ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
CERTIFICATION TO FCC PART 15 REQUIREMENTS

for

INTENTIONAL RADIATOR

49MHz REMOTE CONTROL CAR TRANSMITTER

MODEL NO: 50800

BRAND NAME: R/C SUSIE AND ANGELICA CHATMOBILE

FCC ID NO: APB50800-01A4T

REPORT NO: 01U0683-1

ISSUE DATE: MAY 14, 2001

Prepared for
MATTEL TOYS, INC.
333 CONTINENTAL BLVD.
EL SEGUNDO, CA 90245-5012
USA

Prepared by
COMPLIANCE ENGINEERING SERVICES, INC.
561 F MONTEREY ROAD
MORGAN HILL, CA 95037, USA
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1. Proposed FCC ID Label Format
2. Authorization Letter
3. EUT Photographs
4. Schematic Diagram
5. User Manual

COMPLIANCE ENGINEERING SERVICES, INC. CCS DOCUMENT NO:CCSUP4026B
561 F MONTEREY ROAD, MORGAN HILL, CA 95037, USA TEL:(408)463-0885 FAX:(408)463-0888

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1. VERIFICATION OF COMPLIANCE

COMPANY NAME	:	MATTEL TOYS, INC. 333 CONTINENTAL BLVD. EL SEGUNDO, CA 90245-5012 USA
CONTACT PERSON	:	JOHN DASPIT, STAFF ENGINEER
TELEPHONE NO.	:	310-252-2000
EUT DESCRIPTION	:	49MHz REMOTE CONTROL CAR TRANSMITTER
MODEL NAME/NUMBER	:	50800
BRAND NAME	:	R/C SUSIE AND ANGELICA CHATMOBILE
SERIAL NUMBER	:	N/A
FCC ID	:	APB50800-01A4T
DATE TESTED	:	MAY 07, 2001
REPORT NUMBER	:	01U0683-1

TYPE OF EQUIPMENT	REMOTE CONTROL CAR
EQUIPMENT TYPE	49.86 MHz TRANSMITTER
MEASUREMENT PROCEDURE	ANSI 63.4 / 1992
LIMIT TYPE	CERTIFICATION
FCC RULE	CFR 47, PART 15.235

The above equipment was tested by Compliance Engineering Services, Inc. for compliance with the requirements set forth in CFR 47, PART 15. This said equipment in the configuration described in this report shows that maximum emission levels emanating from equipment are within the compliance requirements.
Warning : This document reports conditions under which testing was conducted and results of tests performed. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification will constitute fraud and shall nullify the document.

Tested By:

MIKE ZHU
SENIOR EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

Approved & Released For CCS By:

STEVE CHENG
EMC ENGINEERING MANAGER
COMPLIANCE CERTIFICATION SERVICES

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2. PRODUCT DESCRIPTION

CHASSIS TYPE	**PLASTIC**
Fundamental Frequency	**49.86 MHz**
Power Source	**9VOLT BATTERY**
Transmitting Time	**CONTINUOUS**
Type of Antenna	**PERMANENTLY ATTACHED**
No. of Channel	**1**
NO. OF LAYER	**1**
Associated Receiver	**APB50800-01A4R**

3. TEST FACILITY

The 3/10/30 meter open area test site and conducted measurement facility used to collect the radiated data is located at 561F Monterey Road, Morgan Hill, California, U.S.A. A detailed description of the test facility was submitted to the Commission on May 27, 1994.

4. MEASUREMENT STANDARDS

The site is constructed and calibrated in conformance with the requirements of ANSI C63.4/1992.

5. TEST METHODOLOGY

For an intentional radiator, the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 KHz, up to at least the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower. (CFR 47 Section 15.33)

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6. MEASUREMENT EQUIPMENT USED

Manufacturer	Model Number	Description	Serial No.	Cal Due Date
H.P.	8566B	Spectrum Analyzer	3014A06685	06/16/01
H.P.	8447D	Pre-Amplifier	2944A06833	11/21/01
H.P.	8560A	Quasi-Peak Detector	C005599	05/04/02
SCHAFFNER-CHASE	CBL6112B	Antenna, Bilog	2586	12/11/01
BATTERY	Energizer	9Volt Nicad or 9V Alkaline	N/A	N/A

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7. TEST PROCEDURES AND TEST RESULTS

RADIATED EMISSION TEST: (15.235 (a))

Test Procedure

1. The EUT was placed on a wooden table on the outdoor ground plane. The search antenna was placed 3 meter from the EUT. The EUT was placed in X,Y, and Z position to simulate the actual usage.

2. The turntable was slowly rotated to locate the direction of maximum emission at each EUT position. Once the maximum direction and EUT position was determined, the search antenna was raised and lowered in both vertical and horizontal polarization. The maximum reading so obtained are recorded in the data list below.

Test Result: Peak emission was under average limit. Refer to attached plots.

RADIATED EMISSION TEST: (15.235 (b))

Test Requirement : The field strength between the band edges and up to 10kHz above and below the band edges shall be attenuated at least 26 dB below the level of the unmodulated carrier or to the general limits in 15.209, which permits the higher emission levels. All emissions more than 10KHz from the band edges shall be below the levels specified in 15.209.

Test Procedure:

1. The EUT was placed on a wooden table on the outdoor ground plane. The search antenna was placed 3 meter from the EUT. The EUT was placed in X, Y, and Z position to simulate the actual usage.

2. The turntable was slowly rotated to locate the direction of maximum direction and EUT position was determined, the search antenna was raised and lowered in both vertical and horizontal polarizations. For band edge measurements a plot was taken in that position and orientation with 10KHz RES B/W and 10KHz VID B/W and compared to a limit line 26dB below the level measured in 12.235(a) plot (75.00dBµV/m-26dB = 49.00dBµV/m). For out of band measurements tabular data was taken.

Test results: All emissions were under specified limits. Refer to attached plots and tabular data sheet.

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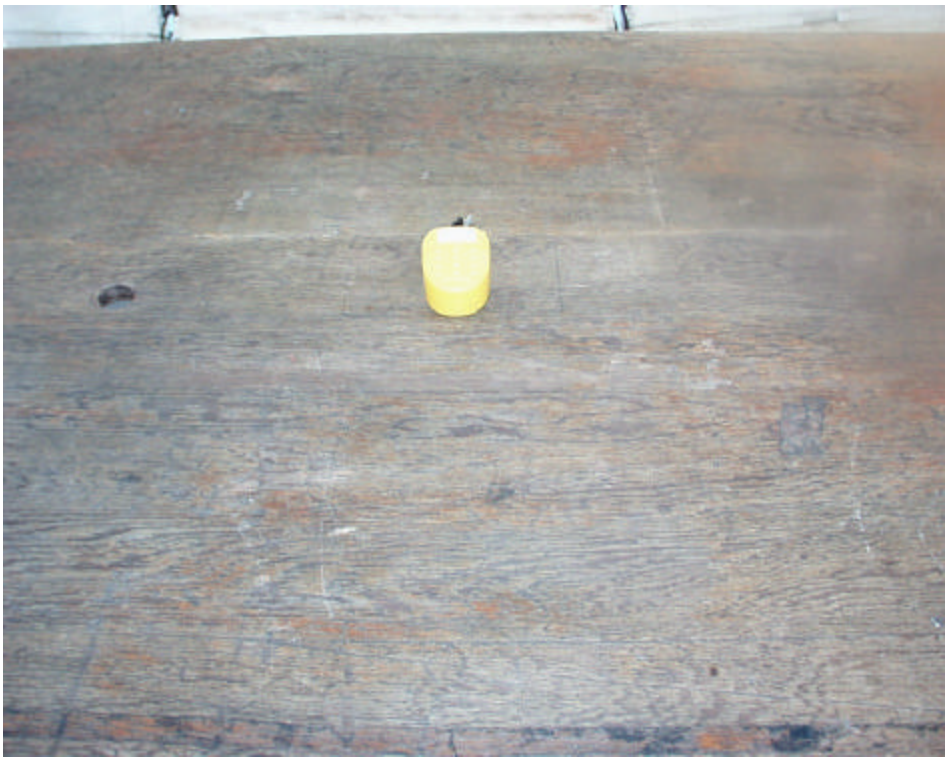
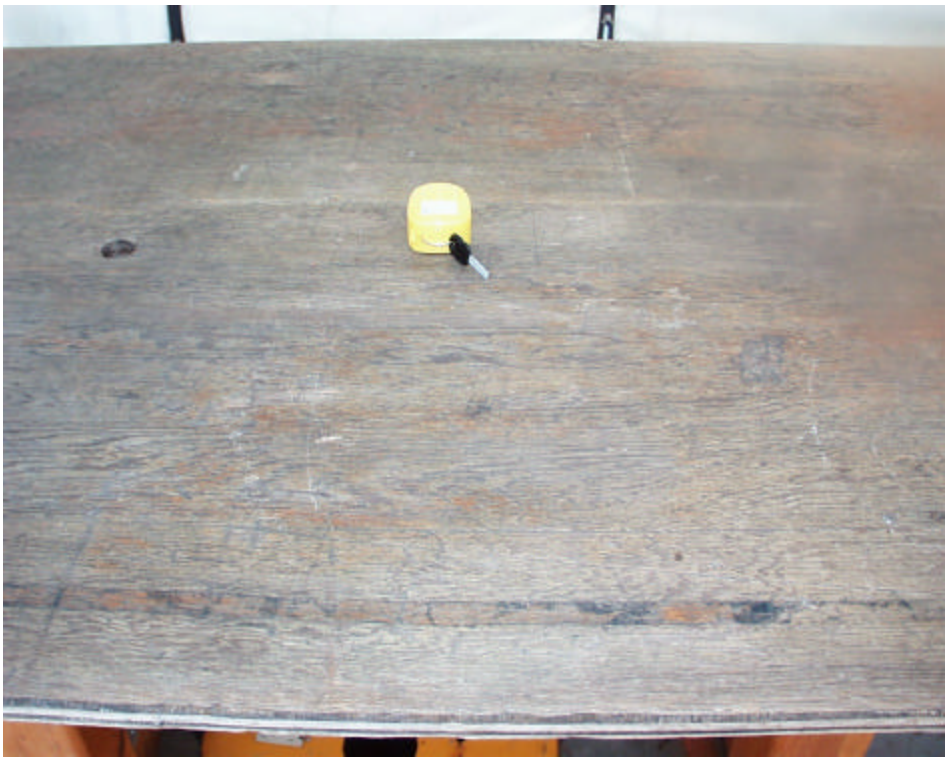
8. RADIATED EMISSION TEST SETUP PHOTOS





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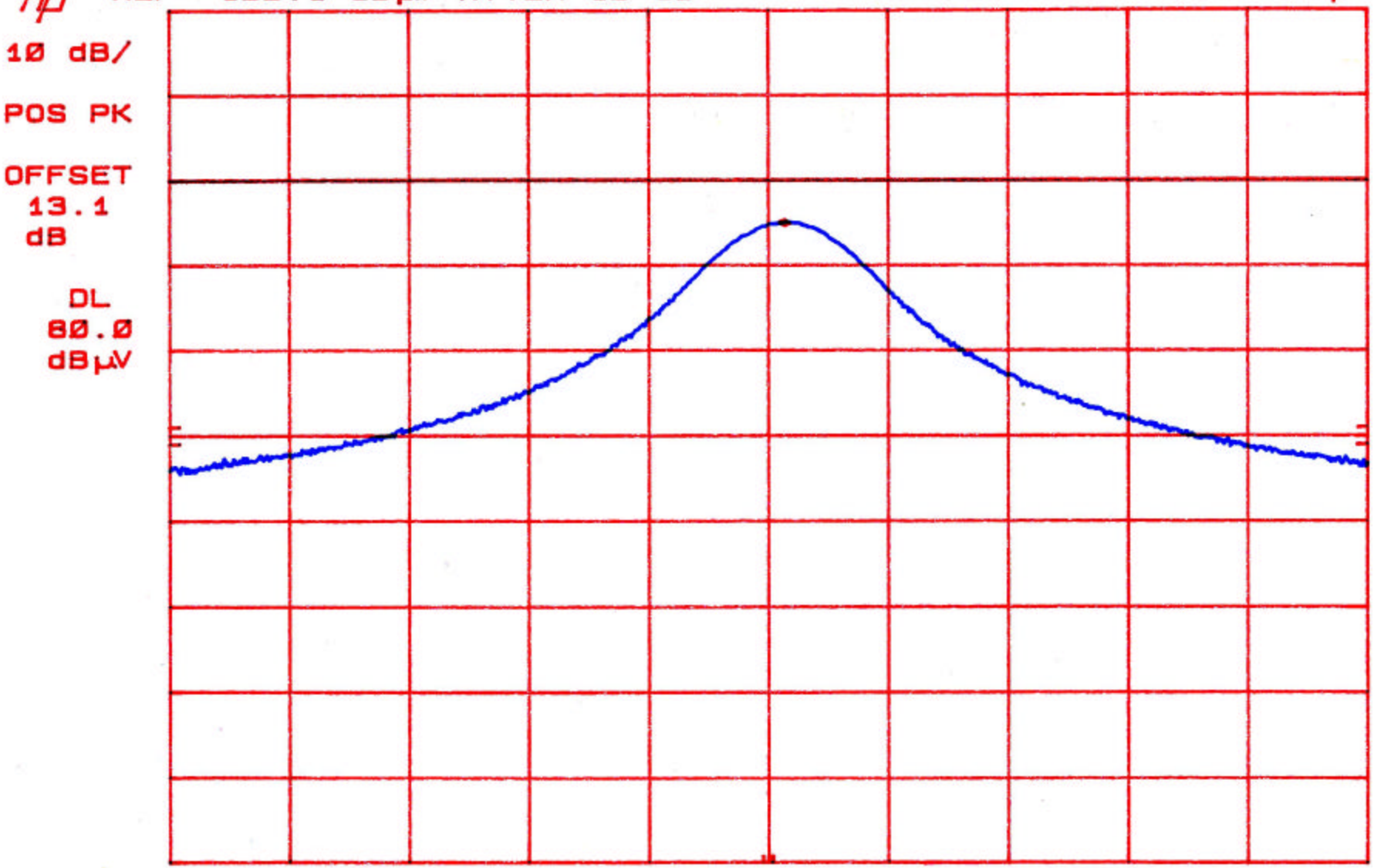
m2

MATTEL FCC15.235 FCCID APB50800-01A4T

MKR 49.861 3 MHz

REF 100.1 dBμV ATTEN 10 dB

75.00 dBμV



START 49.810 MHz

STOP 49.910 MHz

RES BW 10 kHz

VBW 10 kHz

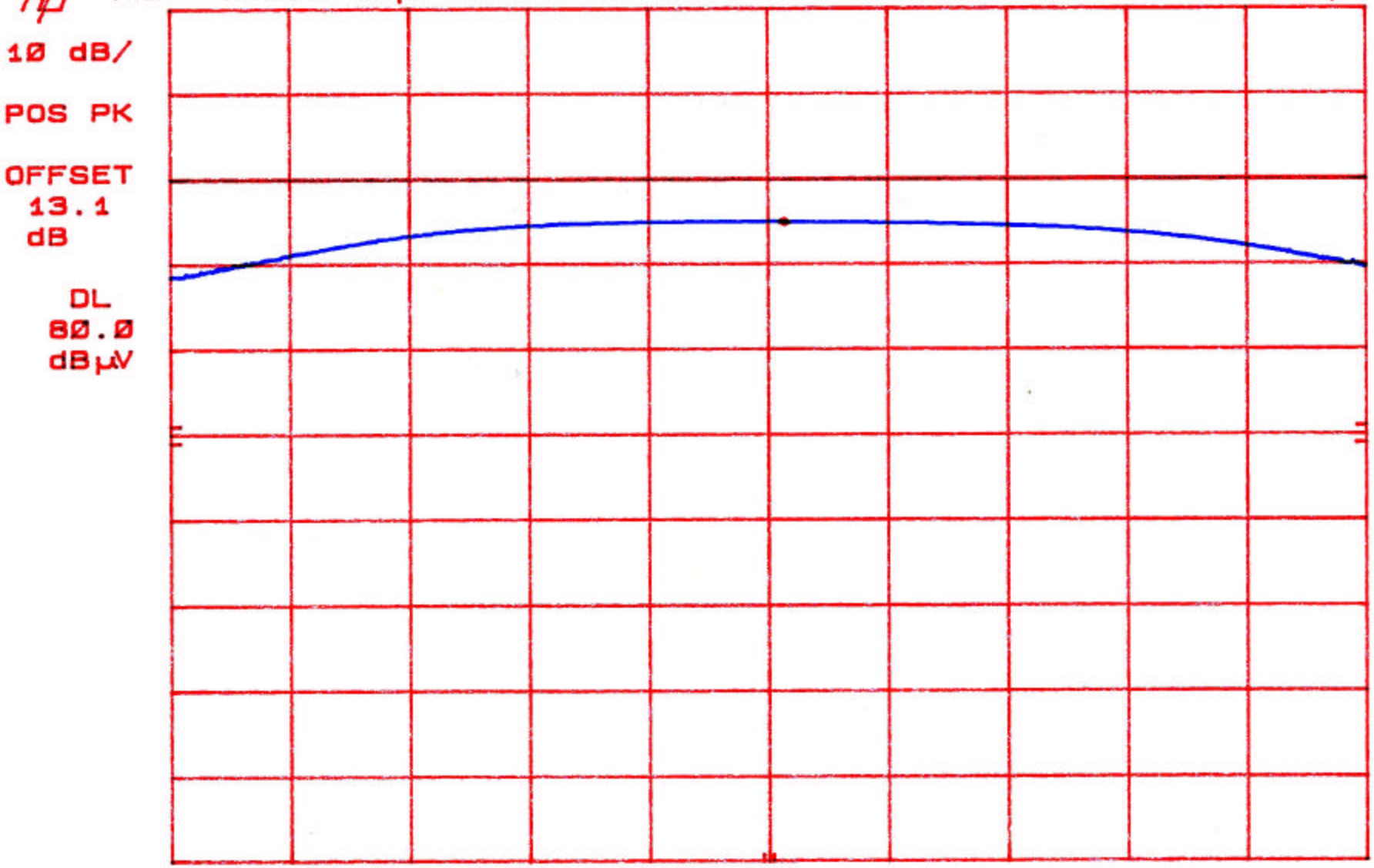
SWP 50.0 msec

MATTEL FCC15.235 FCCID APB50800-01A4T

MKR 49.861 3 MHz

REF 100.1 dBμV ATTEN 10 dB

75.00 dBμV



START 49.810 MHz

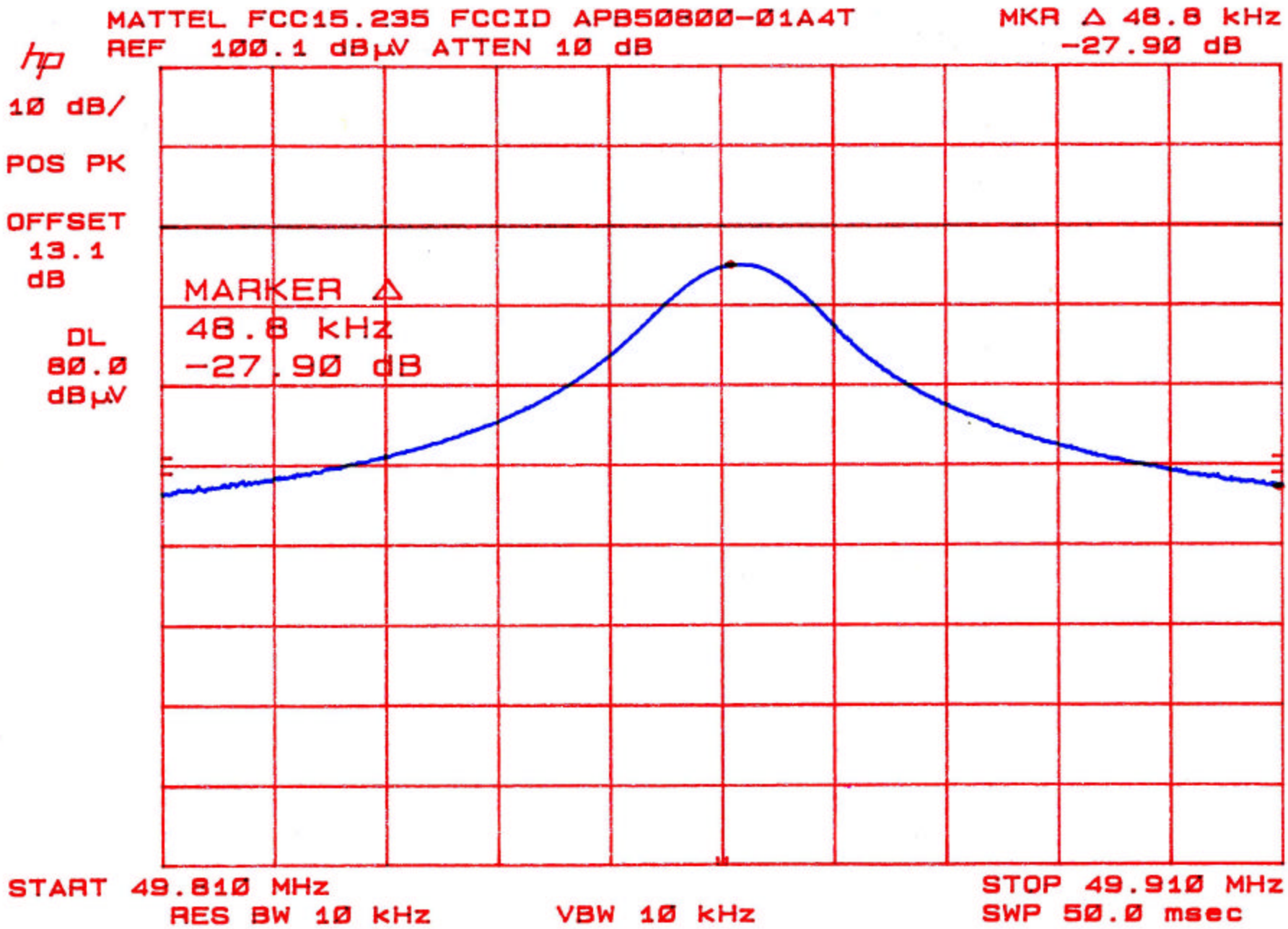
STOP 49.910 MHz

RES BW 100 kHz

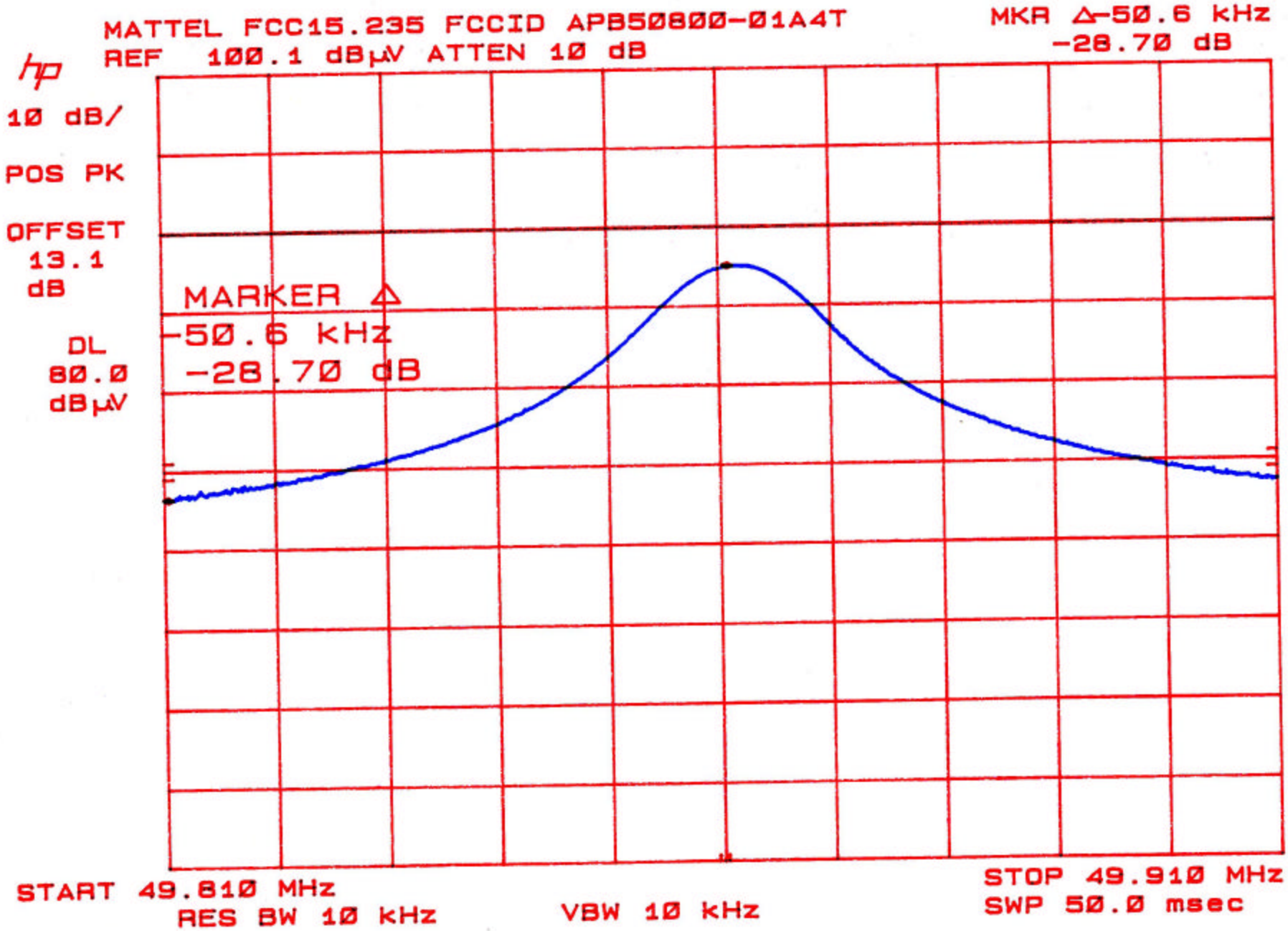
VBW 100 kHz

SWP 50.0 msec

M2


MATTEL FCC15.235 FCCID APB50800-01A4T
REF 100.1 dBµV ATTEN 10 dB
MKR Δ 48.8 kHz
-27.90 dB
hp
10 dB/
POS PK
OFFSET
13.1
dB
DL
80.0
dBµV
MARKER Δ
48.8 kHz
-27.90 dB
START 49.810 MHz
RES BW 10 kHz
VBW 10 kHz
STOP 49.910 MHz
SWP 50.0 msec

m2


MATTEL FCC15.235 FCCID APB50800-01A4T
REF 100.1 dBμV ATTEN 10 dB
MKR Δ-50.6 kHz
-28.70 dB
hp
10 dB/
POS PK
OFFSET
13.1
dB
DL
80.0
dBμV
MARKER Δ
-50.6 kHz
-28.70 dB
START 49.810 MHz
RES BW 10 kHz
VBW 10 kHz
STOP 49.910 MHz
SWP 50.0 msec

COMPLIANCE
Certification Services

FCC, VCCI, CISPR, CE, AUSTEL, NZ
UL, CSA, TUV, BSMI, DHHS, NVLAP

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Project #: 01U0683-1
Report #: 010507A1
Date& Time: 05/07/01 9:42 AM
Test Engr: MIKE ZHU

Company: MATTEL EL SEGUNDO KM
EUT Description: 49Mhz Transmitter Remote Controlled car,M/N:RC Susie Chatmobile
Test Configuration : EUT ONLY
Type of Test: FCC 15.235 & 15.209
Mode of Operation: TX MODE

(●) A-Site ( ) B-Site ( ) C-Site ( ) F-Site [6 Worst Data] [Descending]

Freq. (MHz)	Reading (dBuV)	AF (dB)	Closs (dB)	Pre-amp (dB)	Level (dBuV/m)	Limit FCC_B	Margin (dB)	Pol (H/V)	Az (Deg)	Height (Meter)	Mark (P/Q/A)
Z POSITION:											
49.86	61.90	12.17	0.93	0.00	75.00	80.00	-5.00	3mV	60.00	1.00	P
49.86	45.60	12.17	0.93	0.00	58.70	80.00	-21.30	3mH	30.00	3.00	P
Y POSITION:											
49.86	54.40	12.17	0.93	0.00	67.50	80.00	-12.50	3mV	90.00	1.00	P
49.86	52.70	12.17	0.93	0.00	65.80	80.00	-14.20	3mH	60.00	3.00	P
X POSITION:											
49.86	49.40	12.17	0.93	0.00	62.50	80.00	-17.50	3mV	90.00	1.00	P
49.86	54.10	12.17	0.93	0.00	67.20	80.00	-12.80	3mH	60.00	1.00	P
Z POSITION:											
149.59	47.20	12.01	1.61	27.64	33.18	43.50	-10.32	3mV	60.00	1.00	P
249.28	41.80	14.45	2.10	27.24	31.11	46.00	-14.89	3mV	60.00	1.00	P
548.48	43.50	19.13	3.39	28.67	37.35	46.00	-8.65	3mV	60.00	1.00	P
598.33	45.60	19.68	3.52	28.78	40.02	46.00	-5.98	3mV	60.00	1.00	P
648.21	45.50	19.89	3.75	28.81	40.33	46.00	-5.67	3mV	60.00	1.00	P
747.93	47.60	20.53	4.20	28.79	43.54	46.00	-2.46	3mV	60.00	1.00	QP
Y POSITION:											
149.56	47.80	12.01	1.61	27.64	33.78	43.50	-9.72	3mV	90.00	1.00	P
249.31	40.90	14.45	2.10	27.24	30.21	46.00	-15.79	3mV	90.00	1.00	P
349.03	39.40	15.88	2.61	27.58	30.31	46.00	-15.69	3mV	90.00	1.00	P
747.94	41.50	20.53	4.20	28.79	37.44	46.00	-8.56	3mV	90.00	1.00	P
X POSITION:											
149.56	42.90	12.01	1.61	27.64	28.88	43.50	-14.62	3mV	60.00	1.00	P
358.81	39.60	16.06	2.65	27.66	30.65	46.00	-15.35	3mV	60.00	1.00	P
598.35	43.00	19.68	3.52	28.78	37.42	46.00	-8.58	3mV	60.00	1.00	P
648.20	42.10	19.89	3.75	28.81	36.93	46.00	-9.07	3mV	60.00	1.00	P
X POSITION:											
149.56	47.30	12.01	1.61	27.64	33.28	43.50	-10.22	3mH	50.00	3.00	P
398.88	41.50	16.78	2.83	27.96	33.14	46.00	-12.86	3mH	50.00	1.00	P
448.73	45.70	17.68	3.04	28.26	38.16	46.00	-7.84	3mH	50.00	1.00	P
598.23	44.50	19.68	3.52	28.78	38.92	46.00	-7.08	3mH	50.00	1.00	P
Y POSITION:											

149.56	46.90	12.01	1.61	27.64	32.88	43.50	-10.62	3mH	60.00	3.00	P
398.60	43.30	16.77	2.82	27.96	34.94	46.00	-11.06	3mH	60.00	1.00	P
548.50	41.90	19.13	3.39	28.67	35.75	46.00	-10.25	3mH	60.00	1.00	P
349.05	43.20	15.88	2.61	27.58	34.11	46.00	-11.89	3mH	60.00	1.00	P
Z POSITION:											
149.57	44.10	12.01	1.61	27.64	30.08	43.50	-13.42	3mH	90.00	3.00	P
349.04	41.20	15.88	2.61	27.58	32.11	46.00	-13.89	3mH	90.00	1.00	P
398.90	41.80	16.78	2.83	27.96	33.44	46.00	-12.56	3mH	90.00	1.00	P
747.93	43.30	20.53	4.20	28.79	39.24	46.00	-6.76	3mH	90.00	1.00	P
Total data #: 32											

V.2a