



# CERTIFICATE OF ACCREDITATION

**The ANSI National Accreditation Board**

Hereby attests that

**Copper Mountain Technologies**  
**631 East New York Street**  
**Indianapolis IN 46202**

Fulfills the requirements of

**ISO/IEC 17025:2017**

and national standard

**ANSI/NCSL Z540-1-1994 (R2002)**

In the field of

**CALIBRATION**

This certificate is valid only when accompanied by a current scope of accreditation document.  
The current scope of accreditation can be verified at [www.anab.org](http://www.anab.org).

A handwritten signature in black ink, appearing to read 'R.D.L.', is positioned above a horizontal line.

R. Douglas Leonard Jr., VP, PILR SBU

Expiry Date: 01 July 2022

Certificate Number: AC-2060



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.  
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory  
quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

**SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017  
AND ANSI/NCSL Z540-1-1994 (R2002)**

**Copper Mountain Technologies**

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Indianapolis, IN 46202  
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**CALIBRATION**

Valid to: **July 1, 2022**

Certificate Number: **AC-2060**

**Electrical - RF/Microwave**

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Reflection Magnitude <sup>1</sup>			
DC to 10 GHz	(0 to 0.4) lin (0.4 to 0.6) lin (0.6 to 0.8) lin (0.8 to 1) lin	0.004 0.005 0.006 0.008	C1220ET Vector Network Analyzer, 05CK010-150 and 03CK010-150 Calibration Kits
(10 to 20) GHz	(0.0 to 0.4) lin (0.4 to 0.6) lin (0.6 to 0.8) lin (0.8 to 1) lin	0.006 0.007 0.009 0.012	
Reflection Phase			
DC to 10 GHz	(-180 to +180) °	(0.01 to 0.02) lin (0.02 to 0.05) lin (0.05 to 0.10) lin (0.10 to 0.20) lin (0.20 to 1.00) lin	C1220ET Vector Network Analyzer, 05CK010-150 and 03CK010-150 Calibration Kits
(10 to 20) GHz		(0.01 to 0.02) lin (0.02 to 0.05) lin (0.05 to 0.10) lin (0.10 to 0.20) lin (0.20 to 1.00) lin	
		10 ° 4 ° 2 ° 1 ° 0.5 °  15 ° 6 ° 3 ° 2 ° 1 °	

**Electrical - RF/Microwave**

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Transmission Magnitude DC to 18 GHz (18 to 20) GHz	(-60 to 0) dB	0.05 dB	C1220ET Vector Network Analyzer, 05CK010-150 and 03CK010-150 Calibration Kits
Transmission Phase (-60 to 0) dB DC to 18 GHz (18 to 20) GHz		0.05 dB	
	(-180 to +180) °	0.5 °	R&S NRP-Z52 Thermal Power Sensor
		0.5 °	
RF Absolute Power – Measure		0 dBm DC to 8 GHz (8 to 33) GHz (-20 to +20) dBm DC to 33 GHz	

**Time and Frequency**

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Frequency - Source	10 MHz	100 nHz/Hz	Agilent 53181A, opt. 010 Counter
Frequency - Measure	1 Hz to 26.5 GHz	100 nHz/Hz	Agilent 53181A, opt. 010 Counter, Agilent E4407B Spectrum Analyzer

Calibration and Measurement Capability (CMC) is expressed in terms of the measurement parameter, measurement range, expanded uncertainty of measurement and reference standard, method, and/or equipment. The expanded uncertainty of measurement is expressed as the standard uncertainty of the measurement multiplied by a coverage factor of 2 ( $k=2$ ), corresponding to a confidence level of approximately 95%.

Notes:

1. Unitless linear measure.
2. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-2060.



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