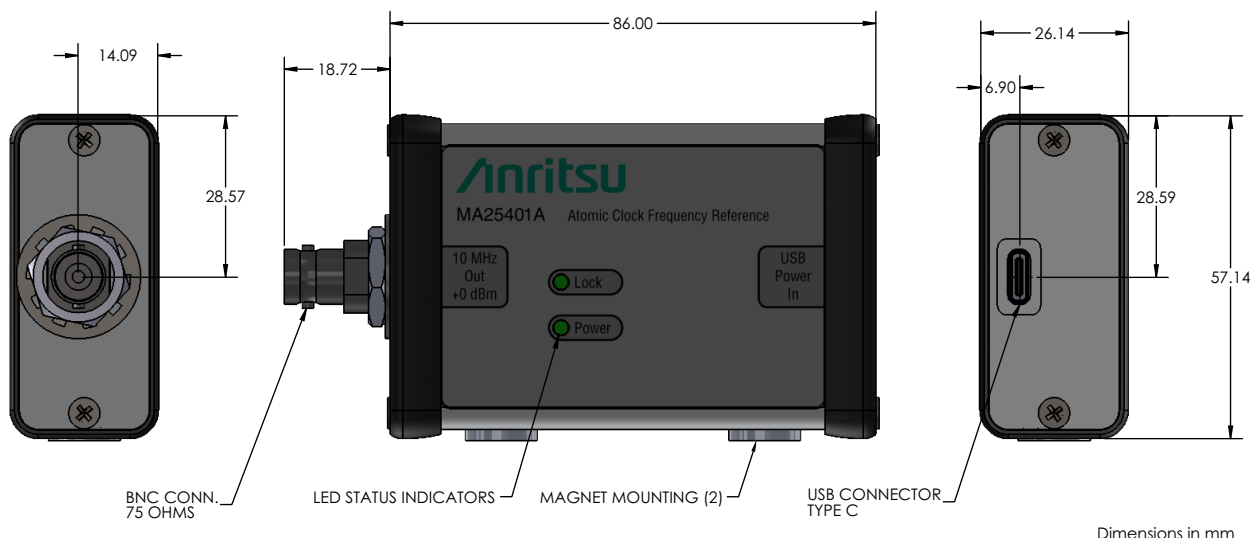
Introduction

With an extremely low power consumption of <200 mW, the MA25401A brings the accuracy and stability of an atomic clock frequency reference to Anritsu's handheld products. The MA25401A Atomic Clock Frequency Reference has short-term stability (Allan Deviation) of $3.0e-10$ @ $\tau = 1$ sec, typical long-term aging of $<9e-10$ per month, and maximum frequency change of $\pm 5e-10$ over an operating temperature range of -10 °C to 55 °C.

The MA25401A 10 MHz output may be used to synchronize an internal frequency reference to an external reference clock to within 5 ppb accuracy. A USB C interface is used for power.

Features and Benefits

- Power consumption <200 mW
- 10 MHz output for synchronization
- USB interface for power
- Short term stability (Allan Deviation) of $3.0e-10$ @ $\tau = 1$ sec



Dimensions in mm

MA25401A Atomic Clock Frequency Reference

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Definitions

	All specifications and characteristics apply under the following conditions, unless otherwise stated:
Warm-Up Time	180 seconds
Operating Temperature Range	-10 °C to 55 °C
Typical Performance	Typical specifications are not tested and are not warranted.
Calibration Cycle	Anritsu recommended calibration interval is 12 months.
	All specifications subject to change without notice. For the most current data sheet, please visit the Anritsu web site: www.anritsu.com

Electrical Specifications

RF Output		
Frequency		10 MHz
Maximum Frequency Offset at Shipment		$\pm 5e-9$
Maximum Frequency Deviation		$\pm 5e-10$ (change over operating temperature range) 0.5 °C per minute
Short-Term Stability (Allan Deviation, typical)		$\tau = 1 \text{ s } 3e-10$ $\tau = 10 \text{ s } 1e-10$ $\tau = 100 \text{ s } 3e-11$ $\tau = 1000 \text{ s } 1e-11$
Aging (typical)		<9e-10 per month <1e-8 per year
Amplitude		0 dBm, typical
Warm-up Time		<180 s

Power Input

Operating	<200 mW, max
Input voltage (VCC)	5.0 \pm 0.1 VDC

Environmental

Operating

Temperature Range	-10 °C to 55 °C
Magnetic Sensitivity	(≤ 2.0 Gauss) $\pm 9e-11$ /Gauss
Vibration	MIL-PRF-28800F, Class 2 Vibration Sinusoidal: 5 Hz -55 Hz Vibration Random: 10 Hz-500 Hz
Humidity	95 % RH at 30 °C, non-condensing

Storage and Transport

Temperature Range	-51 °C to 71 °C
Vibration	MIL-PRF-28800F, Class 2
Shock	30 g (1 ms half-sine)

Mechanical

Weight	<141 g (5 oz)
Size	104.72 mm x 57.14 mm x 26.14 mm

Regulatory Compliance

European Union	EMC Directive 2014/30/EU, EN 61326:2013 CISPR 11/EN 55011:2019+A1:2010 Class A Equipment IEC/EN 61000-4-2/3/4/6 Low Voltage Directive 2014/35/EU EN 61010-1:2010 RoHS Directive 2011/65/EU
Australia and New Zealand	RCM AS/NZS 4417:2012

Ordering Information

Models and Options

MA25401A	10 MHz, 0 dBm Atomic Clock Frequency Reference
MA25401A-0098	Standard Calibration to ISO17025 and ANSI/NCSL Z540-1. Includes calibration certificate.
MA25401A-0099	Premium Calibration to ISO17025 and ANSI/NCSL Z540-1. Includes calibration certificate, test report, and uncertainty data.

Included Accessories

11410-00976	Anritsu Information Card
3-806-387	15 cm (6 in) BNC(m) to BNC(m) cable
3-2000-1942	30 cm (12 in) USB A to USB C cable

Optional Accessories

2000-1938-R	SMB Plug to BNC Jack Adapter (required for use with MS2090A)
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Compatible Instruments

MS2090A	Field Master Pro™ Spectrum Analyzer
MS2720T	Spectrum Master™ Spectrum Analyzer
MS271xE	Spectrum Master™ Spectrum Analyzers
MT8220T	BTS Master™ Base Station Analyzer
MT8213E	Cell Master™ Base Station Analyzer

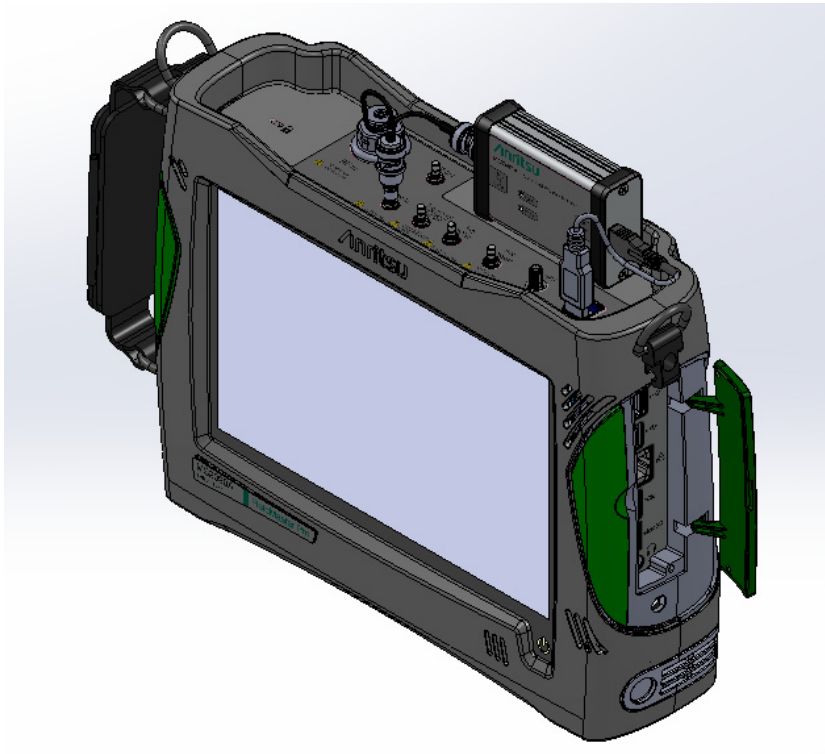
Installation on MS2090A

The MA25401A is magnetically mounted to the MS2090A top connector panel.

Simply place the module onto a flat spot on the instrument connector panel and verify a snug fit.

Plug in the USB cable for power and let the unit power-up and warm up for at least three minutes.

Attach the 10 MHz reference output from the device to the reference in port of the instrument.



MA25401A Atomic Clock Frequency Reference with MS2090A

Training at Anritsu

Anritsu has designed courses to help you stay up to date with technologies important to your job. For available training courses, visit: www.anritsu.com/training



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