



The American Association for Laboratory Accreditation

World Class Accreditation

Accredited Laboratory

A2LA has accredited

FISCHER CUSTOM COMMUNICATIONS, INC.

Torrance, CA

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General Requirements for the Competence of Testing and Calibration Laboratories*. This laboratory also meets the requirements of ANSI/NCSL Z540-1-1994 and any additional program requirements in the field of calibration. 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 8 January 2009*).

Presented this 25th day of March 2010.





Peter Meyer

President & CEO
For the Accreditation Council
Certificate Number 2393.01
Valid to February 29, 2012

For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005
& ANSI/NCSL Z540-1-1994

FISCHER CUSTOM COMMUNICATIONS, INC
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CALIBRATION

Valid To: February 29, 2012

Certificate Number: 2393.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations¹:

I. Electrical – RF & Microwave

Parameter/Equipment	Range	CMC ² (±)	Comments
RF Current Monitor Probe – Transfer Impedance	10 Hz to 4000 MHz	0.1 dB	Agilent E 5071C, Agilent 85032F CISPR 16-1-2
RF Bulk Current Injection Probe – Insertion Loss	10 Hz to 4000 MHz	0.12 dB	Agilent E 5071C, Agilent 85032F DO-160 D, E, F, Mil Std 461 D, E, F, EN 61000-4-6, IEC 61000-4-6
Current Probe/Injection Probe Calibration Fixture – VSWR Insertion Loss	10 Hz to 4000 MHz 10 Hz to 4000 MHz	0.008 (linear) 0.14 dB	Agilent E 5071C, Agilent 85032F DO-160F, Mil Std 461 F

Parameter/Equipment	Range	CMC ^{2,3} (\pm)	Comments
Absorbing Clamp – Insertion Loss	(30 to 1000) MHz	0.2 dB	Agilent E 5071C, Agilent 85032F CISPR 16-1-3
EM Injection Clamp – Insertion Loss	10 kHz to 1 GHz	0.16 dB	Agilent E 5071C, Agilent 85032F EN 61000-4-6, IEC 61000-4-6
CMISN – Impedance Phase Common Mode Decoupling	150 kHz to 30 MHz	2 % 1.2° 0.5 dB	Agilent E 5071C, Agilent 85032F CISPR 22:Edition 5, 2005, CISPR 16-1-2
150-50 Ω Adapter CDN/BCI/EM Clamp – Insertion Loss	10 kHz to 1 GHz	0.42 dB	Agilent E 5071C, Agilent 85032F EN 61000-4-6, IEC 61000-4-6
Clamp-On DeCoupling Network (CMAD) Ferrite Tube Type – Insertion Loss 150 Ω Application 50 Ω Application	150 kHz to 1 GHz (30 to 1) GHz	0.44 dB 0.44 dB	Agilent E 5071C, Agilent 85032F EN 61000-4-6, IEC 61000-4-6, CISPR 22: Ed. 1- Amd. 1, CISPR 16- 1.4: Ed. 2-Amd 1

Parameter/Equipment	Range	CMC ^{2,3} (±)	Comments
CDN –			
Impedance	9 kHz to 300 MHz	2 %	Agilent E 5071C, Agilent 85032F EN 61000-4-6, IEC 61000-4-6, IEC 61000-4-16, CISPR 15
Coupling Factor	9 kHz to 300 MHz	0.54 dB	
Insertion Loss	9 kHz to 300 MHz	0.54 dB	
Voltage Division Factor	9 kHz to 300 MHz	0.18 dB	
LISN –			
Impedance	1 kHz to 400 MHz	1 %	Agilent E 5071C, Agilent 85032F ANSI C63.4, CISPR 16-1-2, DO 160 D, E, F, Mil Std 461 C, D, E, F, Def Stan 59-41, CISPR 25, ISO 7637-2
Insertion Loss Correction Factor Insertion Loss “T” Type		0.16 dB 0.16 dB	
Phase		1.2°	
Isolation (Mains Terminal Receiver Port)		0.18 dB	
BAN –			
Impedance	250 kHz to 500 MHz	3.2 %	HP 8751A, Maury Microwave 8550Q SAE J1113-3, DC 10614
Insertion Loss	250 kHz to 500 MHz	0.18 dB	
TLISN –			
Impedance	150 kHz to 30 MHz	2.4 %	Agilent E 5071C, Agilent 85032F CISPR 22, Edition 5, 2005, CISPR 16-1-2, ITU-T G117, ITU-T 0.9
Voltage Division Factor	150 kHz to 30 MHz	0.18 dB	
Phase	150 kHz to 30 MHz	1.2°	
Decoupling of Common Mode Disturbance	150 kHz to 30 MHz	2 dB	
LCL (Longitudinal Conversion Loss)	150 kHz to 30 MHz	0.2 dB	

Parameter/Equipment	Range	CMC ^{2,3} (±)	Comments
TEM Cell/Stripline/Parallel Plate – Insertion Loss VSWR	DC to 3 GHz DC to 3 GHz	0.16 dB 0.004 (linear)	Agilent E 5071C, Agilent 85032F SAE J1752/3
F-CVP-1 – Voltage Division Factor	100 Hz to 100 MHz	0.17 dB	Agilent E 5071C, Agilent 85032F CISPR 22, Edition 5, 2005, CISPR 16-1-2, Annex G
FCC-TG 115A / EFT – Rise Time Pulse Width	1 ns 50 ns	240 ps 240 ps	Tek TDS 5104B MIL-STD- 461 D, E, F
Attenuator, Terminations and Cabling Characteristic – Transmission Coefficient (0 to 60) dB	9 kHz to 8.5 GHz	0.1 dB + EUT Mismatch	Agilent E 5071C Agilent 85032F
Attenuator, Terminations and Cabling Characteristic – Reflection Coefficient	9 kHz to 8.5 GHz	0.004 (linear)	Agilent E 5071C Agilent 85032F
Magnetic Loop – Coil Factor	(50 to 60) Hz	3 %	Enertech EMDEX II, Fluke 45 IEC 61000-4-8, AMEC 661

¹ This laboratory offers commercial calibration service and field calibration service.

² Calibration and Measurement Capability (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. Calibration and Measurement Capabilities represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

³ In the statement of CMC, all percentages are to be read as percent of reading unless noted otherwise.