An Axiometrix Solutions Brand

Calibration Services
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ACCREDITED
Calibration Cert #2527.01

Calibration Report

Accredited Calibration

Report Number: XXXXXXXXX-XXXXXX-X

Model: APx511 **Data Type:** **AS SHIPPED, NEW** **Program:**
Serial Number: XXXXXXXXX **Date of Cal:** 2-Apr-2026 APxCalibration.exe 24.01

Internal Module Status and Data			
AP Name	***Description***	***Serial No.***	***Revision***
FXAN	Main Board	XXXXX	702

Explanatory notes to the last three columns of the calibration report

"MU" - The column labeled "MU" lists the expanded measurement uncertainties derived from equipment specifications, repeatability data, and other significant sources. These are stated at a minimum confidence of 95% using a coverage factor k=2 (except as appropriate) following the recommendations in ISO/IEC 98-3 *Guide to the expression of uncertainty in measurement (GUM:1995)* , BIPM JCGM 100:2008, and NIST Technical Note 1297.

"TUR" - The column labeled "**TUR**" lists the test uncertainty ratio calculated by dividing the lesser of the lower and upper reading tolerances by the 95% expanded measurement uncertainty. An entry of "**na**" indicates [1] the specified limits are one-sided, or [2] the performance characteristic is not accredited.

"Result" - The column labeled "Result" lists color-coded assessments that the observed characteristic is within its specified limits of performance. There are three possible indications:

pass -- *The READING is within the specified upper and lower limits reduced by guard-bands equal to the 95% expanded measurement uncertainty. The probability or risk of false acceptance is very low, typically <0.2%.*

uncertain -- *The READING is within the specified upper and lower limits, but it is close to one of the limits by an amount that is less than the 95% expanded measurement uncertainty. The probability or risk of false acceptance is elevated.*

>> FAIL << -- *The READING is outside of the specified limit range.*

Accredited measurements listed in the following pages correlate to Audio Precision's Scope of Accreditation as noted:

note 1 - Frequency Measurement
note 2 - AC Voltage Measurement
note 3 - AC Flatness Measurement
note 4 - Resistance Measurement
note 5 - DC Voltage Measurement
note 6 - AC Voltage Source and AC Flatness Source for testing AC Measurement Equipment
note 7 - DC Voltage Source for testing DC Measurement Equipment

This report is valid only when accompanied by a signed Certificate of Calibration.

Uncertainty Calcs: 201804

Item	Setting(s)	Lower Limit	READING	Upper Limit	MU	TUR	Result
SPEAKER AMPLIFIER CHARACTERISTICS							
[1] Speaker Output Frequency Accuracy (Hz) - *note 1*							
	10 kHz	9999.9700	**9999.9861**	10000.0300	0.0064	4.7	**pass**
[2] Frequency Measurement Accuracy (uHz/Hz) - *note 1*							
	10 kHz	-3.00	**1.39**	3.00	0.64	4.7	**pass**
[3] Speaker Ouptut Amplitude Accuracy, no load, 1 kHz (Volts, mVolts) - *note 2*							
	5.700 V	5.6673	**5.7008**	5.7329	0.0016	≥10	**pass**
	2.000 V	1.9885	**2.0012**	2.0115	0.0007	≥10	**pass**
	0.500 V	0.49713	**0.50007**	0.50289	0.00018	≥10	**pass**
	100 mV	99.426	**100.012**	100.577	0.038	≥10	**pass**
	12 mV	11.931	**12.005**	12.069	0.013	5.3	**pass**
[4] Speaker Output Flatness, 8 Ohm load, 1.15 Vrms (dB) - *note 3*							
	100 Hz	-0.0500	**-0.0024**	0.0500	0.0014	≥10	**pass**
	1 kHz	-0.0500	**-0.0001**	0.0500	0.0013	≥10	**pass**
	10 kHz	-0.0500	**0.0078**	0.0500	0.0020	≥10	**pass**
	20 kHz	-0.1000	**0.0358**	0.1000	0.0021	≥10	**pass**
[5] Speaker Voltage Measurement Error, no load, 1 kHz (Volts, mVolts) - *note 2*							
	5.700 V	-0.0327	**-0.0002**	0.0329	0.0020	≥10	**pass**
	2.000 V	-0.0115	**0.0001**	0.0115	0.0009	≥10	**pass**
	0.500 V	-0.00287	**0.00003**	0.00289	0.00018	≥10	**pass**
	100 mV	-0.574	**0.011**	0.577	0.038	≥10	**pass**
	12 mV	-0.069	**-0.003**	0.069	0.006	≥10	**pass**
[6] Speaker Voltage Measurement Flatness, 8 Ohm load, 1.15 Vrms (dB) - *note 3*							
	100 Hz	-0.0500	**0.0000**	0.0500	0.0020	≥10	**pass**
	1 kHz	-0.0500	**-0.0001**	0.0500	0.0020	≥10	**pass**
	10 kHz	-0.0500	**0.0007**	0.0500	0.0023	≥10	**pass**
	20 kHz	-0.1000	**0.0023**	0.1000	0.0023	≥10	**pass**
TELECOIL AMPLIFIER CHARACTERISTICS							
[7] Telecoil Ouptut Amplitude Accuracy, 4 Ohm load, 1 kHz (mAmps) - note 2							
	110 mA	108.74	**110.07**	111.27	0.26	4.8	**pass**
	50 mA	49.43	**50.06**	50.58	0.12	4.8	**pass**
	20 mA	19.771	**20.014**	20.232	0.049	4.7	**pass**
	3 mA	2.9657	**3.0028**	3.0347	0.0074	4.6	**pass**
[8] Telecoil Output Flatness, 4 Ohm load, 110 mAmps (dB) - note 3							
	100 Hz	-0.0500	**-0.0019**	0.0500	0.0014	≥10	**pass**
	1 kHz	-0.0500	**0.0000**	0.0500	0.0013	≥10	**pass**
	10 kHz	-0.0500	**0.0062**	0.0500	0.0020	≥10	**pass**
	20 kHz	-0.1000	**0.0294**	0.1000	0.0021	≥10	**pass**
[9] Telecoil Current Measurement Error, 4 Ohm load, 1 kHz (mAmps) - note 2							
	110 mA	-1.26	**-0.15**	1.27	0.26	4.8	**pass**
	50 mA	-0.57	**-0.06**	0.58	0.12	4.8	**pass**
	20 mA	-0.229	**-0.024**	0.232	0.049	4.7	**pass**
	3 mA	-0.0343	**-0.0039**	0.0347	0.0074	4.6	**pass**
[10] Telecoil Current Measurement Flatness, 4 Ohm load, 110 mAmps (dB) - note 3							
	100 Hz	-0.0500	**0.0003**	0.0500	0.0020	≥10	**pass**
	1 kHz	-0.0500	**0.0000**	0.0500	0.0020	≥10	**pass**
	10 kHz	-0.0500	**0.0028**	0.0500	0.0023	≥10	**pass**
	20 kHz	-0.1000	**0.0100**	0.1000	0.0023	≥10	**pass**

Item	Setting(s)	Lower Limit	READING	Upper Limit	MU	TUR	Result
BATTERY SIMULATOR CHARACTERISTICS							
[11] Battery Voltage Generation Accuracy, no load (Volts) - *note 5*							
	2.048 V	2.0330	**2.0462**	2.0630	0.0004	≥10	**pass**
	1.3 V	1.2850	**1.3002**	1.3150	0.0003	≥10	**pass**
	0.5 V	0.4850	**0.5004**	0.5150	0.0001	≥10	**pass**
[12] Battery Voltage Measurement Error, no load (Volts) - *note 5*							
	2.048 V	-0.0168	**-0.0002**	0.0168	0.0012	≥10	**pass**
	1.3 V	-0.0116	**-0.0001**	0.0116	0.0008	≥10	**pass**
	0.5 V	-0.0045	**0.0000**	0.0045	0.0003	≥10	**pass**
[13] Battery Current Measurement Error, 62 Ohm load (mAmps) - *note 5*							
	30.00 mA	-1.50	**0.11**	1.50	0.13	≥10	**pass**
	3.000 mA	-0.150	**0.011**	0.150	0.013	≥10	**pass**
	0.3000 mA	-0.015	**0.001**	0.015	0.001	≥10	**pass**
MICROPHONE INPUT CHARACTERISTICS							
[14] DC Measurement Accuracy (Volts, mVolts) - *note 7*							
	+24 V	23.807	**23.993**	24.193	0.014	≥10	**pass**
	+8.0 V	7.9360	**7.9978**	8.0640	0.0048	≥10	**pass**
	+2.5 V	2.4800	**2.4993**	2.5200	0.0015	≥10	**pass**
	+800 mV	793.40	**799.82**	806.60	0.48	≥10	**pass**
	+250 mV	247.25	**249.93**	252.75	0.15	≥10	**pass**
	0 mV	-1.000	**0.019**	1.000	0.046	≥10	**pass**
	-250 mV	-252.75	**-249.88**	-247.25	0.15	≥10	**pass**
	-800 mV	-806.60	**-799.76**	-793.40	0.48	≥10	**pass**
	-2.5 V	-2.5200	**-2.4993**	-2.4800	0.0015	≥10	**pass**
	-8 V	-8.0640	**-7.9979**	-7.9360	0.0048	≥10	**pass**
	-24 V	-24.193	**-23.995**	-23.807	0.014	≥10	**pass**
[15] Level Meter AC Accuracy, 1 kHz (Volts, mVolts) - *note 6*							
	16.9 V	16.803	**16.886**	16.998	0.009	≥10	**pass**
	10 V	9.943	**9.992**	10.058	0.006	9.7	**pass**
	5 V	4.9713	**4.9959**	5.0289	0.0029	≥10	**pass**
	2 V	1.9885	**1.9984**	2.0115	0.0011	≥10	**pass**
	500 mV	497.13	**499.61**	502.89	0.29	10.0	**pass**
	200 mV	198.85	**199.84**	201.15	0.11	≥10	**pass**
	5 mV	4.9713	**4.9966**	5.0289	0.0031	9.4	**pass**
[16] Level Meter AC Flatness, 1.15 Vrms (dB) - *note 6*							
	100 Hz	-0.0500	**-0.0171**	0.0500	0.0020	≥10	**pass**
	1 kHz	-0.0500	**-0.0001**	0.0500	0.0020	≥10	**pass**
	10 kHz	-0.0500	**0.0006**	0.0500	0.0023	≥10	**pass**
	20 kHz	-0.1000	**0.0023**	0.1000	0.0023	≥10	**pass**

Item	Setting(s)	Lower Limit	READING	Upper Limit	MU	TUR	Result
NON-ACCREDITED CHARACTERISTICS							
[17] Residual Noise, Microphone Input, 20k BW (uVolts) - non-accredited, self-test							
input shorted		0	**1.12**	1.40	0.06	na	**pass**
[18] Sine THD+N (dB), 20 kHz BW - non-accredited, self-test							
Speaker Voltage,	100 Hz	-999	**-106.9**	-80.0	1.0	na	**pass**
Maximum output	5 kHz	-999	**-91.8**	-80.0	1.0	na	**pass**
into 8 Ohms	20 kHz	-999	**-106.6**	-80.0	1.5	na	**pass**
Telecoil Current,	100 Hz	-999	**-109.2**	-80.0	1.0	na	**pass**
110mA output	5 kHz	-999	**-97.6**	-80.0	1.0	na	**pass**
into 4 Ohms	20 kHz	-999	**-109.7**	-80.0	1.5	na	**pass**
Speaker Output	100 Hz	-999	**-100.8**	-80.0	1.0	na	**pass**
into Microphone	5 kHz	-999	**-100.5**	-80.0	1.0	na	**pass**
Input, 1Vrms	20 kHz	-999	**-100.2**	-80.0	1.5	na	**pass**
[19] Residual SMPTE IMD (%), 4:1, 100Hz:7kHz - non-accredited, self-test							
Speaker	Maximum Output	0%	**0.00202%**	0.01000%	0.00030%	na	**pass**
Telecoil	110 mA	0%	**0.00076%**	0.01000%	0.00030%	na	**pass**
Microphone	1 Vrms	0%	**0.00069%**	0.01000%	0.00030%	na	**pass**
[20] Residual MOD IMD (%), 4:1, 100Hz:7kHz - non-accredited, self-test							
Speaker	Maximum Output	0%	**0.00461%**	0.01000%	0.00020%	na	**pass**
Telecoil	110 mA	0%	**0.00285%**	0.01000%	0.00020%	na	**pass**
Microphone	1 Vrms	0%	**0.00051%**	0.01000%	0.00020%	na	**pass**
[21] Residual DFD IMD (%), mean 8.0kHz, diff 500Hz - non-accredited, self-test							
Speaker	Maximum Output	0%	**0.00129%**	0.01000%	0.00020%	na	**pass**
Telecoil	110 mA	0%	**0.00082%**	0.01000%	0.00020%	na	**pass**
Microphone	1 Vrms	0%	**0.00010%**	0.01000%	0.00020%	na	**pass**

END OF REPORT