

4.6 OUTBAND EMISSION MEASUREMENT

4.6.1 LIMITS OF OUTBAND EMISSION MEASUREMENT

Below –20dB of the highest emission level of operating band (in 100KHz Resolution Bandwidth).

4.6.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100036	Dec. 17, 2008

NOTE:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.

2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set RBW of spectrum analyzer to 100kHz and VBW of spectrum analyzer to 300kHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.

The spectrum plots (RBW = 100kHz, VBW = 300kHz) are attached on the following pages.



4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6

4.6.6 TEST RESULTS

The spectrum plots are attached on the following images. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).



802.11b DSSS MODULATION:

CH1



Report No.: RF970611H05







802.11g OFDM MODULATION:





CH1 Marker 1 [11] -1.35 dBm 2.377180 GHz Marker 2 [71] -42.04 dBm 24.700360 GHz Marker 3 [71] -42.81 dBm 21.703960 GHz Marker 4 [71] -43.33 dBm 21.604080 GHz RBW 100 kHz VBW 300 kHz SWT 2.5 s [T1] MK VIEW Ref 20.8 dBm Offset 0.8 dB Att 30 dB 20.8 = 10-D1 0.27 dBm 0 -10 D2 -19 73 dB -20--30 2 -40 t And -50 -60 -70 -79.2 9 Stop 25 GHz 2.497 GHz/ Start 30 MHz ADT CORP. CH11 Marker 1 [T1] -2.04 dBm 2.427120 GHz -43,73 dBm 21.654020 GHz Marker 3 [T1] -43.99 dBm 21.554140 GHz Marker 4 [T1] -44.07 dBm 21.853780 GHz RBW 100 kHz VBW 300 kHz SWT 2.5 s [T1] MK VIEW Ref 20.8 dBm Offset 0.8 dB Att 30 dE 20.8 = 10 D1 -0.3 dBn 0 -10--20 D2 -2 3 dB -30--40 monthem mannen -50 -60 -70 -79.2 -I Stop 25 GHz Start 30 MHz 1 2.497 GHz/ ADT CO



DRAFT 802.11n (20MHz) OFDM MODULATION: For Chain (0):CH1









For Chain (1):CH1









DRAFT 802.11n (40MHz) OFDM MODULATION:

For Chain (0):CH1





CH1 Marker 1 [T1] -5.84 dBm 2.377180 GHz Marker 2 [T1] -42.97 dBm 24.700560 GHz Marker 3 [T1] -43.14 dBm 24.500600 GHz Marker 4 [T1] -43.89 dBm 21.554140 GHz RBW 100 kHz VBW 300 kHz SWT 2.5 s [T1] MK VIEW Ref 20.8 dBm Offset 0.8 dB Att 30 dB 20.8 10 0 D1 -5.06 dBm -10 -20 D2 -25 0<u>6 dBm</u> -30 32 -40 th M A -50 -60 -70 -79.2 -1 2.497 GHz/ l Stop 25 GHz Start 30 MHz ADTCOR CH7 Marker 1 [T1] -7.20 dBm 2.427120 GHz Marker 2 [T1] -42.55 dBn 21.654020 GH: Marker 3 [T1] -43.62 dBm 24.750300 GHz -43.82 dBm -44.38 dBm -24.600480 GHz RBW 100 kHz VBW 300 kHz SWT 2.5 s [T1] MK VIEW Ref 20.8 dBm Att 30 dB 20.8 Offset 0.8 dB 10 C D1 -5.88 dBm -10 -20 D2 -25 88 dBm -30 2 -40 Å At Martheth which which where -50 -60 -70 -79.2 2.497 GHz/ T Stop 25 GHz Start 30 MHz ADT



For Chain (1):CH1









4.7 ANTENNA REQUIREMENT

4.7.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.7.2 ANTENNA CONNECTED CONSTRUCTION

Transmitter Circuit	Antenna Type	Gain (dBi)	Antenna Connector	Note
Chain(0)	Dipole	2.1	MHF	TX & RX function
Chain(1)	Dipole	2.0	MHF	TX & RX function

There are two antennas provided to this EUT, please refer to the following table:



5. INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA	FCC, UL
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA, CSA
R.O.C.	TAF, BSMI, NCC
Netherlands	Telefication
Singapore	GOST-ASIA(MOU)
Russia	CERTIS(MOU)

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site:

<u>www.adt.com.tw/index.5/phtml</u>. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:

Tel: 886-2-26052180 Fax: 886-2-26052943 Hsin Chu EMC/RF Lab: Tel: 886-3-5935343 Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab: Tel: 886-3-3183232 Fax: 886-3-3185050

Web Site: <u>www.adt.com.tw</u>

The address and road map of all our labs can be found in our web site also



6. APPENDIX-A- MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

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