

ADDRESS: No. 67-9, Shir Men Road, Tu Cheng City,

Taipei Hsien, Taiwan

PHONE : 886-2-22608375 FAX: 886-2-22748013

E - mail : hometek@ms15.hinet.net

FCC TEST REPORT FOR

APPLICANT : TomTom BV

ADDRESS : Rembrandtplein 35, 1017 CT Amsterdam,

The Netherlands

EUT : FM transmitter

MODEL NO. : 2V00.100

FCC ID : S4LFMTRANS

Under Part 15, SUBPART B AND SUBPART C CLASS B

Certification

MEASUREMENT PROCEDURE USED

FCC RULES AND FCC / ANSI C63.4-2003

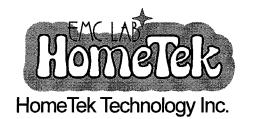
PREPARED BY:

HomeTek Technology Inc.

No. 67-9, Shir Men Road, Tu Cheng City,

Taipei Hsien. Taiwan

Report # : FB6A012



ADDRESS: No. 67-9, Shir Men Road, Tu Cheng City,

Taipei Hsien, Taiwan

PHONE

: 886-2-22608375

FAX: 886-2-22748013

E - mail

: hometek@ms15.hinet.net

CERTIFICATION

EUT

: FM transmitter

MODEL NO.

: 2V00.100

FCC ID

S4LFMTRANS

Receipt Date

11/29/2006

Final Test Date: 01/05/2007

REPORT#

: FB6A012

APPLICANT

: TomTom BV

ADDRESS

: Rembrandtplein 35, 1017 CT Amsterdam,

The Netherlands

MEASUREMENT PROCEDURE USED:

FCC RULES AND REGULATION PART 15, SUBPART B AND SUBPART C AND FCC / ANSI C63.4-2003

We hereby show that:

The measurement sown in this test report were made in accordance with and no deviation with the procedures indicated, and the maximum energy emitted by the equipment was found to be within the FCC limits applicable.

This test result of this report applies to above tested sample only.

This test report shall not be reproduce in part without written approval of HomeTek Technology Inc.

APPROVED BY: //11/2007

ALAIN LIN / Supervisor

FCC ID: <u>S4LFMTRANS</u>

TABL	E OF CONTENTS	1
GENE	RAL INFORMATION	2
MODII	FICATION LIST	4
COND	UCTED POWER LINE TEST	5
1	TEST PROCEDURE	5
2	RESULT OF CONDUCTED EMISSION TEST	5
RADIA	TED EMISSION TEST	6
1	TEST INSTRUMENTS & FACILITIES	6
2	EUT OPERATING CONDITION	7
3	TEST SETUP	
4	CONFIGURATION OF THE EUT	10
5	TEST PROCEDURE	14
6	LIMIT OF RADIATED EMISSION CLASS B	15
7	RESULT OF RADIATED EMISSION TEST (1)	16
8	RESULT OF RADIATED EMISSION TEST (2)	18
9	RESULT OF RADIATED EMISSION TEST (3)	20
10	EMISSION BAND MEASUREMENT	22
РНОТО	O OF FCC ID LABEL	23

APPENDIX A

PHOTOS OF TEST CONFIGURATION

APPENDIX B

PHOTOS OF EUT

APPENDIX C

PLOT OF OCCUPIED BANDWIDTH

GENERAL INFORMATION

1 APPLICANT : TomTom BV

2 ADDRESS : Rembrandtplein 35, 1017 CT Amsterdam,

The Netherlands

3 MANUFACTURER: Fugang Electric (Kunshan) Co., Ltd.

4 ADDRESS : No. 2, Zheng Wei Road,

Jin Xi Town, Kun Shan City,

FCC ID : <u>S4LFMTRANS</u>

Jiang Su Province, China

5 DESCRIPTION OF EUT:

EUT : FM transmitter

FCC ID : S4LFMTRANS

Model Number : 2V00.100

Serial # : N/A

FB6A012 Page: 2 of 23

6 FEATURES OF EUT:

6.1 Frequency: capable of operating anywhere in the US FM band: 88.1MHz ~ 107.9MHz.

FCC ID: <u>S4LFMTRANS</u>

- 6.2 Freq response: 50 Hz to 15 KHz (+/- 3dB).
- 6.3 Stereo separation: 30dB Minimum.
- 6.4 THD: < 2%.
- 6.5 Rang: The FM transmitter must work within a 5m range.
- 6.6 The EUT only use by Tom Tom's GPS. EUT was tested in an automobile and it played music as was expected.

7 TEST MODE:

The EUT were investigated with three operation modes shown as below:

- (1) FM 88.1MHz Mode;
- (2) FM 97.9MHz Mode;
- (3) FM 107.9MHz Mode

The final test data were shown in this test report.

FB6A012 Page: 3 of 23

MODIFICATION LIST

THE FOLLOWING ACCESSORIES WERE ADDED TO THE EUT DURING TESTING :

NO MODIFICATION BY HOMETEK TECHNOLOGY INC.

FB6A012 Page: 4 of 23

CONDUCTED POWER LINE TEST

1 TEST PROCEDURE

According to ANSI C63.4 – 2003.

2 RESULT OF CONDUCTED EMISSION TEST

N/A (Conducted Power Line Test is not applicable to this EUT (Model: 2V00.100)).

FCC ID : <u>S4LFMTRANS</u>

FB6A012 Page: 5 of 23

RADIATED EMISSION TEST

1 TEST INSTRUMENTS & FACILITIES

The following test Instruments was used during the radiated emission test:

FCC ID : <u>S4LFMTRANS</u>

Item	Instruments /facilities	Specification	Manufacturer	Model # / S/N#	Date of Cal.
1	OPEN AREA TEST SITE	☑ OATS 3			JUL/2006
2	EMI TEST RECEIVER	20Hz ~ 26.5GHz	ROHDE & SCHWARZ	ESMI 845442/006	FEB/2006
3	PRE- AMPLIFIER	9KHz ~ 3000MHz	ADVANTEST	BB525C 90081001	OCT/2006
4	ANTENNA (BI-LOG)	25MHz ~ 2GHz	SCHAFFNER	CBL6112B S/N: 2614	JUN/2006
5	Attenuation	50Ω/6dB	JYE BAO	FAT-N (M-F) 001	JUL/2006
6	Cable	10m	SUHNER	RG214/U OS3-003	DEC/2006
7	Cable	14m	BELDEN	9913 OS3-001	DEC/2006
8	EMI 32 (software)	N/A	AUDIX	19991013-0923	N/A

Note: Items $1 \sim 7$ were calibrated within period of 1 year.

FB6A012 Page: 6 of 23

2 EUT OPERATING CONDITION

- 2.1 Configure the EUT according to the **ANSI C63.4 2003**.
- 2.2 The radiated emission in the frequency range from 30 MHz 1000 MHz was test in a horizontal and vertical polarization at HomeTek Lab's open site III. (The photos of radiated test configuration, please refer to appendix A.)

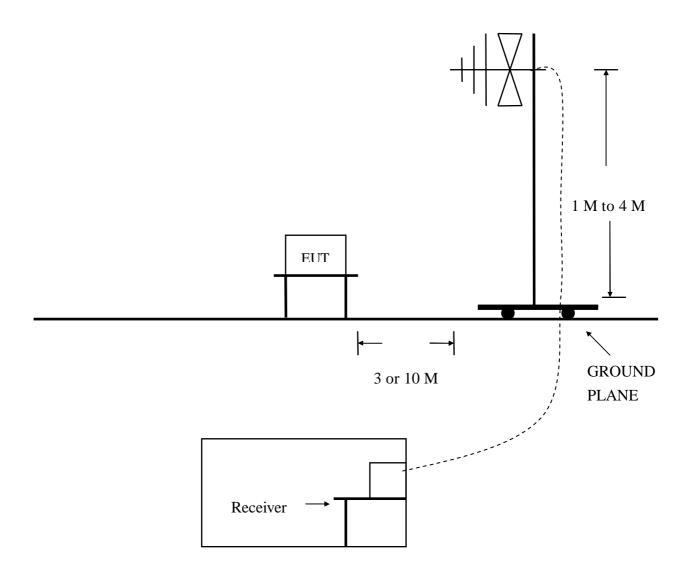
FCC ID: S4LFMTRANS

- 2.3 The crystal frequency of the EUT is 32.768 KHz.
- 2.4 Test Frequency tuning range is 88.1~107.9 MHz.
- 2.5 Connects the GPS and peripherals.
- 2.6 Turn on the GPS power switch.
- 2.7 GPS's RF is adjusting.
- 2.8 GPS play MP3 music.
- 2.9 GPS continue to play music through EUT.
- 2.10 The bandwidth was properly tested with maximum audio input. When testing GPS play mp3 music and adjust maximum volume through EUT transmitter. The EUT only use by Tom Tom's GPS (Model: GO910; GO710; GO510).
- 2.11 The EUT was operated in its normal operating mode for the purpose of the measurements.
- 2.12 The receiving antenna polarized horizontally was varied from 1 to 4 meters and the wooden turntable was rotated through 360 degrees to obtain the highest reading on the ESMI test receiver or on the display of the spectrum analyzer. And also, each emission was to be maximized by changing the orientation of the EUT.

FB6A012 Page: 7 of 23

3 **TEST SETUP**

3.1 TEST SETUP OF OPEN SITE.



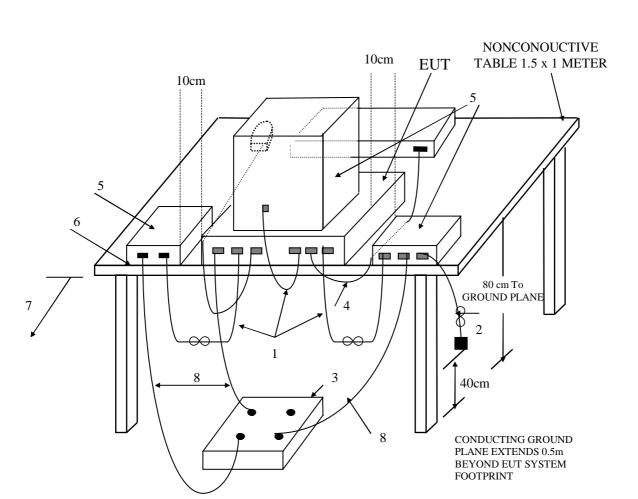
FB6A012 Page: 8 of 23



3.2 TEST SETUP OF EUT

ANSI C63.4-2003

ELECTRICAL AND ELECTRONIC EQUIPMENT IN THE RANGE OF 9kHz TO 40 GHz



(Details for setup configuration, please refer to appendix A.)

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 1m.
- 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.

Test Configuration

Tabletop Equipment Radiated Emission

FB6A012 Page: 9 of 23

4 CONFIGURATION OF THE EUT

The EUT was configured according to **ANSI C63.4 - 2003**. All I/O ports were connected to the appropriate peripherals. All peripherals and cables are listed below (including internal device):

FCC ID: S4LFMTRANS

4.1	EUT

EUT Type : □Proto Type □Engineer Type □Mass Production

Condition when received : ☑Good □Damage : _____

Device : FM Transmitter

Applicant : TomTom BV

Manufacturer : Fugang Electric (Kunshan) Co., Ltd.

Model Number : 2V00.100

Serial Number : N/A

FCC ID : S4LFMTRANS

Audio out connector Port : Plastics Type Connector

External microphone Port : Plastics Type Connector

External antenna Port : Metal Type Connector

Power connector Port : Plastics Type Connector

I/O Port : Plastics Type Connector

Expansion connector Port : Plastics Type Connector

Power Cord : Un-Shielded, 0.1 m, 2 pin

Power Supply Type : Switching Power Adapter

FB6A012 Page: 10 of 23

4.2 PERIPHERALS

☑ Battery

Manufacturer : FORBATT

Model Number : FB12-9

Serial Number : N/A

FCC ID : N/A

Data Cable : N/A

Power Cord : Un-Shielded, 0.1 m

☑ Cigarette Lighter Adapter

Manufacturer : tomtom

Model Number : N/A

Serial Number : N/A

FCC ID : N/A

Data Cable : N/A

Power Cord : Un-Shielded, 1.5 m

☑ TT External Antenna

Manufacturer : tomtom

Model Number : 4N00.002

Serial Number : N/A

FCC ID : N/A

Data Cable : Un-Shielded, 5.4 m,

Connected to the external antenna port

FCC ID : <u>S4LFMTRANS</u>

Power Cord & Adaptor : N/A

FB6A012 Page: 11 of 23

Headphone

Manufacturer : SL

Model Number : N/A

Serial Number : N/A

FCC ID : N/A

Data Cable 1 : Shielded, 1.5 m, Connected to the audio out port

Data Cable 2 : Shielded, 1.5 m, Connected to the microphone port

FCC ID: <u>S4LFMTRANS</u>

Power Cord & Adaptor : N/A

☑ GPS tracking system 1

Manufacturer : tomtom

Model Number : G0910

Serial Number : N/A

FCC ID : N/A

Data Cable : N/A

Power Cord & Adaptor : N/A

☑ GPS tracking system 2

Manufacturer : tomtom

Model Number : G0710

Serial Number : N/A

FCC ID : N/A

Data Cable : N/A

Power Cord & Adaptor : N/A

FB6A012 Page: 12 of 23

☑ GPS tracking system 3

Manufacturer : tomtom

Model Number : G0510

Serial Number : N/A

FCC ID : N/A

Data Cable : N/A

Power Cord & Adaptor : N/A

☑ RDS-TMC Traffic Receiver

Manufacturer : tomtom

Model Number : 4V00.XXX

Serial Number : N/A

FCC ID : N/A

Data Cable : Shielded, 1.7 m, Connected to the Expansion port

FCC ID : <u>S4LFMTRANS</u>

Power Cord : N/A

4.3 REMARK: N/A

FB6A012 Page: 13 of 23

5 TEST PROCEDURE

5.1 The EUT was test according to **ANSI C63.4 – 2003 & FCC Part 15.35/15.209/15.239**.

FCC ID: S4LFMTRANS

- 5.2 The radiated test was performed at HomeTek Lab's Open Site <u>III</u>. (The photos of radiated test configuration, please refer to appendix A.)
- 5.3 This site is on file with the FCC laboratory division, test firm registration number: 713630, expiration Date: 2005/10/25.
- 5.4 The EUT only use by Tom Tom's GPS (Model: GO910; GO710; GO510). When testing GPS play mp3 music and adjust max volume through EUT transmitter.
- 5.5 For emission frequencies measured below 1 GHz, a pre-scan is performed in a shielded chamber to determine the accurate frequencies. The signal of higher emissions will be checked on a open test site. As the same purpose, for emission frequencies measured above 1 GHz, a pre-scan also be performed with a 1 meter measuring distance before final test.
- 5.6 For emission frequencies measured below and above 1 GHz, set the spectrum analyzer or a 100KHz and 1MHz resolution bandwidth respectively for each frequency measured in item 5.5.
- 5.7 The receiving antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Move the antenna to a position where the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0° to 360° with a speed as slow as possible and keep the azimuth that highest emission is indicated on the spectrum analyzer. Vary the antenna position again and record the highest value as a final reading. A RF test receiver is also used to confirm emissions measured.
- 5.8 Repeat item 5.7 until all frequencies need to be measured were completed.
- 5.9 Repeat item 5.8 with search antenna in vertical polarized orientations.
- 5.10 Check seven frequencies of highest emission with varying the placement of cables (if any) associated with EUT to obtain the worst case and record the result.
- 5.11 The frequency range from $\underline{30}$ MHz to $\underline{1}$ GHz were investigated, the measurement were made at $\underline{3}$ meters, with a BI-log antenna.

FB6A012 Page: 14 of 23

6 LIMIT OF RADIATED EMISSION CLASS B

Frequency (MHz)	Measurement Distance	dBuV/m	uV/m
Fundamental frequency	3 (M)	48	250
30 - 88	3 (M)	40	100
88 - 216	3 (M)	43.5	150
216 - 960	3 (M)	46	200
Above 960	3 (M)	54	500

FCC ID : <u>S4LFMTRANS</u>

- 6.1 The tighter limit shall apply at the edge between two frequency bands.
- 6.1 Measurement distance in meters between the measuring instrument antenna and the closed point of any part of the EUT or peripherals.

FB6A012 Page: 15 of 23

7 RESULT OF RADIATED EMISSION TEST (1)

- 7.1 The frequency range from 30 MHz to 1 GHz was investigated.
- 7.2 All readings below or equal <u>1</u> GHz are quasi-peak or peak values with resolution bandwidth of <u>120</u> KHz. The reading of fundamental frequency is peak or average values. With resolution bandwidth of 120KHz.

FCC ID: S4LFMTRANS

- 7.3 The measurements were made at <u>3</u> meters of HomeTek Lab's open site <u>III</u>. (The test setup of radiated test configuration, please refer to test setup of page9, test procedure of page 14 and test photo of appendix A.)
- 7.4 Temperature : $\underline{25}$ °C, Humidity : $\underline{52}$ % RH.
- 7.5 Deviation form the test standards and rules: None.
- 7.6 Radiated Emission data: Horizontal

Frequency	Emission	Limit	Margin	Read	ANT	Cable	Preamp	
(MHz)	Level	(dBuV/m)	(dB)	Level	Factor	Loss	Factor	Detector
	(dBuV/m)			(dBuV)	(dB/m)	(dB)	(dB)	
* 88.10	44.01	48.00	-3.99	60.00	8.65	1.27	25.91	QP
176.22	34.70	43.50	-8.80	49.28	9.33	1.84	25.75	Peak
264.38	17.26	46.00	-28.74	27.35	13.25	2.23	25.57	Peak
352.46	23.01	46.00	-22.99	31.23	14.49	2.64	25.35	Peak
440.57	19.51	46.00	-26.49	25.10	16.40	3.07	25.06	Peak
528.68	23.94	46.00	-22.06	27.09	18.13	3.44	24.72	Peak
616.74	31.52	46.00	-14.48	33.50	18.67	3.75	24.40	Peak
704.82	29.67	46.00	-16.33	30.63	18.87	4.19	24.02	Peak

^{*} Harmonic frequency of T x frequency (FM 88.1MHz) is to low to be measured.

- Emission Level = Read Level Preamp Factor + ANT Factor + Cable Loss.
- Sample Calculation for 704.82 MHz.
- Corrected Reading: $(30.63) (24.02) + (18.87) + (4.19) = \underline{29.67}$.

FB6A012 Page: 16 of 23

7.6 Radiated Emission data: Vertical

Frequency	Emission	Limit	Margin	Read	ANT	Cable	Preamp	
(MHz)	Level	(dBuV/m)	(dB)	Level	Factor	Loss	Factor	Detector
	(dBuV/m)			(dBuV)	(dB/m)	(dB)	(dB)	
* 88.10	41.00	48.00	-7.00	56.99	8.65	1.27	25.91	Peak
176.24	31.30	43.50	-12.20	45.88	9.33	1.84	25.75	Peak
264.38	19.58	46.00	-26.42	29.67	13.25	2.23	25.57	Peak
352.47	19.04	46.00	-26.96	27.26	14.49	2.64	25.35	Peak
440.58	30.84	46.00	-15.16	36.43	16.40	3.07	25.06	Peak
528.67	25.14	46.00	-20.86	28.29	18.13	3.44	24.72	Peak
616.75	32.03	46.00	-13.97	34.01	18.67	3.75	24.40	Peak
704.86	29.15	46.00	-16.85	30.11	18.87	4.19	24.02	Peak

 $[\]divideontimes$ Harmonic frequency of T x frequency (FM 88.1MHz) is to low to be measured.

- Emission Level = Read Level Preamp Factor + ANT Factor + Cable Loss.
- Sample Calculation for <u>704.86</u> MHz.
- Corrected Reading: $(30.11) (24.02) + (18.87) + (4.19) = \underline{29.15}$.

REMARK:

1. Model: 2V00.100.

Measuring mode: FM 88.1MHz Mode.
 "*", means this frequency is fundamental.

4. Result: **PASSED**

FB6A012 Page: 17 of 23

8 RESULT OF RADIATED EMISSION TEST (2)

- 8.1 The frequency range from $\underline{30}$ MHz to $\underline{1}$ GHz was investigated.
- 8.2 All readings below or equal <u>1</u> GHz are quasi-peak or peak values with resolution bandwidth of <u>120</u> KHz. The reading of fundamental frequency is peak or average values. With resolution bandwidth of 120KHz.

FCC ID : S4LFMTRANS

- 8.3 The measurements were made at <u>3</u> meters of HomeTek Lab's open site <u>III</u>. (The test setup of radiated test configuration, please refer to test setup of page9, test procedure of page 14 and test photo of appendix A.)
- 8.4 Temperature : $\underline{27}$ °C, Humidity : $\underline{50}$ % RH.
- 8.5 Deviation form the test standards and rules: None.
- 8.6 Radiated Emission data: Horizontal

Frequency	Emission	Limit	Margin	Read	ANT	Cable	Preamp	
(MHz)	Level	(dBuV/m)	(dB)	Level	Factor	Loss	Factor	Detector
	(dBuV/m)			(dBuV)	(dB/m)	(dB)	(dB)	
* 97.89	44.33	48.00	-3.67	58.89	9.99	1.35	25.90	Peak
195.79	23.95	43.50	-19.55	38.67	9.04	1.96	25.72	Peak
293.70	21.78	46.00	-24.22	31.95	13.00	2.34	25.51	Peak
391.60	21.42	46.00	-24.58	28.39	15.42	2.85	25.24	Peak
489.49	26.27	46.00	-19.73	30.62	17.22	3.30	24.87	Peak
587.40	24.30	46.00	-21.70	26.64	18.55	3.62	24.51	Peak
685.30	26.21	46.00	-19.79	27.35	18.86	4.11	24.11	Peak
783.20	27.13	46.00	-18.87	26.99	19.70	4.26	23.82	Peak

^{*} Harmonic frequency of T x frequency (FM 97.9MHz) is to low to be measured.

- Emission Level = Read Level Preamp Factor + ANT Factor + Cable Loss.
- Sample Calculation for 783.20 MHz.
- Corrected Reading: $(26.99) (23.82) + (19.70) + (4.26) = \underline{27.13}$.

FB6A012 Page: 18 of 23

8.7 Radiated Emission data: **Vertical**

Frequency	Emission	Limit	Margin	Read	ANT	Cable	Preamp	
(MHz)	Level	(dBuV/m)	(dB)	Level	Factor	Loss	Factor	Detector
	(dBuV/m)			(dBuV)	(dB/m)	(dB)	(dB)	
* 97.90	44.18	48.00	-3.82	58.74	9.99	1.35	25.90	Peak
107.00	20.72	42.50	22 = 0	25.44	0.04	4.0.5	22.52	
195.80	20.72	43.50	-22.78	35.44	9.04	1.96	25.72	Peak
202.70	20.47	46.00	25.52	20.64	12.00	2.24	25.51	D 1
293.70	20.47	46.00	-25.53	30.64	13.00	2.34	25.51	Peak
391.59	23.90	46.00	-22.10	30.87	15.42	2.85	25.24	Peak
489.50	23.01	46.00	-22.99	27.36	17.22	3.30	24.87	Peak
587.40	23.78	46.00	-22.22	26.12	18.55	3.62	24.51	Peak
685.30	23.91	46.00	-22.09	25.05	18.86	4.11	24.11	Peak
783.20	26.69	46.00	-19.31	26.55	19.70	4.26	23.82	Peak

FCC ID : <u>S4LFMTRANS</u>

- Emission Level = Read Level Preamp Factor + ANT Factor + Cable Loss.
- Sample Calculation for <u>783.20</u> MHz.
- Corrected Reading: $(26.55) (23.82) + (19.70) + (4.26) = \underline{26.69}$.

REMARK:

1. Model: 2V00.100.

Measuring mode: FM 97.9MHz Mode.
 "*", means this frequency is fundamental.

4. Result: **PASSED**

FB6A012 Page: 19 of 23

^{*} Harmonic frequency of T x frequency (FM 97.9MHz) is to low to be measured.

9 RESULT OF RADIATED EMISSION TEST (3)

- 9.1 The frequency range from $\underline{30}$ MHz to $\underline{1}$ GHz was investigated.
- 9.2 All readings below or equal <u>1</u> GHz are quasi-peak or peak values with resolution bandwidth of <u>120</u> KHz. The reading of fundamental frequency is peak or average values. With resolution bandwidth of 120KHz.

FCC ID : <u>S4LFMTRANS</u>

9.3 The measurements were made at <u>3</u> meters of HomeTek Lab's open site <u>III</u>. |(The test setup of radiated test configuration, please refer to test setup of page9, test procedure of page 14 and test photo of appendix A.)

9.4 Temperature : $\underline{27}$ °C, Humidity : $\underline{50}$ % RH.

9.5 Deviation form the test standards and rules: None.

9.6 Radiated Emission data: Horizontal

Frequency	Emission	Limit	Margin	Read	ANT	Cable	Preamp	
(MHz)	Level	(dBuV/m)	(dB)	Level	Factor	Loss	Factor	Detector
	(dBuV/m)			(dBuV)	(dB/m)	(dB)	(dB)	
* 107.89	40.27	48.00	-7.73	52.99	11.74	1.42	25.88	Peak
215.79	16.70	43.50	-26.80	31.24	9.10	2.04	25.68	Peak
323.70	20.96	46.00	-25.04	30.19	13.72	2.48	25.43	Peak
431.60	22.34	46.00	-23.66	28.16	16.24	3.03	25.09	Peak
539.50	24.27	46.00	-21.73	27.04	18.44	3.47	24.68	Peak
647.40	24.16	46.00	-21.84	25.55	18.96	3.91	24.26	Peak
755.29	27.91	46.00	-18.09	27.86	19.70	4.24	23.89	Peak
863.19	29.00	46.00	-17.00	27.45	20.33	4.79	23.57	Peak

* Harmonic frequency of T x frequency (FM 107.9MHz) is to low to be measured.

- Emission Level = Read Level Preamp Factor + ANT Factor + Cable Loss.
- Sample Calculation for <u>863.19</u> MHz

• Corrected Reading: $(27.45) - (23.57) + (20.33) + (4.79) = \underline{29.00}$.

FB6A012 Page: 20 of 23

9.7 Radiated Emission data: Vertical

Frequency	Emission	Limit	Margin	Read	ANT	Cable	Preamp	
(MHz)	Level	(dBuV/m)	(dB)	Level	Factor	Loss	Factor	Detector
	(dBuV/m)			(dBuV)	(dB/m)	(dB)	(dB)	
* 107.89	43.14	48.00	-4.86	55.86	11.74	1.42	25.88	Peak
215.80	18.44	43.50	-25.06	32.98	9.10	2.04	25.68	Peak
323.69	19.58	46.00	-26.42	28.81	13.72	2.48	25.43	Peak
431.60	25.28	46.00	-20.72	31.10	16.24	3.03	25.09	Peak
539.50	23.40	46.00	-22.60	26.17	18.44	3.47	24.68	Peak
647.40	23.43	46.00	-22.57	24.82	18.96	3.91	24.26	Peak
755.30	26.22	46.00	-19.78	26.17	19.70	4.24	23.89	Peak
863.19	26.40	46.00	-19.60	24.85	20.33	4.79	23.57	Peak

FCC ID : <u>S4LFMTRANS</u>

- Emission Level = Read Level Preamp Factor + ANT Factor + Cable Loss.
- Sample Calculation for <u>863.19</u> MHz.
- Corrected Reading: $(24.85) (23.57) + (20.33) + (4.79) = \underline{26.40}$.

REMARK:

- 1. Model: 2V00.100.
- 2. Measuring mode: FM 107.9MHz Mode.
- 3. "*", means this frequency is fundamental.
- 4. The radiated mission test was passed at minimum margin:

 Horizontal <u>88.10</u> MHz/ <u>45.01</u> dBuV/m, Antenna Height <u>3.5</u> Meter,

 Turn Table <u>160</u> degree, Test Mode: <u>FM 88.1MHz Mode</u>.
- 5. Result: **PASSED**

FB6A012 Page: 21 of 23

^{*} Harmonic frequency of T x frequency (FM 107.9MHz) is to low to be measured.

10 Emission Band Measurement

10.1 According to FCC Part 15.239(a) emissions from the intentional radiator shall be confined within a band $\underline{200}$ KHz wide centered on the operating frequency. The $\underline{200}$ KHz band shall lie wholly within the frequency range of $\underline{88}$ MHz $\sim \underline{108}$ MHz.

FCC ID: S4LFMTRANS

10.2 Measuring Instruments and setting: The following table is the setting of the Spectrum Analyzer.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 20dB Bandwidth
RBW	10KHz
VBW	10KHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

10.3 Test Procedures:

- a. When testing GPS play mp3 music and adjust max volume through EUT transmitter.
- b. The transmitter output (antenna port) was connected to the spectrum analyzer in peak hold mode.
- c. The resolution bandwidth of 10KHz and the video bandwidth of 10KHz were used.
- d. Measured the spectrum width with power higher than 20dB below carrier.

10.4 The result:

- a. Test frequency is 88.1MHz, Temperature: 21° C, Humidity: 49° RH (Date: 2007/01/05);
 - Test frequency is 97.9MHz and 107.9MHz, Temperature: $\underline{31}^{\circ}$ C, Humidity: $\underline{60}^{\circ}$ % RH (Date: 2007/01/05).
- b. Deviation form the test standards and rules: None.
- c. All reading are peak values with resolution bandwidth of 60 KHz/50 KHz.

10.5 The test data of Emission Band, please refer to appendix C.

FB6A012 Page: 22 of 23

PHOTO OF FCC ID LABEL

SAMPLE OF FCC ID LABEL:

FCC ID: S4LFMTRANS

FCC ID : <u>S4LFMTRANS</u>

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference. And (2) this device must accept any interference received, including interference that may cause undesired operation.

Please refer to appendix B photo of ID location.

FB6A012 Page: 23 of 23