



DATE: 08 October 2015

I.T.L. (PRODUCT TESTING) LTD.
FCC Radio Test Report
for
3M Electronic Monitoring

Equipment under test:
Home Curfew Base Unit CDMA*
BU3000*

*See customer's Declaration on page 5.

Tested by: I. Siboni
I. Siboni

Approved by: D. Shidowsky
D. Shidowsky

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This report relates only to items tested.



Measurement/Technical Report for 3M Electronic Monitoring Home Curfew Base Unit CDMA

BU3000

FCC ID: LSQBU3000

This report concerns:	Original Grant: <input checked="" type="checkbox"/>
	Class I change: <input type="checkbox"/>
	Class II change: <input type="checkbox"/>
Equipment type:	Part 15 Remote Control/Security Device Transceiver (DSR)
Limits used:	47CFR15 Section 15.231
Measurement procedure used is ANSI C63.10: 2013.	
Application for Certification prepared by:	Applicant for this device: (different from "prepared by")
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1. General Information

1.1 Administrative Information

Manufacturer: 3M Electronic Monitoring

Manufacturer's Address: P.O.B. 13236,
2 Habarzel St.,
Tel-Aviv, 6971002,
Israel
Tel: +972-3-767-1700
Fax: +972-3-767-1701

Manufacturer's Representative: Hanan Sharet

Equipment Under Test (E.U.T): Home Curfew Base Unit CDMA

Equipment Model No.: BU3000*

Equipment Serial No.: 50414791

Date of Receipt of E.U.T: 09.08.2015

Start of Test: 10.08.2015

End of Test: 12.08.2015

Test Laboratory Location: I.T.L (Product Testing) Ltd.
1 Bat Sheva Street,
Lod
ISRAEL 7120101

Test Specifications: FCC Part 15, Subpart C

*See customer's Declaration on following page.



Date: October 8, 2015

DECLARATION

I hereby declare that the E.U.T. name and model name of the E.U.T. tested at the I.T.L. Radio laboratory between 10 and 12 August 2015 is as follows:

E.U.T. Name:	Home Curfew Base Unit CDMA
Model Name:	BU3000
Serial Number:	50414791

Please use the above names and serial number in the test report and certificate.

Thank you,

Signature: 

**Hanan Sharet:
PRL Engineer
3M Electronic Monitoring Ltd.**



1.2 List of Accreditations

The EMC laboratory of I.T.L. is accredited by the following bodies:

1. The American Association for Laboratory Accreditation (A2LA) (U.S.A.), Certificate No. 1152.01.
2. The Federal Communications Commission (FCC) (U.S.A.), FCC Designation No US1004.
3. The Israel Ministry of the Environment (Israel), Registration No. 1104/01.
4. The Voluntary Control Council for Interference by Information Technology Equipment (VCCI) (Japan), Registration Numbers: C-1350, R-1285.
5. Industry Canada (Canada), IC File No.: 46405-4025; Site No. IC 4025A-1,

I.T.L. Product Testing Ltd. is accredited by the American Association for Laboratory Accreditation (A2LA) and the results shown in this test report have been determined in accordance with I.T.L.'s terms of accreditation unless stated otherwise in the report.



1.3 *Product Description*

RF curfew monitoring systems can also be used to complement GPS tracking capabilities by monitoring offenders' compliance with their restrictive schedule while at home. The base unit is used as a standalone home curfew system, extending comprehensive home detention capabilities.

1.4 *Test Methodology*

Both conducted and radiated testing were performed according to the procedures in ANSI C63.10: 2013. Radiated testing was performed at an antenna to EUT distance of 3 meters.

1.5 *Test Facility*

The radiated emissions tests were performed at I.T.L.'s testing facility at Lod, Israel. I.T.L.'s EMC Laboratory is accredited by A2LA, certificate No. 1152.01 and its FCC Designation Number is US1004.

I.T.L.'s EMC Laboratory is also accredited by A2LA, certificate No. 1152.01.

1.6 *Measurement Uncertainty*

Conducted Emission

Conducted Emission (CISPR 11, EN 55011, CISPR 22, EN 55022, ANSI C63.4) 0.15 – 30 MHz:

Expanded Uncertainty (95% Confidence, K=2):

± 3.44 dB

Radiated Emission

Radiated Emission (CISPR 11, EN 55011, CISPR 22, EN 55022, ANSI C63.4) for open site 30-1000MHz:

Expanded Uncertainty (95% Confidence, K=2):

± 4.96 dB



2. System Test Configuration

2.1 ***Justification***

The EUT was tested in tabletop position.

Testing was performed at 433.92 MHz.

2.2 ***EUT Exercise Software***

No exercise software was needed.

2.3 ***Special Accessories***

No special accessories were needed.

2.4 ***Equipment Modifications***

No modifications were needed in order to achieve compliance

2.5 ***Configuration of Tested System***

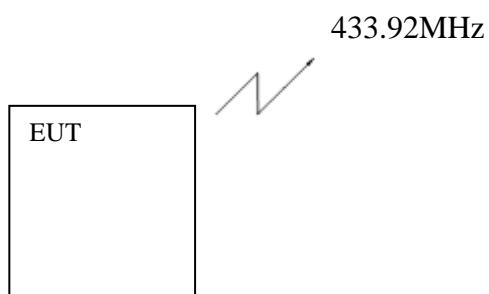


Figure 1. Configuration of Tested System

3. Radiated Measurement Test Set-Up Photos



Figure 2. Radiated Emission Test



Figure 3. Radiated Emission Test



Figure 4. Radiated Emission Test



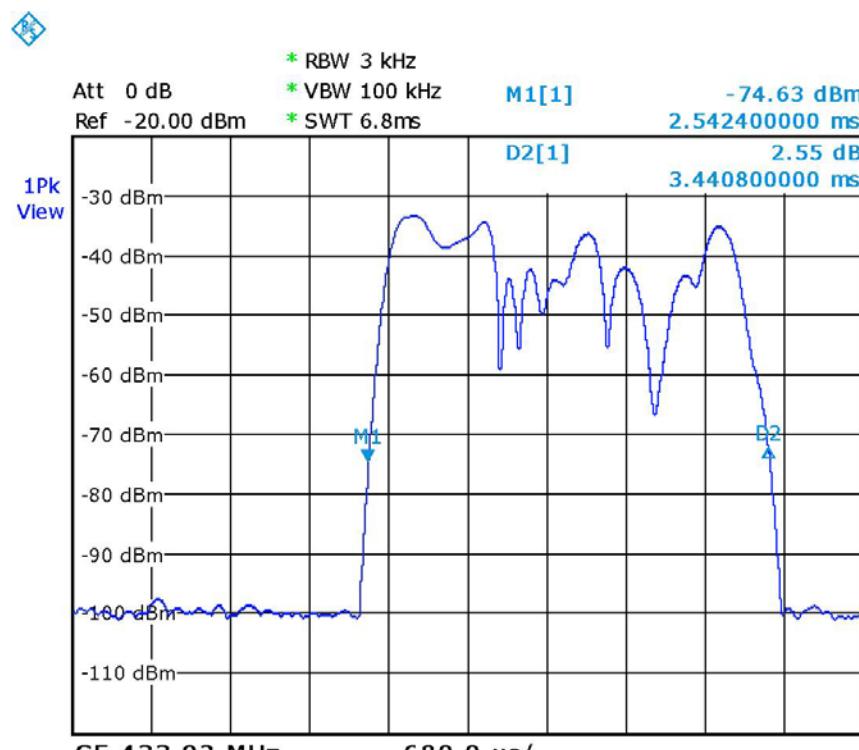
Figure 5. Radiated Emission Test

4. Average Factor Calculation

1. Transmission pulse duration = N/A
2. Transmission pulse period = N/A
3. Burst duration = 0.975 msec
4. Time between bursts = 1.025 sec , >100ms

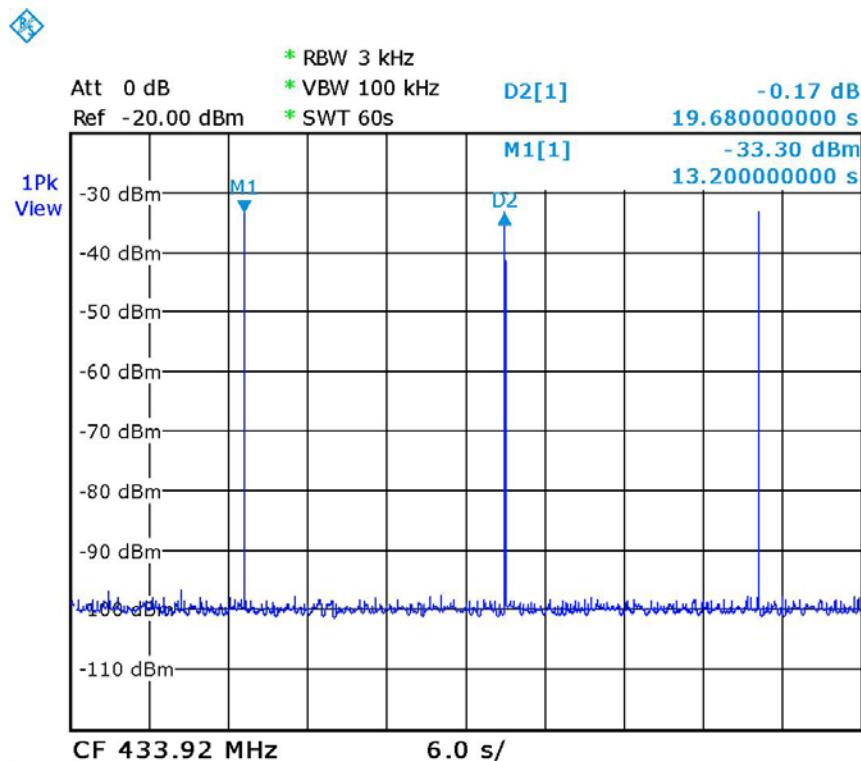
5. Average Factor = $20 \log \left[\frac{\text{Pulse duration}}{\text{Pulse period}} \times \frac{\text{burst duration}}{100\text{msec}} \times \text{Num of burst within 100msec} \right]$

$$\text{Average Factor} = 20 \log \left[\frac{2.54}{100} \times 1 \right] = -32.2 \text{dB}$$



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Figure 6. Burst Duration = 2.54 msec



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Figure 7. Time between Bursts = 19.68 sec, >100ms



4.1 Test Instrumentation Used; Average Factor Calculation

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
Spectrum Analyzer	R&S	FSL6	100194	January 1, 2015	1 Year
Antenna Biconical	EMCO	3104	2606	December 28, 2014	1 Year
Antenna Log Periodic	EMCO	3146	9505-4081	December 28, 2014	2 Years
Antenna Mast	ETS	2070-2	9608-1497	N/A	N/A
Turntable	ETS	2087	-	N/A	N/A
Mast & Table Controller	ETS/EMCO	2090	9608-1456	N/A	N/A

Figure 8 Test Equipment Used



5. Periodic Operation

5.1 Specification

F.C.C., Part 15, Subpart C, Section 15.231(a)

5.2 Requirements

Requirement	Rationale	Verdict
Continuous transmissions are not permitted.	N/A	Complies
A manually operated transmitter shall be deactivated within not more than 5 seconds after releasing the switch.	N/A	Complies
An automatically operated transmitter shall cease operation within 5 seconds after activation.	N/A	Complies
Periodic transmissions at regular predetermined intervals are not permitted.	N/A	Complies
Polling or supervised transmissions to determine system integrity of transmitter used in security or safety applications shall not exceed more than 2 seconds per hour.	See plots in Figure 9 to Figure 10	Complies

5.3 Results

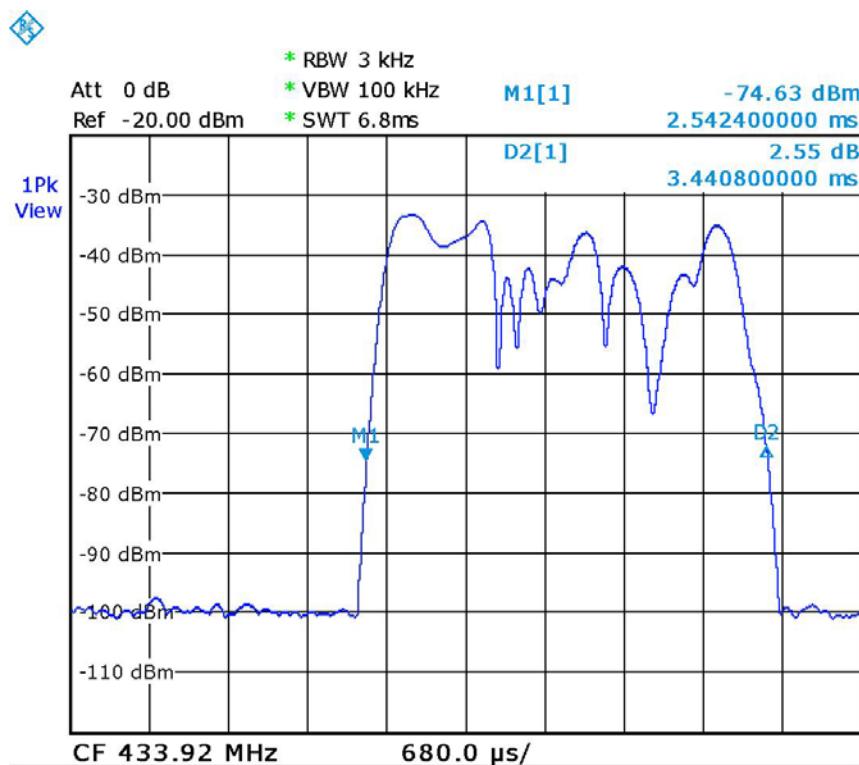
JUDGEMENT: Passed

The EUT met the FCC Part 15, Subpart C, Section 15.231(a) specification requirements.

Periodic Operation

E.U.T Description Home Curfew Base Unit CDMA
Type BU3000
Serial Number: 50414791

Specification: F.C.C., Part 15, Subpart C, 15.231(a)



Date: 9.AUG.2015 16:34:46

Figure 9. System Integrity Burst duration = 2.54 msec

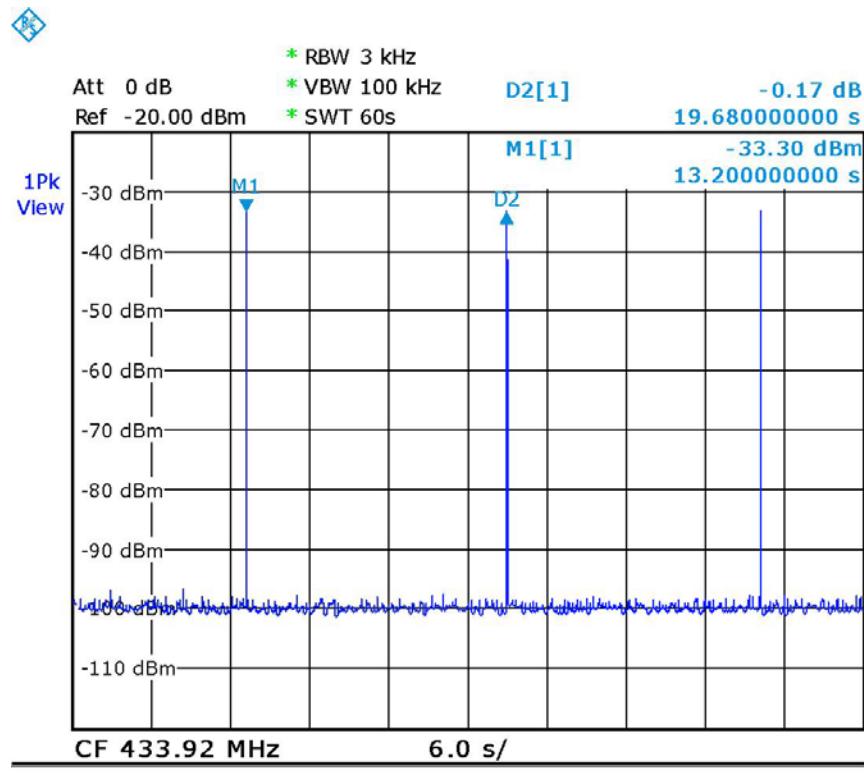


Figure 10. Time between bursts = 19.68 sec., >100ms
System Integrity within 1 Hour (2.54 msec X 360 = 914.4 milliseconds)



5.4 **Test Instrumentation Used; Periodic Operation**

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
Spectrum Analyzer	R&S	FSL6	100194	January 1, 2015	1 Year
Antenna Biconical	EMCO	3104	2606	December 28, 2014	1 Year
Antenna Log Periodic	EMCO	3146	9505-4081	December 28, 2014	2 Years
Antenna Mast	ETS	2070-2	9608-1497	N/A	N/A
Turntable	ETS	2087	-	N/A	N/A
Mast & Table Controller	ETS/EMCO	2090	9608-1456	N/A	N/A

Figure 11 Test Equipment Used



6. Field Strength of Fundamental

6.1 Test Specification

F.C.C., Part 15, Subpart C, Section 15.231(b)

6.2 Test Procedure

The E.U.T. operation mode and test set-up are as described in Section 2.

The E.U.T. was placed on a non-conductive table, 0.8 meters above the O.A.T.S. ground plane.

The EMI receiver was set to the E.U.T. Fundamental Frequency and Peak Detection.

The turntable and antenna mast were adjusted for maximum level reading on the EMI receiver.

The measurement was performed for vertical and horizontal polarizations of the test antenna.

The average result is:

Peak Level (dB μ V/m) + E.U.T. Duty Cycle Factor, in 100msec time window (dB)

6.3 Test Results

JUDGEMENT: Passed by 7.54 dB

The EUT met the FCC Part 15, Subpart C, Section 15.231(b) specification requirements.

The details of the highest emissions are given in *Figure 13* and *Figure 14*.



Field Strength of Fundamental

E.U.T Description Home Curfew Base Unit CDMA
Type BU3000
Serial Number: 50414791

Specification: F.C.C., Part 15, Subpart C, 15.231(b)

Antenna Polarization: Horizontal/Vertical
Test Distance: 3 meters Detector: Peak

Freq. (MHz)	Pol. V/H	Peak Reading (dB μ V/m)	Average Factor (dB)	AVG Result (dB μ V/m)	AVG Specification (dB μ V/m)	Margin (dB)
433.92	H	105.46	-32.20	73.26	80.8	7.54
433.92	V	104.10	-32.20	71.90	80.8	-8.90

Figure 12. Field Strength of Fundamental. Antenna Polarization: HORIZONTAL/VERTICAL. Detector: Peak

Notes:

1. Margin refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.
2. "Peak Reading." (dB μ V/m) included the "Correction Factors".
3. "Correction Factors" (dB) = Test Antenna Correction Factor (dB) + Cable Loss.
4. Average Factor = $20 \log \left[\frac{2.54}{100} \times 1 \right] = -32.2 \text{ dB}$
5. "Average Result" (dB μ V/m) = Peak Reading (dB μ V/m) + D.C.F. (dB)

Field Strength of Fundamental

E.U.T Description Home Curfew Base Unit
CDMA
Type BU3000
Serial Number: 50414791

Specification: F.C.C., Part 15, Subpart C, 15.231(b)

Antenna Polarization: Horizontal

Frequency: 433.92 MHz

Test Distance: 3 meters

Detector: Peak

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ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 433.955 MHz
105.46 dB μ V/m

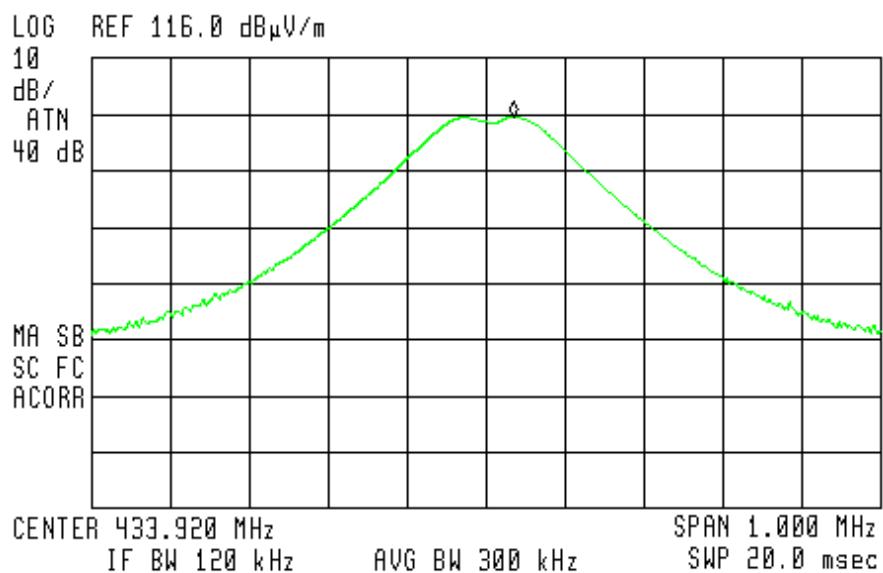


Figure 13. Field Strength of Fundamental (433.92 MHz) Antenna Polarization: HORIZONTAL.



Field Strength of Fundamental

E.U.T Description Home Curfew Base Unit CDMA
Type BU3000
Serial Number: 50414791

Specification: F.C.C., Part 15, Subpart C, 15.231(b)

Antenna Polarization: Vertical Frequency: 433.92 MHz
Test Distance: 3 meters Detector: Peak

⌚ 14:57:04 10 AUG 2015

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 433.955 MHz
104.10 dB μ V/m

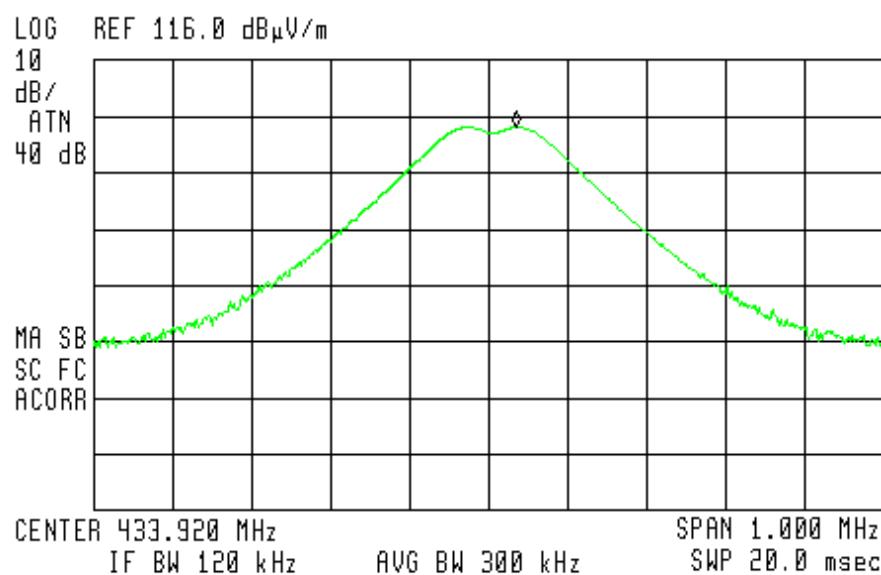


Figure 14. Field Strength of Fundamental (433.92 MHz) Antenna Polarization: VERTICAL.



6.4 ***Test Instrumentation Used, Field Strength of Fundamental***

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
EMI Receiver	HP	85422E	3906A00276	March 11, 2015	1 Year
RF Section	HP	85420E	3705A00248	March 19, 2015	1 Year
Antenna Log Periodic	EMCO	3146	9505-4081	December 28, 2014	1 Year
Antenna Mast	ETS	2070-2	9608-1497	N/A	N/A
Turntable	ETS	2087	-	N/A	N/A
Mast & Table Controller	ETS/EMCO	2090	9608-1456	N/A	N/A

Figure 15 Test Equipment Used

7. Radiated Emission, 9 kHz – 30 MHz

7.1 *Test Specification*

9 kHz-30 MHz, FCC, Part 15, Subpart C, Section 209

7.2 *Test Procedure*

The E.U.T. operation mode and test set-up are as described in Section 2.

A preliminary measurement to characterize the E.U.T was performed inside the shielded room at a distance of 3 meters, using peak detection mode and broadband antennas. The preliminary measurements produced a list of the highest emissions. The E.U.T was then transferred to the open site, and placed on a remote-controlled turntable. The E.U.T was placed on a non-metallic table, 0.8 meters above the ground. The configuration tested is shown in Figure 1.

The frequency range 9 kHz-30 MHz was scanned.

The emissions were measured using a computerized EMI receiver complying with CISPR 16 requirements. The specification limits and applicable correction factors are loaded to the receiver via a 3.5" floppy disk.

In the frequency range 9 kHz-30MHz, the loop antenna was rotated on its vertical axis. The antenna height (center of loop) was 1 meter at a distance of 3 meters.

The E.U.T. was operated at the frequency of 433.92 MHz. This frequency was measured using a peak detector.

7.3 *Test Results*

JUDGEMENT: Passed

The EUT was tested and it met the requirements of the FCC Part 15, Subpart C specification.

All emissions were greater than the EMI receiver noise level which is at least 6dB below the specification limit.



7.4 Test Instrumentation Used, Radiated Measurements

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
EMI Receiver	HP	85422E	3906A00276	March 11, 2015	1 Year
RF Section	HP	85420E	3705A00248	March 19, 2015	1 Year
Active Loop Antenna	EMCO	6502	9506-2950	November 4, 2014	1 Year
Antenna Mast	ETS	2070-2	9608-1497	N/A	N/A
Turntable	ETS	2087	-	N/A	N/A
Mast & Table Controller	ETS/EMCO	2090	9608-1456	N/A	N/A

Figure 16 Test Equipment Used

7.5 Field Strength Calculation

The field strength is calculated directly by the EMI Receiver software, and a "Correction Factors" data disk, using the following equation:

$$FS = RA + AF + CF$$

FS: Field Strength [dB μ V/m]
RA: Receiver Amplitude [dB μ V]
AF: Receiving Antenna Correction Factor [dB/m]
CF: Cable Attenuation Factor [dB]

Example: $FS = 30.7 \text{ dB}\mu\text{V (RA)} + 14.0 \text{ dB (AF)} + 0.9 \text{ dB (CF)} = 45.6 \text{ dB}\mu\text{V}$

No external pre-amplifiers are used.



8. Radiated Emission 30 – 4500 MHz

8.1 Test Specification

30 - 4500 MHz, F.C.C., Part 15, Subpart C

8.2 Test Procedure

The E.U.T. operation mode and test set-up are as described in Section 2. A preliminary measurement to characterize the E.U.T was performed inside the shielded room at a distance of 3 meters, using peak detection mode and broadband antennas. The preliminary measurements produced a list of the highest emissions. The E.U.T was then transferred to the open site, and placed on a remote-controlled turntable. The E.U.T was placed on a non-metallic table, 0.8 meters above the ground. The configuration tested is shown in Figure 1. The signals from the list of the highest emissions were verified and the list was updated accordingly.

The levels of the emissions within the frequency ranges of the restricted bands (Section 15.205 of FCC Part 15) were compared to the limits of the table in Section 15.209 (a), General Requirements.

The emissions were measured using a computerized EMI receiver complying with CISPR 16 requirements. The specification limits and applicable correction factors are loaded to the receiver via a 3.5" floppy disk.

In the frequency range 30MHz-2.9 GHz, a computerized EMI receiver complying with CISPR 16 requirements was used.

In the frequency range 2.9 – 4.5GHz, a spectrum analyzer including a low noise amplifier was used. The test distance was 3 meters. During peak measurements, the I.F. bandwidth was 1 MHz, and video bandwidth 3 MHz. During average measurements, the I.F. bandwidth was 1 MHz and video bandwidth was 100 Hz.

The readings were maximized by adjusting the antenna height between 1-4 meters, the turntable azimuth between 0-360°, and the antenna polarization. Verification of the E.U.T emissions was based on the following methods: turning the E.U.T on and off; using a frequency span less than 10 MHz; observation of the signal level during turntable rotation. (Background noise is not affected by the rotation of the E.U.T.)

The emissions were measured at a distance of 3 meters.

Testing was done at two operational frequencies: 433.92 MHz.

8.3 Test Results

JUDGEMENT: Passed by 44.2 dB

The EUT met the requirements of the F.C.C. Part 15, Subpart C specification.

The margin between the emission level and the specification limit was 44.2 dB in the worst case at the frequency of 1301.76 MHz, horizontal polarization.



Radiated Emission

E.U.T Description Home Curfew Base Unit CDMA
Type BU3000
Serial Number: 50414791

Specification: FCC Part 15, Subpart C

Antenna Polarization: Horizontal/Vertical
Antenna: 3 meters distance

Frequency range: 30 MHz to 4500 MHz
Detectors: Peak

Frequency (MHz)	Antenna Polarity (H/V)	Peak Reading (dB μ V/m)	Average Factor (dB μ V/m)	Average Result dB μ V/m)	Average Specification (dB μ V/m)	Margin (dB)
867.84	H	42.9	-32.2	10.7	60.8	-50.1
867.84	V	40.7	-32.2	8.5	60.8	-52.3
1301.76	H	42.0	-32.2	9.8	54.0	-44.2
1301.76	V	40.6	-32.2	8.4	54.0	-45.6

Figure 17. Radiated Emission 433.92 MHz Fundamental - Antenna Polarization: Horizontal/Vertical. Detectors Peak

Notes:

1. Margin refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.
2. "Peak Reading." (dB μ V/m) included the "Correction Factors".
3. "Correction Factors" (dB) = Test Antenna Correction Factor (dB) + Cable Loss.
4. "Average Result" (dB μ V/m)=Peak Reading (dB μ V/m)+ Average Factor (dB)



8.4 Test Instrumentation Used, Radiated Measurements

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
EMI Receiver	HP	85422E	3906A00276	March 11, 2015	1 Year
RF Section	HP	85420E	3705A00248	March 19, 2015	1 Year
Low Noise Amplifier	DBS MICROWAVE	LNA-DBS- 0411N313	013	August 22, 2014	1 Year
Spectrum Analyzer	HP	8592L	3826A01204	March 4, 2015	1 Year
Antenna Biconical	EMCO	3104	2606	December 28, 2014	1 Year
Antenna Log Periodic	EMCO	3146	9505-4081	December 28, 2014	1 Year
Double Ridged Waveguide Horn Antenna	EMCO	3115	29845	May 19, 2015	3 Years
Antenna Mast	ETS	2070-2	9608-1497	N/A	N/A
Turntable	ETS	2087	-	N/A	N/A
Mast & Table Controller	ETS/EMCO	2090	9608-1456	N/A	N/A

Figure 18 Test Equipment Used



9. 20 dB Bandwidth

9.1 *Test Specification*

F.C.C. Part 15, Subpart C, Section 15.231(c)

9.2 *Test Procedure*

The transmitter unit operated with normal modulation. The spectrum analyzer was set to 30 kHz resolution BW and center frequency of the transmitter fundamental. The spectrum bandwidth of the transmitter unit was measured and recorded. The BW was measured at 20 dBc points.

The EUT was set up as shown in Figure 1, and its proper operation was checked. The transmitter occupied bandwidth was measured with the EMI receiver as frequency delta between reference points on the modulation envelope.

9.3 *Test Results*

Frequency	Bandwidth Reading (kHz)	Specification (1) (kHz)	Margin (kHz)
433.92	179.60	1083.55	903.95

(1) 0.25% of the E.U.T. fundamental frequency, Section 15.231(c).

Figure 19. Test Results

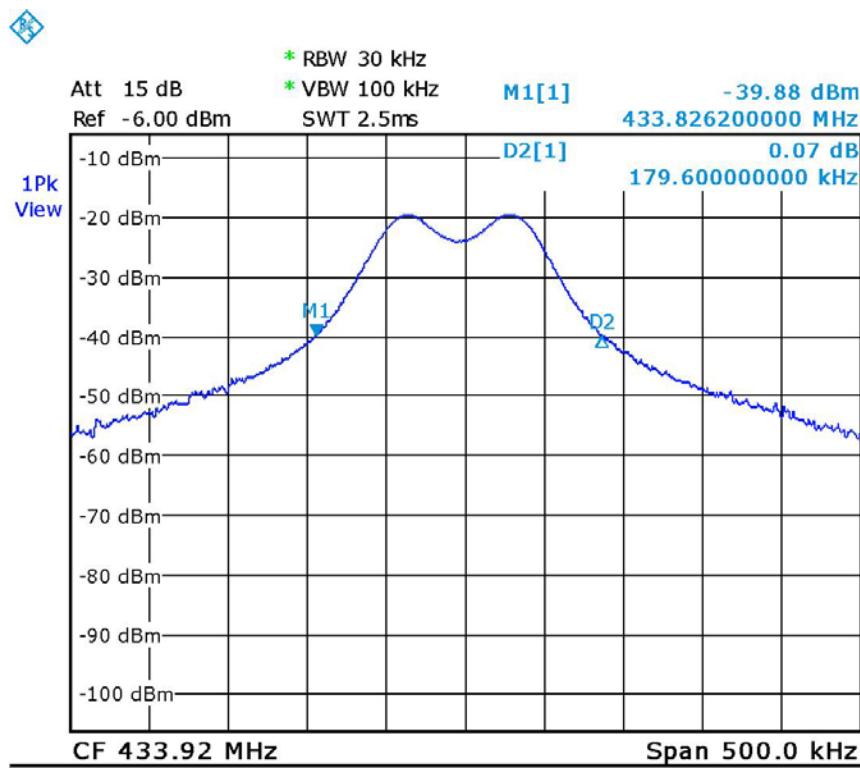
JUDGEMENT: Passed by 903.95 kHz

For additional information see Figure 20.



20dB Bandwidth

E.U.T Description Home Curfew Base Unit CDMA
Type BU3000
Serial Number: 50414791



Date: 10.AUG.2015 09:18:34

Figure 20. 433.92MHz



9.4 Test Equipment Used; 20 dB Bandwidth

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
Spectrum Analyzer	R&S	FSL6	100194	January 1, 2015	1 Year
Antenna Biconical	EMCO	3104	2606	December 28, 2014	1 Year
Antenna Log Periodic	EMCO	3146	9505-4081	December 28, 2014	2 Years
Antenna Mast	ETS	2070-2	9608-1497	N/A	N/A
Turntable	ETS	2087	-	N/A	N/A
Mast & Table Controller	ETS/EMCO	2090	9608-1456	N/A	N/A

Figure 21 Test Equipment Used



10. APPENDIX A - CORRECTION

FAC TOR S

10.1 Correction factors for

CABLE

from EMI receiver
to test antenna
at 3 meter range.

Frequency (MHz)	Cable Loss (dB)
0.010	0.4
0.015	0.2
0.020	0.2
0.030	0.3
0.050	0.3
0.075	0.3
0.100	0.2
0.150	0.2
0.200	0.3
0.500	0.4
1.00	0.4
1.50	0.5
2.00	0.5
5.00	0.6
10.00	0.8
15.00	0.9
20.00	0.8

Frequency (MHz)	Cable Loss (dB)
50.00	1.2
100.00	0.7
150.00	20.1
200.00	2.3
300.00	2.9
500.00	3.8
750.00	4.8
1000.00	5.4
1500.00	6.7
2000.00	9.0
2500.00	9.4
3000.00	9.9
3500.00	10.2
4000.00	11.2
4500.00	12.1
5000.00	13.1
5500.00	13.5
6000.00	14.5

NOTES:

1. The cable type is SPUMA400 RF-11N(X2) and 39m long
2. The cable is manufactured by Huber + Suhner



10.2 Correction factors for

**CABLE
from EMI receiver
to test antenna
at 3 meter range.**

FREQUENCY CORRECTION FACTOR	
(GHz)	(dB)
1.0	1.2
2.0	1.6
3.0	2.0
4.0	2.4
5.0	3.0
6.0	3.4
7.0	3.8
8.0	4.2
9.0	4.6
10.0	5.0
12.0	5.8

NOTES:

1. The cable type is RG-8.
2. The overall length of the cable is 10 meters.



10.3 Correction factors for LOG PERIODIC ANTENNA

Type **EMCO Model 3146**
S/N 9505-4081

CALIBRATION DATA

Frequency, MHz	Antenna factor, dB/m ¹⁾
200	11.55
250	11.60
300	14.43
400	15.38
500	17.98
600	18.78
700	21.17
800	21.16
900	22.67
1000	24.09

¹⁾ The antenna factor shall be added to receiver reading in dB μ V to obtain field strength in dB μ V/m.



10.4 Correction factors for Double-Ridged Waveguide Horn

**Model: 3115, S/N 29845
at 10 meter range.**

FREQUENCY (MHz)	AFE (dB/m)	FREQUENCY (MHz)	AFE (dB/m)
1000	22.4	10000	36.1
2000	25.2	11000	37.0
3000	31.1	12000	41.3
4000	30.2	13000	38.1
5000	34.2	14000	41.7
6000	31.6	15000	39.0
7000	34.7	16000	38.8
8000	34.8	17000	43.2
9000	36.2	18000	43.7



10.5 Correction factors for ACTIVE LOOP ANTENNA

**Model 6502
S/N 9506-2950**

FREQUENCY (MHz)	Magnetic Antenna Factor (dB)	Electric Antenna Factor (dB)
.009	-35.1	16.4
.010	-35.7	15.8
.020	-38.5	13.0
.050	-39.6	11.9
.075	-39.8	11.8
.100	-40.0	11.6
.150	-40.0	11.5
.250	-40.0	11.6
.500	-40.0	11.5
.750	-40.1	11.5
1.000	-39.9	11.7
2.000	-39.5	12.0
3.000	-39.4	12.1
4.000	-39.7	11.9
5.000	-39.7	11.8
10.000	40.2	11.3
15.000	-40.7	10.8
20.000	-40.5	11.0
25.000	-41.3	10.2
30.000	42.3	9.2



**10.6 Correction factors for Biconical ANTENNA
EMCO Model 3104
S/N 2606**

CALIBRATION DATA

Frequency, MHz	Near free space antenna factor, dB/m	Geometry specific correction factor, dB	Free space antenna factor, dB/m ¹⁾
30	12.97	0.13	12.84
35	12.34	0.09	12.25
40	12.03	0.06	11.97
45	11.42	0.02	11.40
50	11.91	0.03	11.88
60	11.92	0.37	11.55
70	9.60	0.25	9.35
80	6.99	-0.45	7.44
90	10.87	-0.34	11.21
100	11.51	-0.06	11.57
120	13.30	0.20	13.10
140	12.56	-0.01	12.57
160	14.49	-0.12	14.61
180	16.53	0.05	16.48
200	15.30	0.15	15.15

¹⁾ The antenna factor shall be added to receiver reading in dB μ V to obtain field strength in dB μ V/m.