



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

1250 Peterson Dr., Wheeling, IL 60090

FCC Rules and Regulations / Intentional Radiators

Operational in the Band 13.553-13.567 MHz

Part 15, Subpart C, Section 15.225

THE FOLLOWING "**MEETS**" THE ABOVE TEST SPECIFICATION

Formal Name: CORE Console

Kind of Equipment: Medical Electrical Equipment

Test Configuration: The CORE Console has the following connections: 3 handpieces and their associated cabling, 2 footswitches with their associated cabling and 3 firewire (1394) cables. One power cord is connected to the console. (Tested at 120 vac, 60 Hz)

Model Number(s): 5400-050-000

Model(s) Tested: 5400-050-000

Serial Number(s): FCC #1 , FCC #2

Date of Tests: September 9 & 10, 2004

Test Conducted For:
Stryker Instruments
4100 E. Milham Ave
Kalamazoo, Michigan 49001

NOTICE: "This report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government". Please see the "Additional Description of Equipment Under Test" page listed inside of this report. This report must not be reproduced (except in full), without the approval of D.L.S. Electronic Systems.



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SIGNATURE PAGE

Report By:

Aron C. Rowe
Test Engineer
EMC-001375-NE

Reviewed By:

William Stumpf
OATS Manager

Approved By:

Brian Mattson
General Manager

Company Official:

Stryker Instruments



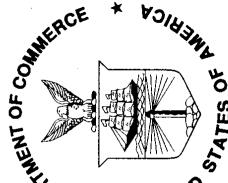
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United States Department of Commerce
National Institute of Standards and Technology

NVLAP

ISO/IEC 17025:1999
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Certificate of Accreditation

D.L.S. ELECTRONIC SYSTEMS, INC.
WHEELING, IL

is recognized by the National Voluntary Laboratory Accreditation Program
for satisfactory compliance with criteria set forth in NIST Handbook 150:2001,
all requirements of ISO/IEC 17025:1999, and relevant requirements of ISO 9002:1994.
Accreditation is awarded for specific services, listed on the Scope of Accreditation, for:

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

September 30, 2004

Effective through

For the National Institute of Standards and Technology
NVLAP Lab Code: 100276-0

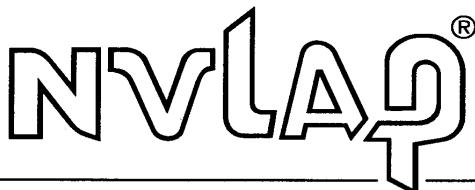
NVLAP-01C (06-01)



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D.L.S. ELECTRONIC SYSTEMS, INC.
1250 Peterson Drive
Wheeling, IL 60090-6454
Mr. Brian J. Mattson
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E-Mail: bmattson@dlsemc.com
URL: <http://www.dlsemc.com>

NVLAP Code Designation / Description

Emissions Test Methods:

12/160D21	RTCA/DO-160D (1997): Environmental Conditions and Test Procedures for Airborne Equipment - Section 21 - Emission of Radio Frequency Energy
12/300220a	EN 300 220-1 V1.3.1 (2000-09): Electromagnetic compatibility and Radio spectrum Matters; Short Range Devices; Radio equipment to be used in the 25 MHz to 1000 MHz frequency range with power levels ranging up to 500 mW; Part 1: Technical characteristics and test methods
12/300386a	EN 300 386 V.1.2.1: Electromagnetic compatibility and radio spectrum matter (ERM); Telecommunication network equipment; Electromagnetic compatibility (EMC) requirements
12/C63.17	ANSI C63.17-1998: American National Standard for Methods of Measurement of the Electromagnetic and Operational Compatibility of Unlicensed Personal Communications Services (UPCS) Devices

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12/C6317a	ANSI C63.17-1998: American National Standard for Methods of Measurement of the Electromagnetic and Operational Compatibility of Unlicensed Personal Communications Services (UPCS) Devices
12/CIS11	IEC/CISPR 11 + A1 (1997), EN 55011 (1998), AS/NZS 2064 (1997), and CNS 137803 (1997): Limits and Methods of Measurement of Electromagnetic Disturbance Characteristics of Industrial, Scientific, and Medical Radio-Frequency Equipment
12/CIS13	IEC/CISPR 13 (2001-04), EN 55013 (2001), AS/NZS 1053 (2001), and CNS 13439 (2001): Sound and television broadcast receivers and associated equipment - Radio disturbance characteristics - Limits and methods of measurement
12/CIS14	CISPR 14-1 (March 30, 2000): Limits and methods of measurement of radio interference characteristics of household electrical appliances, portable tools and similar electrical apparatus - Part 1: Emissions
12/CIS14a	EN 55014-1 (1993) with Amendments A1 (1997) & A2 (1999)
12/CIS14d	IEC/CISPR 14-1 (2001) and A1 (2001): Electromagnetic Compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emissions
12/CIS14e	EN 55014-1 (2001) and A1 (2001): Electromagnetic Compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission

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12/CIS14f	AS/NZS 1044 (2001) and A1 (2001): Electromagnetic Compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission
12/CIS14g	CNS 13783-1 (2001) and A1 (2001): Electromagnetic Compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission
12/CIS15	IEC/CISPR 15 (2000) + A1 (2001): Limits and methods of measurements of radio disturbance characteristics of electrical lighting and similar equipment
12/CIS15a	AS/NZS CISPR (2002): Limits and methods of measurements of radio disturbance characteristics of electrical lighting and similar equipment
12/CIS15b	CNS 13439 (2000) + A1 (2001): Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
12/CIS15c	EN 55015 (2000) + A1 (2001): Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
12/CIS22	IEC/CISPR 22 (1997) and EN 55022 (1998): Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/CIS22a	IEC/CISPR 22 (1993): Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.

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12/CIS22b	CNS 13438 (1997): Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
12/EM02a	IEC 61000-3-2, Edition 2.1 (2001-10), EN 61000-3-2 (2000), and AS/NZS 2279.1 (2000): Electromagnetic compatibility (EMC) Part 3-2: Limits - Limits for harmonic current emissions (equipment input current <= 16 A)
12/EM03	EN 61000-3-3 (1995), IEC 61000-3-3 (1995), and AS/NZS 2279.3 (1995): EMC - Part 3: Limits - Section 3. Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current up to 16A
12/F18	FCC OST/MP-5 (1986): FCC Methods of Measurement of Radio Noise Emissions for ISM Equipment (cited in FCC Method 47 CFR Part 18 - Industrial, Scientific, and Medical Equipment)
12/FCC15b	ANSI C63.4 (2001) with FCC Method - 47 CFR Part 15, Subpart B: Unintentional Radiators
12/FCC15c	ANSI C63.4 (2001) with FCC Method - 47 CFR Part 15, Subpart C: Intentional Radiators
12/FCC15d	ANSI C63.4 (2001) with FCC Method - 47 CFR Part 15, Subpart D: Unlicensed Personal Communications Service Devices

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12/FCC15e	ANSI C63.4 (2001) with FCC Method - CFR Part 15, Subpart E: Unlicensed National Information Infrastructure Service Devices
12/T51	AS/NZS CISPR 22 (2002) and AS/NZS 3548 (1997): Electromagnetic Interference - Limits and Methods of Measurement of Information Technology Equipment
12/VCCIa	Agreement of Voluntary Control Council for Interference by Information Technology Equipment - Technical Requirements: V-3/02.04

Immunity Test Methods:

12/1089a	GR-1089-CORE, Issue 3, October 2002: Electromagnetic Compatibility and Electrical Safety - Generic Criteria for Network Telecommunications Equipment (sections 2, 3.3, and 3.5)
12/160D16	RTCA/DO-160D (1997): Environmental Conditions and Test Procedures for Airborne Equipment - Section 16 - Power Input
12/160D17	RTCA/DO-160D (1997): Environmental Conditions and Test Procedures for Airborne Equipment - Section 17 - Voltage Spike
12/160D18	RTCA/DO-160D (1997): Environmental Conditions and Test Procedures for Airborne Equipment - Section 18 - Audio Frequency Conducted Susceptibility - Power Inputs

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12/160D19	RTCA/DO-160D (1997): Environmental Conditions and Test Procedures for Airborne Equipment - Section 19 - Induced Signal Susceptibility
12/160D20	RTCA/DO-160D (1997): Environmental Conditions and Test Procedures for Airborne Equipment - Section 20 - Radio Frequency Susceptibility (Radiated and Conducted)
12/160D22	RTCA/DO-160D (1997): Environmental Conditions and Test Procedures for Airborne Equipment - Section 22 - Lightning Induced Transient Susceptibility
12/160D25	RTCA/DO-160D (1997): Environmental Conditions and Test Procedures for Airborne Equipment - Section 25 - Electrostatic Discharge (ESD)
12/I01	IEC 61000-4-2 (1995) and Amendment 1 (1998) and EN 61000-4-2: Electrostatic Discharge Immunity Test
12/I02	IEC 61000-4-3 (1995) and Amendment 1 (1998) and EN 61000-4-3: Radiated, Radio-Frequency Electromagnetic Field Immunity Test
12/I03	IEC 61000-4-4 (1995) and EN 61000-4-4: Electrical Fast Transient/Burst Immunity Test
12/I04	IEC 61000-4-5 (1995) and EN 61000-4-5: Surge Immunity Test

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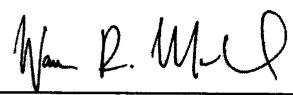
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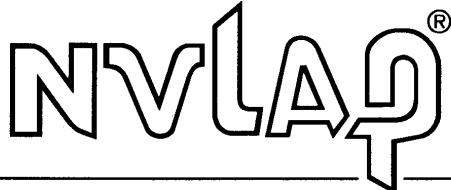
<p>NVLAP[®] National Institute of Standards and Technology</p> <p>Scope of Accreditation</p>	
<p>ISO/IEC 17025:1999 ISO 9002:1994</p> <p>ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS</p> <p>D.L.S. ELECTRONIC SYSTEMS, INC.</p> <p>NVLAP LAB CODE 100276-0</p> <p> Page: 7 of 9</p>	
<p>NVLAP Code Designation / Description</p> <p>12/I05 IEC 61000-4-6 (1996) and EN 61000-4-6: Immunity to Conducted Disturbances, Induced Radio-Frequency Fields</p> <p>12/I06 IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test</p> <p>12/I07 IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests</p> <p>12/J111324 SAE J1113/24: Immunity to radiated electromagnetic fields; 10 kHz to 200 MHz - Crawford TEM cell and 10 kHz to 5 GHz - Wideband TEM cell</p> <p>12/J111341 SAE J1113/41 (1995-07): Limits and methods of measurement of radio disturbance characteristics of components and modules for the protection of receivers used on board vehicles</p> <p>Radio Test Methods</p> <p>12/RSS119 RSS-119, Issue 6 (March 25, 2000): Land Mobile and Fixed Radio Transmitters and Receivers, 27.41 to 960 MHz</p> <p>12/RSS123 RSS-123, Issue 1, Rev. 2 (November 6, 1999): Low Power Licensed Radiocommunication Devices</p> <p>12/RSS137 RSS-137, Issue 1, Rev. 1 (September 25, 1999): Location and Monitoring Service (902 - 928 MHz)</p>	
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12/RSS139 RSS-139, Issue 1 (February 5, 2000): Licensed Radiocommunications Devices in the Band 2400 - 2483.5 MHz

12/CIS15c EN 55015 (2000) + A1 (2001): Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment

MIL-STD-462 : Conducted Emissions:

12/A18 MIL-STD-461 Version E Method CE106

MIL-STD-462 : Conducted Susceptibility:

12/B12 MIL-STD-462 Version D Method CS101

12/B13 MIL-STD-462 Version D Method CS103

12/B25 MIL-STD-461 Version E Method CS114

12/B26 MIL-STD-461 Version E Method CS115

12/B27 MIL-STD-461 Version E Method CS116

MIL-STD-462 : Radiated Emissions:

12/D04 MIL-STD-462 Version D Method RE101

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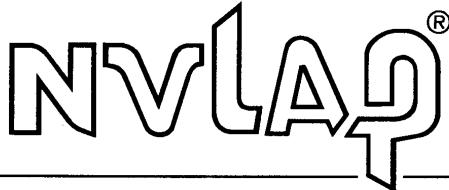
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12/D05 MIL-STD-462 Version D Method RE102
12/D06 MIL-STD-462 Version D Method RE103

MIL-STD-462 : Radiated Susceptibility:

12/E08 MIL-STD-462 Version D Method RS101
12/E09 MIL-STD-462 Version D Method RS103

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1.0 SUMMARY OF TEST REPORT

It was found that the CORE Console, Model Number(s) 5400-050-000, "meets" the radio interference conducted and radiated emission requirements of the FCC "Rules and Regulations", Part 15, Subpart C, Section 15.225 for operational in the 13.553-13.567 MHz Band. It should be noted that the amount of margin was only 2.9 dB at 49.14 MHz, radiated. The normal tolerance of the test equipment is ± 3 dB. Due to this tolerance and the variation in normal production, a margin of at least 6 dB is recommended. With only a 2.9 dB in margin, there is a probability that if this or another unit were tested by the Domestic or Foreign Compliance Regulatory Agency using similar test equipment, it could be found to not meet the above requirement.

This test report relates only to the items tested and contains the following number of pages.

Text: 71

2.0 INTRODUCTION

On September 9 & 10, 2004, a series of radio frequency interference measurements was performed on CORE Console, Model Number(s) 5400-050-000, Serial Number: FCC #1, FCC #2. The tests were performed according to the procedures of the FCC as stated in the "Methods of Measurement of Radio-Noise Emissions for Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz" found in the American National Standards Institute, ANSI C63.4-2001. Tests were performed by personnel of D.L.S. Electronic Systems, Inc. who are responsible to Donald L. Sweeney, Senior EMC Engineer.

3.0 OBJECT

The purpose of this series of tests was to determine if the test sample could meet the radio frequency interference emission requirements of the FCC "Rules and Regulations", Part 15, Subpart C, Sections 15.209 & 15.225 for Intentional Radiators operating in the Band 13.553-13.567 MHz.



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4.0 TEST SET-UP

All emission tests were performed at D.L.S. Electronic Systems, Inc. and set up according to the American National Standards Institute, ANSI C63.4-2001, Section 8, (Figures 11a and 11b).

All emissions tests were performed with the test item placed on a 80 cm high rotating non-conductive table, located in the test room. Equipment normally operated on the floor was placed on a metal covered turntable which is flush with the surrounding conducting ground plane. The ground plane has an electrical isolation layer over its surface approximately 7 mm thick. The EUT is separated from the turntable ground plane by a non-conductive layer. The equipment under test was set up according to ANSI C63.4-2001, Sections 6, 7 and 8.

5.0 TEST EQUIPMENT (Bandwidths and Detector Function)

All preliminary data below 1000 MHz was automatically plotted using the HP Spectrum Analyzer or ESI 26/40 Fixed Tuned Receiver. The data was taken using Peak, Quasi-Peak or the Average Detector Functions as required. This information was then used to determine the frequencies of maximum emissions. Above 1000 MHz, final data was taken using the Average Detector.

Below 1000 MHz, final data was taken using the HP Spectrum Analyzer and/or ESI 26/40 Fixed Tuned Receiver. These plots were made using the Peak or Quasi-Peak Detector functions, with manual measurements performed on the questionable frequencies using the Quasi-Peak or the Average Detector Function of the Analyzer or ESI 26/40 Fixed Tuned Receiver as required. Above 1000 MHz, final data was taken using the Average Detector on the Spectrum Analyzer.

The bandwidths shown below are specified by ANSI C63.4-2001, Section 4.2.

Frequency Range	Bandwidth (-6 dB)
10 to 150 kHz	200 Hz
150 kHz to 30 MHz	9 kHz
30 MHz to 1 GHz	120 kHz
Above 1 GHz	1 MHz

A list of the equipment used can be found in Table 1. All primary equipment was calibrated against known reference standards with a verified traceable path to NIST.



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6.0 AMBIENT MEASUREMENTS

For emissions measurements, broadband antennas and an EMI Test Receiver with a panoramic spectrum display are used. First the frequency range is scanned and displayed on the test receiver display. Next the scanned frequency range is divided into smaller ranges, and then it is manually tuned through to determine the emissions from the EUT. A headset or loudspeaker is connected to the test receiver's AM/FM demodulated output as an aid in detecting ambient signals and finding frequencies of significant emission from the EUT. If there is any doubt as to the source of the emission, it is further investigated by rotating the EUT, or by disconnecting the power from the EUT.

The EUT is set up in its typical configuration and operated in its various modes. For tabletop systems, cables are manipulated within the range of likely configurations. For floor-standing equipment, the cables are located in the same manner as the user would install them and no further manipulation is made. If the manner of cable installation is not known, or if it changes with each installation, cables or wires for floor-standing equipment shall be manipulated to the extent possible to produce the maximum level of emissions. For each mode of operation, the frequency spectrum is monitored. Variations in antenna height, antenna polarization, EUT azimuth, and cable or wire placement (each variable within bounds specified elsewhere) are explored to produce the emissions that have the highest amplitude relative to the limit. These methods are performed to the specifications in ANSI C63.4: 2001.



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7.0 DESCRIPTION OF TEST SAMPLE: (See also Paragraph 8.0)

7.1 Description:

The Stryker Consolidated Operating Room Equipment (CORE) System is intended for use in the cutting, drilling, reaming, decorticating, and smoothing of teeth, bone, bone cement, and other bone-related tissue in a variety of surgical procedures, including but not limited to Neuro, ENT, Dental and Endoscopic. It is also usable in placement of cutting of screws, metal, wires, pins and other fixation devices.

7.2 PHYSICAL DIMENSIONS OF EQUIPMENT UNDER TEST

Length: 17" x Width: 12.5" x Height: 5"

7.3 LINE FILTER USED:

Schaffner 9246B-6-06

7.4 INTERNAL CLOCK FREQUENCIES:

Switching Power Supply Frequencies:

52 kHz, 100 kHz, 200 kHz and 1.1 MHz

Clock Frequencies:

3.6864 MHz, 8 MHz, 13.56 MHz, 14.7464 MHz, 16 MHz, 24.57 MHz, 30 MHz, 32.768 MHz, 40 MHz and 49.152 MHz.



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7.0 DESCRIPTION OF TEST SAMPLE: (CON'T)

7.5 DESCRIPTION OF ALL CIRCUIT BOARDS:

1. CORE Console Main PCB Assembly	PN: 5400-050-050 Rev 4.53
2. Connector Harness PCB Assembly	PN: 5400-050-051 Rev 1
3. Connector Interface PCB Assembly	PN: 5400-050-072 Rev 2
4. CORE Power Supply	PN: 5400-050-040 Rev 3
5. Sharp Display Interface	PN: 5400-050-065 Rev A
6. Sharp Display Controller	PN: 5400-050-064 Rev A



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8.0 ADDITIONAL DESCRIPTION OF TEST SAMPLE:
(See also Paragraph 7.0)

1: There were no additional descriptions noted at the time of test.

I certify that the above, as described in paragraph 7.0, describes the equipment tested and will be manufactured as stated.

By: _____
Signature

Title

For: _____
Company

Date



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9.0 PHOTO INFORMATION AND TEST SET-UP

Item 0 CORE Console

Model Number: 5400-050-000 Serial Number: FCC #1 , FCC #2

Item 1 Formula Handpiece with antenna.

Item 2 Core Saber Drill Handpiece

Item 3 Core UHT Handpiece

Item 4 Three shielded Firewire Cables with Plastic Shells. 3m

Item 5 Two Stryker Foot Switches

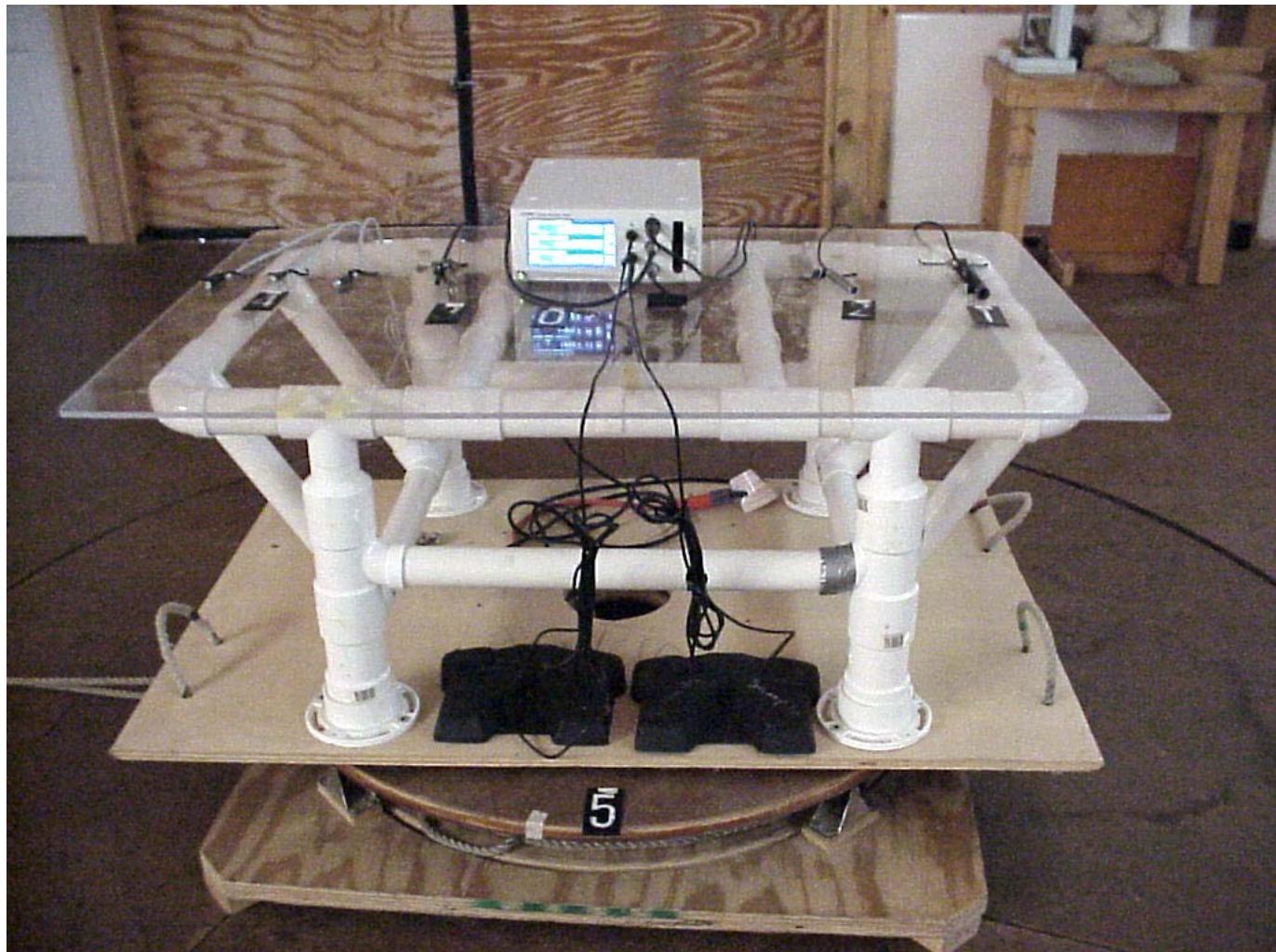
Item 6 Shielded AC Power Line Cord. 3.5m



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10.0 RADIATED PHOTOS TAKEN DURING TESTING

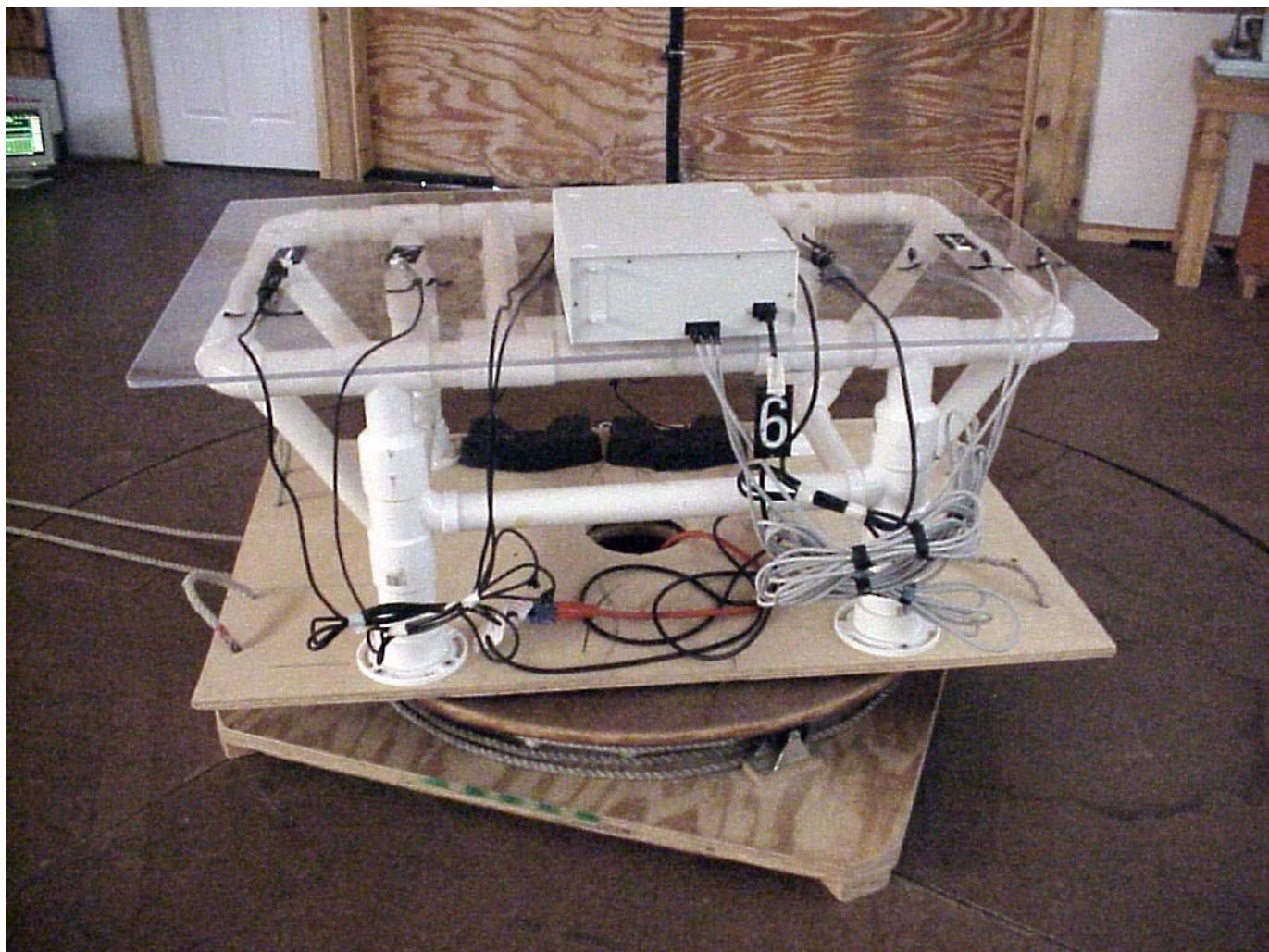




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Model Tested: 5400-050-000
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1250 Peterson Dr., Wheeling, IL 60090

8.0 RADIATED PHOTOS TAKEN DURING TESTING: (CON'T)

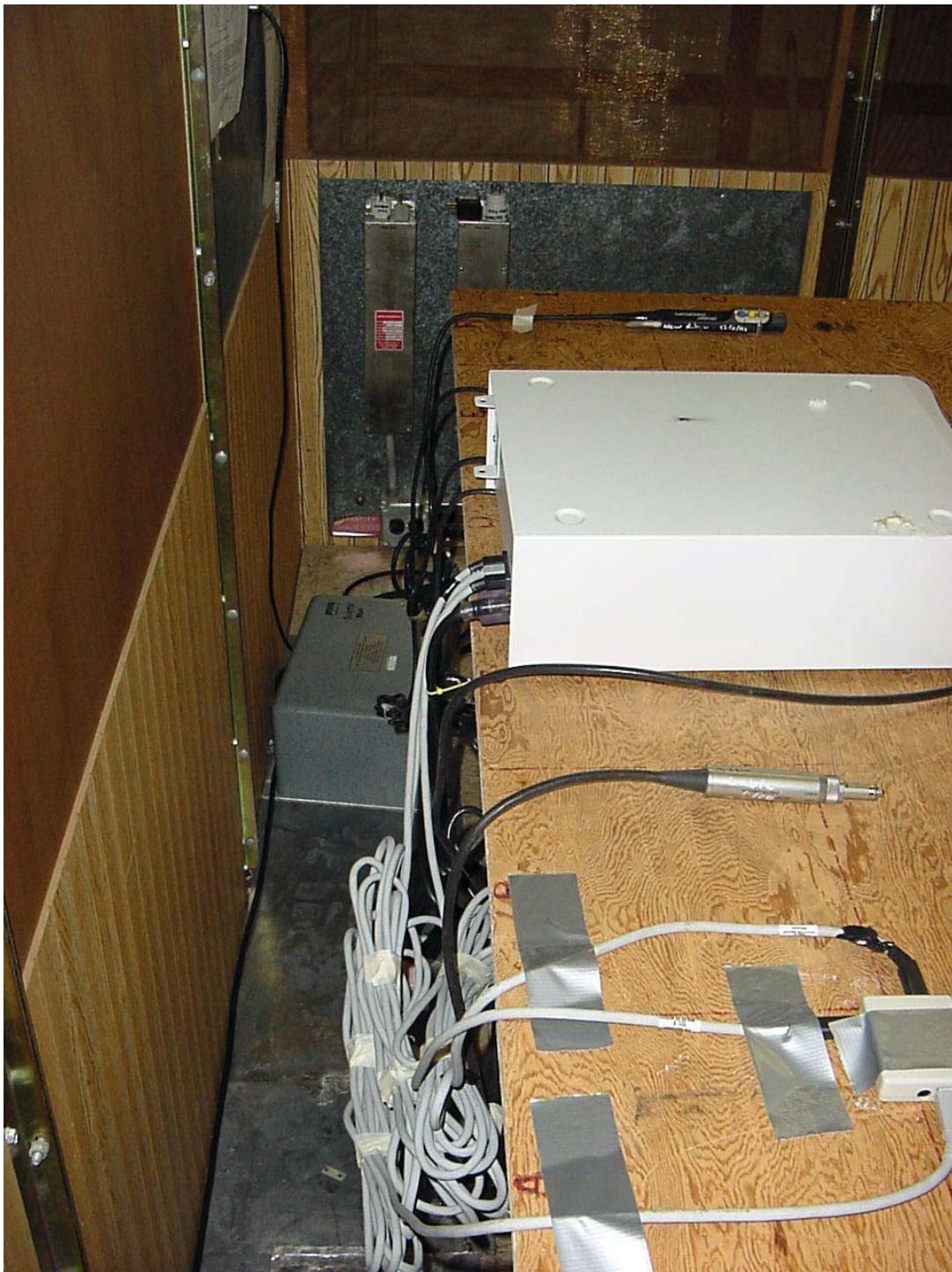




Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

1250 Peterson Dr., Wheeling, IL 60090

10.0 CONDUCTED PHOTOS TAKEN DURING TESTING





Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

1250 Peterson Dr., Wheeling, IL 60090

11.0 RESULTS OF TESTS

The radio interference emission charts results can be seen on the pages at the end of this report. Data sheets indicating the test measurements taken during testing can also be found at the end of this report. Points on the emission charts shown with a yellow mark are background frequencies that were verified during testing.

12.0 CONCLUSION

It was found that the CORE Console, Model Number(s) 5400-050-000 **"meets"** the radio interference conducted and radiated emission requirements of the FCC "Rules and Regulations", Part 15, Subpart C, Section 15.225 for operational in the 13.553-13.567 MHz Band.

It should be noted that the amount of margin was only 2.9 dB at 49.14 MHz, radiated. The normal tolerance of the test equipment is ± 3 dB. Due to this tolerance and the variation in normal production, a margin of at least 6 dB is recommended. With only a 2.9 dB in margin, there is a probability that if this or another unit were tested by the Domestic or Foreign Compliance Regulatory Agency using similar test equipment, it could be found to not meet the above requirement.



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

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TABLE 1 – EQUIPMENT LIST

Test Equipment	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Due Dates
Spectrum Analyzer	Hewlett/ Packard	8566B	2240A002041	100 Hz – 22 GHz	10/04
Quasi-Peak Adapter	Hewlett/ Packard	85650A	2043A00121	10 kHz – 1 GHz	10/04
Spectrum Analyzer	Hewlett/ Packard	8566B	2421A00452	100 Hz – 22 GHz	2/05
Quasi-Peak Adapter	Hewlett/ Packard	85650A	2043A00450	10 kHz – 1 GHz	2/05
Spectrum Analyzer	Hewlett/ Packard	8591A	3009A00700	9 kHz – 1.8 GHz	3/05
Receiver	Electrometrics	EMC-30	44168	10 kHz – 1 GHz	9/05
Receiver	Rohde & Schwarz	ESI 26	837491/010	20 Hz – 26 GHz	11/04
Receiver	Rohde & Schwarz	ESI 40	837808/006	20 Hz – 40 GHz	12/04
Receiver	Rohde & Schwarz	ESI 40	837808/005	20 Hz – 40 GHz	12/04
Antenna	EMCO	3104C	00054891	20 MHz – 200 MHz	2/05
Antenna	Electrometrics	LPA-25	1114	200 MHz – 1 GHz	3/05
Antenna	EMCO	3104C	00054892	20 MHz – 200 MHz	3/05

All primary equipment is calibrated against known reference standards with a verified traceable path to NIST.



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

1250 Peterson Dr., Wheeling, IL 60090

TABLE 1 – EQUIPMENT LIST

Test Equipment	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Due Dates
Antenna	Electrometrics	3146	1205	200 MHz – 1 GHz	3/05
Antenna	EMCO	3104C	97014785	20 MHz – 200 MHz	2/05
Antenna	EMCO	3146	97024895	200 MHz – 1 GHz	3/05
Antenna	EMCO	3115	2479	1 GHz – 18 GHz	8/05
Antenna	EMCO	3115	99035731	1 GHz – 18 GHz	4/05
Antenna	Rohde & Schwarz	HUF-Z1	829381001	20 MHz – 1 GHz	2/05
Antenna	Rohde & Schwarz	HUF-Z1	829381005	20 MHz – 1 GHz	8/05
LISN	Solar	8012-50-R-24-BNC	8305116	10 MHz – 30 MHz	8/05
LISN	Solar	8012-50-R-24-BNC	814548	10 MHz – 30 MHz	8/05
LISN	Solar	9252-50-R-24-BNC	961019	10 MHz – 30 MHz	12/04
LISN	Solar	9252-50-R-24-BNC	971612	10 MHz – 30 MHz	10/04
LISN	Solar	9252-50-R-24-BNC	92710620	10 MHz – 30 MHz	7/05

All primary equipment is calibrated against known reference standards with a verified traceable path to NIST.



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

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APPENDIX A

TEST PROCEDURE

Part 15, Subpart C, Section 15.225a-c

OPERATION WITHIN THE BAND 13.553-13.567 MHz



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

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1.0 CONDUCTED EMISSION MEASUREMENTS

The conducted emissions were measured over the frequency range from 150 kHz to 30 MHz in accordance with the power line measurements, as specified in ANSI C63.4-1992. Since the device is operated from the public utility lines, the 120 Vac, 60 Hz power leads, high and low sides were measured by connecting the measuring equipment to the appropriate meter terminal of the LISN. All signals were then recorded. The allowed levels for Intentional Radiators cannot exceed 250 uV (47.96 dBuV) at any frequency between 150 kHz and 30 MHz, as stated in Section 15.207a.



Company: Stryker Instruments
Model Tested: 5400-050-000
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CONDUCTED DATA AND GRAPHS

TAKEN DURING TESTING

PART 15.207

FCC Part 15 Class B

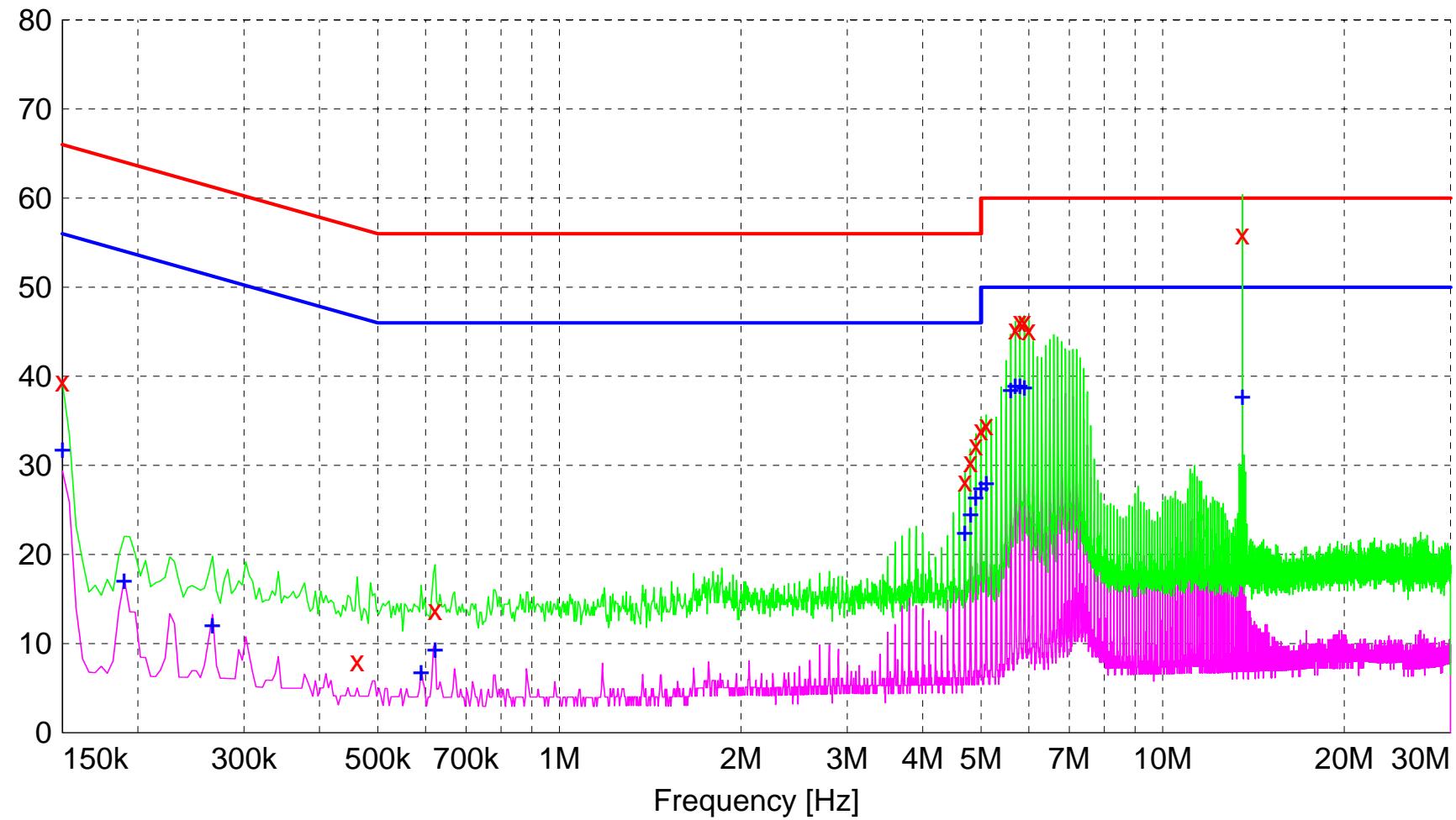
Voltage Mains Test

EUT: TPS core console w\cutter recognition Wireless 13.56 MHZ
Manufacturer: Stryker Instruments
Operating Condition: 72 deg. F, 49% R.H.
Test Site: DLS OF Screenroom
Operator: Tim O
Test Specification: 120 V; 60 Hz
Comment: Line 1
Date: 09/9/2004

SCAN TABLE: "FCC ClassB Voltage"

Short Description:			FCC Class B Voltage			
Start	Stop	Step	Detector	Meas.	IF	Transducer
Frequency	Frequency	Width		Time	Bandw.	
150.0 kHz	30.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	LISN DLS#128
			Average			

Level [dB μ V]



x x	MES	tpSL1_fin QP
+	MES	tpSL1_fin AV
—	MES	tpSL1_pre PK
—	MES	tpSL1_pre AV
—	LIM	FCC ClassB V QP New Voltage Amplitude QP Limit
—	LIM	FCC ClassB V AV New Voltage Amplitude AVG Limit

MEASUREMENT RESULT: "tpsL1_fin QP"

9/9/2004 12:05PM

Frequency MHz	Level dB μ V	Transd dB	Limit dB μ V	Margin dB	Line	PE
0.150000	39.50	11.7	66	26.5	1	---
0.462000	8.00	10.6	57	48.7	1	---
0.622000	13.80	10.5	56	42.2	1	---
4.702000	28.20	10.9	56	27.8	1	---
4.802000	30.40	10.9	56	25.6	1	---
4.902000	32.30	10.9	56	23.7	1	---
4.998000	34.00	11.0	56	22.0	1	---
5.098000	34.60	11.0	60	25.4	1	---
5.698000	45.30	11.0	60	14.7	1	---
5.798000	46.10	11.0	60	13.9	1	---
5.898000	46.10	11.0	60	13.9	1	---
5.998000	45.20	11.0	60	14.8	1	---
13.562000	55.90	11.6	60	4.1	1	---

MEASUREMENT RESULT: "tpsL1_fin AV"

9/9/2004 12:05PM

Frequency MHz	Level dB μ V	Transd dB	Limit dB μ V	Margin dB	Line	PE
0.150000	31.90	11.7	56	24.1	1	---
0.190000	17.20	11.2	54	36.9	1	---
0.266000	12.20	10.9	51	39.0	1	---
0.590000	6.90	10.5	46	39.1	1	---
0.622000	9.50	10.5	46	36.5	1	---
4.702000	22.60	10.9	46	23.4	1	---
4.802000	24.60	10.9	46	21.4	1	---
4.898000	26.50	10.9	46	19.5	1	---
4.998000	27.60	11.0	46	18.4	1	---
5.102000	28.10	11.0	50	21.9	1	---
5.598000	38.60	11.0	50	11.4	1	---
5.698000	39.10	11.0	50	10.9	1	---
5.798000	39.10	11.0	50	10.9	1	---
5.898000	38.90	11.0	50	11.1	1	---
13.558000	37.80	11.6	50	12.2	1	---

FCC Part 15 Class B

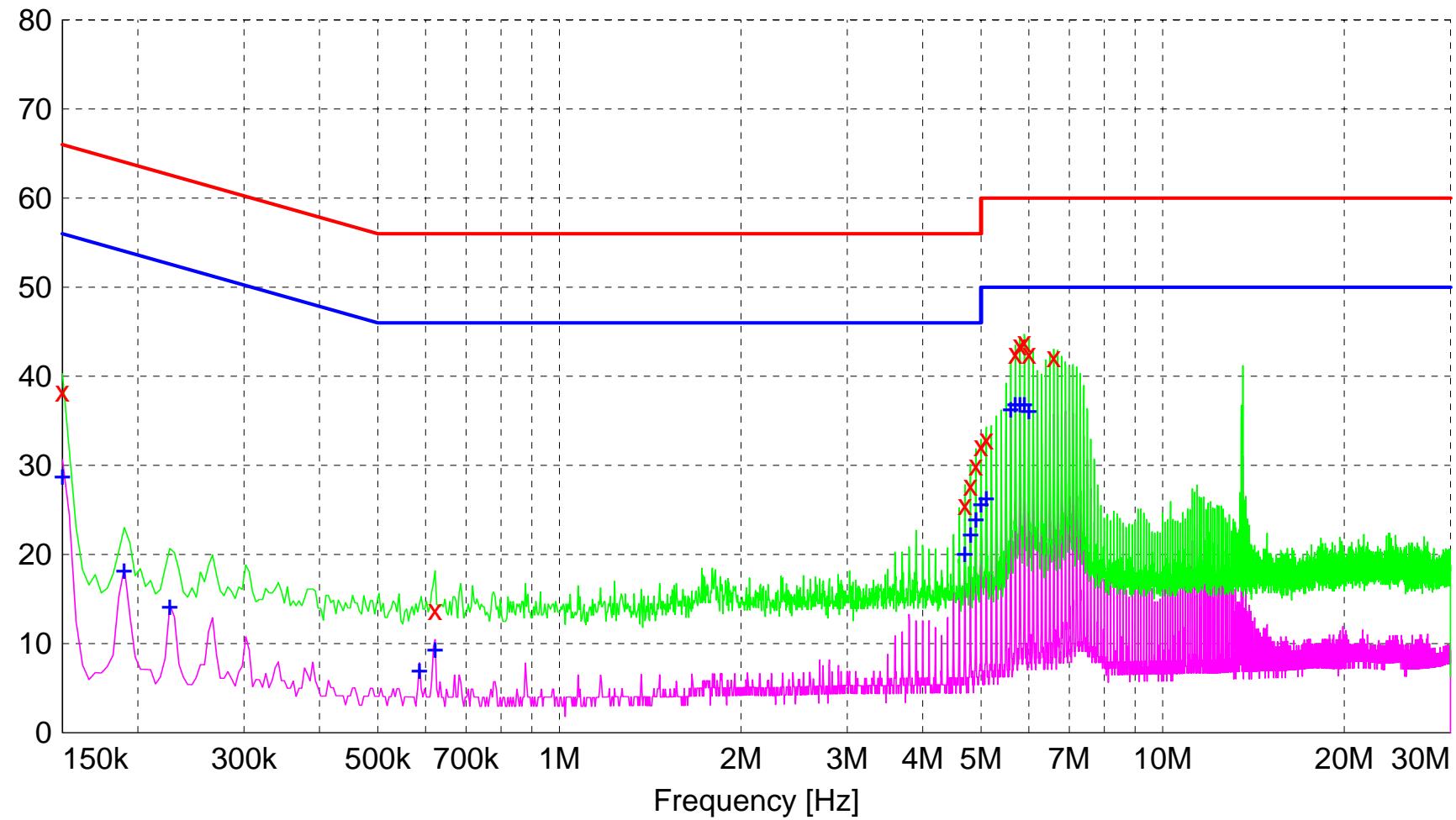
Voltage Mains Test

EUT: TPS core console w\cutter recognition Wireless 13.56 MHZ
Manufacturer: Stryker Instruments
Operating Condition: 72 deg. F, 49% R.H.
Test Site: DLS OF Screenroom
Operator: Tim O
Test Specification: 120 V; 60 Hz
Comment: Line 2
Date: 09/9/2004

SCAN TABLE: "FCC ClassB Voltage"

Short Description:			FCC Class B Voltage			
Start	Stop	Step	Detector	Meas.	IF	Transducer
Frequency	Frequency	Width		Time	Bandw.	
150.0 kHz	30.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	LISN DLS#128
			Average			

Level [dB μ V]



x x	MES	tpsl2_fin QP
+	MES	tpsl2_fin AV
—	MES	tpsl2_pre PK
—	MES	tpsl2_pre AV
—	LIM	FCC ClassB V QP New Voltage Amplitude QP Limit
—	LIM	FCC ClassB V AV New Voltage Amplitude AVG Limit

MEASUREMENT RESULT: "tpsl2_fin QP"

9/9/2004 12:11PM

Frequency MHz	Level dB μ V	Transd dB	Limit dB μ V	Margin dB	Line	PE
0.150000	38.30	11.7	66	27.7	1	---
0.622000	13.80	10.5	56	42.2	1	---
4.702000	25.60	10.9	56	30.4	1	---
4.802000	27.80	10.9	56	28.2	1	---
4.902000	30.00	10.9	56	26.0	1	---
4.998000	32.20	11.0	56	23.8	1	---
5.102000	32.90	11.0	60	27.1	1	---
5.698000	42.60	11.0	60	17.4	1	---
5.798000	43.50	11.0	60	16.5	1	---
5.898000	43.90	11.0	60	16.1	1	---
6.002000	42.60	11.0	60	17.4	1	---
6.598000	42.20	11.1	60	17.8	1	---

MEASUREMENT RESULT: "tpsl2_fin AV"

9/9/2004 12:11PM

Frequency MHz	Level dB μ V	Transd dB	Limit dB μ V	Margin dB	Line	PE
0.150000	28.90	11.7	56	27.1	1	---
0.190000	18.30	11.2	54	35.8	1	---
0.226000	14.30	11.0	53	38.3	1	---
0.586000	7.10	10.5	46	38.9	1	---
0.622000	9.50	10.5	46	36.5	1	---
4.702000	20.20	10.9	46	25.8	1	---
4.802000	22.40	10.9	46	23.6	1	---
4.902000	24.10	10.9	46	21.9	1	---
4.998000	25.80	11.0	46	20.2	1	---
5.102000	26.40	11.0	50	23.6	1	---
5.598000	36.40	11.0	50	13.6	1	---
5.698000	37.00	11.0	50	13.0	1	---
5.798000	37.00	11.0	50	13.0	1	---
5.898000	37.00	11.0	50	13.0	1	---
6.002000	36.20	11.0	50	13.8	1	---



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

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2.0 BAND EDGE AND RESTRICT BAND COMPLIANCE

The field strength of any emissions appearing outside the 13.553 to 13.567 MHz band shall not exceed the general radiated emissions limits as stated Section 15.209. The fundamental from the CORE Console transmitter shall not be inside the restrict band 13.36 to 13.41 MHz.

NOTE: See the following page (s) for the graph (s) made showing compliance for Band Edge and Restrict Band:



Company: Stryker Instruments
Model Tested: 5400-050-000
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GRAPH (s) TAKEN SHOWING THE BAND EDGE AND RESTRICT BAND COMPLIANCE

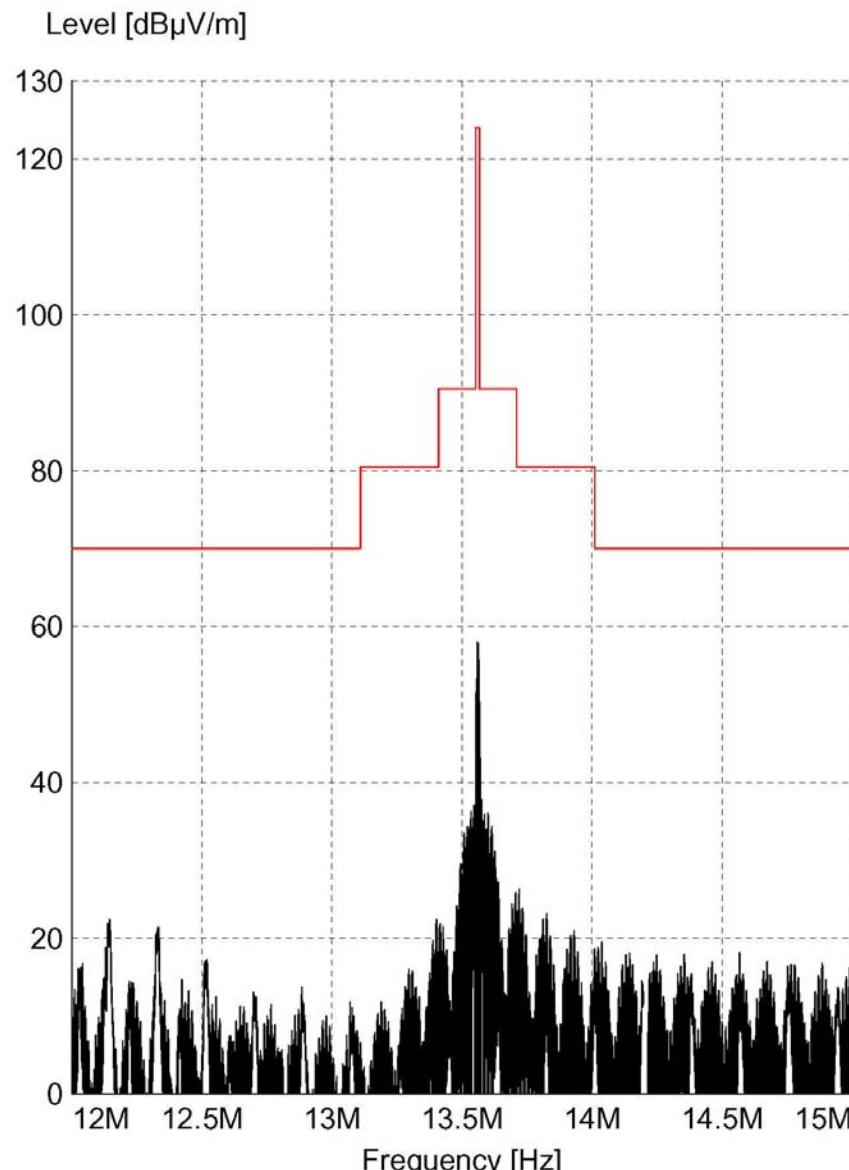
PART 15.225 (b)



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

1250 Peterson Dr., Wheeling, IL 60090

Test Date: 9-10-04
EUT: TPS Console w\ Cutter Recognition
Test: Radiated Emission Bandwidth
Operator: Jason L.
Comment: Transmit Frequency – 13.56 MHz





Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

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3.0 FIELD STRENGTH OF SPURIOUS EMISSION MEASUREMENTS (SECTION 15.225a & b)

The radiated measurements made at D.L.S. Electronic Systems, Inc., for the CORE Console, Model Number: 5400-050-000, are shown in tabulated and graph form. Preliminary radiation measurements were performed at a 3 meter test distance with the limits adjusted linearly when required. The frequency range from 9 kHz to over 960 MHz, depending upon the fundamental frequency as stated in Part 15.33a, was automatically scanned and plotted at various angles.

Measurements for the CORE Console were made up to 2000 MHz, in accordance with Section 15.33a for Intentional Radiators with a fundamental frequency of 13.56 MHz. For intentional radiators, the frequency range to be investigated is determined by the lowest radio frequency generated by the device without going below 9 kHz, up to at least the tenth harmonic of the highest fundamental frequency or 1000 MHz, whichever is lower. At those frequencies where significant signals were detected, measurements were made at an open field test site, located at Genoa City, Wisconsin, FCC file number **31040/SIT**, to determine the actual radiation levels.

All signals in the frequency range of 9 kHz to 30 MHz were measured with a low frequency Loop Antenna as a pickup device. From 30 to 200 MHz, a Biconical Antenna or tuned dipoles were used and from 200 MHz to 1000 MHz, a Log Periodic or Tuned Dipoles were used. During the test the equipment was rotated and the antenna was raised and lowered from 1 meter to 4 meters to find the maximum level. In order to find maximum emissions, the cables were moved through all the positions the equipment would be expected to experience in the field. Tests were made in the vertical polarization with the Loop Antenna, rotated 360° around its vertical axis. Tests were also made in both the horizontal and vertical planes of polarization with the Biconical and Log Periodic. In each case, the table was rotated to find the maximum emissions.

When the equipment is out of limit at 3 meters, and the signals from the equipment at 30 meters cannot be recorded due to the background, a representative sample of these frequencies were re-measured at various distances such as 4, 5, 6, 8, 15 meters and the greatest distance that can be measured to demonstrate graphically that the emissions are dropping off and will be under the limit at the specified distance. All signals were then recorded. The allowed levels for Intentional Radiators in the 13.553 MHz to 13.567 MHz band shall not exceed 10,000 uV measured at 30 meters. The field strength of any emissions appearing outside of this band shall not exceed the radiated emissions limits shown in Section 15.209.



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

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RADIATED DATA AND GRAPHS TAKEN FOR

FUNDAMENTAL FIELD STRENGTH

SPURIOUS EMISSION MEASUREMENTS

PART 15.225

Radiated Field Strength

EUT: TPS Core Console w\ Cutter Recognition
Manufacturer: Stryker Instruments
Operating Condition: 73 deg F; 54% R.H.
Test Site: DLS O.F. Site 3
Operator: Jason L
Test Specification: 120 V; 60 Hz
Comment: 13.56 Mhz Transmit and Receive
DATE: 09/9/2004

TEXT: "Site 3 LowH 3M"

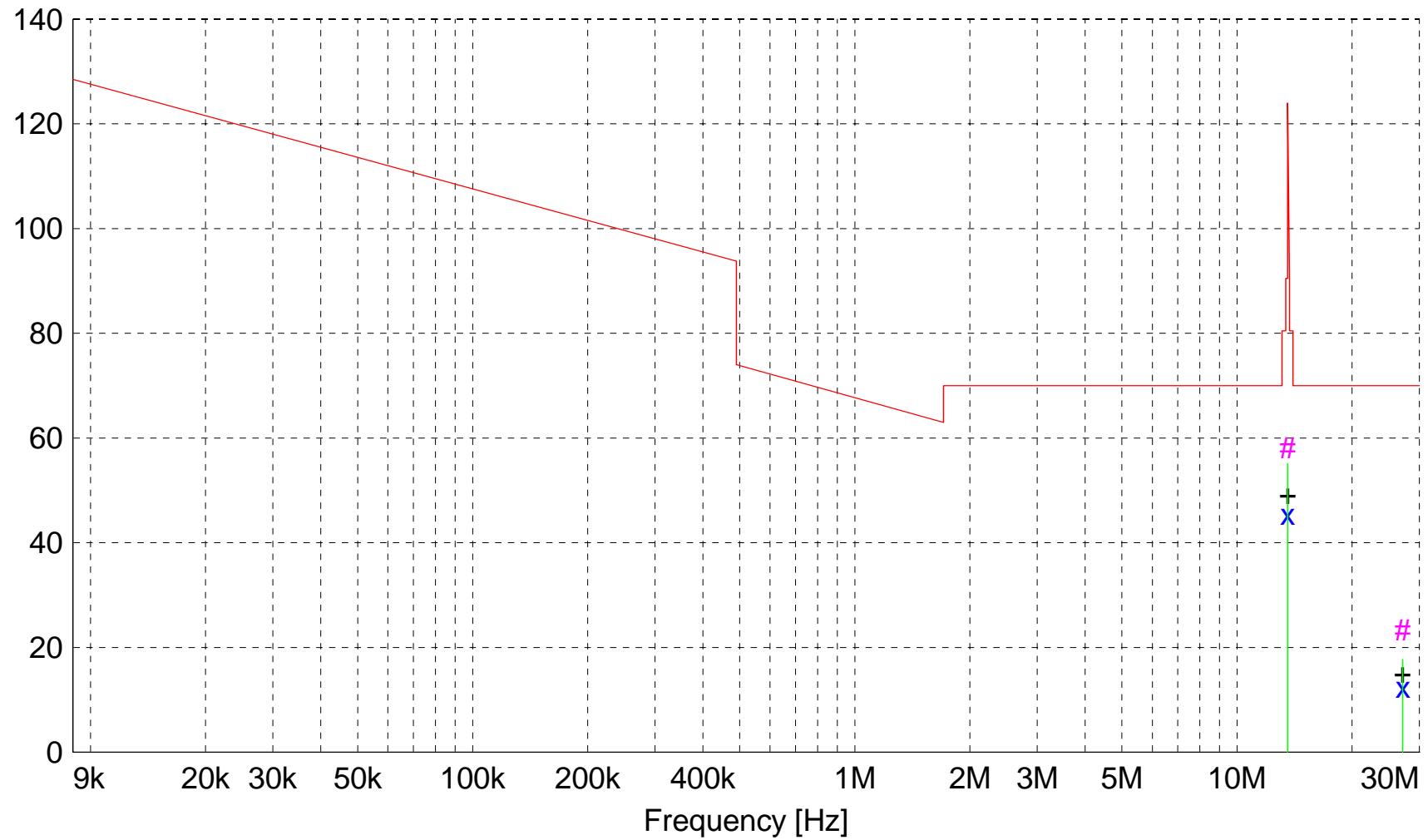
Short Description: Test Set-up 10kHz to 30MHz H
TEST EQUIPMENT: Receiver --- Rohde&Schwarz ESI40 SN: 837808/006

Antennas --- EMCO Active Loop Model: 6502 SN: 2038

Pre-Amp --- Rohde&Schwarz TS-PR10 SN: 032001/005

TEST SET-UP: EuT Measured at 3 Meters with H-FIELD Antenna

Level [dB μ V/m]



||||| MES Aazq1_FE_Quasi-Peak
x x : MES Aazq1_FE_Average
: MES Aazq1_FE_Peak
+ + : MES Aazq1_FE_Peak_List
— LIM fcc 15.225 3m

FCC 15.225&RSS210 6.2.2(e)@3m

MEASUREMENT RESULT: "Aazql1_FE_Final"

9/9/2004 2:10PM

Frequency MHz	Level dB μ V	Antenna Factor dB μ V/m	System Loss dB	Total Level dB μ V/m	Limit dB μ V/m	Margin dB	Height m	EuT Ant.	Final Angle deg	Comment Detector
27.120000	39.65	8.58	-24.8	23.4	70.0	46.6	1.00	125	MAX PEAK	2nd Harmonic
27.120000	33.96	8.58	-24.8	17.7	70.0	52.3	1.00	125	QUASI-PEAK	2nd Harmonic
27.120000	28.63	8.58	-24.8	12.4	70.0	57.6	1.00	125	AVERAGE	2nd Harmonic
13.560000	72.96	10.41	-25.4	58.0	124.0	66.0	1.00	125	MAX PEAK	Fundamental
13.560000	70.02	10.41	-25.4	55.1	124.0	68.9	1.00	125	QUASI-PEAK	Fundamental
13.560000	60.33	10.41	-25.4	45.4	124.0	78.6	1.00	125	AVERAGE	Fundamental



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

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RADIATED DATA TAKEN FOR
FIELD STRENGTH
SPURIOUS EMISSION MEASUREMENTS
PART 15.209

Electric Field Strength

EUT: TPS Core Console w\ Cutter Recognition
Manufacturer: Stryker
Operating Condition: 73 deg. F; 52% R.H.
Test Site: DLS OF Site 3
Operator: Jason L
Test Specification: 120 VAC; 60 Hz
Comment: Transmit and Receive at 13.56 MHz
Date: 09/09/04

TEXT: "Site 3 MidV 3M"

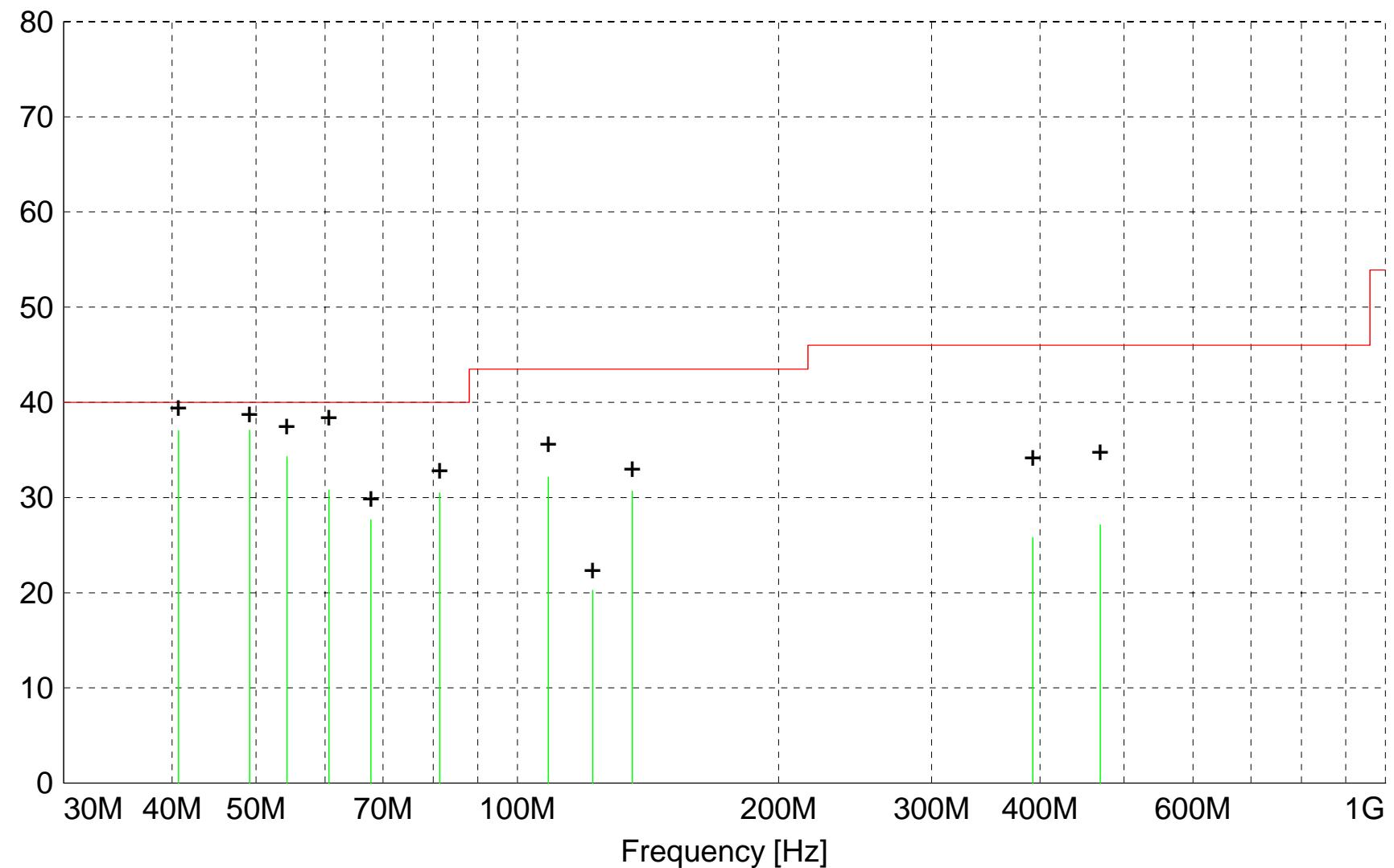
Short Description: Test Set-up Vert30-1000MHz
TEST EQUIPMENT: Receiver --- Rohde&Schwarz ESI 26 SN: 837491/010

Antennas ---
Biconical -- EMCO 3104C SN: 9701-4785
Log Periodic -- EMCO 3146 SN: 9702-4895

Pre-Amp --- Rohde&Schwarz TS-PR10 SN: 032001/005

TEST SET-UP: EUT Measured at 3 Meters with VERTICAL Antenna Polarisation

Level [dB μ V/m]



MEASUREMENT RESULT: "Aazq3_F1V_Final"

9/9/2004 5:42PM

Frequency MHz	Level dB μ V	Antenna Factor dB μ V/m	System Loss dB	Total Level dB μ V/m	Limit dB μ V/m	Margin dB	Height Ant. m	EuT Angle deg	Final Detector	Comment
49.140000	49.55	11.67	-24.1	37.1	40.0	2.9	1.00	180	QUASI-PEAK	None
40.680000	49.78	11.65	-24.4	37.0	40.0	3.0	1.00	170	QUASI-PEAK	3rd Harmonic
54.240000	47.44	10.93	-24.1	34.3	40.0	5.7	1.00	145	QUASI-PEAK	4th Harmonic
60.610000	45.22	9.58	-24.0	30.8	40.0	9.2	1.00	110	QUASI-PEAK	None
81.360000	47.21	7.17	-23.9	30.5	40.0	9.5	1.00	110	QUASI-PEAK	6th Harmonic
108.480000	42.91	12.54	-23.3	32.1	43.5	11.4	1.00	110	QUASI-PEAK	8th Harmonic
67.800000	44.08	7.58	-24.0	27.7	40.0	12.3	1.00	45	QUASI-PEAK	5th Harmonic
135.600000	41.66	12.20	-23.2	30.7	43.5	12.8	1.00	180	QUASI-PEAK	10th Harmonic
469.400000	31.17	17.11	-21.1	27.1	46.0	18.9	1.00	230	QUASI-PEAK	None
392.430000	31.51	15.64	-21.3	25.8	46.0	20.2	1.00	230	QUASI-PEAK	None
122.040000	30.52	12.98	-23.2	20.3	43.5	23.2	1.00	60	QUASI-PEAK	9th Harmonic

Electric Field Strength

EUT: TPS Core Console w\ Cutter Recognition
Manufacturer: Stryker
Operating Condition: 73 deg. F; 52% R.H.
Test Site: DLS OF Site 3
Operator: Jason L
Test Specification: 120 VAC; 60 Hz
Comment: Transmit and Receive at 13.56 MHz
Date: 09/09/04

TEXT: "Site 3 MidH 3M"

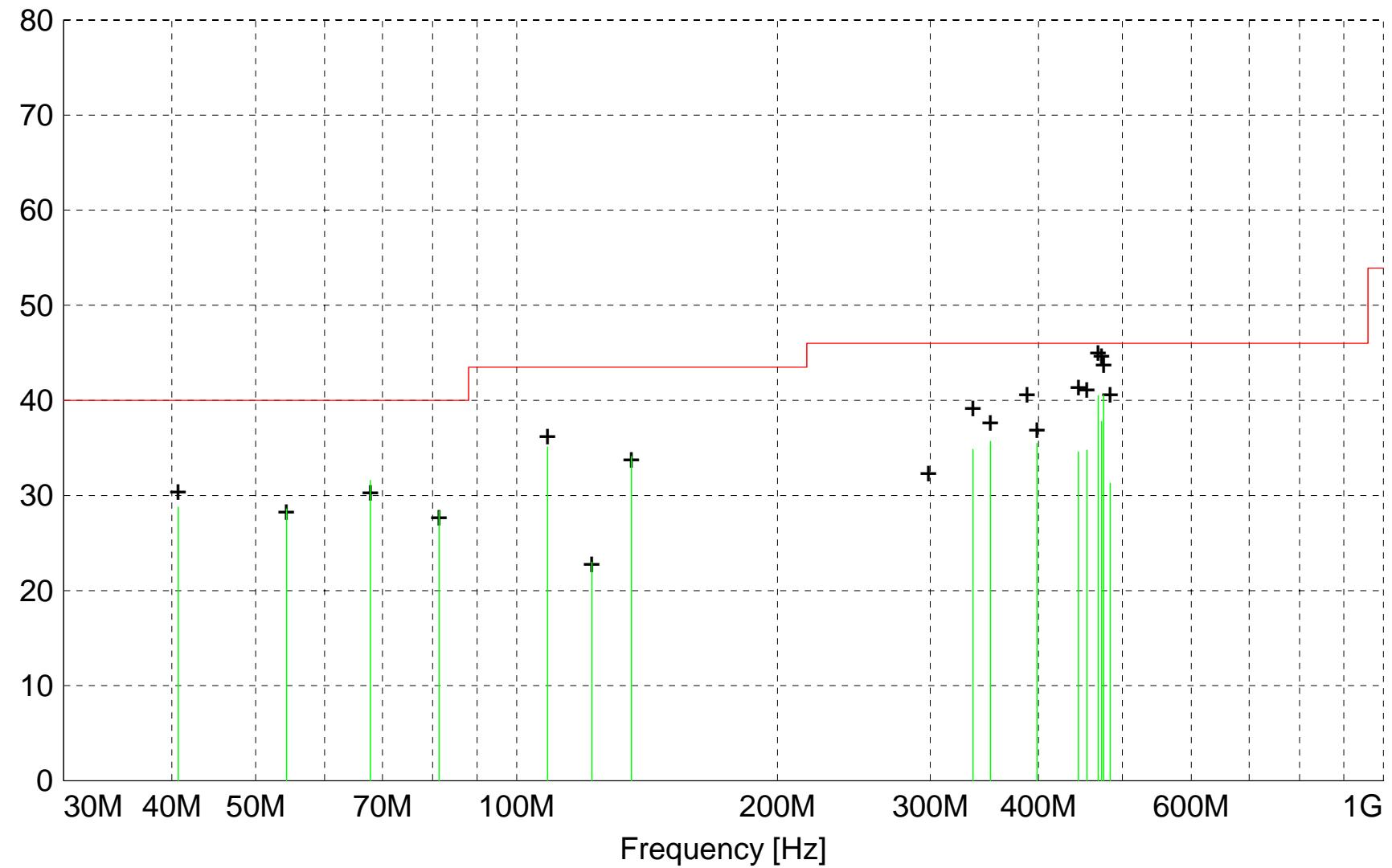
Short Description: Test Set-up Horz30-1000MHz
TEST EQUIPMENT: Receiver --- Rohde&Schwarz ESI 40 SN: 837808/006

Antennas ---
Biconical -- EMCO 3104C SN: 9701-4785
Log Periodic -- EMCO 3146 SN: 9702-4895

Pre-Amp --- Rohde&Schwarz TS-PR10 SN: 032001/005

TEST SET-UP: Eut Measured at 3 Meters with HORIZONTAL Antenna Polarisation

Level [dB μ V/m]



||||| MES Aazq3_F1H_Quasi-Peak
+ + - MES Aazq3_F1H_Peak_List
— LIM FCC ClassB F QP/AV Field Strength FCC Class B 3m

MEASUREMENT RESULT: "Aazq3_F1H_Final"

9/9/2004 6:03PM

Frequency MHz	Level dB μ V	Antenna Factor dB μ V/m	System Loss dB	Total Level dB μ V/m	Limit dB μ V/m	Margin dB	Height Ant. m	EuT Angle deg	Final Detector	Comment
475.710000	44.43	17.28	-21.2	40.6	46.0	5.4	1.00	225	QUASI-PEAK	None
468.760000	44.55	17.10	-21.1	40.5	46.0	5.5	1.00	225	QUASI-PEAK	None
472.780000	41.76	17.18	-21.2	37.8	46.0	8.2	1.00	225	QUASI-PEAK	None
108.480000	45.88	12.54	-23.3	35.1	43.5	8.4	1.80	110	QUASI-PEAK	8th Harmonic
67.800000	47.96	7.58	-24.0	31.6	40.0	8.4	3.20	180	QUASI-PEAK	5th Harmonic
135.600000	45.11	12.20	-23.2	34.1	43.5	9.4	2.30	90	QUASI-PEAK	10th Harmonic
352.000000	42.68	14.83	-21.8	35.7	46.0	10.3	1.00	225	QUASI-PEAK	None
398.110000	40.99	15.86	-21.4	35.5	46.0	10.5	1.00	345	QUASI-PEAK	None
335.890000	41.63	14.96	-21.7	34.9	46.0	11.1	1.00	225	QUASI-PEAK	None
40.680000	41.55	11.65	-24.4	28.8	40.0	11.2	3.00	180	QUASI-PEAK	3rd Harmonic
454.790000	39.17	16.69	-21.1	34.8	46.0	11.2	1.00	225	QUASI-PEAK	None
444.800000	39.14	16.52	-21.1	34.6	46.0	11.4	1.00	225	QUASI-PEAK	None
54.240000	41.72	10.93	-24.1	28.6	40.0	11.4	3.50	0	QUASI-PEAK	4th Harmonic
81.360000	45.09	7.17	-23.9	28.4	40.0	11.6	2.00	225	QUASI-PEAK	6th Harmonic
483.780000	35.05	17.34	-21.1	31.3	46.0	14.7	1.00	225	QUASI-PEAK	None
122.040000	33.26	12.98	-23.2	23.0	43.5	20.5	2.50	225	QUASI-PEAK	9th Harmonic

Electric Field Strength

EUT: TPS Core Console w\ Cutter Recognition
Manufacturer: Stryker
Operating Condition: 68 deg. F; 59% R.H.
Test Site: DLS OF Site 3
Operator: Craig B
Test Specification: 120 VAC; 60 Hz
Comment: Transmit and Receive at 13.56 MHz
Date: 09/10/04

TEXT: "Site 3 6204&184 V3M"

Short Description: Test Set-up Vert1GHz-
TEST EQUIPMENT: Receiver --- Rohde&Schwarz ESI 40 SN: 837808/006

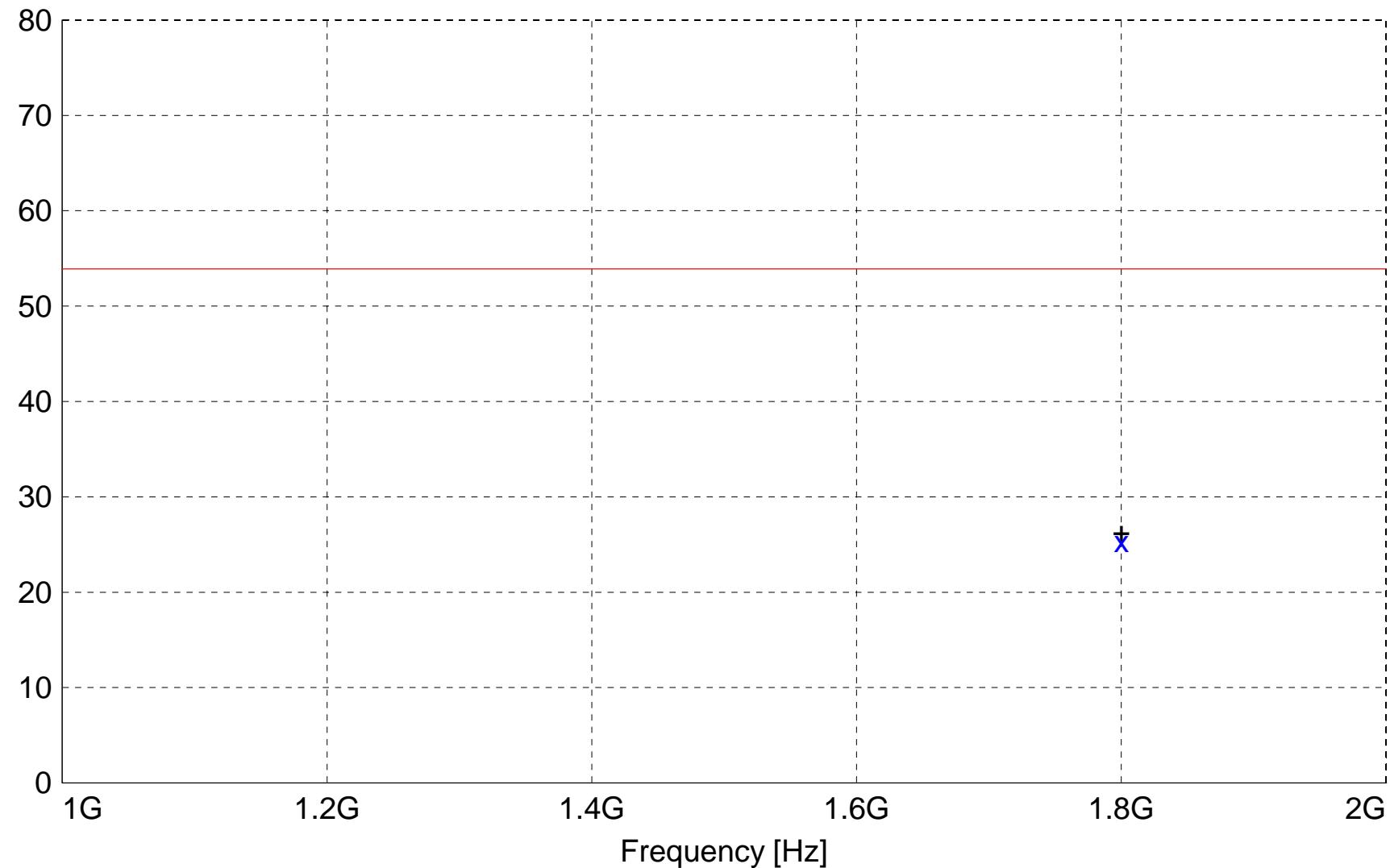
Horn Antenna --- ETS 3115 SN: 6204

Pre-Amps ---

1 - 10 GHz -- Miteq AMF-6D-010100-50 SN: 682425
10 - 18 GHz -- Miteq AMF-6F-100200-50-10P SN: 668382

TEST SET-UP: Eut Measured at 3 Meters with VERTICAL Antenna Polarisation

Level [dB μ V/m]



— LIM FCC ClassB F QP/AV

— MES A9101_sv_Average

— MES A9101_sv_Peak_List

MEASUREMENT RESULT: "A9101_sv_Final"

9/10/2004 8:52AM

Frequency MHz	Level dB μ V	Antenna Factor dB μ V/m	System Loss dB	Total Level dB μ V/m	Limit dB μ V/m	Margin dB	Height Ant. m	EuT Angle deg	Final Detector	Comment
1800.000000	39.34	26.42	-40.5	25.3	53.9	28.6	1.00	160	AVERAGE	None

Electric Field Strength

EUT: TPS Core Console w\ Cutter Recognition
Manufacturer: Stryker
Operating Condition: 68 deg. F; 59% R.H.
Test Site: DLS OF Site 3
Operator: Craig B
Test Specification: 120 VAC; 60 Hz
Comment: Transmit and Receive at 13.56 MHz
Date: 09/10/04

TEXT: "Site 3 6204&184 H3M"

Short Description: Test Set-up Horz1GHz-
TEST EQUIPMENT: Receiver --- Rohde&Schwarz ESI 40 SN: 837808/006

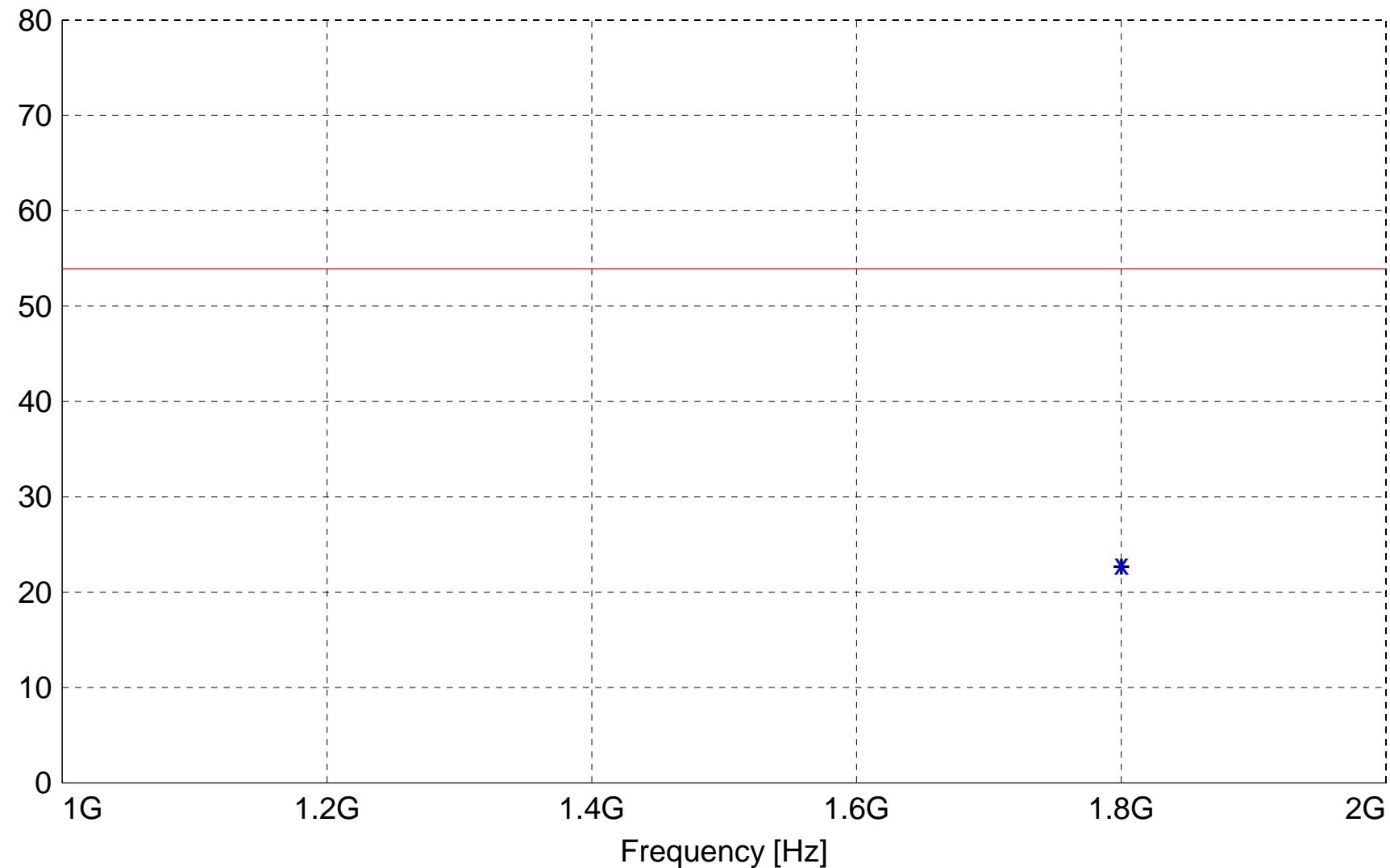
Horn Antenna --- ETS 3115 SN: 6204

Pre-Amps ---

1 - 10 GHz -- Miteq AMF-6D-010100-50 SN: 682425
10 - 18 GHz -- Miteq AMF-6F-100200-50-10P SN: 668382

TEST SET-UP: EuT Measured at 3 Meters with HORIZONTAL Antenna Polarisation

Level [dB μ V/m]



MEASUREMENT RESULT: "A9101_sh_Final"

9/10/2004 8:56AM

Frequency MHz	Level dB μ V	Antenna Factor dB μ V/m	System Loss dB	Total Level dB μ V/m	Limit dB μ V/m	Margin dB	Height Ant. m	EuT Angle deg	Final Detector	Comment
1800.000000	36.98	26.42	-40.5	22.9	53.9	31.0	1.00	30	AVERAGE	None



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

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4.0 FREQUENCY STABILITY - PART 2.1055a (Temperature)

The frequency stability was measured from -30° to +50° centigrade at intervals of 10° centigrade throughout the range. Prior to each frequency measurement, the equipment was left alone for a sufficient period of time (approximately 30 minutes or more) to allow the components of the CORE Console oscillator circuitry to stabilize. The following information was taken:

FREQUENCY STABILITY FOR TEMPERATURE VARIATION IN MHz:

-20°	13.56062124
-10°	13.56062124
0°	13.56062124
+10°	13.56059118
+20°	13.5605511
+30°	13.56052104
+40°	13.56051102
+50°	13.56052104

Worst Case Variance:

110.22 Hz

As stated in Part 15, Section 15.225 (c), the Frequency Tolerance and Margin for this range are as follows:

Ambient Frequency: = 13560551.10 Hz

Frequency Tolerance: = 0.0001

13560551.10 * 0.0001 = 1356.06 Hz

NOTE: This is well inside the specified limits.



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

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GRAPHS TAKEN FOR FREQUENCY

STABILITY WHEN VARYING THE

TEMPERATURE

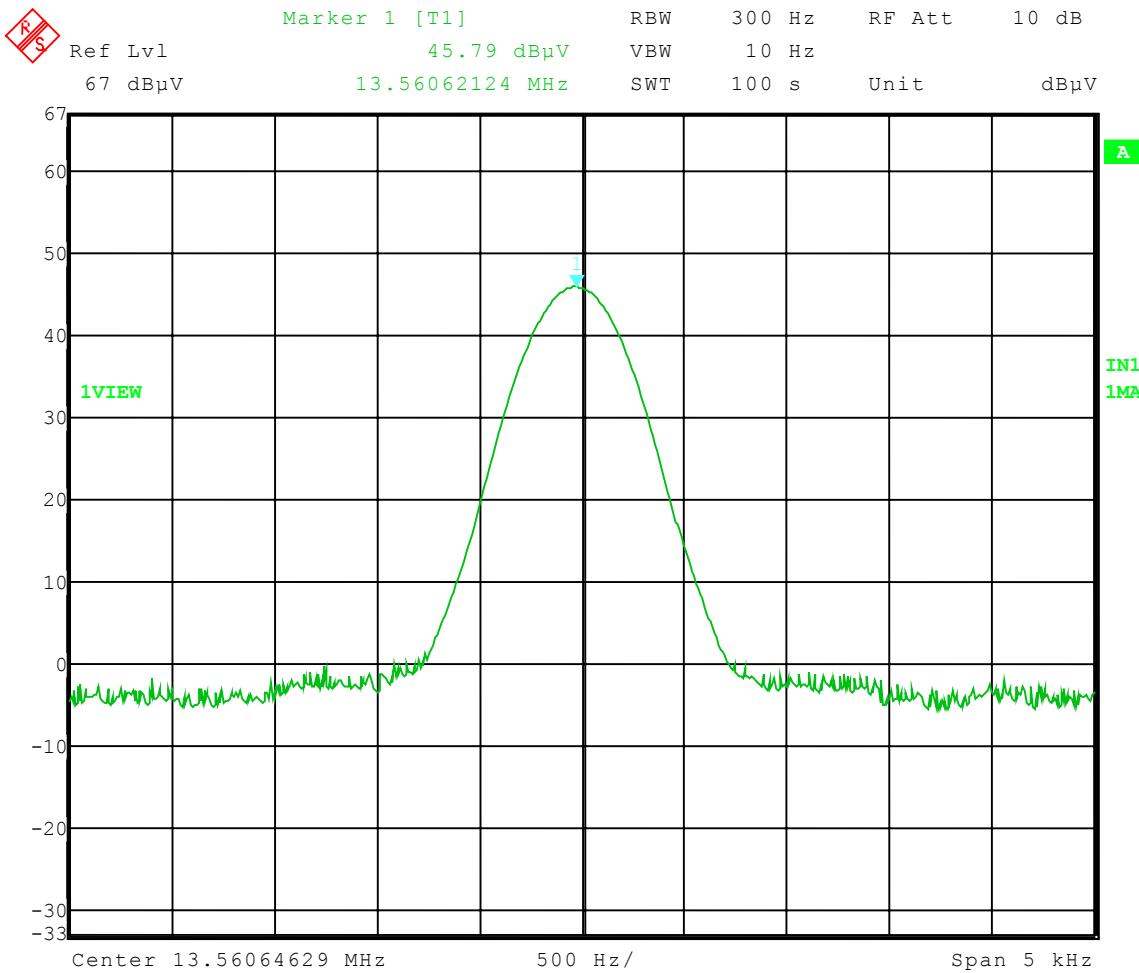
PART 2.1055A

NOTE: This is well inside the specified limits.



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

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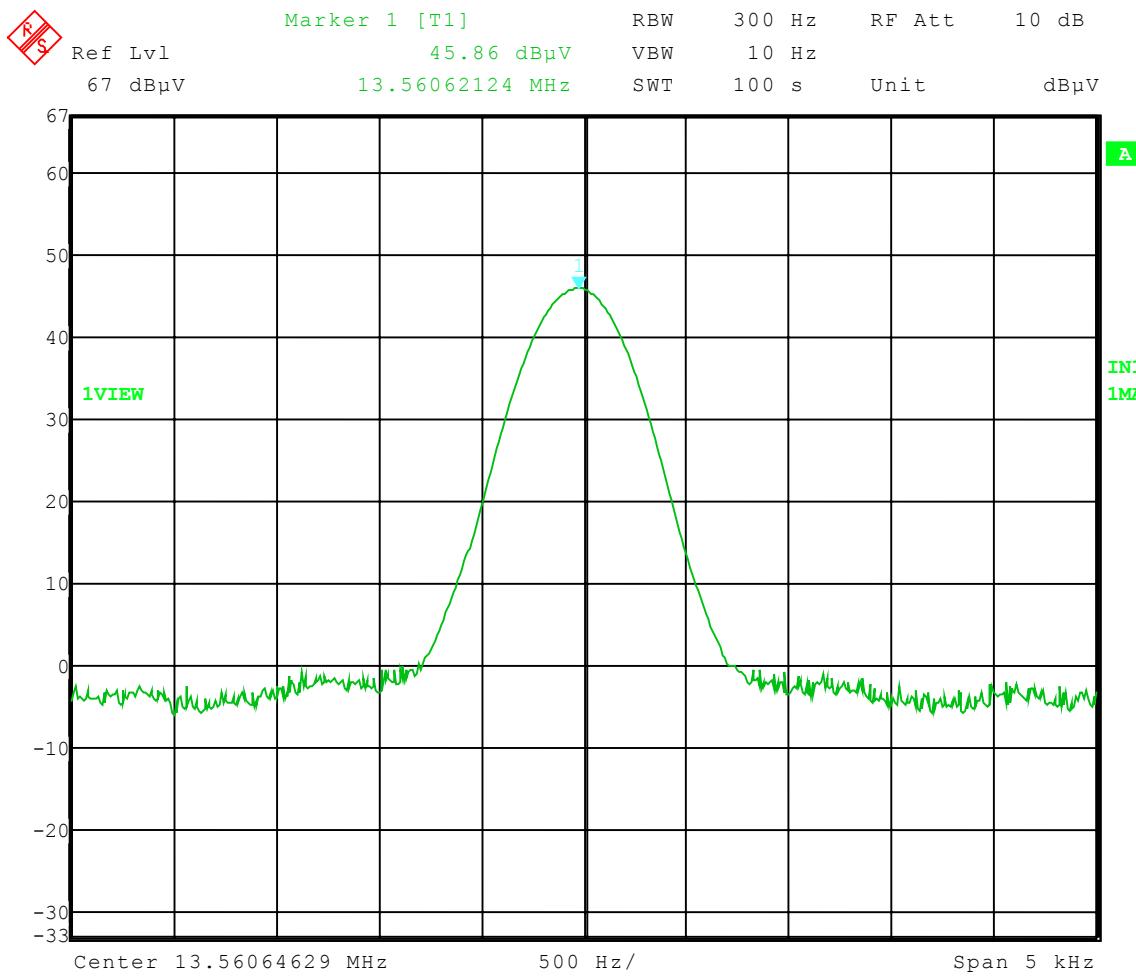


Test Date: 9-10-04
Company: Stryker
EUT: TPS Console w\ Cutter Recognition
Operator: Craig B.
Frequency Stability – Temperature
Temperature: -20 deg C
Frequency: 13.56062124 MHz
Nominal: 13.56 MHz
Limit: +or- 1,356.00 Hz
Deviation: 621 Hz



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

1250 Peterson Dr., Wheeling, IL 60090



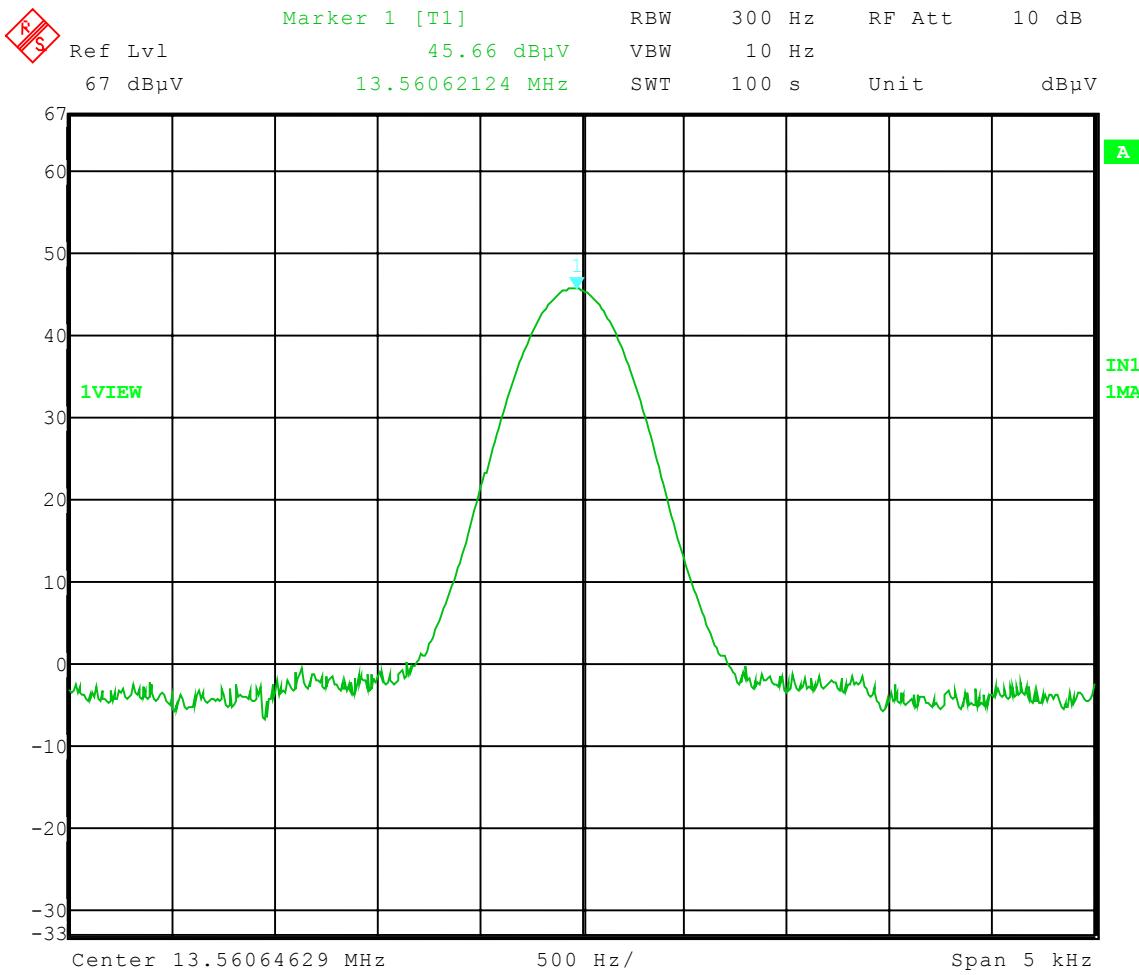
Date: 10.SEP.2004 11:34:56

Test Date: 9-10-04
Company: Stryker
EUT: TPS Console w\ Cutter Recognition
Operator: Craig B.
Frequency Stability – Temperature
Temperature: -10 deg C
Frequency: 13.56062124 MHz
Nominal: 13.56 MHz
Limit: +or- 1,356.00 Hz
Deviation: 621 Hz



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

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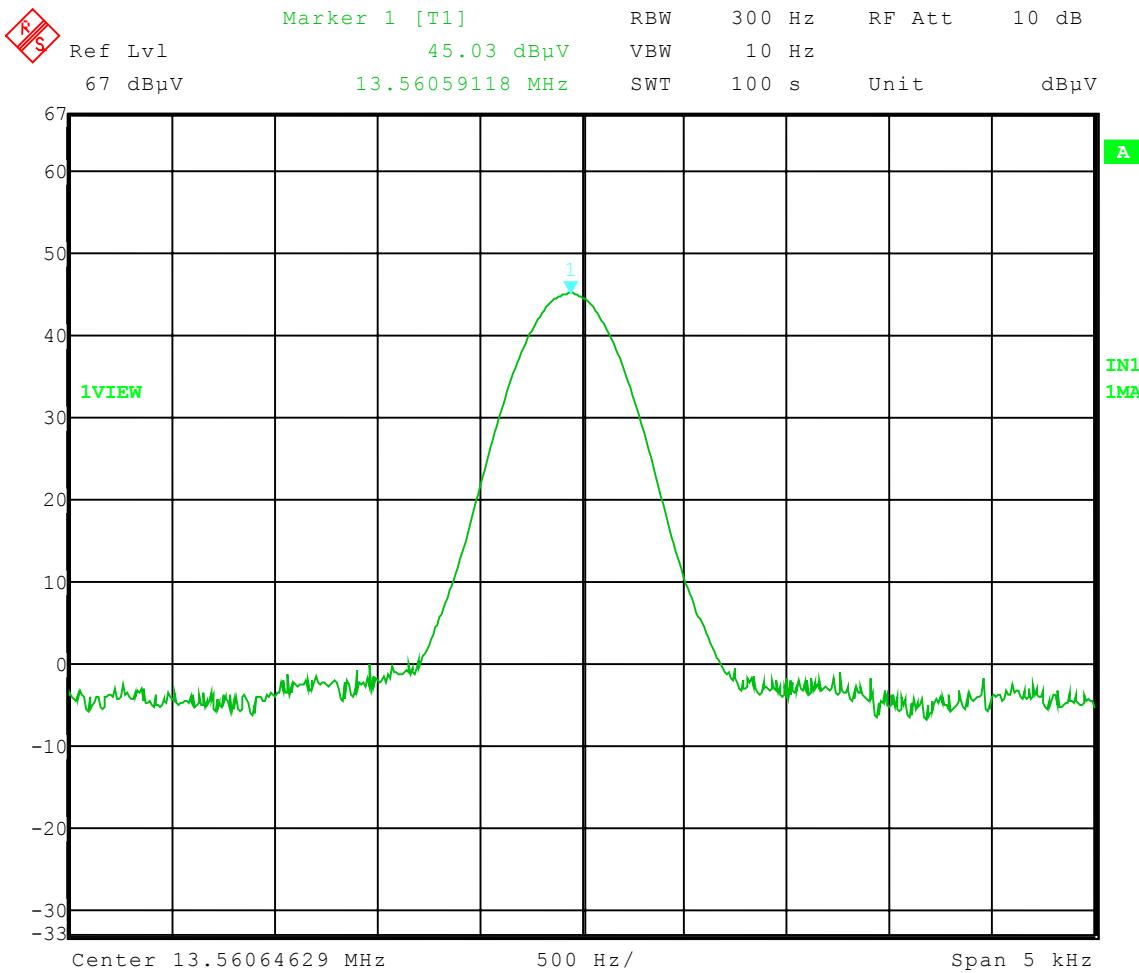
Date: 10.SEP.2004 12:10:04

Test Date: 9-10-04
Company: Stryker
EUT: TPS Console w\ Cutter Recognition
Operator: Craig B.
Frequency Stability – Temperature
Temperature: 0 deg C
Frequency: 13.56062124 MHz
Nominal: 13.56 MHz
Limit: +or- 1,356.00 Hz
Deviation: 621 Hz



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

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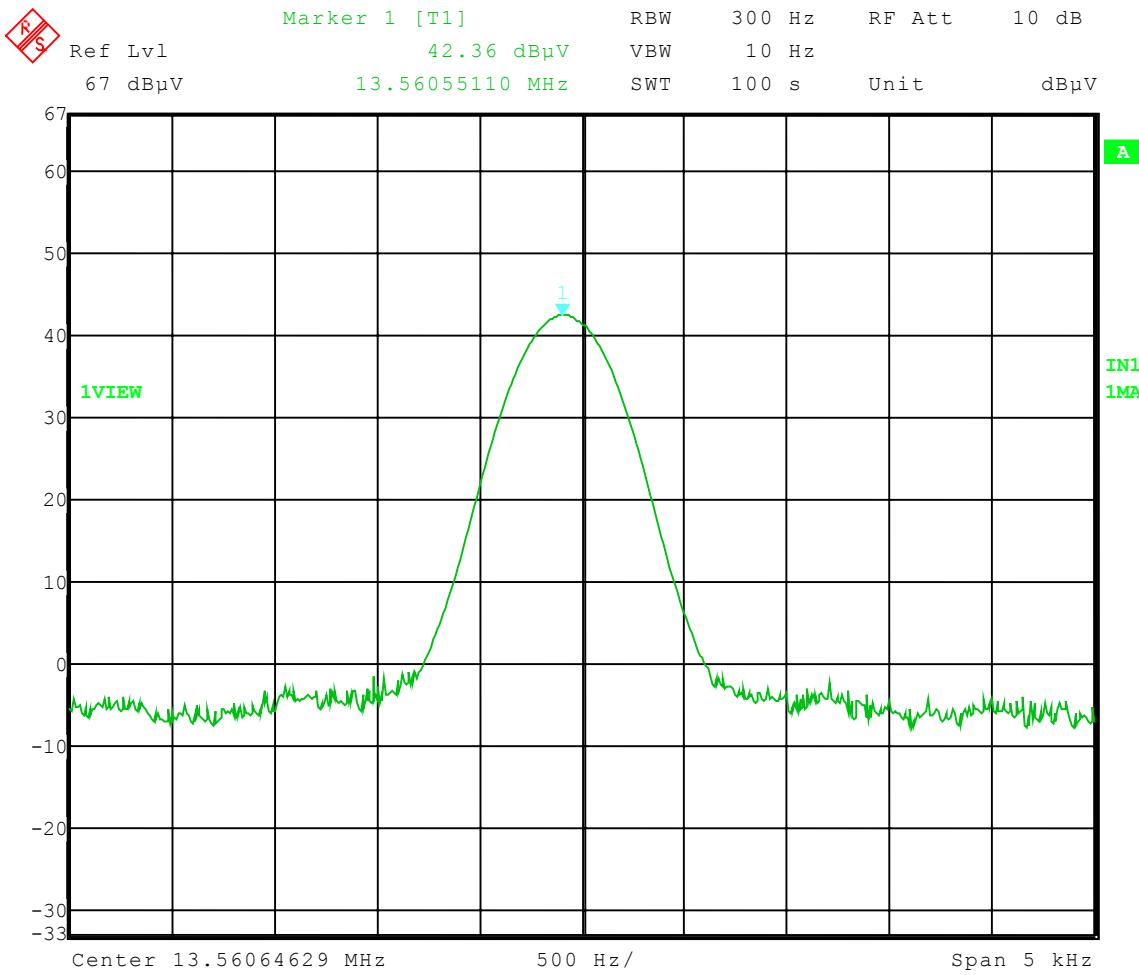


Test Date: 9-10-04
Company: Stryker
EUT: TPS Console w\ Cutter Recognition
Operator: Craig B.
Frequency Stability – Temperature
Temperature: +10 deg C
Frequency: 13.56059118 MHz
Nominal: 13.56 MHz
Limit: +or- 1,356.00 Hz
Deviation: 591 Hz



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

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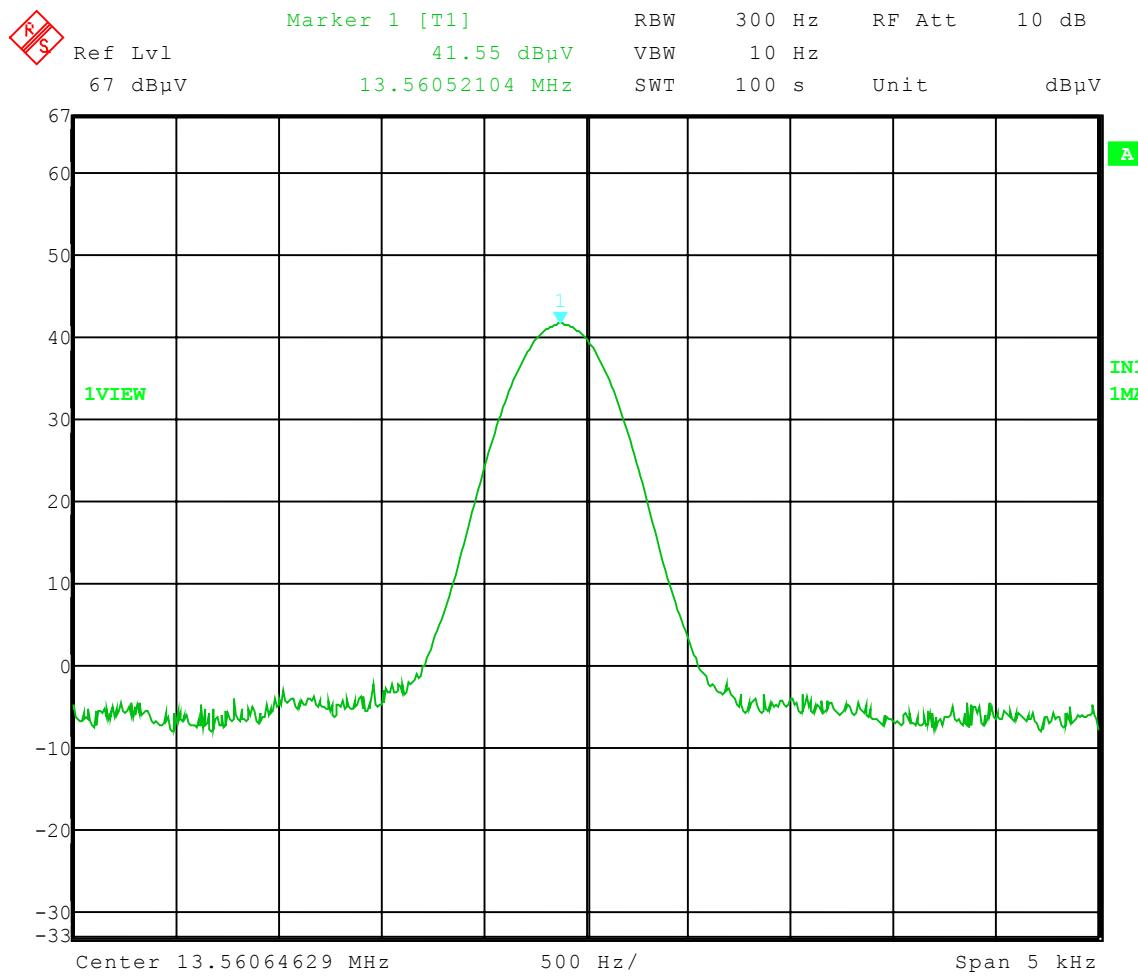
Date: 10.SEP.2004 13:17:11

Test Date: 9-10-04
Company: Stryker
EUT: TPS Console w\ Cutter Recognition
Operator: Craig B.
Frequency Stability – Temperature
Temperature: +20 deg C
Frequency: 13.56055110 MHz
Nominal: 13.56 MHz
Limit: +or- 1,356.00 Hz
Deviation: 551 Hz



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

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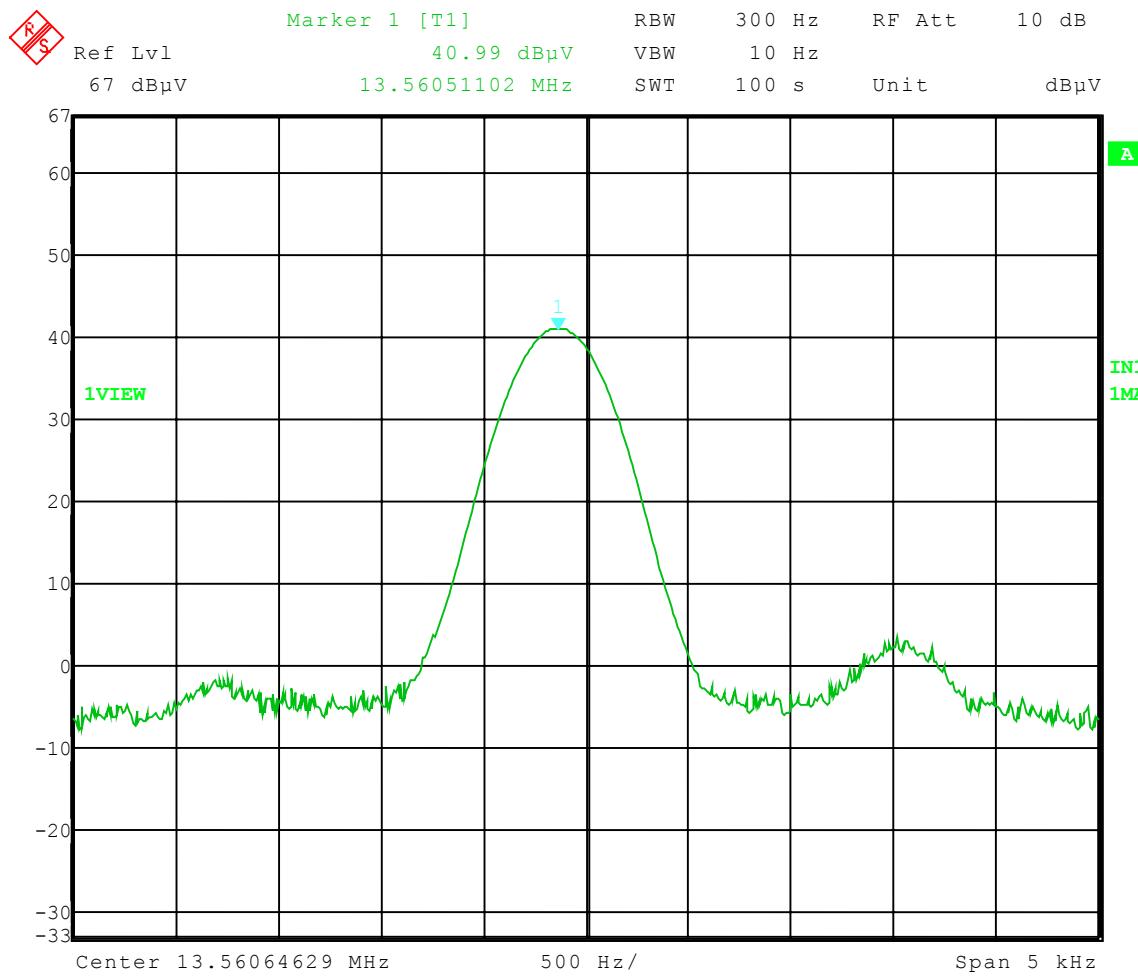
Date: 10.SEP.2004 14:02:32

Test Date: 9-10-04
Company: Stryker
EUT: TPS Console w\ Cutter Recognition
Operator: Craig B.
Frequency Stability – Temperature
Temperature: +30 deg C
Frequency: 13.56052104 MHz
Nominal: 13.56 MHz
Limit: +or- 1,356.00 Hz
Deviation: 521 Hz



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

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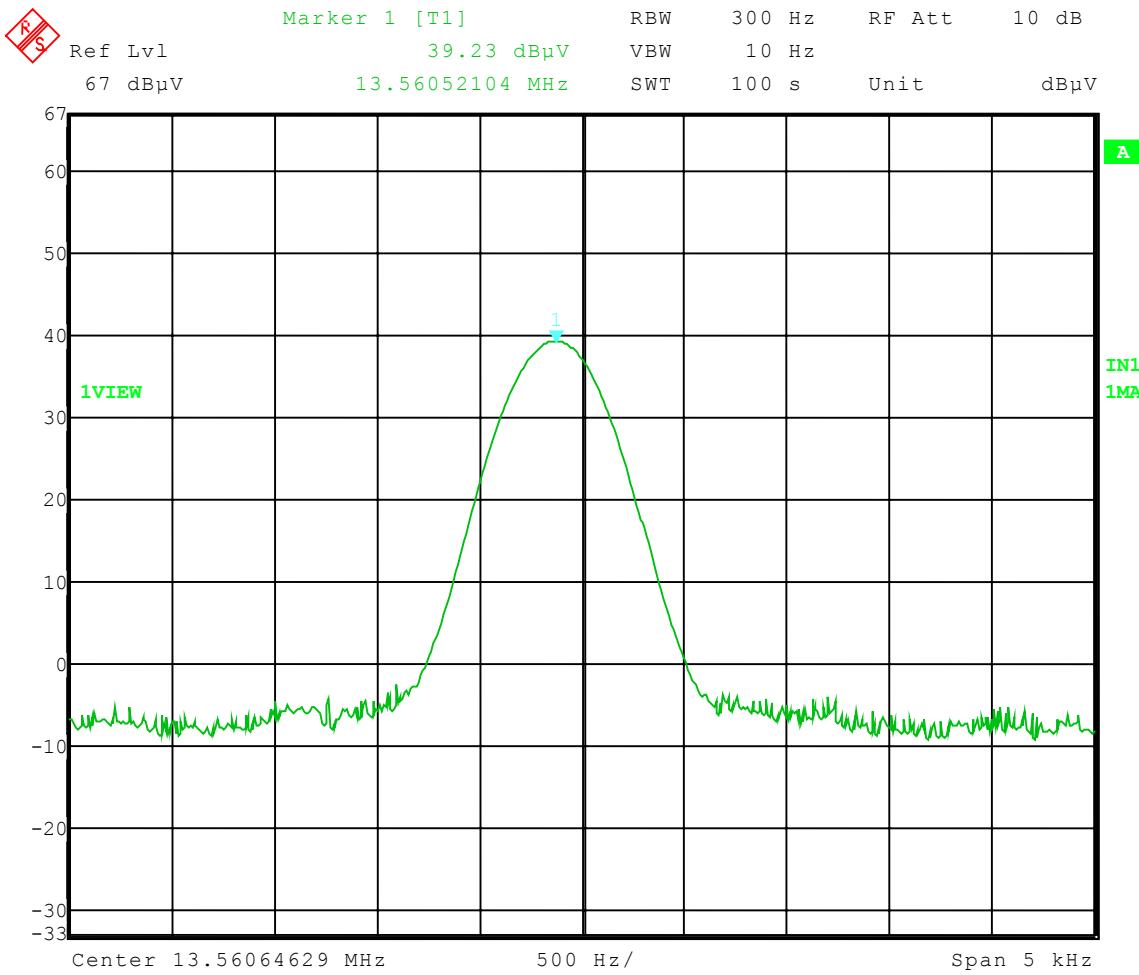
Date: 10.SEP.2004 14:34:14

Test Date: 9-10-04
Company: Stryker
EUT: TPS Console w\ Cutter Recognition
Operator: Craig B.
Frequency Stability – Temperature
Temperature: +40 deg C
Frequency: 13.56051102 MHz
Nominal: 13.56 MHz
Limit: +or- 1,356.00 Hz
Deviation: 511 Hz



Company: Stryker Instruments
Model Tested: 5400-050-000
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Date: 10.SEP.2004 15:04:16

Test Date: 9-10-04
Company: Stryker
EUT: TPS Console w\ Cutter Recognition
Operator: Craig B.
Frequency Stability – Temperature
Temperature: +50 deg C
Frequency: 13.56052104 MHz
Nominal: 13.56 MHz
Limit: +or- 1,356.00 Hz
Deviation: 521 Hz



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

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5.0 FREQUENCY STABILITY - PART 2.1055d (Voltage)

The frequency stability of CORE Console was measured by varying the primary supply voltage from 85% to 115% of nominal value for all equipment other than hand carried battery equipment.

FREQUENCY STABILITY FOR VOLTAGE VARIATION:

85%	13560541.08
100%	13560551.10
115%	13560561.12

NOTE: This is well inside the specified limits.

FREQUENCY STABILITY FOR HAND HELD DEVICES:

For hand carried, battery powered equipment, the supply voltage was reduced to the battery operating end point specified by the manufacturer. Readings were taken at the reduced end point and with a fresh battery:

Fresh Battery verses Battery end point:

Frequency #1	0 Hz
Frequency #2	0 Hz
Frequency #3	0 Hz
Frequency #4	0 Hz
Frequency #5	0 Hz
Frequency #6	0 Hz

As stated in Part 15, Section 15.225 (c), the Frequency Tolerance and Margin for this range are as follows:

Frequency Tolerance: **0.0001**

Limit: **1356.06 Hz**

NOTE: This is well inside the specified limits.



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

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GRAPHS TAKEN FOR FREQUENCY

STABILITY WHEN VARYING THE

PRIMARY SUPPLY VOLTAGE

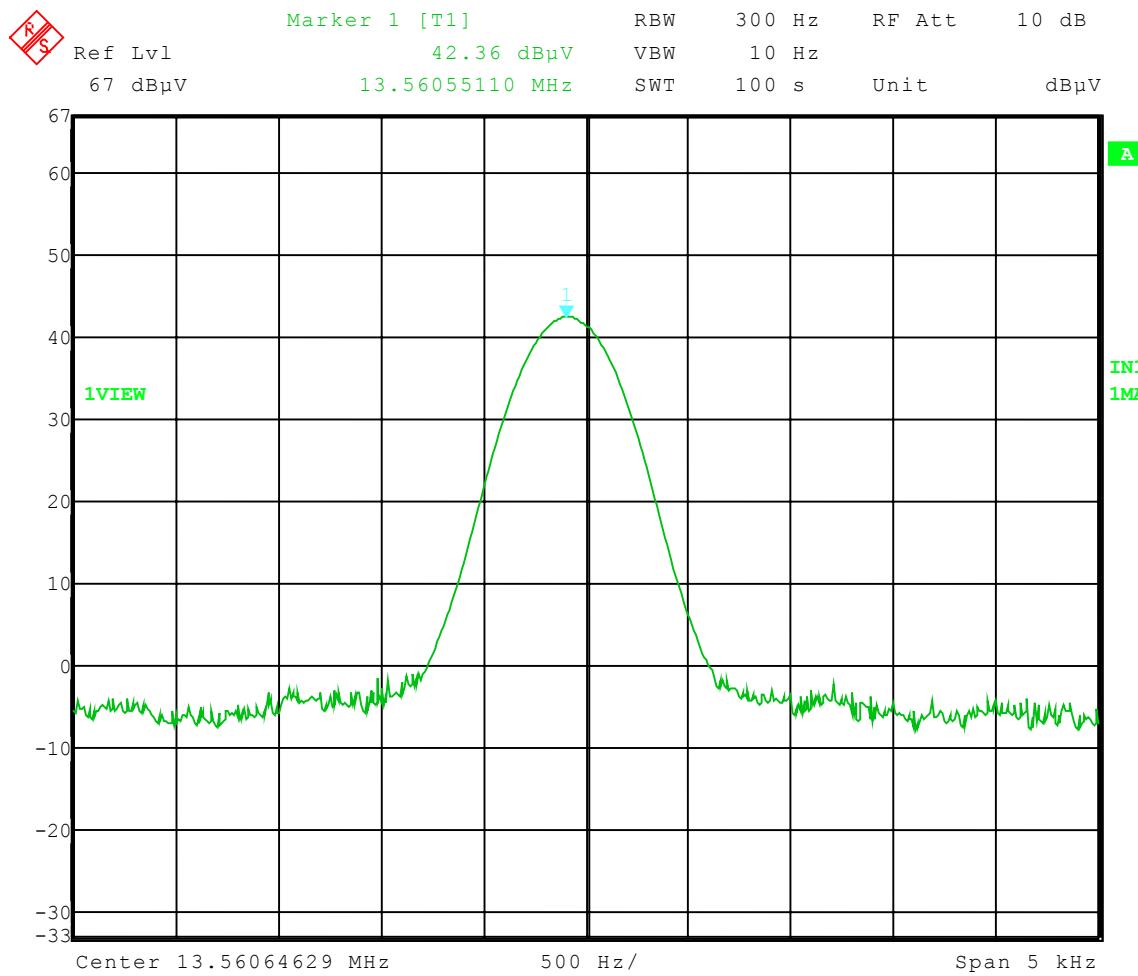
PART 2.1055d

NOTE: This is well inside the specified limits.



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

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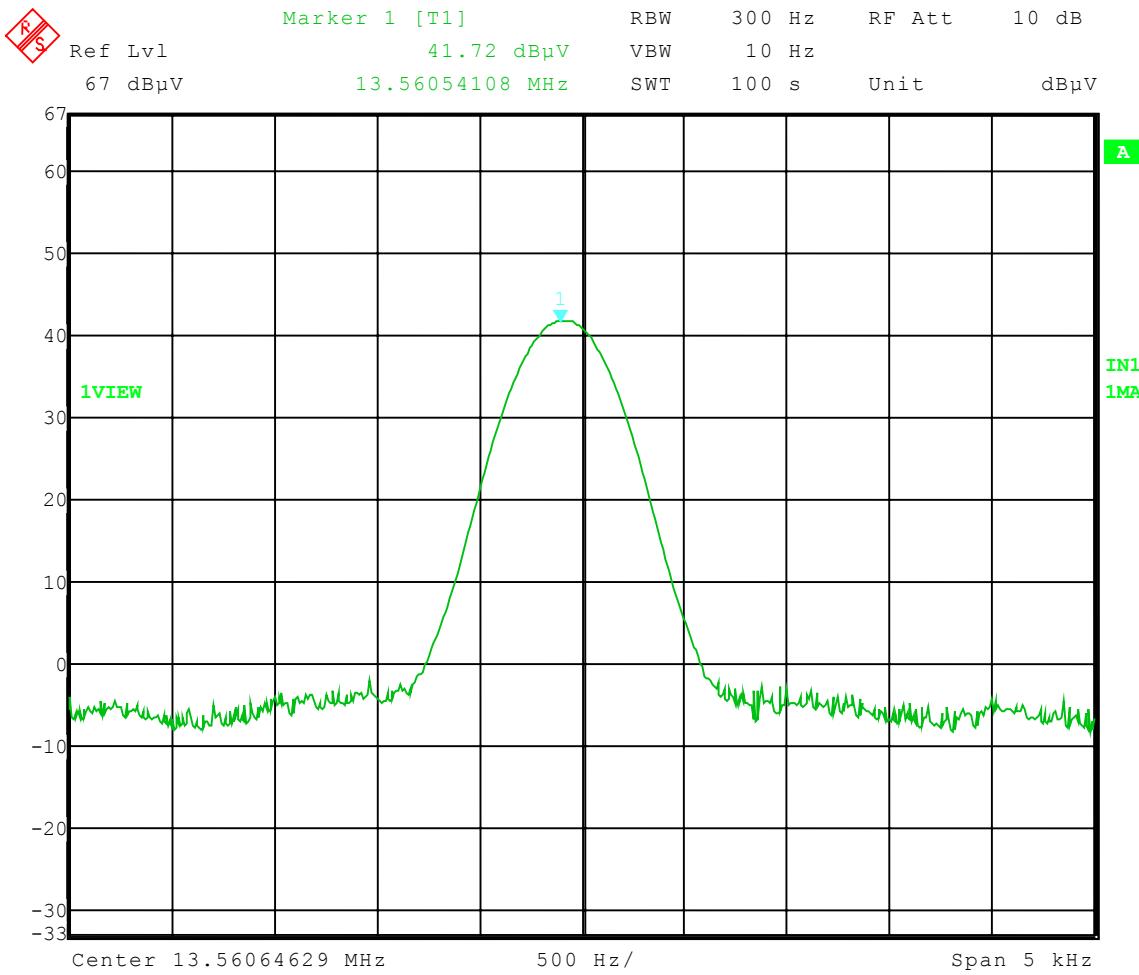


Test Date: 9-10-04
Company: Stryker
EUT: TPS Console w\ Cutter Recognition
Operator: Craig B.
Frequency Stability – Voltage
Voltage: 120 Vac; 60 Hz
Frequency: 13.56055110 MHz
Nominal: 13.56 MHz
Limit: +or- 1,356.00 Hz
Deviation: 551 Hz



Company: Stryker Instruments
Model Tested: 5400-050-000
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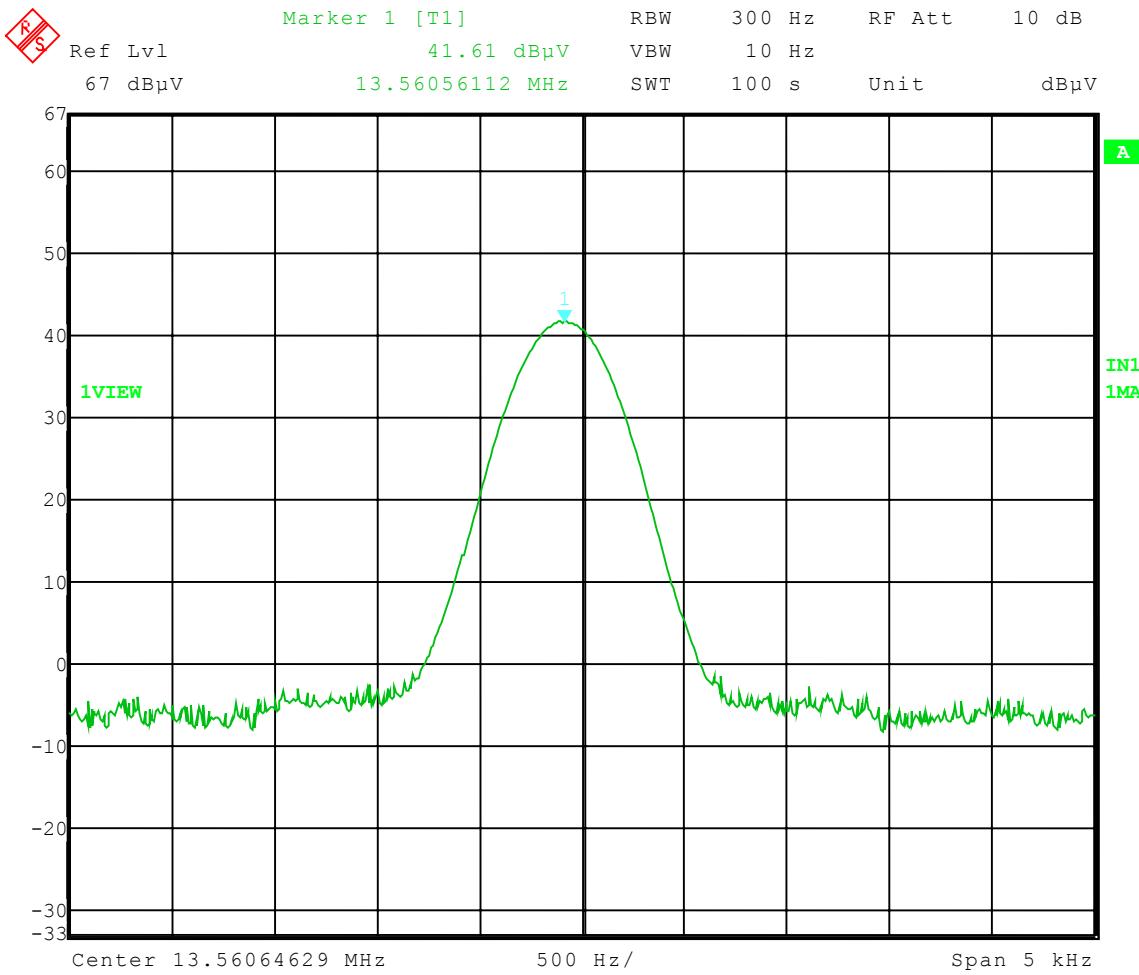
Date: 10.SEP.2004 13:27:46

Test Date: 9-10-04
Company: Stryker
EUT: TPS Console w\ Cutter Recognition
Operator: Craig B.
Frequency Stability – Voltage
Voltage: 108 Vac; 60 Hz
Frequency: 13.56054108 MHz
Nominal: 13.56 MHz
Limit: +or- 1,356.00 Hz
Deviation: 541 Hz



Company: Stryker Instruments
Model Tested: 5400-050-000
Report Number: 10980

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Date: 10.SEP.2004 13:31:49

Test Date: 9-10-04
Company: Stryker
EUT: TPS Console w\ Cutter Recognition
Operator: Craig B.
Frequency Stability – Voltage
Voltage: 132 Vac; 60 Hz
Frequency: 13.56056112 MHz
Nominal: 13.56 MHz
Limit: +or- 1,356.00 Hz
Deviation: 561 Hz