Cameron Health, Inc.

Q-Tech Programmer 2020

June 17, 2008

Report No. CAME0007 Rev. 2

Report Prepared By



www.nwemc.com 1-888-EMI-CERT

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Certificate of Test

Issue Date: June 17, 2008 Cameron Health, Inc. Model: Q-Tech Programmer 2020

Emissions					
Test Description	Specification	Test Method	Pass/Fail		
Field Strength of Radiated Emissions	FCC 95I:2007	ANSI/TIA/EIA-603-C-2004	Pass		
Field Strength of Fundamental	FCC 951:2007	ANSI/TIA/EIA-603-C-2004	Pass		
Occupied Bandwidth	FCC 951:2007	ANSI/TIA/EIA-603-C-2004	Pass		
Emission Mask	FCC 95I:2007	ANSI/TIA/EIA-603-C-2004	Pass		
Frequency Stability	FCC 951:2007	ANSI/TIA/EIA-603-C-2004	Pass		
Radiated Emissions	FCC 15.209:2007	ANSI C63.4:2003	Pass		

Modifications made to the product See the Modifications section of this report

Test Facility

The measurement facility used to collect the data is located at:

Northwest EMC, Inc. 41 Tesla Ave. Irvine, CA 92618

Phone: (503) 844-4066

Fax: 844-3826

This site has been fully described in a report filed with and accepted by the FCC (Federal Communications Commission) and Industry Canada (Site Filing #2834B).

Approved By: Don Facteau, IT Manager

NVLAP Lab Code: 200676-0

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America.

Product compliance is the responsibility of the client, therefore the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. This Report may only be duplicated in its entirety. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test.



Revision Number	Description	Date	Page Number
01	Replaced Field Strength of Radiated Emissions data	6-26-08	16-24
01	Replaced Field Strength of Fundamental data	6-26-08	30-35
01	Replaced Occupied Bandwidth data	6-26-08	36-40
02	Deleted statement from test description about tissue substitute material	9-10-08	25
02	Removed two bandwidth results from data that were not needed	9-10-08	37
02	Updated the assigned frequency to 40.5108 MHz	9-10-08	42-43



FCC: Accredited by NVLAP for performance of FCC radio, digital, and ISM device testing. Our Open Area Test Sites, certification chambers, and conducted measurement facilities have been fully described in reports filed with the FCC and accepted by the FCC in letters maintained in our files. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by the FCC as a Telecommunications Certification Body (TCB). This allows Northwest EMC to certify transmitters to FCC specifications in accordance with 47 CFR 2.960 and 2.962.

NVLAP: Northwest EMC, Inc. is accredited under the United States Department of Commerce, National Institute of Standards and Technology, and National Voluntary Laboratory Accreditation Program for satisfactory compliance with the requirements of ISO/IEC 17025 for Testing Laboratories. The NVLAP accreditation encompasses Electromagnetic Compatibility Testing in accordance with the European Union EMC Directive 2004/108/EC, and ANSI C63.4. Additionally, Northwest EMC is accredited by NVLAP to perform radio testing in accordance with the European Union R&TTE Directive 1999/5/EEC, the requirements of FCC, and the RSS radio standards for Industry Canada.

Industry Canada: Accredited by NVLAP for performance of Industry Canada RSS and ICES testing. Our Open Area Test Sites and certification chambers comply with RSS 212, Issue 1 (Provisional) and have been filed with Industry Canada and accepted. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by NIST and recognized by Industry Canada as a Certification Body (CB) per the APEC Mutual Recognition Arrangement (MRA). This allows Northwest EMC to certify transmitters to Industry Canada technical requirements.

CAB: Designated by NIST and validated by the European Commission as a Conformity Assessment Body (CAB) to conduct tests and approve products to the EMC directive and transmitters to the R&TTE directive, as described in the U.S. - EU Mutual Recognition Agreement.

TÜV Product Service: Included in TUV Product Service Group's Listing of Recognized Laboratories. It qualifies in connection with the TUV Certification after Recognition of Agent's Testing Program for the product categories and/or standards shown in TUV's current Listing of CARAT Laboratories, available from TUV. A certificate was issued to represent that this laboratory continues to meet TUV's CARAT Program requirements. Certificate No. USA0604C.

TÜV Rheinland: Authorized to carryout EMC tests by order and under supervision of TÜV Rheinland. This authorization is based on "Conditions for EMC-Subcontractors" of November 1992.



NVLAP LAB CODE 200761-0















NEMKO: Assessed and accredited by NEMKO (Norwegian testing and certification body) for European emissions and immunity testing. As a result of NEMKO's laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification (Authorization No. ELA 119).

Australia/New Zealand: The National Association of Testing Authorities (NATA), Australia has been appointed by the ACA as an accreditation body to accredit test laboratories and competent bodies for EMC standards. Accredited test reports or assessments by competent bodies must carry the NATA logo. Test reports made by an overseas laboratory that has been accredited for the relevant standards by an overseas accreditation body that has a Mutual Recognition Agreement (MRA) with NATA are also accepted as technical grounds for product conformity. The report should be endorsed with the respective logo of the accreditation body (NVLAP).

VCCI: Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. (Registration Numbers. - Hillsboro: C-1071, R-1025, C-2687, T-289, and R-2318, Irvine: R-1943, C-2766, and T-298, Sultan: R-871, C-1784, and T-294).

BSMI: Northwest EMC has been designated by NIST and validated by C-Taipei (BSMI) as a CAB to conduct tests as described in the APEC Mutual Recognition Agreement (US0017). License No.SL2-IN-E-1017.

GOST: Northwest EMC, Inc. has been assessed and accredited by the Russian Certification bodies Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC, to perform EMC and Hygienic testing for Information Technology Products. As a result of their laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification

MIC: Northwest EMC, Inc is a CAB designated by MRA partners and recognized by Korea. (Assigned Lab Numbers: Hillsboro: US0017, Irvine: US0158, Sultan: US0157)

> SCOPE For details on the Scopes of our Accreditations, please visit: http://www.nwemc.com/accreditations/





BSMI







NEMKO



Revision 03/18/05





California – Orange County Facility Labs OC01 – OC13

41 Tesla Ave. Irvine, CA 92618 (888) 364-2378 Fax: (503) 844-3826





Oregon – Evergreen Facility Labs EV01 – EV11

22975 NW Evergreen Pkwy. Suite 400 Hillsboro, OR 97124 (503) 844-4066 Fax: (503) 844-3826





Washington – Sultan Facility Labs SU01 – SU07

14128 339th Ave. SE Sultan, WA 98294 (888) 364-2378



Rev 11/17/06

Party Requesting the Test

Company Name: Cameron Health, Inc.		
Address:	229 Avenida Fabricante	
City, State, Zip:	San Clemente, CA 92672	
Test Requested By:	Paul Erlinger	
Model:	Q-Tech Programmer 2020	
First Date of Test:	June 10, 2008	
Last Date of Test:	June 23, 2008	
Receipt Date of Samples:	June 10, 2008	
Equipment Design Stage:	Production	
Equipment Condition:	No Damage	

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test): A MICS programmer for use with a low-power MICS transmitter.

Testing Objective:

Seeking FCC authorization under FCC 95I as a MICS programmer.

EUT Photo



CONFIGURATION 1 CAME0007

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Q-Tech Programmer 2020	Cameron Health, Inc	2020	2020-A100118

Peripherals in test setup boundary					
Description Manufacturer Model/Part Number Serial Number					
Power Supply	ELPAC Power Systems	MW2415	002173		
Wand Antenna	Cameron Health, Inc.	4510	None		

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Cable	No	1.7m	No	Power Supply	AC Mains
DC Cable	No	1.7m	No	Power Supply	Q-Tech Programmer 2020
Wand Antenna	No	3m	No	Q-Tech Programmer 2020	Wand Antenna
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 2 CAME0007

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Q-Tech Programmer 2020	Cameron Health, Inc	2020	2020-A100118

Peripherals in test setup boundary					
Description	Manufacturer Model/Part Number Serial Number				
Power Supply	ELPAC Power Systems	MW2415	002173		

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Cable	No	1.7m	No	Power Supply	AC Mains
DC Cable	No	1.7m	No	Power Supply	Q-Tech Programmer 2020
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					



Modifications

	Equipment modifications						
Item	Date	Test	Modification	Note	Disposition of EUT		
1	6/10/2008	Field Strength of Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.		
2	6/10/2008	Field Strength of Fundamental	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.		
3	6/11/2008	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.		
4	6/11/2008	Emission Mask	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.		
5	6/12/2008	Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.		
6	6/23/2008	Frequency Stability	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.		

NORTHWEST

FCC 15.209

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION Standby Mode.

Standby Mode.

MODE USED FOR FINAL DATA

Standby Mode.

POWER SETTINGS INVESTIGATED

120VAC/60Hz

POWER SETTINGS USED FOR FINAL DATA

120VAC/60Hz

FREQUENCY RANGE INV	ESTIGATED		
Start Frequency	30 MHz	Stop Frequency	12.8 GHz

403.5 MHz

CLOCKS AND OSCILLATORS

SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AOE	10/13/2006	24
Antenna, Horn	ETS	3160-07	AHR	NCR	0
OC 10 Cables a, b, c, I Cables			000	2/2/2008	13
Pre-Amplifier	Miteq	AMF-4D-010120-30-10P-1	AOP	2/2/2008	13
Antenna, Horn	EMCO	3115	AHB	8/31/2007	24
OC10 cables a,b,c,e,f Horn Cables			OCJ	2/2/2008	13
Antenna, Biconilog	EMCO	3142	AXJ	2/25/2008	24
OC10 cables a,b,c,d Bilog			OCH	1/7/2008	13
Pre-Amplifier	Miteq	AM-1616-1000	AOM	1/7/2008	13
Spectrum Analyzer	Agilent	E4446A	AAQ	12/14/2007	13

MEASUREMENT BANDWIDTHS

MEAGONEMEN	DANDINDING			
	Frequency Range	Peak Data	Quasi-Peak Data	Average Data
	(MHz)	(kHz)	(kHz)	(kHz)
	0.01 - 0.15	1.0	0.2	0.2
	9.0	9.0		
	30.0 - 1000	100.0	120.0	120.0
	Above 1000	1000.0	N/A	1000.0
	Measurements were made us	sing the bandwidths and deter	ctors specified. No video filte	r was used

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for mid channel receive frequency. For this configuration, the spectrum was scanned throughout the specified range. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes.

N	ORTHWEST			E(C_15	200			:Т			P	SA 2007.05.07 EMI 2006 4 26
	EMC	O Test D			50 13	209	DAT				ords Or '	CANESS	
Se	EUT: rial Number:	Q-Tech Pro	ogrammer 118	2020						W	ork Order: Date:	CAME000 06/12/08	7
	Customer:	Cameron H	lealth, Inc.							Ter	nperature:	21.43	
	Attendees: Project:	Paul Erling	jer							Barome	Humidity: etric Pres.:	52% 1011	
	Tested by:	Jaemi Suh					Powe	r: 120VAC/60)Hz	24.011	Job Site:	0C10	
TEST S	SPECIFICAT	IONS						Test Metho	1.2002				
	PARAMETER	RS						ANGI 603.	+.2003				
Anten	na Height(s)	(m)	1 - 4				Test Dist	tance (m)	3	}			
COMM	IENTS												
None													
		10050											
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	Freq	Amplitude	Factor	Azimuth	Height	Distance	Attenuatio	n Polarity	Detector	Adjustment	Adjusted	Spec. Limit	Spec.
	(MHz)	(dBuV) 34.6	(dB)	(degrees)	(meters)	(meters)	(dB)	V-Bilog	PK	(dB)	dBuV/m	dBuV/m	(dB)
6	500.023	28.8	6.7	344.0	2.0	3.0	0.0	V-Bilog	PK	0.0	35.5	46.0	-10.5
e	500.003	26.5	6.7	344.0	2.0	3.0	0.0	V-Bilog	QP	0.0	33.2	46.0	-12.8
	44.472 44.485	30.8	-4.0 -4.0	356.0	2.2	3.0	0.0	V-Bilog H-Bilog	PK	0.0	26.0	40.0	-13.2
7	795.113	21.9	9.8	233.0	1.0	3.0	0.0	V-Bilog	PK	0.0	31.7	46.0	-14.3
-	44.474 795 127	27.4 16.6	-4.0 0.8	356.0	2.2	3.0	0.0	H-Bilog	QP	0.0	23.4	40.0	-16.6
3	395.862	23.8	2.3	124.0	1.0	3.0	0.0	V-Bilog	PK	0.0	26.1	46.0	-19.9
-	70.828	24.9	-8.0	227.0	2.7	3.0	0.0	H-Bilog	PK	0.0	16.9	40.0	-23.1
3	396.674 206.676	20.5 23.6	2.3 -3 0	124.0 92 0	1.0 1.0	3.0	0.0	V-Bilog H-Bilog	QP PK	0.0	22.8 19 7	46.0 43.5	-23.2 -23.8
4	70.850	21.8	-8.0	227.0	2.7	3.0	0.0	H-Bilog	QP	0.0	13.8	40.0	-26.2
2	206.859	18.4	-3.9	92.0	1.0	3.0	0.0	H-Bilog	QP	0.0	14.5	43.5	-29.0

N	ORTHWEST			E	C_45	200-		СЦ		T			P	SA 2007.05.07
E	EMC			FU	50 13	.209	JATA	36						ENII 2006.4.26
	EUT:	Q-Tech Pro	ogrammer	2020							W	ork Order:	CAME000	7
Se	rial Number:	2020-A100	118 Joolth Inc.								То	Date:	06/12/08	
	Attendees:	Paul Erlind	ier								Te	Humidity:	52%	
	Project:	None	, ,								Barom	etric Pres.:	1011	
	Tested by:	Jaemi Suh					Power:	120VA	\C/60	Hz		Job Site:	0C10	
TEST	SPECIFICAT	ONS						Test M	/letho	d				
FCC 1	5.209:2007							ANSI	C63.4	1:2003				
TERT														
Antoni	PARAMETER	(m)	1 1				Tost Dista	nce (m)	3				
COMM	IENTS	(11)	1-4				TCST DISta		·/	5				
None														
EUT O	PERATING N	IODES												
Standt DEVIA	by Mode. TIONS FROM	I TEST STA	NDARD											
No dev	viations.		-											
Run #		2	2								an Pr	~		
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	(MHz)	(dBuV)	(dB)	(degrees)	(meters)	(meters)	(dB)	i Uidi	y	Delecioi	(dB)	dBuV/m	dBuV/m	(dB)
6	960.309	25.0	16.3	187.0	1.9	3.0	0.0	H-Ho	orn	AV	0.0	41.3	54.0	-12.7
6	960.689	25.0	16.3	16.0	1.0	3.0	0.0	V-Ho	orn	AV	0.0	41.3	54.0	-12.7
6	958.487 958 106	31.8 27 7	16.3 16.2	16.0 197 0	1.0 1.0	3.0	0.0	V-Ho	orn	PK DK	0.0	54.1	74.0	-19.9
3	612.539	24.0	8.5	51.0	1.9	3.0 3.0	0.0	п-но Н-Но	orn	AV	0.0	32.5	74.0 54 0	-20.0 -21.5
3	612.768	24.0	8.5	147.0	3.5	3.0	0.0	V-Ho	orn	AV	0.0	32.5	54.0	-21.5
2	020.605	24.4	5.6	276.0	2.8	3.0	0.0	H-Ho	orn	AV	0.0	30.0	54.0	-24.0
2	021.179	24.3	5.6	160.0	1.0	3.0	0.0	V-Ho	orn	AV	0.0	29.9	54.0	-24.1
3	612.553	36.8	8.5	147.0	3.5	3.0	0.0	V-Ho	orn	PK	0.0	45.3	74.0	-28.7
1	318.048	25.9	-1.3	360.0	1.6	3.0	0.0	V-Ho	orn	AV	0.0	24.6	54.0	-29.4
1: 2:	510.209 613 527	25.9 36.1	-1.3 8.5	78.0 51.0	1.0	3.U 3.0	0.0	п-Но Н_Н/	orn	AV PK	0.0	∠4.6 44.6	54.U 74.0	-29.4 -29.4
2	020.202	37.3	5.6	160.0	1.0	3.0	0.0	V-Ho	orn	PK	0.0	42.9	74.0	-29.4
2	019.658	36.7	5.6	276.0	2.8	3.0	0.0	H-Ho	orn	PK	0.0	42.3	74.0	-31.7
1	319.061	38.4	-1.3	360.0	1.6	3.0	0.0	V-Ho	orn	PK	0.0	37.1	74.0	-36.9
1	319.133	38.3	-1.3	78.0	1.0	3.0	0.0	H-Ho	orn	PK	0.0	37.0	74.0	-37.0

	нwest //С			FC	CC 15	5.209 I	DATA	SHE	T			PS E	A 2007.05.07 EMI 2006.4.26
	EUT:	Q-Tech Pro	ogrammer	2020						W	ork Order:	CAME0007	7
Serial	Number:	2020-A100	118							-	Date:	06/12/08	
C	ttendees:	Cameron F	iealth, Inc							Ter	nperature: Humidity	21.43 52%	
	Project:	None	JCI							Barome	etric Pres.:	1011	
Т	ested by:	Jaemi Suh					Power:	120VAC/6	OHz		Job Site:	0C10	
TEST SPE		ONS						Test Metho	od 4:2002				
FGC 15.20	J9:2007	_						ANSI C63.	4.2003				
TEST PA		(m)	1 1				Tost Dista	nco (m)	2				
	TS	(11)	1 - 4				Test Dista	nce (m)	3				
None	RATING	IODES											
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(MI	Hz)	(dBuV)	(dB)	(degrees)	(meters)	(meters)	(dB)	. slamy	Detector	(dB)	dBuV/m	dBuV/m	(dB)
8584	1.935	35.3	-9.2	130.0	1.0	3.0	0.0	V-Horn	AV	0.0	26.1	54.0	-27.9
8585	5.534 0.170	35.3	-9.2	16.0	1.0	3.0	0.0	H-Horn	AV	0.0	26.1	54.0	-27.9
10210	9.730	34.5 34.4	-0.0 -8.6	200.0 208.0	1.0	3.0 3.0	0.0	V-Horn	AV	0.0	∠5.9 25.8	54.0 54.0	-20.1 -28.2
1193	9.040	34.3	-9.0	305.0	1.0	3.0	0.0	H-Horn	AV	0.0	25.3	54.0	-28.7
1193	9.710	34.3	-9.0	34.0	1.0	3.0	0.0	V-Horn	AV	0.0	25.3	54.0	-28.7
1193	9.140	47.9	-9.0	305.0	1.0	3.0	0.0	H-Horn	PK	0.0	38.9	74.0	-35.1
1020	9.570 9.280	47.4 47.3	-8.6 -8.6	208.0	1.0	3.0 3.0	0.0	v-Horn H-Horn	PK PK	0.0	38.8 38.7	74.0 74.0	-35.2 -35.3
8584	1.374	47.7	-9.2	130.0	1.0	3.0	0.0	V-Horn	PK	0.0	38.5	74.0	-35.5
8584	.276	47.4	-9.2	16.0	1.0	3.0	0.0	H-Horn	PK	0.0	38.2	74.0	-35.8
1193	8.540	46.3	-9.0	34.0	1.0	3.0	0.0	V-Horn	PK	0.0	37.3	74.0	-36.7



FCC 15.209





FCC 15.209



FIELD STRENGTH OF RADIATED EMISSIONS

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPE Transmit at 403.5	RATION 5 MHz.							
MODE USED FO Transmit at 403.	R FINAL DATA 5 MHz.							
POWER SETTIN 120VAC/60Hz	GS INVESTIGATED)						
POWER SETTIN 120VAC/60Hz	GS USED FOR FIN	AL DAT.	A					
FREQUENCY RA Start Frequency	NGE INVESTIGAT	ED 30 I	MHz	Stop Free	quency		8000 MHz	
CLOCKS AND O 403.5 MHz	SCILLATORS							
SAMPLE CALCU Radiated Emissions:	ILATIONS Field Strength = Measured Le	vel + Antenn	a Factor + Cable Factor - Ar	nplifier Gain + I	Distance Adjustment Factor +	External Atter	nuation	
TEST EQUIPME	NT							
Desc	ription	Μ	lanufacturer		Model	ID	Last Cal.	Interval
Pre-A	mplifier		Miteq	AMF-4D	-010120-30-10P-1	AOP	2/2/2008	13
Antenr	na, Horn		EMCO		3115	AHB	8/31/2007	24
OC10 cables a,b,	c,e,f Horn Cables					OCJ	2/2/2008	13
Antenna,	Biconilog		EMCO		3142	AXJ	2/25/2008	24
OC10 cables	a,b,c,d Bilog					OCH	1/7/2008	13
Pre-A	mplifier		Miteq	AN	<i>I</i> -1616-1000	AOM	1/7/2008	13
Spectrun	n Analyzer		Agilent		E4446A	AAQ	12/14/2007	13
MEASUREMENT	BANDWIDTHS							
	Frequency Ra	nge	Peak Dat	a	Quasi-Peak E	Data	Average Da	ata
	(MHz)		(kHz)		(kHz)		(kHz)	
	0.01 - 0.15		1.0		0.2		0.2	
	0.15 - 30.0		10.0		9.0		9.0	
	30.0 - 1000		100.0		120.0		120.0	
	Above 1000)	1000.0	و مربع الم	N/A	vide a fit	1000.0	
I N	leasurements were	made us	sing the bandwidths	s and dete	ctors specified. No	video filte	er was used.	

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

EMC

The highest gain of each type of antenna to be used with the EUT was tested. The EUT was on a 80cm table. The EUT was configured for it's single channel transmit frequency. For each configuration, X,Y, and Z axis, the spectrum was scanned throughout the specified range. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable and adjusting measurement antenna height and polarization. A preamp was used for this test in order to provide sufficient measurement sensitivity.

	MC		F	ELD	STRE	NGT	I OF I	RADI	ATED	EMIS	SION	S	P	SA 2007.05.07 EMI 2006.4.26
	EL	JT: 0	Q-Tech Pro	ogrammer	2020						W	ork Order:	CAME000	7
Seri	ial Numb	er: 2	020-A100	118								Date:	06/10/08	
	Custom	er: 0	Cameron H	lealth, Inc.							Ten	nperature:	21.43	
	Attende	es: I	aul Erling	er							Barome	Humidity:	52% 1011	
	Tested	bv:	laemi Suh					Power:	120VAC/60)Hz	Daronne	Job Site:	0C10	
TEST S	PECIFIC	ATIC	NS						Test Metho	d				
FCC 95	1:2007								ANSI/TIA/E	IA-603-C:2	2004			
Antenn	ARAME I	ERC (s) (r	n)	1 - 1				Test Dista	nce (m)	3				
COMME	ENTS	(3) (1	'	1-4				TCST DISta						
Y-Axis EUT OF Transn	PERATIN nit at 403	G M(DDES Hz.											
No devi	iations.		IEST STA	NDARD										
Run #			2								10	2		
Configu	uration #		1								year	-		
Results	3		Pa	ss						Signature	\mathcal{O}			
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.	Freq		Amplitude	Factor	Azimuth	Height	Distance	External Attenuation	Polarity	Detector	Distance Adjustment	Adjusted	Spec Limit	Compared to Spec
((MHz)		(dBuV)	(dB)	(degrees)	(meters)	(meters)	(dB)	1 oldiny	Deteolor	(dB)	dBuV/m	dBuV/m	(dB)
80	06.990		23.4	9.8	116.0	1.0	0.0	0.0	H-Bilog	PK	0.0	33.2	46.0	-12.8
80	07.112		23.1	9.8	134.0	1.0	0.0	0.0	V-Bilog	PK	0.0	32.9	46.0	-13.1
40	01.520		30.1	2.4	78.0	1.9	0.0	0.0	H-Bilog	PK	0.0	32.5	46.0	-13.5
40 40	05.465		∠9.9 28.8	∠.4 2.5	259.0	2.0	0.0	0.0	H-Biloa	PK	0.0	32.3 31.3	46.0	-13.7
40	01.469		27.7	2.4	78.0	1.9	0.0	0.0	H-Bilog	QP	0.0	30.1	46.0	-15.9
40	05.494		26.5	2.5	315.0	1.0	0.0	0.0	V-Bilog	PK	0.0	29.0	46.0	-17.0
40	05.522		26.4	2.5	360.0	2.0	0.0	0.0	H-Bilog	QP	0.0	28.9	46.0	-17.1
40	05.523		24.8	2.5	315.0	1.0	0.0	0.0	V-Bilog	QP	0.0	27.3	46.0	-18.7
80	00.708		17.1 17.1	9.8 0.8	134.0	1.0	0.0	0.0	V-Bilog	QP OP	0.0	26.9	46.0	-19.1 _10 1
4(01.677		23.2	2.4	259.0	1.0	0.0	0.0	V-Bilog	QP	0.0	25.6	46.0	-20.4

	DRTHWEST	F	IELD	STRE	NGT	H OF	RADI	ATED	EMIS	SION	S	PS	A 2007.05.07 MI 2006.4.26
	EUT	Q-Tech Pro	ogrammer	2020						W	ork Order:	CAME0007	7
Sei	rial Number:	2020-A100	118								Date:	06/10/08	
	Customer	Cameron H	lealth, Inc.							Ten	perature:	21.43	
	Attendees: Project:	Paul Erling	jer							Barome	Humidity:	52% 1011	
	Tested by:	Jaemi Suh					Power:	120VAC/6	0Hz	Baronio	Job Site:	0C10	
TEST S	SPECIFICAT	IONS						Test Meth	od				
FCC 95	51:2007							ANSI/TIA/	EIA-603-C:2	2004			
TEST F Antenr	PARAMETER	RS (m)	1 - 4				Test Dista	nce (m)	3				
СОММ	ENTS	()											
Y-Axis													
EUT O	PERATING I	MODES											
Trans	mit at 403.5	MHz.											
DEVIA No dev	riations.	VITESTSTA	NDARD										
Run #	lutioner	3	3							1.0	1		
Config	uration #	1								year	-		
Result	S	Pa	SS						Signature	$^{\prime}O$			
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	1000.000	,					MHz					100	00.000
	Freq	Amplitude	Factor	Azimuth	Height	Distance	External	Polarity	Detector	Distance Adjustment	Adjusted	Spec Limit	Compared to
	(MHz)	(dBuV)	(dB)	(degrees)	(meters)	(meters)	(dB)		_ 0.00101	(dB)	dBuV/m	dBuV/m	(dB)
16	614.099	33.9	1.2	67.0	1.0	0.0	0.0	H-Horn	AV	0.0	35.1	54.0	-18.9
32	228.023	25.3 25.3	7.4 7.4	1.0 184.0	1.7 1.0	0.0	0.0	V-Horn H-Horn	AV AV	0.0	32.7	54.0 54.0	-21.3
20	017.709	25.3	5.6	6.0	2.3	0.0	0.0	V-Horn	AV	0.0	30.9	54.0	-23.1
24	420.947	25.4	5.5	244.0	1.9	0.0	0.0	H-Horn	AV	0.0	30.9	54.0	-23.1
24	421.078	25.4	5.5	360.0	2.2	0.0	0.0	V-Horn	AV	0.0	30.9	54.0	-23.1
12	210.573	32.4	-2.0	320.0	1.4	0.0	0.0	H-Horn	AV	0.0	30.5	54.0 54.0	-23.5
16	614.075	27.4	1.2	202.0	1.0	0.0	0.0	V-Horn	AV	0.0	28.6	54.0	-25.4
32	227.872	37.9	7.4	184.0	1.0	0.0	0.0	H-Horn	PK	0.0	45.3	74.0	-28.7
32	220.003 207.616	37.5 26.1	7.4 -2.0	67.0	1.7	0.0	0.0	v-⊓orn V-Horn	AV	0.0	44.9 24.1	74.0 54.0	-29.1 -29.9
24	418.668	38.5	5.5	360.0	2.2	0.0	0.0	V-Horn	PK	0.0	44.0	74.0	-30.0
24	422.529	37.7	5.5	244.0	1.9	0.0	0.0	H-Horn	PK	0.0	43.2	74.0	-30.8
20 20	017.643 015.930	37.5 36 9	5.6 5.6	201.0	1.0 2 3	0.0	0.0	H-Horn	PK PK	0.0	43.1 42 5	74.0 74.0	-30.9 -31.5
20	614.232	41.1	1.2	67.0	1.0	0.0	0.0	H-Horn	PK	0.0	42.3	74.0	-31.7
16	614.144	38.0	1.2	202.0	1.0	0.0	0.0	V-Horn	PK	0.0	39.2	74.0	-34.8
12	210.292 208 556	40.6 38.0	-2.0 -2.0	320.0 67.0	1.4 1.0	0.0	0.0	H-Horn V-Horn	PK PK	0.0	38.6 36.0	74.0 74.0	-35.4 -38.0
14		00.0		00		0.0	0.0			0.0	00.0		00.0

NO	RTHWEST		F	ELD	STRE	NGTI	H OF I	RADI	ATED	EMIS	SION	S	P	SA 2007.05.07 EMI 2006.4.26
	EL	JT:lC	-Tech Pro	grammer	2020						W	ork Order:	CAME000	7
Seri	ial Numb	er: 2	020-A1001	18								Date:	06/10/08	
	Custom	er: C	ameron H	ealth, Inc.							Ter	nperature:	21.43	
	Attende	es: F	aul Erling	er								Humidity:	52%	
	Proje	ect: N	lone								Barome	etric Pres.:	1011	
	Tested I	by: J	aemi Suh					Power:	120VAC/60	Hz		Job Site:	0C10	
TEST S	PECIFIC	ΑΤΙΟ	NS						lest Metho	d				
FCC 95	1:2007								ANSI/TIA/E	:IA-603-C:2	2004			
TEST P	ARAMET	ERS												
Antenn	a Height	(s) (n	n) ·	1 - 4				Test Dista	nce (m)	3				
Z-Axis	PERATIN	g Mo	DDES											
Transn	nit at 403	.5 M	Hz.											
DEVIAT	IONS FR	OM.	TEST STA	NDARD										
No devi	iations.													
Run #			5								and the			
Configu	uration #		1								1/1			
Results	;		Pas	s						Signature	0			
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			I					External			Distance			Compared to
	Freq		Amplitude	Factor	Azimuth	Height	Distance	Attenuation	Polarity	Detector	Adjustment	Adjusted	Spec. Limit	Spec.
(MHz)		(dBuV)	(dB)	(degrees)	(meters)	(meters)	(dB)			(dB)	dBuV/m	dBuV/m	(dB)
40	J1.630		31.2	2.4	197.0	1.0	3.0	0.0	V-Bilog	PK	0.0	33.6	46.0	-12.4
80	10.920		22.1 22.1	9.8	105.0	3.2	3.0	0.0		PK	0.0	32.5	46.0	-13.5
80	10.921 15 /00		22.1 28.1	9.0 2.5	257 0	1.0	3.U 3.0	0.0	V-Bilog	PK DK	0.0	31.9 30 F	40.U	-14.1
40	72.499 72.008		20.1	2.5	207.0	1.0	3.U 3.D	0.0	H-Rilog	PK	0.0	28 N	40.0 46 0	-13.4
40 20	16 980		20.0	2.0 Q R	56.0	1.0	3.0	0.0	V-Bilog	OP	0.0	20.0	46.0	-10.0
00 80	17 286		17.1	9.8	105.0	3.2	3.0	0.0	H-Rilog	OP	0.0	26.0	46.0	-19.1
40	01.673		24.5	2.4	197.0	1.0	3.0	0.0	V-Biloa	QP	0.0	26.9	46.0	-19.1
40	01.738		23.9	2.4	153.0	1.0	3.0	0.0	H-Bilon	PK	0.0	26.3	46.0	-19.7
40	05.524		21.8	2.5	257.0	1.0	3.0	0.0	V-Biloa	QP	0.0	24.3	46.0	-21.7
40	05.008		20.6	2.5	311.0	1.8	3.0	0.0	H-Biloa	QP	0.0	23.1	46.0	-22.9
40	01.698		19.2	2.4	153.0	1.0	3.0	0.0	H-Bilog	QP	0.0	21.6	46.0	-24.4

NC	DRTHWEST	FIELD STRENGTH OF RADIATED EMISSIONS										PS	GA 2007.05.07 EMI 2006.4.26
	EU	T: Q-Tech Pr	ogrammer	2020						Wo	ork Order:	CAME0007	7
Ser	ial Numbe	er: 2020-A100	0118								Date:	06/10/08	
	Custome	er: Cameron	Health, Inc							Tem	perature:	21.43	
	Attendee	s: Paul Erlin	ger								Humidity:	52%	
	Projec	ct: None	-				-	400010-00		Barome	tric Pres.:	1011	
1-9-1-9	Tested b	y: Jaemi Sul	n				Power:	120VAC/6	UHZ		Job Site:	UC10	
TEST S		TONS								004			
FCC 95	01:2007							ANSI/HA/I	=IA-603-C:2	004			
TEST		EDS											
Antenn	a Height(s) (m)	1 - 4				Test Dista	nce (m)	3				
COMM	ENTS	o) ()	<u>.</u>				100121014		, v				
Z-Axis													
		MODEO											
EUI OF	PERATING	5 MH7											
DEVIA	TIONS FR	OM TEST ST	ANDARD										
No dev	iations.												
Run #			4							1.0	1		
Config	uration #		1	1						year			
Results	s	Pa	ass	1					Signature	\mathcal{O}			
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	Eroa	Amerilianti	Faster	من تر بال	Linialit	Distance	External	Delect	Deteri	Distance	ا بمنام ۸	Spee Lint	Compared to
	(MHz)	(dBuV)	(dB)	(dearees)	(meters)	(meters)	(dB)	Polarity	Detector	Aujustment (dB)	dBuV/m	dBuV/m	opec. (dB)
16	614.092	36.3	1.2	146.0	1.0	0.0	0.0	H-Horn	AV	0.0	37.5	54.0	-16.5
32	232.834	25.3	7.4	108.0	1.0	0.0	0.0	H-Horn	AV	0.0	32.7	54.0	-21.3
32	230.077	25.2	7.4	188.0	1.0	0.0	0.0	V-Horn	AV	0.0	32.6	54.0	-21.4
20	017.622	26.5	5.6	103.0	2.6	0.0	0.0	H-Horn	AV	0.0	32.1	54.0	-21.9
20	J17.495	25.3	5.6 F F	239.0	2.2	0.0	0.0	V-Horn	AV	0.0	30.9	54.0	-23.1
24	+17.040 121 316	∠5.4 25.4	5.5 5.5	190.0	3.5 3.1	0.0	0.0	N-Horn	AV AV	0.0	30.9	04.U	-23.1 -23.1
24 16	514.070	29.2	1.2	188.0	1.0	0.0	0.0	V-Horn	AV	0.0	30.4	54.0	-23.6
12	210.466	27.4	-2.0	343.0	1.0	0.0	0.0	V-Horn	AV	0.0	25.4	54.0	-28.6
32	227.034	37.5	7.4	188.0	1.0	0.0	0.0	V-Horn	PK	0.0	44.9	74.0	-29.1
12	210.542	26.7	-2.0	157.0	1.4	0.0	0.0	H-Horn	AV	0.0	24.7	54.0	-29.3
16	513.801	43.0	1.2	146.0	1.0	0.0	0.0	H-Horn	PK	0.0	44.2	74.0	-29.8
24	+19.782	38.4	5.5 7 4	190.0	3.5	0.0	0.0	H-Horn	PK	0.0	43.9	74.0	-30.1
32	29.095	30.5 37 7	7.4 5.6	239.0	1.0	0.0	0.0	N-Horn	PK	0.0	43.9 43.3	74.0 74.0	-30.1 -30.7
20)17.757	37.7	5.6	103.0	2.2	0.0	0.0	H-Horn	PK	0.0	43.3	74.0	-30.7
24	121.749	37.5	5.5	263.0	3.1	0.0	0.0	V-Horn	PK	0.0	43.0	74.0	-31.0
16	614.041	39.0	1.2	188.0	1.0	0.0	0.0	V-Horn	PK	0.0	40.2	74.0	-33.8
12	211.209	38.9	-2.0	343.0	1.0	0.0	0.0	V-Horn	PK	0.0	36.9	74.0	-37.1
12	208.892	38.4	-2.0	157.0	1.4	0.0	0.0	H-Horn	PK	0.0	36.4	74.0	-37.6

NO	RTHWEST	F	IELD	STRE	NGT	H OF	RADI/	ATED	EMIS	SION	S	P	SA 2007.05.07 EMI 2006.4.26
	FUT	Q-Tech Pr	ogrammer	2020						W	ork Order	CAME000	7
Seri	ial Number:	2020-A100	118	2020							Date:	06/10/08	1
	Customer:	Cameron H	lealth, Inc.							Ten	perature:	21.43	
	Attendees:	Paul Erling	jer								Humidity:	52%	
	Project:	None					_			Barome	tric Pres.:	1011	
TECTO	Tested by:	Jaemi Suh					Power:	120VAC/60)Hz		Job Site:	0C10	
FCC 05		UNS							IA-603-C·2	2004			
	1.2007	0							14-000-0.2				
Antonn	ARAMETER	5 (m)	1 1				Tost Dista	nco (m)	2				
COMME	a neight(s) (=NTS	(11)	1 - 4				Test Dista	nce (m)	3)			
X-Axis EUT OP Transn	PERATING M nit at 403.5 M	IODES MHz.											
DEVIAT	IONS FROM	I TEST STA	NDARD										
No devi	ations.									1.0			
Run #)							Jeant			
Configu	Iration #	Pa	<u></u>						Cinnatura	10)			
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1	Freq	Amplitude	Factor	Azimuth	Height	Distance	Attenuation	Polarity	Detector	Adjustment	Adjusted	Spec. Limit	Spec.
(MHz)	(dBuV)	(dB)	(degrees)	(meters)	(meters)	(dB)			(dB)	dBuV/m	dBuV/m	(dB)
80	07.181 07.155	23.4	9.8	34.0	1.0	0.0	0.0	V-Bilog	PK	0.0	33.2	46.0	-12.8
80 21	07.100	∠3.3 26.6	9.8 2.5	259.0	3.1 1.0	0.0	0.0	п-віюў V-Biloa	PK	0.0	29.1	40.0 46.0	-12.9
40	01.673	26.0	2.4	136.0	1.0	0.0	0.0	V-Bilog	PK	0.0	28.4	46.0	-17.6
80	06.642	17.1	9.8	34.0	1.0	0.0	0.0	V-Bilog	QP	0.0	26.9	46.0	-19.1
80	06.936	17.1	9.8	10.0	3.1	0.0	0.0	H-Bilog	QP	0.0	26.9	46.0	-19.1
40	01.690	24.1	2.4	110.0	2.0	0.0	0.0	H-Bilog	PK	0.0	26.5	46.0	-19.5
40	05.068	22.9	2.5	90.0	1.0	0.0	0.0	H-Bilog	PK	0.0	25.4	46.0	-20.6
40 AC	JO.UUX 11 671	∠∠.5 21 4	2.5 2.4	∠59.0 136.0	1.0	0.0	0.0	V-Bilog		0.0	∠5.U 23.9	40.U 46.0	-21.0 -22.2
40	01.671	19.1	2.4	110.0	2.0	0.0	0.0	H-Biloa		0.0	21.5	46.0	-24.5
40)5.525	18.3	2.5	90.0	1.0	0.0	0.0	H-Bilog	QP	0.0	20.8	46.0	-25.2

NO	RTHWEST		F	ELD	STRE	NGT	H OF	RADI	ATED	EMIS	SION	S	PS E	A 2007.05.07 MI 2006.4.26
	E	UT:	Q-Tech Pro	grammer	2020						Wo	ork Order:	CAME0007	7
Ser	ial Numb	per: 2	020-A100	118								Date:	06/10/08	
	Custom	ner: C	ameron H	lealth, Inc							Tem	perature:	21.43	
	Attende	es: F	aul Erling	er								Humidity:	52%	
	Proje	ect: N	lone					Damas	4001/40/0	011-	Barome	tric Pres.:	1011	
TEST S	PECIEIC	DY: J	aemi Sun					Power:	Test Meth	od		Job Site:	0010	
FCC 95	1:2007								ANSI/TIA/	EIA-603-C:2	004			
TEST P	ARAME	TERS	1											
Antenn	a Height	:(s) (n	n)	1 - 4				Test Dista	nce (m)	3				
COMM	ENTS													
X-Axis														
EUT OF	PERATIN	IG MO	DDES											
Transn	nit at 403	3.5 M	Hz. Test sta											
No dev	iations.		1231 314	NDARD										
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Config	uration #		1								Gen			
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		Т						External	1	1	Distance			Compared to
	Freq		Amplitude	Factor	Azimuth	Height	Distance	Attenuation	Polarity	Detector	Adjustment	Adjusted	Spec. Limit	Spec.
(MHz)		(dBuV)	(dB)	(degrees)	(meters)	(meters)	(dB)	L		(dB)	dBuV/m	dBuV/m	(dB)
16	14.098		35.8 34 s	1.2 1 2	108.0	2.7	0.0	0.0	H-Horn	AV	0.0	37.0 36.0	54.0	-17.0
32	28.233		34.0 25.4	7.4	152.0	1.0	0.0	0.0	H-Horn	AV	0.0	32.8	54.0 54.0	-10.0
32	27.831		25.2	7.4	206.0	1.0	0.0	0.0	V-Horn	AV	0.0	32.6	54.0	-21.4
20	17.545		26.6	5.6	81.0	1.0	0.0	0.0	V-Horn	AV	0.0	32.2	54.0	-21.8
24	21.049		26.0	5.5	35.0	1.0	0.0	0.0	H-Horn	AV	0.0	31.5	54.0	-22.5
20	117.011 21.454		∠ə.ŏ 25.3	5.6 5.5	303.0 317 0	1.0	0.0	0.0	H-Horn	AV AV	0.0	31.4 30.8	54.0	-22.6
32	25.925		37.5	7.4	206.0	1.0	0.0	0.0	V-Horn	PK	0.0	44.9	74.0	-29.1
12	207.050		26.3	-2.0	213.0	2.4	0.0	0.0	H-Horn	AV	0.0	24.3	54.0	-29.7
32	27.768		36.5	7.4	152.0	1.0	0.0	0.0	H-Horn	PK	0.0	43.9	74.0	-30.1
24	18.882		38.1	5.5	317.0	2.6	0.0	0.0	V-Horn	PK	0.0	43.6 22 F	74.0	-30.4
20	10.469		23.5 37.9	-2.0 5.6	309.0 303.0	3.4 1.0	0.0	0.0	v-nom H-Horn	PK	0.0	∠ა.ə 43.5	54.0 74.0	-30.5
20	17.298		37.7	5.6	81.0	1.0	0.0	0.0	V-Horn	PK	0.0	43.3	74.0	-30.7
24	19.574		37.8	5.5	35.0	1.0	0.0	0.0	H-Horn	PK	0.0	43.3	74.0	-30.7
16	513.807		41.6	1.2	192.0	1.0	0.0	0.0	V-Horn	PK	0.0	42.8	74.0	-31.2
16	014.241 011 840		41.6 37 0	1.2 -20	108.0 300 0	2.1 3.4	0.0	0.0	H-Horn	PK	0.0	42.8 35 0	74.0 74.0	-31.2 -38 1
12	209.121		37.8	-2.0	213.0	2.4	0.0	0.0	H-Horn	PK	0.0	35.8	74.0	-38.2

EMC FIELD STRENGTH OF RADIATED EMISSIONS

PSA 2007.05.07



EMC FIELD STRENGTH OF RADIATED EMISSIONS

PSA 2007.05.07



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4446A	AAQ	12/14/2007	13

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

Per 47 CFR 95.635(d)(4-5) the emission mask was measured. Emissions more than 150 kHz away from the center frequency must be attenuated below the transmitter output power by at least 20 dB. In addition, emissions 250 kHz or less above and below the MICS band (402-405 MHz) must be attenuated below the maximum permitted output power by at least 20 dB.

The emission mask was measured in the same configuration as radiated spurious emissions. First, the EUT orientation (horizontal or vertical), the turntable azimuth and measurement antenna height, were maximized to achieve the maximum field strength of the fundamental transmit frequency.

Then, a spectrum analyzer was used to measure the emission mask. A spectrum analyzer using a peak detector with no video filtering was used with a resolution bandwidth equal to approximately 1.0 percent of the emission bandwidth of the EUT. However, various plots were made using different frequency spans and resolution bandwidths in an attempt to not only satisfy the measurement criteria, but to also show that all emissions outside of the occupied band are greatly attenuated.

NORTHWEST		EMISSION	MASK			XMit 2007.06.13
EUT:	Q-Tech Programmer 2020				Work Order: CAME000	7
Serial Number:	2020-A100118				Date: 06/11/08	
Customer:	Cameron Health, Inc.				Temperature: 21.43°C	
Attendees:	Paul Erlinger				Humidity: 52%	
Project:	None			Barc	ometric Pres.: 1011	
Tested by:	Jaemi Suh		Power: 120VAC/60Hz		Job Site: 0C10	
TEST SPECIFICATI	ONS		Test Method			
FCC 95I:2007			ANSI/TIA/EIA-603-	C-2004		
COMMENTS						
None						
DEVIATIONS FROM	I TEST STANDARD					
None						
Configuration #	2	Signature				
				Value	Limit	Results
1 kHz RBW, +150 kH	Hz fc			≤ -20 dBc	See Graph	Pass
1 kHz RBW, +250 kH	Iz of allowable band			≤ -20 dBc	See Graph	Pass
3 kHz RBW, +150 kH	Hz fc			≤ -20 dBc	See Graph	Pass
3 kHz RBW, +250 kH	Iz of allowable band			≤ -20 dBc	See Graph	Pass

Resul

EMISSION MASK

1 kHz RBW, ± 150 kHz fc

Result: Pass

Value: ≤ -20 dBc

Limit: See Graph



	1 kHz RBW, ± 250 kHz of allowable	band	
t: Pass	Value: ≤ -20 dBc	Limit:	See Graph



EMISSION MASK

3 kHz RBW, ± 150 kHz fc

Result: Pass

Value: ≤ -20 dBc

Limit: See Graph



	3 kHz RBW, ± 2	250 kHz of allowable bar	nd	
Result: Pass	Value:	≤ -20 dBc	Limit:	See Graph





EMISSION MASK



Field Strength of Fundamental

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION			
Transmit at 403.5 MHz.			
MODE USED FOR FINAL DAT	Α		
Transmit at 403.5 MHz.			
POWER SETTINGS INVESTIG	ATED		
120VAC/60Hz			
POWER SETTINGS USED FO	R FINAL DATA		
120VAC/60Hz			
FREQUENCY RANGE INVEST	IGATED		
Start Frequency	30 MHz	Stop Frequency	1000

SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
Antenna, Biconilog	EMCO	3142	AXJ	2/25/2008	24
OC10 cables a,b,c,d Bilog			OCH	1/7/2008	13
Pre-Amplifier	Miteq	AM-1616-1000	AOM	1/7/2008	13
Spectrum Analyzer	Agilent	E4446A	AAQ	12/14/2007	13

MEASUREMEN	F BANDWIDTHS			
	Frequency Range	Peak Data	Quasi-Peak Data	Average Data
	(MHz)	(kHz)	(kHz)	(kHz)
	0.01 - 0.15	1.0	0.2	0.2
	0.15 - 30.0	10.0	9.0	9.0
	30.0 - 1000	100.0	120.0	120.0
	Above 1000	1000.0	N/A	1000.0
N	leasurements were made us	ing the bandwidths and dete	ctors specified. No video filte	er was used.

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

Per 95.635(b), the maximum EIRP for a MICS transmitter is 25uW. This is equivalent to a radiated field strength 85.2 dBuV/m at 3 meters when measured over a reference ground plane.

The Field Strength of the Fundamental was measured in the far-field at an FCC Listed Semi-anechoic Chamber. Spectrum analyzer and linearly polarized antennas were used to measure the effective radiated power (EIRP) of the fundamental.

The orientation of the EUT and measurement antenna were manipulated to maximize the level of emissions. The turntable azimuth was varied to maximize the level of radiated emissions. The height of the measurement antenna was also varied from 1 to 4 meters. The amplitude and frequency of the emissions were noted.

N	ORTHWEST											PS	GA 2007.05.07
E	ЕМС			Field	Stre	ngth	of Fur	ndan	nental			I	EMI 2006.4.26
	EU	C: Q-Tech Pr	ogrammer	2020						W	ork Order:	CAME000	7
Se	rial Numbe	r: 2020-A100	118								Date:	06/10/08	
	Custome	r: Cameron I	Health, Inc							Ter	nperature:	21.43	
	Projec	t: None	Jei							Barome	etric Pres.	1011	
	Tested by	y: Jaemi Suh	1				Power:	120VAC	/60Hz	Baronia	Job Site:	0C10	
TEST S	SPECIFICA	TIONS						Test Met	hod				
FCC 9	51:2007							ANSI/TIA	A/EIA-603-C-:	2004			
TEST I	PARAMETE	RS											
Anteni	na Height(s) (m)	1 - 4				Test Dista	nce (m)	3	}			
COMM	IENTS												
EUT O Trans DEVIA	PERATING mit at 403.5 TIONS FRO	MODES 5 MHz. 0M TEST STA	ANDARD										
No dev	viations.		1	1						1 0			
Config	uration #		1	-						General			
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Result	.5	14							Signature				
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	Freq	Amplitude	Factor	Azimuth	Height	Distance	External	Polorit	Detesta-	Distance	Adjusted	Spec Limit	Compared to
	(MHz)	(dBuV)	(dB)	(degrees)	(meters)	(meters)	(dB)	Polarity	Detector	(dB)	dBuV/m	dBuV/m	(dB)
4	103.466	79.3	2.5	210.0	1.9	3.0	0.0	H-Bilog	I PK	0.0	81.8	85.2	-3.4
4	103.548	78.2	2.5	319.0	2.0	3.0	0.0	V-Bilog	I PK	0.0	80.7	85.2	-4.5

N				Field	Stre	nath	of Eur	ndam	ental			PS I	SA 2007.05.07 EMI 2006.4.26
									-orneen				
So	EU Fial Numbe	1: Q-Tech Pr	ogrammer	2020						W	Ork Order:	CAME000	/
56	Custome	r: Cameron I	Health, Inc							Ten	nperature:	21.43	
	Attendees	s: Paul Erling	ger	-							Humidity:	52%	
	Projec	t: None								Barome	tric Pres.:	1011	
TFOT	Tested by	y: Jaemi Suh	1				Power:	120VAC/6	60Hz		Job Site:	0C10	
ECC 0		HONS						ANSI/TIA/		2004			
									2	2001			
TEST F	PARAMETE	RS											
Antenr	ha Height(s) (m)	1 - 4				Test Dista	nce (m)	3				
	ENIS												
I-AXIS													
L													
EUT O	PERATING	MODES	-										
Trans	mit at 403.5	5 MHz.											
No dev	viations	MITEST STA	ANDARD										
Run #	nations.		1							10			
Config	uration #		1							Gent	-		
Result	s	Pa	ISS	-					Signature	$\left(\right)$			
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							MHz						
	_						External			Distance			Compared to
	Freq	Amplitude	Factor	Azimuth	Height	Distance	Attenuation	Polarity	Detector	Adjustment	Adjusted	Spec. Limit	Spec.
	(MHZ)	(uBUV) 79.9	(dB) 2.5	(degrees)	(meters)	(meters)		H-Bilog	PK	(dB)	050V/m	85.2	(uB)
4	03.478	73.7	2.5	1.0	1.6	3.0	0.0	V-Bilog	PK	0.0	76.2	85.2	-9.0

N				Field	l Stre	nath	of Eur	ndam	ental			PS	SA 2007.05.07 EMI 200 <u>6.4.26</u>
	EMC					ngui	en rui	Terenni	entai				
	EU	T: Q-Tech Pr	ogrammer	2020						W	ork Order:	CAME000	7
Se	rial Numbe	er: 2020-A100	118 Jackh Inc							Tom	Date:	06/10/08	
-	Attendee	s: Paul Frling	Health, Inc	•						Ten	Humidity:	52%	
	Projec	t: None	901							Barome	tric Pres.:	1011	
	Tested b	y: Jaemi Suh	1				Power:	120VAC/6	60Hz	24.0110	Job Site:	0C10	
TEST	SPECIFICA	TIONS						Test Meth	iod				
FCC 9	51:2007							ANSI/TIA/	/EIA-603-C-2	2004			
TEST	PARAMETE	ERS							_				
Anten	na Height(s	s) (m)	1 - 4				Test Dista	nce (m)	3				
COMM X-Axis	IENTS S												
EUT O	PERATING	MODES											
Trans	mit at 403.	5 MHz.											
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	Freq	Amplitude	Factor	Azimuth	Height	Distance	Attenuation	Polarity	Detector	Adjustment	Adjusted	Spec. Limit	Spec.
	(MHz)	(dBuV)	(dB)	(degrees)	(meters)	(meters)	(dB)			(dB)	dBuV/m	dBuV/m	(dB)
4	403.546	82.1	2.5	84.0	2.1	3.0	0.0	H-Bilog	PK	0.0	84.6	85.2	-0.6
4	403.568	79.9	2.5	17.0	2.2	3.0	0.0	V-Bilog	PK	0.0	82.4	85.2	-2.8

NORTHWEST

FIELD STRENGTH OF FUNDAMENTAL

PSA 2007.05.07



NORTHWEST

FIELD STRENGTH OF FUNDAMENTAL

PSA 2007.05.07



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT											
Description	Manufacturer	Model	ID	Last Cal.	Interval						
Spectrum Analyzer	Agilent	E4446A	AAQ	12/14/2007	13						

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

A 20 dB external attenuator was used. The attenuator and coaxial cable loss were compensated in the spectrum analyzer. A 3 kHz resolution bandwidth with no video filtering and a peak detector were used. The RBW was sufficiently narrow to plot the actually bandwidth of the signal and not the filter response curve of the spectrum analyzer.

The emission mask defined by 95.633(e) is shown on each plot. The 0dB reference for the mask is the measured output power of the un-modulated carrier at that frequency.

NORTHWEST		OCCUPIED	BANDWIDTH			XMit 2007.06.13
EUT:	Q-Tech Programmer 2020				Work Order: CAME00	07
Serial Number:	2020-A100118				Date: 06/11/08	
Customer:	Cameron Health, Inc.				Temperature: 21.43°C	
Attendees:	Paul Erlinger				Humidity: 52%	
Project:	None			Bar	ometric Pres.: 1011	
Tested by:	Jaemi Suh		Power: 120VAC/60Hz		Job Site: 0C10	
TEST SPECIFICAT	IONS		Test Method			
FCC 95I:2007			ANSI/TIA/EIA-603-0	C-2004		
COMMENTS						
None						
DEVIATIONS FROM	M TEST STANDARD					
None						
Configuration #	2	Signature				
				Value	Limit	Results
3 kHz RBW				100.8 kHz	300 kHz	Pass

OCCUPIED BANDWIDTH





OCCUPIED BANDWIDTH



XMit 2006.08.25

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
MultiMeter	Fluke	79 III	MMD	11/14/2008	13
Spectrum Analyzer	Hewlett Packard	8593E	AAP	12/14/2007	13
Chamber, Temperature/Humidity	Cincinnati Sub Zero (CSZ)	ZPHS-32-3.5-SCT/AC	TBE	5/22/2008	13
Oscillator	Elgar	401 SD-001	TPG	NCR	0
Spectrum Analyzer	Agilent	E4440A	AAX	10/1/2007	12

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request. Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct

TEST DESCRIPTION

The Frequency Stability was measured using a near-field probe and a spectrum analyzer. The spectrum analyzer is configured with a precision frequency reference that exceeds the stability requirement of the transmitter.

The EUT was placed inside a temperature / humidity chamber. The near-field probe was placed near the transmitter. A low-loss coaxial cable connected the near-field probe to the spectrum analyzer outside of the chamber.

The transmit frequency was recorded at the extremes of the specified temperature range (0° to +55° C) and at 15°C intervals and also at the voltage extremes of the specific voltage range (102V to 138V).

NORTHWEST EMC		FREQUENC	Y STABILITY		XMit 2006.08.25
EUT:	Q-Tech Programmer 2020			Work Order:	CAME0007
Serial Number:	2020-A100118			Date:	06/23/08
Customer:	Cameron Health, Inc.			Temperature:	21.43°C
Attendees:	Paul Erlinger			Humidity:	52%
Project:	None			Barometric Pres.:	1011
Tested by:	Jaemi Suh		Power: 120VAC/60Hz	Job Site:	0C10
TEST SPECIFICATI	IONS		Test Method		
FCC 95I:2007			ANSI/TIA/EIA-603-B:200	02	
COMMENTS					
None					
DEVIATIONS FROM	I TEST STANDARD				
None					
Configuration #	2	Signature			

Frequency Stability with Variation of Ambient Temperature (Primary Supply = 120V, 60Hz)

Temp (°C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)	Specification (ppm)
0	403.510800	403.515400	11.40	100
15	403.510800	403.516480	14.08	100
25	403.510800	403.515230	10.98	100
35	403.510800	403.514630	9.49	100
45	403.510800	403.514415	8.96	100
55	403.510800	403.513560	6.84	100

NORTHWEST EMC		FREQUENC	Y STA	BILITY		XMit 2006.08.2
EUT:	Q-Tech Programmer 2020				Work Order:	CAME0007
Serial Number:	2020-A100784				Date:	06/23/08
Customer:	Cameron Health, Inc.				Temperature:	21.43°C
Attendees:	Paul Erlinger				Humidity:	52%
Project:	None				Barometric Pres.:	1011
Tested by:	Jaemi Suh		Power:	120VAC/60Hz	Job Site:	0C10
TEST SPECIFICATI	ONS			Test Method		
FCC 95I:2007				ANSI/TIA/EIA-603-B:20	02	
COMMENTS						
None						
DEVIATIONS FROM	I TEST STANDARD					
None						
Configuration #	2	Signature				

Frequency Stability with Variation of Primary Supply Voltage (Ambient Temperature = 25C)

Voltage (VAC, 60Hz)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)	Specification (ppm)
138	403.510800	403.511659	2.13	100
132	403.510800	403.511635	2.07	100
126	403.510800	403.511591	1.96	100
120	403.510800	403.512650	4.58	100
114	403.510800	403.511850	2.60	100
108	403.510800	403.511700	2.23	100
102	403.510800	403.511910	2.75	100



FREQUENCY STABILITY





FREQUENCY STABILITY





FREQUENCY STABILITY



