FCC ID: KXU-LFTX1

EXHIBIT 4:

TECHNICAL REPORT

Manufacturer: R.F. Technologies, Inc.
3125 N. 126th Street
Brookfield, WI 53005

Model Number: CA9300

Serial Number: pre-production

Users Manual: "Included"

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Manufacturer: R.F. Technologies, Inc.
Model: CA9300
Serial Number(s): "pre-production"

Crystal Frequencies

- The following crystal or resonator frequencies are present in this product:

Clock (x1):	4.1943 MHz
Controller Board Clock crystal:	8.00 MHz

Tuning Range

- The tuning range of the transmitter is determined by the microprocessor division ratio and is fixed at 131 kHz

FCC ID: KXU-LFTX1

COMPLIANCE TESTING

OF

R.F. TECHNOLOGIES

CA9300 CONTROL UNIT

~ TEST REPORT ~

OCTOBER 21ST AND 25TH ,1997

Prepared for:

R.F. Technologies, Inc.
3125 N 126th Street
Brookfield, WI 53005

FCC ID: KXU-LFTX1

SIGNATURE PAGE

Prepared By: Thomas T. Lee 14 April 1998

Thomas T Lee, EMC Engineer *Date*

Approved By: Kenneth L Boston 14 April 1998

Kenneth L. Boston, EMC Lab Manager *Date*

PE #31926

Registered Professional Engineer

(State of Wisconsin)

FCC ID: KXU-LFTX1

7.3 SUMMARY OF TEST REPORT

MANUFACTURER:	R.F. TECHNOLOGIES, INC
MODEL:	CA9300
SERIAL:	"pre-production"
DESCRIPTION:	LOW POWER TRANSMITTER
FREQUENCY RANGE:	TRANSMITTER; 131 kHz

The R.F. Technologies model CA9300 Transmitter was found to "meet" the radiated emission specification of Title 47 CFR, FCC Part 15, subpart C.

R.F. Technologies model CA9300 Transmitter was also found to "meet" both the conducted and the radiated emission specification of Title 47 CFR FCC Part 15, subpart B for emissions with regards to the digital sections of the product.

This product is a composite device, with the digital section subject to verification. Therefore this technical report will primary contain data that is pertinent to the certification of the transmitter section of the product.

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7.4 INTRODUCTION

On October 21st and 25th of 1997, a series of Radiated Emissions tests were performed on 2 sample models of the R.F. Technologies CA9300 control unit. This is a transmitter, which is designed to send out a polling signal to a small tag transponder, which then responds with a short burst of data transmission which comprises an I.D. code. This data burst is received by a separately mounted UHF receiver module, and the ID code is sent back into the CA9300 by a short cable connection. These tests were performed using the test procedures outlined in ANSI C63.4-1992 for intentional radiators, and in accordance with the limits set forth in FCC Part 15.231e for a periodic transmitter. Tests were also performed as outlined in ANSI C63.4-1992 for non-intentional radiators, in order to allow verification of emissions from the digital section of the product. These tests were performed by Kenneth L. Boston, PE, of L. S. Compliance, Inc. and witnessed by Jan Reik of R. F. Technologies, Inc.

7.5 PURPOSE

The above mentioned tests were performed in order to determine the compliance of the R. F. Technologies LFTX1 product with limits contained in various provisions of Title 47 CFR, FCC Part 15, including:

15.107
15.109
15.205
15.207
15.209

All radiated emissions tests were performed to measure the emissions in the frequency bands described by the above sections, and to determine whether said emissions are below the limits established by the above sections. These tests were performed in accordance with the procedure described in the 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). Another document used as reference for the EMI receiver specification was the International Special Committee on Radio Interference (CISPR) number 16-1 (1993).

7.6 RADIATED EMISSIONS TEST SETUP

The test sample was operated within the 3 meter Semi-Anechoic, FCC listed chamber located at L.S. Compliance in Cedarburg, WI. and also on the 10 meter Open Air Test Site located outside the L.S. Compliance facility. The sample was mounted on a simulated door frame fixture which was positioned on center of the flush-mounted 2m diameter metal turntable. The test sample was operated with power supplied by an AC power wall module plugged into the 110 VAC supplied at the turntable center.

Please refer to Section 7.13 for pictures of the test setup.

7.7 RADIATED EMISSION TEST PROCEDURE

The fundamental and spurious (harmonic) emissions of the transmitter were tested for compliance to the general limits given in Title 47 CFR, FCC Part 15.209. For the calculations used to determine the limits applicable for the test sample, refer to Appendix A. These limits are expressed in decibels (dB) above 1 microvolt per meter (μV/m). The samples were tested from the lowest frequency generated by the transmitter (without going below 9 kHz) to the 10th harmonic of the fundamental frequency generated by the device. The appropriate limits were also observed when the fundamental or spurious signals were located within any of the restricted bands as described in Part 15.205a. These frequencies, and their associated limits, are referenced in Section 7.10. The test sample was assembled upon a test fixture that would simulate a standard single width (36"x72") and double width (72"x72") door frame. Both conductive and non-conductive materials for the frame were used, to simulate installation on a wooden door and an aluminum frame door. For measurement of the transmitter fundamental, harmonics, and low frequency spurious signals, a magnetic loop antenna was used, which was placed at a separation distance of 10 meters upon an FCC listed OATS located at the L. S. Compliance facility in Cedarburg , WI. The fixture was set up on top of the 2 meter flush mounted turntable installed at the 10 meter OATS. The loop and fixture orientation were then varied to obtain the maximum signal levels and then readings were taken. The results are tabulated in the charts found in Appendix B. The test sample was also setup in the 3 Meter FCC listed Semi-Anechoic chamber located at L. S. Compliance, upon the 2 meter turntable in the chamber, and an antenna mast was placed 3 meters from the test object perimeter. A biconical antenna or tuned dipole was used to measure emissions from 30 to 200 MHz, a log periodic or tuned dipole was used to measure emissions from 200 to 1000 MHz. The test object was place in continuous transmit, and the spurious signals were maximized by rotating the turntable 360 degrees, and by raising and lowering the antenna between 1 and 4 meters. The sample was tested with several framing configurations to determine the maximum signal levels, using both horizontal and vertical antenna polarities.

The unit was scanned for emissions in both transmit and standby modes, over the range 131 kHz to 1000 MHz to establish compliance with Part 15.109 for the transmitter. Also, the scans were performed to evaluate the digital controller section of the product, which is subject to verification as a Class B digital device. Any significant spurious signals, other than the noise floor of the system, are tabulated in the data section found in Appendix B. Signature scans can be found in Appendix C.

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7.8 TEST EQUIPMENT UTILIZED FOR THE RADIATED EMISSIONS TEST

A list of the test equipment and antennas used for the tests can be found in Section 7.15, which includes the calibration information as well as the equipment description. All equipment is calibrated and used according to the user manuals supplied by the manufacturer. All antenna calibrations were performed at a N.I.S.T traceable site, and the resultant correction factors were entered into the Hewlett Packard 8546A EMI receiver software database. The connecting cables used were also measured for loss using a calibrated signal generator and the HP 8546A EMI receiver. The resulting loss factors were entered into the HP 8546A database. This allowed for automatic changes in the antenna correction factor, as well as cable loss or other corrections, to be added to the EMI receiver display while taking measurements. Thus, the resulting data taken from the HP 8546A is an actual reading and can be entered into the database as a corrected meter reading. When a reading is taken using the peak detector, a duty cycle correction factor can be applied when correcting to an average reading. This operation can be used when measuring periodic data transmission, under FCC part 15.231b, and Part 15.35c. The calculation for deriving this duty factor can be found in Appendix A. The resulting average reading was then compared to the appropriate limit in order to determine compliance. The HP 8546A EMI receiver was operated with a bandwidth of 9 kHz when receiving signals below 30 MHz; with a bandwidth of 120 kHz when receiving signals above 30 MHz and below 1 GHz, and with a bandwidth of 1 MHz when receiving signals above 1 GHz, in accordance with CISPR 16. The peak, Quasi-peak, and Average detector functions were used.

FCC ID: KXU-LFTX1

7.9 CONDUCTED EMISSION TEST

The model LFTX1 Transceiver was mounted on a simulated doorframe and placed in the 3-meter Semi-Anechoic Chamber and positioned on a flush mount 2-meter turntable. The test sample was configured in accordance with ANSI C63.4, 1992 for floor-standing equipment. A LISN was used to connect to the test sample through a short jumper cable. The HP Transient Limiter was connected between the LISN and the HP 8546A EMI receiver by way of an RG214 cable. On the HP 8546A, the marker was tuned to the most significant spurious emissions which were then measured using the Average and Quasi-Peak detectors.

7.10 CONDUCTED EMISSION TEST PROCEDURE

The conducted emissions radiation measurements were performed in the 3 meter Semi-Anechoic, FCC listed chamber located at L. S. Compliance in Cedarburg, WI, upon the test sample. The frequency range from 0.15 to 30 MHz was inspected in accordance with FCC Part 15 Class B emissions. The test sample was powered from an AC power source connected to the LISN. The CA9300 was operated in the active mode during the conducted emissions testing. Both L1 and L2 were tested for conducted emission pursuant to FCC Part 15. Reading were then taken using the Quasi-Peak detector, and the measurement results can be found in Appendix B, with signature scans located in Appendix C.

7.11 CONDUCTED EMISSION TEST EQUIPMENT UTILIZED

A list of the test equipment used for the conducted emission tests can be found in Section 7.15, which includes the calibration information as well as the equipment description. All equipment is calibrated and used according to the user's manuals supplied by the manufacturer. All antennas were calibrated at a N.I.S.T. traceable site, and the resultant correction factors were entered into the Hewlett Packard 8546A EMI receiver software database. The connecting cables used were also measured for loss using a calibrated signal generator and the HP 8546A EMI receiver. The resulting loss factors were entered into the HP 8546A database. This allowed for automatic changes in the antenna correction factor, as well as cable loss or other corrections, to be added to the EMI receiver display while taking measurements. Thus, the resulting data taken from the HP 8546A is an actual reading and can be entered into the database as a corrected reading. The equipment used for the conducted emission consists of the HP 8546A EMI receiver, HP Transient Limiter and the EMCO LISN.

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Manufacturer: R.F. Technologies, Inc.
Model: CA9300
Serial Number(s): "pre-production"

7.12 - Restricted Bands affecting this product (transmitter)

0.090 kHz- 0.110 kHz

0.495 kHz- 0.505 kHz

7.13 – Photos taken during testing

7.13 Summary of Results and Conclusions

Based on the procedures outlined in this report, and the test results included in appendices B and C, it can be determined that the Transmitter model CA9300 does "meet" the emission requirements of Title 47 CFR, FCC Part 15 Subpart C for an intentional radiator. The model CA9300 was also found to "meet" the emission requirements of Part 15, subpart B for unintentional radiators with regards to the Digital section of the Control unit.

The enclosed test results pertain to the samples of the test item listed, and only for the tests performed on the data sheets. Any subsequent modification or changes to the test items could invalidate the data contained herein, and could therefore invalidate the findings of this report.

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7.15 - Test Equipment

Asset #	Manufacturer	Model #	Serial #	Description	Due Date
AA960003	EMCO	3121C	786	Dipole Set Antenna	7/14/98
AA960004	EMCO	3146	9512-4276	Log Periodic Antenna	9/9/98
AA960005	EMCO	3110B	9601/2280	Biconical Antenna	9/9/98
AA96006	EMCO	6502	2753	Active loop antenna	7/7/98
AA960032	HP	11947A	3107A01708	Transient Limiter	I.O
EE960009	EMCO	810/2N	9509/1152	10 AMP LISN	7/7/98
EE960004	EMCO	2090	9607-1164	Mast/Ttable Controller	I.O
EE960013	HP	8546A	3617A00320	Receiver RF Section W/Display and RF filter section	7/30/98
EE960014	HP	85460A	3448A00296	Receiver RF Section Preselector	7/30/98

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APPENDIX A:

SAMPLE CALCULATIONS

FCC ID: KXU-LFTX1

Manufacturer: R.F. Technologies, Inc.
Model: CA9300
Serial Number(s): pre-production

Calculation of Radiated Emissions limits for FCC Part 15.209; general limits for intentional radiators.

FIELD STRENGTH OF TRANSMITTER FUNDAMENTAL AND HARMONIC FREQUENCIES:

For the frequency range of 9 kHz to 490 kHz the limit (at 10 meters) is found by:
LIMIT (dBuV/m)= 20log(2400/F in kHz) + 88.62

For the frequency range of 490 kHz to 1705 kHz the limit (at 10 meters) is found by:
LIMIT (bDuV/m)= 20log(24000/F in kHz) + 28.62

For the frequency range of 1705 kHz to 30 MHz the limit (at 10 meters) is found by:
LIMIT (bDuV/m)= 20log(30) + 28.62

For the frequency range of 30 MHz to 88 MHz the limit (at 3 meters) is found by:
LIMIT (dBuV/m) = 20log(100)

For the frequency range of 88 MHz to 216 MHz the limit (at 3 meters) is found by:
LIMIT (dBuV/m) = 20log(150)

For the frequency range of 216 MHz to 960 MHz the limit (at 3 meters) is found by:
LIMIT (dBuV/m) = 20log(200)

For the frequency range of 960 MHz to 40 GHz the limit at 3 meters is found by:
LIMIT (dBuV/m) = 20log(500)

Where the measurement distance was specified to be 30 or 300 meters, a correction factor was applied in order to permit measurement to be performed at a separation distance of 10 meters. In accordance with part 15.31(f)(2), the scaling factor was determined by taking measurements at two distances on the radial comprising the maximum signal level, and using the results to derive a scaling factor. The measurement values are shown in Appendix B, for readings taken at 10 and 30 meters; this resulted in a scaling factor determined to be the cube of an inverse linear distance extrapolation factor. (1/D^3)

From 300 meters down to 10 meters: FACTOR(dB) = 60log(300/10) = 88.62dB

From 30 meters down to 10 meters: FACTOR(dB) = 60log(30/10) = 28.62 dB

From 300 meters down to 30 meters: FACTOR(dB) = 60log(300/30) = 60 dB

FCC ID: KXU-LFTX1

Manufacturer: R.F. Technologies, Inc.
Model: CA9300
Serial Number(s): pre-production

LIMITS FOR READINGS TAKEN AT 10 METERS

Frequency (MHz)	FCC limit (uV/m)	FCC limit (dBuV/m)	Scaling factor	Adjusted limit (dBuV/m)
0.131	18.32	25.26	88.62	113.88
0.262	9.16	19.24	88.62	107.86
0.393	6.11	15.72	88.62	104.34
0.524	45.8	33.22	28.62	61.84
0.655	36.64	31.28	28.62	59.90
0.786	30.53	29.69	28.62	58.32
0.917	26.17	28.36	28.62	56.98
1.048	22.9	27.2	28.62	55.82
1.179	20.36	26.17	28.62	54.79
1.310	18.32	25.26	28.62	53.88
1.705-30.0	30.00	29.54	28.62	58.16

For a frequency of 0.131 MHz, a reading taken at 30 meters would be: 25.26 + 60 = 85.26 dBuV

FCC ID: KXU-LFTX1

Manufacturer: R.F. Technologies, Inc.
Model: CA9300
Serial Number: preproduction

Duty Cycle Correction Factor Calculation

In order to operate the door monitoring System in facilities where several doors may be monitored simultaneously, the low frequency transmitter is pulsed on and off in one of four unique timing cycles. For the purposes of this test, the transmitter switch settings were set for the maximum on-time duty cycle. A graph of this signal is found in Appendix C. The calculated on-time is 1.763 milliseconds over a total period of 4.5 milliseconds.

Correction factor = 20log (1.763/4.5)
= 8.14 dB

The Door transmitter was measured in the worst case configuration on the 10 meter OATS, with both the peak detector and the average detector. The peak reading minus the correction factor was then compared to the average reading. Entered below is the comparison of the measurement of the fundamental frequency signal on the Door system mounted on a double wide plastic door frame fixture:

Peak – Correction factor	= 114.41 –8.14	=106.27 dBuV/m
Average reading	= 104.91	=104.91 dBuV/m

The two readings agree to within 1.36 dB.

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APPENDIX B:

DATA CHARTS

FCC ID: KXU-LFTX1

Measurement of Electromagnetic Radiated Emission within 3 Meter FCC Listed Chamber

Frequency Range inspected: 30 to 1000 MHz

Date of Test:	10/21,25 , 1997	Manufacturer:	R.F. Technologies
Location:	L.S. Compliance, Inc.	Model No.:	CA9300
	W66 N220 Commerce Court		
	Cedarburg, WI 53012		
Specifications:	Title 47CFR, FCC Part 15.109	Serial No.:	Pre-production
Distance:	3 meters	Configuration:	active
Equipment:	HP 8546A EMI Receiver	Detector(s) Used:	Quasi-Peak
	EMCO 3115 Double Ridged Waveguide		
	EMCO 3146A Log Periodic		
	EMCO 3110B Biconical		

The following table depicts the level of significant Class B spurious emissions when the system is mounted on a non-conductive, double doorframe:

Frequency (MHz)	Antenna Polarity	Height (meters)	Azimuth (0° - 360°)	Q-Peak Reading (dBuV/m)	15.109 Limit(dBuV/m)	Margin (dB)
118.062	V	1	90	29.52	43.5	13.98
114.049	V	1	20	28.23	43.5	15.27
63.971	V	1	270	28.97	40	11.03
62.918	V	1	270	31.61	40	8.39
58.72	V	1	270	28.22	40	11.78
40.017	V	1	30	30.66	40	9.34
32.015	V	1	30	27.98	40	12.02
40.015	H	3	0	28.71	40	11.29
110.046	H	1.4	160	29.69	43.5	13.81
114.047	H	1.4	30	30.78	43.5	12.72
118.051	H	1.4	30	28.95	43.5	14.55

FCC ID: KXU-LFTX1

Measurement of Electromagnetic Radiated Emission within 3 Meter FCC Listed Chamber

Frequency Range inspected: 30 to 1000 MHz

Date of Test:	10/21,25; 1997	Manufacturer:	R.F. Technologies
Location:	L.S. Compliance, Inc.	Model No.:	CA9300
	W66 N220 Commerce Court		
	Cedarburg, WI 53012		
Specifications:	Title 47CFR, FCC Part 15.109	Serial No.:	Pre-production
Distance:	3 meters	Configuration:	active
Equipment:	HP 8546A EMI Receiver	Detector(s) Used:	Quasi-Peak
	EMCO 3115 Double Ridged Waveguide		
	EMCO 3146A Log Periodic		

The following table depicts the level of significant Class B spurious emissions when the system is mounted on a non-conductive single doorframe.

Frequency (MHz)	Antenna Polarity	Height (meters)	Azimuth (0° - 360°)	Q-Peak Reading (dBuV/m)	15.109 Limit(dBuV/m)	Margin (dB)
32.013	v	1	215	37.99	40	2.01
36.019	v	1	215	31.74	40	8.26
40.014	v	1	215	28.64	40	11.36
110.06	v	1	215	28.12	40	11.88
32.01	h	3	0	28.2	40	11.8
118	h	2	160	26.5	40	13.5

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Measurement of Electromagnetic Radiated Emission within 3 Meter FCC Listed Chamber

Frequency Range inspected: 30 to 1000 MHz

Date of Test:	10/21,25; 1997	Manufacturer:	R.F. Technologies
Location:	L. S. Compliance, Inc.	Model No.:	CA9300
	W66 N220 Commerce Court		
	Cedarburg, WI 53012		
Specifications:	47CFR, FCC Part 15.109	Serial No.:	Pre-production
Distance:	3 meters	Configuration:	active
Equipment:	HP 8546A EMI Receiver	Detector(s) Used:	Quasi-Peak
	EMCO 3115 Double Ridged Waveguide		
	EMCO 3146A Log Periodic		
	EMCO 3110B Biconical		

The following table depicts the level of significant Class B spurious emissions when the system is mounted on an aluminum double doorframe.

Frequency (MHz)	Antenna Polarity	Height (meters)	Azimuth (0° - 360°)	Q-Peak Reading (dBuV/m)	15.109 Limit(dBuV/m)	Margin (dB)
40.104	H	3.3	0	27.43	40	12.57
114.048	H	1.5	140	31.2	40	8.8
58.026	V	1	270	29.29	40	10.71
62.926	V	1	270	31.41	40	8.59
63.973	V	1	270	30.29	40	9.71
65.025	V	1	270	30.07	40	9.93
66.043	V	1	270	30.19	40	9.81
67.125	V	1	270	30.28	40	9.72
68.039	V	1	270	28.45	40	11.55
68.149	V	1	270	28.46	40	11.54
32.016	V	1	270	32.23	40	7.77

FCC ID: KXU-LFTX1

Measurement of Electromagnetic Radiated Emission within 3 Meter FCC Listed Chamber

Frequency Range inspected: 30 to 1000 MHz

Date of Test:	10/21,25; 1997	Manufacturer:	R.F. Technologies
Location:	L. S. Compliance, Inc.	Model No.:	CA9300
	W66 N220 Commerce Court		
	Cedarburg, WI 53012		
Specifications:	Title 47CFR, FCC Part 15.109	Serial No.:	Pre-production
Distance:	3 meters	Configuration:	active
Equipment:	HP 8546A EMI Receiver	Detector(s) Used:	Quasi-peak
	EMCO 3115 Double Ridged Waveguide		
	EMCO 3146A Log Periodic		
	EMCO 3110B Biconical		

The following table depicts the level of significant Class B spurious emissions when the system is mounted on an aluminum single doorframe.

Frequency (MHz)	Antenna Polarity	Height (meters)	Azimuth (0° - 360°)	Q-Peak Readin (dBuV/m)	15.109 Limit(dBuV/m)	Margin (dB)
114.051	H	1.4	140	32.22	43.5	11.28
110.052	H	1.4	140	28.13	43.5	15.37

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Measurement of Radiated Emission upon the 10 Meter FCC Listed OATS

Frequency range inspected: 0.131 to 30 MHz

Date of Test:	10/21,25; 1997	Manufacturer:	R.F. Technologies
Location:	L.S. Compliance, Inc.	Model No.:	CA9300
	W66 N220 Commerce Court		
	Cedarburg, WI 53012		
Specifications:	Title 47CFR, FCC Part 15.209	Serial No.:	Pre-production
Distance:	10 meters	Configuration:	Plastic frame, double wide
Equipment:	HP 8546A EMI Receiver	Detector(s) Used:	Quasi-peak, average
	EMCO 6502 Active Loop		
	EMCO 3146A Log Periodic		
	EMCO 3110B Biconical		

Readings taken at 10 meters.

Frequency (MHz)	Reading (dBuV/m)	Detectors	15.209 Limit(dBuV/m)	Margin (dB)
0.131	104.91	Avg Amp	113.88	8.97
0.262	40.32	Avg Amp	103.86	63.54
0.393	57.26	Avg Amp	104.34	47.08
0.524	34.1	QP-Amp	61.85	27.75
0.656	54.97	QP-Amp	59.91	4.94
0.786	40.1	QP-Amp	58.32	18.22
0.917	54.33	QP-Amp	57	2.67
1.048	31.81	QP-Amp	55.83	24.02
1.18	40.93	QP-Amp	54.8	13.87
1.31	36.99	QP-Amp	53.89	16.9

Readings taken at 30 meters

Frequency (MHz)	Reading (dBuV/m)	Detectors	15.209 @30m Limit(dBuV/m)	Margin (dB)
0.131	75.7	ave	85.26	9.56

The 30 meter reading taken above is used to confirm the 1/dist^3 scaling factor.

FCC ID: KXU-LFTX1

Measurement of Radiated Emission upon the 10 Meter FCC Listed OATS

Frequency range inspected: 0.131 to 30 MHz

Date of Test:	10/21,25; 1997	Manufacturer:	R.F. Technologies
Location:	L.S. Compliance, Inc.	Model No.:	CA9300
	W66 N220 Commerce Court		
	Cedarburg, WI 53012		
Specifications:	Title 47CFR, FCC Part 15.209	Serial No.:	Pre-production
Distance:	10 meters	Configuration:	Alum. Frame, single wide
Equipment:	HP 8546A EMI Receiver	Detector(s) Used:	Quasi-peak, average
	EMCO 6502 Active Loop		
	EMCO 3146A Log Periodic		
	EMCO 3110B Biconical		

Readings taken at 10 meters

Frequency (MHz)	Reading (dBuV/m)	Detector	15.209 Limit(dBuV/m)	Margin (dB)
0.131	103.1	Average	113.88	10.78
0.262	35	Average	107.86	72.86
0.393	58.6	Average	104.34	45.74
0.524	23.63	Qpeak	61.85	38.22
0.655	55.04	Qpeak	59.91	4.87
0.786	40.87	Qpeak	58.32	17.45
0.917	48.68	Qpeak	57	8.32
1.048	39.42	Qpeak	55.83	16.41
1.179	32.89	Qpeak	54.8	21.91

FCC ID: KXU-LFTX1

Measurement of Electromagnetic Conducted Emission within 3 Meter FCC Listed Chamber

Frequency Range inspected: 0.45 to 30 MHz.

Date of Test:	10/21,25: 1997	Manufacturer:	R.F. Technologies
Location:	L.S. Compliance, Inc.	Model No.:	CA9300
	W66 N220 Commerce Court		
	Cedarburg, WI 53012		
Specifications:	Title 47CFR, FCC Part 15.107	Serial No.:	Pre-production
Distance:	0.8 meter	Configuration:	active
Equipment:	HP 8546A EMI Receiver	Detector(s) Used:	Quasi-peak
	EMCO 3810/2 LISN		

Measurement of Electromagnetic Conducted Emissions taken in the 3 Meter Chamber

Frequency Range inspected: 0.450 to 30 MHz.

Freq. (MHz)	Line	Q-Peak (dBuV/m)	Limit (dBuV/m)	Margin (dB)
0.487	L1	33.56	48	14.44
0.787	L1	27.34	48	20.66
20	L1	29.76	48	18.24
28.01	L1	29.65	48	18.35
0.438	L2	34.99	48	13.01
0.442	L2	34.61	48	13.39
0.461	L2	32.81	48	15.19
0.44	L2	34.85	48	13.15
20	L2	28.58	48	19.42
28.01	L2	31.1	48	16.9

FCC ID: KXU-LFTX1

Measurement of Electromagnetic Radiated Emission within 3 Meter FCC Listed Chamber

Frequency Range inspected: 30 to 2000 MHz

Date of Test:	10/21,25: 1997	Manufacturer:	R.F. Technologies
Location:	L.S. Compliance, Inc.	Model No.:	CA9300
	W66 N220 Commerce Court		
	Cedarburg, WI 53012		
Specifications:	Title 47CFR, FCC Part 15.109	Serial No.:	Pre-production
Distance:	3 meters	Configuration:	standby
Equipment:	HP 8546A EMI Receiver	Detector(s) Used:	Quasi-peak
	EMCO 3115 Double Ridged Waveguide		
	EMCO 3146A Log Periodic		
	EMCO 3110B Biconical		

No significant radiated emissions within 20 dB of the limit could be found.

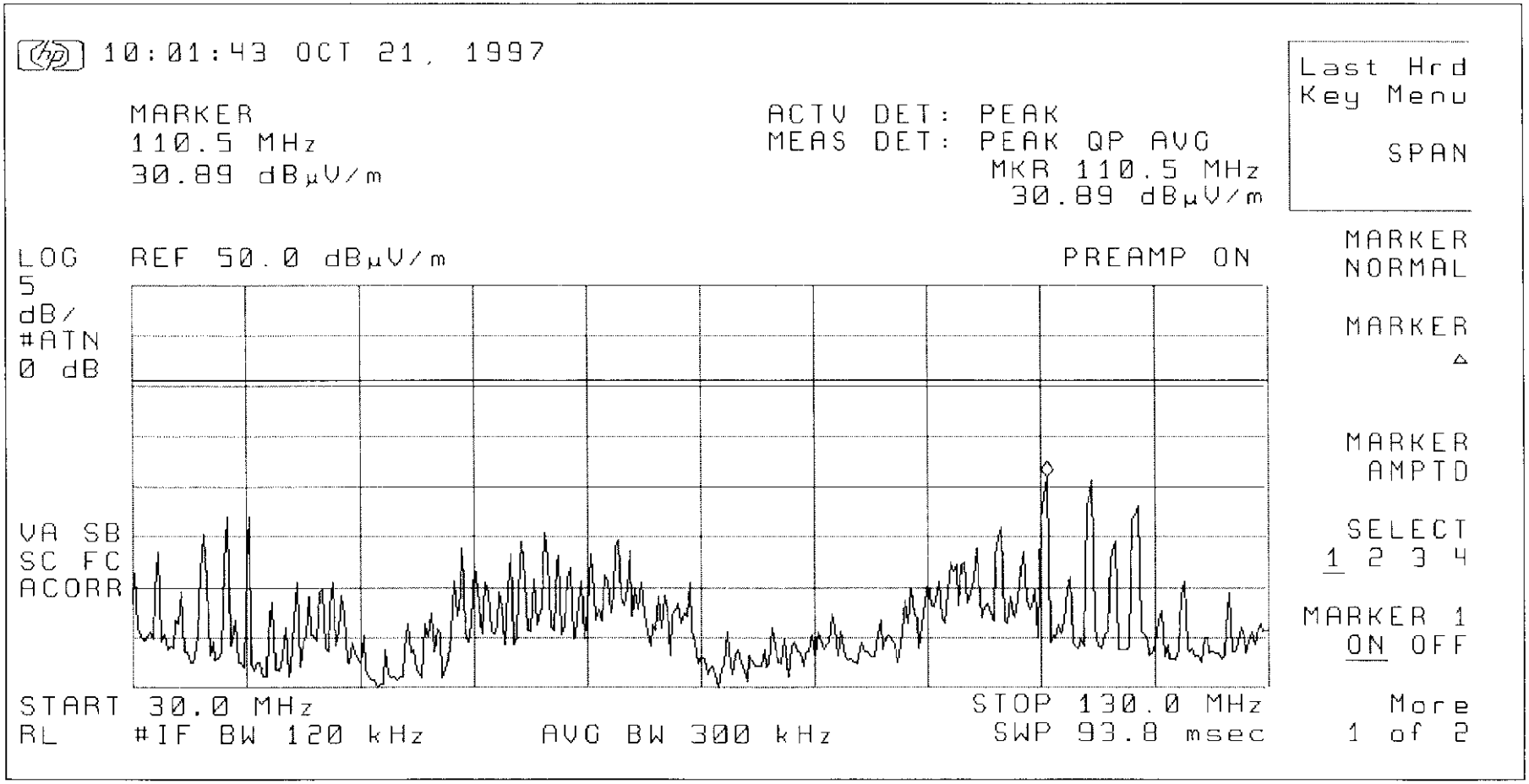
FCC ID: KXU-LFTX1

APPENDIX C:

GRAPHS

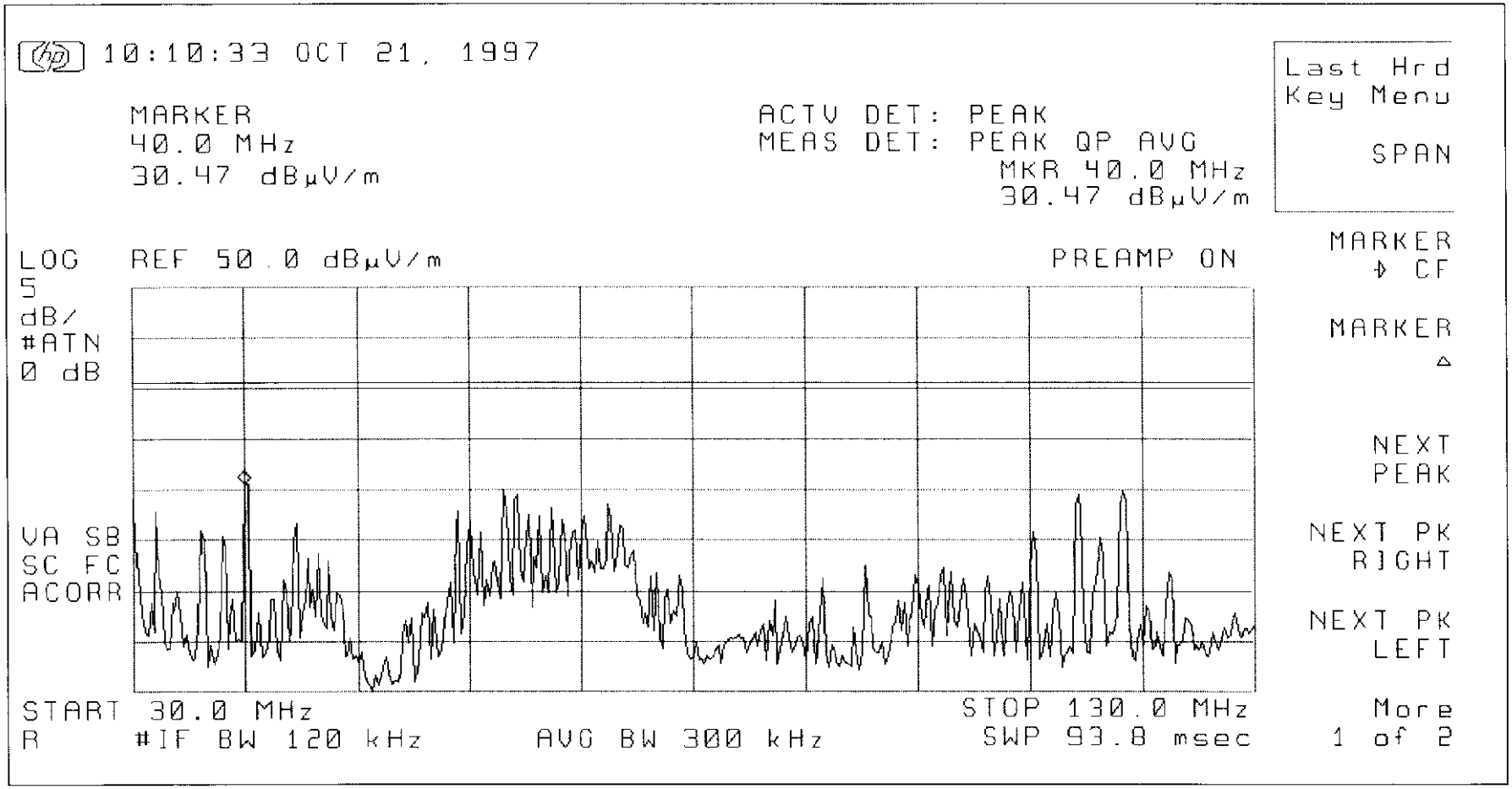
FCC ID: KXU-LFTX1

Signature Scan of the Radiated Emissions of the Plastic Door frame fixture, Horizontal, above 30 MHz



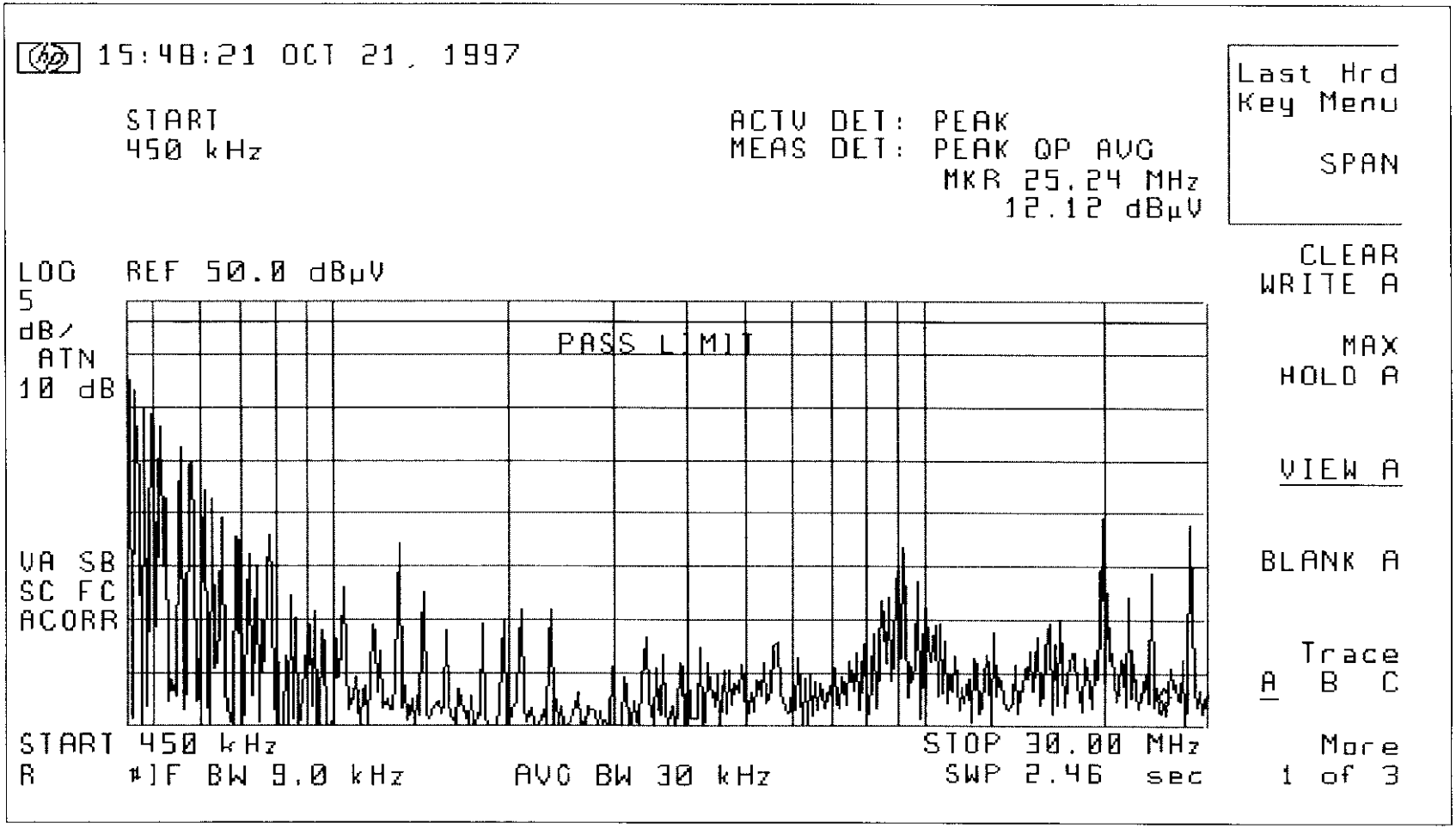
FCC ID: KXU-LFTX1

Signature Scan of the Radiated Emissions of the Plastic Door frame fixture, Vertical, above 30 MHz



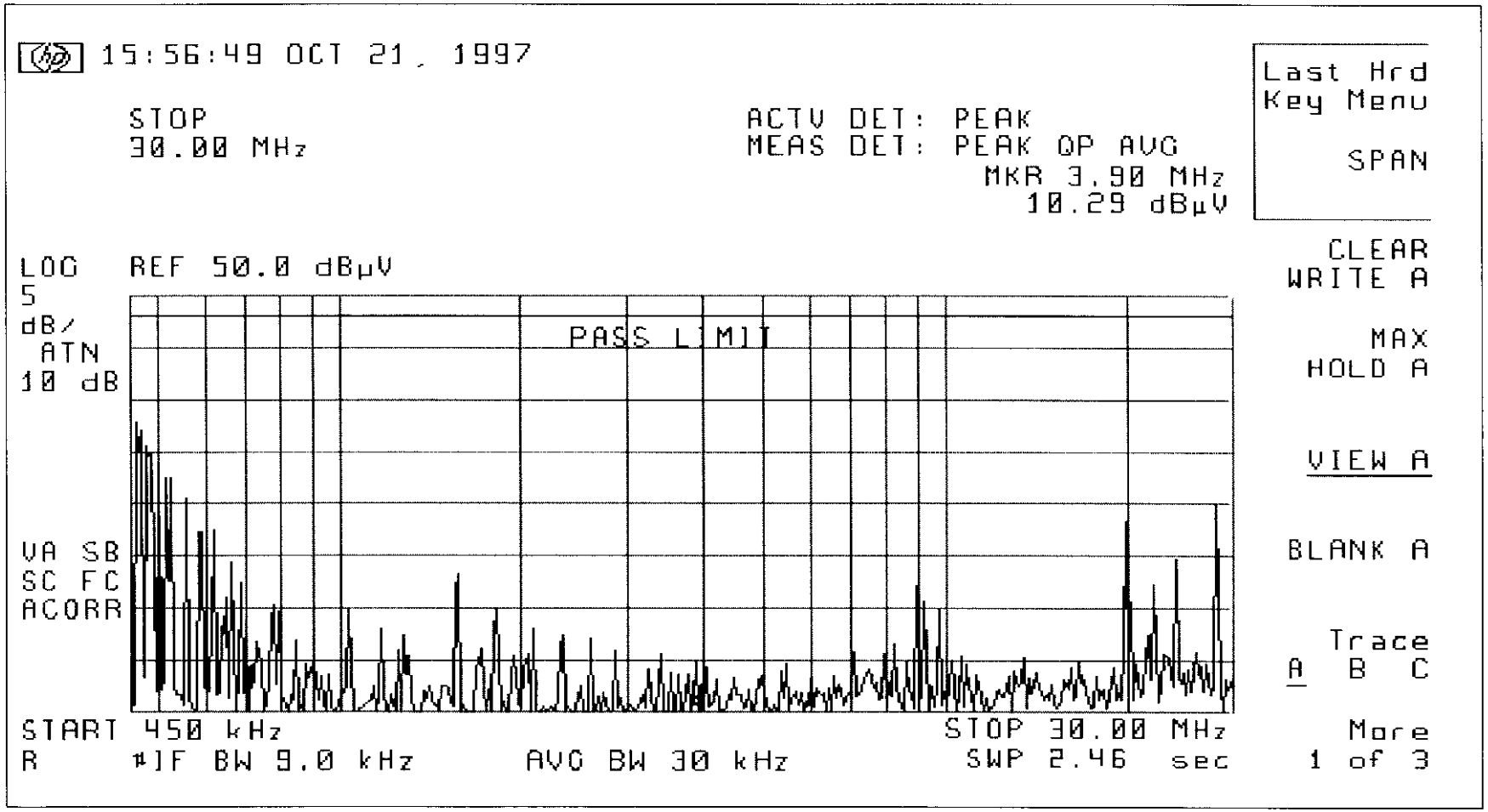
FCC ID: KXU-LFTX1

Signature Scan of the Conducted Emissions of the Plastic Door frame fixture, from 450 kHz to 30 MHz



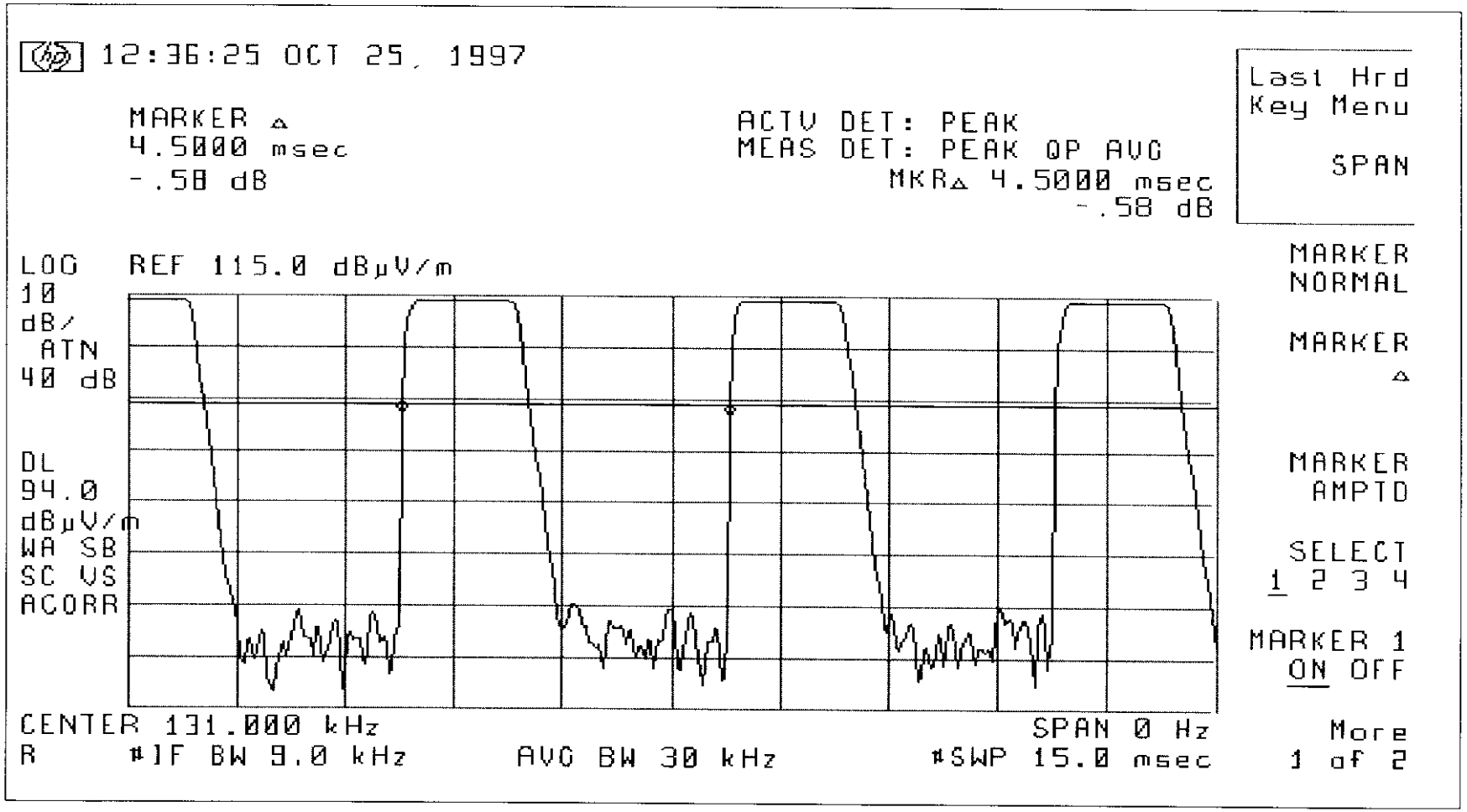
FCC ID: KXU-LFTX1

Signature Scan of the Conducted Emissions of the Plastic Door frame fixture, from 450 kHz to 30 MHz



FCC ID: KXU-LFTX1

Scan of the emissions for the worse case Duty Cycle



FCC ID: KXU-LFTX1

Signature Scan of the Occupied Bandwidth