

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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EMC Test Report



22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

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 95I:2007	ANSI/TIA/EIA-603-C-2004	Pass
Occupied Bandwidth	FCC 95I:2007	ANSI/TIA/EIA-603-C-2004	Pass
Emission Mask	FCC 95I:2007	ANSI/TIA/EIA-603-C-2004	Pass
Frequency Stability	FCC 95I: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.



NVLAP LAB CODE 200629-0
NVLAP LAB CODE 200630-0
NVLAP LAB CODE 200676-0
NVLAP LAB CODE 200761-0

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 TÜV Product Service Group's Listing of Recognized Laboratories. It qualifies in connection with the TÜV Certification after Recognition of Agent's Testing Program for the product categories and/or standards shown in TÜV's current Listing of CARAT Laboratories, available from TÜV. A certificate was issued to represent that this laboratory continues to meet TÜV'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.



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



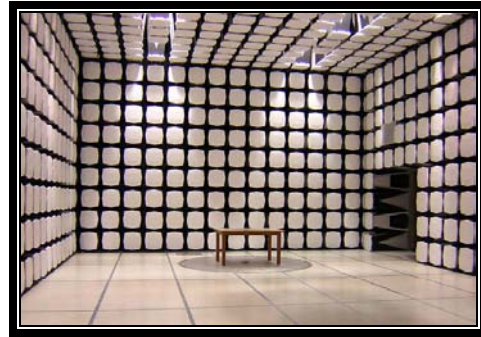
MIC: Northwest EMC, Inc is a CAB designated by MRA partners and recognized by Korea. (*Assigned Lab Numbers: Hillsboro: US0017, Irvine: US0158, Sultan: US0157*)



SCOPE

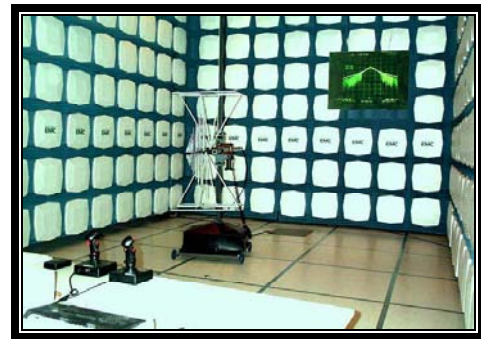
For details on the Scopes of our Accreditations, please visit:

<http://www.nwemc.com/accreditations/>



**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

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.					

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.

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.

MODE USED FOR FINAL DATA

Standby Mode.

POWER SETTINGS INVESTIGATED

120VAC/60Hz

POWER SETTINGS USED FOR FINAL DATA

120VAC/60Hz

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	12.8 GHz
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CLOCKS AND OSCILLATORS

403.5 MHz

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, l Cables			OCO	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

	Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (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

Measurements were made using the bandwidths and detectors specified. No video filter 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.

FCC 15.209 DATA SHEET

EMC

EUT:	Q-Tech Programmer 2020	Work Order:	CAME0007
Serial Number:	2020-A100118	Date:	06/12/08
Customer:	Cameron Health, Inc.	Temperature:	21.43
Attendees:	Paul Erlinger	Humidity:	52%
Project:	None	Barometric Pres.:	1011
Tested by:	Jaemi Suh	Power:	120VAC/60Hz
		Job Site:	0C10

TEST SPECIFICATIONS

FCC 15.209:2007

Test Method

ANSI C63.4:2003

TEST PARAMETERS

Antenna Height(s) (m)	1 - 4	Test Distance (m)	3
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COMMENTS

None

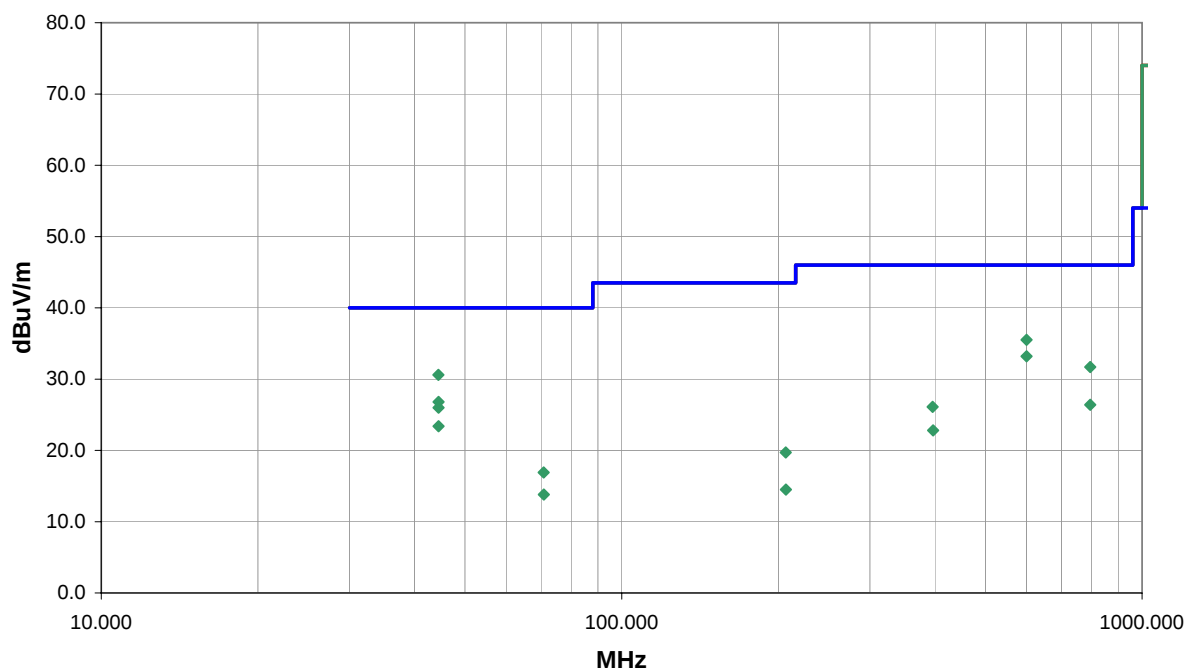
EUT OPERATING MODES

Standby Mode.

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	1	Signature 
Configuration #	1	
Results	Pass	



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
44.449	34.6	-4.0	119.0	1.0	3.0	0.0	V-Bilog	PK	0.0	30.6	40.0	-9.4
600.023	28.8	6.7	344.0	2.0	3.0	0.0	V-Bilog	PK	0.0	35.5	46.0	-10.5
600.003	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	30.8	-4.0	119.0	1.0	3.0	0.0	V-Bilog	QP	0.0	26.8	40.0	-13.2
44.485	30.0	-4.0	356.0	2.2	3.0	0.0	H-Bilog	PK	0.0	26.0	40.0	-14.0
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	27.4	-4.0	356.0	2.2	3.0	0.0	H-Bilog	QP	0.0	23.4	40.0	-16.6
795.127	16.6	9.8	233.0	1.0	3.0	0.0	V-Bilog	QP	0.0	26.4	46.0	-19.6
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
396.674	20.5	2.3	124.0	1.0	3.0	0.0	V-Bilog	QP	0.0	22.8	46.0	-23.2
206.676	23.6	-3.9	92.0	1.0	3.0	0.0	H-Bilog	PK	0.0	19.7	43.5	-23.8
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
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

FCC 15.209 DATA SHEET

EMC

EUT:	Q-Tech Programmer 2020	Work Order:	CAME0007
Serial Number:	2020-A100118	Date:	06/12/08
Customer:	Cameron Health, Inc.	Temperature:	21.43
Attendees:	Paul Erlinger	Humidity:	52%
Project:	None	Barometric Pres.:	1011
Tested by:	Jaemi Suh	Power:	120VAC/60Hz
		Job Site:	0C10

TEST SPECIFICATIONS

Test Method

FCC 15.209:2007

ANSI C63.4:2003

TEST PARAMETERS

Antenna Height(s) (m)	1 - 4	Test Distance (m)	3
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COMMENTS

None

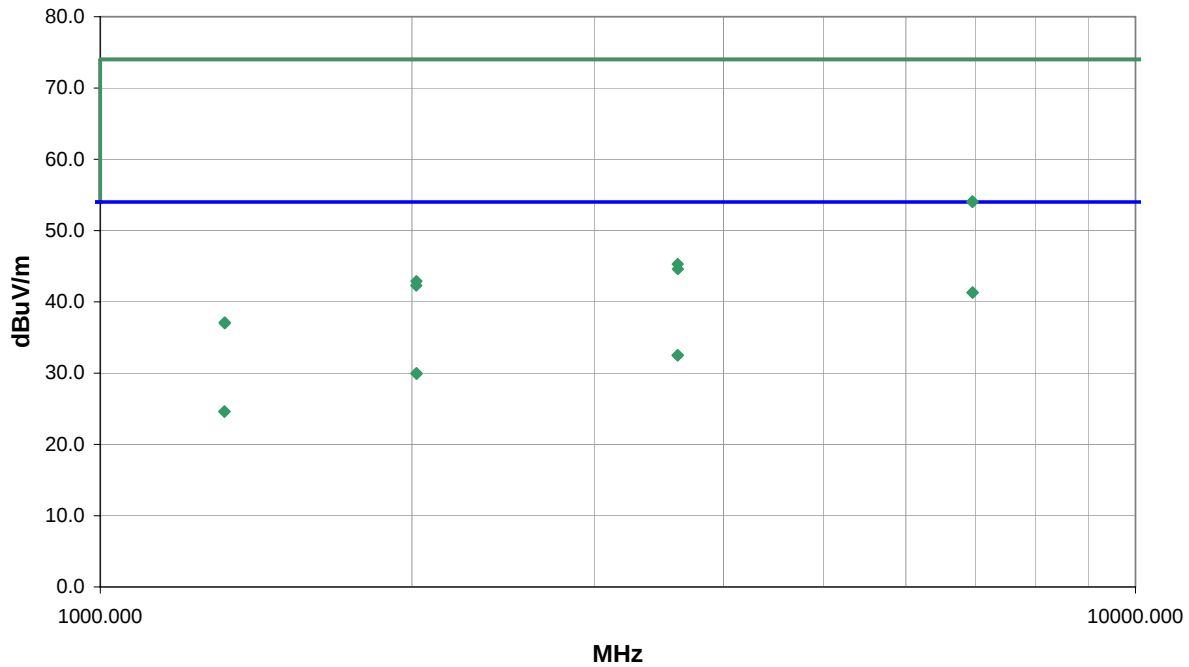
EUT OPERATING MODES

Standby Mode.

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	2	Signature 
Configuration #	1	
Results	Pass	



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
6960.309	25.0	16.3	187.0	1.9	3.0	0.0	H-Horn	AV	0.0	41.3	54.0	-12.7
6960.689	25.0	16.3	16.0	1.0	3.0	0.0	V-Horn	AV	0.0	41.3	54.0	-12.7
6958.487	37.8	16.3	16.0	1.0	3.0	0.0	V-Horn	PK	0.0	54.1	74.0	-19.9
6958.106	37.7	16.3	187.0	1.9	3.0	0.0	H-Horn	PK	0.0	54.0	74.0	-20.0
3612.539	24.0	8.5	51.0	1.0	3.0	0.0	H-Horn	AV	0.0	32.5	54.0	-21.5
3612.768	24.0	8.5	147.0	3.5	3.0	0.0	V-Horn	AV	0.0	32.5	54.0	-21.5
2020.605	24.4	5.6	276.0	2.8	3.0	0.0	H-Horn	AV	0.0	30.0	54.0	-24.0
2021.179	24.3	5.6	160.0	1.0	3.0	0.0	V-Horn	AV	0.0	29.9	54.0	-24.1
3612.553	36.8	8.5	147.0	3.5	3.0	0.0	V-Horn	PK	0.0	45.3	74.0	-28.7
1318.048	25.9	-1.3	360.0	1.6	3.0	0.0	V-Horn	AV	0.0	24.6	54.0	-29.4
1318.289	25.9	-1.3	78.0	1.0	3.0	0.0	H-Horn	AV	0.0	24.6	54.0	-29.4
3613.527	36.1	8.5	51.0	1.0	3.0	0.0	H-Horn	PK	0.0	44.6	74.0	-29.4
2020.202	37.3	5.6	160.0	1.0	3.0	0.0	V-Horn	PK	0.0	42.9	74.0	-31.1
2019.658	36.7	5.6	276.0	2.8	3.0	0.0	H-Horn	PK	0.0	42.3	74.0	-31.7
1319.061	38.4	-1.3	360.0	1.6	3.0	0.0	V-Horn	PK	0.0	37.1	74.0	-36.9
1319.133	38.3	-1.3	78.0	1.0	3.0	0.0	H-Horn	PK	0.0	37.0	74.0	-37.0

NORTHWEST		PSA 2007.05.07 EMI 2006.4.26										
EMC		FCC 15.209 DATA SHEET										
EUT: Q-Tech Programmer 2020		Work Order: CAME0007										
Serial Number: 2020-A100118		Date: 06/12/08										
Customer: Cameron Health, Inc.		Temperature: 21.43										
Attendees: Paul Erlinger		Humidity: 52%										
Project: None		Barometric Pres.: 1011										
Tested by: Jaemi Suh		Power: 120VAC/60Hz	Job Site: 0C10									
TEST SPECIFICATIONS		Test Method										
FCC 15.209:2007		ANSI C63.4:2003										
TEST PARAMETERS												
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3									
COMMENTS												
None												
EUT OPERATING MODES												
Standby Mode.												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #	3	<i>Signature</i>										
Configuration #	1											
Results	Pass											
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
8584.935	35.3	-9.2	130.0	1.0	3.0	0.0	V-Horn	AV	0.0	26.1	54.0	-27.9
8585.534	35.3	-9.2	16.0	1.0	3.0	0.0	H-Horn	AV	0.0	26.1	54.0	-27.9
10210.170	34.5	-8.6	266.0	1.0	3.0	0.0	H-Horn	AV	0.0	25.9	54.0	-28.1
10209.730	34.4	-8.6	208.0	1.0	3.0	0.0	V-Horn	AV	0.0	25.8	54.0	-28.2
11939.040	34.3	-9.0	305.0	1.0	3.0	0.0	H-Horn	AV	0.0	25.3	54.0	-28.7
11939.710	34.3	-9.0	34.0	1.0	3.0	0.0	V-Horn	AV	0.0	25.3	54.0	-28.7
11939.140	47.9	-9.0	305.0	1.0	3.0	0.0	H-Horn	PK	0.0	38.9	74.0	-35.1
10209.570	47.4	-8.6	208.0	1.0	3.0	0.0	V-Horn	PK	0.0	38.8	74.0	-35.2
10209.280	47.3	-8.6	266.0	1.0	3.0	0.0	H-Horn	PK	0.0	38.7	74.0	-35.3
8584.374	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
11938.540	46.3	-9.0	34.0	1.0	3.0	0.0	V-Horn	PK	0.0	37.3	74.0	-36.7





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 DATA

Transmit at 403.5 MHz.

POWER SETTINGS INVESTIGATED

120VAC/60Hz

POWER SETTINGS USED FOR FINAL DATA

120VAC/60Hz

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	8000 MHz
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CLOCKS AND OSCILLATORS

403.5 MHz

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-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

	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

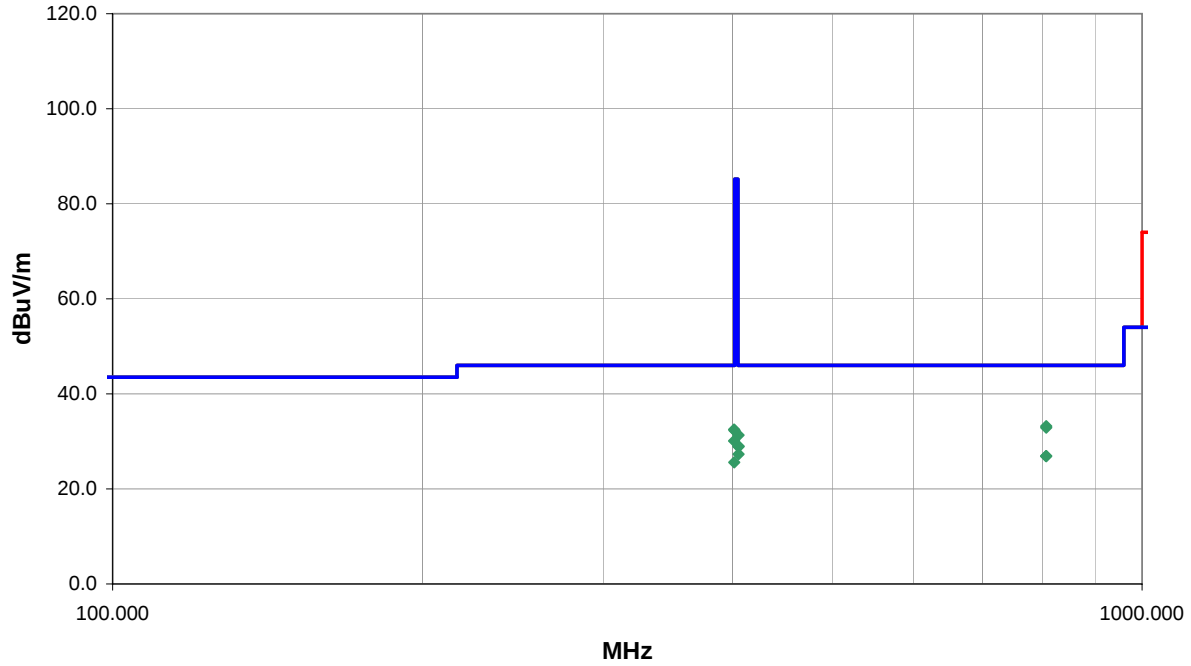
Measurements were made using the bandwidths and detectors specified. No video filter was used.

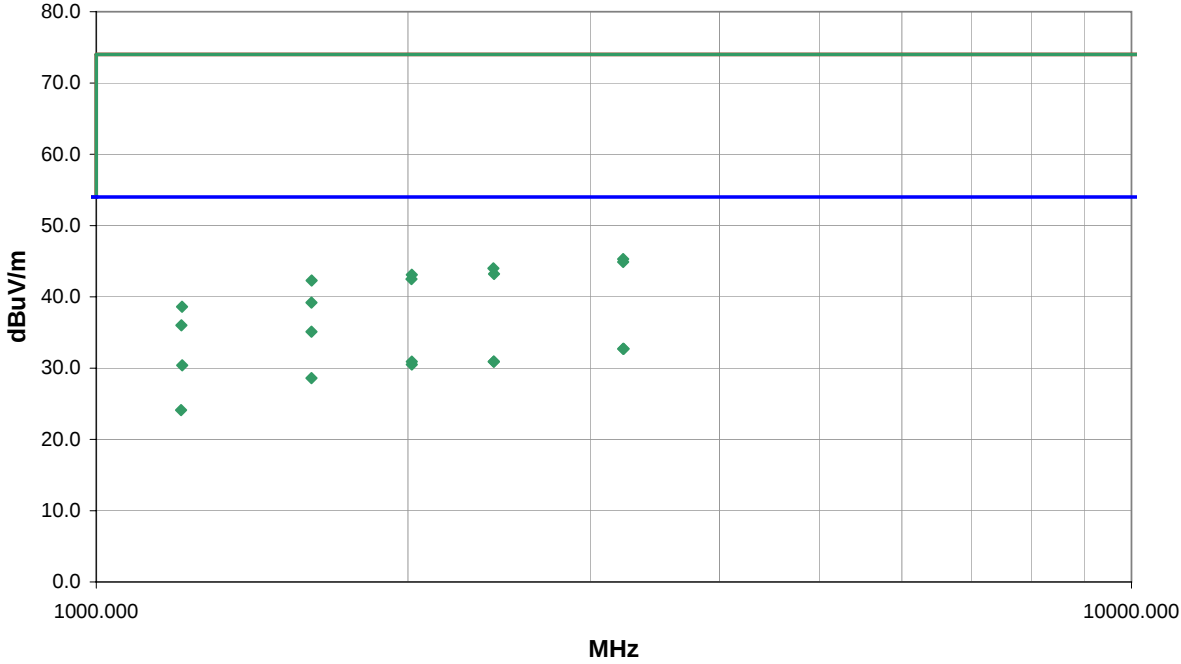
MEASUREMENT UNCERTAINTY

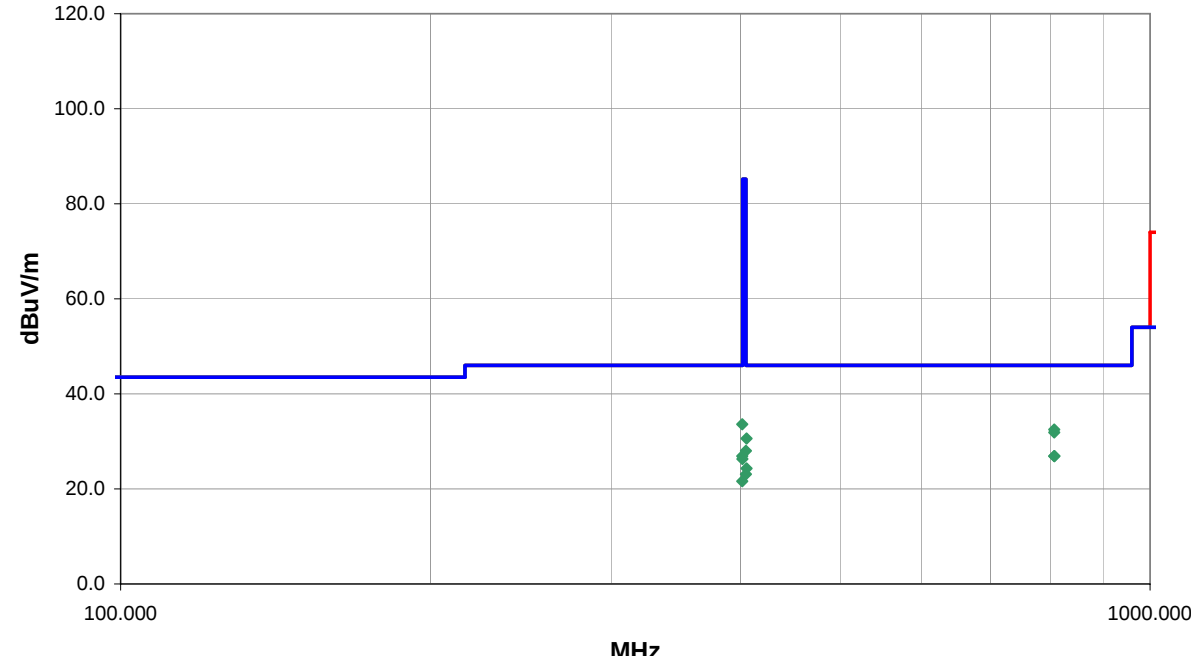
Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated 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.

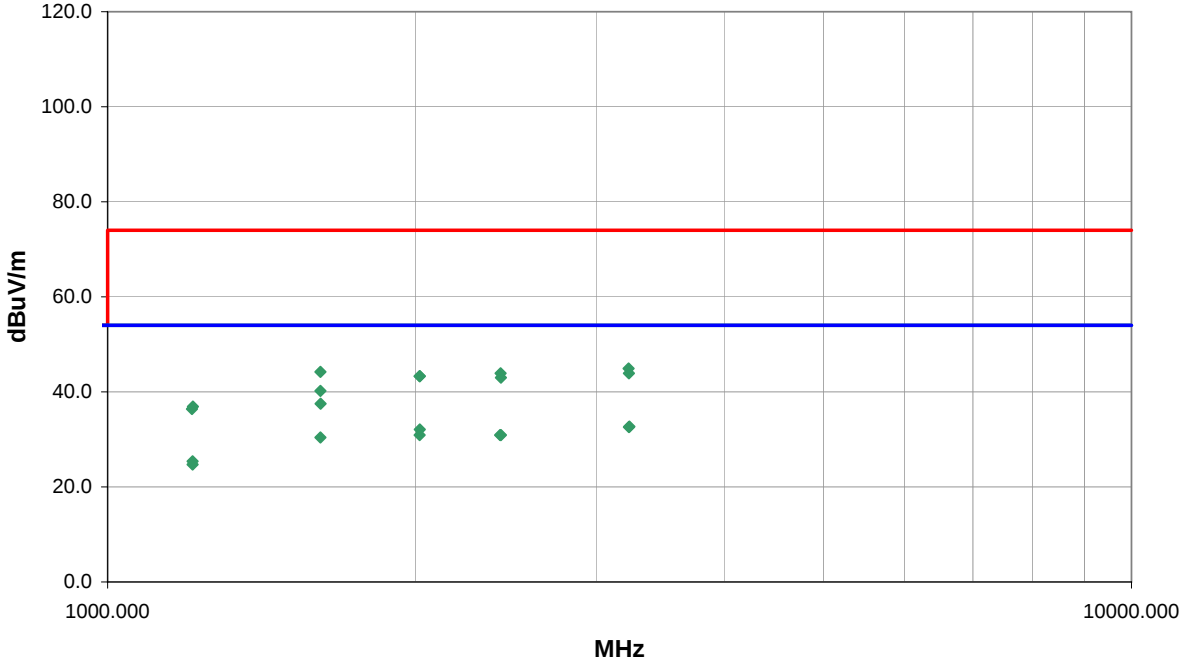
TEST DESCRIPTION

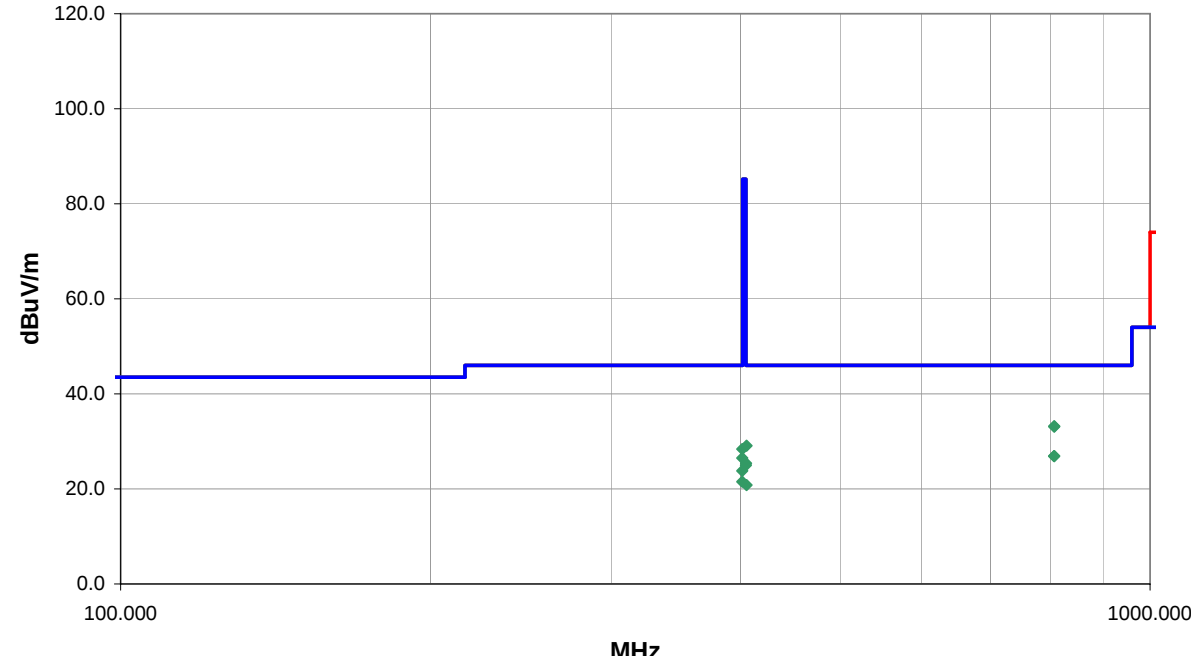
The highest gain of each type of antenna to be used with the EUT was tested. The EUT was on a 80cm table. The EUT was configured for it's single channel transmit frequency. For each configuration, X,Y, and Z axis, the spectrum was scanned throughout the specified range. While scanning, emissions from 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.

NORTHWEST EMC		FIELD STRENGTH OF RADIATED EMISSIONS		PSA 2007.05.07 EMI 2006.4.26								
EUT: Q-Tech Programmer 2020			Work Order: CAME0007									
Serial Number: 2020-A100118			Date: 06/10/08									
Customer: Cameron Health, Inc.			Temperature: 21.43									
Attendees: Paul Erlinger			Humidity: 52%									
Project: None			Barometric Pres.: 1011									
Tested by: Jaemi Suh		Power: 120VAC/60Hz	Job Site: 0C10									
TEST SPECIFICATIONS			Test Method									
FCC 95I:2007			ANSI/TIA/EIA-603-C:2004									
TEST PARAMETERS												
Antenna Height(s) (m)		1 - 4		Test Distance (m) 3								
COMMENTS												
Y-Axis												
EUT OPERATING MODES												
Transmit at 403.5 MHz.												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #	2		Signature 									
Configuration #	1											
Results	Pass											
												
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
806.990	23.4	9.8	116.0	1.0	0.0	0.0	H-Bilog	PK	0.0	33.2	46.0	-12.8
807.112	23.1	9.8	134.0	1.0	0.0	0.0	V-Bilog	PK	0.0	32.9	46.0	-13.1
401.520	30.1	2.4	78.0	1.9	0.0	0.0	H-Bilog	PK	0.0	32.5	46.0	-13.5
401.896	29.9	2.4	259.0	1.0	0.0	0.0	V-Bilog	PK	0.0	32.3	46.0	-13.7
405.465	28.8	2.5	360.0	2.0	0.0	0.0	H-Bilog	PK	0.0	31.3	46.0	-14.7
401.469	27.7	2.4	78.0	1.9	0.0	0.0	H-Bilog	QP	0.0	30.1	46.0	-15.9
405.494	26.5	2.5	315.0	1.0	0.0	0.0	V-Bilog	PK	0.0	29.0	46.0	-17.0
405.522	26.4	2.5	360.0	2.0	0.0	0.0	H-Bilog	QP	0.0	28.9	46.0	-17.1
405.523	24.8	2.5	315.0	1.0	0.0	0.0	V-Bilog	QP	0.0	27.3	46.0	-18.7
806.708	17.1	9.8	134.0	1.0	0.0	0.0	V-Bilog	QP	0.0	26.9	46.0	-19.1
806.961	17.1	9.8	116.0	1.0	0.0	0.0	H-Bilog	QP	0.0	26.9	46.0	-19.1
401.677	23.2	2.4	259.0	1.0	0.0	0.0	V-Bilog	QP	0.0	25.6	46.0	-20.4

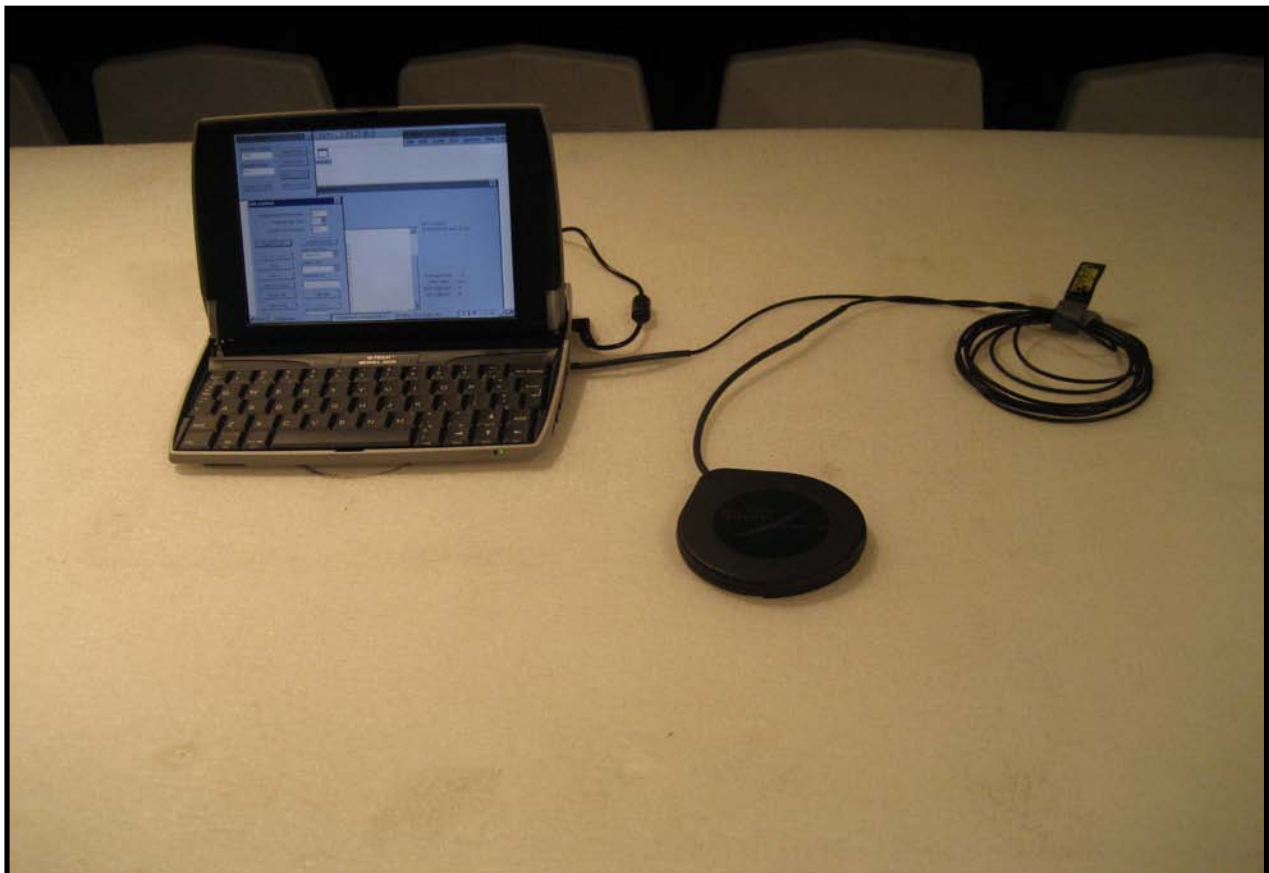
NORTHWEST EMC		FIELD STRENGTH OF RADIATED EMISSIONS		PSA 2007.05.07 EMI 2006.4.26								
EUT: Q-Tech Programmer 2020			Work Order: CAME0007									
Serial Number: 2020-A100118			Date: 06/10/08									
Customer: Cameron Health, Inc.			Temperature: 21.43									
Attendees: Paul Erlinger			Humidity: 52%									
Project: None			Barometric Pres.: 1011									
Tested by: Jaemi Suh		Power: 120VAC/60Hz		Job Site: 0C10								
TEST SPECIFICATIONS			Test Method									
FCC 95I:2007			ANSI/TIA/EIA-603-C:2004									
TEST PARAMETERS												
Antenna Height(s) (m)		1 - 4		Test Distance (m) 3								
COMMENTS												
Y-Axis												
EUT OPERATING MODES												
Transmit at 403.5 MHz.												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #	3		 Signature									
Configuration #	1											
Results	Pass											
												
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
1614.099	33.9	1.2	67.0	1.0	0.0	0.0	H-Horn	AV	0.0	35.1	54.0	-18.9
3228.023	25.3	7.4	1.0	1.7	0.0	0.0	V-Horn	AV	0.0	32.7	54.0	-21.3
3231.982	25.3	7.4	184.0	1.0	0.0	0.0	H-Horn	AV	0.0	32.7	54.0	-21.3
2017.709	25.3	5.6	6.0	2.3	0.0	0.0	V-Horn	AV	0.0	30.9	54.0	-23.1
2420.947	25.4	5.5	244.0	1.9	0.0	0.0	H-Horn	AV	0.0	30.9	54.0	-23.1
2421.078	25.4	5.5	360.0	2.2	0.0	0.0	V-Horn	AV	0.0	30.9	54.0	-23.1
2017.460	24.9	5.6	201.0	1.0	0.0	0.0	H-Horn	AV	0.0	30.5	54.0	-23.5
1210.573	32.4	-2.0	320.0	1.4	0.0	0.0	H-Horn	AV	0.0	30.4	54.0	-23.6
1614.075	27.4	1.2	202.0	1.0	0.0	0.0	V-Horn	AV	0.0	28.6	54.0	-25.4
3227.872	37.9	7.4	184.0	1.0	0.0	0.0	H-Horn	PK	0.0	45.3	74.0	-28.7
3228.503	37.5	7.4	1.0	1.7	0.0	0.0	V-Horn	PK	0.0	44.9	74.0	-29.1
1207.616	26.1	-2.0	67.0	1.0	0.0	0.0	V-Horn	AV	0.0	24.1	54.0	-29.9
2418.668	38.5	5.5	360.0	2.2	0.0	0.0	V-Horn	PK	0.0	44.0	74.0	-30.0
2422.529	37.7	5.5	244.0	1.9	0.0	0.0	H-Horn	PK	0.0	43.2	74.0	-30.8
2017.643	37.5	5.6	201.0	1.0	0.0	0.0	H-Horn	PK	0.0	43.1	74.0	-30.9
2015.930	36.9	5.6	6.0	2.3	0.0	0.0	V-Horn	PK	0.0	42.5	74.0	-31.5
1614.232	41.1	1.2	67.0	1.0	0.0	0.0	H-Horn	PK	0.0	42.3	74.0	-31.7
1614.144	38.0	1.2	202.0	1.0	0.0	0.0	V-Horn	PK	0.0	39.2	74.0	-34.8
1210.292	40.6	-2.0	320.0	1.4	0.0	0.0	H-Horn	PK	0.0	38.6	74.0	-35.4
1208.556	38.0	-2.0	67.0	1.0	0.0	0.0	V-Horn	PK	0.0	36.0	74.0	-38.0

NORTHWEST EMC		FIELD STRENGTH OF RADIATED EMISSIONS		PSA 2007.05.07 EMI 2006.4.26								
EUT: Q-Tech Programmer 2020			Work Order: CAME0007									
Serial Number: 2020-A100118			Date: 06/10/08									
Customer: Cameron Health, Inc.			Temperature: 21.43									
Attendees: Paul Erlinger			Humidity: 52%									
Project: None			Barometric Pres.: 1011									
Tested by: Jaemi Suh		Power: 120VAC/60Hz	Job Site: 0C10									
TEST SPECIFICATIONS			Test Method									
FCC 95I:2007			ANSI/TIA/EIA-603-C:2004									
TEST PARAMETERS												
Antenna Height(s) (m)		1 - 4		Test Distance (m) 3								
COMMENTS												
Z-Axis												
EUT OPERATING MODES												
Transmit at 403.5 MHz.												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #	5		 Signature									
Configuration #	1											
Results	Pass											
												
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
401.630	31.2	2.4	197.0	1.0	3.0	0.0	V-Bilog	PK	0.0	33.6	46.0	-12.4
806.958	22.7	9.8	105.0	3.2	3.0	0.0	H-Bilog	PK	0.0	32.5	46.0	-13.5
806.921	22.1	9.8	56.0	1.0	3.0	0.0	V-Bilog	PK	0.0	31.9	46.0	-14.1
405.499	28.1	2.5	257.0	1.0	3.0	0.0	V-Bilog	PK	0.0	30.6	46.0	-15.4
405.008	25.5	2.5	311.0	1.8	3.0	0.0	H-Bilog	PK	0.0	28.0	46.0	-18.0
806.980	17.1	9.8	56.0	1.0	3.0	0.0	V-Bilog	QP	0.0	26.9	46.0	-19.1
807.286	17.1	9.8	105.0	3.2	3.0	0.0	H-Bilog	QP	0.0	26.9	46.0	-19.1
401.673	24.5	2.4	197.0	1.0	3.0	0.0	V-Bilog	QP	0.0	26.9	46.0	-19.1
401.738	23.9	2.4	153.0	1.0	3.0	0.0	H-Bilog	PK	0.0	26.3	46.0	-19.7
405.524	21.8	2.5	257.0	1.0	3.0	0.0	V-Bilog	QP	0.0	24.3	46.0	-21.7
405.008	20.6	2.5	311.0	1.8	3.0	0.0	H-Bilog	QP	0.0	23.1	46.0	-22.9
401.698	19.2	2.4	153.0	1.0	3.0	0.0	H-Bilog	QP	0.0	21.6	46.0	-24.4

NORTHWEST		FIELD STRENGTH OF RADIATED EMISSIONS		PSA 2007.05.07								
EMC				EMI 2006.4.26								
EUT: Q-Tech Programmer 2020			Work Order: CAME0007									
Serial Number: 2020-A100118			Date: 06/10/08									
Customer: Cameron Health, Inc.			Temperature: 21.43									
Attendees: Paul Erlinger			Humidity: 52%									
Project: None			Barometric Pres.: 1011									
Tested by: Jaemi Suh		Power: 120VAC/60Hz	Job Site: 0C10									
TEST SPECIFICATIONS			Test Method									
FCC 95I:2007			ANSI/TIA/EIA-603-C:2004									
TEST PARAMETERS												
Antenna Height(s) (m)		1 - 4		Test Distance (m) 3								
COMMENTS												
Z-Axis												
EUT OPERATING MODES												
Transmit at 403.5 MHz.												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #	4		Signature 									
Configuration #	1											
Results	Pass											
												
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
1614.092	36.3	1.2	146.0	1.0	0.0	0.0	H-Horn	AV	0.0	37.5	54.0	-16.5
3232.834	25.3	7.4	108.0	1.0	0.0	0.0	H-Horn	AV	0.0	32.7	54.0	-21.3
3230.077	25.2	7.4	188.0	1.0	0.0	0.0	V-Horn	AV	0.0	32.6	54.0	-21.4
2017.622	26.5	5.6	103.0	2.6	0.0	0.0	H-Horn	AV	0.0	32.1	54.0	-21.9
2017.495	25.3	5.6	239.0	2.2	0.0	0.0	V-Horn	AV	0.0	30.9	54.0	-23.1
2417.046	25.4	5.5	190.0	3.5	0.0	0.0	H-Horn	AV	0.0	30.9	54.0	-23.1
2421.316	25.4	5.5	263.0	3.1	0.0	0.0	V-Horn	AV	0.0	30.9	54.0	-23.1
1614.070	29.2	1.2	188.0	1.0	0.0	0.0	V-Horn	AV	0.0	30.4	54.0	-23.6
1210.466	27.4	-2.0	343.0	1.0	0.0	0.0	V-Horn	AV	0.0	25.4	54.0	-28.6
3227.034	37.5	7.4	188.0	1.0	0.0	0.0	V-Horn	PK	0.0	44.9	74.0	-29.1
1210.542	26.7	-2.0	157.0	1.4	0.0	0.0	H-Horn	AV	0.0	24.7	54.0	-29.3
1613.801	43.0	1.2	146.0	1.0	0.0	0.0	H-Horn	PK	0.0	44.2	74.0	-29.8
2419.782	38.4	5.5	190.0	3.5	0.0	0.0	H-Horn	PK	0.0	43.9	74.0	-30.1
3229.695	36.5	7.4	108.0	1.0	0.0	0.0	H-Horn	PK	0.0	43.9	74.0	-30.1
2017.005	37.7	5.6	239.0	2.2	0.0	0.0	V-Horn	PK	0.0	43.3	74.0	-30.7
2017.757	37.7	5.6	103.0	2.6	0.0	0.0	H-Horn	PK	0.0	43.3	74.0	-30.7
2421.749	37.5	5.5	263.0	3.1	0.0	0.0	V-Horn	PK	0.0	43.0	74.0	-31.0
1614.041	39.0	1.2	188.0	1.0	0.0	0.0	V-Horn	PK	0.0	40.2	74.0	-33.8
1211.209	38.9	-2.0	343.0	1.0	0.0	0.0	V-Horn	PK	0.0	36.9	74.0	-37.1
1208.892	38.4	-2.0	157.0	1.4	0.0	0.0	H-Horn	PK	0.0	36.4	74.0	-37.6

NORTHWEST EMC		FIELD STRENGTH OF RADIATED EMISSIONS		PSA 2007.05.07 EMI 2006.4.26																																																																																																																																																																																	
EUT: Q-Tech Programmer 2020			Work Order: CAME0007																																																																																																																																																																																		
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<table border="1"> <thead> <tr> <th>Freq (MHz)</th> <th>Amplitude (dBuV)</th> <th>Factor (dB)</th> <th>Azimuth (degrees)</th> <th>Height (meters)</th> <th>Distance (meters)</th> <th>External Attenuation (dB)</th> <th>Polarity</th> <th>Detector</th> <th>Distance Adjustment (dB)</th> <th>Adjusted dBuV/m</th> <th>Spec. Limit dBuV/m</th> <th>Compared to Spec. (dB)</th> </tr> </thead> <tbody> <tr><td>807.181</td><td>23.4</td><td>9.8</td><td>34.0</td><td>1.0</td><td>0.0</td><td>0.0</td><td>V-Bilog</td><td>PK</td><td>0.0</td><td>33.2</td><td>46.0</td><td>-12.8</td></tr> <tr><td>807.155</td><td>23.3</td><td>9.8</td><td>10.0</td><td>3.1</td><td>0.0</td><td>0.0</td><td>H-Bilog</td><td>PK</td><td>0.0</td><td>33.1</td><td>46.0</td><td>-12.9</td></tr> <tr><td>405.500</td><td>26.6</td><td>2.5</td><td>259.0</td><td>1.0</td><td>0.0</td><td>0.0</td><td>V-Bilog</td><td>PK</td><td>0.0</td><td>29.1</td><td>46.0</td><td>-16.9</td></tr> <tr><td>401.673</td><td>26.0</td><td>2.4</td><td>136.0</td><td>1.0</td><td>0.0</td><td>0.0</td><td>V-Bilog</td><td>PK</td><td>0.0</td><td>28.4</td><td>46.0</td><td>-17.6</td></tr> <tr><td>806.642</td><td>17.1</td><td>9.8</td><td>34.0</td><td>1.0</td><td>0.0</td><td>0.0</td><td>V-Bilog</td><td>QP</td><td>0.0</td><td>26.9</td><td>46.0</td><td>-19.1</td></tr> <tr><td>806.936</td><td>17.1</td><td>9.8</td><td>10.0</td><td>3.1</td><td>0.0</td><td>0.0</td><td>H-Bilog</td><td>QP</td><td>0.0</td><td>26.9</td><td>46.0</td><td>-19.1</td></tr> <tr><td>401.690</td><td>24.1</td><td>2.4</td><td>110.0</td><td>2.0</td><td>0.0</td><td>0.0</td><td>H-Bilog</td><td>PK</td><td>0.0</td><td>26.5</td><td>46.0</td><td>-19.5</td></tr> <tr><td>405.068</td><td>22.9</td><td>2.5</td><td>90.0</td><td>1.0</td><td>0.0</td><td>0.0</td><td>H-Bilog</td><td>PK</td><td>0.0</td><td>25.4</td><td>46.0</td><td>-20.6</td></tr> <tr><td>405.008</td><td>22.5</td><td>2.5</td><td>259.0</td><td>1.0</td><td>0.0</td><td>0.0</td><td>V-Bilog</td><td>QP</td><td>0.0</td><td>25.0</td><td>46.0</td><td>-21.0</td></tr> <tr><td>401.671</td><td>21.4</td><td>2.4</td><td>136.0</td><td>1.0</td><td>0.0</td><td>0.0</td><td>V-Bilog</td><td>QP</td><td>0.0</td><td>23.8</td><td>46.0</td><td>-22.2</td></tr> <tr><td>401.671</td><td>19.1</td><td>2.4</td><td>110.0</td><td>2.0</td><td>0.0</td><td>0.0</td><td>H-Bilog</td><td>QP</td><td>0.0</td><td>21.5</td><td>46.0</td><td>-24.5</td></tr> <tr><td>405.525</td><td>18.3</td><td>2.5</td><td>90.0</td><td>1.0</td><td>0.0</td><td>0.0</td><td>H-Bilog</td><td>QP</td><td>0.0</td><td>20.8</td><td>46.0</td><td>-25.2</td></tr> </tbody> </table>													Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	807.181	23.4	9.8	34.0	1.0	0.0	0.0	V-Bilog	PK	0.0	33.2	46.0	-12.8	807.155	23.3	9.8	10.0	3.1	0.0	0.0	H-Bilog	PK	0.0	33.1	46.0	-12.9	405.500	26.6	2.5	259.0	1.0	0.0	0.0	V-Bilog	PK	0.0	29.1	46.0	-16.9	401.673	26.0	2.4	136.0	1.0	0.0	0.0	V-Bilog	PK	0.0	28.4	46.0	-17.6	806.642	17.1	9.8	34.0	1.0	0.0	0.0	V-Bilog	QP	0.0	26.9	46.0	-19.1	806.936	17.1	9.8	10.0	3.1	0.0	0.0	H-Bilog	QP	0.0	26.9	46.0	-19.1	401.690	24.1	2.4	110.0	2.0	0.0	0.0	H-Bilog	PK	0.0	26.5	46.0	-19.5	405.068	22.9	2.5	90.0	1.0	0.0	0.0	H-Bilog	PK	0.0	25.4	46.0	-20.6	405.008	22.5	2.5	259.0	1.0	0.0	0.0	V-Bilog	QP	0.0	25.0	46.0	-21.0	401.671	21.4	2.4	136.0	1.0	0.0	0.0	V-Bilog	QP	0.0	23.8	46.0	-22.2	401.671	19.1	2.4	110.0	2.0	0.0	0.0	H-Bilog	QP	0.0	21.5	46.0	-24.5	405.525	18.3	2.5	90.0	1.0	0.0	0.0	H-Bilog	QP	0.0	20.8	46.0	-25.2
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)																																																																																																																																																																									
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NORTHWEST										PSA 2007.05.07 EMI 2006.4.26			
EMC FIELD STRENGTH OF RADIATED EMISSIONS													
EUT: Q-Tech Programmer 2020										Work Order: CAME0007			
Serial Number: 2020-A100118										Date: 06/10/08			
Customer: Cameron Health, Inc.										Temperature: 21.43			
Attendees: Paul Erlinger										Humidity: 52%			
Project: None										Barometric Pres.: 1011			
Tested by: Jaemi Suh					Power: 120VAC/60Hz					Job Site: 0C10			
TEST SPECIFICATIONS										Test Method			
FCC 95I:2007										ANSI/TIA/EIA-603-C:2004			
TEST PARAMETERS													
Antenna Height(s) (m)					1 - 4					Test Distance (m)		3	
COMMENTS													
X-Axis													
EUT OPERATING MODES													
Transmit at 403.5 MHz.													
DEVIATIONS FROM TEST STANDARD													
No deviations.													
Run #		7		Signature									
Configuration #		1											
Results		Pass											
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Spec. (dB)	
1614.098	35.8	1.2	108.0	2.7	0.0	0.0	H-Horn	AV	0.0	37.0	54.0	-17.0	
1614.086	34.8	1.2	192.0	1.0	0.0	0.0	V-Horn	AV	0.0	36.0	54.0	-18.0	
3228.233	25.4	7.4	152.0	1.0	0.0	0.0	H-Horn	AV	0.0	32.8	54.0	-21.2	
3227.831	25.2	7.4	206.0	1.0	0.0	0.0	V-Horn	AV	0.0	32.6	54.0	-21.4	
2017.545	26.6	5.6	81.0	1.0	0.0	0.0	V-Horn	AV	0.0	32.2	54.0	-21.8	
2421.049	26.0	5.5	35.0	1.0	0.0	0.0	H-Horn	AV	0.0	31.5	54.0	-22.5	
2017.611	25.8	5.6	303.0	1.0	0.0	0.0	H-Horn	AV	0.0	31.4	54.0	-22.6	
2421.454	25.3	5.5	317.0	2.6	0.0	0.0	V-Horn	AV	0.0	30.8	54.0	-23.2	
3225.925	37.5	7.4	206.0	1.0	0.0	0.0	V-Horn	PK	0.0	44.9	74.0	-29.1	
1207.050	26.3	-2.0	213.0	2.4	0.0	0.0	H-Horn	AV	0.0	24.3	54.0	-29.7	
3227.768	36.5	7.4	152.0	1.0	0.0	0.0	H-Horn	PK	0.0	43.9	74.0	-30.1	
2418.882	38.1	5.5	317.0	2.6	0.0	0.0	V-Horn	PK	0.0	43.6	74.0	-30.4	
1210.489	25.5	-2.0	309.0	3.4	0.0	0.0	V-Horn	AV	0.0	23.5	54.0	-30.5	
2018.177	37.9	5.6	303.0	1.0	0.0	0.0	H-Horn	PK	0.0	43.5	74.0	-30.5	
2017.298	37.7	5.6	81.0	1.0	0.0	0.0	V-Horn	PK	0.0	43.3	74.0	-30.7	
2419.574	37.8	5.5	35.0	1.0	0.0	0.0	H-Horn	PK	0.0	43.3	74.0	-30.7	
1613.807	41.6	1.2	192.0	1.0	0.0	0.0	V-Horn	PK	0.0	42.8	74.0	-31.2	
1614.241	41.6	1.2	108.0	2.7	0.0	0.0	H-Horn	PK	0.0	42.8	74.0	-31.2	
1211.840	37.9	-2.0	309.0	3.4	0.0	0.0	V-Horn	PK	0.0	35.9	74.0	-38.1	
1209.121	37.8	-2.0	213.0	2.4	0.0	0.0	H-Horn	PK	0.0	35.8	74.0	-38.2	





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.

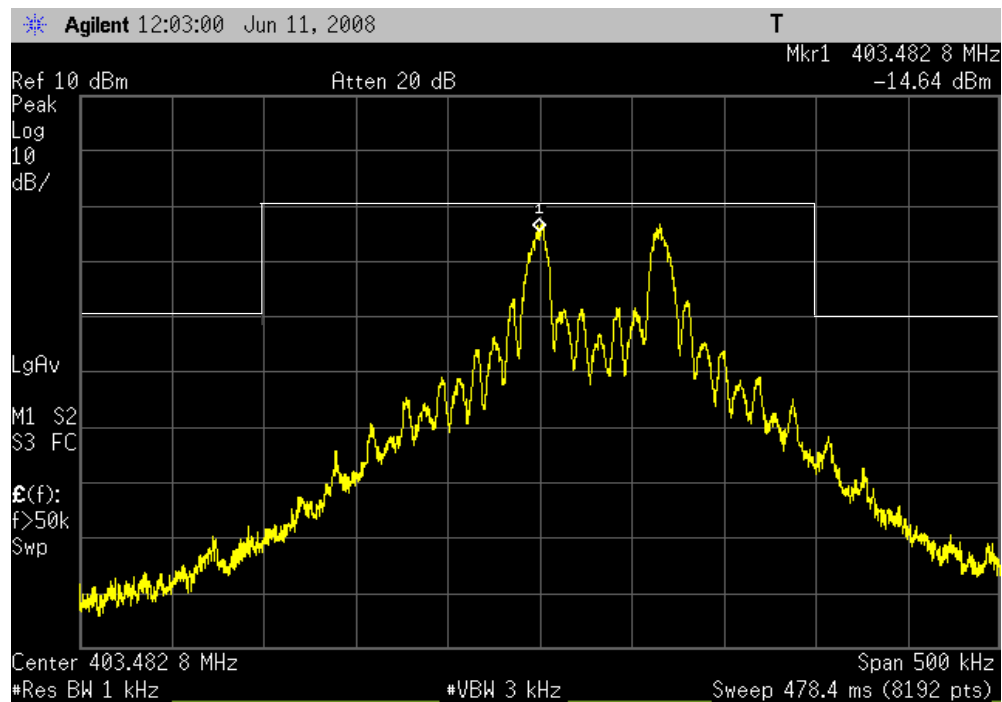
EMC

EMISSION MASK

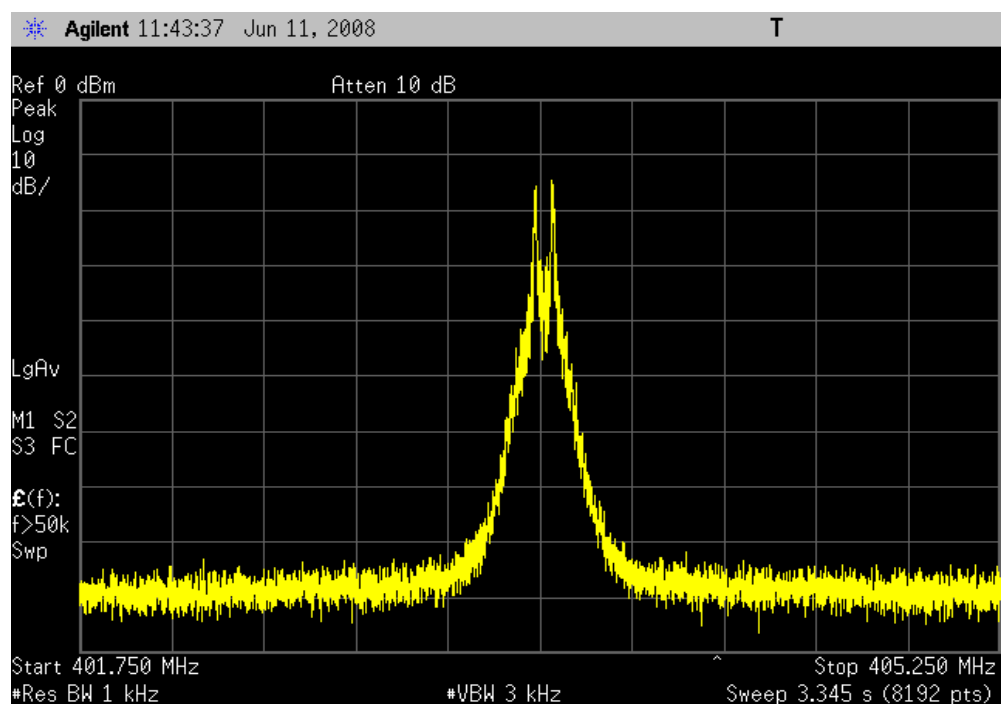
EUT: Q-Tech Programmer 2020		Work Order: CAME0007	
Serial Number: 2020-A100118		Date: 06/11/08	
Customer: Cameron Health, Inc.		Temperature: 21.43°C	
Attendees: Paul Erlinger		Humidity: 52%	
Project: None		Barometric Pres.: 1011	
Tested by: Jaemi Suh		Power: 120VAC/60Hz	Job Site: 0C10
TEST SPECIFICATIONS		Test Method	
FCC 951:2007		ANSI/TIA/EIA-603-C-2004	
COMMENTS			
None			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature 	

	Value	Limit	Results
1 kHz RBW, +150 kHz fc	≤ -20 dBc	See Graph	Pass
1 kHz RBW, +250 kHz of allowable band	≤ -20 dBc	See Graph	Pass
3 kHz RBW, +150 kHz fc	≤ -20 dBc	See Graph	Pass
3 kHz RBW, +250 kHz of allowable band	≤ -20 dBc	See Graph	Pass

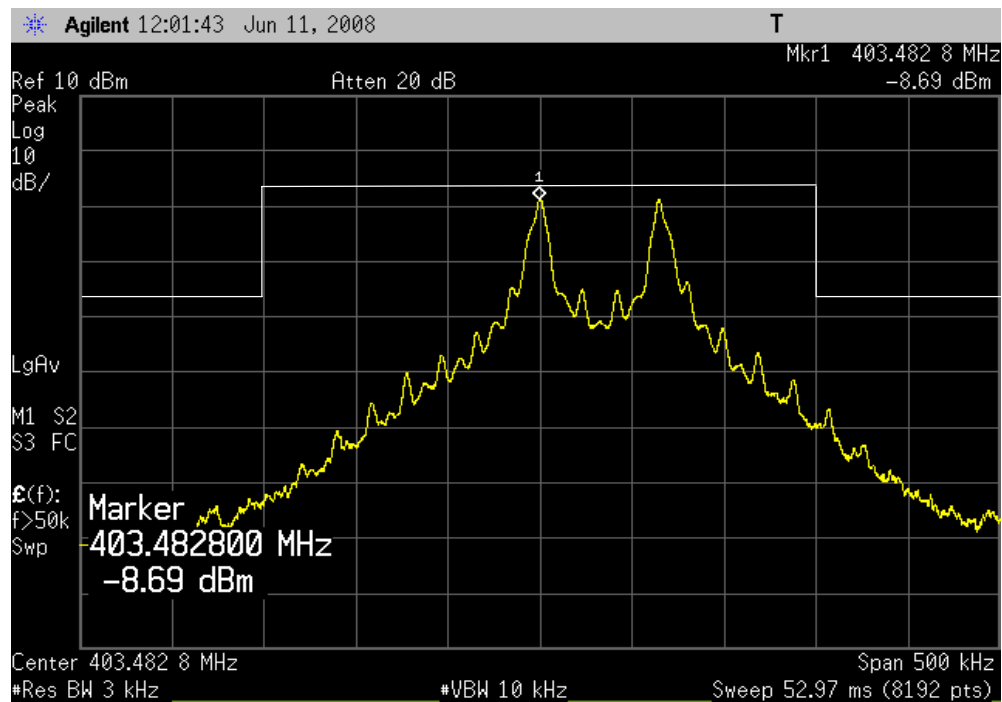
1 kHz RBW, ± 150 kHz fc		
Result: Pass	Value: ≤ -20 dBc	Limit: See Graph



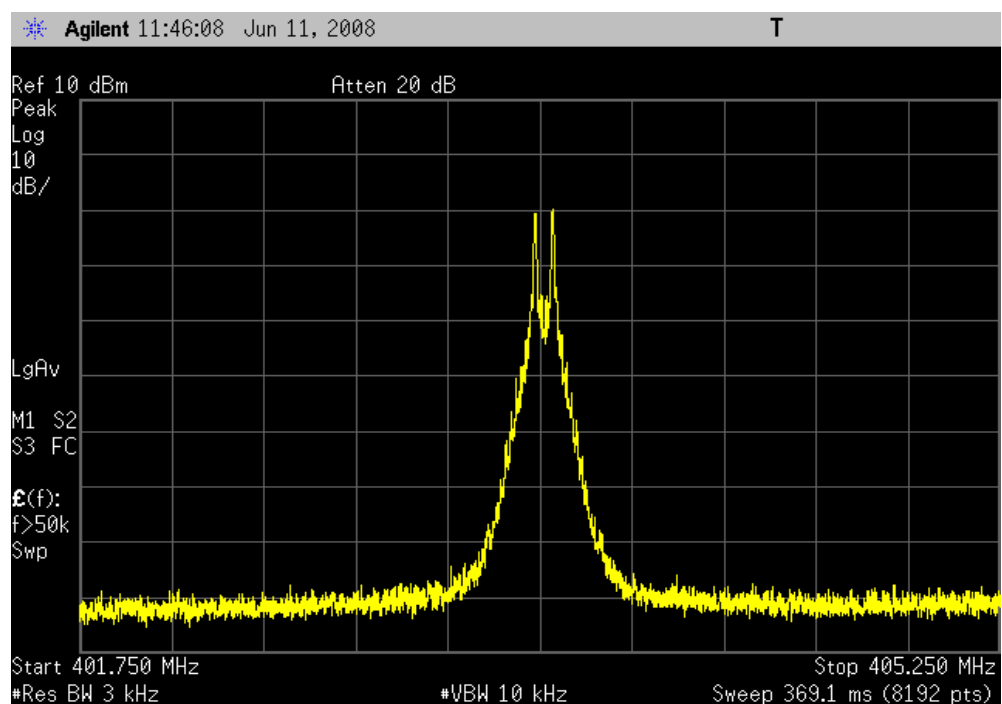
1 kHz RBW, ± 250 kHz of allowable band		
Result: Pass	Value: ≤ -20 dBc	Limit: See Graph

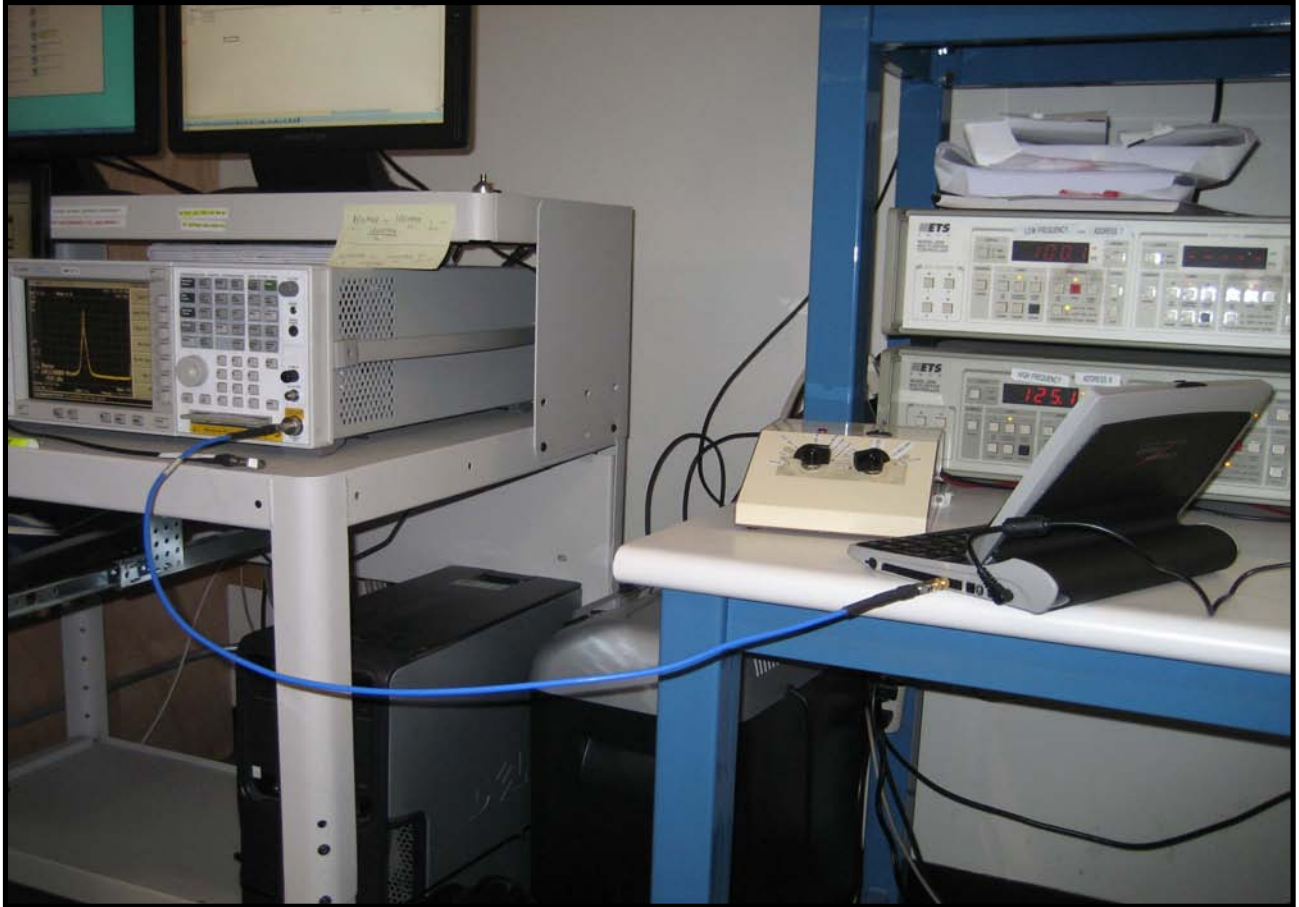


3 kHz RBW, ± 150 kHz fc		
Result: Pass	Value: ≤ -20 dBc	Limit: See Graph



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





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 DATA

Transmit at 403.5 MHz.

POWER SETTINGS INVESTIGATED

120VAC/60Hz

POWER SETTINGS USED FOR FINAL DATA

120VAC/60Hz

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	1000
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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

MEASUREMENT 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

Measurements were made using the bandwidths and detectors specified. No video filter 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.

EUT:	Q-Tech Programmer 2020	Work Order:	CAME0007
Serial Number:	2020-A100118	Date:	06/10/08
Customer:	Cameron Health, Inc.	Temperature:	21.43
Attendees:	Paul Erlinger	Humidity:	52%
Project:	None	Barometric Pres.:	1011
Tested by:	Jaemi Suh	Power:	120VAC/60Hz
		Job Site:	0C10

TEST SPECIFICATIONS

Test Method

FCC 951:2007

ANSI/TIA/EIA-603-C-2004

TEST PARAMETERS

Antenna Height(s) (m)	1 - 4	Test Distance (m)	3
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COMMENTS

Z-Axis

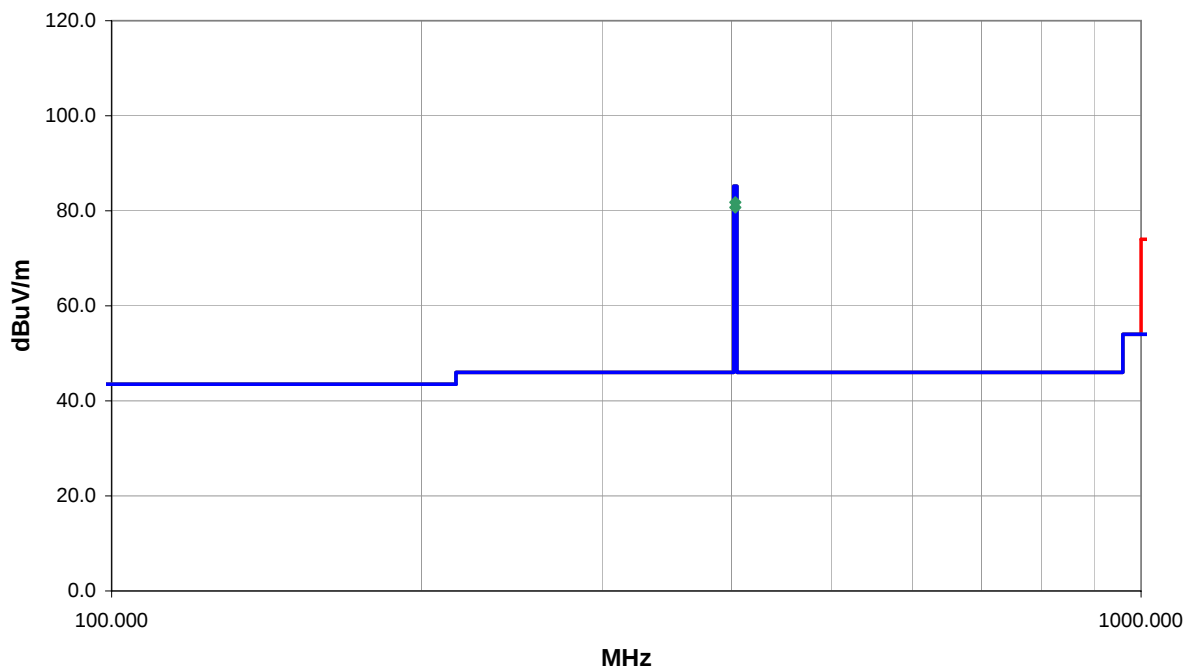
EUT OPERATING MODES

Transmit at 403.5 MHz.

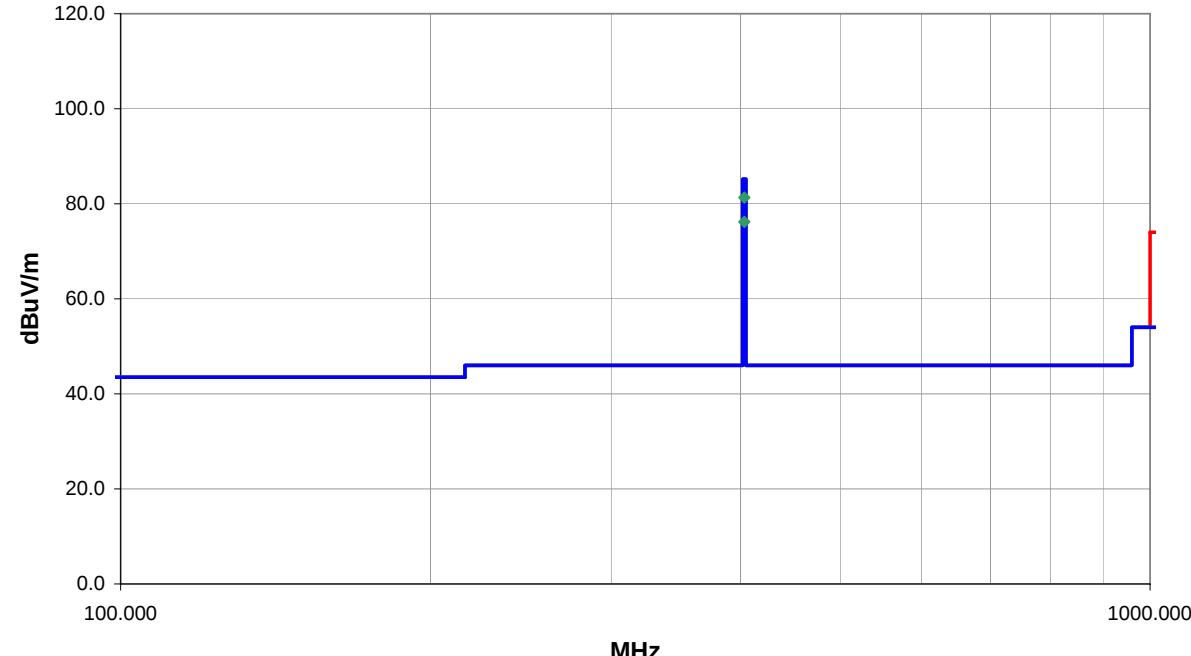
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	1	Signature 
Configuration #	1	
Results	Pass	



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
403.466	79.3	2.5	210.0	1.9	3.0	0.0	H-Bilog	PK	0.0	81.8	85.2	-3.4
403.548	78.2	2.5	319.0	2.0	3.0	0.0	V-Bilog	PK	0.0	80.7	85.2	-4.5

NORTHWEST		Field Strength of Fundamental		PSA 2007.05.07								
EMC				EMI 2006.4.26								
EUT: Q-Tech Programmer 2020			Work Order: CAME0007									
Serial Number: 2020-A100118			Date: 06/10/08									
Customer: Cameron Health, Inc.			Temperature: 21.43									
Attendees: Paul Erlinger			Humidity: 52%									
Project: None			Barometric Pres.: 1011									
Tested by: Jaemi Suh		Power: 120VAC/60Hz		Job Site: 0C10								
TEST SPECIFICATIONS			Test Method									
FCC 951:2007			ANSI/TIA/EIA-603-C-2004									
TEST PARAMETERS												
Antenna Height(s) (m)		1 - 4		Test Distance (m) 3								
COMMENTS												
Y-Axis												
EUT OPERATING MODES												
Transmit at 403.5 MHz.												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #	1		 Signature									
Configuration #	1											
Results	Pass											
												
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
403.482	78.8	2.5	205.0	1.9	3.0	0.0	H-Bilog	PK	0.0	81.3	85.2	-3.9
403.478	73.7	2.5	1.0	1.6	3.0	0.0	V-Bilog	PK	0.0	76.2	85.2	-9.0

EUT:	Q-Tech Programmer 2020	Work Order:	CAME0007
Serial Number:	2020-A100118	Date:	06/10/08
Customer:	Cameron Health, Inc.	Temperature:	21.43
Attendees:	Paul Erlinger	Humidity:	52%
Project:	None	Barometric Pres.:	1011
Tested by:	Jaemi Suh	Power:	120VAC/60Hz
		Job Site:	0C10

TEST SPECIFICATIONS

Test Method

FCC 951:2007

ANSI/TIA/EIA-603-C-2004

TEST PARAMETERS

Antenna Height(s) (m)	1 - 4	Test Distance (m)	3
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COMMENTS

X-Axis

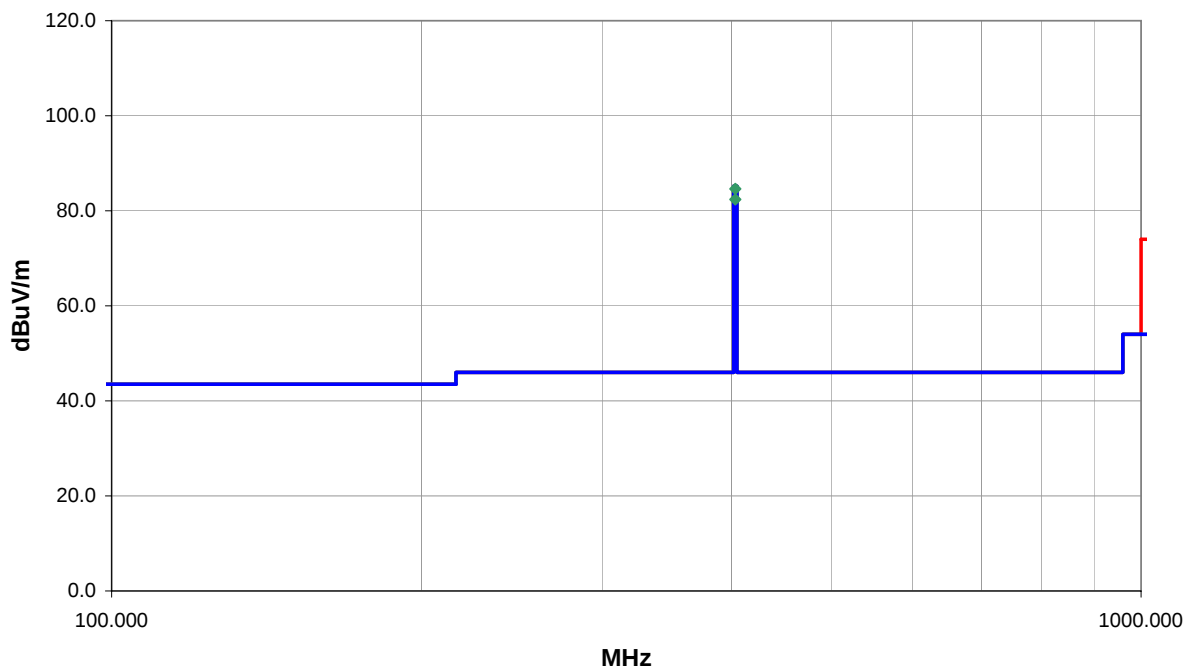
EUT OPERATING MODES

Transmit at 403.5 MHz.

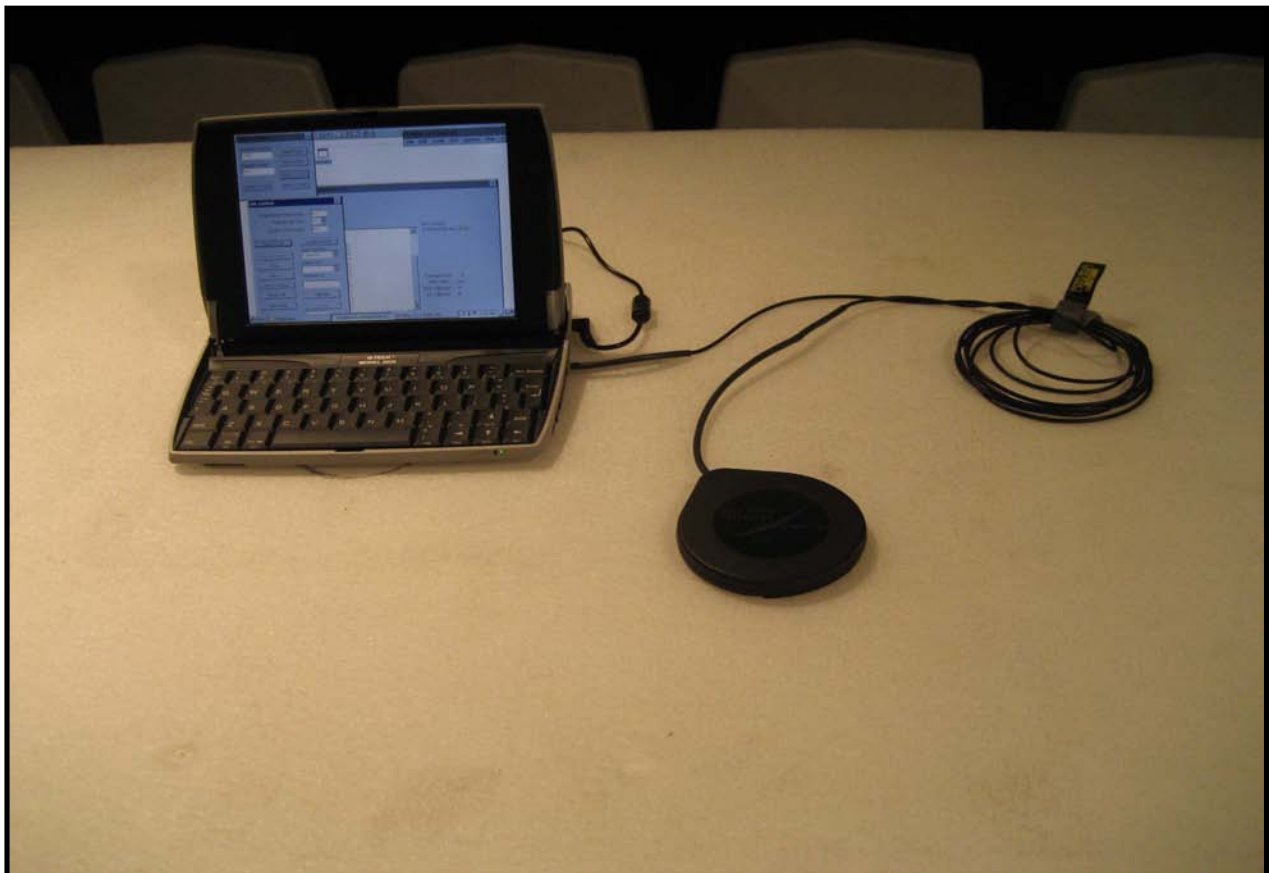
DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	1	Signature 
Configuration #	1	
Results	Pass	



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
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
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





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 actual 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.

EMC

OCCUPIED BANDWIDTH

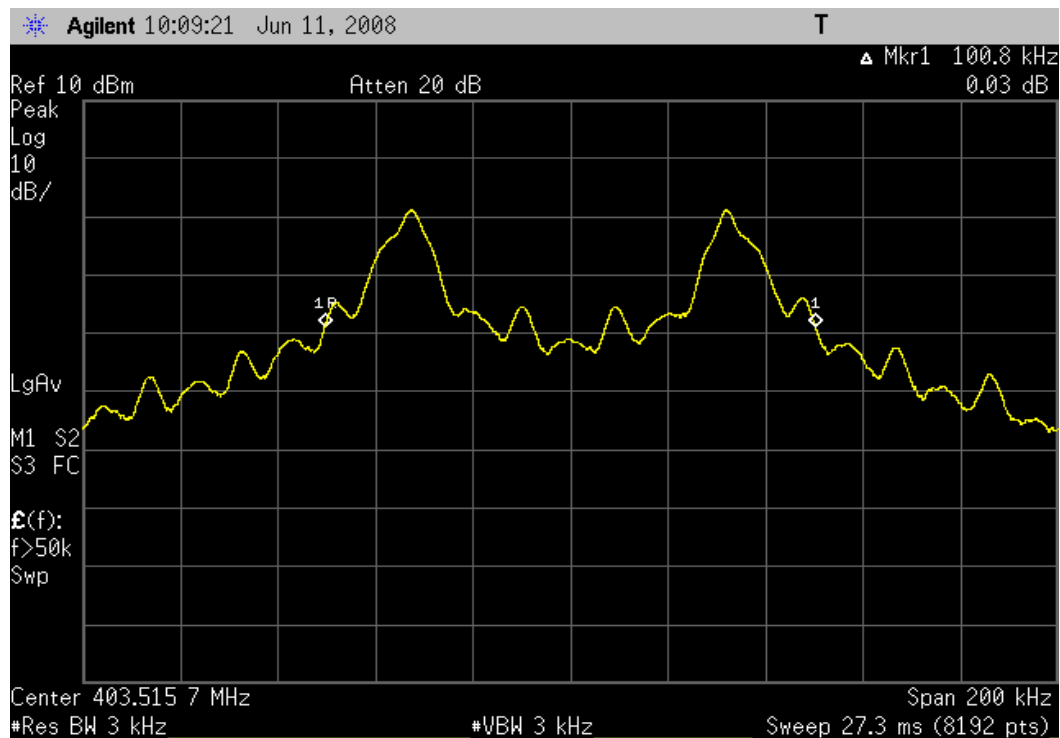
EUT: Q-Tech Programmer 2020		Work Order: CAME0007	
Serial Number: 2020-A100118		Date: 06/11/08	
Customer: Cameron Health, Inc.		Temperature: 21.43°C	
Attendees: Paul Erlinger		Humidity: 52%	
Project: None		Barometric Pres.: 1011	
Tested by: Jaemi Suh		Power: 120VAC/60Hz	Job Site: 0C10
TEST SPECIFICATIONS		Test Method	
FCC 951:2007		ANSI/TIA/EIA-603-C-2004	
COMMENTS			
None			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature 	
		Value	Limit
3 kHz RBW		100.8 kHz	300 kHz
			Results
			Pass

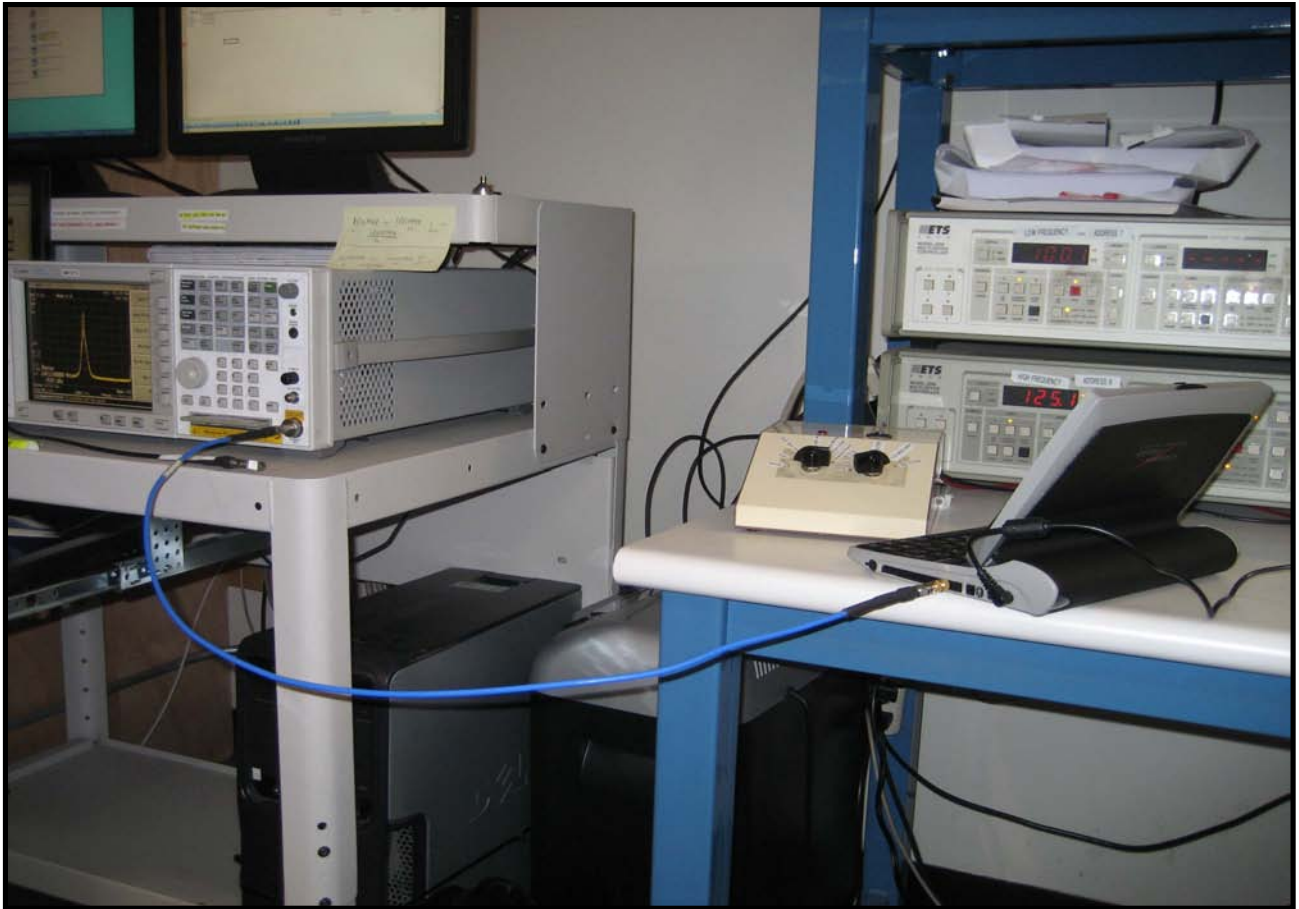
3 kHz RBW

Result: Pass

Value: 100.8 kHz

Limit: 300 kHz





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).

EMC

FREQUENCY STABILITY

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 SPECIFICATIONS		Test Method	
FCC 951:2007		ANSI/TIA/EIA-603-B:2002	
COMMENTS			
None			
DEVIATIONS FROM 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		FREQUENCY STABILITY		XMit 2006.08.25	
EMC					
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 SPECIFICATIONS		Test Method			
FCC 95i:2007		ANSI/TIA/EIA-603-B:2002			
COMMENTS					
None					
DEVIATIONS FROM 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

