

RF TEST REPORT

Test report No.: EMC- FCC- R0002

FCC ID: V5K-PXMRF-1A

Type of equipment: Remote Switch

Brand Name: POSKOM Co., Ltd

Model Name: PXMRF-1A

Applicant: POSKOM Co., Ltd

FCC Rule Part(s): §15.231

Frequency Range: 433.7000 MHz ~ 433.8875 MHz

Channel Separation: 12.5 kHz

Test result: Complied

The above equipment was tested by EMC compliance Testing Laboratory for compliance with the requirements of FCC Rules and Regulations.

The results of testing in this report apply to the product/system which was tested only. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Date of test: February 25, 2008 ~ February 29 , 2008
Issued date: February 29 , 2008



Tested by: _____
KIM, CHANG MIN



Approved by: _____
YOO, SUNG YOUNG

[Contents]

1. Client information	3
2. Laboratory information	4
3. Description of E.U.T.....	5
3.1 Basic description	5
3.2 General description	5
3.3 Test frequency	5
4. Summary of test results	6
4.1 Standards & results	6
5. Test results	7
5.1 Transmission Requirement (15.231 (a)).....	7
5.2 Field Strength of Emission (15.231 (b)).....	11
5.3 Occupied bandwidth (15.231 (c))	13
6. Test equipment used for test	15

Appendix 1 Test setup photos

Appendix 2 External photos of EUT

Appendix 3 Internal photos of EUT

Appendix 4 Block diagram

Appendix 5 Schematics

Appendix 6 User manual

Appendix 7 Part list

Appendix 8 Layout diagram

1. Client information

Applicant: **POSKOM Co., Ltd**
Address: Room 405, Unitech Ville Bldg., 1141-2 ,
Baeksuk-dong, Ilsan-dongu, Goyang, Korea
Telephone number: +82(31)906-9007
Facsimile number : +82(31)908-4208
Contact person: Ki-Bong Sung / CTO

Manufacturer: **POSKOM Co., Ltd**
Address: Room 405, Unitech Ville Bldg., 1141-2 ,
Baeksuk-dong, Ilsan-dongu, Goyang, Korea
Telephone number: +82(31)906-9007
Facsimile number : +82(31)908-4208
Contact person: Ki-Bong Sung / CTO

2. Laboratory information

Address

EMC Compliance Ltd.
82-1, JEIL-RI, YANGJI-MYUN, CHURINGU, YONGIN-CITY, KYUNGKI-DO,
KOREA 449-825
Telephone Number: 82 31 336 9919 Facsimile Number: 82 31 336 4767

Certificate

CBTL Testing Laboratory, KOLAS NO.: 231
FCC Filing No.: 793334
VCCI Registration No.: C-1713, R-1606, T-258

SITE MAP



3. Description of E.U.T.

3.1 Basic description

Applicant :	POSKOM Co.,Ltd
Address of Applicant:	Room 405, Unitech Ville Bldg., 1141-2 ,Baeksuk-dong, Ilsan-dongu, Goyang, Korea
Manufacturer:	POSKOM Co.,Ltd
Address of Manufacturer:	Room 405, Unitech Ville Bldg., 1141-2 ,Baeksuk-dong, Ilsan-dongu, Goyang, Korea
Type of equipment:	Remote Switch
Basic Model:	PXMRF-1A
Brand name:	Poskom
Serial number:	Proto type

3.2 General description

Frequency Range	433.7000 MHz ~ 433.8875 MHz
Type of Modulation	FSK
Channel spacing	12.5 kHz
Channel capacity	16 ch
Type of Antenna	Wheep antenna
Power supply	DC 5V
Operating temperature	-10℃ ~ 50℃
Dimension	76 * 51* 20mm
Weight	44 g

3.3 Test frequency

Frequency	433.7875
------------------	-----------------

4. Summary of test results

4.1 Standards & results

Rule Reference	Parameter	Status
Part 15 Subpart C		
15.231 (a)	Transmission Requirement	C
15.231 (b)	Radiated Emission	C
15.231 (c)	Occupied Bandwidth	C
15.231 (d)	Frequency Tolerance	NA
15.231 (e)	Periodic Alternate Field Strength Requirement	NA
Note: C=complies NC= Not complies NT=Not tested NA=Not Applicable		

5. Test results

5.1 Transmission Requirement (15.231 (a))

5.1.1 Minimum Standard

15.231 (a) Continuous transmissions such as voice, video or data transmissions are not permitted.

15.231 (a)(1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter with in not more than 5 seconds after being released.

15.231 (a)(2) A transmitter activated automatically shall cease transmission with in 5 seconds of activation.

15.231 (a)(3) Periodic transmissions at regular pre-determined intervals are not permitted. However polling supervisory transmissions to determine system integrity of transmitters used in security or safety applications are allowed if the periodic rate of transmission does not exceed one transmission of not more than one second duration per hour for each transmitter.

15.231 (a)(4) Intentional radiators which are employed for radio control purposes during emergencies involving fire, security, and safety of life, when activated to signal on alarm, may operate during the pendency of the alarm.

5.1.2 Test Result

Complies

5.1.3 Test data

Rational for compliance with Transmission Requirement

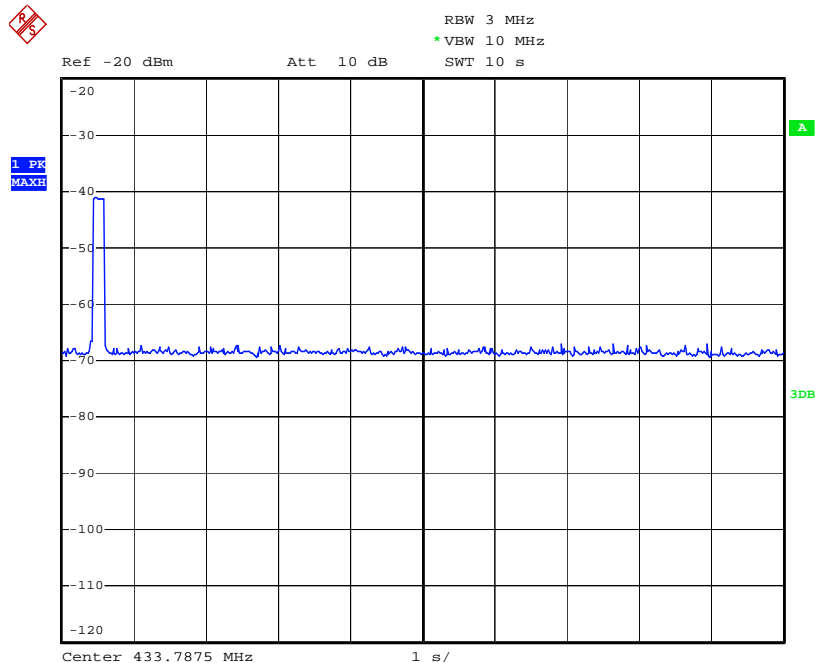
15.231 (a)(1): The transmitter is deactivated within 230 milliseconds.

15.231 (a)(2): No automatic activation.

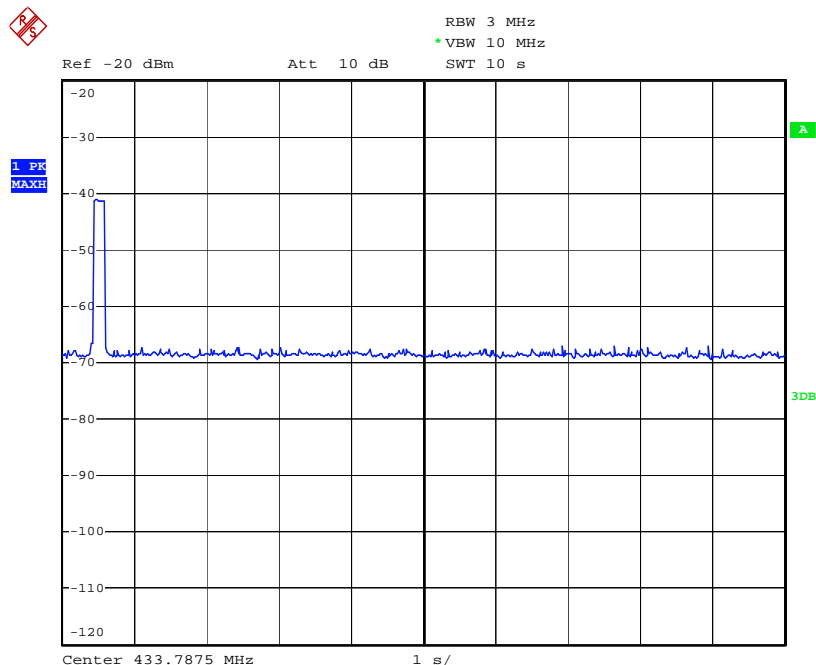
15.231 (a)(3): No Periodic Transmission.

15.231 (a)(4): 230 milliseconds activation.

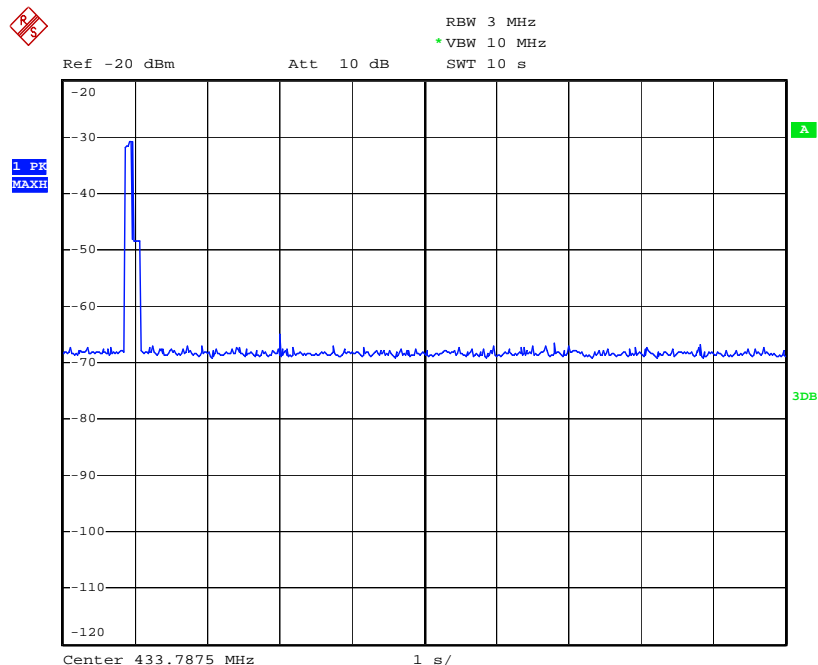
- duty cycle: 100%



- activation (manual operation: 230ms)



- No Periodic operation



5.2 Field Strength of Emission (15.231 (b))

5.2.1 Minimum Standard

Fundamental Frequency (MHz)	Field Strength of Fundamental (uV/m@ 3m)	Field Strength of Spurious Emission (uV/m@ 3m)
40.66 -40.70	2250	225
70-130	1250	125
130-174	1250 to 3750*	125 to 375*
174-260	3750	375
260-470	3750 to 12500*	375 to 1250*
Above 470	12500	1250
*Linear interpolations.		

5.2.2 Test Result

Complied

5.2.3 Measurement Data

Measurement Distance : 3m (OATS)

Freq (MHz)	P o l	Reading (dBuV)	Correction Factor (dB)	AMP Gain (dB)	Emission level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
433.7875	H	41.5	19.74	-	61.24	80.8	19.56
867.5750	H	0.2	28.36	-	28.56	60.8	32.24
1301.3625	H	44.6	28.40	34.4	38.58	54.0	15.42
1735.1500	H	46.3	29.35	34.3	41.39	60.8	19.41
2168.9375	H	44.4	32.11	34.3	42.24	60.8	18.56
2602.7250	H	44.9	32.40	34.5	42.78	60.8	18.02
3036.5125	H	46.8	34.02	34.9	45.92	60.8	14.88
3470.3000	H	47.7	35.72	34.9	48.52	60.8	12.28
3904.0875	H	42.8	38.03	34.8	46.03	54.0	7.97
4337.8750	H	43.0	38.42	35.0	46.42	54.0	7.58

Remarks

No other emissions were detected at a level greater than 20 dB below limit.

Emission Level = Ant Factor(dB) + Cable Loss(dB) + Reading(dBuV)

Margin = Limit(dB)- Emission Level(dBuV/m)

5.3 Occupied bandwidth (15.231 (c))

5.3.1 Minimum Standard

15.231(c) The bandwidth of the emission shall be no wider than 0.25 % of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5 % of the center frequency. Bandwidth is determined at the point 20 dB down from the modulated carrier.

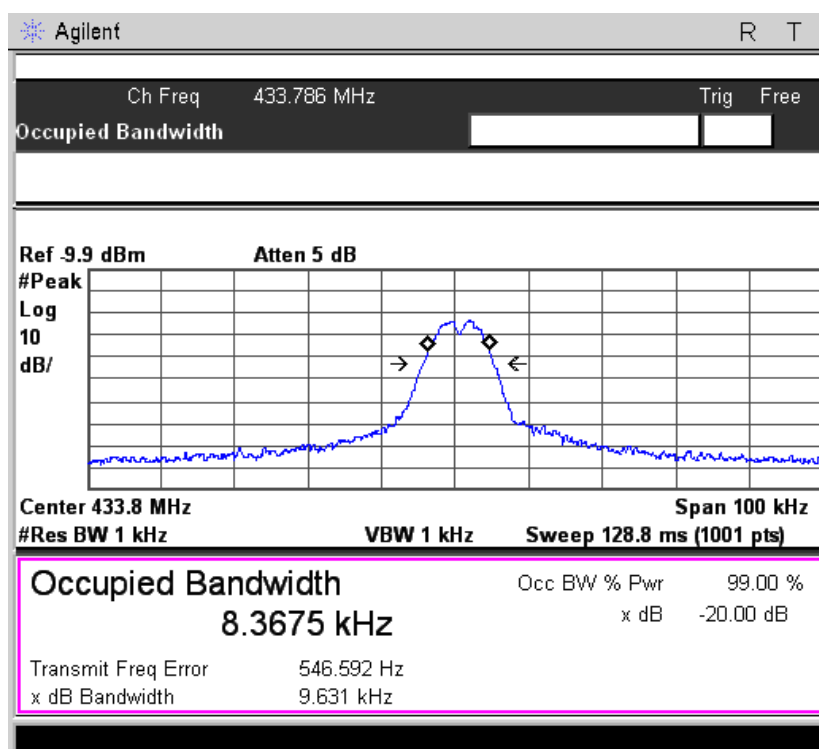
-Limit: $433.7875 \text{ MHz} * 0.0025 = 1.085 \text{ MHz}$

5.3.2 Test Result

- Complied

5.3.3 Measurement Data

- Occupied bandwidth: 9.631 kHz



6. Test equipment used for test

	Description	Manufacture	Model No.	Serial No.	Next Cal Date.
<input type="checkbox"/>	Temp & humidity chamber	taekwang	TK-04	TK001	08.12.12
<input type="checkbox"/>	Temp & humidity chamber	taekwang	TK-500	TK002	08.09.06
<input type="checkbox"/>	Power Meter	Agilent	E4416A	GB41292365	08.11.02
<input type="checkbox"/>	Frequency Counter	HP	5351B	3049A01295	08.11.02
<input checked="" type="checkbox"/>	Spectrum Analyzer	Agilent	E4407B	US39010142	08.11.02
<input checked="" type="checkbox"/>	Spectrum Analyzer	R & S	FSP40	100209	08.11.19
<input checked="" type="checkbox"/>	Signal Generator	HP	E4432B	GB39340611	08.11.02
<input type="checkbox"/>	Modulation Analyzer	HP	8901B	3538A05527	08.11.08
<input type="checkbox"/>	Function Generator	Agilent	33120A	US36018826	08.11.02
<input type="checkbox"/>	Audio Analyzer	HP	8903B	3011A10372	08.11.02
<input type="checkbox"/>	Audio Analyzer	HP	8903B	3729A18248	08.11.02
<input type="checkbox"/>	AC Power Supply	KIKUSUI	PCR2000W	GB001619	08.11.02
<input checked="" type="checkbox"/>	DC Power Supply	Tektronix	PS2520G	TW50517	09.02.15
<input type="checkbox"/>	DC Power Supply	Tektronix	PS2521G	TW53135	08.11.02
<input type="checkbox"/>	Dummy Load	BIRD	8141	7560	-
<input type="checkbox"/>	Dummy Load	BIRD	8401-025	799	-
<input checked="" type="checkbox"/>	EMI Test Receiver	R&S	ESCI	100001	08.11.16
<input checked="" type="checkbox"/>	Attenuator	HP	8494A	2631A09825	08.11.06
<input checked="" type="checkbox"/>	Attenuator	HP	8496A	3308A16640	08.11.06
<input type="checkbox"/>	Attenuator	R&S	RBS1000	D67079	08.11.05
<input type="checkbox"/>	Attenuator	BIRD	50-A-MFN-20	0403002	08.11.02
<input type="checkbox"/>	Attenuator	HP	11581A	29738	09.01.08
<input type="checkbox"/>	Power sensor	Agilent	E9321A	US40390422	08.11.03
<input type="checkbox"/>	Power sensor	Agilent	E9325A		08.11.03
<input type="checkbox"/>	LOOP Antenna	EMCO	EMCO6502	9205-2745	09.05.28
<input checked="" type="checkbox"/>	BILOG Antenna	Schwarzbeck	VULB 9160	3138	10.02.21
<input checked="" type="checkbox"/>	HORN Antenna	ETS	3115	00086706	09.12.13
<input type="checkbox"/>	Power Divider	HP	11636A	05441	08.11.07
<input type="checkbox"/>	Signal Generator	HP	E4421B	GB40052295	08.11.02
<input type="checkbox"/>	Signal Generator	IFR	IFR2023A	202304/278	08.05.03
<input type="checkbox"/>	Power Divider	Weinschel	1580-1	NX375	08.11.07
<input type="checkbox"/>	Power Divider	Weinschel	1580-1	NX379	07.10.31
<input type="checkbox"/>	Power Divider	Weinschel	1580-1	NX380	08.11.16
<input checked="" type="checkbox"/>	PRE-AMP	AGILENT	8449B	3008A02343	09.02.15