DAYTON T. BROWN INC.
Founded 1950

ENGINEERING AND TEST DIVISION
CHURCH STREET, BOHEMIA, LONG ISLAND, NEW YORK 11716 (516) 589-6300

TEST REPORT NO.: DTB01R99-0413, REVISION A

DAYTON T. BROWN, INC. JOB NO.: 400474-00-000

CUSTOMER: CRESTRON ELECTRONICS, INC.
15 VOLVO DRIVE
ROCKLEIGH, NJ 07647

SUBJECT: FCC CODE OF FEDERAL REGULATIONS, 47 CFR, PART 15, SUB-PART B AND SUB-PART C TESTING PERFORMED ON ONE SMARTOUCH RF TOUCHPANEL, MODEL NO. ST-1550C, SERIAL NO. 224937; AND ONE TRANSPOWER AC ADAPTER, MODEL NO. 481210003C0

PURCHASE ORDER NO.: 87583

ATTENTION: MR. SAM YOGASUNTHARM

THIS REPORT CONTAINS: SIX PAGES AND FIVE ENCLOSURES

TEST ENGINEER	J. SMIRK
DEPARTMENT SUPERVISOR	K. CUMMINGS
OPERATIONS MANAGER	for TZ T. ZIMOULIS
DATE	27 OCTOBER 1999

THE DATA CONTAINED IN THIS REPORT WAS OBTAINED BY TESTING IN COMPLIANCE WITH THE APPLICABLE TEST SPECIFICATION AS NOTED

ACCREDITED

DAYTON T. BROWN INC.®
Founded 1950

TABLE OF CONTENTS

1.0 ABSTRACT

This report details the results of the FCC Code of Federal Regulations, 47 CFR, Part 15, Sub-Part B and Sub-Part C testing on one Smartouch RF Touchpanel, Model No. ST-1550C, Serial No. 224937, manufactured by Crestron Electronics, Inc. operated with one Transpower AC Adapter, Model No. 481210003C0, supplied by Crestron Electronics, Inc.

The Smartouch RF Touchpanel and the Transpower AC Adapter were found to be in compliance with the radiated portions of the FCC Code of Federal Regulations, 47 CFR, Part 15, Sub-Part C.

The Smartouch RF Touchpanel and the Transpower AC Adapter were found to be in compliance with the conducted portions of the FCC Code of Federal Regulations, 47 CFR, Part 15, Sub-Part B, specification limits Class B.

Detailed test results can be observed in Enclosures 2, 3, and 4 of this report.

The test results recorded in this report relate only to those items tested.

DAYTON T. BROWN INC.
Founded 1950

2.0 REFERENCES

(a) Customer Purchase Order No.: 87583

(b) Dayton T. Brown, Inc. Job No.: 400474-00-000

(c) Test Specifications: Code of Federal Regulations, 47 CFR, Part 15, Sub-Part C
Code of Federal Regulations, 47 CFR, Part 15, Sub-Part B, Class B

(d) Test Procedure: American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz, ANSI C63.4-1992, dated 17 July 1992

DAYTON T. BROWN INC.
Founded 1950

3.0 ADMINISTRATIVE INFORMATION

Customer:	Crestron Electronics, Inc. 15 Volvo Drive Rockleigh, NJ 07647
Test Items:	Smartouch RF Touchpanel, Model No. ST-1550C, Serial No. 224937; and Transpower AC Adapter, Model No. 481210003C0
Quantity Received:	One of Each
Test Start Date:	22 March 1999
Test Completion Date:	24 June 1999
Disposition of Test Items:	The test samples were returned to Crestron Electronics, Inc. on 24 June 1999.

DAYTON T. BROWN INC.
Founded 1950

4.0 TEST PROGRAM OUTLINE

Description of Test Method	Results
Radiated Emission, Intentional Radiator, 30 MHz to 10 GHz	Met the specification requirements.
Occupied Bandwidth	Met the specification requirements.
Conducted Emission, 450 kHz to 30 MHz	Met the specification requirements.

5.0 GENERAL TEST INFORMATION

Setup

For the radiated emission test, in the frequency range of 30 to 1000 MHz, the test sample was set up in a climate controlled open field site that measures 44 feet long by 24 feet wide by 24 feet high.

For the radiated emission test, in the frequency range of 1 to 10 GHz, the test sample was set up in an anechoic chamber that measures 30 feet wide by 32 feet long by 12 feet high.

For the conducted emission test, the test sample was set up within a shielded enclosure which is 20 feet wide by 20 feet long by 12 feet high.

All lines carrying power into the shielded enclosure passed through RF suppression filters suitably bonded to the enclosure and capable of 100-dB attenuation over a spectrum of 14 kHz to 10,000 MHz.

Unit Operation:

Operational Mode Tested - Transmit Mode - The Smartouch RF Touchpanel was transmitting at 433.89 MHz.

Enclosure 1

Test Equipment List

Test equipment utilized for the program reported herein was within its assigned interval of calibration. Details are on file at Dayton T. Brown, Inc. and will be made available upon request.

TEST	ITEM	MANUFACTURER	DTB NO.	EQUIPMENT CHARACTERISTIC	MODEL	SERIAL NO.	CALIBRATION DUE DATE
CE	16-Foot RG-214 BNC Cable	Pasternak	7-8	50 kHz - 1.0 GHz ±1.0 dB	RG214/U	8	10/24/99
CE	6-Foot RG-214 BNC Cable	Pasternak	7-15	50 kHz - 1.0 GHz ±1.0 dB	RG214/U	15	10/24/99
RE	BiLog Antenna	Chase-York	27-1	30 - 2000 MHz	CBL 6112	2055	3/26/99
RE	Double Ridge Waveguide Antenna	Electro-Mechanics Co.	27-55	1.0 - 18 GHz	3115	2072	11/15/00
OBW	Tuned Dipole Antenna	AIL Tech	27-65-3	400 - 1000 MHz	DM-105A -T3	E2427-8	2/25/01
RE	Metering Module	Electro-Metrics	65-142-1	10 kHz - 1.0 GHz	CRM 25	136	11/28/99
RE	Interference Analyzer	Electro-Metrics	65-143	10 kHz - 1.0 GHz	EMC 25 Mk III	656	11/28/99
CE	Interference Analyzer	Electro-Metrics	65-206	9 kHz - 1.0 GHz	EMC-30 Mk IV	44162	3/12/00
CE	Line Impedance Stabilization Network	Solar Electronics	73-90	10 kHz - 50 MHz 50 µh, 24 Amps Dual LISN	8012-50-R-24-BNC	941547	5/9/99
CE	Solid Room	Rayproof	-	20 ft x 20 ft 12 ft High	-	Solid Room 1	-
RE	Anechoic Facility	Dayton T. Brown, Inc.	-	30 ft x 32 ft 12 ft High	-	Anechoic Room	-
RE	FCC Facility	Dayton T. Brown, Inc.	-	44 ft x 24 ft 24 ft High	-	FCC Site	-
RE, OBW	Spectrum Analyzer	Hewlett-Packard	Rental	9 kHz - 26.5 GHz	8563E	3425A-0253	8/8/99 AN 295239A

Enclosure 2

Radiated Emission,
Intentional Radiator, 30 MHz to 10 GHz

DAYTON T. BROWN INC.
Founded 1950

RADIATED EMISSION, INTENTIONAL RADIATOR, 30 MHz to 10 GHz

Test Procedure

A radiated emission test, in the frequency range of 30 to 1000 MHz, was performed with the test item while it was mounted on a wooden table that was standing on a conductive turntable.

For the frequency range of 30 to 1000 MHz, measurements were made utilizing a manually tuned interference measurement receiver which was located in the instrumentation room below the ground plane.

The receiver was connected to the measurement antenna which was located 10 meters from the turntable for the frequency range of 30 to 1000 MHz.

A linear polarized antenna was utilized for the measurements. The antenna height was varied between 1 and 4 meters, and the test sample was rotated 360° to ensure maximum pickup from the test sample.

A radiated emission test, in the frequency range of 1 to 10 GHz, was performed on the test item while it was mounted on a wooden table in an anechoic chamber.

For the frequency range of 1 to 10 GHz, measurements were made utilizing a spectrum analyzer located in a shielded enclosure which was attached to the anechoic enclosure.

The receiver was connected to the measurement antenna, which was located 3 meters from the table for the frequency range of 1 to 10 GHz, with a length of 50Ω coaxial cable.

The test item utilizes pulse modulation with a 50 percent duty cycle.

Any emissions not reported were at least 20 dB below the specification limits.

Measurements were made utilizing the following bandwidth and detector function:

Frequency Range	CISPR Bandwidth	Detector Function
30 to 1000 MHz	120 kHz	Quasi-Peak
1 to 10 GHz	100 kHz	Peak

The antenna per meter factors of the antenna utilized are depicted in the figure contained in this enclosure.

The test setup employed is depicted in the photograph contained in this enclosure.

RADIATED EMISSION,
INTENTIONAL RADIATOR, 30 MHz to 10 GHz
(Continued)

Test Results

No emission levels above the FCC Code of Federal Regulations, 47 CFR, Part 15, Sub-Part C, specification limits were observed.

Detailed test results for the radiated emission test for Intentional Radiators can be observed on pages 3 through 14 of this enclosure.

DAYTON T. BROWN INC.

Founded 1950

Date: 24-Jun-99

Test Item: Touchpanel
Serial No.: C224937
Customer: Crestron
Job No.: 400474-00-000
Test Condition: Transmitting
Distance: 10 Meters
Specification: FCC R&R Part 15, Sub-Part B, Class B
Antenna Polarization: Horizontal
Detector Function: Quasi-Peak **Units:** dBuV/m
Bandwidth: 120 kHz (CISPR)

Radiated Field Strength Measurements

Met Requirement Yes [x] **No** [ ]

Freq. (MHz)	Meter Indicated (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Pre-Amp Gain # (dB)	Total Indicated (dBuV/m)	Spec. Limit (dBuV/m)		Level Above Spec. Limit	Notes
30	2	18.6	0.8		21.4	29.54			
100	6	10.3	1.5		17.8	33.1			
433	40	16.5	3.4		60.0	70.59			
862	22	20.8	5.5		48.3	50.59			
1000	4	21.5	6.0		31.5	43.54			

RFSM1

Remarks: * Indicates above Specification Limit; A - Indicates Ambient; Total Indicated = Meter Indicated + Antenna Factor + Cable Loss - Pre-Amp Gain
Antenna Factor is for BiLog Antenna, DTB No. 27-1; Calibration Due: 26-Mar-00

Reviewed By: _____ Test Performed By: _____

DAYTON T. BROWN, INC.
Founded 1950

Test Item: Touchpanel
Customer: Crestron
Test Condition: Transmitting
Specification: FCC R&R Part 15, Sub-Part B, Class B
Detector Function: Quasi-Peak **Units:** dBuV/m

Date: 24-Jun-99
Serial No.: C224937
Job No.: 400474-00-000
Distance: 10 Meters
Antenna Polarization: Vertical
Bandwidth: 120 kHz (CISPR)

Radiated Field Strength Measurements **Met Requirement Yes** [X] **No** [ ]

Freq. (MHz)	Meter Indicated (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Pre-Amp Gain # (dB)	Total Indicated (dBuV/m)	Spec. Limit (dBuV/m)		Level Above Spec. Limit	Notes
30	6	17.6	0.8		24.4	29.54			
100	5	9.8	1.5		16.3	33.1			
242	6	11.7	2.5		20.2	35.56			
330	8	14.1	2.9		25.0	35.56			
433	28	16.4	3.4		47.8	70.59			
862	20	21.4	5.5		46.9	50.59			
1000	4	21.8	6.0		31.8	43.54			

RFSM1

Remarks: * Indicates above Specification Limit; A - Indicates Ambient; Total Indicated = Meter Indicated + Antenna Factor + Cable Loss - Pre-Amp Gain
Antenna Factor is for BiLog Antenna, DTB No. 27-1; Calibration Due: 26-Mar-00

Reviewed By: _____ Test Performed By: _____

DAYTON T. BROWN, INC.
Founded 1950

Test Item : Touchpanel
Customer : Crestron
Test Condition : Transmitting
Specification : FCC part 15 sub part C
Detector Function : Peak
Units : dBuV/m

Date : 23 Mar 1999
Serial No.: C224937
Job No. : 400474-00-000
Distance : 3 Meters
Antenna Polarization: Horizontal
Bandwidth: 100 kHz
Met Requirement Yes ☑ No ☐

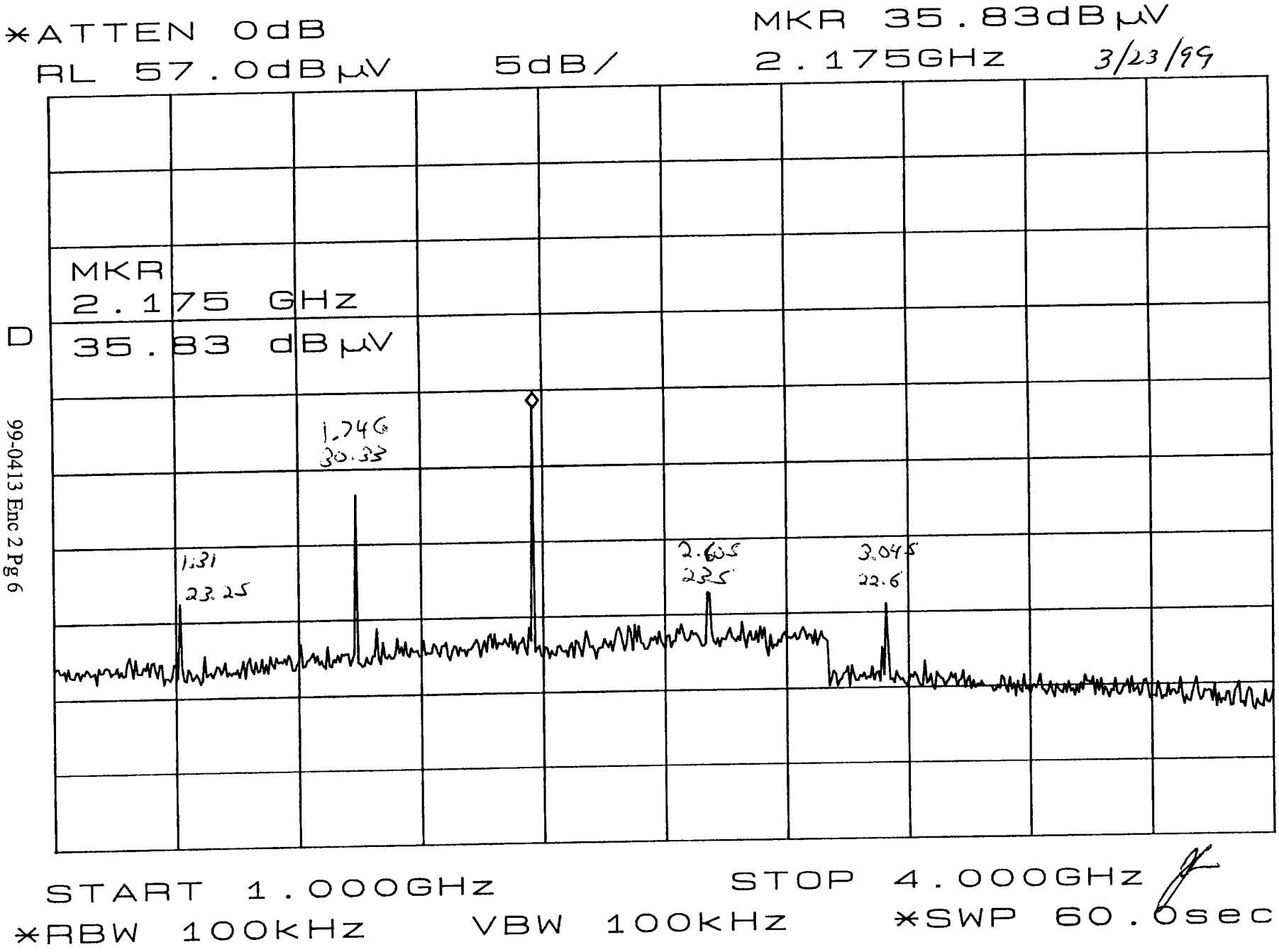
Radiated Field Strength Measurements

Freq. (MHz)	Meter Indicated dBuV	Antenna Factor dB	Cable Loss dB	Pre-Amp Gain dB	Total Indicated dBuV/m	Spec. Limit dBuV/m		Level Above Spec. Limit	Observation	
1310	23.5	23.6	2.2		49.3	67 (1)				
1740	30.33	26.5	2.5		59.33	67 (1)				
2175	35.83	27.5	2.2		65.53	67 (1)				
2605	23.5	28	3.4		54.9	67 (1)				
3045	22.6	29.5	5.9		58	67 (1)				

Remarks : * Indicates above Specification Limit; A - Indicates Ambient; Total Indicated = Meter Indicated + Antenna Factor + CableLoss-Pre-AmpGain

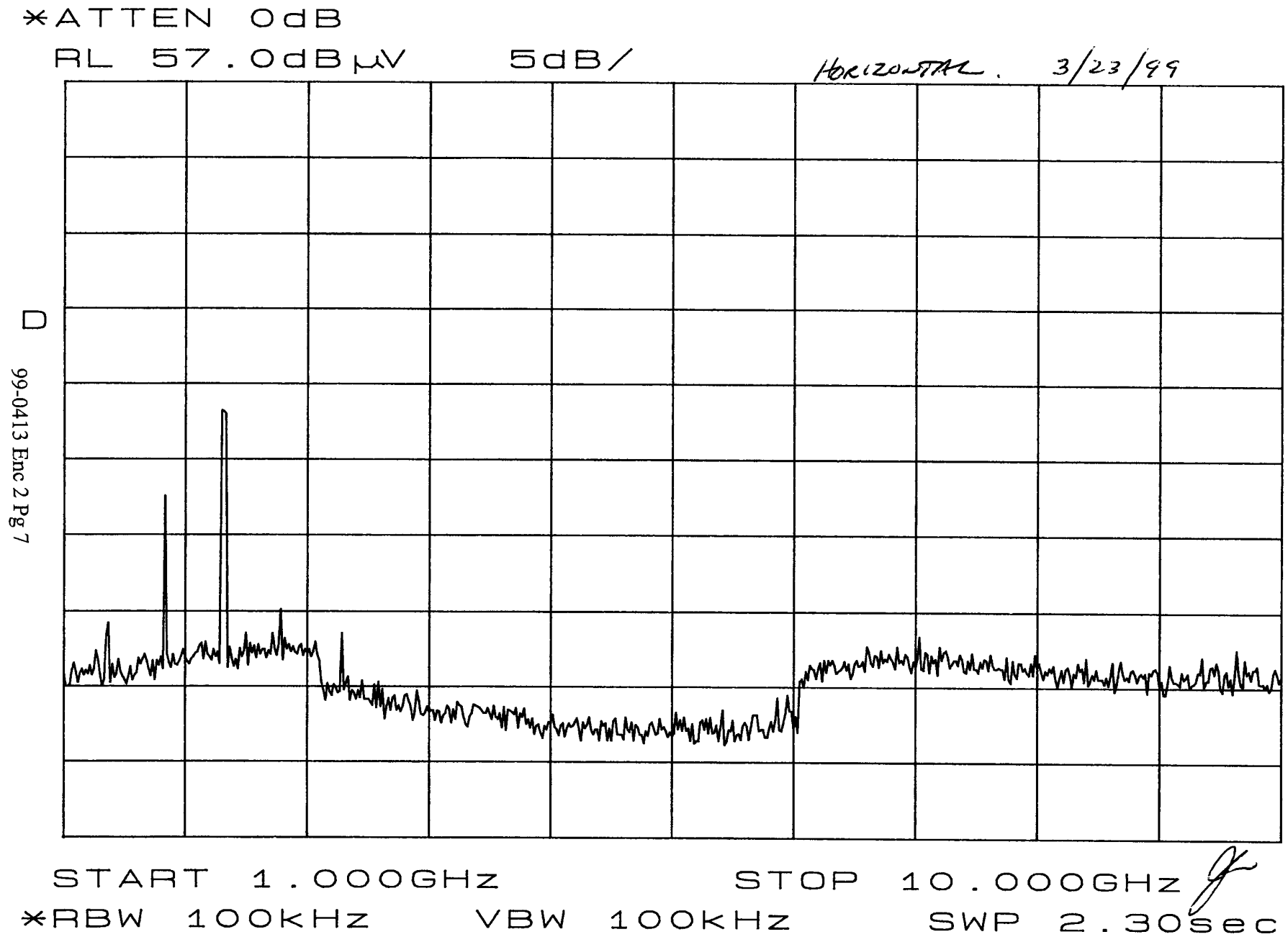
(1) 6 dB correction added to spec limit

Engineer : _____ Technician : _____



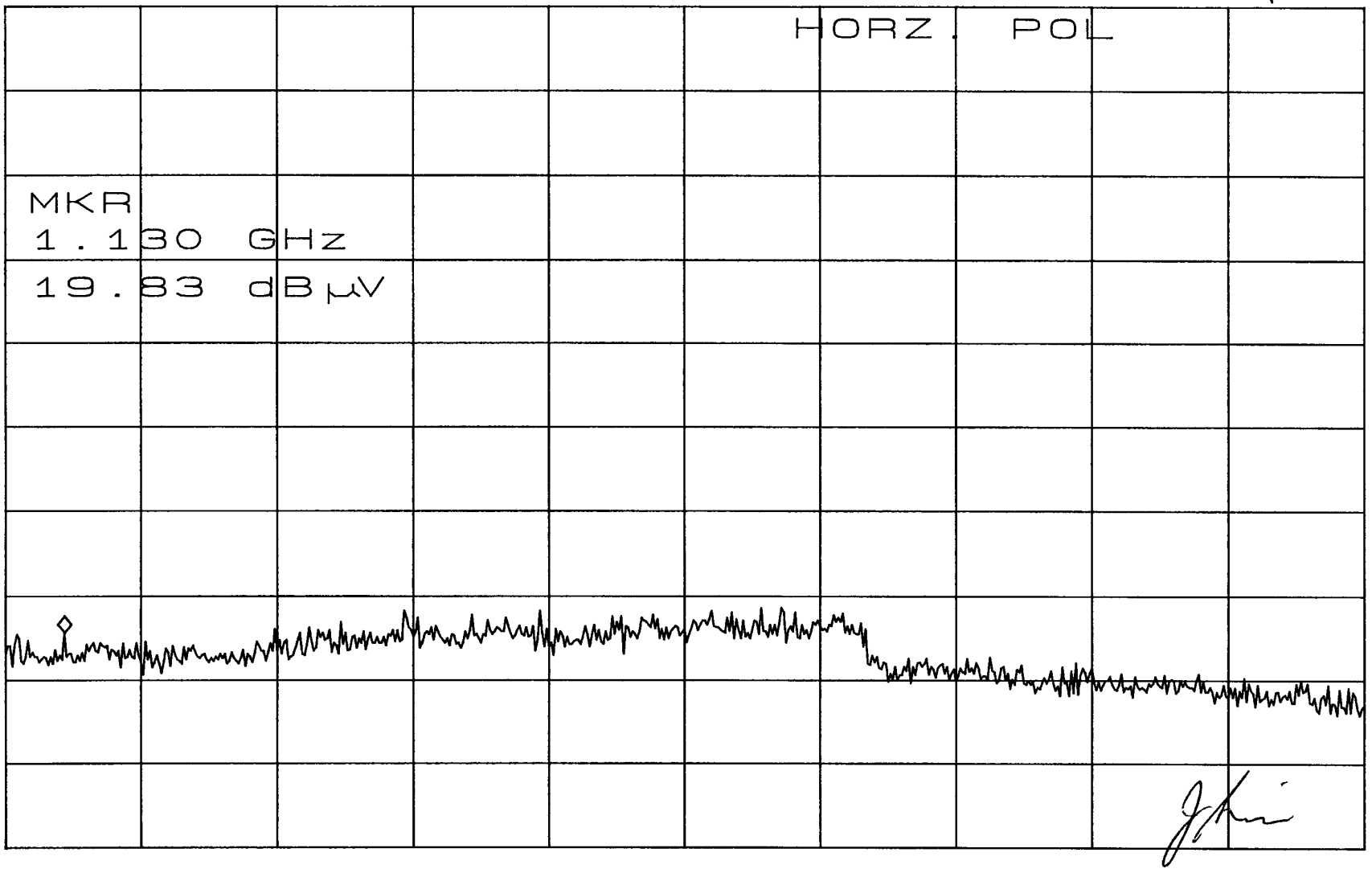
D

99-0413 Enc 2 Pg 6


*ATTEN 0dB
RL 57.0dBµV 5dB/
HORIZONTAL. 3/23/99
D
START 1.000GHz
STOP 10.000GHz
*RBW 100kHz
VBW 100kHz
SWP 2.30sec

6/24/99

*ATTEN 0dB
RL 57.0dBµV 5dB/
MKR 19.83dBµV
1.130GHz
HORZ. POL



D

99-0413 Enc 2 Pg 8

START 1.000GHz STOP 4.000GHz
*RBW 100kHz VBW 100kHz *SWP 60.0sec
RETEST DATA AFTER MODIFICATION 6/24/99

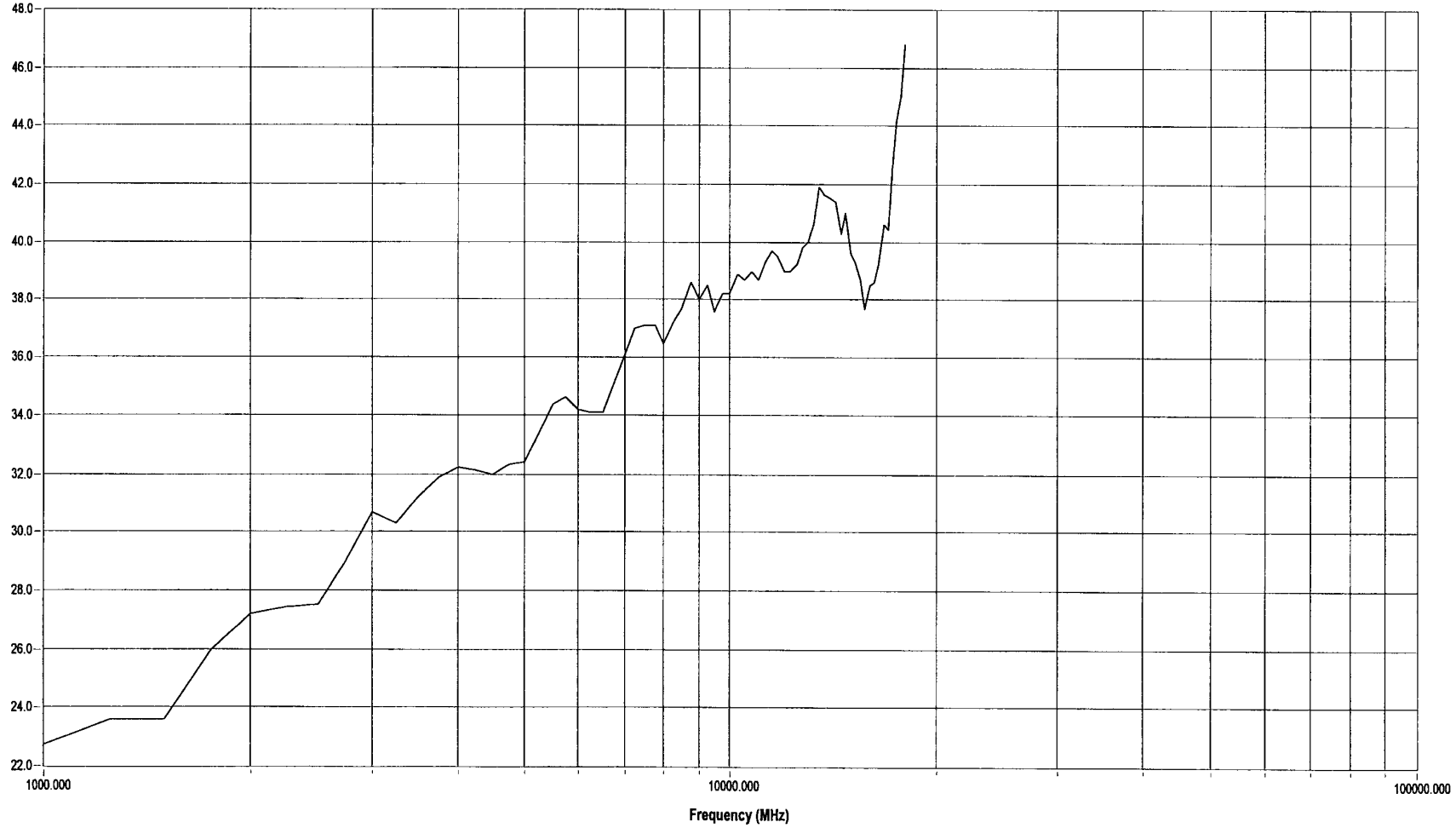
CORRECTION FACTOR

Factor File Name: 27-55 horizontal pol..rea

Factor Description: Double Ridge Waveguide Antenna - EMCO Model No.3115 , Serial No.2072

DTB Number: 27-55

Cal Due Date: 11/19/00



99-0413 Enc 2 Pg 9

DAYTON T. BROWN, INC.
Founded 1950

Date : 23 Mar 1999

Test Item : Touchpanel
Serial No.: C224937
Customer : Crestron
Job No. : 400474-00-000
Test Condition : Transmitting
Distance : 3 Meters
Specification : FCC part 15 sub part C
Antenna Polarization: Vertical
Detector Function : Peak
Units : dBuV/m
Bandwidth: 100 kHz

Radiated Field Strength Measurements

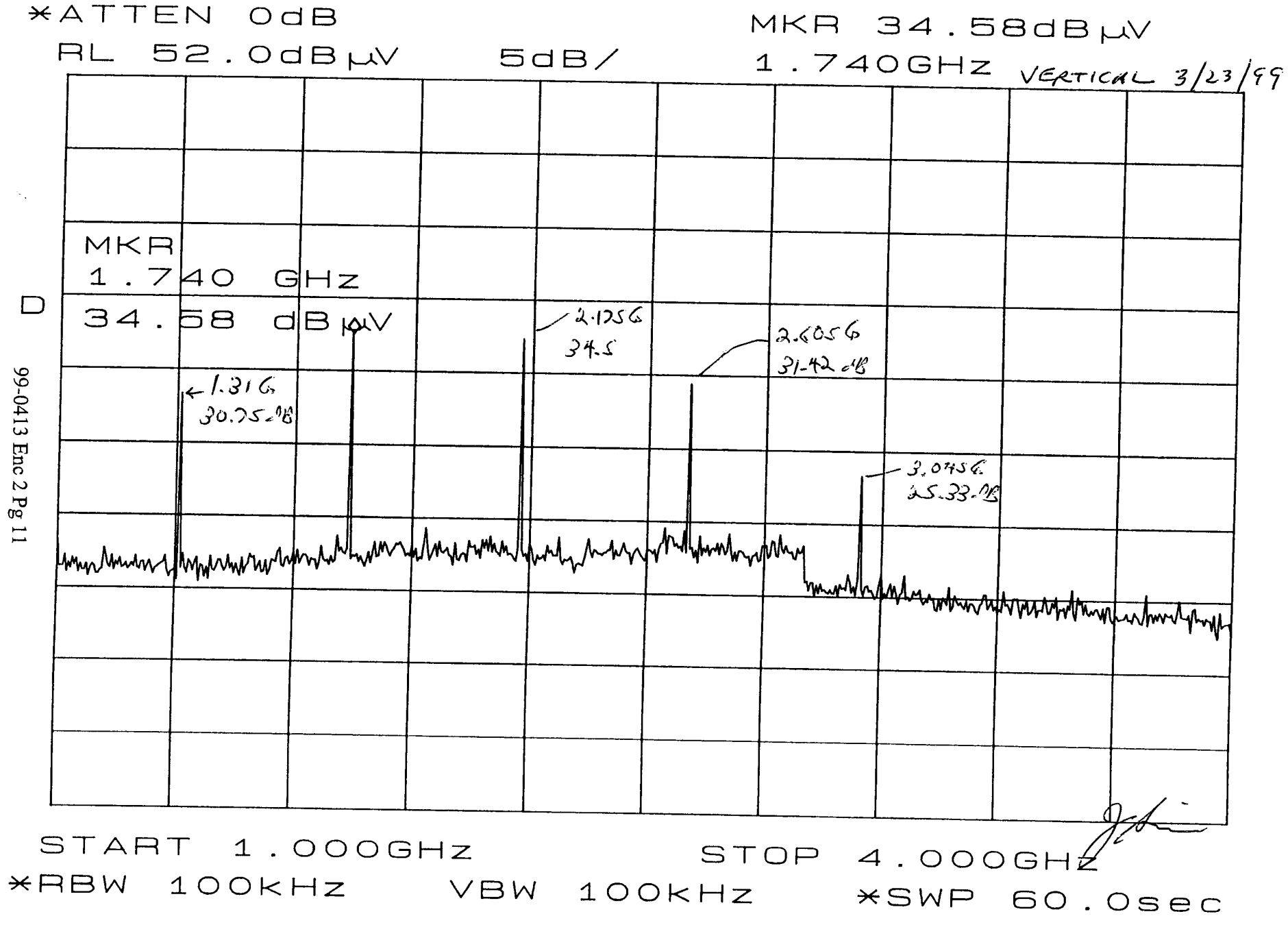
Met Requirement Yes ☑ No ☐

Freq. (MHz)	Meter Indicated dBuV	Antenna Factor dB	Cable Loss dB	Pre-Amp Gain dB	Total Indicated dBuV/m	Spec. Limit dBuV/m		Level Above Spec. Limit	Observation	
1310	30.75	23.6	2.2		56.55	67 (1)				
1740	34.58	26.5	2.5		63.58	67 (1)				
2175	34.5	27	2.2		63.7	67 (1)				
2605	31.42	28	3.4		62.82	67 (1)				
3045	25.33	29.5	5.9		60.73	67 (1)				

Remarks : * Indicates above Specification Limit; A - Indicates Ambient; Total Indicated = Meter Indicated + Antenna Factor + CableLoss-Pre-AmpGain

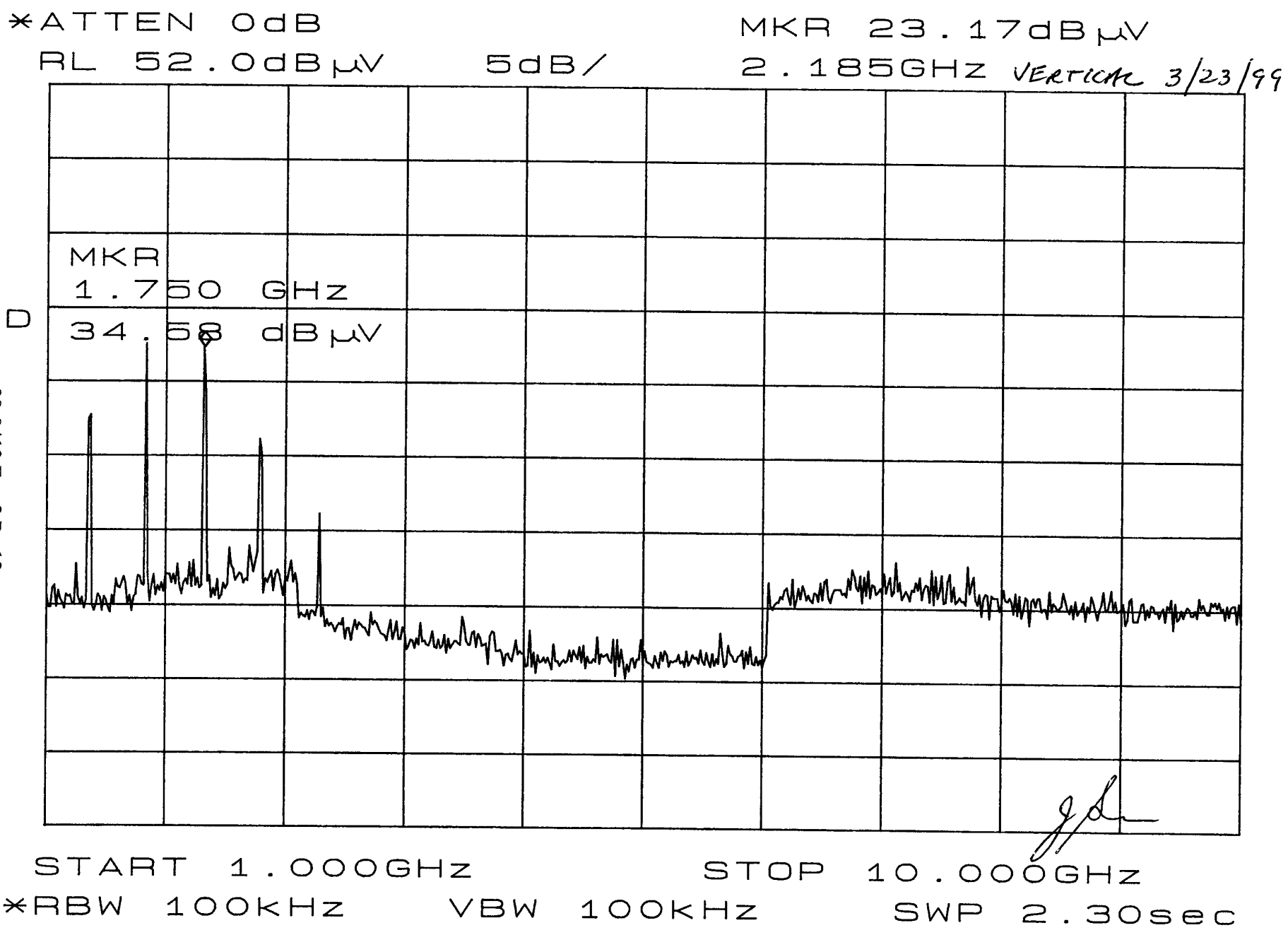
(1) 6 dB correction added to spec limit

Engineer : _____ Technician : _____



D

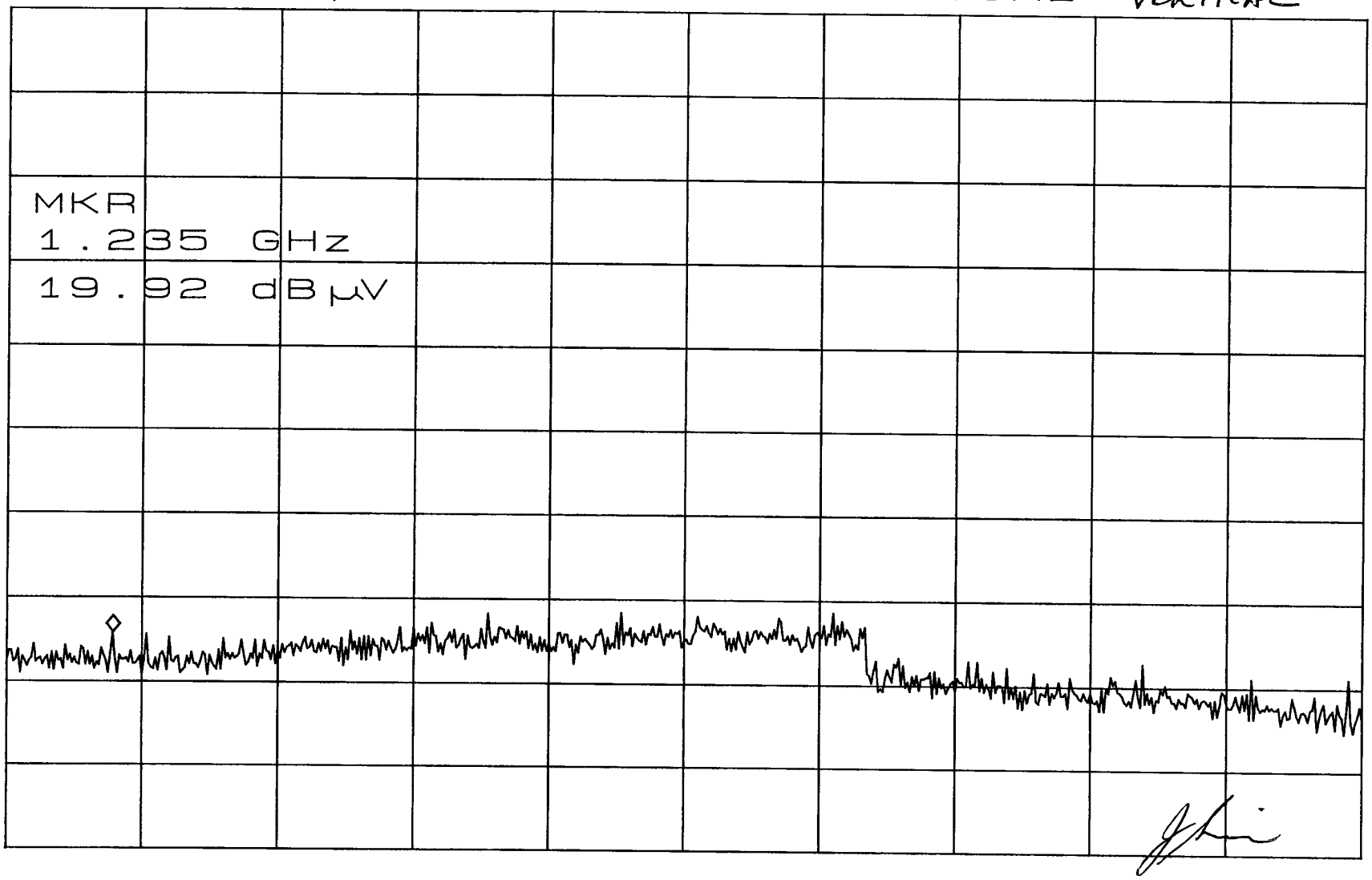
99-0413 Enc 2 Pg 11



99-0413 Enc 2 Pg 12

6/24

*ATTEN 0dB
MKR 19.92dBµV
RL 57.0dBµV 5dB/
1.235GHz VERTICAL



D

START 1.000GHz
STOP 4.000GHz
*RBW 100KHz
VBW 100KHz
*SWP 60.0sec

RETEST DATA AFTER MODIFICATION 6/24/99

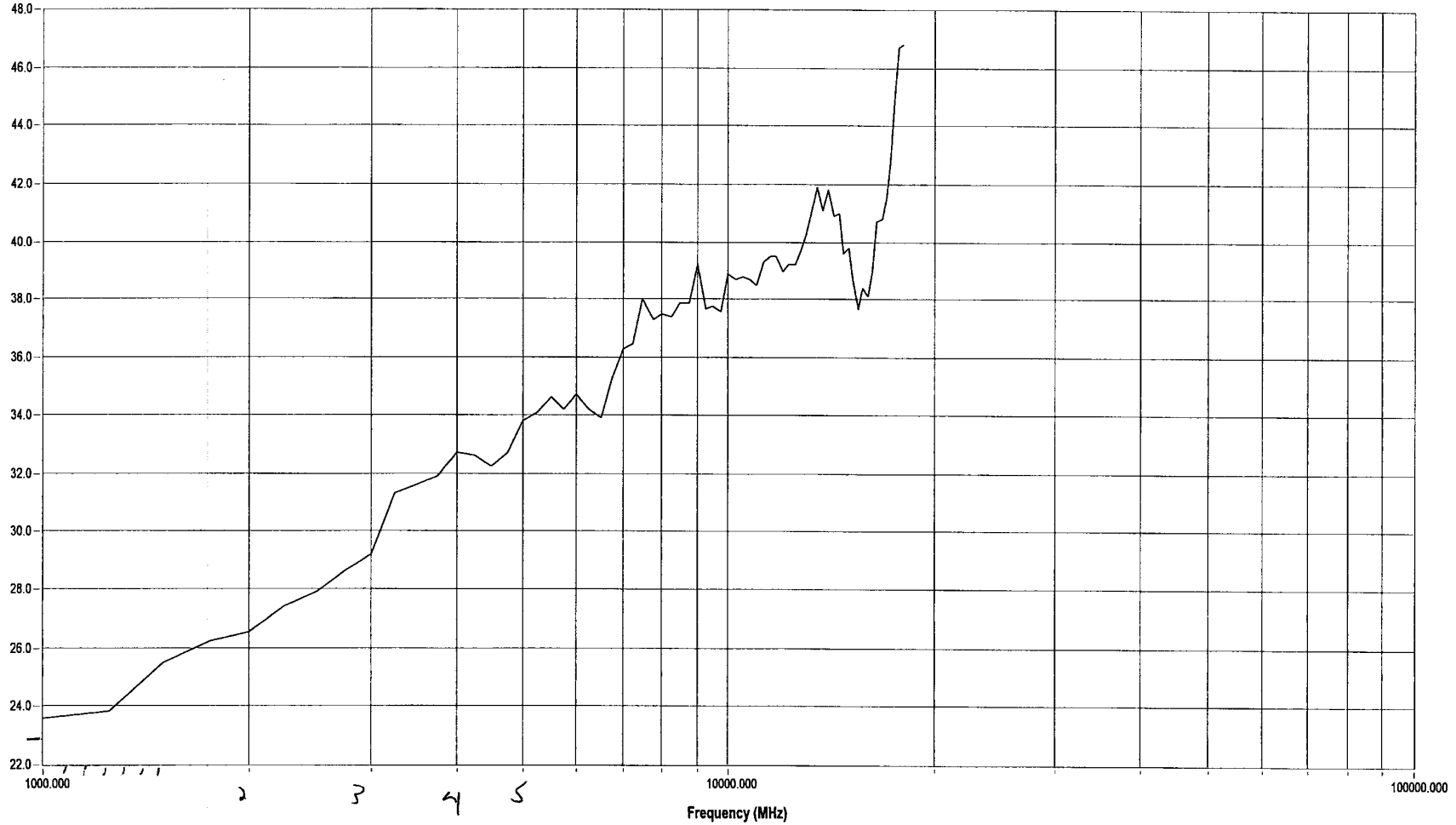
CORRECTION FACTOR

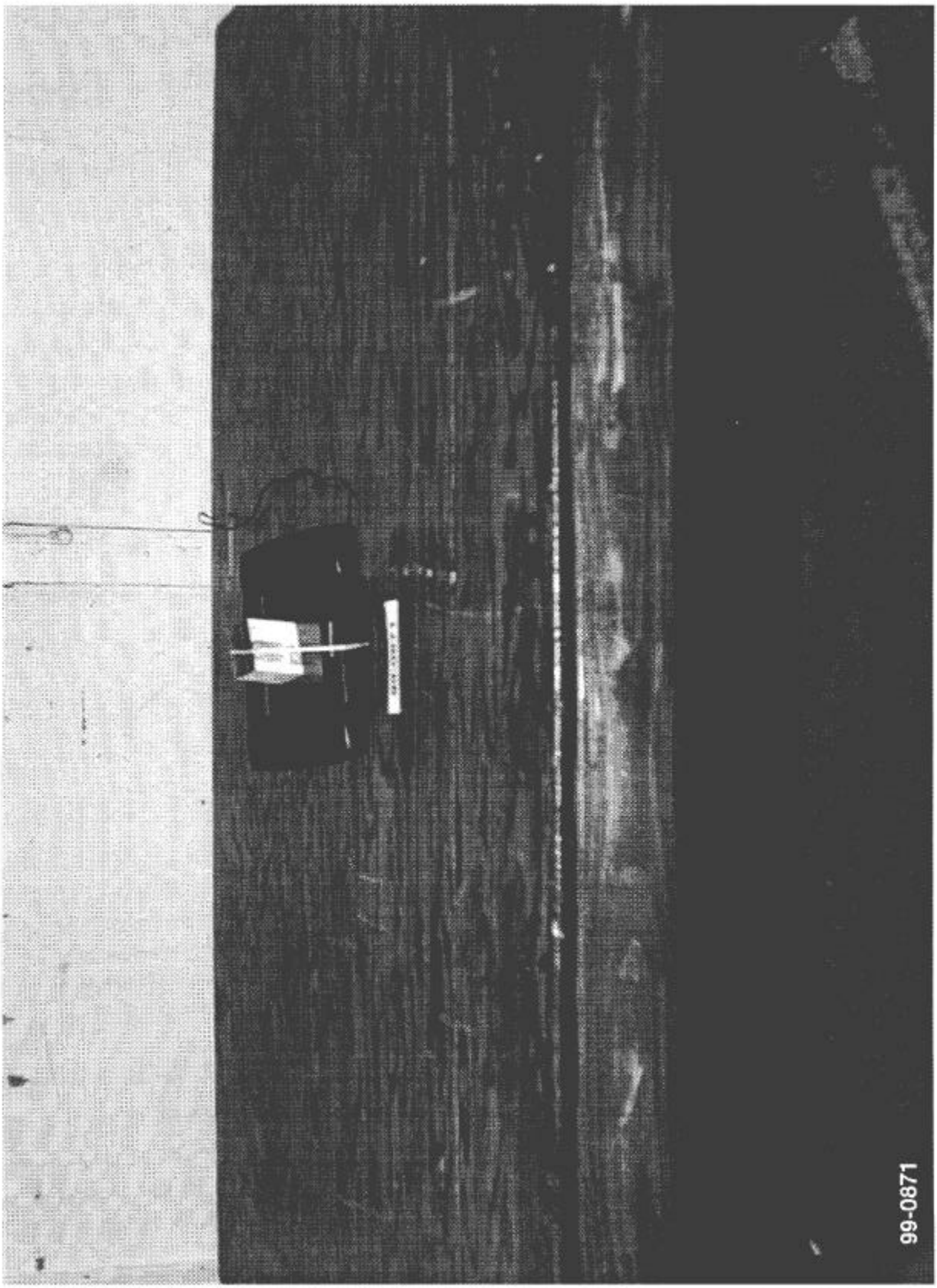
Factor File Name: 27-55 Vertical Pol..rea

Factor Description: Double Ridge Waveguide Antenna - EMCO Model No.3115 , Serial No.2072

DTB Number: 27-55

Cal Due Date: 11/19/00





TESTED FOR CRESTRON ELECTRONICS, INC.
ITEM: SMARTOUCH RF TOUCHPANEL AND TRANSPOWER AC ADAPTER

S/N 224937
M/N ST-1550C & 481210003C0

RADIATED EMISSION,
30 TO 1000 MHz

JOB NO. 400474-00-000
DTB01R99-0413, REVISION A

FILE NO. 99-0871
ENCLOSURE 2

23 MARCH 1999
PHOTO 1

DAYTON T. BROWN INC.
Founded 1950

Enclosure 3

Occupied Bandwidth

DAYTON T. BROWN INC.
Founded 1950

OCCUPIED BANDWIDTH

Test Procedure

The occupied bandwidth of the test item was measured using a spectrum analyzer with a bandwidth setting of 100 kHz. The spectrum analyzer was operated in the "Max Hold" mode.

The test item has an operating frequency of 433.89 MHz. The maximum allowed bandwidth for devices operating above 70 MHz and below 900 MHz is 0.25 percent of the center frequency.

The maximum allowed bandwidth is calculated as follows:

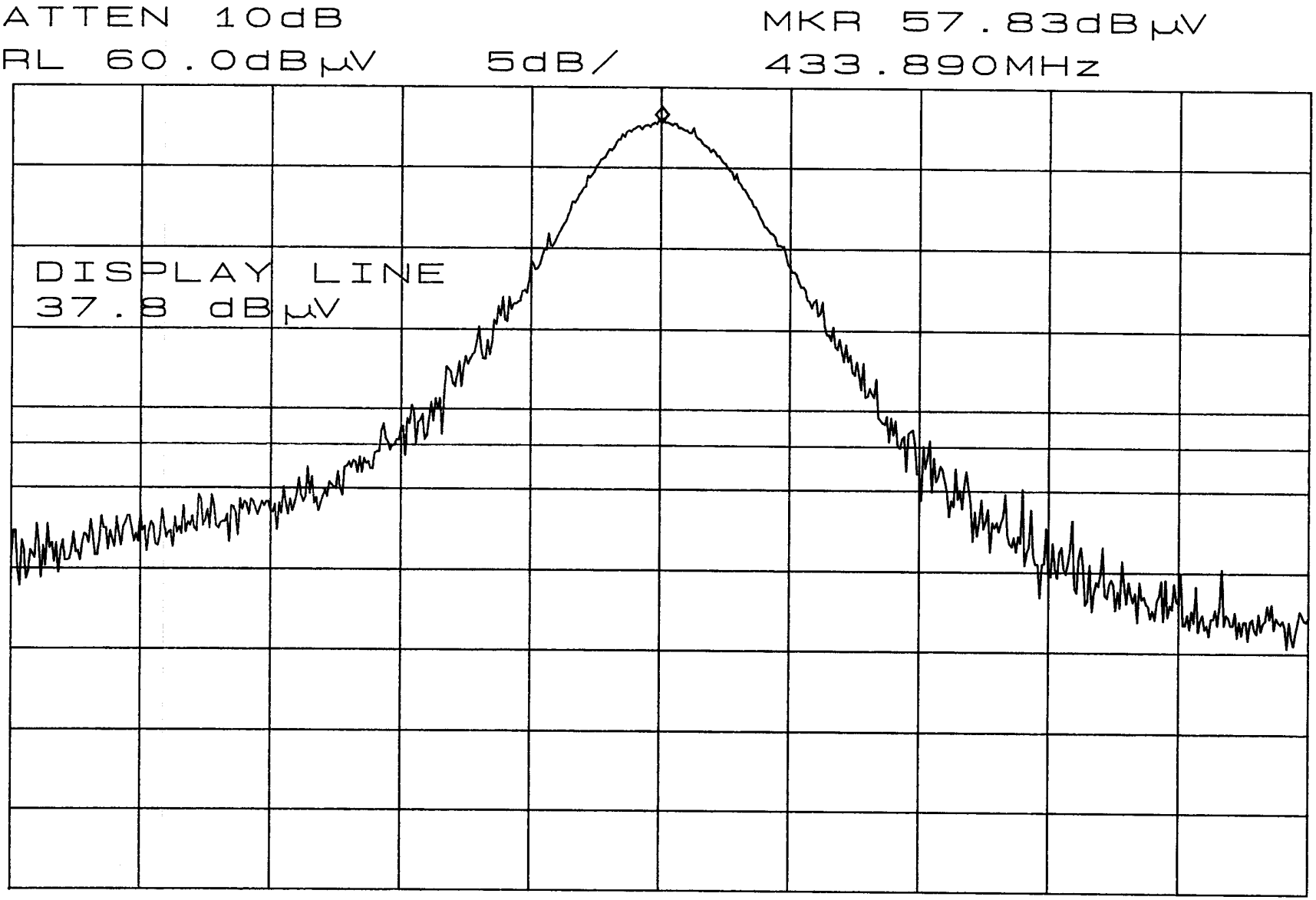
$$433.89 \text{ MHz} \times 0.0025 = 1.0847 \text{ MHz}$$

The occupied bandwidth was determined at the points 20 dB down from the carrier.

Test Results

The test item met the occupied bandwidth test. The measured occupied bandwidth from the test item was 400 kHz at the 20-dB down point.

Detailed test results for the occupied bandwidth test can be observed on page 2 of this enclosure.



99-0413 Enc 3 Pg 2

Enclosure 4

Conducted Emission, 450 kHz to 30 MHz

DAYTON T. BROWN INC.®

Founded 1950

CONDUCTED EMISSION, 450 kHz to 30 MHz

Test Procedure

A conducted emission test, in the frequency range of 450 kHz to 30 MHz, was performed on the test sample while mounted on a nonconductive table. The table measured 1 meter by 1.5 meters with its top surface 80 cm above the ground plane.

Power was supplied to the test sample via LISNs which were bonded to the ground plane below and to the side of the nonconductive table. The unused 50Ω connector on the LISN was terminated in 50Ω.

Measurements were made utilizing the following bandwidth and detector function:

Frequency Range	CISPR Bandwidth	Detector Function
450 kHz to 30 MHz	9 kHz	Quasi-Peak

The test setup employed is depicted in the photograph contained in this enclosure.

Test Results

No emission levels above the Class B conducted emission specification limits were observed.

Detailed test results for the conducted emission test can be observed on pages 2 and 3 of this enclosure

Test Title: fcc r & r, part 15, class b

Test Procedure:	ANSI C63.4
Customer:	Crestron
Test Item:	Touchpanel
Model Num.:	ST-1550C
Part Num.:	N/A
Serial Num.:	C224937
Mode of Op.:	Transmiting
Comment:	WITH MC ADAPTOR W/N 4812/0003 C0

Date:	3/22/99
Tested By:	W. Tully
Project Eng.:	J. Smirk
Job Num:	400474-00-000
Test Num:	474001
Detector:	Quasi-Peak
Dwell:	160 milliseconds
Sensor Loc.:	115 VAC Phase
Sensor Pol:	N/A
File Name:	474001.d30

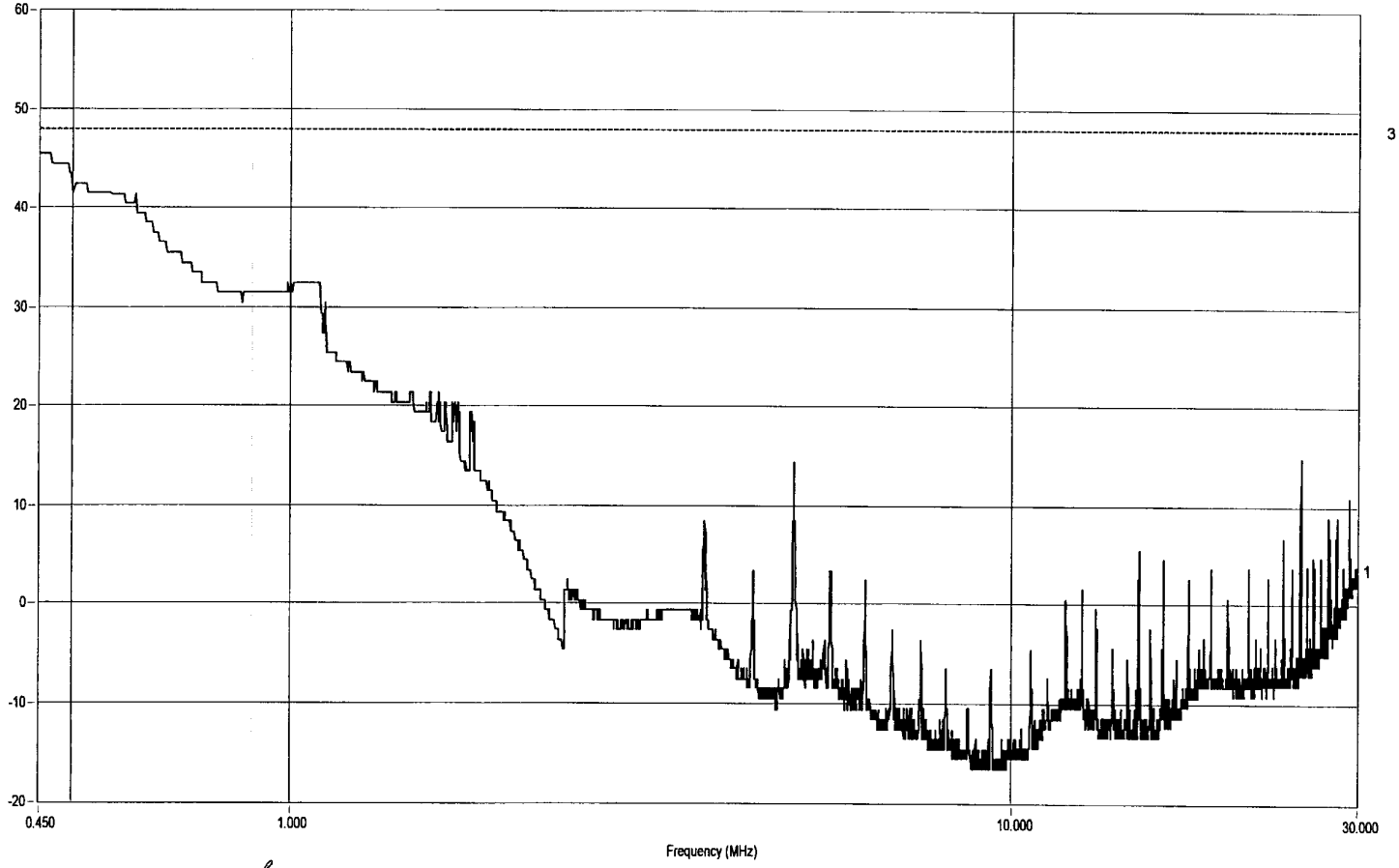
Time: 9:32 AM

DAYTON T. BROWN

1. Data

3. fcc r & r, part 15, class b.l30 (Spec Limit)

99-0413 Enc 4 Pg 2



BW Table

Frequency	BW
0.450 MHz	9 KHz
30.000 MHz	

Factor Files

lisn 73-90.r30 (0.450 MHz)

Correction Files

7-8.c30
7-15.c30

Engineer: _____

Technician: _____

Test Title: fcc r & r, part 15, class b

Test Procedure:	ANSI C63.4
Customer:	Crestron
Test Item:	Touchpanel
Model Num.:	ST-1550C
Part Num.:	N/A
Serial Num.:	C224937
Mode of Op.:	Transmiting
Comment:	WITH AC ADAPTOR M/L 4512/1000 3 C 4

Date:	3/22/99
Tested By:	W. Tully
Project Eng.:	J. Smirk
Job Num:	400474-00-000
Test Num:	474002
Detector:	Quasi-Peak
Dwell:	160 milliseconds
Sensor Loc.:	115 VAC Return
Sensor Pol:	N/A
File Name:	474002.d30

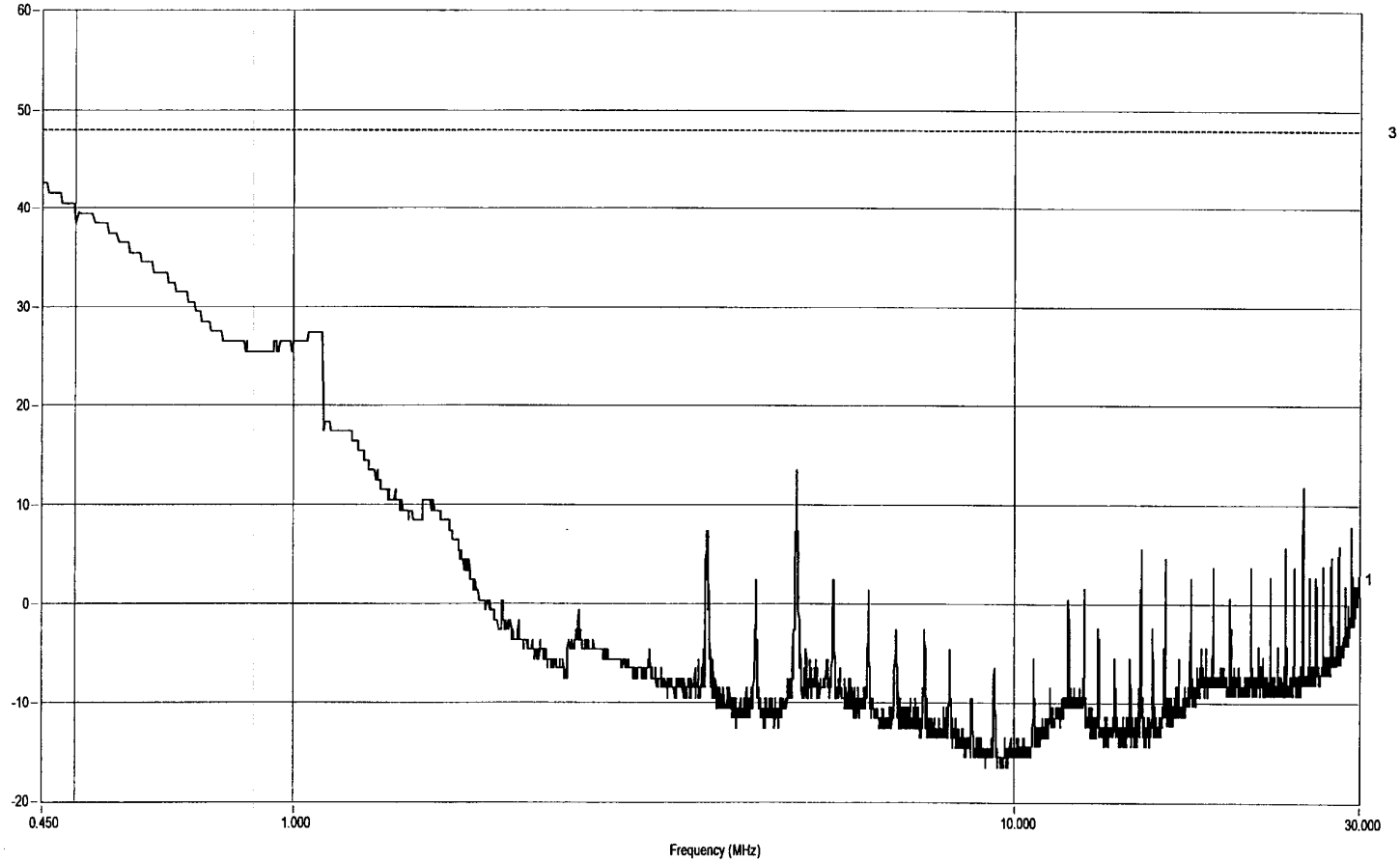
Time: 10:16 AM

DAYTON T. BROWN

1. Data

3. fcc r & r, part 15, class b.l30 (Spec Limit)

99-0413 Enc 4 Pg 3



BW Table

Frequency	BW
0.450 MHz	9 KHz
30.000 MHz	

Factor Files

lisn 73-90.r30 (0.450 MHz)

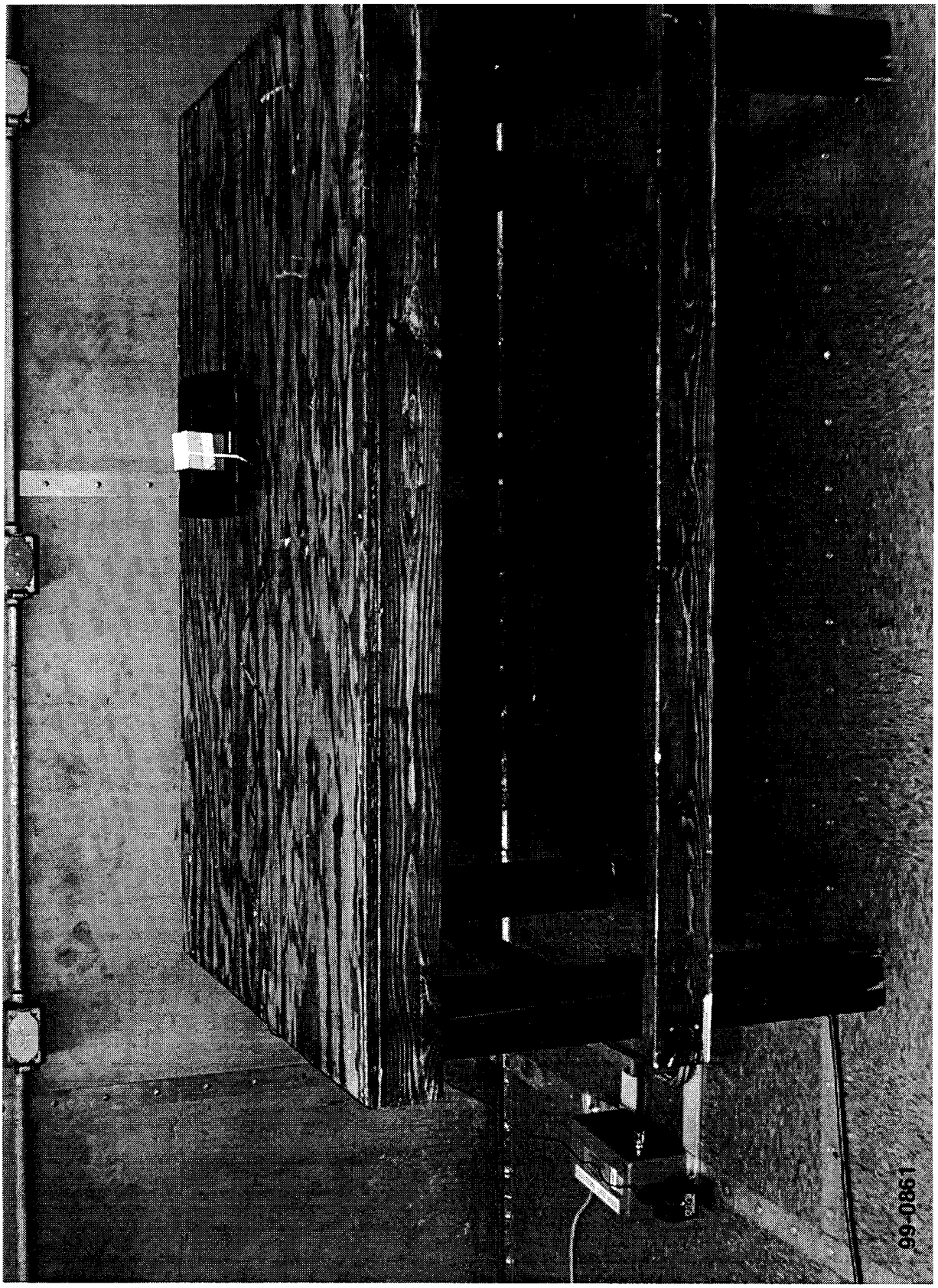
Correction Files

7-8.c30

7-15.c30

Engineer: J. Smirk

Technician: W. Tully



TESTED FOR CRESTRON ELECTRONICS, INC.
ITEM: SMARTOUCH RF TOUCHPANEL AND TRANSPOWER AC ADAPTER

S/N 224937
M/N ST-1550C &
481210003C0

CONDUCTED EMISSION,
450 kHz TO 30 MHz

JOB NO. 400474-00-000
DTB01R99-0413, REVISION A

FILE NO. 99-0861
ENCLOSURE 4

22 MARCH 1999
PHOTO 1

DAYTON T. BROWN INC.
Founded 1950

Enclosure 5

A2LA Scope of Accreditation

American Association for Laboratory Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC GUIDE 25-1990 AND EN 45001

DAYTON T. BROWN, INC.
Church Street
Bohemia, NY 11716
Charles Gortakowski Phone: 516 589 6300

ACOUSTICS & VIBRATION

Valid To: December 31, 2000 Certificate Number: 0767-01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following acoustics & vibration tests:

Vibration (Sine, Random, Gunfire, Shipboard)

Buzz, Squeak and Rattle

Combined Environments and Reliability (Temperature, Humidity and Vibration)

Pyroshock

Sound Power and Measurements

Airborne and Structureborne Noise Measurement

On the following types of materials and products:
Aircraft Components & Systems; Automotive Components & Systems; Shipboard Components & Systems; Railroad & Industrial Vehicle Components & Systems; Information Technology & Telecommunication Equipment & Systems; Electronic Components & Systems; Medical Electronic Equipment; Military Equipment & Hardware.

Using the following standards:
Military: MIL-STD-810 D/E (Methods: 500.3, 501.3, 502.3, 503.3, 513.3, 514.4, 515.4, 516.4, 520.1), MIL-STD-167-1, MIL-S-901, MIL-STD-202 E/F (Methods: 103B, 105C, 107D, 112C, 201A, 202D, 203B, 204D, 205E, 207A, 212A, 213B, 214), MIL-STD-781, MIL-E-16400, MIL-STD-108, MIL-STD-2036, MIL-T-28800, MIL-STD-740-1, MIL-STD-740-2, NAVMAT P-9492
Commercial: RTCA/DO-160
ANSI: S1.2, S1.35
GM: 9103P, 9104P, 9110P, 9125P, 9128P, 9140P, 9144P, 9154P, 9163P, 9175P
FORD: DVT1.12.00.007-AC, ES-F5VB-54043B13-AA
Chrysler: PF-9007, PF-9531, PF-6897, PF-8243, PF-9164
Telephony: Bellcore GR-63

5301 Buckeystown Pike, Suite 350 • Frederick, MD 21704-8307 • Phone: 301 644 3200 • Fax: 301 662 2974

American Association for Laboratory Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC GUIDE 25-1990 AND EN 45001

DAYTON T. BROWN, INC.
Church Street
Bohemia, NY 11716
Charles Gortakowski Phone: 516 589 6300

ELECTRICAL (EMC)

Valid To: December 31, 2000 Certificate Number: 0767-02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following electrical tests:

Capacitance	Impedance
AC Capacitance	Inductance
AC Loss Characteristics	Power Factor
Conductivity	Resistance (Dielectric Constant, Insulation Resistance)
Current (AC/DC)	Voltage (AC/DC)

EMI/RFI

Conducted Emissions	Surge Immunity
Conducted Transient Susceptibility	Input Power Variations
Conducted Immunity	Magnetic Field Emission
Radiated Emissions (3m & 10m Sites)	Magnetic Field Susceptibility
Radiated Emissions	Harmonics – Powerline & RF
Shielded Room, Mode Stirring	RF Power Handling
Radiated Susceptibility (Immunity)	Shielding Effectiveness
Radiated Transient Susceptibility	TEMPEST
Electrostatic Discharge (ESD)	Transmissibility
Electromagnetic Pulse (EMP)	Electromagnetic Site Survey
Electrical Fast Transient (EFT)	

On the following types of materials and products:
Aerospace Components & Systems; Automotive Components & Systems; Shipboard Components & Systems; Railroad & Industrial Vehicle Components & Systems; Information Technology & Telecommunication Equipment & Systems; Electrical & Electronic Components & Systems; Medical Electronic Equipment; Military Equipment & Hardware.

Using the following sources of standards:
ANSI, AS/NZS, CFR, CISPR, EN, ENV, FCC, IEC, Commercial Aviation, Military, GM, Chrysler, Telephony, ANSI/IEEE, VCCI

A supplemental scope, identifying the full range of tests and types of tests, is available from A2LA or the laboratory.

5301 Buckeystown Pike, Suite 350 • Frederick, MD 21704-8307 • Phone: 301 644 3200 • Fax: 301 662 2974

American Association for Laboratory Accreditation

SUPPLEMENT TO THE SCOPE OF ACCREDITATION
TO ISO/IEC GUIDE 25-1990 AND EN 45001

DAYTON T. BROWN, INC.
Church Street
Bohemia, NY 11716
Charles Gortakowski Phone: 516 589 6300

ELECTRICAL (EMC)

Valid as of: February 25, 1999
Valid until: December 31, 2000
Certificate Number: 0767-02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following electrical tests:

AS/NZS 3548
Code of Federal Regulations (CFR) 47, FCC Method Part 15 using ANSI C63.4
Code of Federal Regulations (CFR) 47, FCC Method Part 68
CISPR 22
EN: 50081-1, 50081-2, 50082-1, 50082-2, 50091-1, 50091-2, 55011, 55013, 55014, 55015, 55022, 60555-2, 60555-3, 60601-1-2, 61000-4-1, 61000-4-2, 61000-4-4, 61000-4-5, 61000-4-7, 61000-4-8, 61000-4-11
ENV: 50140, 50141, 50142, 50204
IEC: 601, 601-1-2, 801-1 (1000-4-1), 801-2 (1000-4-2), 801-3 (1000-4-3), 801-4 (1000-4-4), 801-5 (1000-4-5), 801-6 (1000-4-6), 1000-4-7, 1000-4-8, 1000-4-11, 1000-3-2, 1000-3-3
Commercial Aviation: RTCA/DO-160, FAA Advisory Circular 20-136, Boeing D200Z001, Boeing WZZ7000
Military: MIL-STD-461 (A,B,C,&D), MIL-STD-462, MIL-STD-1399, MIL-STD-704, MIL-E-16400, MIL-STD-2036, MIL-STD-1275A(AT), MIL-STD-202
GM: 9100P, 9105P, 9109P, 9110P, 9112P, 9113P, 9114P, 9115P, 9116P, 9117P, 9119P, 9120P, 9103P, 9104P, 9125P, 9128P, 9140P, 9144P, 9154P, 9163P, 9175P
Chrysler PF-9164, PF-9326
Telephony Bellcore GR-1089
ANSI/IEEE: IEEE-587-1980, IEEE-C62.41, IEEE-C62.32
TEMPEST: NST ISSAM Tempest/1-92
Customer Supplied Methods and Custom Methods

5301 Buckeystown Pike, Suite 350 • Frederick, MD 21704-8307 • Phone: 301 644 3200 • Fax: 301 662 2974

American Association for Laboratory Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC GUIDE 25-1990 AND EN 45001

DAYTON T. BROWN, INC.
Church Street
Bohemia, NY 11716
Charles Gortakowski Phone: 516 589 6300

MECHANICAL

Valid To: December 31, 2000 Certificate Number: 0767-03

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following mechanical tests:

Compression; Stress; Hardness; Cleanliness; Fatigue; Metallography; Coating/Plating Thickness; Microhardness; NDT (Dye Penetrant & Magnetic Particle)
Dimensional (CMM – X-1200mm (±0.001mm); Y-1000mm (±0.001mm); Z-600mm (±0.001mm))

Environmental Simulation
Acceleration; Altitude; Fungus; Explosion; Dust; Sun/Solar Radiation; Temperature/Altitude; Wind & Rain; Combined Environments; Salt Fog/Salt Spray; Humidity; Water Immersion; Temperature/Shock; Drop/Impact; Sand; Durability (Horn Life Actuation/Horn Blow Mechanism); High Pressure Burst (Air & Hydraulic); High/Low Temperature/Humidity/Vibration; Shock (1/2 Sine, Sawtooth, Trapezoid)

On the following types of materials and products:
Aerospace Components & Systems; Automotive Components & Systems; Shipboard Components & Systems; Railroad & Industrial Components & Systems; Information Technology & Telecommunication Equipment & Systems; Electrical & Electronic Components & Systems; Medical Electronic Equipment; Military Equipment & Hardware; Packaging & Containers; Pipes, Hoses, Fittings, and Valves.

Using the following standards:
Military: MIL-STD-810 D/E (Methods: 500.3, 501.3, 502.3, 503.3, 505.3, 506.3, 507.3, 508.4, 509.3, 510.3, 511.3, 512.3, 513.4, 514.4, 515.4, 516.4, 520.1), MIL-STD-167-1, MIL-S-901, MIL-STD-202 E/F (Methods: 101D, 103B, 104A, 105C, 107D, 108A, 109B, 110A, 112C, 201A, 202D, 203B, 204D, 205E, 207A, 209, 212A, 213B, 214), MIL-STD-781, MIL-E-16400, MIL-STD-108, MIL-STD-2036, MIL-T-28800, NAVMAT P-9492, MIL-STD-6866, MIL-T-7743, MIL-STD-410, MIL-STD-271, MIL-STD-1875, MIL-STD-2154, MIL-STD-453
Commercial: RTCA/DO-160
ANSI/ASME: Y14.5M, Y14.6, Y14.36
ANSI/AFBMA: Standard 9
ASTM: B117, D1141, G23, E18, D2240, B557, E3, E8, E45, E340, E384, E407, E1417, E1444
GM: 9110P, 9103P, 9104P, 9125P, 9128P, 9140P, 9144P, 9154P, 9163P, 9175P, 9540P (Method B)
FORD: DVT1.12.00-007-AC; ES-F5VB-54043B13-AA; FMUSS 209
Chrysler: PF-9007, PF-9531, PF-6897, PF-8243, PF-9164
Telephony: Bellcore GR-63

5301 Buckeystown Pike, Suite 350 • Frederick, MD 21704-8307 • Phone: 301 644 3200 • Fax: 301 662 2974