Elliott Laboratories
www.elliottlabs.com
684 West Maude Avenue
Sunnyvale, CA 94085-3518
408-245-7800 Phone
408-245-3499 Fax

Electromagnetic Emissions Test Report
Application for Grant of Equipment Authorization
pursuant to
Industry Canada RSS-Gen Issue 2 / RSS 210 Issue 7
FCC Part 15 Subpart C
on the
Abbott Diabetes Care
Transmitter
Model: AV2 Controller

MANUFACTURER:	Abbott Diabetes Care 1360 South Loop Road Alameda, CA 94502
TEST SITE:	Elliott Laboratories 684 W. Maude Ave Sunnyvale, CA 94086
REPORT DATE:	August 26, 2008
REISSUE DATE:	September 17, 2008
FINAL TEST DATE:	May 8, May 12, June 27 and July 2, 2008
AUTHORIZED SIGNATORY:	Mark E. Hill Staff Engineer

ACCREDITED

Testing Cert #2016-01

REVISION HISTORY

Rev #	Date	Comments	Modified By
1	September 3, 2008	Initial Release	-
2	September 17, 2008	Reissued to clarify test results, model number, software modifications, test dates and correct manufacturer	David Guidotti

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SCOPE

An electromagnetic emissions test has been performed on the Abbott Diabetes Care model AV2 Controller pursuant to the following rules:

Industry Canada RSS-Gen Issue 2
RSS 210 Issue 7 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment"
FCC Part 15 Subpart C

Conducted and radiated emissions data has been collected, reduced, and analyzed within this report in accordance with measurement guidelines set forth in the following reference standards and as outlined in Elliott Laboratories test procedures:

ANSI C63.4:2003

The intentional radiator above has been tested in a simulated typical installation to demonstrate compliance with the relevant Industry Canada performance and procedural standards.

Final system data was gathered in a mode that tended to maximize emissions by varying orientation of EUT, orientation of power and I/O cabling, antenna search height, and antenna polarization.

Every practical effort was made to perform an impartial test using appropriate test equipment of known calibration. All pertinent factors have been applied to reach the determination of compliance.

The test results recorded herein are based on a single type test of the Abbott Diabetes Care model AV2 Controller and therefore apply only to the tested sample. The sample was selected and prepared by Rich Kelley of Abbott Diabetes Care.

OBJECTIVE

The primary objective of the manufacturer is compliance with the regulations outlined in the previous section.

Prior to marketing in the USA, all unlicensed transmitters and transceivers require certification. Receive-only devices operating between 30 MHz and 960 MHz are subject to either certification or a manufacturer's declaration of conformity, with all other receive-only devices exempt from the technical requirements.

Prior to marketing in Canada, Class I transmitters, receivers and transceivers require certification. Class II devices are required to meet the appropriate technical requirements but are exempt from certification requirements.

Certification is a procedure where the manufacturer submits test data and technical information to a certification body and receives a certificate or grant of equipment authorization upon successful completion of the certification body's review of the submitted documents. Once the equipment authorization has been obtained, the label indicating compliance must be attached to all identical units, which are subsequently manufactured.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product which may result in increased emissions should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing or I/O cable changes, etc.).

STATEMENT OF COMPLIANCE

The tested sample of Abbott Diabetes Care model AV2 Controller complied with the requirements of the following regulations:

Industry Canada RSS-Gen Issue 2
RSS 210 Issue 7 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment"
FCC Part 15 Subpart C

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product which may result in increased emissions should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing or I/O cable changes, etc.).

TEST RESULTS SUMMARY

DEVICES OPERATING IN THE 2400 – 2483.5 MHz BANDS

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.249 (a)	RSS 210 A2.9 (1)	Fundamental Signal Strength	92.1dBµV/m (40271.7µV/m) @ 2402.0MHz	50mV/m @ 3m	Complies
15.249 (a) / 15.209	RSS 210 A2.9 (1) & Table 2	Radiated Spurious Emissions, 30 - 25000 MHz	52.3dBµV/m (412.1µV/m) @ 2484.0MHz	Harmonics 500uV/m @ 3m or general limits	Complies
15.249 (a)	RSP 100 RSS GEN 4.4.1	99% Bandwidth	1.16MHz	Information only	N/A

GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS

FCC Rule Part	RSS Rule part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.203	-	RF Connector	Antenna is internal		Complies
15.109		Receiver spurious emissions			N/A – Note 1
	RSS GEN 7.2.3 Table 1	Receiver spurious emissions			N/A – Note 2
15.207	RSS GEN Table 2	AC Conducted Emissions	46.3dBµV @ 0.220MHz (-6.5dB)	Refer to standard	Complies
15.247 (b) (5) 15.407 (f)	RSS 102	RF Exposure Requirements	RSS 102 declaration and User Manual statements.	Refer to OET 65, FCC Part 1 and RSS 102	Complies
	RSP 100 RSS GEN 7.1.5	User Manual		Statement required regarding non-interference	N/A – Note 3

Note 1 – The receiver tunes above 960 MHz.
Note 2 – The testing was not performed per Abbott Diabetes Care Protocol.
Note 3 – Review of the User's Manual was not included in this evaluation.

MEASUREMENT UNCERTAINTIES

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level and were calculated in accordance with UKAS document LAB 34.

Measurement Type	Frequency Range (MHz)	Calculated Uncertainty (dB)
Conducted Emissions	0.15 to 30	± 2.4
Radiated Emissions	0.015 to 30	± 3.0
Radiated Emissions	30 to 1000	± 3.6
Radiated Emissions	1000 to 40000	± 6.0

EQUIPMENT UNDER TEST (EUT) DETAILS

GENERAL

The Abbott Diabetes Care model AV2 Controller is an AV2 controller that is designed to control the Aviator Insulin Delivery System pump. The device is a hand held portable device. It can be placed in a cradle for charging and data transmission to a PC or worn on the body. The EUT was treated as tabletop equipment during testing to simulate the end-user environment. The electrical rating of the EUT power adapter is 100-240 Volts, 50-60 Hz, 0.25 Amps.

The sample was received on May 8, 2008 and tested on May 8, May 12, June 27 and July 2, 2008. The EUT consisted of the following component(s):

Manufacturer	Model	Description	Serial Number	FCC ID
Abbott Diabetes Care	PRT07013-001 UI:AV2CTL 0.00.12 CGE:0.08	AV2 Controller	BBAK361-D0300	TBP
Phihong USA	PSM03R-050P	Power Supply	-	-

ANTENNA SYSTEM

The antenna is integral to the device.

ENCLOSURE

The EUT enclosure is primarily constructed of mold plastic. It measures approximately 8 cm wide by 9 cm deep by 11 cm high.

MODIFICATIONS

The following modifications were made to the EUT:
upgraded the software from AV2CTL 0.00.12 and CGE 0.08 to Software UI: 0.00.13 and CGE: 0.09 on June 09, 2008. Upgraded to Software UI: 0.00.14 and CGE: 0.10 on June 26, 2008.

SUPPORT EQUIPMENT

No local support equipment was used during emissions testing.

The following equipment was used as remote support equipment for emissions testing:

Manufacturer	Model	Description	Serial Number	FCC ID
Dell	M60	Laptop	2407531429	-

EUT INTERFACE PORTS

The I/O cabling configuration during emissions testing was as follows:

Port	Connected To	Cable(s)		
		Description	Shielded or Unshielded	Length(m)
USB 2.0	Laptop	USB	Shielded	20.0

EUT OPERATION

During emissions testing the EUT was set to transmit continuously using the $ptxcont command from the laptop.

TEST SITE

GENERAL INFORMATION

Final test measurements were taken on June 27 and July 2, 2008 at the Elliott Laboratories Open Area Test Site #2 located at 684 West Maude Avenue, Sunnyvale, California. Pursuant to section 2.948 of the FCC's Rules and section 3.3 of RSP-100, construction, calibration, and equipment data has been filed with the Commission.

ANSI C63.4:2003 recommends that ambient noise at the test site be at least 6 dB below the allowable limits. Ambient levels are below this requirement with the exception of predictable local TV, radio, and mobile communications traffic. The test site contains separate areas for radiated and conducted emissions testing. Considerable engineering effort has been expended to ensure that the facilities conform to all pertinent requirements of ANSI C63.4:2003.

CONDUCTED EMISSIONS CONSIDERATIONS

Conducted emissions testing is performed in conformance with ANSI C63.4:2003. Measurements are made with the EUT connected to the public power network through a nominal, standardized RF impedance, which is provided by a line impedance stabilization network, known as a LISN. A LISN is inserted in series with each current-carrying conductor in the EUT power cord.

RADIATED EMISSIONS CONSIDERATIONS

The FCC has determined that radiation measurements made in a shielded enclosure are not suitable for determining levels of radiated emissions. Radiated measurements are performed in an open field environment or in a semi-anechoic chamber. The test sites are maintained free of conductive objects within the CISPR defined elliptical area incorporated in ANSI C63.4:2003 guidelines and meet the Normalized Site Attenuation (NSA) requirements of ANSI C63.4:2003.

MEASUREMENT INSTRUMENTATION

RECEIVER SYSTEM

An EMI receiver as specified in CISPR 16-1 is used for emissions measurements. The receivers used can measure over the frequency range of 9 kHz up to 2000 MHz. These receivers allow both ease of measurement and high accuracy to be achieved. The receivers have Peak, Average, and CISPR (Quasi-peak) detectors built into their design so no external adapters are necessary. The receiver automatically sets the required bandwidth for the CISPR detector used during measurements. If the repetition frequency of the signal being measured is below 20Hz, peak measurements are made in lieu of Quasi-Peak measurements.

For measurements above the frequency range of the receivers, a spectrum analyzer is utilized because it provides visibility of the entire spectrum along with the precision and versatility required to support engineering analysis. Average measurements above 1000MHz are performed on the spectrum analyzer using the linear-average method with a resolution bandwidth of 1 MHz and a video bandwidth of 10 Hz, unless the signal is pulsed in which case the average (or video) bandwidth of the measuring instrument is reduced to onset of pulse desensitization and then increased.

INSTRUMENT CONTROL COMPUTER

The receivers utilize either a Rohde & Schwarz EZM Spectrum Monitor/Controller or contain an internal Spectrum Monitor/Controller to view and convert the receiver measurements to the field strength at an antenna or voltage developed at the LISN measurement port, which is then compared directly with the appropriate specification limit. This provides faster, more accurate readings by performing the conversions described under Sample Calculations within the Test Procedures section of this report. Results are printed in a graphic and/or tabular format, as appropriate. A personal computer is used to record all measurements made with the receivers.

The Spectrum Monitor provides a visual display of the signal being measured. In addition, the controller or a personal computer run automated data collection programs which control the receivers. This provides added accuracy since all site correction factors, such as cable loss and antenna factors are added automatically.

LINE IMPEDANCE STABILIZATION NETWORK (LISN)

Line conducted measurements utilize a fifty microhenry Line Impedance Stabilization Network as the monitoring point. The LISN used also contains a 250 uH CISPR adapter. This network provides for calibrated radio frequency noise measurements by the design of the internal low pass and high pass filters on the EUT and measurement ports, respectively.

FILTERS/ATTENUATORS

External filters and precision attenuators are often connected between the receiving antenna or LISN and the receiver. This eliminates saturation effects and non-linear operation due to high amplitude transient events.

ANTENNAS

A loop antenna is used below 30 MHz. For the measurement range 30 MHz to 1000 MHz either a combination of a biconical antenna and a log periodic or a bi-log antenna is used. Above 1000 MHz, horn antennas are used. The antenna calibration factors to convert the received voltage to an electric field strength are included with appropriate cable loss and amplifier gain factors to determine an overall site factor, which is then programmed into the test receivers or incorporated into the test software.

ANTENNA MAST AND EQUIPMENT TURNTABLE

The antennas used to measure the radiated electric field strength are mounted on a non-conductive antenna mast equipped with a motor-drive to vary the antenna height. Measurements below 30 MHz are made with the loop antenna at a fixed height of 1m above the ground plane.

ANSI C63.4:2003 specifies that the test height above ground for table mounted devices shall be 80 centimeters. Floor mounted equipment shall be placed on the ground plane if the device is normally used on a conductive floor or separated from the ground plane by insulating material from 3 to 12 mm if the device is normally used on a non-conductive floor. During radiated measurements, the EUT is positioned on a motorized turntable in conformance with this requirement.

INSTRUMENT CALIBRATION

All test equipment is regularly checked to ensure that performance is maintained in accordance with the manufacturer's specifications. All antennas are calibrated at regular intervals with respect to tuned half-wave dipoles. An exhibit of this report contains the list of test equipment used and calibration information.

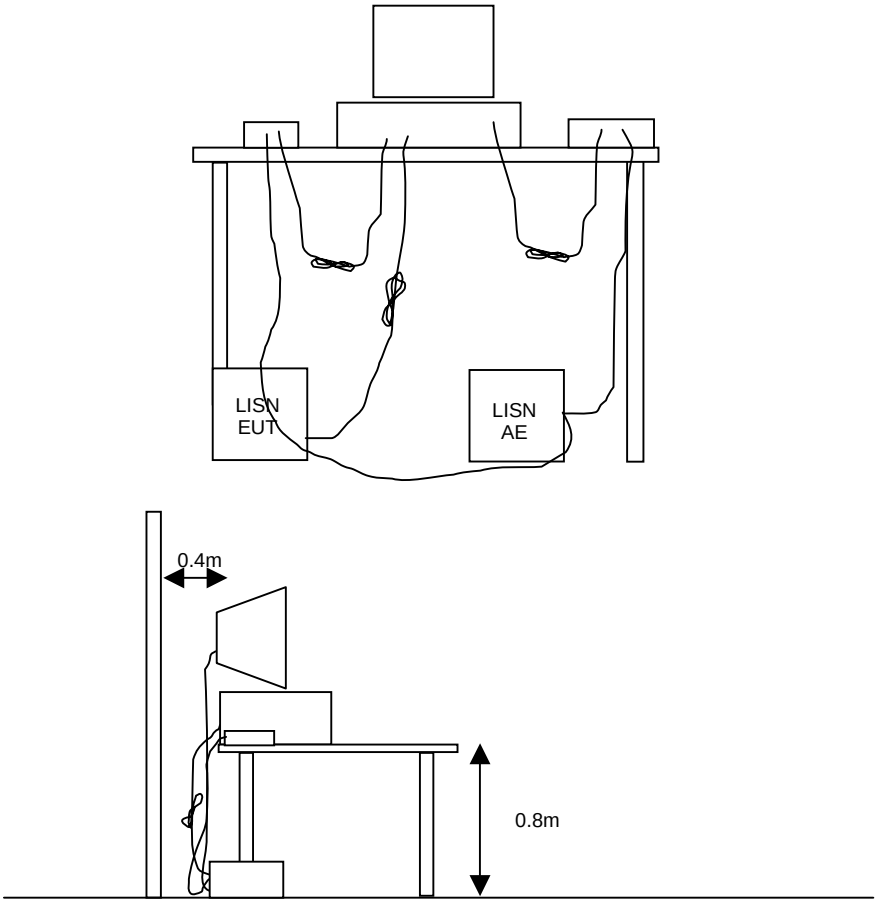
TEST PROCEDURES

EUT AND CABLE PLACEMENT

The regulations require that interconnecting cables be connected to the available ports of the unit and that the placement of the unit and the attached cables simulate the worst case orientation that can be expected from a typical installation, so far as practicable. To this end, the position of the unit and associated cabling is varied within the guidelines of ANSI C63.4:2003, and the worst-case orientation is used for final measurements.

CONDUCTED EMISSIONS

Conducted emissions are measured at the plug end of the power cord supplied with the EUT. Excess power cord length is wrapped in a bundle between 30 and 40 centimeters in length near the center of the cord. Preliminary measurements are made to determine the highest amplitude emission relative to the specification limit for all the modes of operation. Placement of system components and varying of cable positions are performed in each mode. A final peak mode scan is then performed in the position and mode for which the highest emission was noted on all current carrying conductors of the power cord.



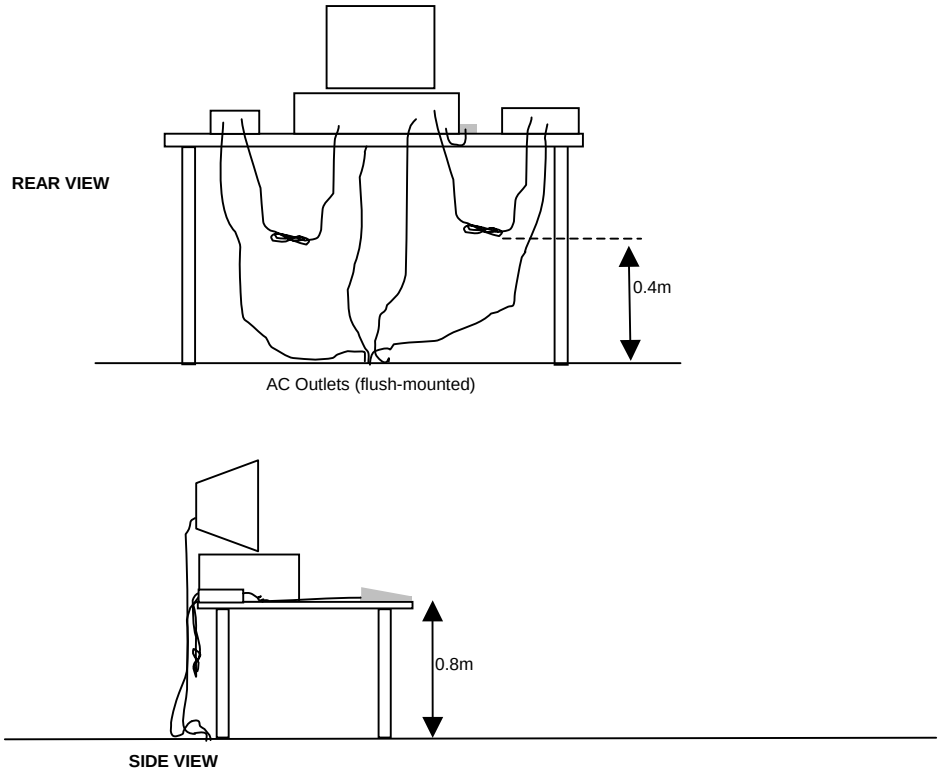
RADIATED EMISSIONS

A preliminary scan of the radiated emissions is performed in which all significant EUT frequencies are identified with the system in a nominal configuration. At least two scans are performed, one scan for each antenna polarization (horizontal and vertical; loop parallel and perpendicular to the EUT). During the preliminary scans, the EUT is rotated through 360˚, the antenna height is varied (for measurements above 30 MHz) and cable positions are varied to determine the highest emission relative to the limit. Preliminary scans may be performed in a fully anechoic chamber for the purposes of identifying the frequencies of the highest emissions from the EUT.

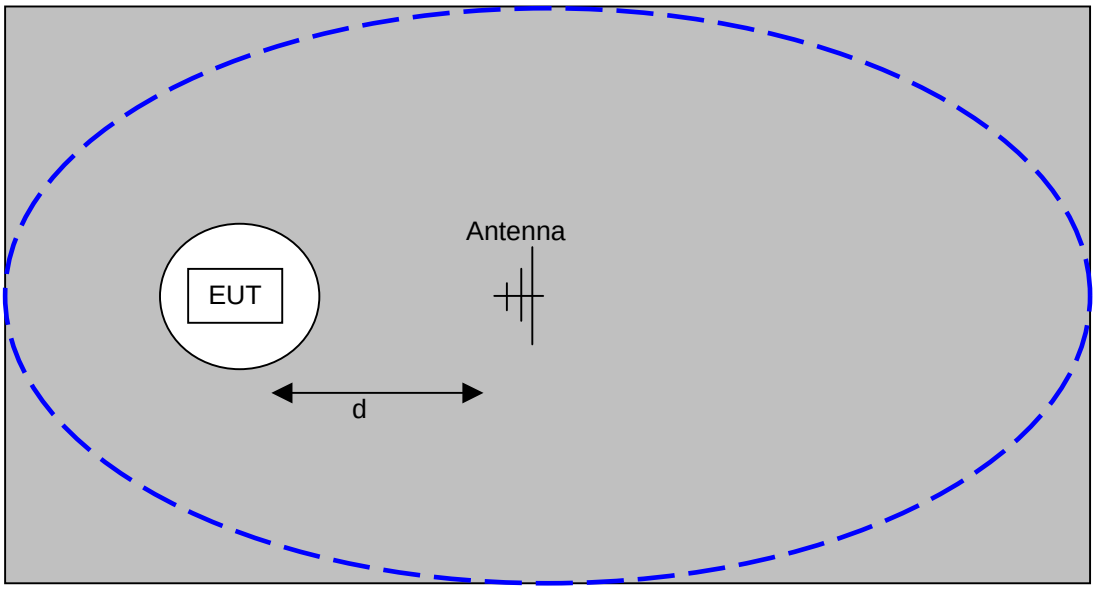
A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

Final maximization is a phase in which the highest amplitude emissions identified in the spectral search are viewed while the EUT azimuth angle is varied from 0 to 360 degrees relative to the receiving antenna. The azimuth, which results in the highest emission is then maintained while varying the antenna height from one to four meters (for measurements above 30 MHz, measurements below 30 MHz are made with the loop antenna at a fixed height of 1m). The result is the identification of the highest amplitude for each of the highest peaks. Each recorded level is corrected in the receiver using appropriate factors for cables, connectors, antennas, and preamplifier gain.

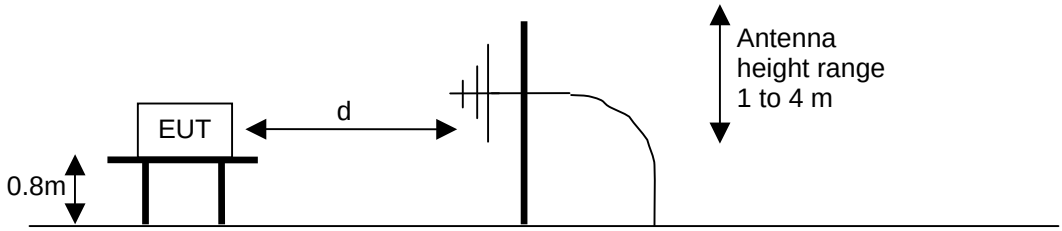
When testing above 18 GHz, the receive antenna is located at 1meter from the EUT and the antenna height is restricted to a maximum of 2.5 meters.



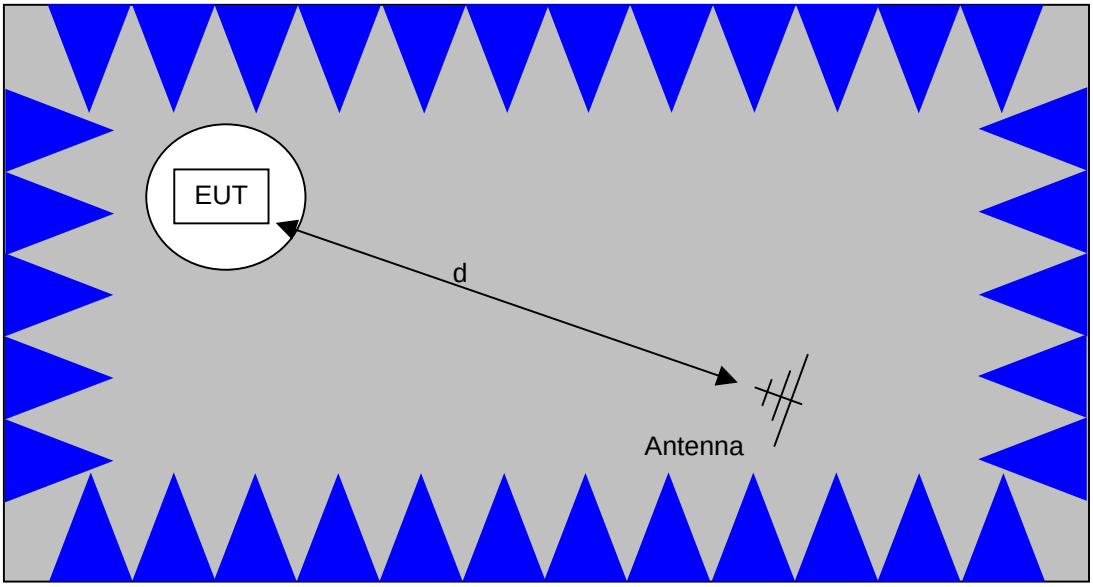
Typical Test Configuration for Radiated Field Strength Measurements



The ground plane extends beyond the ellipse defined in CISPR 16 / CISPR 22 / ANSI C63.4 and is large enough to accommodate test distances (d) of 3m and 10m. Refer to the test data tables for the actual measurement distance.

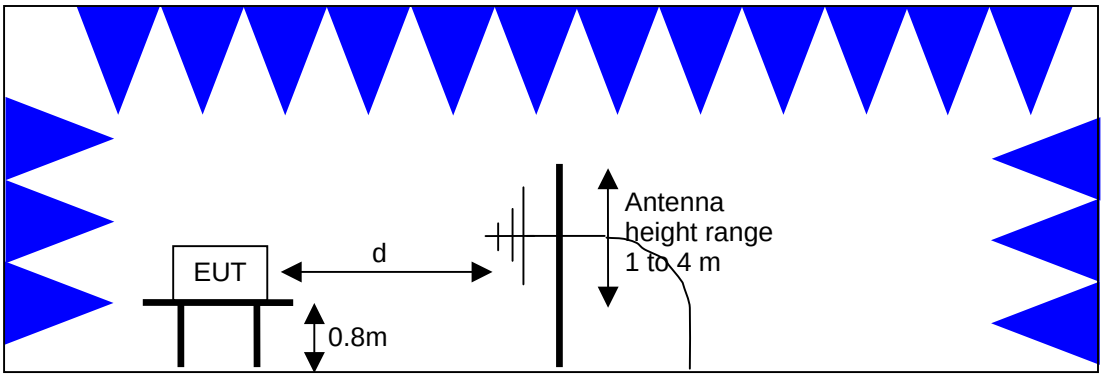


Test Configuration for Radiated Field Strength Measurements
OATS- Plan and Side Views



The anechoic materials on the walls and ceiling ensure compliance with the normalized site attenuation requirements of CISPR 16 / CISPR 22 / ANSI C63.4 for an alternate test site at the measurement distances used.

Floor-standing equipment is placed on the floor with insulating supports between the unit and the ground plane.



Test Configuration for Radiated Field Strength Measurements
Semi-Anechoic Chamber, Plan and Side Views

BANDWIDTH MEASUREMENTS

The 6dB, 20dB and/or 26dB signal bandwidth is measured in using the bandwidths recommended by ANSI C63.4. When required, the 99% bandwidth is measured using the methods detailed in RSS GEN.

SPECIFICATION LIMITS AND SAMPLE CALCULATIONS

The limits for conducted emissions are given in units of microvolts, and the limits for radiated emissions are given in units of microvolts per meter at a specified test distance. Data is measured in the logarithmic form of decibels relative to one microvolt, or dB microvolts (dBuV). For radiated emissions, the measured data is converted to the field strength at the antenna in dB microvolts per meter (dBuV/m). The results are then converted to the linear forms of uV and uV/m for comparison to published specifications.

For reference, converting the specification limits from linear to decibel form is accomplished by taking the base ten logarithm, then multiplying by 20. These limits in both linear and logarithmic form are as follows:

GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS

The table below shows the limits for the spurious emissions from transmitters that fall in restricted bands[1] (with the exception of transmitters operating under FCC Part 15 Subpart D and RSS 210 Annex 9), the limits for all emissions from a low power device operating under the general rules of RSS 310 (tables 3 and 4), RSS 210 (table 2) and FCC Part 15 Subpart C section 15.209.

Frequency Range (MHz)	Limit (uV/m)	Limit (dBuV/m @ 3m)
0.009-0.490	$2400/F_{KHz}$ @ 300m	$67.6-20*\log_{10}(F_{KHz})$ @ 300m
0.490-1.705	$24000/F_{KHz}$ @ 30m	$87.6-20*\log_{10}(F_{KHz})$ @ 30m
1.705 to 30	30 @ 30m	29.5 @ 30m
30 to 88	100 @ 3m	40 @ 3m
88 to 216	150 @ 3m	43.5 @ 3m
216 to 960	200 @ 3m	46.0 @ 3m
Above 960	500 @ 3m	54.0 @ 3m

RADIATEDFUNDAMENTAL & SPURIOUS EMISSIONS SPECIFICATION LIMITS – 15.249 and RSS 210 A2.9

The table below shows the limits for the fundamental emission and for its harmonics. Harmonics that that fall in restricted bands[2] and all other spurious emissions are subject to the general limits of RSS 210 and FCC Part 15 Subpart C.

Frequency Range (MHz)	Limit for Fundamental @ 3m	Limit for Harmonics @ 3m
902 – 928	50,000 uV/m 94dBuV/m	500 uV/m 54dBuV/m
2400 – 2483.5	50,000 uV/m 94dBuV/m	500 uV/m 54dBuV/m
5725 - 5850	50,000 uV/m 94dBuV/m	500 uV/m 54dBuV/m

[1] The restricted bands are detailed in FCC 15.203, RSS 210 Table 1 and RSS 310 Table 2
[2] The restricted bands are detailed in FCC 15.203, RSS 210 Table 1 and RSS 310 Table 2

SAMPLE CALCULATIONS - CONDUCTED EMISSIONS

Receiver readings are compared directly to the conducted emissions specification limit (decibel form) as follows:

$$R_r - S = M$$

where:

R_r = Receiver Reading in dBuV

S = Specification Limit in dBuV

M = Margin to Specification in +/- dB

SAMPLE CALCULATIONS - RADIATED EMISSIONS

Receiver readings are compared directly to the specification limit (decibel form). The receiver internally corrects for cable loss, preamplifier gain, and antenna factor. The calculations are in the reverse direction of the actual signal flow, thus cable loss is added and the amplifier gain is subtracted. The Antenna Factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

A distance factor, when used for electric field measurements above 30MHz, is calculated by using the following formula:

$$F_d = 20*LOG_{10} (D_m/D_s)$$

where:

F_d = Distance Factor in dB

D_m = Measurement Distance in meters

D_s = Specification Distance in meters

For electric field measurements below 30MHz the extrapolation factor is either determined by making measurements at multiple distances or a theoretical value is calculated using the formula:

$$F_d = 40*LOG_{10} (D_m/D_s)$$

Measurement Distance is the distance at which the measurements were taken and Specification Distance is the distance at which the specification limits are based. The antenna factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

The margin of a given emission peak relative to the limit is calculated as follows:

$$R_c = R_r + F_d$$

and

$$M = R_c - L_s$$

where:

R_r = Receiver Reading in dBuV/m

F_d = Distance Factor in dB

R_c = Corrected Reading in dBuV/m

L_s = Specification Limit in dBuV/m

M = Margin in dB Relative to Spec

SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION

Where the radiated electric field strength is expressed in terms of the equivalent isotropic radiated power (eirp), or where a field strength measurement of output power is made in lieu of a direct measurement, the following formula is used to convert between eirp and field strength at a distance of 3m from the equipment under test:

$$E = \frac{1000000 \sqrt{30 P}}{3} \text{ microvolts per meter}$$

where P is the eirp (Watts)

EXHIBIT 1: Test Equipment Calibration Data

1 Page

Radiated Emissions, 30 - 26,500 MHz, 13-Jun-08
Engineer: Rafael Varelas

Manufacturer	Description	Model #	Asset #	Cal Due
Elliott Laboratories	Biconical Antenna, 30-300 MHz	EL30.300	54	26-Mar-09
EMCO	Log Periodic Antenna, 0.3-1 GHz	3146A	364	13-Dec-08
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	870	08-Nov-08
Hewlett Packard	EMC Spectrum Analyzer, 9 KHz-26.5 GHz	8593EM	1141	29-Nov-08
EMCO	Antenna, Horn, 1-18 GHz	3117	1662	11-Apr-10
Hewlett Packard	Preamplifier, 100 kHz - 1.3 GHz	8447D OPT 010	1826	29-May-09

Radiated Emissions, 30 - 26,500 MHz, 14-Jun-08
Engineer: Rafael Varelas

Manufacturer	Description	Model #	Asset #	Cal Due
EMCO	Antenna, Horn, 1-18 GHz	3115	487	24-Jun-08
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	785	27-May-09
Hewlett Packard	EMC Spectrum Analyzer, 9 kHz - 6.5 GHz	8595EM	787	19-Feb-09
Hewlett Packard	High Pass filter, 3.5 GHz (Red System)	P/N 84300-80038 (84125C)	1403	24-Aug-08

Radiated Emissions, 1000 - 25,000 MHz, 02-Jul-08
Engineer: Mehran Birgani

Manufacturer	Description	Model #	Asset #	Cal Due
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	870	08-Nov-08
Hewlett Packard	High Pass filter, 3.5 GHz	P/N 84300-80038	1157	15-Oct-08
EMCO	Antenna, Horn, 1-18 GHz (SA40-Blu)	3115	1386	11-Aug-08
Hewlett Packard	SpecAn 9 kHz - 40 GHz, (SA40)	8564E	CH5273	20-Jul-08

Conducted Emissions - AC Power Ports, 08-May-08
Engineer: Wayne Fisher

Manufacturer	Description	Model #	Asset #	Cal Due
Elliott Laboratories	LISN, FCC / CISPR	LISN-3, OATS	304	18-Jul-08
Hewlett Packard	EMC Spectrum Analyzer, 9 kHz - 6.5 GHz	8595EM	780	09-Oct-08
Rohde & Schwarz	Test Receiver, 9 kHz-2750 MHz	ESCS 30	1337	21-Sep-08
Rohde& Schwarz	Pulse Limiter	ESH3 Z2	1398	12-Feb-09

Conducted Emissions - AC Power Ports, 12-May-08
Engineer: Juan Gonzalez

Manufacturer	Description	Model #	Asset #	Cal Due
Elliott Laboratories	LISN, FCC / CISPR	LISN-3, OATS	304	18-Jul-08
Hewlett Packard	EMC Spectrum Analyzer, 9 kHz - 6.5 GHz	8595EM	780	09-Oct-08
Rohde & Schwarz	Test Receiver, 9 kHz-2750 MHz	ESCS 30	1337	21-Sep-08
Rohde& Schwarz	Pulse Limiter	ESH3 Z2	1398	12-Feb-09

EXHIBIT 2: Test Measurement Data

23 Pages

Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manager:	Sheareen Washington
Contact:	Rich Kelley		
Emissions Standard(s):	RSS 210, FCC 15.249	Class:	N/A
Immunity Standard(s):	-	Environment:	-

EMC Test Data

For The

Abbott Diabetes Care

Model

AV2 Controller

Date of Last Test: 7/2/2008

Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manger:	Sheareen Washington
Contact:	Rich Kelley		
Emissions Standard(s):	RSS 210, FCC 15.249	Class:	N/A
Immunity Standard(s):	-	Environment:	-

EUT INFORMATION

General Description

The EUT is an AV2 controller that is designed to control the Aviator Insulin Delivery System pump. The device is a hand held portable device. It it can be placed in a cradle for charging and data transmission to a PC or worn on the body. The EUT was treated as table-top equipment during testing to simulate the end-user environment. The electrical rating of the EUT power adapter is 100-240 Volts , 50-60 Hz, 0.25 Amps.

Equipment Under Test

Manufacturer	Model	Description	Serial Number	FCC ID
Abbott Diabetes Care	PRT07013-001 UI:AV2CTL 0.00.12 CGE:0.08	AV2 Controller	BBAK361-D0300	TBP
Phihong USA	PSM03R-050P	Power Supply	-	-

Other EUT Details

The following EUT details should be noted: none.

EUT Antenna (Intentional Radiators Only)

The antenna is integral to the device.

EUT Enclosure

The EUT enclosure is primarily constructed of mold plastic . It measures approximately 8 cm wide by 9 cm deep by 11 cm high.

Modification History

Mod. #	Test	Date	Modification
1	-	6/9/2008	Upgraded Software UI: 0.00.13 and CGE: 0.09
2	-	6/26/2008	Upgraded to Software UI: 0.00.14 and CGE: 0.10
3			

Modifications applied are assumed to be used on subsequent tests unless otherwise stated as a further modification.

Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manger:	Sheareen Washington
Contact:	Rich Kelley		
Emissions Standard(s):	RSS 210, FCC 15.249	Class:	N/A
Immunity Standard(s):	-	Environment:	-

Test Configuration #1

Local Support Equipment

Manufacturer	Model	Description	Serial Number	FCC ID
none	-	-	-	-

Remote Support Equipment

Manufacturer	Model	Description	Serial Number	FCC ID
Dell	M60	Laptop	2407531429	-

Cabling and Ports

Port	Connected To	Cable(s)		
		Description	Shielded or Unshielded	Length(m)
USB 2.0	Laptop	USB	Shielded	20.0

EUT Operation During Emissions Tests

During emissions testing the EUT was set to transmit continuously using the $ptxcont command from the laptop.

Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manager:	Sheareen Washington
Contact:	Rich Kelley		
Standard:	RSS 210, FCC 15.249	Class:	N/A

Conducted Emissions - Power Ports

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

The EUT was located on a wooden table, 40 cm from a vertical coupling plane and 80cm from the LISN.

Ambient Conditions:

Temperature: 17.2 °C

Rel. Humidity: 60 %

Summary of Results

Run #	Test Performed	Limit	Result	Margin
1 (Alarm Modes-Manual Test) (8.6.7)	CE, AC Power, 230V/50Hz	CISPR11 Class B Group 1	Pass	38.0dBµV @ 0.368MHz (-10.5dB)
2 (Alarm Modes-Manual Test) (8.6.7)	CE, AC Power,120V/60Hz	CISPR11 Class B Group 1	Pass	46.3dBµV @ 0.220MHz (-6.5dB)
3 (While communicating to the DMS) (8.6.8)	CE, AC Power, 230V/50Hz	CISPR11 Class B Group 1	Pass	53.5dBµV @ 0.313MHz (-6.4dB)
4 (While communicating to the DMS) (8.6.8)	CE, AC Power,120V/60Hz	CISPR11 Class B Group 1	Pass	44.0dBµV @ 0.567MHz (-12.0dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manager:	Sheareen Washington
Contact:	Rich Kelley		
Standard:	RSS 210, FCC 15.249	Class:	N/A

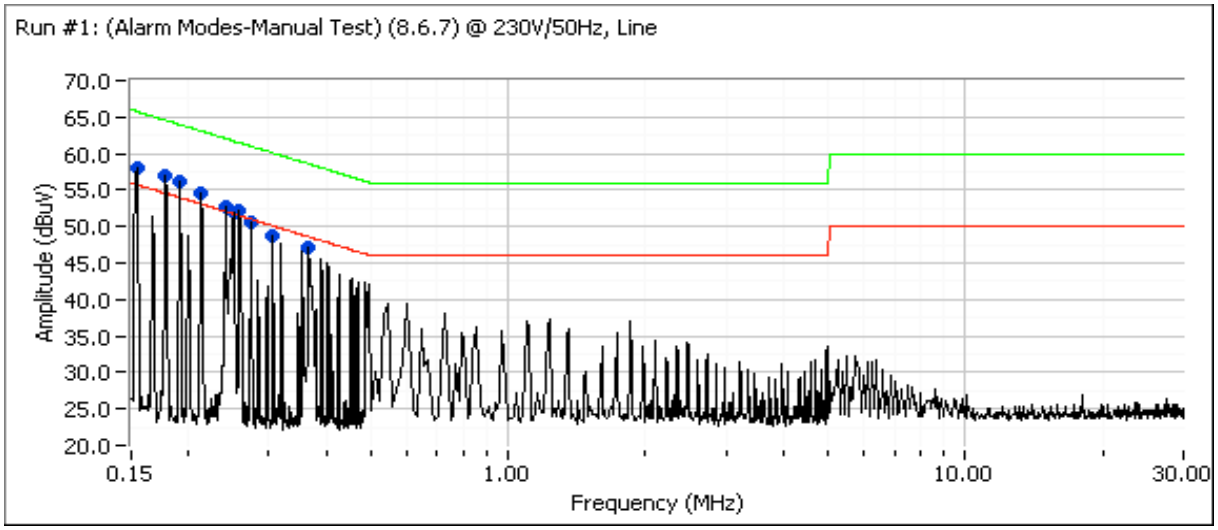
Run #1: AC Power Port Conducted Emissions, 0.15 - 30MHz, 230V/50Hz
(Alarm Modes-Manual Test) (8.6.7)

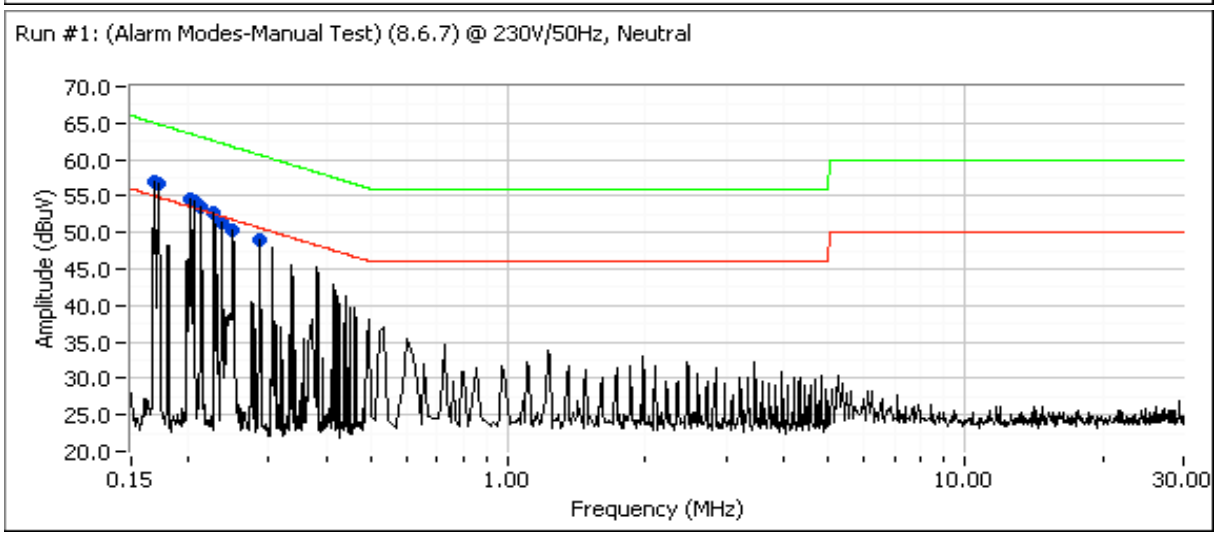
Date of Test: 5/8/2008
Test Engineer: Wayne Fisher
Test Location: SVOATS#1

Config. Used: 1
Config Change: None
EUT Voltage: 230V/50Hz

Initial Test Data, Glucose readings

152, 153, 152, 152, 152, 151, 153, 151, 152, 152





Run #1 Continued next page

Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manager:	Sheareen Washington
Contact:	Rich Kelley		
Standard:	RSS 210, FCC 15.249	Class:	N/A

Frequency	Level	AC	CISPR 11 B		Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
0.368	38.0	Line	48.5	-10.5	AVG	-
0.154	51.6	Line	65.8	-14.2	QP	-
0.247	37.6	Neutral	51.9	-14.3	AVG	-
0.246	37.5	Neutral	51.9	-14.4	AVG	-
0.247	37.4	Line	51.9	-14.5	AVG	-
0.179	49.9	Line	64.5	-14.6	QP	-
0.192	48.8	Line	63.9	-15.1	QP	-
0.247	46.8	Line	61.9	-15.1	QP	-
0.368	43.2	Line	58.5	-15.3	QP	-
0.167	49.8	Neutral	65.1	-15.3	QP	-
0.171	49.6	Neutral	64.9	-15.3	QP	-
0.214	47.4	Line	63.0	-15.6	QP	-
0.250	46.1	Line	61.8	-15.7	QP	-
0.242	46.1	Line	62.0	-15.9	QP	-
0.201	47.3	Neutral	63.6	-16.3	QP	-
0.206	46.9	Neutral	63.4	-16.5	QP	-
0.214	46.3	Neutral	63.0	-16.7	QP	-
0.274	44.1	Line	61.0	-16.9	QP	-
0.247	44.9	Neutral	61.9	-17.0	QP	-
0.246	44.9	Neutral	61.9	-17.0	QP	-
0.250	34.6	Line	51.8	-17.2	AVG	-
0.250	34.6	Neutral	51.8	-17.2	AVG	-
0.250	44.3	Neutral	61.8	-17.5	QP	-
0.306	42.3	Line	60.1	-17.8	QP	-
0.286	41.6	Neutral	60.6	-19.0	QP	-
0.242	32.8	Line	52.0	-19.2	AVG	-
0.179	20.3	Line	54.5	-34.2	AVG	-
0.154	21.5	Line	55.8	-34.3	AVG	-
0.192	19.6	Line	53.9	-34.3	AVG	-
0.214	18.7	Line	53.0	-34.3	AVG	-
0.274	16.4	Line	51.0	-34.6	AVG	-
0.171	20.1	Neutral	54.9	-34.8	AVG	-
0.306	15.2	Line	50.1	-34.9	AVG	-
0.167	20.2	Neutral	55.1	-34.9	AVG	-
0.206	18.3	Neutral	53.4	-35.1	AVG	-
0.201	18.4	Neutral	53.6	-35.2	AVG	-
0.214	17.8	Neutral	53.0	-35.2	AVG	-
0.286	14.9	Neutral	50.6	-35.7	AVG	-

Post Test Data, Glucose readings
153, 152, 152, 152, 153, 153, 152, 152, 152, 152
Yes communicated with pump

Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manager:	Sheareen Washington
Contact:	Rich Kelley		
Standard:	RSS 210, FCC 15.249	Class:	N/A

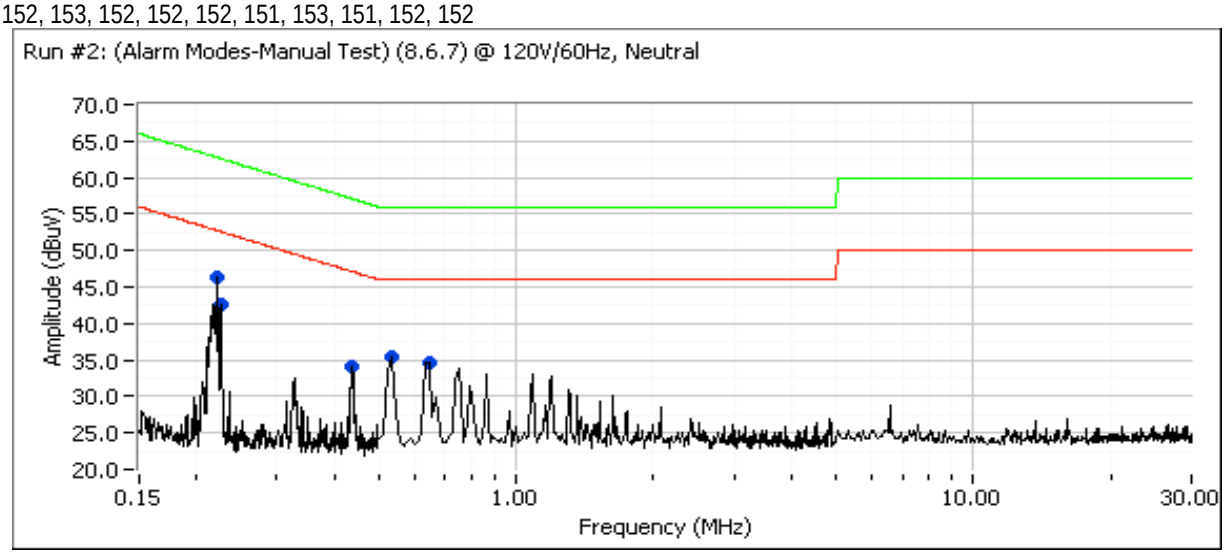
Run #2: AC Power Port Conducted Emissions, 0.15 - 30MHz, 120V/60Hz
(Alarm Modes-Manual Test) (8.6.7)

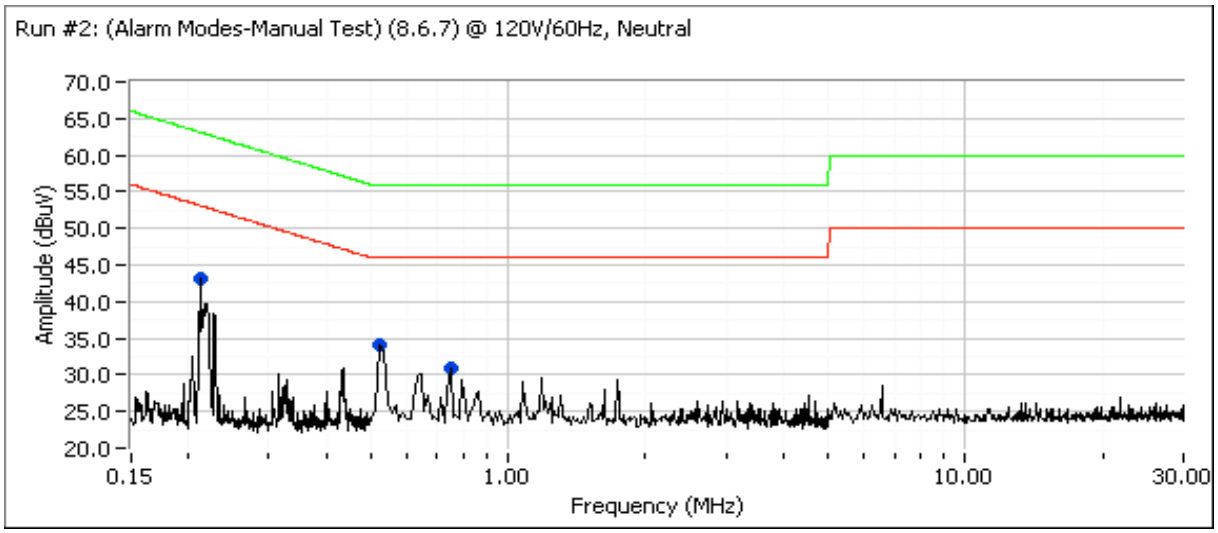
Date of Test: 5/8/2008
Test Engineer: Wayne Fisher
Test Location: SVOATS#1

Config. Used: 1
Config Change: None
EUT Voltage: 120V/60Hz

Initial Test Data, Glucose readings

152, 153, 152, 152, 152, 151, 153, 151, 152, 152





Run #2 continued

Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manager:	Sheareen Washington
Contact:	Rich Kelley		
Standard:	RSS 210, FCC 15.249	Class:	N/A

Frequency	Level	AC	CISPR 11 B		Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
0.220	46.3	Line	52.8	-6.5	Peak	-
0.213	43.2	Neutral	53.1	-9.9	Peak	-
0.227	42.6	Line	52.6	-10.0	Peak	-
0.545	35.3	Line	46.0	-10.7	Peak	-
0.655	34.5	Line	46.0	-11.5	Peak	-
0.515	34.1	Neutral	46.0	-11.9	Peak	-
0.438	34.1	Line	47.1	-13.0	Peak	-
0.740	31.0	Neutral	46.0	-15.0	Peak	-

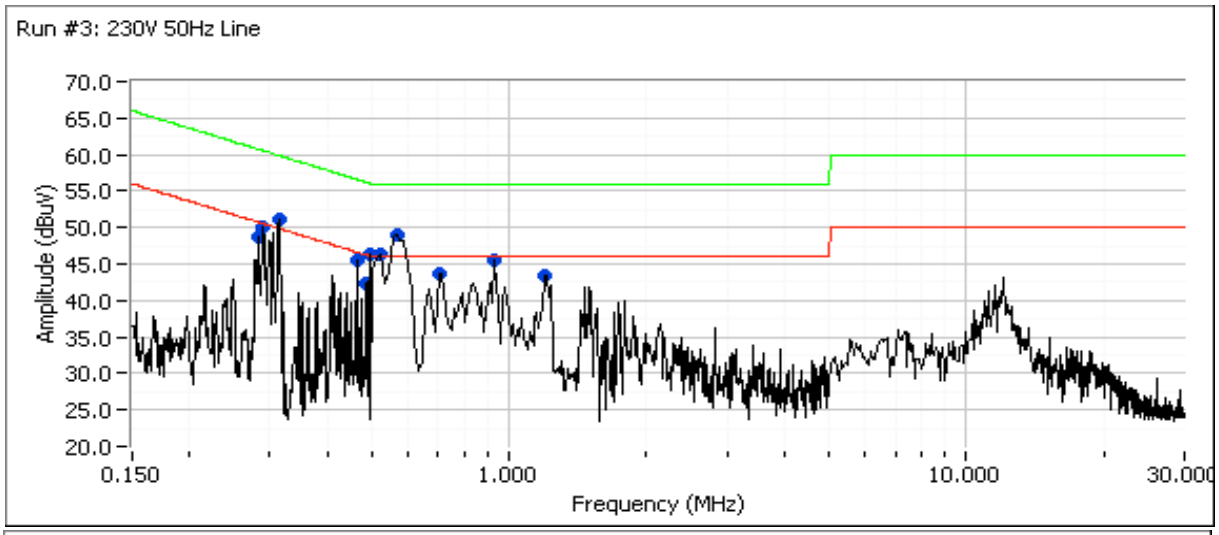
Post Test Data, Glucose readings
153, 152, 152, 152, 153, 153, 152, 152, 152, 152
Yes communicated with pump

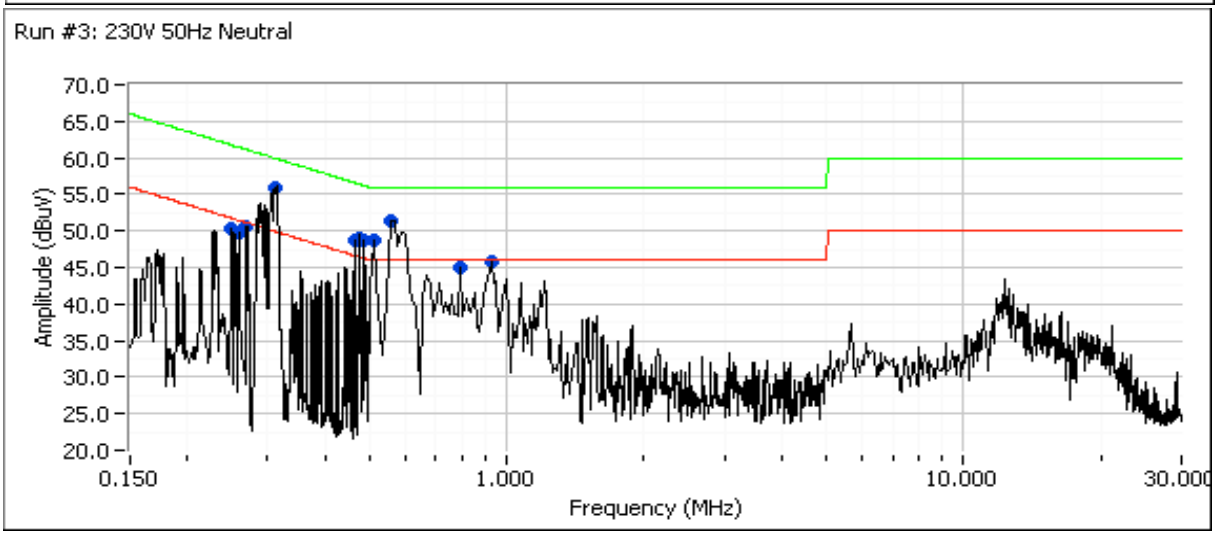
Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manager:	Sheareen Washington
Contact:	Rich Kelley		
Standard:	RSS 210, FCC 15.249	Class:	N/A

Run #3: AC Power Port Conducted Emissions, 0.15 - 30MHz, 230V/50Hz
(While communicating to the DMS) (8.6.8)

Date of Test: 5/12/2008
Test Engineer: Juan G.
Test Location: SVOATS#1

Config. Used: 2
Config Change: Laptop is local host
EUT Voltage: 230V/50Hz





Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manager:	Sheareen Washington
Contact:	Rich Kelley		
Standard:	RSS 210, FCC 15.249	Class:	N/A

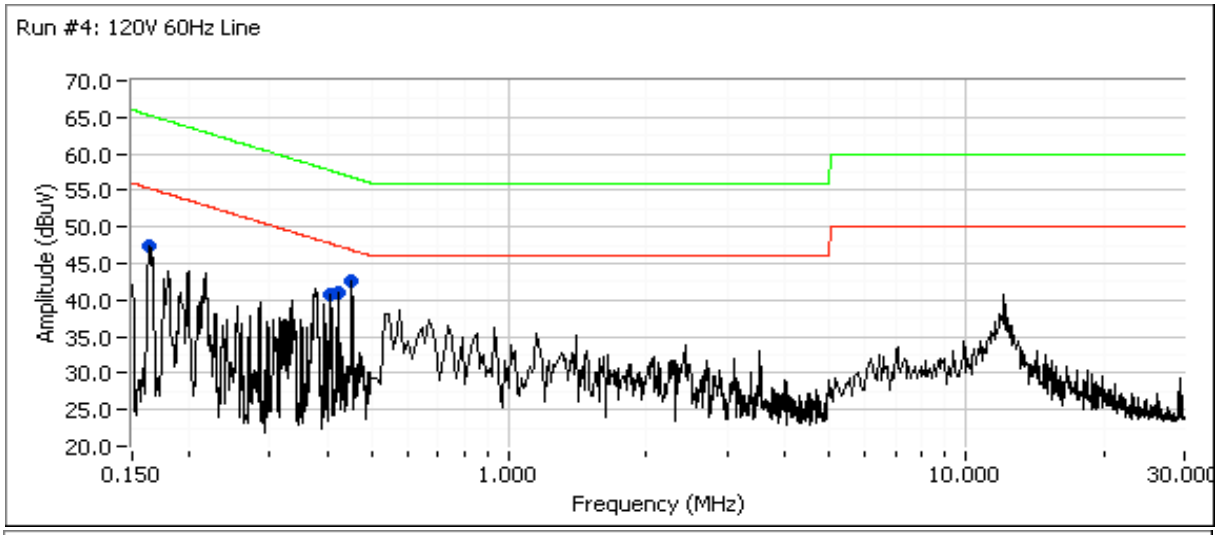
Frequency	Level	AC	CISPR 11 B		Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
0.313	53.5	Neutral	59.9	-6.4	QP	-
0.567	49.0	Line 1	56.0	-7.0	QP	-
0.290	42.8	Line 1	50.5	-7.7	AVG	-
0.315	49.9	Line 1	59.8	-9.9	QP	-
0.556	45.3	Neutral	56.0	-10.7	QP	-
0.284	39.9	Line 1	50.7	-10.8	AVG	-
0.928	45.2	Line 1	56.0	-10.8	QP	-
0.284	49.6	Line 1	60.7	-11.1	QP	-
0.290	49.4	Line 1	60.5	-11.1	QP	-
0.270	49.8	Neutral	61.1	-11.3	QP	-
0.251	49.8	Neutral	61.7	-11.9	QP	-
0.260	49.3	Neutral	61.4	-12.1	QP	-
0.511	43.7	Neutral	56.0	-12.3	QP	-
0.315	37.4	Line 1	49.8	-12.4	AVG	-
0.567	33.5	Line 1	46.0	-12.5	AVG	-
0.313	37.1	Neutral	49.9	-12.8	AVG	-
0.487	42.8	Neutral	56.2	-13.4	QP	-
0.928	32.5	Line 1	46.0	-13.5	AVG	-
0.793	42.5	Neutral	56.0	-13.5	QP	-
0.466	42.7	Line 1	56.6	-13.9	QP	-
0.489	42.2	Line 1	56.2	-14.0	QP	-
0.251	37.7	Neutral	51.7	-14.0	AVG	-
0.495	41.9	Line 1	56.1	-14.2	QP	-
0.477	42.2	Neutral	56.4	-14.2	QP	-
0.468	42.1	Neutral	56.5	-14.4	QP	-
0.522	41.5	Line 1	56.0	-14.5	QP	-
0.928	41.0	Neutral	56.0	-15.0	QP	-
0.702	40.7	Line 1	56.0	-15.3	QP	-
0.702	30.3	Line 1	46.0	-15.7	AVG	-
1.197	39.4	Line 1	56.0	-16.6	QP	-
0.556	27.8	Neutral	46.0	-18.2	AVG	-
0.522	27.3	Line 1	46.0	-18.7	AVG	-
0.466	27.6	Line 1	46.6	-19.0	AVG	-
1.197	26.3	Line 1	46.0	-19.7	AVG	-
0.260	31.2	Neutral	51.4	-20.2	AVG	-
0.489	25.8	Line 1	46.2	-20.4	AVG	-
0.511	25.3	Neutral	46.0	-20.7	AVG	-
0.495	25.3	Line 1	46.1	-20.8	AVG	-
0.487	24.3	Neutral	46.2	-21.9	AVG	-
0.793	22.6	Neutral	46.0	-23.4	AVG	-
0.928	22.6	Neutral	46.0	-23.4	AVG	-
0.270	27.6	Neutral	51.1	-23.5	AVG	-
0.468	22.4	Neutral	46.5	-24.1	AVG	-
0.477	21.8	Neutral	46.4	-24.6	AVG	-

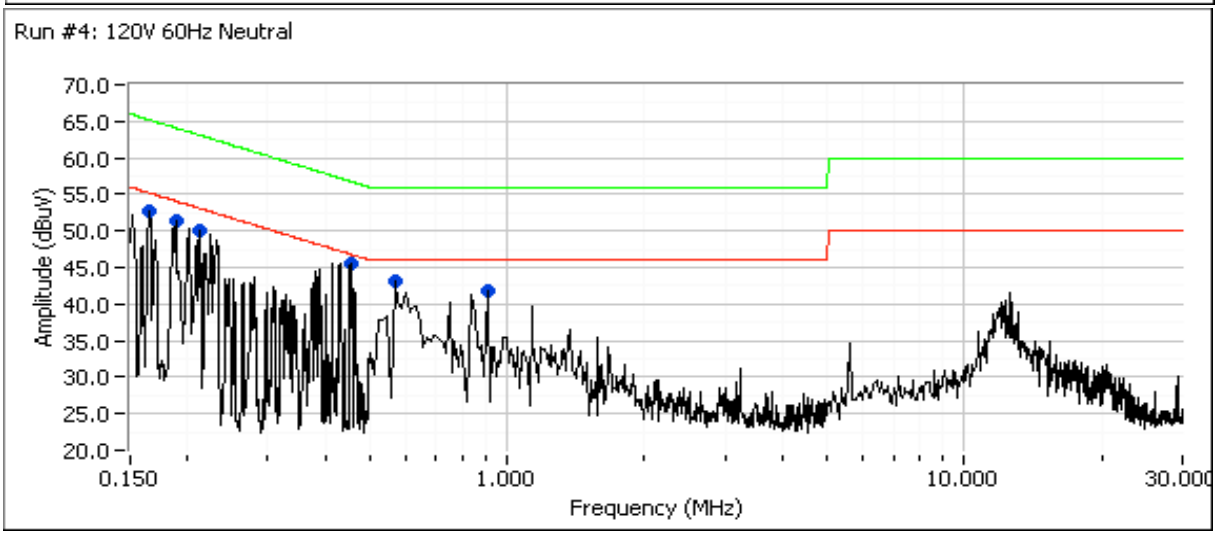
Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manager:	Sheareen Washington
Contact:	Rich Kelley		
Standard:	RSS 210, FCC 15.249	Class:	N/A

Run #4: AC Power Port Conducted Emissions, 0.15 - 30MHz, 120V/60Hz
(While communicating to the DMS) (8.6.8)

Date of Test: 5/12/2008
Test Engineer: Juan G.
Test Location: SVOATS#1

Config. Used: 2
Config Change: Laptop is local host
EUT Voltage: 120V/60Hz





Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manager:	Sheareen Washington
Contact:	Rich Kelley		
Standard:	RSS 210, FCC 15.249	Class:	N/A

Frequency	Level	AC	CISPR 11 B		Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
0.567	44.0	Line 1	56.0	-12.0	QP	-
0.454	44.7	Line 1	56.8	-12.1	QP	-
0.214	50.0	Line 1	63.0	-13.0	QP	-
0.189	48.9	Line 1	64.1	-15.2	QP	-
0.567	30.7	Line 1	46.0	-15.3	AVG	-
0.214	37.5	Line 1	53.0	-15.5	AVG	-
0.452	41.0	Line 1	56.8	-15.8	QP	-
0.166	49.2	Line 1	65.2	-16.0	QP	-
0.423	40.6	Line 1	57.4	-16.8	QP	-
0.189	37.1	Line 1	54.1	-17.0	AVG	-
0.905	37.9	Line 1	56.0	-18.1	QP	-
0.405	38.7	Line 1	57.8	-19.1	QP	-
0.452	26.8	Line 1	46.8	-20.0	AVG	-
0.164	44.6	Line 1	65.3	-20.7	QP	-
0.423	26.5	Line 1	47.4	-20.9	AVG	-
0.166	33.5	Line 1	55.2	-21.7	AVG	-
0.454	24.9	Line 1	46.8	-21.9	AVG	-
0.905	20.9	Line 1	46.0	-25.1	AVG	-
0.405	22.3	Line 1	47.8	-25.5	AVG	-
0.164	28.2	Line 1	55.3	-27.1	AVG	-

Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manager:	Sheareen Washington
Contact:	Rich Kelley		
Standard:	RSS 210, FCC 15.249	Class:	N/A

RSS 210 and FCC 15.249 Radiated Spurious Emissions

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 6/27/2008 and 7/2/2008
Test Engineer: R. Varelas & M. Birgani
Test Location: SVOATS #2

Config. Used: 1
Config Change: None
EUT Voltage: 5Vdc

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

	6/27/08	7/2/08	
Temperature:	19	19	°C
Rel. Humidity:	55	65	%

Summary of Results - Device Operating in the 2400-2483.5 MHz Band

Run #	Mode	Channel	Power Setting	Test Performed	Limit	Result / Margin
1a	-	Low @ 2402 MHz	-	Fundamental Level	FCC Part 15.249	92.1dBµV/m (40271.7µV/m) @ 2402.0MHz (-1.9dB)
			-	Restricted Band Edge (2390 MHz)	FCC Part 15.209 / 15.249	51.8dBµV/m (389.0µV/m) @ 2389.8MHz (-2.2dB)
			-	Radiated Emissions, 1 - 25 GHz	FCC Part 15.209 / 15.249	43.9dBµV/m (156.7µV/m) @ 4804.0MHz (-10.1dB)
1b	-	Center at 2430 MHz	-	Fundamental Level	FCC Part 15.249	91.4dBµV/m (37153.5µV/m) @ 2429.9MHz (-2.6dB)
			-	Radiated Emissions, 1 - 25 GHz	FCC Part 15.209 / 15.249	45.7dBµV/m (192.8µV/m) @ 4860.0MHz (-8.3dB)
1c	-	High @ 2480 MHz	-	Fundamental Level	FCC Part 15.249	90.7dBµV/m (34276.8µV/m) @ 2480.0MHz (-3.3dB)
			-	Restricted Band Edge (2483.5 MHz)	FCC Part 15.209 / 15.249	52.3dBµV/m (412.1µV/m) @ 2484.0MHz (-1.7dB)
			-	Radiated Emissions, 1 - 25 GHz	FCC Part 15.209 / 15.249	45.1dBµV/m (179.9µV/m) @ 4960.0MHz (-8.9dB)
2	-	-	-	99% Bandwidth	RSS 210	1.16 MHz

Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manager:	Sheareen Washington
Contact:	Rich Kelley		
Standard:	RSS 210, FCC 15.249	Class:	N/A

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manager:	Sheareen Washington
Contact:	Rich Kelley		
Standard:	RSS 210, FCC 15.249	Class:	N/A

Run #1: Radiated Spurious Emissions, 30 - 25000 MHz.

Run #1a: Low Channel @ 2402 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz

Frequency	Level	Pol	15.209 / 15.249		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2401.940	91.0	V	94.0	-3.0	AVG	209	1.1	EUT Flat
2401.950	90.6	V	94.0	-3.4	AVG	279	1.0	EUT Upright
2401.960	90.5	V	94.0	-3.5	AVG	72	1.0	EUT Side
2401.970	89.2	H	94.0	-4.8	AVG	272	1.0	EUT Flat
2401.970	88.3	H	94.0	-5.7	AVG	121	1.3	EUT Side
2401.990	92.1	H	94.0	-1.9	AVG	193	1.0	EUT Upright
2401.940	91.6	V	114.0	-22.4	PK	209	1.1	EUT Flat
2401.950	91.3	V	114.0	-22.7	PK	279	1.0	EUT Upright
2401.960	91.3	V	114.0	-22.7	PK	72	1.0	EUT Side
2401.970	89.9	H	114.0	-24.1	PK	272	1.0	EUT Flat
2401.970	89.4	H	114.0	-24.6	PK	121	1.3	EUT Side
2401.990	92.7	H	114.0	-21.3	PK	193	1.0	EUT Upright

Band Edge Signal Field Strength - EUT Upright

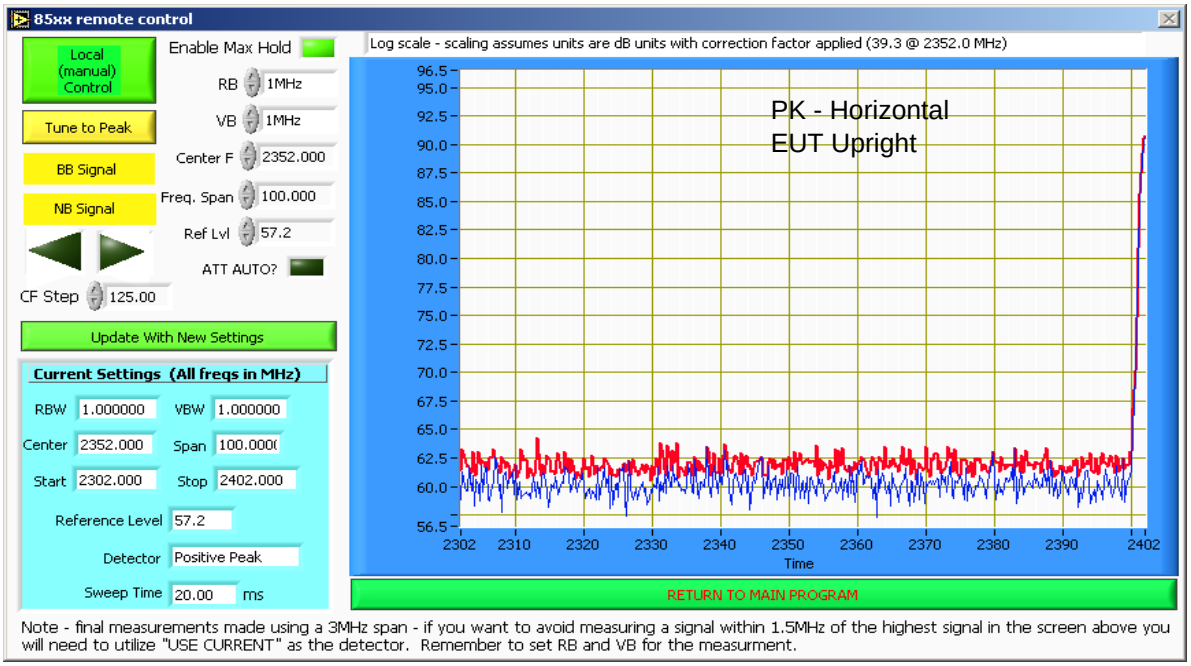
Frequency	Level	Pol	15.209 / 15.249		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.750	51.8	V	54.0	-2.2	Avg	72	1.0	
2388.470	64.3	V	74.0	-9.7	PK	72	1.0	
2388.880	51.8	H	54.0	-2.2	Avg	193	1.0	
2389.640	63.8	H	74.0	-10.2	PK	193	1.0	

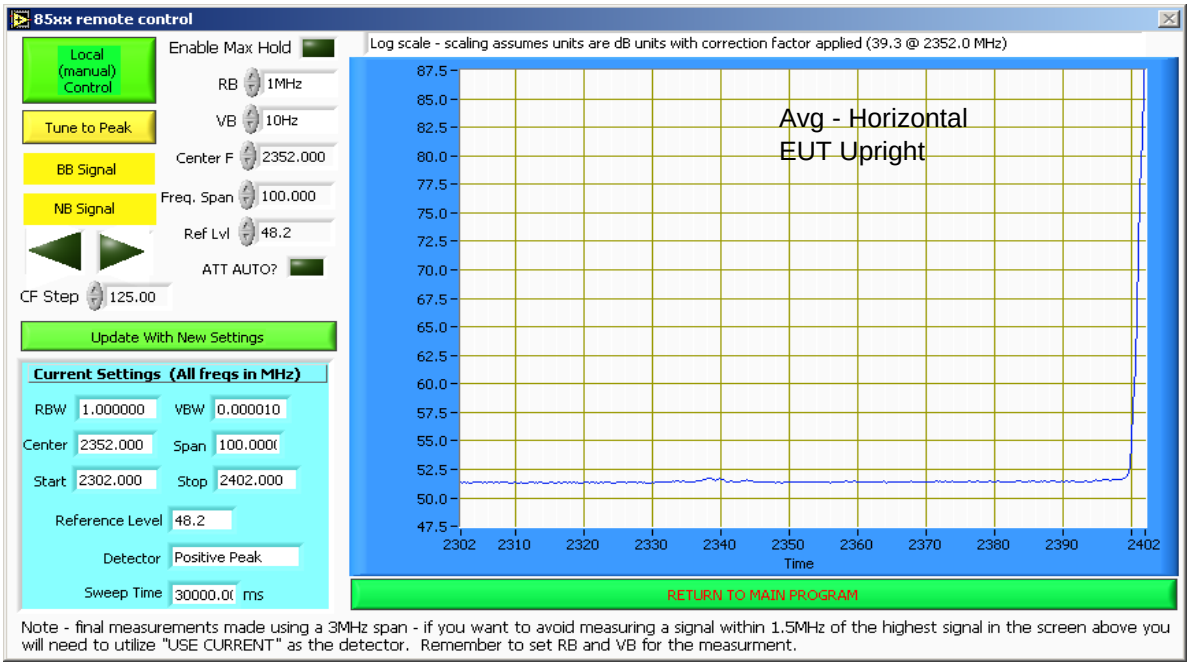
Other Spurious Emissions - EUT Upright

Frequency	Level	Pol	15.209 / 15.249		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
4803.980	41.1	V	54.0	-12.9	AVG	291	1.1	RB 1 MHz; VB: 10 Hz
4804.010	43.9	H	54.0	-10.1	AVG	321	1.5	RB 1 MHz; VB: 10 Hz
7205.950	36.0	V	54.0	-18.0	AVG	299	1.0	Note 2, RB 1 MHz; VB: 10 Hz
7207.370	36.1	H	54.0	-17.9	AVG	276	1.0	Note 2, RB 1 MHz; VB: 10 Hz
4803.950	49.4	H	74.0	-24.6	PK	321	1.5	RB 1 MHz; VB: 1 MHz
4804.320	47.8	V	74.0	-26.2	PK	291	1.1	RB 1 MHz; VB: 1 MHz
7205.300	47.9	H	74.0	-26.1	PK	276	1.0	Note 2, RB 1 MHz; VB: 1 MHz
7205.770	47.5	V	74.0	-26.5	PK	299	1.0	Note 2, RB 1 MHz; VB: 1 MHz

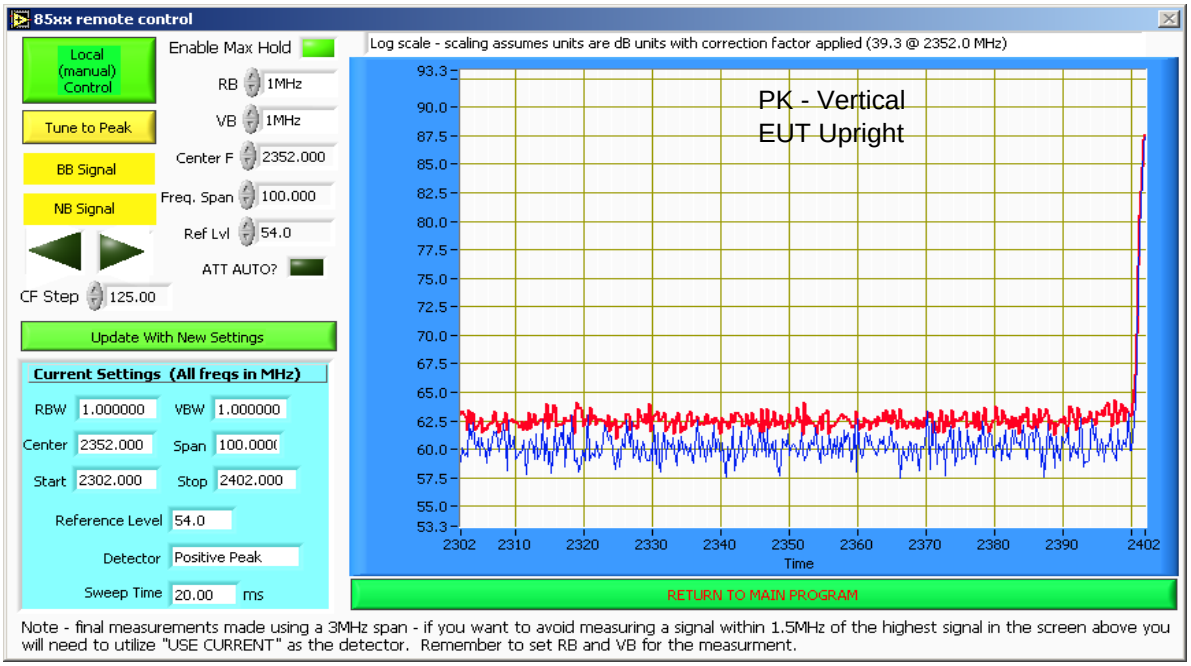
Note 1:	For emissions in restricted bands and non harmonic emisisons, the limit of 15.209 is used. For harmonic emissions, the limit is 40dB below the level of the fundamental which is idenital to the 15.209 limit above 1 GHz.
Note 2:	Signal is unrestricted, but more stringent level was used.

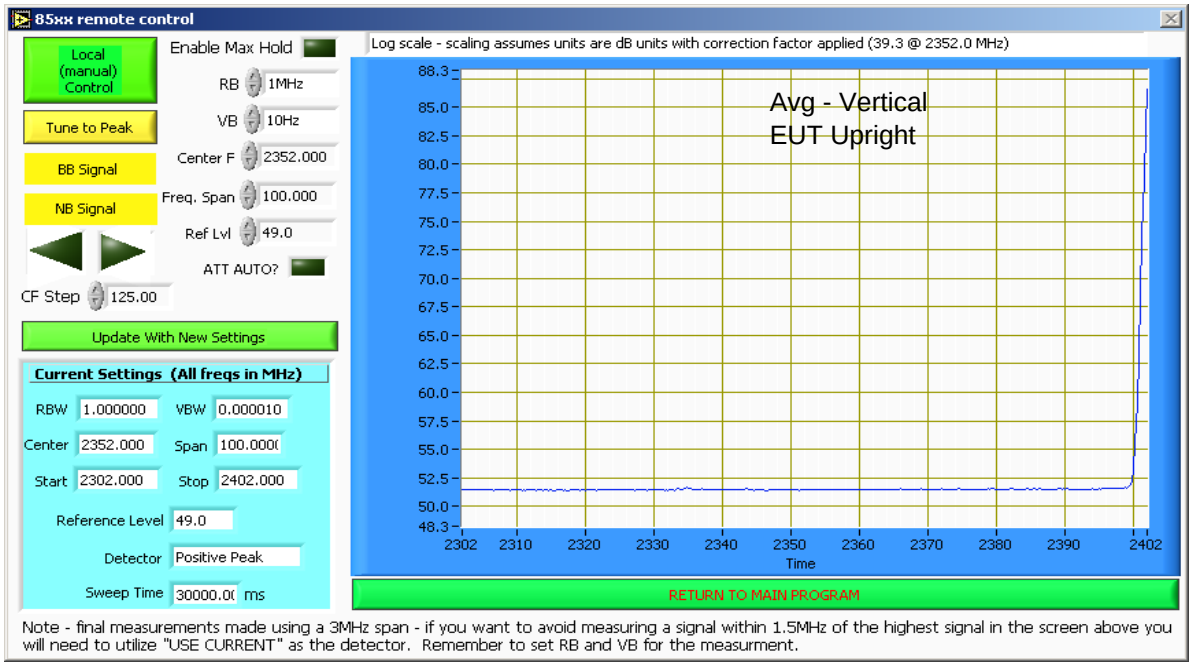
Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manager:	Sheareen Washington
Contact:	Rich Kelley		
Standard:	RSS 210, FCC 15.249	Class:	N/A





Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manager:	Sheareen Washington
Contact:	Rich Kelley		
Standard:	RSS 210, FCC 15.249	Class:	N/A





Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manager:	Sheareen Washington
Contact:	Rich Kelley		
Standard:	RSS 210, FCC 15.249	Class:	N/A

Run #1b: Center Channel @ 2430 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz

Frequency	Level	Pol	15.209 / 15.249		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2429.940	91.4	H	94.0	-2.6	AVG	170	1.0	EUT Upright
2429.950	88.7	H	94.0	-5.3	AVG	127	1.0	EUT Side
2429.960	89.6	V	94.0	-4.4	AVG	237	1.0	EUT Flat
2429.960	87.8	H	94.0	-6.2	AVG	273	1.0	EUT Flat
2429.970	88.7	V	94.0	-5.3	AVG	278	1.3	EUT Upright
2429.990	89.7	V	94.0	-4.3	AVG	67	1.1	EUT Side
2429.940	92.1	H	114.0	-21.9	PK	170	1.0	EUT Upright
2429.950	89.6	H	114.0	-24.4	PK	127	1.0	EUT Side
2429.960	90.4	V	114.0	-23.6	PK	237	1.0	EUT Flat
2429.960	88.7	H	114.0	-25.3	PK	273	1.0	EUT Flat
2429.970	89.4	V	114.0	-24.6	PK	278	1.3	EUT Upright
2429.990	90.4	V	114.0	-23.6	PK	67	1.1	EUT Side

Other Spurious Emissions - EUT Upright

Frequency	Level	Pol	15.209 / 15.249		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
4860.020	45.7	H	54.0	-8.3	AVG	330	1.4	RB 1.000 MHz; VB: 10 Hz
4860.030	42.1	V	54.0	-11.9	AVG	301	1.1	RB 1.000 MHz; VB: 10 Hz
7291.370	36.0	V	54.0	-18.0	AVG	273	1.3	RB 1.000 MHz; VB: 10 Hz
7291.420	35.9	H	54.0	-18.1	AVG	39	1.0	RB 1.000 MHz; VB: 10 Hz
4860.070	51.0	H	74.0	-23.0	PK	330	1.4	RB 1.000 MHz; VB: 1.000 MHz
4860.290	48.9	V	74.0	-25.1	PK	301	1.1	RB 1.000 MHz; VB: 1.000 MHz
7288.540	47.5	V	74.0	-26.5	PK	273	1.3	RB 1.000 MHz; VB: 1.000 MHz
7291.150	47.7	H	74.0	-26.3	PK	39	1.0	RB 1.000 MHz; VB: 1.000 MHz

Note 1:	For emissions in restricted bands and non harmonic emisisons, the limit of 15.209 is used. For harmonic emissions, the limit is 40dB below the level of the fundamental which is idenital to the 15.209 limit above 1 GHz.

Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manager:	Sheareen Washington
Contact:	Rich Kelley		
Standard:	RSS 210, FCC 15.249	Class:	N/A

Run #1c: High Channel @ 2480 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz

Frequency	Level	Pol	15.209 / 15.249		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2479.930	89.9	V	94.0	-4.1	AVG	206	1.1	EUT Flat
2479.940	88.2	H	94.0	-5.8	AVG	181	1.0	EUT Side
2479.950	90.0	V	94.0	-4.0	AVG	238	1.3	EUT Upright
2479.960	89.9	V	94.0	-4.1	AVG	73	1.5	EUT Side
2479.960	88.6	H	94.0	-5.4	AVG	266	1.0	EUT Flat
2479.980	90.7	H	94.0	-3.3	AVG	185	1.0	EUT Upright
2479.930	90.7	V	114.0	-23.3	PK	206	1.1	EUT Flat
2479.940	89.0	H	114.0	-25.0	PK	181	1.0	EUT Side
2479.950	90.7	V	114.0	-23.3	PK	238	1.3	EUT Upright
2479.960	90.6	V	114.0	-23.4	PK	73	1.5	EUT Side
2479.960	89.3	H	114.0	-24.7	PK	266	1.0	EUT Flat
2479.980	91.4	H	114.0	-22.6	PK	185	1.0	EUT Upright

Band Edge Signal Field Strength - EUT Upright

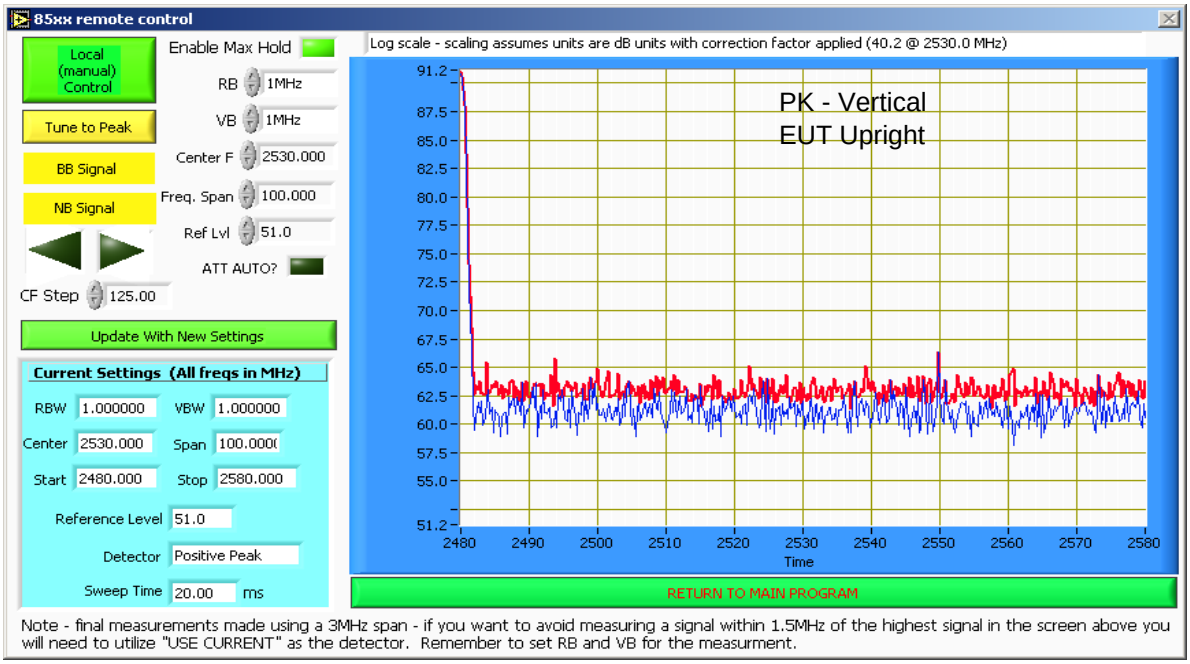
Frequency	Level	Pol	15.209 / 15.249		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
2484.000	52.3	H	54.0	-1.7	Avg	185	1.0	RB 1.000 MHz; VB: 10 Hz
2486.320	65.1	H	74.0	-8.9	PK	185	1.0	RB 1.000 MHz; VB: 1.000 MHz
2485.740	51.8	V	54.0	-2.2	Avg	238	1.3	RB 1.000 MHz; VB: 10 Hz
2484.810	63.7	V	74.0	-10.3	PK	238	1.3	RB 1.000 MHz; VB: 1.000 MHz

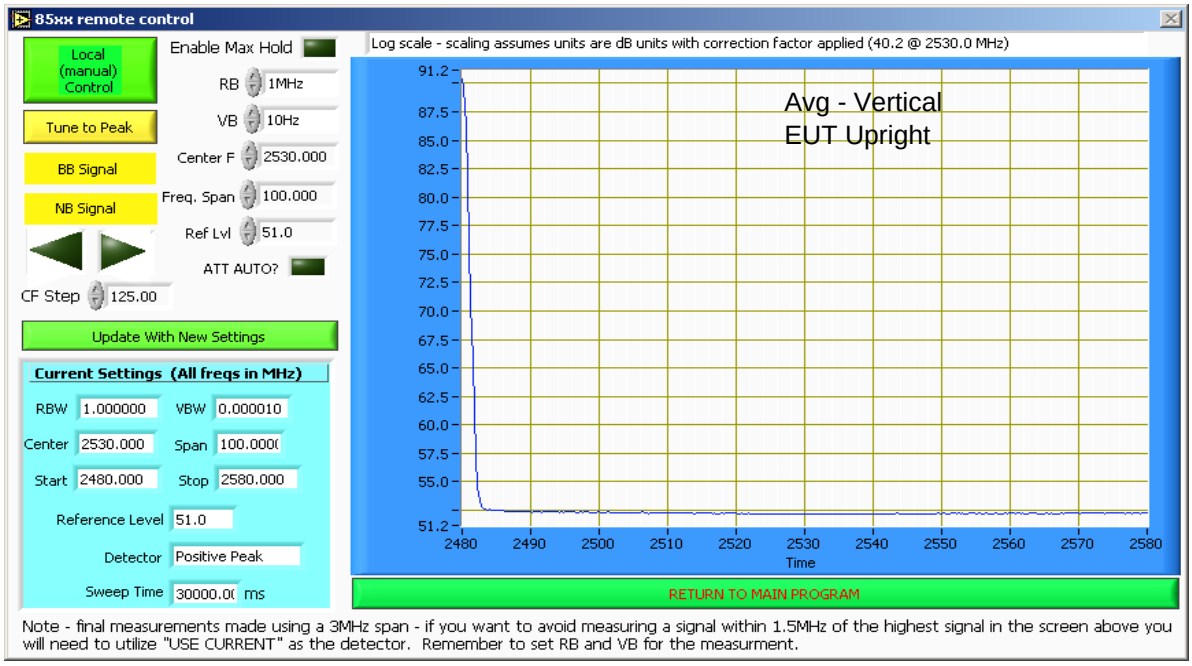
Other Spurious Emissions - EUT Upright

Frequency	Level	Pol	15.209 / 15.249		Detector	Azimuth	Height	Comments
MHz	dBµV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
4959.860	41.4	H	54.0	-12.6	AVG	184	1.5	RB 1.000 MHz; VB: 10 Hz
4960.030	45.1	V	54.0	-8.9	AVG	5	1.3	RB 1.000 MHz; VB: 10 Hz
7441.240	37.1	V	54.0	-16.9	AVG	223	1.0	RB 1.000 MHz; VB: 10 Hz
7441.500	37.4	H	54.0	-16.6	AVG	48	1.0	RB 1.000 MHz; VB: 10 Hz
4959.850	50.7	V	74.0	-23.3	PK	5	1.3	RB 1.000 MHz; VB: 1.000 MHz
4960.080	49.0	H	74.0	-25.0	PK	184	1.5	RB 1.000 MHz; VB: 1.000 MHz
7440.130	48.8	H	74.0	-25.2	PK	48	1.0	RB 1.000 MHz; VB: 1.000 MHz
7441.250	47.8	V	74.0	-26.2	PK	223	1.0	RB 1.000 MHz; VB: 1.000 MHz

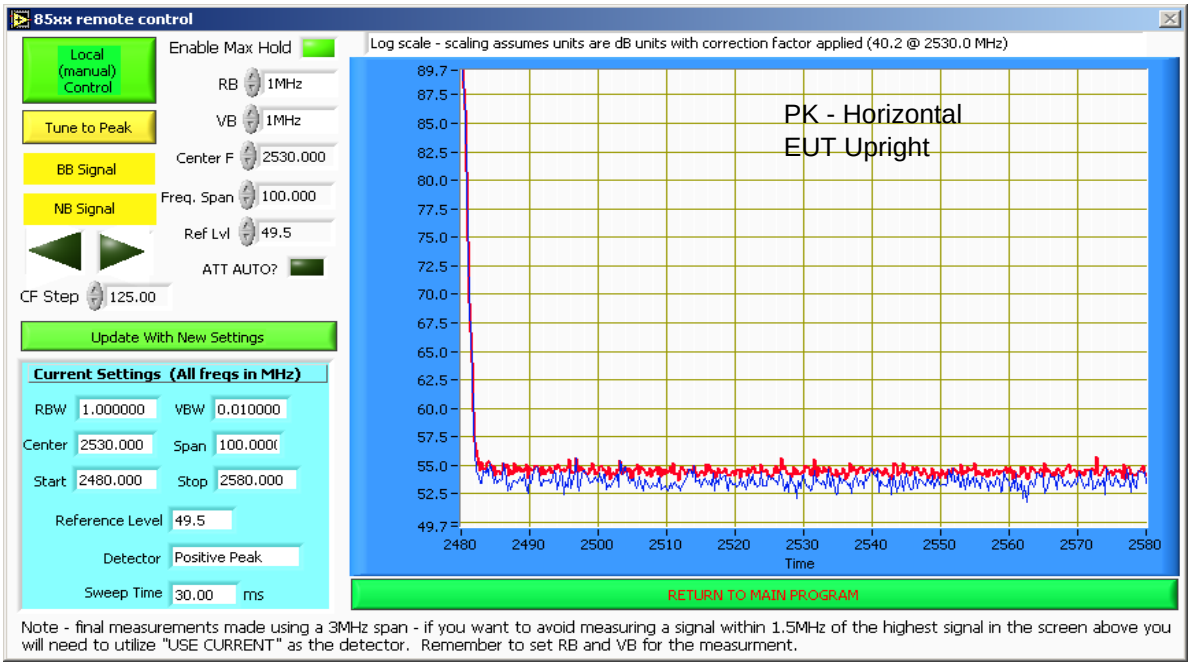
Note 1:	For emissions in restricted bands and non harmonic emisisons, the limit of 15.209 is used. For harmonic emissions, the limit is 40dB below the level of the fundamental which is idenital to the 15.209 limit above 1 GHz.

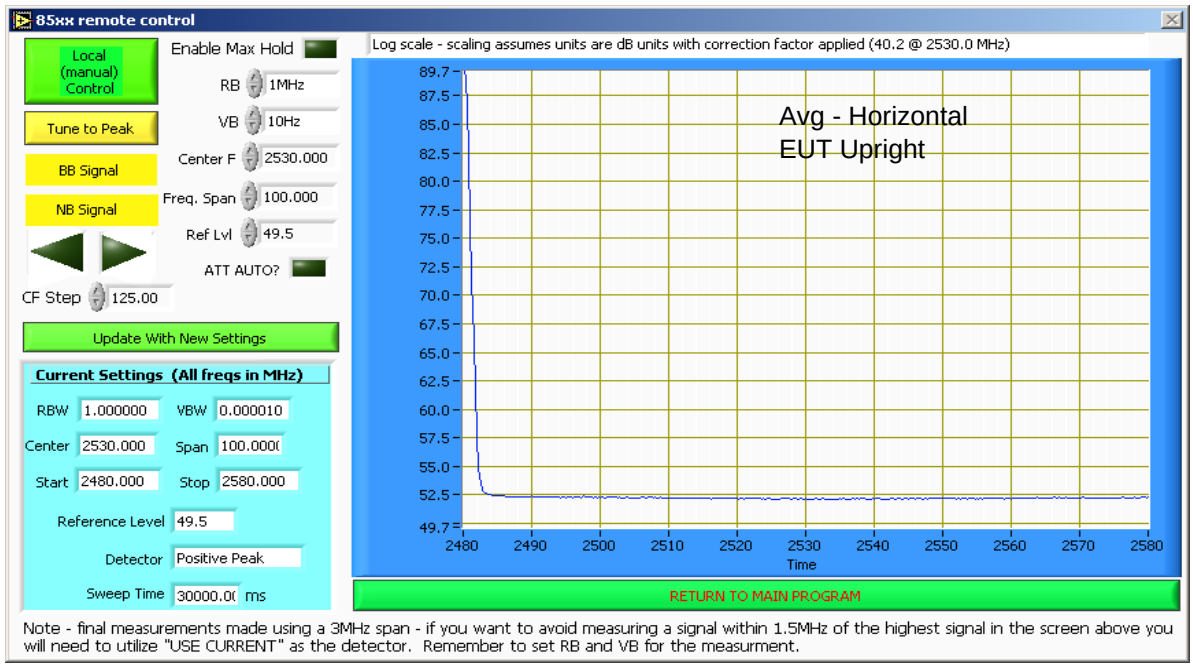
Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manager:	Sheareen Washington
Contact:	Rich Kelley		
Standard:	RSS 210, FCC 15.249	Class:	N/A





Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manager:	Sheareen Washington
Contact:	Rich Kelley		
Standard:	RSS 210, FCC 15.249	Class:	N/A



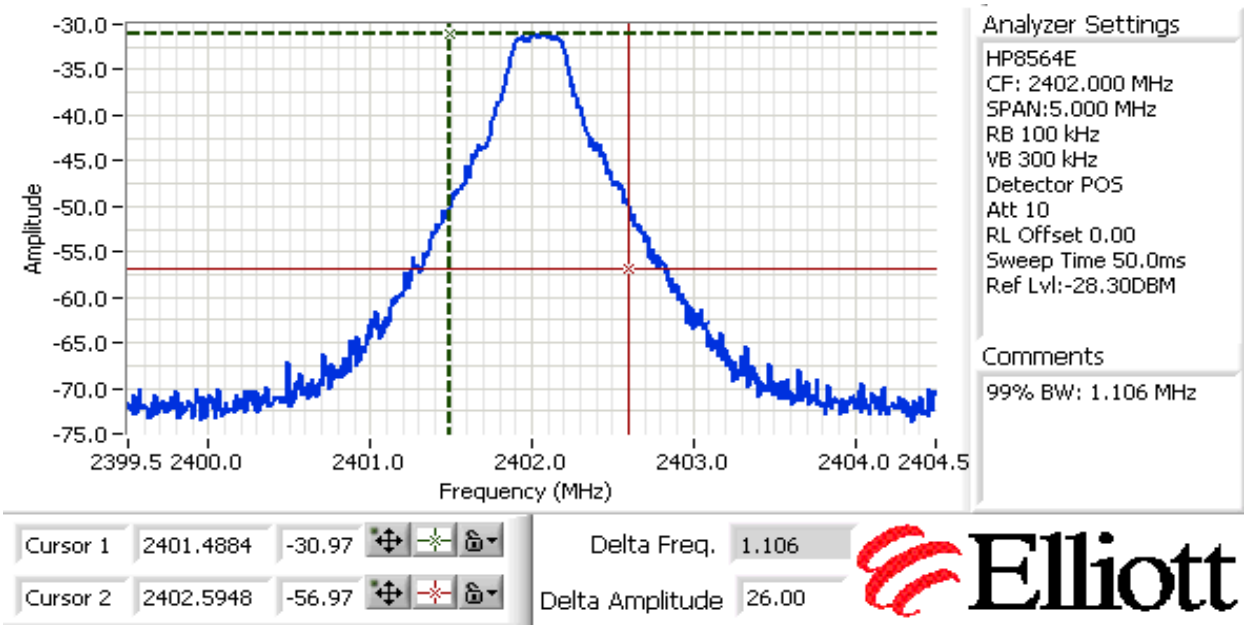


Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manager:	Sheareen Washington
Contact:	Rich Kelley		
Standard:	RSS 210, FCC 15.249	Class:	N/A

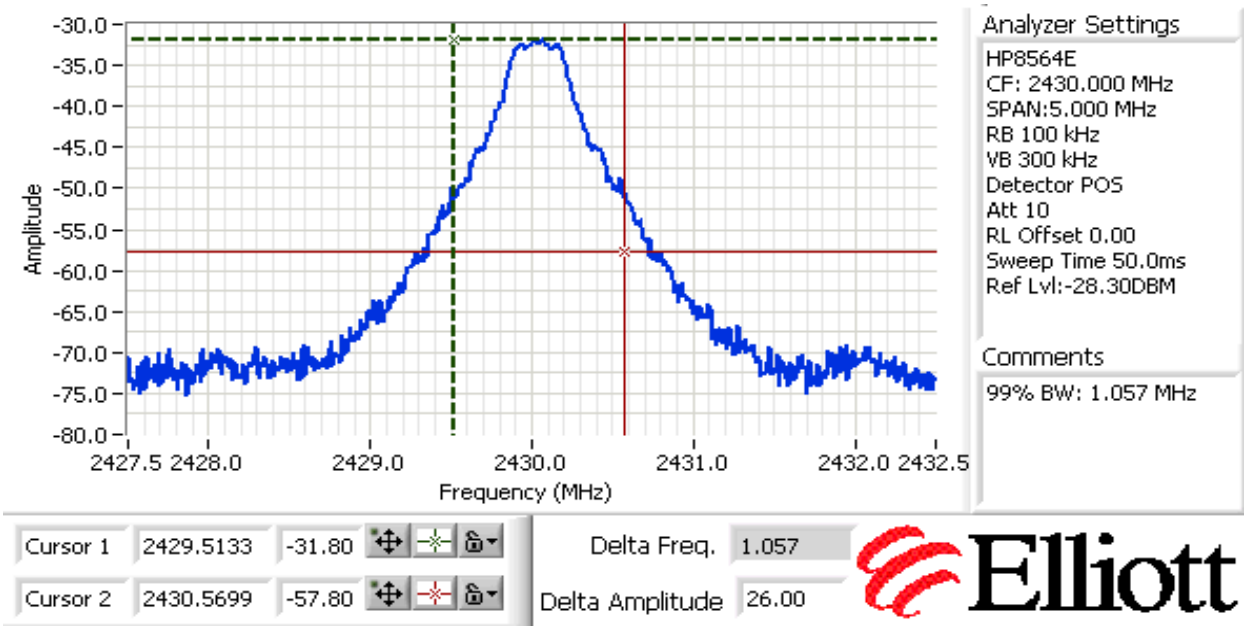
Run #2: Signal Bandwidth

Power Setting	Frequency (MHz)	Resolution Bandwidth	99% Bandwidth (MHz)
-	2402	100kHz	1.11
-	2430	100kHz	1.06
-	2480	100kHz	1.16

Note 1:	99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB > 3xRB



Client:	Abbott Diabetes Care	Job Number:	J71548
Model:	AV2 Controller	T-Log Number:	T71985
		Account Manager:	Sheareen Washington
Contact:	Rich Kelley		
Standard:	RSS 210, FCC 15.249	Class:	N/A



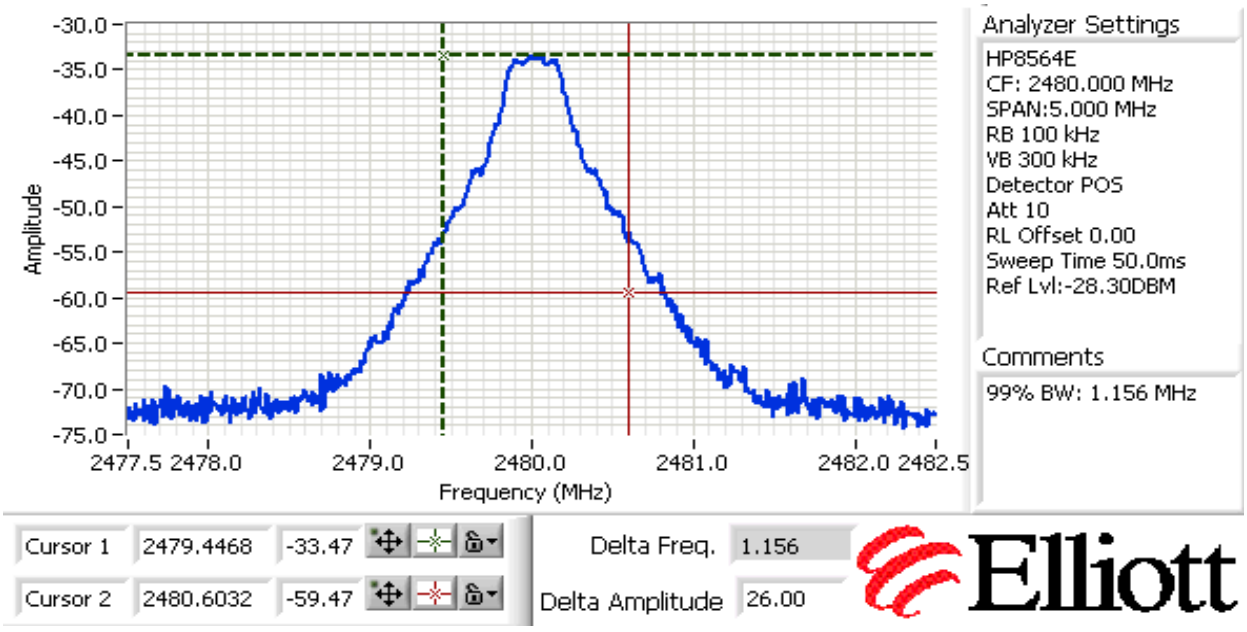
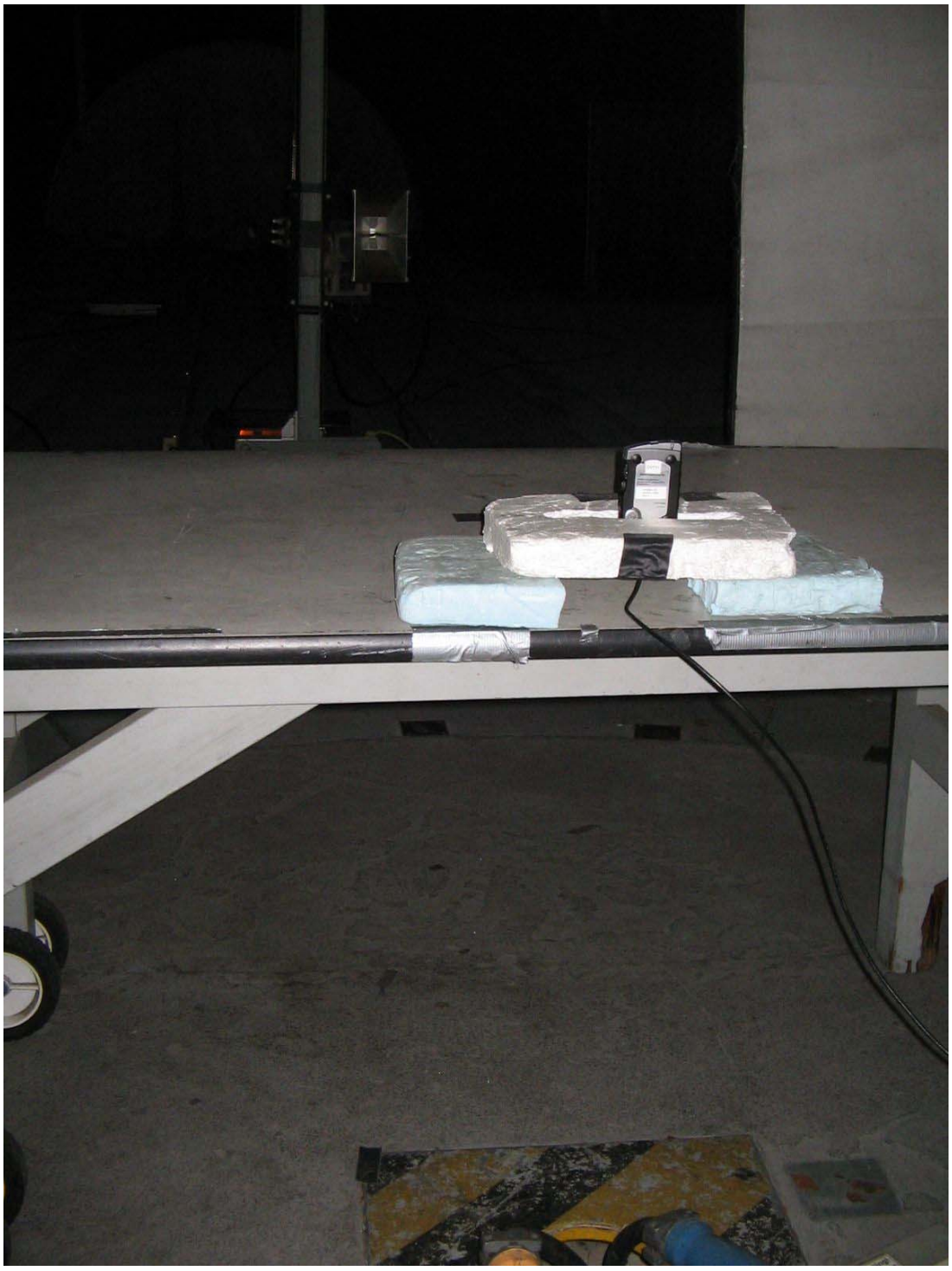


EXHIBIT 3: Photographs of Test Configurations

Radiated Emissions Test Configuration Photographs



AC Power Line Conducted Emissions Test Configuration Photographs