TÜV PRODUCT SERVICE

EMC EMISSION - TEST REPORT
UNITED STATES STANDARD 47 CFR PART 15, SUBPART C

Test Report File No.	: **S8257-06**	Date of Issue:	02 June 1998
Model / Serial No.	: **K3 / ----**		
Product Type	: Keypad Remote Transmitter		
Applicant	: THE CLICKER CORPORATION		
Manufacturer	: THE CLICKER CORPORATION		
License holder	: THE CLICKER CORPORATION		
Address	: 540 South Andreasen, Suite C		
	: Escondido, CA 92029		
Test Result	: ■ **Positive**	☐ **Negative**	
Test Project Number Reference(s)	: **S201825701-06**		
Total pages - Test Report	: 12		

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TUV Product Service reports apply only to the specific sample tested under stated test conditions. It is the manufacturer's responsibility to assure the continued compliance of production units of this model. TÜV Product Service, Inc. shall have no liability for any deductions, inferences or generalizations drawn by the client or others from TUV Product Service, Inc. issued reports.

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TÜV PRODUCT SERVICE 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone 619 546 3999 FAX 619 546 0364

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DIRECTORY - EMISSIONS
Test Report

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Appendices

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EMISSIONS TEST REGULATIONS :

The emissions tests were performed according to the following regulations:

☐ - EN 50081-1 / 1991

☐ - EN 55011 / 1991 ☐ - Group 1 ☐ - Group 2
☐ - Class A ☐ - Class B

☐ - EN 55013 / 1990

☐ - EN 55014 / 1987 ☐ - Household appliances and similar
☐ - Portable tools
☐ - Semiconductor devices

☐ - EN 55014 / A2:1990

☐ - EN 55014 / 1993 ☐ - Household appliances and similar
☐ - Portable tools
☐ - Semiconductor devices

☐ - EN 55015 / 1987
☐ - EN 55015 / A1:1990
☐ - EN 55015 / 1993

☐ - EN 55022 / 1987 ☐ - Class A ☐ - Class B

☐ - EN 55022 / 1994 ☐ - Class A ☐ - Class B

☐ - BS
☐ - VCCI ☐ - Class A ITE ☐ - Class B ITE

☐ - 47 CFR Part 15, Subpart B

☐ - 107(b)
☐ - 107(a)
☐ - 107(e) ☐ - Class A ☐ - Class B

☐ - 109(b)
☐ - 109(a)
☐ - 109(g) ☐ - Class A ☐ - Class B

■ - 47 CFR Part 15, Subpart C

■ - 207(a)
■ - 209(a)
■ - 231(b)
■ - 231(c)

☐ - AS/NZS 3548: 1995 ☐ - Class A ☐ - Class B

☐ - CISPR 11 (1990) ☐ - Group 1 ☐ - Group 2
☐ - Class A ☐ - Class B

☐ - CISPR 22 (1993) ☐ - Class A ☐ - Class B

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Environmental Conditions In The Laboratory:

	Actual
Temperature:	: 23 °C
Relative Humidity:	: 50 %
Atmospheric Pressure:	: 100.0 kPa

Power Supply Utilized:

Power supply system : Battery

Symbol Definitions:

■ - Applicable
☐ - Not Applicable

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Emissions Test Conditions: CONDUCTED EMISSIONS (Interference Voltage)

The *CONDUCTED EMISSIONS (INTERFERENCE VOLTAGE)* measurements were performed at the following test location:

■ - Test not performed - see remarks

☐ - SR-2, Shielded Room, 12' x 24' x 10', Metal Chamber
☐ - SR-3, Shielded Room, 12' x 20' x 8', Metal Chamber
☐ - SR-4, Shielded Room, 10' x 17' x 8', Copper Screen Chamber
☐ - SR-5, Shielded Room, 16' x 28' x 15', Metal, Semi-Anechoic Chamber
☐ - CSR-1, Shielded Room, 10' x 7' x 7', Metal Chamber

Test Equipment Used :

	Model No.	Prop. No.	Description	Manufacturer	Serial No.
☐ -	NM-7A, NM-17/27, NM-37/57, NM-67, CCA-7, & H/P 9836 HP-1B Computer	156, 162-166	Automated RFI Measurement System (ARMS), NO. 1	Eaton/Ailtech	(multiple)
☐ -	NM-17/27, NM-37/57, CA-7, and H/P 9826 Computer	168, 170, 177, 178	Automated RFI Measurement System (ARMS), NO. 2	Eaton/Ailtech	(multiple)
☐ -	H/P Spectrum Analyzer, Model 8568B; Display Section RF Analyzer Section; H/P 85650A, Quasi-Peak Adapter H/P Computer System, Model 310 with HP 85869A Software	187, 188	Automated RFI Measurement System (ARMS)	Various	(multiple)
☐ -	LISN-3, 50 A	262-263	Power Mains Network (LISN), 50 µH/250 µH/50 Ω/0.25 µF	Fischer Custom Communications, Inc.	3-4
☐ -	LISN-3, 50 A	264, 265	Power Mains Network (LISN), 50 µH/250 µH/50 Ω/0.25 µF	Fischer Custom Communications, Inc.	5-6
☐ -	LISN-2, 25 A	413	Power Mains Network (LISN), 50 µH/250 µH/50 Ω/0.25 µF	Fischer Custom Communications, Inc.	7
☐ -	LISN-2, 25 A	--	Power Mains Network (LISN), 50 µH/250 µH/50 Ω/0.25 µF	Fischer Custom Communications, Inc.	7
☐ -	FCC-LISN-50-25-2	553	Power Mains Network (LISN), 50 µH/250 µH/50 Ω/0.25 µF	Fischer Custom Communications, Inc.	112
☐ -	FCC-LISN-50-25-2	552	Power Mains Network (LISN), 50 µH/250 µH/50 Ω/0.25 µF	Fischer Custom Communications, Inc.	113
☐ -	8012-50-R-12-BNC	266	LISN, 50 µH/50 Ω/0.1 µF	Solar Electronics Co.	--
☐ -	9252-50-R-24-BNC	458	LISN, 50 µH /250 µH/50 Ω/ 0.25 µF	Solar Electronics Co.	941719
☐ -	9252-50-R-24-BNC	457	LISN, 50 µH /250 µH/50 Ω/ 0.25 µF	Solar Electronics Co.	941720
☐ -	MDS-21	277	Absorbing Clamp	Rohde & Schwarz	821023
☐ -	ESHS 20	428	EMI Test Receiver	Rohde & Schwarz	837055/00 1
☐ -	ESHS 30	459	EMI Test Receiver	Rohde & Schwarz	832354/00 4
☐ -	CAT-20	598	20 dB Attenuator	Mini-Circuits	--
☐ -	CAT-20	615	20 dB Attenuator	Mini-Circuits	--

Remarks: EUT battery operated.

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Emissions Test Conditions: RADIATED EMISSIONS (Magnetic Field)

The *RADIATED EMISSIONS (MAGNETIC FIELD)* measurements were performed at the following test location:

■ - Test not applicable

☐ - SR-2, Shielded Room, 12' x 24' x 10', Metal Chamber
☐ - SR-3, Shielded Room, 12' x 20' x 8', Metal Chamber
☐ - SR-4, Shielded Room, 10' x 17' x 8', Copper Screen Chamber
☐ - SR-5, Shielded Room, 16' x 28' x 15', Metal, Semi-Anechoic Chamber
☐ - TR-1, Shielded Room, 16.5' x 10' x 7.5', Copper Screen Chamber
☐ - CSR-1, Shielded Room, 10' x 7' x 7', Metal Chamber

Testing was performed at a test distance of :

☐ - 3 meters
☐ - 30 meters

NOT APPLICABLE

Test Equipment Used :

	Model No.	Prop. No.	Description	Manufacturer	Serial No.
☐ -	NM-7A, NM-17/27, NM-37/57, NM-87, CCA-7, and H/P 9836 HP-1B Computer	156, 162-166	Automated RFI Measurement System (ARMS), NO. 1	Eaton/Ailtech	(multiple)
☐ -	NM-17/27, NM-37/57, CA-7, & H/P 9836 Computer	168, 170, 177, 178	Automated RFI Measurement System (ARMS), NO. 2	Eaton/Ailtech	(multiple)
☐ -	AT-205/URM-6	201	Loop Antenna	Eaton/Ailtech	64090
☐ -	94593-1	205	Loop Antenna	Eaton/Ailtech	0264

Remarks: _____

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Emissions Test Conditions: RADIATED EMISSIONS (Electric Field)

The *RADIATED EMISSIONS (ELECTRIC FIELD)* measurements, in the frequency range of 30 MHz-1000 MHz, were tested in a horizontal and vertical polarization at the following test location :

☐ - **Test not applicable**

☐ - Roof (Small Open Area Test Site)
☐ - Canyon #1 (10- and 30-Meter Open Area Test Site), Carroll Canyon, San Diego
■ - Canyon #2 (3- and 10-Meter Open Area Test Site), Carroll Canyon, San Diego

Testing was performed at a test distance of :

■ - 3 meters
☐ - 10 meters
☐ - 30 meters

Test Equipment Used :

	Model No.	Prop. No.	Description	Manufacturer	Serial No.
☐ -	NM-37/57A	420	OATS measurement set (Roof)	Eaton/Ailtech	0561-09261
	CCA-7	373			0773-03117
☐ -	NM-37/57	171	OATS measurement set (Canyon)	Eaton/Ailtech	0709-82078
	CCA-7	172			0187-0322
☐ -	HFH 2-Z2	208	Antenna, Loop	Rohde & Schwarz	880
☐ -	3104	235	Antenna, Biconical	EMCO	3031
☐ -	3110	451	Antenna, Biconical	EMCO	1378
☐ -	94455-1	231	Antenna, Biconical	Eaton/Ailtech	0811
■ -	3110B	491	Antenna, Biconical	EMCO	9508-2
☐ -	CBL6111	460	Antenna, Bilog	Chase	1013
☐ -	CBL6111	461	Antenna, Bilog	Chase	1291
☐ -	3146	242	Antenna, Log Periodic Dipole	EMCO	1597
☐ -	3146	243	Antenna, Log Periodic Dipole	EMCO	106X
■ -	3146	244	Antenna, Log Periodic Dipole	EMCO	1063
☐ -	7405	570	Loop Probes	EMCO	9104-1959
☐ -	8566B	404	Spectrum Analyzer	Hewlett Packard	2311A02209
☐ -	85662B	406	Spectrum Analyzer Display	Hewlett Packard	2309A04682
☐ -	ESVS 30	427	EMI Test Receiver	Rohde & Schwarz	830350/006
■ -	ESVS 30	466	EMI Test Receiver	Rohde & Schwarz	833825/003

Remarks: _____

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Emissions Test Conditions: INTERFERENCE POWER

The *INTERFERENCE POWER* measurements were performed by using the absorbing clamp on the mains and interface cables in the frequency range 30 MHz - 300 MHz at the following test location :

■ - Test not applicable

☐ - SR-2, Shielded Room, 12' x 24' x 10', Metal Chamber
☐ - SR-3, Shielded Room, 12' x 20' x 8', Metal Chamber
☐ - SR-4, Shielded Room, 10' x 17' x 8', Copper Screen Chamber
☐ - SR-5, Shielded Room, 16' x 28' x 15', Metal, Semi-Anechoic Chamber
☐ - CSR-1, Shielded Room, 10' x 7' x 7', Metal Chamber

NOT APPLICABLE

Test Equipment Used :

	Model No.	Prop. No.	Description	Manufacturer	Serial No.
☐ -	MDS-21	277	Absorbing Clamp	Rohde & Schwarz	821023
☐ -	NM-7A, NM-17/27, NM-37/57, NM-67, CCA-7, & H/P 9836 HP-1B Computer	156, 169-166	Automated RFI Measurement System (ARMS), NO. 1	Eaton/Ailtech	(multiple)
☐ -	NM-17/27, NM-37/57, CA-7, & H/P 9826 Computer	168, 170, 177, 178	Automated RFI Measurement System (ARMS), NO. 2	Eaton/Ailtech	(multiple)
☐ -	H/P Spectrum Analyzer, Model 8566B, Display Section RF Analyzer Section, H/P 85650A, Quasi-Peak Adapter H/P Computer System, Model 310 with HP 85869A Software	187, 188	Automated RFI Measurement System (ARMS)	Hewlett Packard	2304A04531 2304A02500 2811A01325
☐ -	ESVS 30	427	EMI Test Receiver	Rohde & Schwarz	830350/006
☐ -	ESVS 30	466	EMI Test Receiver	Rohde & Schwarz	830350/003

Remarks: _____

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Emissions Test Conditions: RADIATED EMISSIONS (FCC Part 15, 15.231)

The *EQUIVALENT RADIATED EMISSIONS* measurements were performed at the following test location :

☐ - **Test not applicable**

■ - Roof (Small Open Area Test Site)
☐ - Canyon #1 (10- and 30-Meter Open Area Test Site), Carroll Canyon, San Diego
☐ - Canyon #2 (3- and 10-Meter Open Area Test Site), Carroll Canyon, San Diego

Testing was performed at a test distance of:

☐ - 1 meters
■ - 3 meters
☐ - 10 meters

Test Equipment Used :

	Model No.	Prop. No.	Description	Manufacturer	Serial No.
■ -	8566	407	Spectrum Analyzer	Hewlett Packard	2311A02209
☐ -	85662B	406	Spectrum Analyzer Display	Hewlett Packard	2309A04682
☐ -	3115	453	Antenna, Double Ridge Guide	EMCO	9412-4363
■ -	3115	251	Antenna, Double Ridge Guide	EMCO	2495
■ -	3146	418	Antenna, Log Periodic Dipole	EMCO	--
■ -	3118	451	Broadband Antenna	EMCO	--
■ -	--	--	Miteq LNZ, 2 - 8 GHz	Miteq, Inc.	--
☐ -	91888-2	252	Horn Antenna (1 to 2 GHz)	Eaton	101
☐ -	91889-2	253	Horn Antenna (2 to 3.6 GHz)	Eaton	101
☐ -	91892-1	254	Reflector Antenna (3.6 to 18 GHz)	Eaton	--
☐ -	94613-1	255	Horn Antenna (3.6 to 7.6 GHz)	Eaton	--
☐ -	91891-2	256	Horn Antenna (7.3 to 12 GHz)	Eaton	--
☐ -	94614-1	257	Horn Antenna (12 to 18 GHz)	Eaton	--

Remarks: _____

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Equipment Under Test (EUT) Test Operation Mode - Emissions Tests :

The equipment under test was operated under the following conditions during emissions testing:

☐ - Standby

☐ - Test Program (H - Pattern)

☐ - Test Program (Color Bar)

☐ - Test Program (Customer Specified)

☐ - Practice Operation

☐ - Normal Operating Mode

■ - Continuous transmit

Configuration of the equipment under test:

☐ - See Constructional Data Form in Appendix B - Page B2

■ - See Product Information Form(s) in Appendix B - Page B2

The following peripheral devices and interface cables were connected during the testing:

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - unshielded power cable

☐ - unshielded cables

☐ - shielded cables MPS.No.: _____

☐ - customer specific cables

☐ - _____

☐ - _____

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Emissions Test Results:

Conducted Emissions, 10/150/450 kHz - 30 MHz

☐ - PASS ☐ - FAIL ■ - NOT APPLICABLE

Minimum limit margin _____ dB at _____ MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks: Battery operated EUT.

Radiated Emissions (Magnetic Field), 10 kHz - 30 MHz

☐ - PASS ☐ - FAIL ■ - NOT APPLICABLE

Minimum limit margin _____ dB at _____ MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks: _____

Radiated Emissions (Electric Field), 30 MHz - 1000 MHz

■ - PASS ☐ - FAIL ☐ - NOT APPLICABLE

Minimum limit margin 16.5 dB at 40 MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks: _____

Interference Power at the Mains and Interface Cables, 30 MHz - 300 MHz

☐ - PASS ☐ - FAIL ■ - NOT APPLICABLE

Minimum limit margin _____ dB at _____ MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks: _____

Equivalent Radiated Emissions

■ - PASS ☐ - FAIL ☐ - NOT APPLICABLE

Minimum limit margin 0.2 dB at 780 MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks: _____

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GENERAL REMARKS:

(*) Conducted Emissions - EUT battery operated.

SUMMARY:

All tests according to the regulations cited on page 3 were

☐ - Performed

■ - **Not** Performed*

The Equipment Under Test

■ - **Fulfills** the general approval requirements cited on page 3.

☐ - **Does not** fulfill the general approval requirements cited on page 3.

Statement of Measurement Uncertainty

The data and results referenced in this document are true and accurate. There may be some degree or level of measurement uncertainty. As EN 45001 does not allow recommendations to be included in the test report, the reader is encouraged to request a copy of the TÜV policy concerning pass or fail judgment with respect to possible measurement uncertainties.

Equipment Received Date: 28 May 1998

Testing Start Date: 28 May 1998

Testing End Date: 29 May 1998

- TÜV PRODUCT SERVICE, INC. -

Responsible Engineer:

Jim Owen
(EMC Engineer)

Responsible Test Engineer:

Dave Marshall
(EMC Test Engineer)

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Technical Documentation

Test Data Sheets

and

Test Setup Drawing(s)

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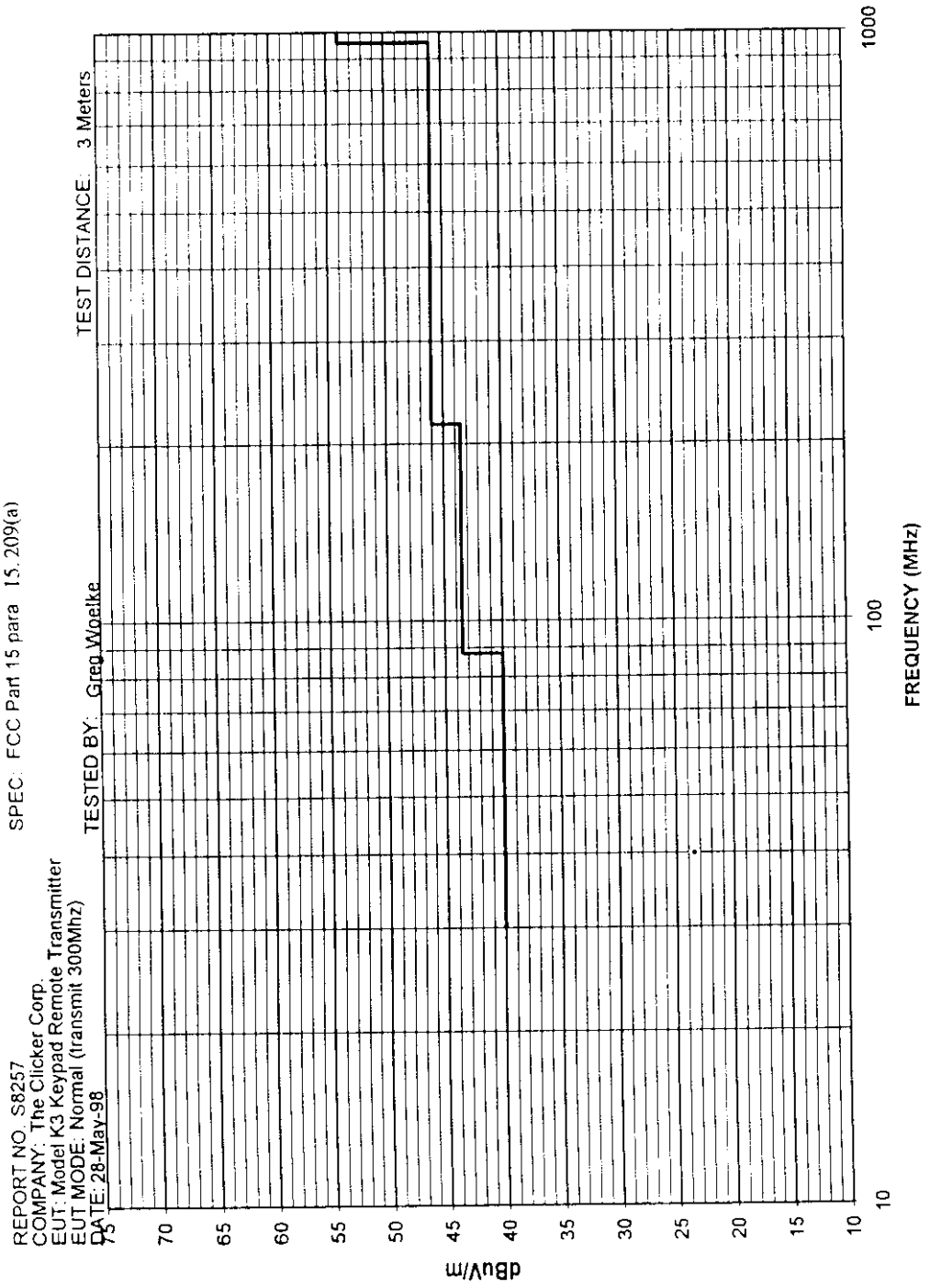

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TÜV PRODUCT SERVICE

REPORT No: S8257 SPEC: FCC Part 15 para 15. 209(a)

CUSTOMER: The Clicker Corp. TEST DIST: 3 Meters

E U T: Model K3 Keypad Remote Transmitter TEST SITE: 2

EUT MODE: Normal (transmit 300Mhz) BICONICAL: 491

DATE: 28-May-98 TESTED BY: Greg Woelke LOG PERIODIC: 244

NOTES: Quasi-Peak with 120 KHz measurement bandwidth. RCVR: 466

Battery Powered

EUT MARGIN -16.5 dB at 40 MHz ver 1.6

FREQUENCY (MHz)	VERTICAL measured (dBuv)	HORIZONTAL measured (dBuV)	CORRECTION FACTOR (dB/m)	MAXIMUM CORRECTED (dBuV/m)	SPECIFIED LIMIT (dBuV/m)	EUT MARGIN (dB)	EUT ROTATION (degrees)	ANTENNA HEIGHT (meters)
40.00	10	-2	13.5	23.5	40	-16.5	190	1

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REPORT No: S-8257 TESTED BY: dm SPEC: FCC Part 15 para 15.231(b)

CUSTOMER: The Clicker Corporation TEST DIST: 3 Meters

E U T: Keypad remote xmtr, Mdl K3 TEST SITE: 3

EUT MODE: continous transmit BICONICAL: N/A

DATE: 29-May-98 LOG PERIODIC: 418

NOTES: Duty Cycle= 31% OTHER: 251
no measurable harmonics found above 2100 MHz
RBW & VBW 1 MHz

FREQ (MHz)	VERTICAL (dBuv) pk	av	HORIZONTAL (dBuv) pk	av	CORRECTION FACTOR (dB/m)	MAX LEVEL (dBuV/m) pk	av	SPEC LIMIT (dBuV/m) pk	av	MARGIN (dB) pk	av	EUT Rotatio	Antenna Height	
300	51.5	41.3	49	38.8	17.4	68.9	58.7	94.6	74.6	-25.7	-16	0	2.5	
600	29.8	19.6	27	16.8	22.9	52.7	42.5	74.6	54.6	-21.9	-12	270	1.5	
900	17.6	7.43	23.8	13.6	27.7	51.5	41.3	74.6	54.6	-23.1	-13			
1200	-7.7	-17.9	-7.9	-18.1	28.8	21.1	10.9	74	54	-52.9	-43			
1500	7.7	-2.47	-2.8	-13	30.5	38.2	28.0	74	54	-35.8	-26			
1800	7.6	-2.57	-4.1	-14.3	32.4	40.0	29.8	74.7	54.7	-34.7	-25			
2100	-5	-15.2	-5.7	-15.9	34.0	29.0	18.9	74.7	54.7	-45.7	-36			
2400					35.4									

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REPORT No: S-8257 TESTED BY: dm SPEC: FCC Part 15 para 15.231(b)

CUSTOMER: The Clicker Corporation TEST DIST: 3 Meters

E U T: Keypad remote xmtr Model K3 TEST SITE: 3

EUT MODE: continous transmit BICONICAL: N/A

DATE: 29-May-98 LOG PERIODIC: 418

NOTES: Duty Cycle= 31% OTHER: 251

no measurable harmonics found at 3m above 2170 MHz

RBW & VBW 1 MHz

FREQ (MHz)	VERTICAL (dBuv) pk	av	HORIZONTAL (dBuv) pk	av	CORRECTION FACTOR (dB/m)	MAX LEVEL (dBuV/m) pk	av	SPEC LIMIT (dBuV/m) pk	av	MARGIN (dB) pk	av	EUT Rotatio	Antenna Height	
310	50.9	40.7	53.9	43.7	17.3	71.2	61.0	95.3	75.3	-24.1	-14	0	2.5	
620	31.1	20.9	28.7	18.5	22.7	53.8	43.6	75.3	55.3	-21.5	-12	270	1.5	
930	16.9	6.73	22.8	12.6	28.0	50.8	40.6	75.3	55.3	-24.6	-15			
1240	-7.7	-17.9	-11.3	-21.5	29.0	21.3	11.2	74	54	-52.7	-43			
1550	4.4	-5.77	-7.7	-17.9	30.8	35.2	25.0	74	54	-38.8	-29			
1860	8.8	-1.37	-7.2	-17.4	32.7	41.5	31.4	75.3	55.3	-33.8	-24			
2170	-6.6	-16.8	-9.3	-19.5	34.3	27.7	17.6	75.3	55.3	-47.6	-38			
2480					35.7									

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TÜV PRODUCT SERVICE

REPORT No: S-8257 TESTED BY: dm SPEC: FCC Part 15 para 15.231(b)

CUSTOMER: The Clicker Corporation TEST DIST: 3 Meters

E U T: Keypad remote xmtr, Model K3 TEST SITE: 3

EUT MODE: continous transmit BICONICAL: N/A

DATE: 29-May-98 LOG PERIODIC: 418

NOTES: Duty Cycle= 21% OTHER: 251

no measurable harmonics found above 2340 MHz at 3 meters

RBW & VBW 1 MHz

FREQ (MHz)	VERTICAL (dBuv)		HORIZONTAL (dBuv)		CORRECTION FACTOR (dB/m)	MAX LEVEL (dBuV/m)		SPEC LIMIT (dBuV/m)		MARGIN (dB)		EUT Rotatio	Antenna Height	
	pk	av	pk	av		pk	av	pk	av	pk	av			
390	64.1	50.5	71.9	58.3	18.6	90.5	76.9	99.2	79.2	-8.7	-2.3	0	2.5	
780	38.1	24.5	46.8	33.2	25.8	72.6	59.0	79.2	59.2	-6.6	-0.2	270	1.5	
1170	26.7	13.1	29.8	16.2	28.7	58.5	44.9	74	54	-15.5	-9.1	270	1	
1560	13.5	-0.06	8.9	-4.66	30.9	44.4	30.8	74	54	-29.6	-23			
1950	4.7	-8.86	5.2	-8.36	33.3	38.5	24.9	79.2	59.2	-40.7	-34			
2340	-4.8	-18.4	-6	-19.6	35.1	30.3	16.7	74	54	-43.7	-37			
2730					36.4									

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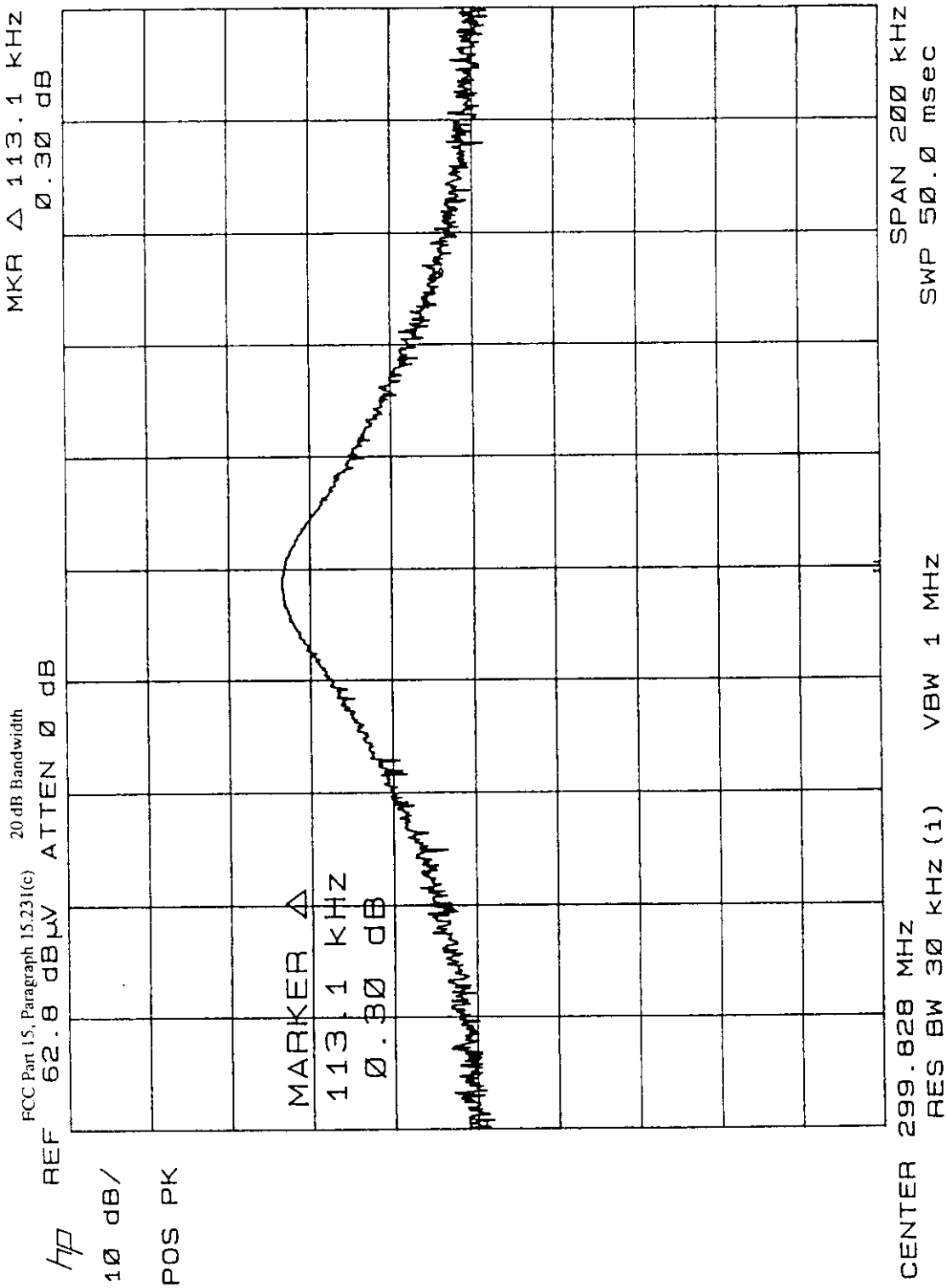
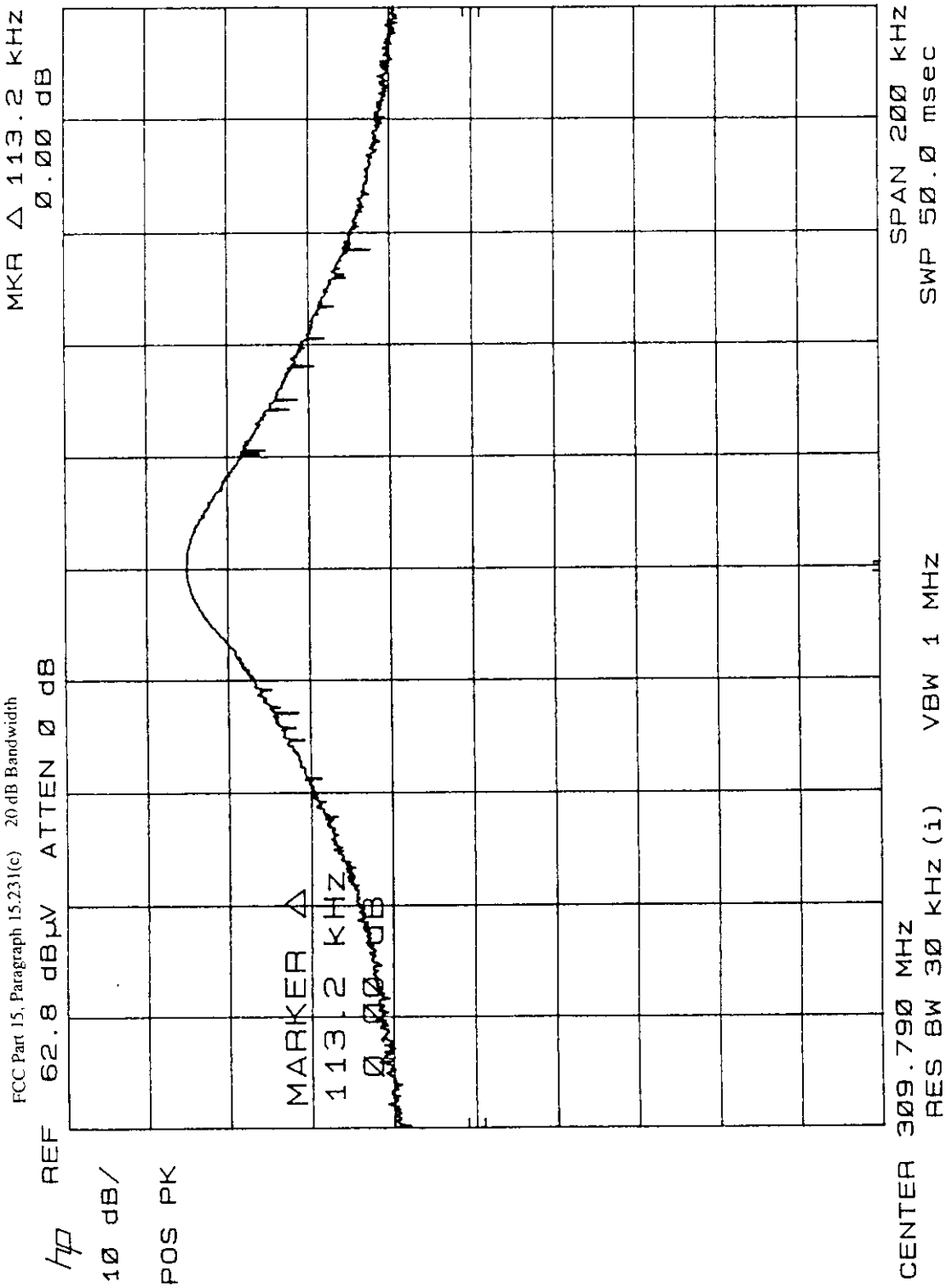
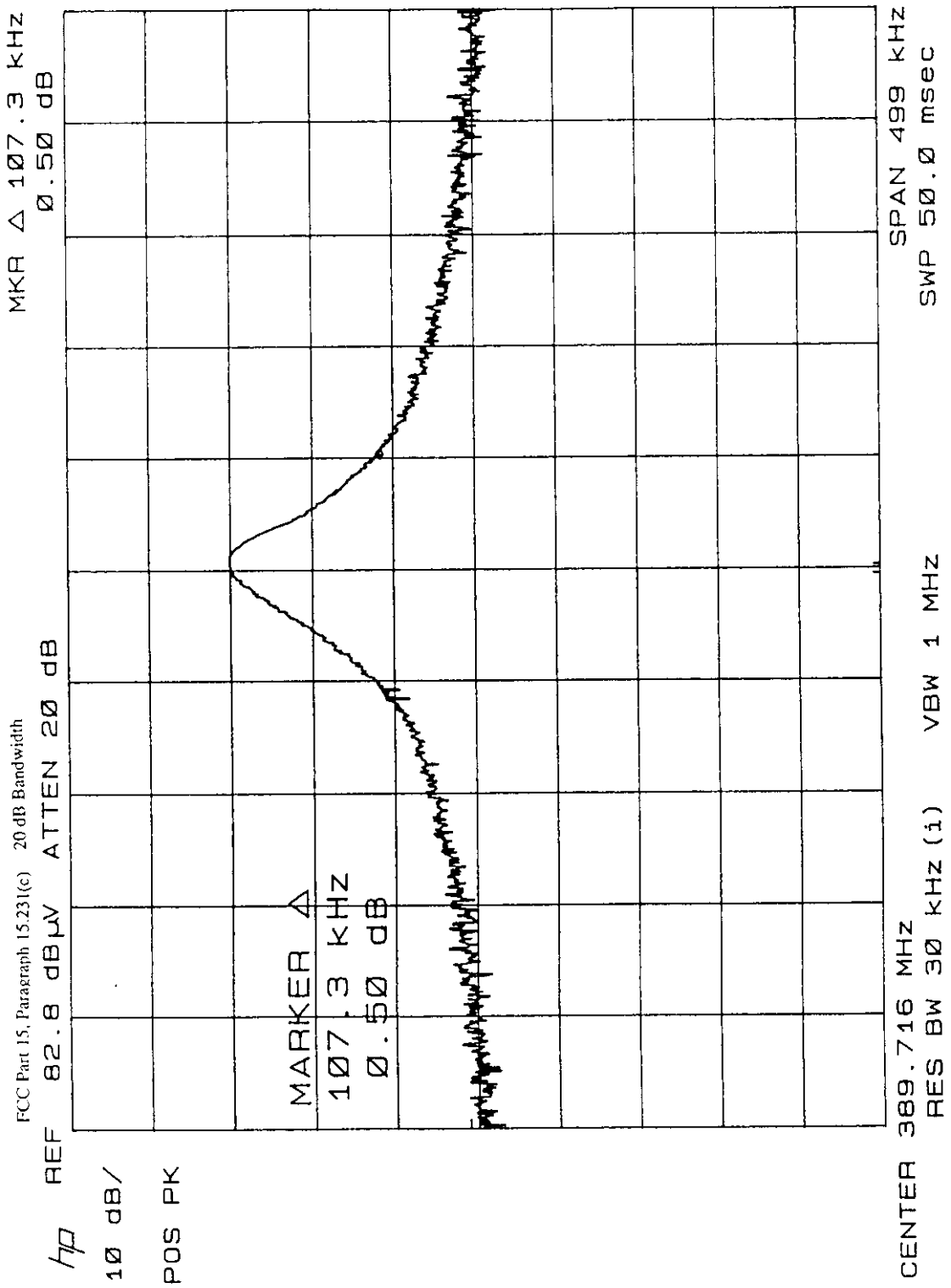

FCC Part 15, Paragraph 15.231(c) 20 dB Bandwidth
REF 62.8 dBµV ATTEN Ø dB
10 dB/
POS PK
MARKER Δ
113.1 kHz
Ø.3Ø dB
MKR Δ 113.1 kHz
Ø.3Ø dB
SPAN 2ØØ kHz
SWP 5Ø.Ø msec
CENTER 299.828 MHz
RES BW 3Ø kHz (i) VBW 1 MHz


FCC Part 15, Paragraph 15.231(c) 20 dB Bandwidth
REF 62.8 dBµV ATTEN Ø dB
10 dB/
POS PK
MKR Δ 113.2 kHz
Ø.ØØ dB
MARKER Δ
113.2 kHz
Ø.ØØ dB
CENTER 309.790 MHz
RES BW 30 kHz (i) VBW 1 MHz
SPAN 200 kHz
SWP 50.Ø msec



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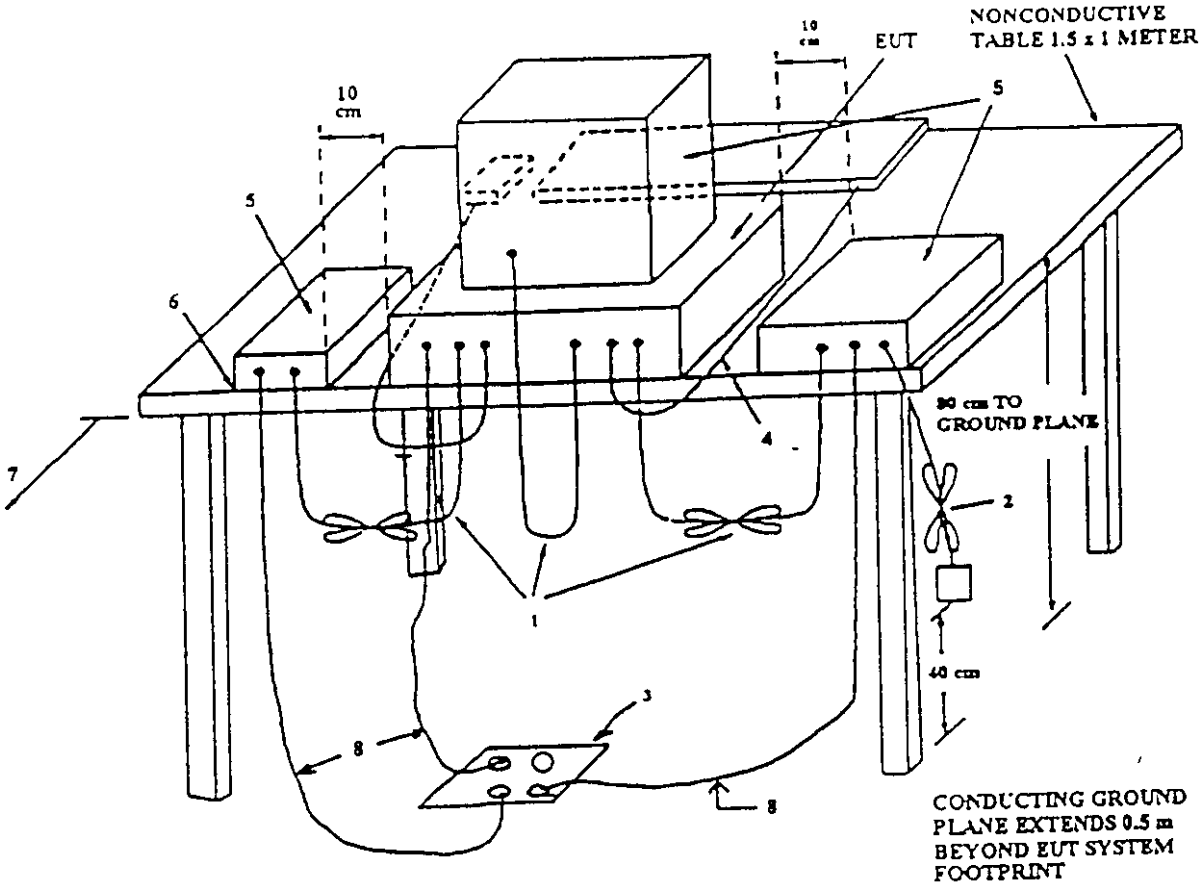
TÜV PRODUCT SERVICE

Radiated Emission Test Setup, 30 to 1,000 MHz



LEGEND:

1. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth forming a bundle 30 to 40 cm long, hanging approximately in the middle between ground plane and table.
2. I/O cables that are connected to a peripheral shall be bundled in center. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1 m.
3. If LISNs are kept in the test setup for radiated emissions, it is preferred that they be installed under the ground plane with the receptacle flush with the ground plane.
4. Cables of hand-operated devices, such as keyboards, mouses, etc., have to be placed as close as possible to the controller.
5. Non-EUT components of EUT system being tested.
6. The rear of all components of the system under test shall be located flush with the rear of the table.
7. No vertical conducting wall used.
8. Power cords drape to the floor and are routed over to receptacle.

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TÜV PRODUCT SERVICE

Appendix D

Supplemental Information

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TÜV PRODUCT SERVICE

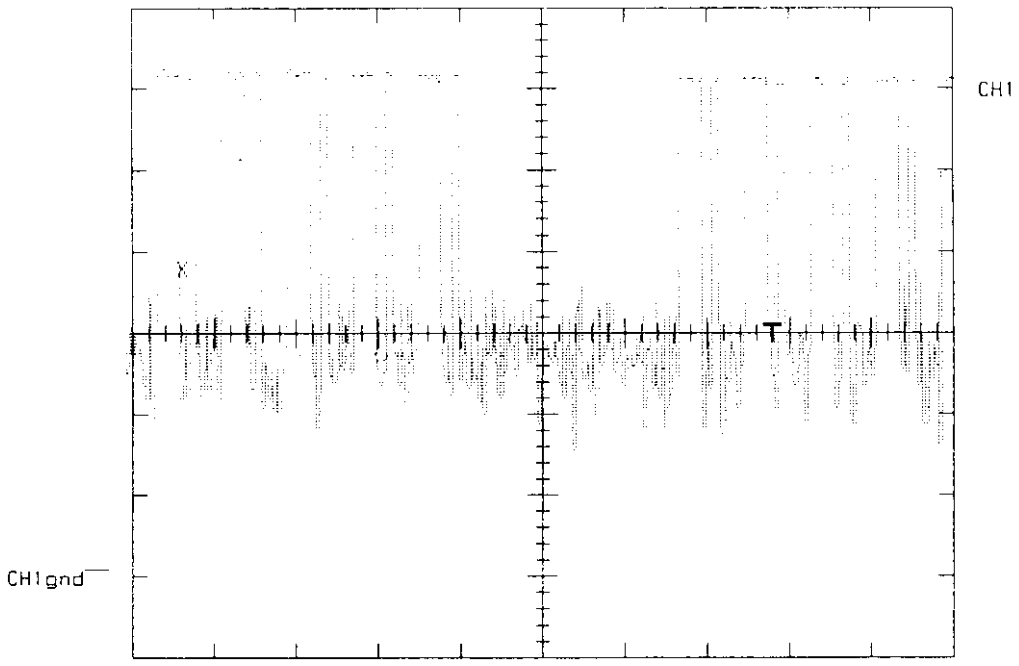
Clicker Corporation

Test: Duty Cycle
Date: May 28, 1998

f_o = 300 MHz

CH1 100mV A 5ms 214mV EXT1

mW



CH1 FREQ = 67.1 Hz
CH1 RMS = 325.50mV
CH1 PER = 14.9ms

Duty cycle = time on / period
= [(1.5ms x 5) + (0.5 x 5)] / 32.5
= $\frac{10.0}{32.5}$ = 31%

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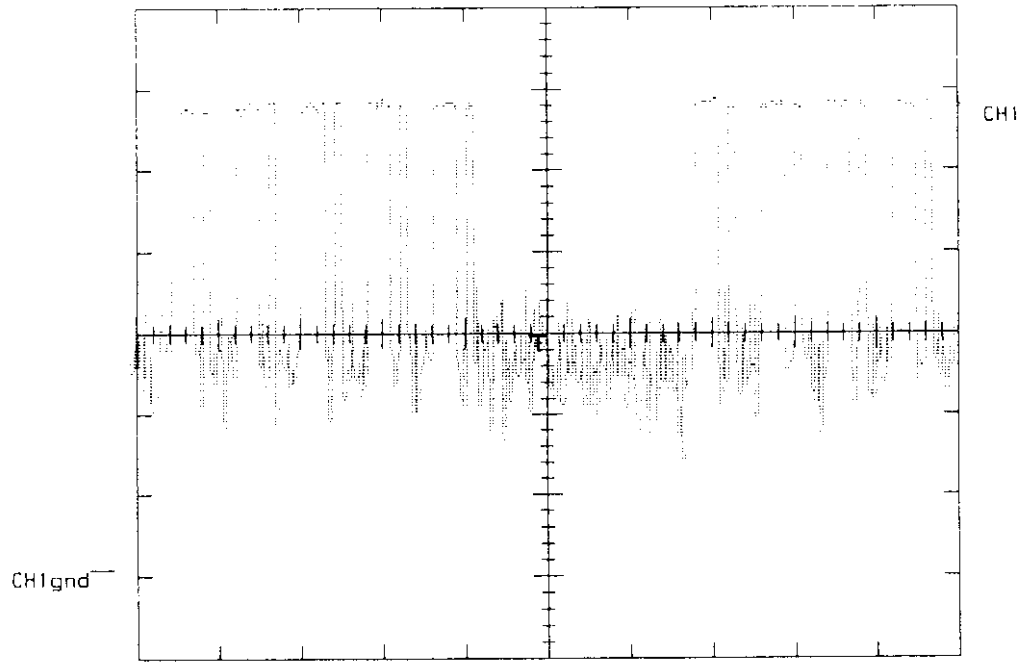
TÜV PRODUCT SERVICE

Clucker Corporation

$f_o = 310$ MHz

CH1 100mV A 5ms 366mV EXT
MW



CH1 FREQ = 125 Hz
CH1 RMS = 447.05mV
CH1 PER = 8.00ms

Duty cycle = time on/period
$= [[1.5\text{ms} \times 5) + (5 \times 5)]/32$
$= \frac{10.0}{32} = 31\%$

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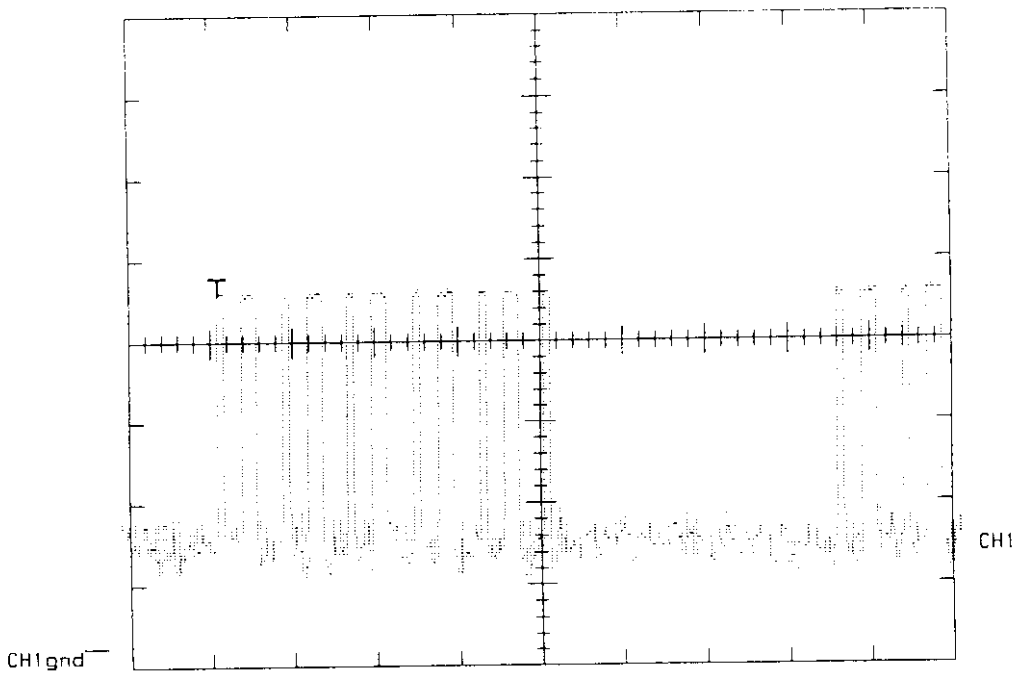
TÜV PRODUCT SERVICE

Clucker Corporation

f_o = 390 MHZ

CH1 200mV A 10ms 400mV VERT



LO RES? CH1 FREQ = 336 Hz
CH1 RMS = 591.22mV
LO RES? CH1 PER = 2.98ms

Duty cycle = time on/period
= [(2ms x 5) + (1ms x 6)] / 75
= 16/75 = 21%

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Strategic Advisory Services

6067 Dassia Way
Oceanside, CA 92056
(760) 726-9943

FCC ID: MJNK3

COMPONENT LIST

* = SMD (surface mount device)

P/N	Type	Description	Count	Mfg. P/N
100-007	Resistor	100k, 1/10w, 5% SMT	8	CR0805-1003FTR
100-008	Resistor	10k, 1/10w, 5% SMT	10	CR0805-1002FTR
100-009	Resistor	1M, 1/10w, 5% SMT	1	CR0805-1004FTR
100-010	Resistor	330, 1/10w, 1% SMT	2	CR0805-3301JTR
200-002	Cap	CAP, VAR, 2.8-10PF	1	GKG10011 / SG1002-ND
200-008	Cap	CAP, .1uf SMT	3	GRM42-6X7R104J050BL
200-009	Cap	CAP,VAR, 1.7 - 3 pf	2	GRG3R021/ RS03A
200-010	Cap	CAP, 1.5pf	1	GRM40C0G1R5C020BL
200-012	Cap	CAP,3.9pf	2	GRM40C0G3R9C050BD
200-013	Cap	CAP, 470pf	4	MA0805CG-471J500
200-014	Cap	CAP, 8.2 pf	1	MA0805CG-8R2J500
200-015	Cap	CAP, 3.3 pf	1	MA0805CG-3R3J500
300-001	Inductor	Choke, 1UH	4	78F1ROK / M7813-ND
300-004	Resontr	4 MHZ Resonator SMT	1	CSTCS4.00MG-TC
400-004	Trans	XSTR, MPS-H10	1	MPS -H10 / MPSH10-ND
400-005	IC	Voltage reg. SMT	1	NJM78L05UA
400-006	XSTR	PNP SMT 2N3906	1	2N3906
400-007	Diode	LED, SMT	6	HT-150YA
400-008	Diode	HS Diode SMT	6	MMBD4148
400-009	XSTR	NPN, SMT	2	MMBD3904LTI (MOT)
400-013	Diode	Pin Diode	2	MMBV3401LT1 (MOT)
700-005	PCB	K3 PCB	1	
800-***	IC	Processor	1	68HC805P18
800-***	Screw	Pan Philips 2x1/4	5	
800-***	Mount	2 Mounting Screws 1 bag	1	
800-007	Inst	Instructions	1	
800-012	Battery	9v Alkaline Battery	1	
800-013	KP	Keypad	1	
800-015	Clip	Battery Clip	1	
800-017	Case	Case, K1 K2	1	
800-018	Blister		1	

Strategic Advisory Services

6067 Dassia Way
Oceanside, CA 92056
(760) 726-9943

FCC ID: MJNK3

CODING INSTRUCTIONS

A. The model MJNK3 works with five primary brands of garage door and gate operators
   1. Linear / Moore-O-Matic
   2. Stanley
   3. Multi-Code
   4. Chamberlain
   5. Genie

B. Proper operation of your new Clicker Model MJNK3 requires simple programming to select the system frequency and internal dipswitch code.
   1. To activate programming mode
      a. Enter 3 digit PIN
      b. Press and release #
      c. Select transmitter type from chart and enter Key on keypad
      d. Press and release #
      e. Enter dip switch settings (1=On 2=Off)
      f. Press and release #

Key	Model
1	Linear
2	Stanley
3	Multi-Code
4	Chamberlain
5	Genie (9 position)
6	Genie (12 position)

TÜV PRODUCT SERVICE

EMC EMISSION - TEST REPORT
UNITED STATES STANDARD 47 CFR PART 15, SUBPART C

Test Report File No.	: **S8257-06**	Date of Issue:	02 June 1998
Model / Serial No.	: **K3 / ----**		
Product Type	: Keypad Remote Transmitter		
Applicant	: THE CLICKER CORPORATION		
Manufacturer	: THE CLICKER CORPORATION		
License holder	: THE CLICKER CORPORATION		
Address	: 540 South Andreasen, Suite C		
	: Escondido, CA 92029		
Test Result	: ■ **Positive**	☐ **Negative**	
Test Project Number Reference(s)	: **S201825701-06**		
Total pages - Test Report	: 12		

TÜV Product Service, Inc. is a subcontractor to TÜV Product Service, GmbH according to the principles outlined in ISO/IEC Guide 25 and EN 45001.

TÜV Product Service reports apply only to the specific sample tested under stated test conditions. It is the manufacturer's responsibility to assure the continued compliance of production units of this model. TÜV Product Service, Inc. shall have no liability for any deductions, inferences or generalizations drawn by the client or others from TÜV Product Service, Inc. issued reports.

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TÜV PRODUCT SERVICE

DIRECTORY - EMISSIONS
Test Report

Technical Documentation

Appendices

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EMISSIONS TEST REGULATIONS :

The emissions tests were performed according to the following regulations:

☐ - EN 50081-1 / 1991

☐ - EN 55011 / 1991 ☐ - Group 1 ☐ - Class A ☐ - Group 2 ☐ - Class B

☐ - EN 55013 / 1990

☐ - EN 55014 / 1987 ☐ - Household appliances and similar ☐ - Portable tools ☐ - Semiconductor devices

☐ - EN 55014 / A2:1990

☐ - EN 55014 / 1993 ☐ - Household appliances and similar ☐ - Portable tools ☐ - Semiconductor devices

☐ - EN 55015 / 1987
☐ - EN 55015 / A1:1990
☐ - EN 55015 / 1993

☐ - EN 55022 / 1987 ☐ - Class A ☐ - Class B

☐ - EN 55022 / 1994 ☐ - Class A ☐ - Class B

☐ - BS
☐ - VCCI ☐ - Class A ITE ☐ - Class B ITE

☐ - 47 CFR Part 15, Subpart B

☐ - 107(b)
☐ - 107(a)
☐ - 107(e) ☐ - Class A ☐ - Class B

☐ - 109(b)
☐ - 109(a)
☐ - 109(g) ☐ - Class A ☐ - Class B

■ - 47 CFR Part 15, Subpart C

■ - 207(a)
■ - 209(a)
■ - 231(b)
■ - 231(c)

☐ - AS/NZS 3548: 1995 ☐ - Class A ☐ - Class B

☐ - CISPR 11 (1990) ☐ - Group 1 ☐ - Class A ☐ - Group 2 ☐ - Class B

☐ - CISPR 22 (1993) ☐ - Class A ☐ - Class B

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Environmental Conditions In The Laboratory:

	Actual
Temperature:	: 23 °C
Relative Humidity:	: 50 %
Atmospheric Pressure:	: 100.0 kPa

Power Supply Utilized:

Power supply system : Battery

Symbol Definitions:

■ - Applicable
☐ - Not Applicable

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TÜV PRODUCT SERVICE

Emissions Test Conditions: CONDUCTED EMISSIONS (Interference Voltage)

The *CONDUCTED EMISSIONS (INTERFERENCE VOLTAGE)* measurements were performed at the following test location:

■ - Test not performed - see remarks

☐ - SR-2, Shielded Room, 12' x 24' x 10', Metal Chamber
☐ - SR-3, Shielded Room, 12' x 20' x 8', Metal Chamber
☐ - SR-4, Shielded Room, 10' x 17' x 8', Copper Screen Chamber
☐ - SR-5, Shielded Room, 16' x 28' x 15', Metal, Semi-Anechoic Chamber
☐ - CSR-1, Shielded Room, 10' x 7' x 7', Metal Chamber

Test Equipment Used :

	Model No.	Prop. No.	Description	Manufacturer	Serial No.
☐ -	NM-7A, NM-17/27, NM-37/57, NM-67, CCA-7, & H/P 9836 HP-1B Computer	156, 162-166	Automated RFI Measurement System (ARMS), NO. 1	Eaton/Ailtech	(multiple)
☐ -	NM-17/27, NM-37/57, CA-7, and H/P 9826 Computer	168, 170, 177, 178	Automated RFI Measurement System (ARMS), NO. 2	Eaton/Ailtech	(multiple)
☐ -	H/P Spectrum Analyzer, Model 8568B; Display Section RF Analyzer Section; H/P 85650A, Quasi-Peak Adapter H/P Computer System, Model 310 with HP 85869A Software	187, 188	Automated RFI Measurement System (ARMS)	Various	(multiple)
☐ -	LISN-3, 50 A	262-263	Power Mains Network (LISN), 50 µH/250 µH/50 Ω/0.25 µF	Fischer Custom Communications, Inc.	3-4
☐ -	LISN-3, 50 A	264, 265	Power Mains Network (LISN), 50 µH/250 µH/50 Ω/0.25 µF	Fischer Custom Communications, Inc.	5-6
☐ -	LISN-2, 25 A	413	Power Mains Network (LISN), 50 µH/250 µH/50 Ω/0.25 µF	Fischer Custom Communications, Inc.	7
☐ -	LISN-2, 25 A	--	Power Mains Network (LISN), 50 µH/250 µH/50 Ω/0.25 µF	Fischer Custom Communications, Inc.	7
☐ -	FCC-LISN-50-25-2	553	Power Mains Network (LISN), 50 µH/250 µH/50 Ω/0.25 µF	Fischer Custom Communications, Inc.	112
☐ -	FCC-LISN-50-25-2	552	Power Mains Network (LISN), 50 µH/250 µH/50 Ω/0.25 µF	Fischer Custom Communications, Inc.	113
☐ -	8012-50-R-12-BNC	266	LISN, 50 µH/50 Ω/0.1 µF	Solar Electronics Co.	--
☐ -	9252-50-R-24-BNC	458	LISN, 50 µH /250 µH/50 Ω/ 0.25 µF	Solar Electronics Co.	941719
☐ -	9252-50-R-24-BNC	457	LISN, 50 µH /250 µH/50 Ω/ 0.25 µF	Solar Electronics Co.	941720
☐ -	MDS-21	277	Absorbing Clamp	Rohde & Schwarz	821023
☐ -	ESHS 20	428	EMI Test Receiver	Rohde & Schwarz	837055/001
☐ -	ESHS 30	459	EMI Test Receiver	Rohde & Schwarz	832354/004
☐ -	CAT-20	598	20 dB Attenuator	Mini-Circuits	--
☐ -	CAT-20	615	20 dB Attenuator	Mini-Circuits	--

Remarks: EUT battery operated.

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Emissions Test Conditions: RADIATED EMISSIONS (Magnetic Field)

The *RADIATED EMISSIONS (MAGNETIC FIELD)* measurements were performed at the following test location:

■ - Test not applicable

☐ - SR-2, Shielded Room, 12' x 24' x 10', Metal Chamber
☐ - SR-3, Shielded Room, 12' x 20' x 8', Metal Chamber
☐ - SR-4, Shielded Room, 10' x 17' x 8', Copper Screen Chamber
☐ - SR-5, Shielded Room, 16' x 28' x 15', Metal, Semi-Anechoic Chamber
☐ - TR-1, Shielded Room, 16.5' x 10' x 7.5', Copper Screen Chamber
☐ - CSR-1, Shielded Room, 10' x 7' x 7', Metal Chamber

NOT APPLICABLE

Testing was performed at a test distance of :

☐ - 3 meters
☐ - 30 meters

Test Equipment Used :

	Model No.	Prop. No.	Description	Manufacturer	Serial No.
☐ -	NM-7A, NM-17/27, NM-37/57, NM-37, CCA-7, & H/P 9836 HP-1B Computer	156, 162-166	Automated RFI Measurement System (ARMS), NO. 1	Eaton/Ailtech	(multiple)
☐ -	NM-17/27, NM-37/57, CA-7, & H/P 9836 Computer	168, 170, 177, 178	Automated RFI Measurement System (ARMS), NO. 2	Eaton/Ailtech	(multiple)
☐ -	AT-205/URM-6	201	Loop Antenna	Eaton/Ailtech	64090
☐ -	94593-1	205	Loop Antenna	Eaton/Ailtech	0264

Remarks: _____

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TÜV PRODUCT SERVICE

Emissions Test Conditions: RADIATED EMISSIONS (Electric Field)

The *RADIATED EMISSIONS (ELECTRIC FIELD)* measurements, in the frequency range of 30 MHz-1000 MHz, were tested in a horizontal and vertical polarization at the following test location :

☐ - **Test not applicable**

☐ - Roof (Small Open Area Test Site)
☐ - Canyon #1 (10- and 30-Meter Open Area Test Site), Carroll Canyon, San Diego
■ - Canyon #2 (3- and 10-Meter Open Area Test Site), Carroll Canyon, San Diego

Testing was performed at a test distance of :

■ - 3 meters
☐ - 10 meters
☐ - 30 meters

Test Equipment Used :

	Model No.	Prop. No.	Description	Manufacturer	Serial No.
☐ -	NM-37/57A	420	OATS measurement set (Roof)	Eaton/Ailtech	0561-09261
	CCA-7	373			0773-03117
☐ -	NM-37/57	171	OATS measurement set (Canyon)	Eaton/Ailtech	0709-82078
	CCA-7	172			0187-0322
☐ -	HFH 2-Z2	208	Antenna, Loop	Rohde & Schwarz	880
☐ -	3104	235	Antenna, Biconical	EMCO	3031
☐ -	3110	451	Antenna, Biconical	EMCO	1378
☐ -	94455-1	231	Antenna, Biconical	Eaton/Ailtech	0811
■ -	3110B	491	Antenna, Biconical	EMCO	9508-2
☐ -	CBL6111	460	Antenna, Bilog	Chase	1013
☐ -	CBL6111	461	Antenna, Bilog	Chase	1291
☐ -	3146	242	Antenna, Log Periodic Dipole	EMCO	1597
☐ -	3146	243	Antenna, Log Periodic Dipole	EMCO	106X
■ -	3146	244	Antenna, Log Periodic Dipole	EMCO	1063
☐ -	7405	570	Loop Probes	EMCO	9104-1959
☐ -	8566B	404	Spectrum Analyzer	Hewlett Packard	2311A02209
☐ -	85662B	406	Spectrum Analyzer Display	Hewlett Packard	2309A04682
☐ -	ESVS 30	427	EMI Test Receiver	Rohde & Schwarz	830350/006
■ -	ESVS 30	466	EMI Test Receiver	Rohde & Schwarz	833825/003

Remarks: _____

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TÜV PRODUCT SERVICE

Emissions Test Conditions: INTERFERENCE POWER

The *INTERFERENCE POWER* measurements were performed by using the absorbing clamp on the mains and interface cables in the frequency range 30 MHz - 300 MHz at the following test location :

■ - Test not applicable

☐ - SR-2, Shielded Room, 12' x 24' x 10', Metal Chamber
☐ - SR-3, Shielded Room, 12' x 20' x 8', Metal Chamber
☐ - SR-4, Shielded Room, 10' x 17' x 8', Copper Screen Chamber
☐ - SR-5, Shielded Room, 16' x 28' x 15', Metal, Semi-Anechoic Chamber
☐ - CSR-1, Shielded Room, 10' x 7' x 7', Metal Chamber

Test Equipment Used :

	Model No.	Prop. No.	Description	Manufacturer	Serial No.
☐ -	MDS-21	277	Absorbing Clamp	Rohde & Schwarz	821023
☐ -	NM-7A, NM-17/27, NM-37/57, NM-67, CCA-7, & H/P 9836 HP-1B Computer	151, 162-166	Automated RFI Measurement System (ARMS), NO. 1	Eaton/Ailtech	(multiple)
☐ -	NM-17/27, NM-37/57, CA-7, & H/P 9826 Computer	168, 170, 177, 178	Automated RFI Measurement System (ARMS), NO. 2	Eaton/Ailtech	(multiple)
☐ -	H/P Spectrum Analyzer, Model 8568B, Display Section RF Analyzer Section, H/P 85650A, Quasi-Peak Adapter H/P Computer System, Model 310 with HP 85869A Software	187, 188	Automated RFI Measurement System (ARMS)	Hewlett Packard	2304A04531 2304A02500 2811A01325
☐ -	ESVS 30	427	EMI Test Receiver	Rohde & Schwarz	830350/006
☐ -	ESVS 30	466	EMI Test Receiver	Rohde & Schwarz	830350/003

NOT APPLICABLE

Remarks: _____

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TÜV PRODUCT SERVICE

Emissions Test Conditions: RADIATED EMISSIONS (FCC Part 15, 15.231)

The *EQUIVALENT RADIATED EMISSIONS* measurements were performed at the following test location :

☐ - **Test not applicable**

■ - Roof (Small Open Area Test Site)
☐ - Canyon #1 (10- and 30-Meter Open Area Test Site), Carroll Canyon, San Diego
☐ - Canyon #2 (3- and 10-Meter Open Area Test Site), Carroll Canyon, San Diego

Testing was performed at a test distance of:

☐ - 1 meters
■ - 3 meters
☐ - 10 meters

Test Equipment Used :

	Model No.	Prop. No.	Description	Manufacturer	Serial No.
■ -	8566	407	Spectrum Analyzer	Hewlett Packard	2311A02209
☐ -	85662B	406	Spectrum Analyzer Display	Hewlett Packard	2309A04682
☐ -	3115	453	Antenna, Double Ridge Guide	EMCO	9412-4363
■ -	3115	251	Antenna, Double Ridge Guide	EMCO	2495
■ -	3146	418	Antenna, Log Periodic Dipole	EMCO	--
■ -	3118	451	Broadband Antenna	EMCO	--
■ -	--	--	Miteq LNZ, 2 - 8 GHz	Miteq, Inc.	--
☐ -	91888-2	252	Horn Antenna (1 to 2 GHz)	Eaton	101
☐ -	91889-2	253	Horn Antenna (2 to 3.6 GHz)	Eaton	101
☐ -	91892-1	254	Reflector Antenna (3.6 to 18 GHz)	Eaton	--
☐ -	94613-1	255	Horn Antenna (3.6 to 7.6 GHz)	Eaton	--
☐ -	91891-2	256	Horn Antenna (7.3 to 12 GHz)	Eaton	--
☐ -	94614-1	257	Horn Antenna (12 to 18 GHz)	Eaton	--

Remarks: _____

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TÜV PRODUCT SERVICE

Equipment Under Test (EUT) Test Operation Mode - Emissions Tests :

The equipment under test was operated under the following conditions during emissions testing:

☐ - Standby

☐ - Test Program (H - Pattern)

☐ - Test Program (Color Bar)

☐ - Test Program (Customer Specified)

☐ - Practice Operation

☐ - Normal Operating Mode

■ - Continuous transmit

Configuration of the equipment under test:

☐ - See Constructional Data Form in Appendix B - Page B2

■ - See Product Information Form(s) in Appendix B - Page B2

The following peripheral devices and interface cables were connected during the testing:

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - unshielded power cable

☐ - unshielded cables

☐ - shielded cables MPS.No.: _____

☐ - customer specific cables

☐ - _____

☐ - _____

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Emissions Test Results:

Conducted Emissions, 10/150/450 kHz - 30 MHz

☐ - PASS ☐ - FAIL ■ - NOT APPLICABLE

Minimum limit margin _____ dB at _____ MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks: Battery operated EUT.

Radiated Emissions (Magnetic Field), 10 kHz - 30 MHz

☐ - PASS ☐ - FAIL ■ - NOT APPLICABLE

Minimum limit margin _____ dB at _____ MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks:

Radiated Emissions (Electric Field), 30 MHz - 1000 MHz

■ - PASS ☐ - FAIL ☐ - NOT APPLICABLE

Minimum limit margin 16.5 dB at 40 MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks:

Interference Power at the Mains and Interface Cables, 30 MHz - 300 MHz

☐ - PASS ☐ - FAIL ■ - NOT APPLICABLE

Minimum limit margin _____ dB at _____ MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks:

Equivalent Radiated Emissions

■ - PASS ☐ - FAIL ☐ - NOT APPLICABLE

Minimum limit margin 0.2 dB at 780 MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks:

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GENERAL REMARKS:

(*) Conducted Emissions - EUT battery operated.

SUMMARY:

All tests according to the regulations cited on page 3 were

☐ - Performed

■ - **Not** Performed*

The Equipment Under Test

■ - **Fulfills** the general approval requirements cited on page 3.

☐ - **Does not** fulfill the general approval requirements cited on page 3.

Statement of Measurement Uncertainty

The data and results referenced in this document are true and accurate. There may be some degree or level of measurement uncertainty. As EN 45001 does not allow recommendations to be included in the test report, the reader is encouraged to request a copy of the TÜV policy concerning pass or fail judgment with respect to possible measurement uncertainties.

Equipment Received Date: 28 May 1998

Testing Start Date: 28 May 1998

Testing End Date: 29 May 1998

- TÜV PRODUCT SERVICE, INC. -

Responsible Engineer:

Jim Owen
(EMC Engineer)

Responsible Test Engineer:

Dave Marshall
(EMC Test Engineer)

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Appendix A

Test Setups
(Photographs)

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Appendix B

Product Information Form(s)

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TÜV PRODUCT SERVICE

CUSTOMER INFORMATION	
COMPANY NAME:	THE CLICKER CORPORATION
COMPANY ADDRESS:	540 South Andreasen, Suite C
	Escondido, CA 92029
PHONE NUMBER:	760 745 8822
FAX NUMBER/E-MAIL ADDRESS:	760 745 5901
CUSTOMER CONTACT:	Wayne Hurndon
PRODUCT DESCRIPTION	
NAME, MODEL, SERIAL # OF EUT:	Keypad Remote Transmitter, Model K3
DESCRIPTION OF EUT:	Handheld RF transmitter

Components of EUT

Description	Model Number	Serial Number	FCC ID Number
--			

OPERATING MODE(S):	13 - 300 MHz; 46 - 310 MHz; 79 - 390 MHz
I/O CABLES	None
POWER CORDS	None
POWER INTERFACE	
FREQUENCY/AC/DC VOLTAGE:	9 Vdc battery
PHASES/CURRENT:	-- / --

OSCILLATOR FREQUENCIES

FREQUENCY	EUT LOCATION	DESCRIPTION OF USE
4 MHz	Y1	Input to micro

POWER SUPPLY

DESCRIPTION	MANUFACTURER	MODEL #	SERIAL #	SWITCHING/LINEAR FREQ.
--				

POWER LINE FILTERS

MANUFACTURER	MODEL NO.	QTY.	LOCATION ON EUT
--			

CRITICAL EMI COMPONENTS

DESCRIPTION	MANUFACTURER	PART # OR VALUE	QTY.	LOCATION ON EUT
--				

DESCRIPTION OF ENCLOSURE:	Plastic slide case

INTERFACING AND/OR SIMULATORS PERIPHERAL EQUIPMENT:

DESCRIPTION	MANUFACTURER	MODEL #	SERIAL #	FCC ID
--				

BLOCK DIAGRAM:	See page B3.

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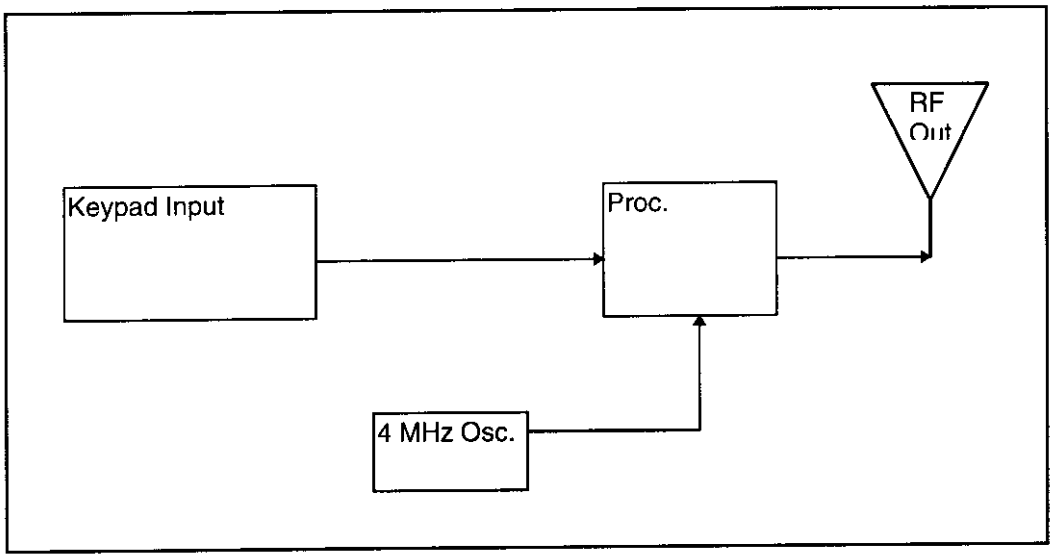

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Appendix C

Change History

Not Applicable

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Appendix D

Supplemental Information

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TÜV PRODUCT SERVICE

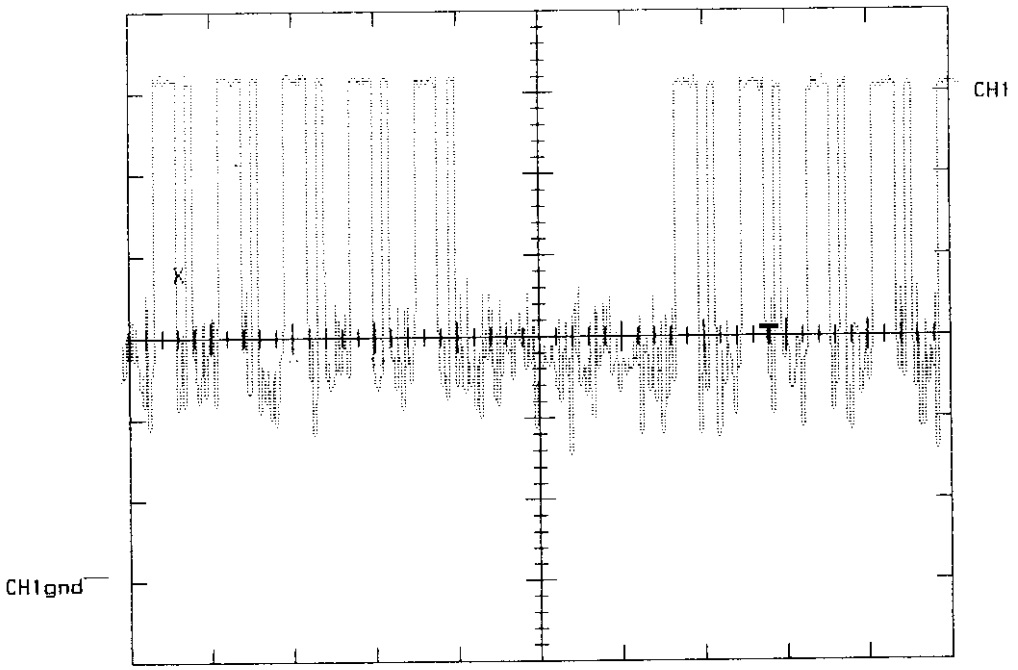
Clicker Corporation

Test: Duty Cycle
Date: May 28, 1998

f_0 = 300 MHz

CH1 100mV A 5ms 214mV EXT1

MW



CH1 FREQ = 67.1 Hz
CH1 RMS = 325.50mV
CH1 PER = 14.9ms

Duty cycle = time on / period
= [(1.5ms × 5) + (0.5 × 5)] / 32.5
= $\frac{100}{325}$ = 31%

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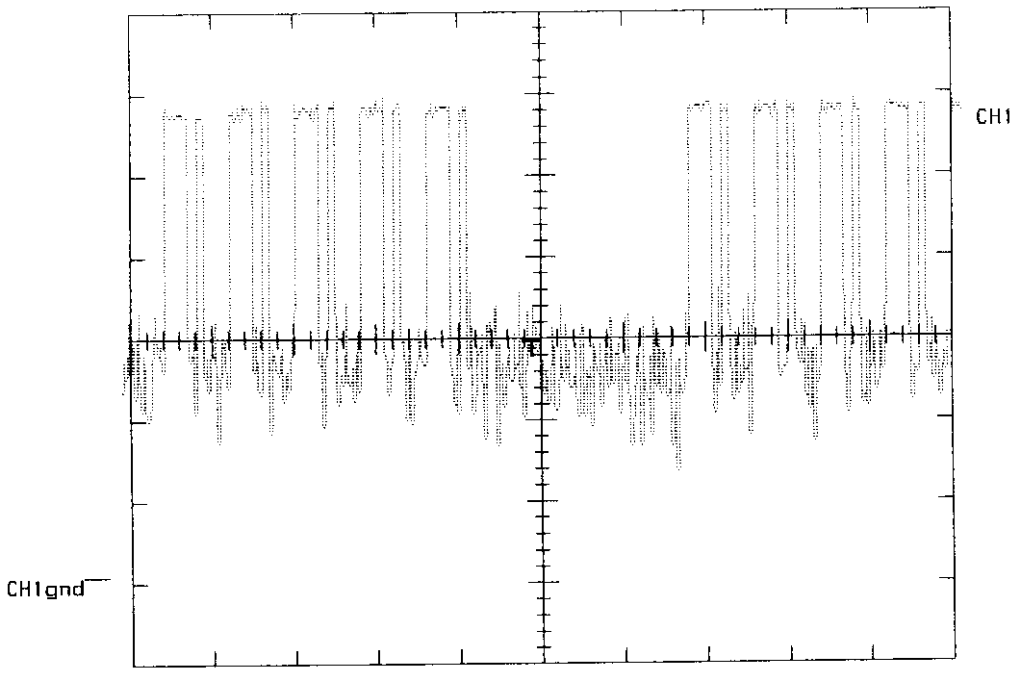
TÜV PRODUCT SERVICE

Clucker Corporation

f_o = 310 MHz

CH1 100mV A 5ms 366mV EXT1

mW



CH1 FREQ = 125 Hz
CH1 RMS = 447.05mV
CH1 PER = 8.00ms

Duty cycle = time on/period
= [(1.5ms x 5) + (5 x 5)]/32
= $\frac{10.0}{32}$ = 31%

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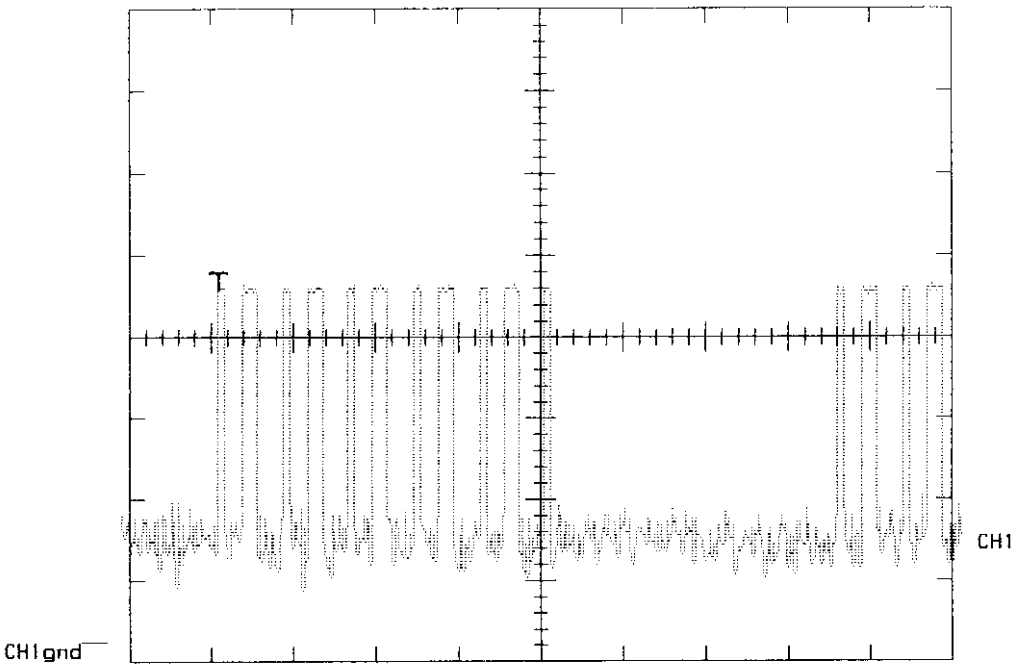
TÜV PRODUCT SERVICE

Clicker Corporation

f_o = 390 MHz

CH1 200mV A 10ms 400mV VERT



LO RES? CH1 FREQ = 336 Hz
CH1 RMS = 591.22mV
LO RES? CH1 PER = 2.98ms

Duty cycle = time on/period
= [(2ms x 5) + (1ms x 6)] / 75
= 16/75 = 21%

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Technical Documentation

Test Data Sheets

and

Test Setup Drawing(s)

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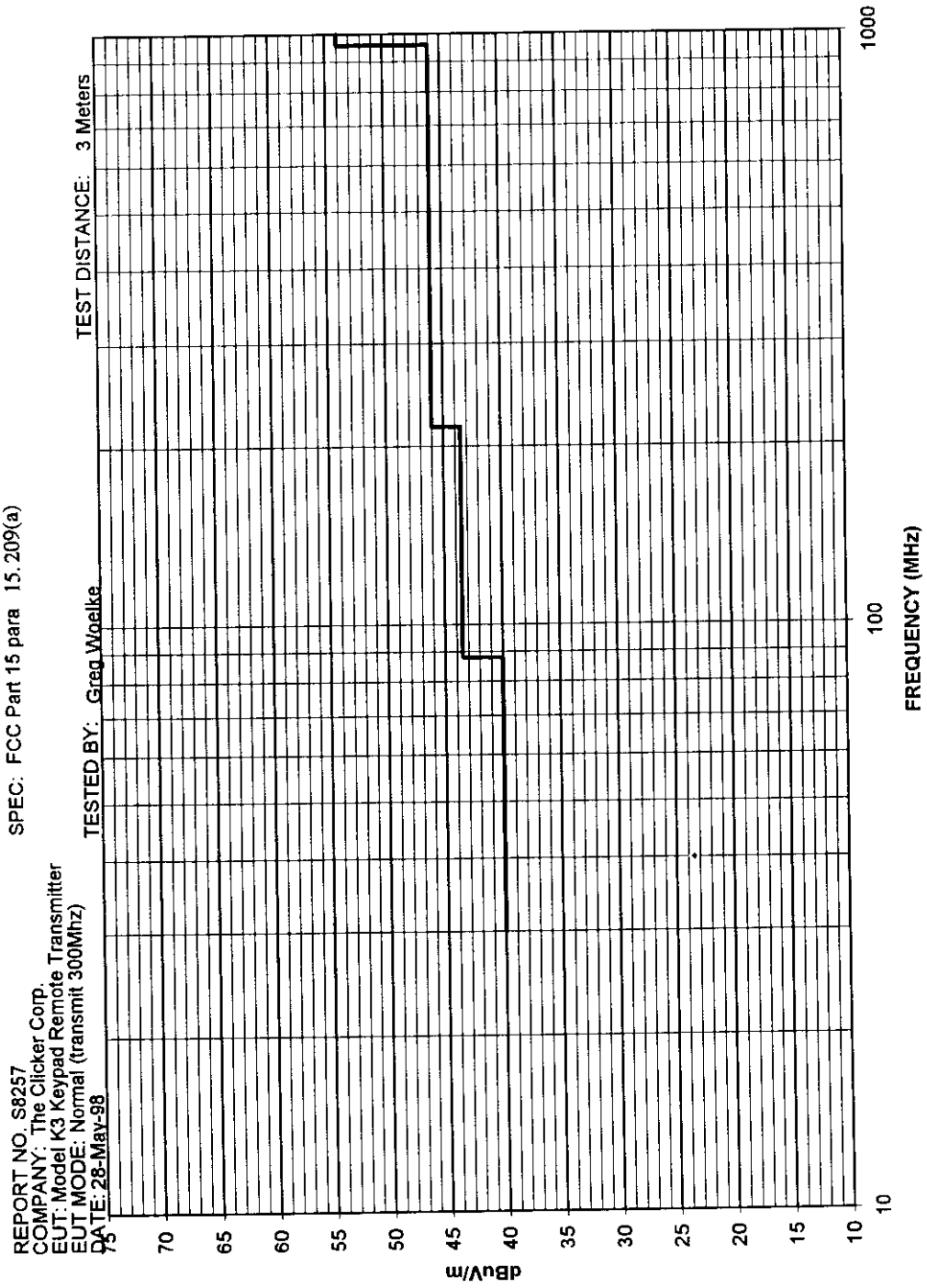
TÜV PRODUCT SERVICE



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TÜV PRODUCT SERVICE

REPORT No: S8257 SPEC: FCC Part 15 para 15. 209(a)

CUSTOMER: The Clicker Corp. TEST DIST: 3 Meters

E U T: Model K3 Keypad Remote Transmitter TEST SITE: 2

EUT MODE: Normal (transmit 300Mhz) BICONICAL: 491

DATE: 28-May-98 TESTED BY: Greg Woelke LOG PERIODIC: 244

NOTES: Quasi-Peak with 120 KHz measurement bandwidth. RCVR: 466

Battery Powered

EUT MARGIN -16.5 dB at 40 MHz ver 1.6

FREQUENCY (MHz)	VERTICAL measured (dBuv)	HORIZONTAL measured (dBuV)	CORRECTION FACTOR (dB/m)	MAXIMUM CORRECTED (dBuV/m)	SPECIFIED LIMIT (dBuV/m)	EUT MARGIN (dB)	EUT ROTATION (degrees)	ANTENNA HEIGHT (meters)
40.00	10	-2	13.5	23.5	40	-16.5	190	1

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TÜV PRODUCT SERVICE

REPORT No: S-8257 TESTED BY: dm SPEC: FCC Part 15 para 15.231(b)

CUSTOMER: The Clicker Corporation TEST DIST: 3 Meters

E U T: Keypad remote xmtr, Mdl K3 TEST SITE: 3

EUT MODE: continous transmit BICONICAL: N/A

DATE: 29-May-98 LOG PERIODIC: 418

NOTES: Duty Cycle= 31% OTHER: 251

no measurable harmonics found above 2100 MHz

RBW & VBW 1 MHz

FREQ (MHz)	VERTICAL (dBuv)		HORIZONTAL (dBuv)		CORRECTION FACTOR (dB/m)	MAX LEVEL (dBuV/m)		SPEC LIMIT (dBuV/m)		MARGIN (dB)		EUT Rotatio	Antenna Height	
	pk	av	pk	av		pk	av	pk	av	pk	av			
300	51.5	41.3	49	38.8	17.4	**68.9**	**58.7**	94.6	74.6	-25.7	-16	0	2.5	
600	29.8	19.6	27	16.8	22.9	**52.7**	**42.5**	74.6	54.6	-21.9	-12	270	1.5	
900	17.6	7.43	23.8	13.6	27.7	**51.5**	**41.3**	74.6	54.6	-23.1	-13			
1200	-7.7	-17.9	-7.9	-18.1	28.8	**21.1**	**10.9**	74	54	-52.9	-43			
1500	7.7	-2.47	-2.8	-13	30.5	**38.2**	**28.0**	74	54	-35.8	-26			
1800	7.6	-2.57	-4.1	-14.3	32.4	**40.0**	**29.8**	74.7	54.7	-34.7	-25			
2100	-5	-15.2	-5.7	-15.9	34.0	**29.0**	**18.9**	74.7	54.7	-45.7	-36			
2400					35.4									

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TÜV PRODUCT SERVICE

REPORT No: S-8257 TESTED BY: dm SPEC: FCC Part 15 para 15.231(b)

CUSTOMER: The Clicker Corporation TEST DIST: 3 Meters

E U T: Keypad remote xmtr Model K3 TEST SITE: 3

EUT MODE: continous transmit BICONICAL: N/A

DATE: 29-May-98 LOG PERIODIC: 418

NOTES: Duty Cycle= 31% OTHER: 251

no measurable harmonics found at 3m above 2170 MHz

RBW & VBW 1 MHz

FREQ (MHz)	VERTICAL (dBuv) pk	av	HORIZONTAL (dBuv) pk	av	CORRECTION FACTOR (dB/m)	MAX LEVEL (dBuV/m) pk	av	SPEC LIMIT (dBuV/m) pk	av	MARGIN (dB) pk	av	EUT Rotatio	Antenna Height	
310	50.9	40.7	53.9	43.7	17.3	**71.2**	**61.0**	95.3	75.3	-24.1	-14	0	2.5	
620	31.1	20.9	28.7	18.5	22.7	**53.8**	**43.6**	75.3	55.3	-21.5	-12	270	1.5	
930	16.9	6.73	22.8	12.6	28.0	**50.8**	**40.6**	75.3	55.3	-24.6	-15			
1240	-7.7	-17.9	-11.3	-21.5	29.0	**21.3**	**11.2**	74	54	-52.7	-43			
1550	4.4	-5.77	-7.7	-17.9	30.8	**35.2**	**25.0**	74	54	-38.8	-29			
1860	8.8	-1.37	-7.2	-17.4	32.7	**41.5**	**31.4**	75.3	55.3	-33.8	-24			
2170	-6.6	-16.8	-9.3	-19.5	34.3	**27.7**	**17.6**	75.3	55.3	-47.6	-38			
2480					35.7									

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TÜV PRODUCT SERVICE

REPORT No: S-8257 TESTED BY: dm SPEC: FCC Part 15 para 15.231(b)

CUSTOMER: The Clicker Corporation TEST DIST: 3 Meters

E U T: Keypad remote xmtr, Model K3 TEST SITE: 3

EUT MODE: continous transmit BICONICAL: N/A

DATE: 29-May-98 LOG PERIODIC: 418

NOTES: Duty Cycle= 21% OTHER: 251

no measurable harmonics found above 2340 MHz at 3 meters

RBW & VBW 1 MHz

FREQ (MHz)	VERTICAL (dBuv) pk	av	HORIZONTAL (dBuv) pk	av	CORRECTION FACTOR (dB/m)	MAX LEVEL (dBuV/m) pk	av	SPEC LIMIT (dBuV/m) pk	av	MARGIN (dB) pk	av	EUT Rotatio	Antenna Height	
390	64.1	50.5	71.9	58.3	18.6	**90.5**	**76.9**	99.2	79.2	-8.7	-2.3	0	2.5	
780	38.1	24.5	46.8	33.2	25.8	**72.6**	**59.0**	79.2	59.2	-6.6	-0.2	270	1.5	
1170	26.7	13.1	29.8	16.2	28.7	**58.5**	**44.9**	74	54	-15.5	-9.1	270	1	
1560	13.5	-0.06	8.9	-4.66	30.9	**44.4**	**30.8**	74	54	-29.6	-23			
1950	4.7	-8.86	5.2	-8.36	33.3	**38.5**	**24.9**	79.2	59.2	-40.7	-34			
2340	-4.8	-18.4	-6	-19.6	35.1	**30.3**	**16.7**	74	54	-43.7	-37			
2730					36.4									

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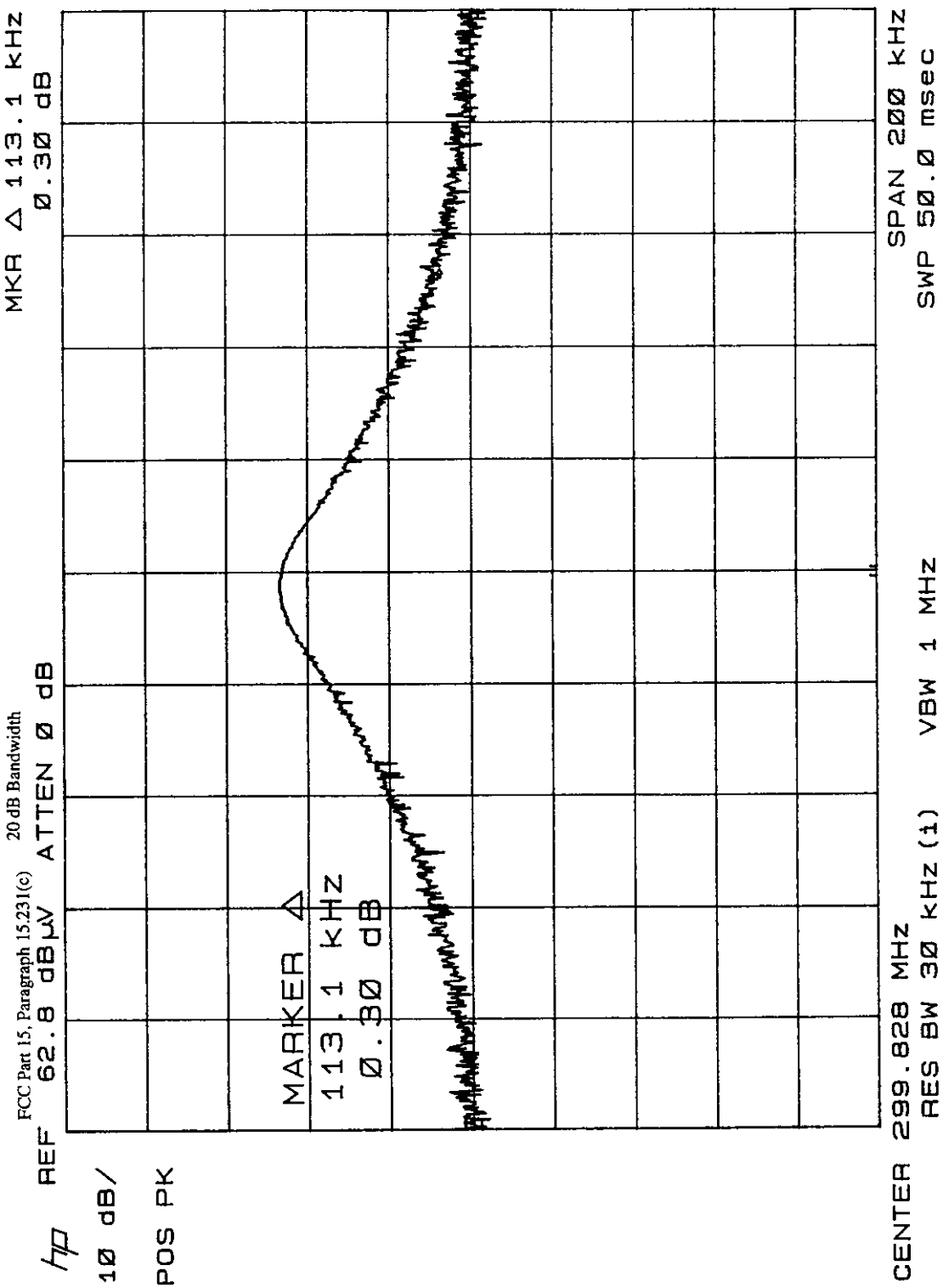

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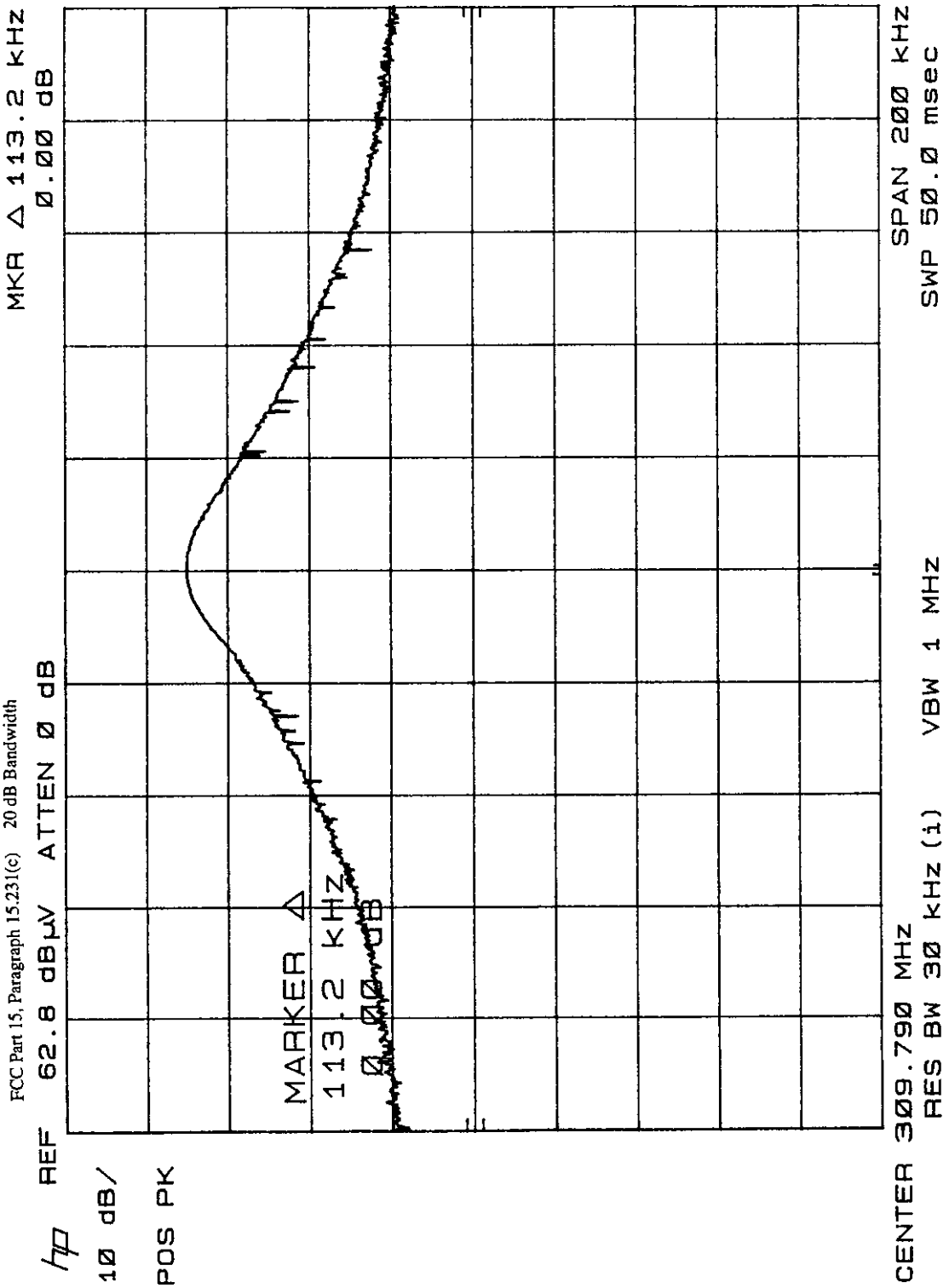

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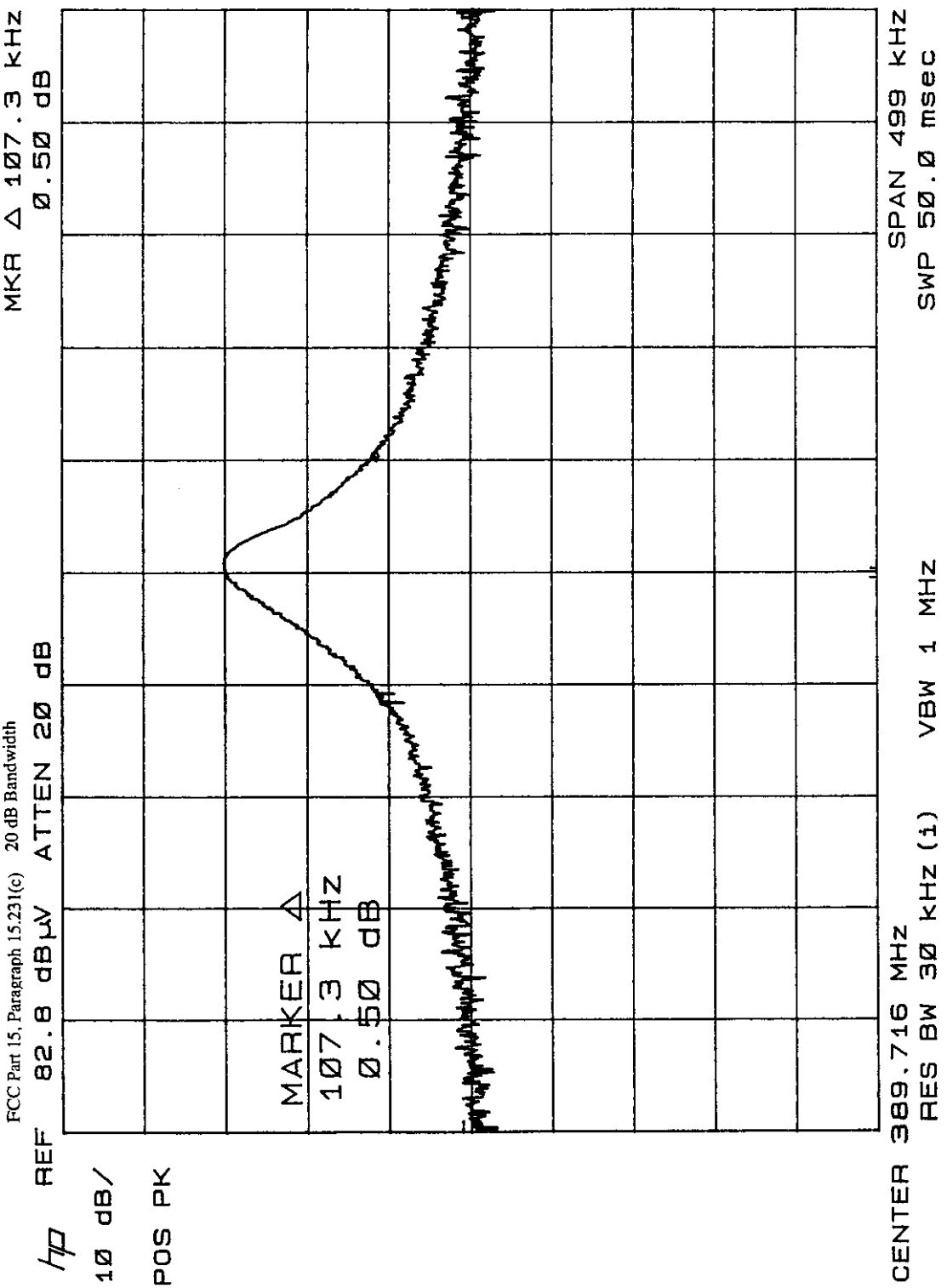

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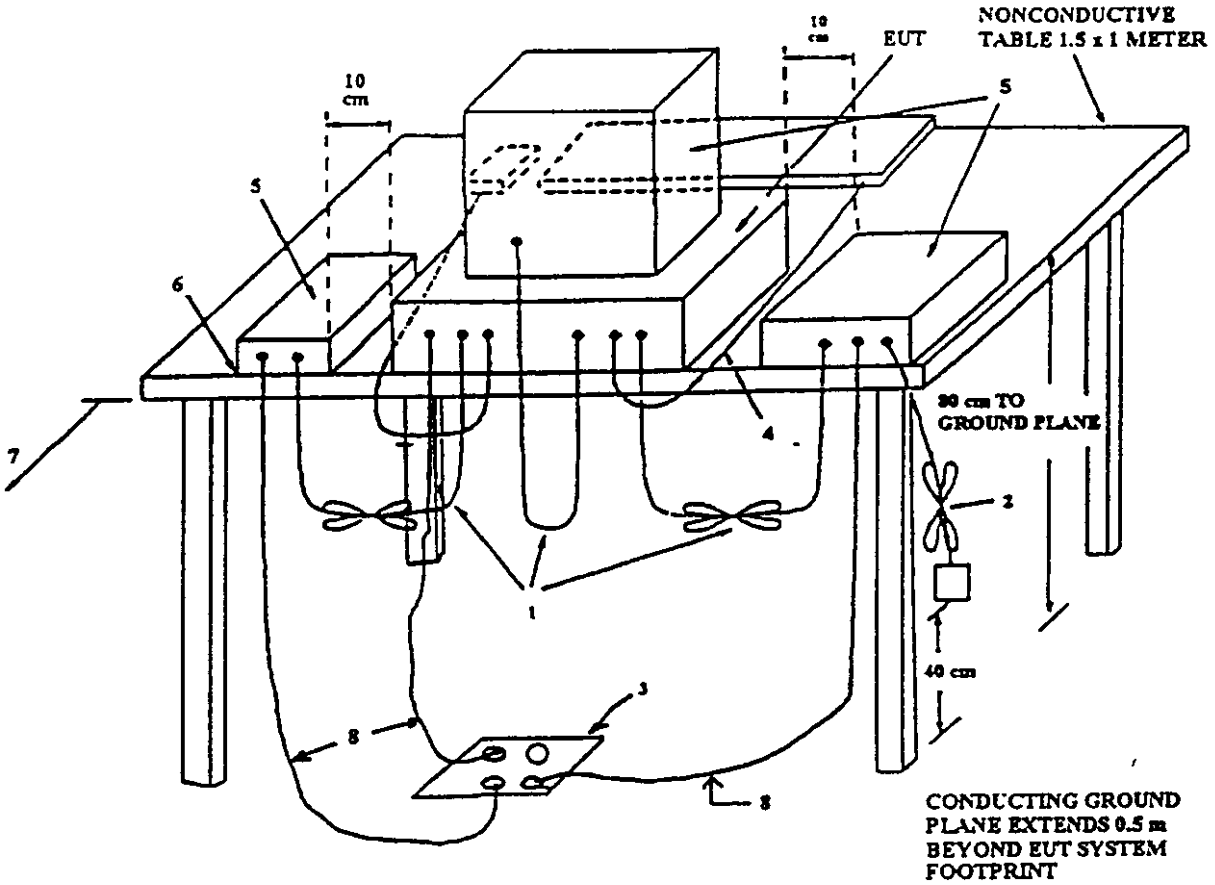
Radiated Emission Test Setup, 30 to 1,000 MHz



LEGEND:

1. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth forming a bundle 30 to 40 cm long, hanging approximately in the middle between ground plane and table.
2. I/O cables that are connected to a peripheral shall be bundled in center. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1 m.
3. If LISNs are kept in the test setup for radiated emissions, it is preferred that they be installed under the ground plane with the receptacle flush with the ground plane.
4. Cables of hand-operated devices, such as keyboards, mouses, etc., have to be placed as close as possible to the controller.
5. Non-EUT components of EUT system being tested.
6. The rear of all components of the system under test shall be located flush with the rear of the table.
7. No vertical conducting wall used.
8. Power cords drape to the floor and are routed over to receptacle.

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