



Partial FCC RF Test Report

APPLICANT : DAP Technologies
EQUIPMENT : Rugged Mobile Tablet Computer
BRAND NAME : DAP
MODEL NAME : 9000WBWZV1
MARKETING NAME : M9010
FCC ID : T5M9000WBWZV1
STANDARD : FCC 47 CFR Part 2, 22(H), 24(E), 27(L)
CLASSIFICATION : PCS Licensed Transmitter (PCB)
Tx/Rx FREQUENCY RANGE : GSM850 : 824.2 ~ 848.8 MHz /
869.2 ~ 893.8 MHz
GSM1900 : 1850.2 ~ 1909.8 MHz /
1930.2 ~ 1989.8 MHz
WCDMA Band V : 826.4 ~ 846.6 MHz /
871.4 ~ 891.6 MHz
WCDMA Band IV : 1712.4 MHz ~ 1752.6 MHz
2112.4 MHz ~ 2152.6 MHz
WCDMA Band II : 1852.4 ~ 1907.6 MHz /
1932.4 ~ 1987.6 MHz
CDMA2000 BC0 : 824.70 ~ 848.31 MHz /
869.70 ~ 893.31 MHz
CDMA2000 BC1 : 1851.25 ~ 1908.75 MHz /
1931.25 ~ 1988.75 MHz
MAX. ERP/EIRP POWER : GSM850 (GPRS 10) : 0.22 W
GSM850 (EDGE 8) : 0.08 W
GSM1900 (GPRS 10) : 0.69 W
GSM1900 (EDGE 8) : 0.39 W
WCDMA Band V (RMC 12.2Kbps) : 0.03 W
WCDMA Band IV (RMC 12.2Kbps) : 0.26 W
WCDMA Band II (RMC 12.2Kbps) : 0.25 W
CDMA2000 BC0 : 0.04 W
CDMA2000 BC1 : 0.26 W



The product was integrated the WWAN Module (Brand Name: Sierra Wireless / Model Name: MC8355, FCC ID: N7NMC8355) during the test.

This is a partial report which is included the Radiation test item. The product was received on Jul. 07, 2011 and completely tested on Aug. 03, 2011. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI / TIA / EIA-603-C-2004 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:

Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.



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SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	§22.913(a)(2)	Effective Radiated Power	< 7 Watts	PASS	-
3.1	§24.232(c)	Equivalent Isotropic Radiated Power	< 2 Watts	PASS	-
3.1	§27.50(d)(2)	Equivalent Isotropic Radiated Power	< 1 Watts	PASS	-
3.2	§2.1053 §22.917(a) §24.238(a) §27.53(g)	Field Strength of Spurious Radiation	$< 43 + 10 \log_{10}(P[\text{Watts}])$	PASS	Under limit 12.86 dB at 1672 MHz



1 General Description

1.1 Applicant

DAP Technologies
7450 South Priest DR Tempe, AZ, US

1.2 Manufacturer

Venture Corporation Limited
Blk5006, Ang Mo Kio Avenue 5, #03-07 TECHplace II, Singapore 569870

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Rugged Mobile Tablet Computer
Brand Name	DAP
Model Name	9000WBWZV1
Marketing Name	M9010
FCC ID	T5M9000WBWZV1
Tx Frequency	GSM850 : 824 MHz ~ 849 MHz GSM1900 : 1850 MHz ~ 1910 MHz WCDMA Band V : 824 MHz ~ 849 MHz WCDMA Band IV : 1710 MHz ~ 1755 MHz WCDMA Band II : 1850 MHz ~ 1910 MHz CDMA2000 BC0 : 824 MHz ~ 849 MHz CDMA2000 BC1 : 1850 MHz ~1910 MHz
Rx Frequency	GSM850 : 869 MHz ~ 894 MHz GSM1900 : 1930 MHz ~ 1990 MHz WCDMA Band V : 869 MHz ~ 894 MHz WCDMA Band IV : 2110 MHz ~ 2155 MHz WCDMA Band II : 1930 MHz ~ 1990 MHz CDMA2000 BC0 : 869 MHz ~ 894 MHz CDMA2000 BC1 : 1930 MHz ~ 1990 MHz
Maximum Output Power to Antenna	GSM850 : 31.21 dBm GSM1900 : 29.00 dBm WCDMA Band V : 23.71 dBm WCDMA Band IV : 23.58 dBm WCDMA Band II : 23.35 dBm CDMA2000 BC0 : 23.97 dBm CDMA2000 BC1 : 23.98 dBm
Maximum ERP/EIRP	GSM850 (GPRS 10) : 0.22 W (23.45 dBm) GSM850 (EDGE 8) : 0.08 W (19.18 dBm) GSM1900 (GPRS 10) : 0.69 W (28.41 dBm) GSM1900 (EDGE 8) : 0.39 W (25.89 dBm) WCDMA Band V (RMC 12.2Kbps) : 0.03 W (14.93 dBm)



	WCDMA Band IV (RMC 12.2Kbps) : 0.26 W (24.09 dBm) WCDMA Band II (RMC 12.2Kbps) : 0.25 W (23.94 dBm) CDMA2000 BC0 : 0.04 W (15.48 dBm) CDMA2000 BC1 : 0.26 W (24.08 dBm)
Antenna Type	Fixed Internal Antenna
HW Version	Merlion P3
SW Version	MER_00.00.10
Type of Modulation	GSM / GPRS : GMSK EDGE : 8PSK WCDMA : QPSK (Uplink) HSDPA : QPSK (Uplink) HSUPA : QPSK (Uplink) CDMA2000 : QPSK
EUT Stage	Production Unit

Remark:

1. For other wireless features of this EUT, the test report will be issued separately.
2. This test report recorded only product characteristics and test results of PCS Licensed Transmitter (PCB).
3. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978		
Test Site No.	Sporton Site No.		FCC Registration No.
	TH02-HY	03CH05-HY	722060

1.5 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ Preliminary Guidance for Receiving Applications for Certification of 3G Device. May 9, 2006.
- ♦ 47 CFR Part 2, 22(H), 24(E), 27(L)
- ♦ ANSI / TIA / EIA-603-C-2004
- ♦ IC RSS-132 Issue 2
- ♦ IC RSS-133 Issue 5
- ♦ IC RSS-139 Issue 2

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B (DoC), recorded in a separate test report.

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU200	N/A	N/A	Unshielded, 1.8 m

2 Test Configuration of Equipment Under Test

2.1 Test Mode

During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range.

Frequency range investigated for radiated emission is as follows:

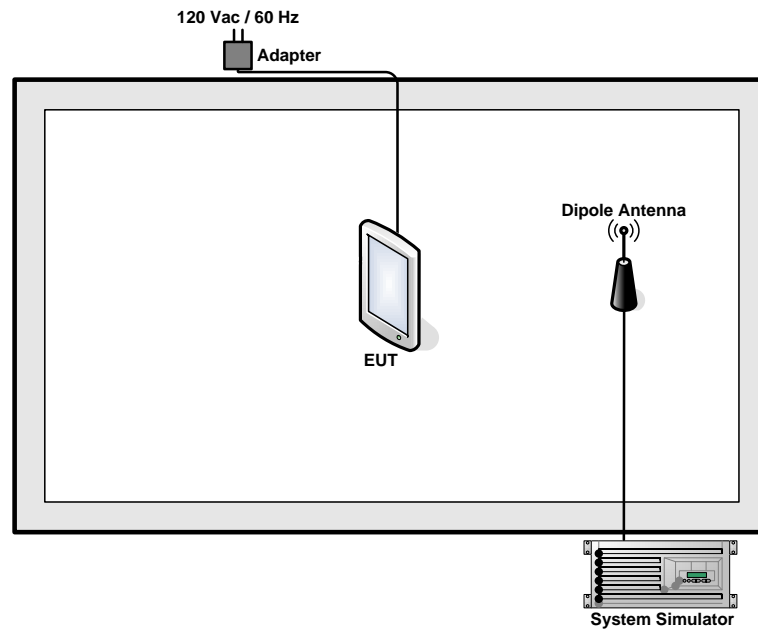
1. 30 MHz to 9000 MHz for GSM850, WCDMA Band V and CDMA2000 BC0
2. 30 MHz to 18000 MHz for WCDMA Band IV.
3. 30 MHz to 19000 MHz for GSM1900, WCDMA Band II and CDMA2000 BC1.

Test Modes	
Band	Radiated TCs
GSM 850	<ul style="list-style-type: none"> ■ GPRS 10 Link ■ EDGE 8 Link
GSM 1900	<ul style="list-style-type: none"> ■ GPRS 10 Link ■ EDGE 8 Link
WCDMA Band V	<ul style="list-style-type: none"> ■ RMC 12.2Kbps Link
WCDMA Band IV	<ul style="list-style-type: none"> ■ RMC 12.2Kbps Link
WCDMA Band II	<ul style="list-style-type: none"> ■ RMC 12.2Kbps Link
CDMA2000 BC0	<ul style="list-style-type: none"> ■ 1xEV-DO Rev. 0 Link Mode
CDMA2000 BC1	<ul style="list-style-type: none"> ■ 1xEV-DO Rev. 0 Link Mode

Note:

1. The maximum power levels are GPRS multi-slot class 10 mode for GMSK link, EDGE multi-slot class 8 mode for 8PSK link, RMC 12.2Kbps mode for WCDMA band V, RMC 12.2Kbps mode for WCDMA band IV, and RMC 12.2Kbps mode for WCDMA band II, 1xEV-DO Rev. 0 RTAP 153.6K mode for CDMA2000 BC0, 1xEV-DO Rev. 0 RTAP 153.6K mode for CDMA2000 BC1, only these modes were used for all tests.
2. Because there are individual antennas for each WWAN, WLAN, and Bluetooth, the co-location test modes are not required.

2.2 Connection Diagram of Test System





3 Test Result

3.1 Effective Radiated Power and Effective Isotropic Radiated Power Measurement

3.1.1 Description of the ERP/EIRP Measurement

ERP/EIRP is measured by substitution method according to ANSI / TIA / EIA-603-C-2004. The ERP of mobile transmitters must not exceed 7 Watts. The EIRP of mobile transmitters are limited to 2 Watts for 1850~1910 MHz and 1 watt for 1710~1755 MHz.

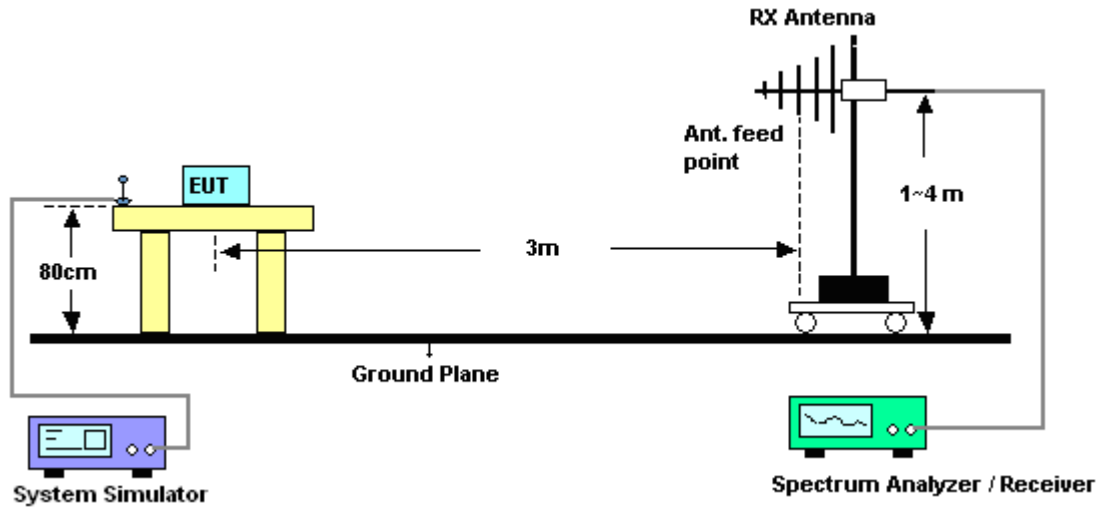
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The EUT was placed on an non-conductive rotating platform with 0.8 meter height in a semi-anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RBW= 3MHz,VBW= 3MHz, and peak detector settings.
2. During the measurement, the EUT was enforced in maximum power and linked with a base station. The highest emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
3. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-C. The EUT was replaced by dipole antenna (substitution antenna) at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Analyzer reading. Then the EUT's EIRP was calculated with the correction factor, $EIRP = LVL + \text{Correction factor}$ and $ERP = EIRP - 2.15$.

3.1.4 Test Setup



3.1.5 Test Result of ERP

GSM850 (GPRS 10) Radiated Power ERP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
824.2	-5.93	30.8	22.72	0.19
836.4	-5.61	31.21	23.45	0.22
848.8	-6.01	31.53	23.37	0.22
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
824.2	-10.27	32.84	20.42	0.11
836.4	-9.22	32.85	21.48	0.14
848.8	-9.06	34.11	22.90	0.19

* ERP = LVL (dBm) + Correction Factor (dB) – 2.15

GSM850 (EDGE 8) Radiated Power ERP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
824.2	-10.48	30.8	18.17	0.07
836.4	-10.24	31.21	18.82	0.08
848.8	-10.20	31.53	19.18	0.08
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
824.2	-14.78	32.84	15.91	0.04
836.4	-13.83	32.85	16.87	0.05
848.8	-13.41	34.11	18.55	0.07

* ERP = LVL (dBm) + Correction Factor (dB) – 2.15



WCDMA Band V (RMC 12.2Kbps) Radiated Power ERP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
826.4	-14.85	30.8	13.80	0.02
836.4	-14.89	31.21	14.17	0.03
846.6	-14.45	31.53	14.93	0.03
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
826.4	-18.99	32.84	11.70	0.01
836.4	-18.70	32.85	12.00	0.02
846.6	-17.92	34.11	14.04	0.03

* ERP = LVL (dBm) + Correction Factor (dB) – 2.15

CDMA2000 BC0 Radiated Power ERP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
824.70	-17.96	30.79	10.68	0.01
836.52	-17.71	31.21	11.35	0.01
848.31	-17.06	31.53	12.32	0.02
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
824.70	-17.82	32.83	12.86	0.02
836.52	-16.72	32.85	13.98	0.03
848.31	-16.48	34.11	15.48	0.04

* ERP = LVL (dBm) + Correction Factor (dB) – 2.15

3.1.6 Test Result of EIRP

GSM1900 (GPRS 10) Radiated Power EIRP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.2	-13.62	40.03	26.41	0.44
1880.0	-13.07	39.62	26.55	0.45
1909.8	-13.28	41.69	28.41	0.69
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.2	-23.21	44.51	21.30	0.13
1880.0	-20.75	43.16	22.41	0.17
1909.8	-20.45	43.98	23.53	0.23

* EIRP = LVL (dBm) + Correction Factor (dB)

GSM1900 (EDGE 8) Radiated Power EIRP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.2	-15.76	40.03	24.27	0.27
1880.0	-15.42	39.62	24.20	0.26
1909.8	-15.80	41.69	25.89	0.39
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.2	-26.82	44.51	17.69	0.06
1880.0	-24.42	43.16	18.74	0.07
1909.8	-24.89	43.98	19.09	0.08

* EIRP = LVL (dBm) + Correction Factor (dB)



WCDMA Band IV (RMC 12.2Kbps) Radiated Power EIRP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1712.4	-17.50	39.24	21.74	0.15
1732.6	-17.39	39.99	22.60	0.18
1752.6	-16.18	40.27	24.09	0.26
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1712.4	-26.48	43.64	17.16	0.05
1732.6	-25.48	42.40	16.92	0.05
1752.6	-24.36	41.70	17.34	0.05

* EIRP = LVL (dBm) + Correction Factor (dB)

WCDMA Band II (RMC 12.2Kbps) Radiated Power EIRP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1852.4	-17.66	40.03	22.37	0.17
1880.0	-17.43	39.62	22.19	0.17
1907.6	-17.75	41.69	23.94	0.25
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1852.4	-27.60	44.51	16.91	0.05
1880.0	-27.41	43.16	15.75	0.04
1907.6	-27.84	43.98	16.14	0.04

* EIRP = LVL (dBm) + Correction Factor (dB)



CDMA2000 BC1 Radiated Power EIRP				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1851.25	-16.85	40.03	23.18	0.21
1880.00	-17.79	39.62	21.83	0.15
1908.75	-17.61	41.69	24.08	0.26
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1851.25	-25.84	44.51	18.67	0.07
1880.00	-24.52	43.16	18.64	0.07
1908.75	-23.54	43.98	20.44	0.11

* EIRP = LVL (dBm) + Correction Factor (dB)



3.2 Field Strength of Spurious Radiation Measurement

3.2.1 Description of Field Strength of Spurious Radiated Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA / EIA-603-C-2004. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

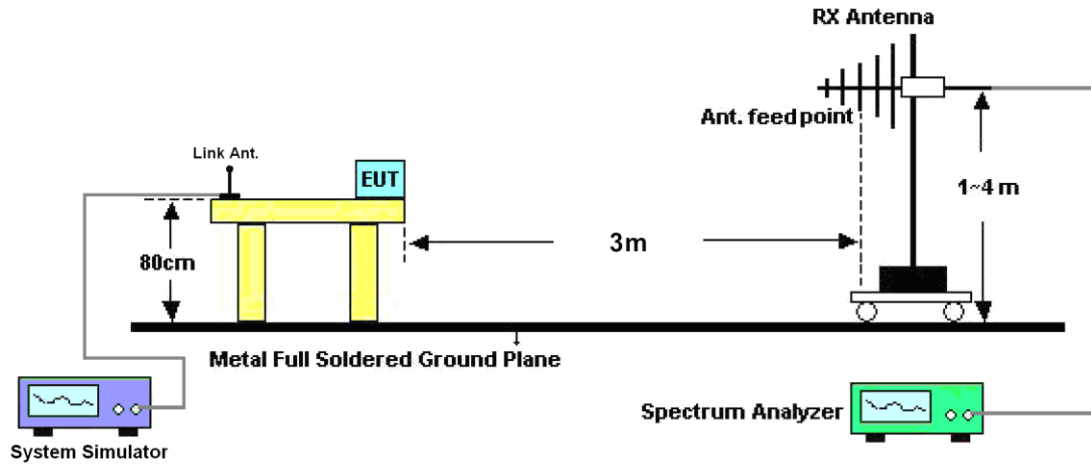
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The EUT was placed on a rotatable wooden table with 0.8 meter about ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. $EIRP \text{ (dBm)} = S.G. \text{ Power} - Tx \text{ Cable Loss} + Tx \text{ Antenna Gain}$
11. $ERP \text{ (dBm)} = EIRP - 2.15$

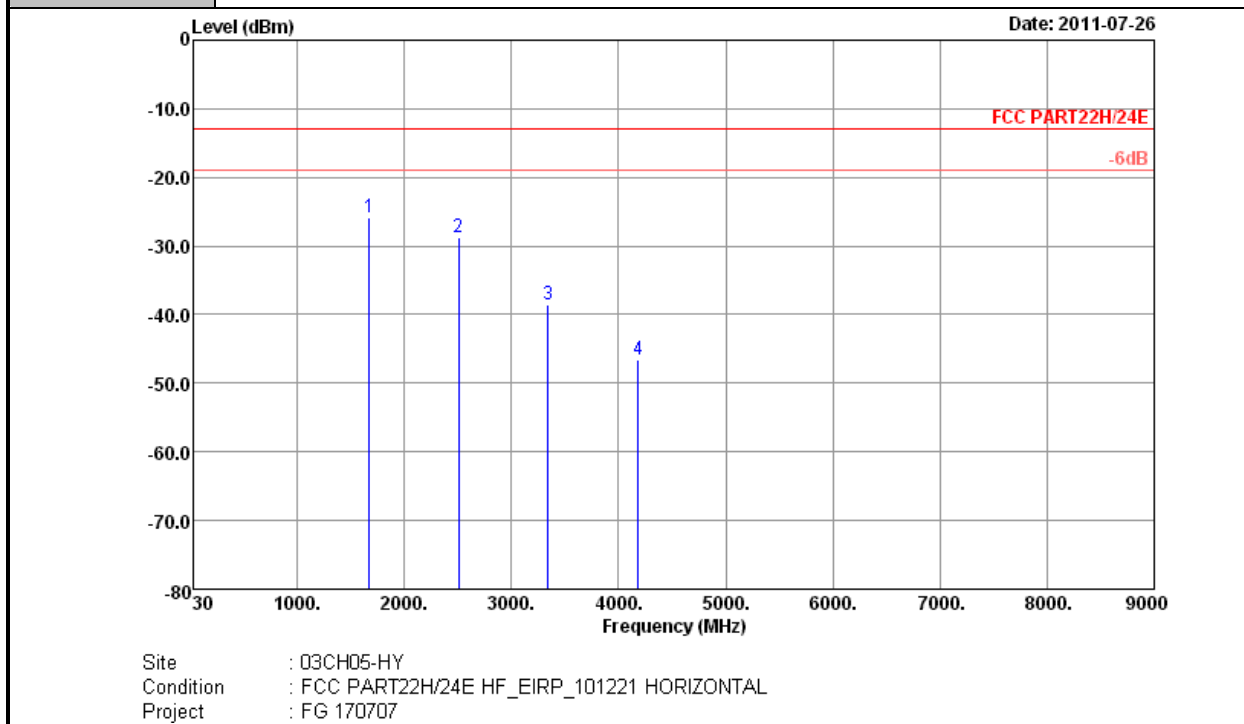
3.2.4 Test Setup





3.2.5 Test Result of Field Strength of Spurious Radiated

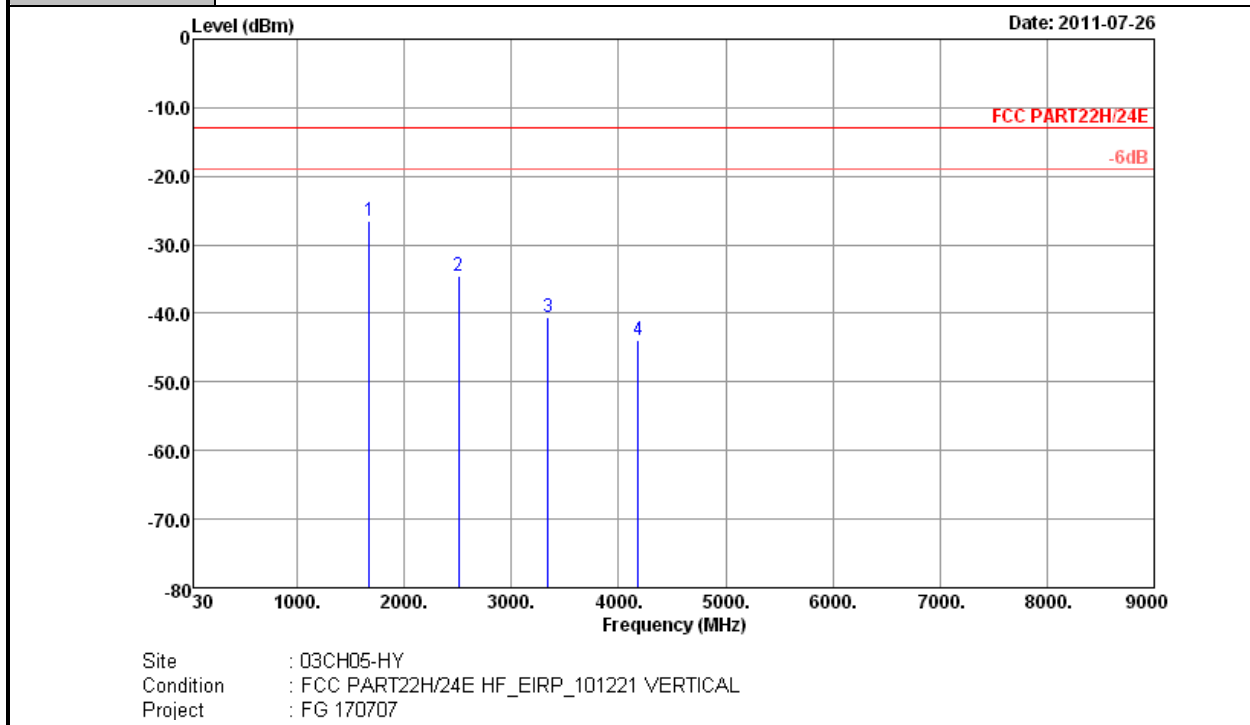
Band :	GSM850	Temperature :	24~25°C
Test Mode :	GPRS 10 Link	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-25.86	-13	-12.86	-31.76	-27.05	2.15	5.49	H	Pass
2509	-28.79	-13	-15.79	-37.98	-30.68	2.38	6.41	H	Pass
3345	-38.49	-13	-25.49	-49.84	-41.82	2.86	8.34	H	Pass
4182	-46.49	-13	-33.49	-61.53	-50.43	3.26	9.35	H	Pass



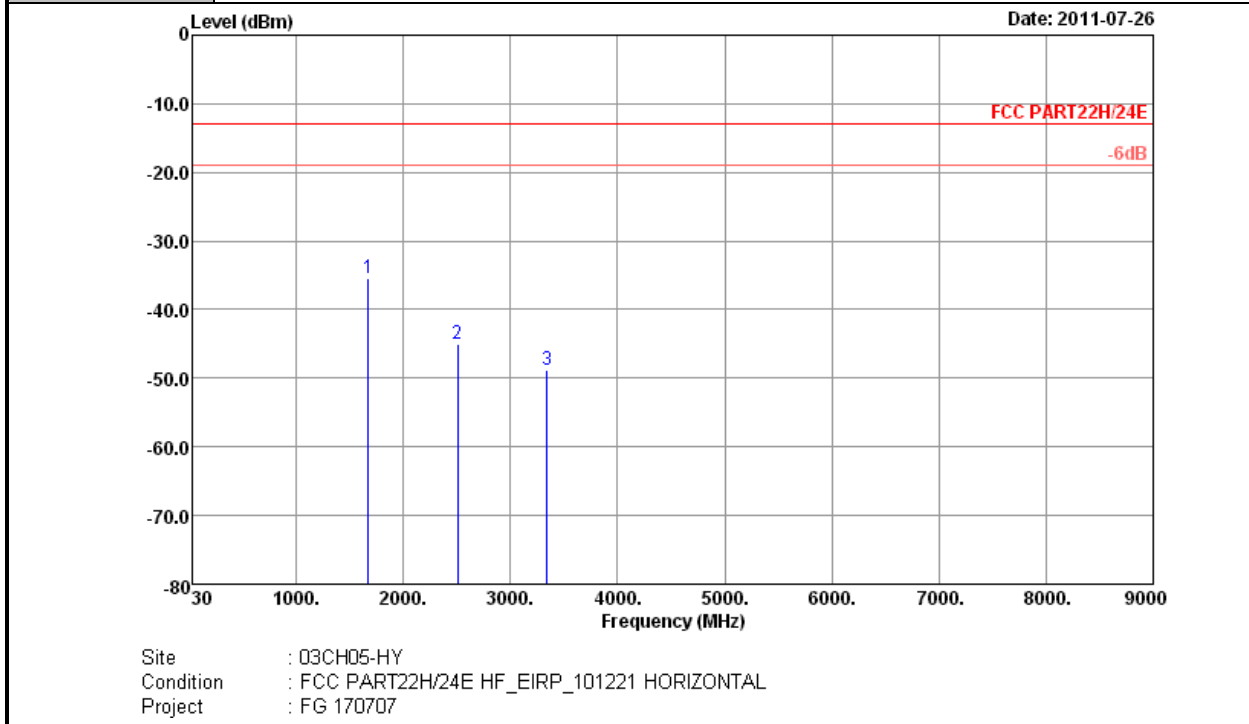
Band :	GSM850	Temperature :	24~25°C
Test Mode :	GPRS 10 Link	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-26.42	-13	-13.42	-32.11	-27.61	2.15	5.49	V	Pass
2509	-34.53	-13	-21.53	-43.55	-36.42	2.38	6.41	V	Pass
3345	-40.62	-13	-27.62	-52.02	-43.95	2.86	8.34	V	Pass
4182	-43.92	-13	-30.92	-59.09	-47.86	3.26	9.35	V	Pass



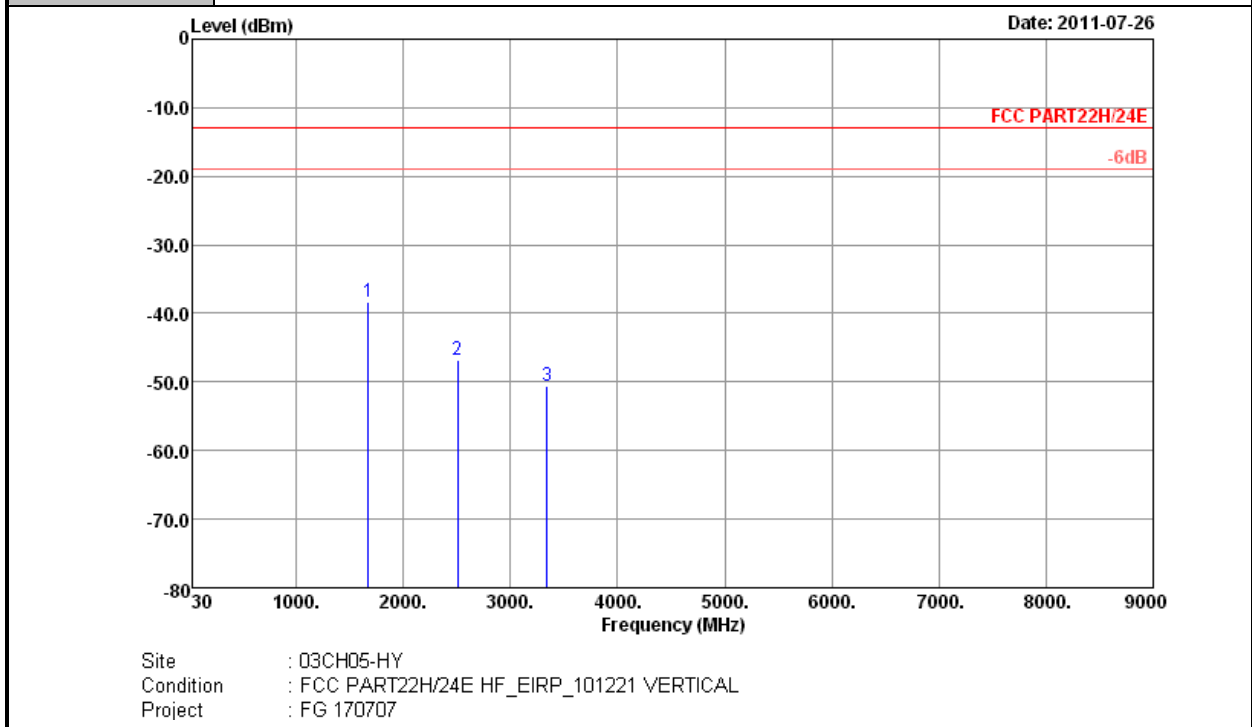
Band :	GSM850	Temperature :	24~25°C
Test Mode :	EDGE 8 Link	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-35.45	-13	-22.45	-41.28	-36.64	2.15	5.49	H	Pass
2509	-45.00	-13	-32.00	-54.2	-46.89	2.38	6.41	H	Pass
3345	-48.78	-13	-35.78	-60.2	-52.11	2.86	8.34	H	Pass



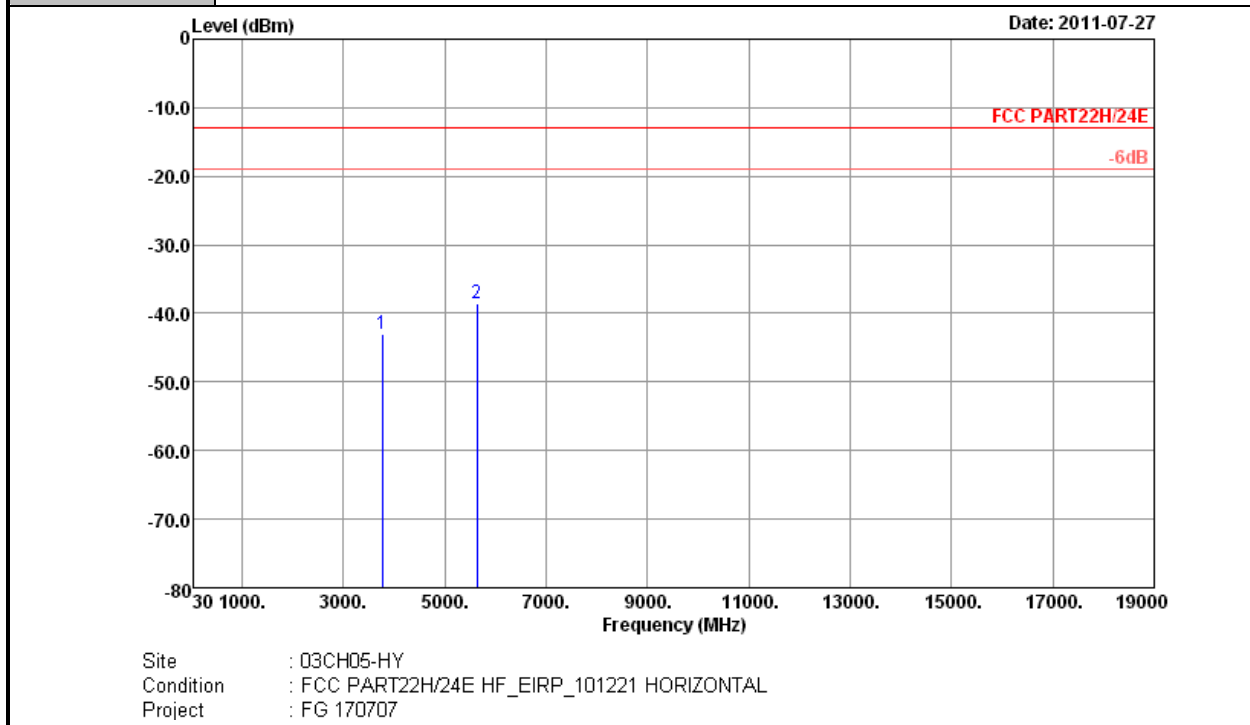
Band :	GSM850	Temperature :	24~25°C
Test Mode :	EDGE 8 Link	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-38.26	-13	-25.26	-44.06	-39.45	2.15	5.49	V	Pass
2509	-46.90	-13	-33.90	-56.07	-48.79	2.38	6.41	V	Pass
3345	-50.62	-13	-37.62	-61.8	-53.95	2.86	8.34	V	Pass



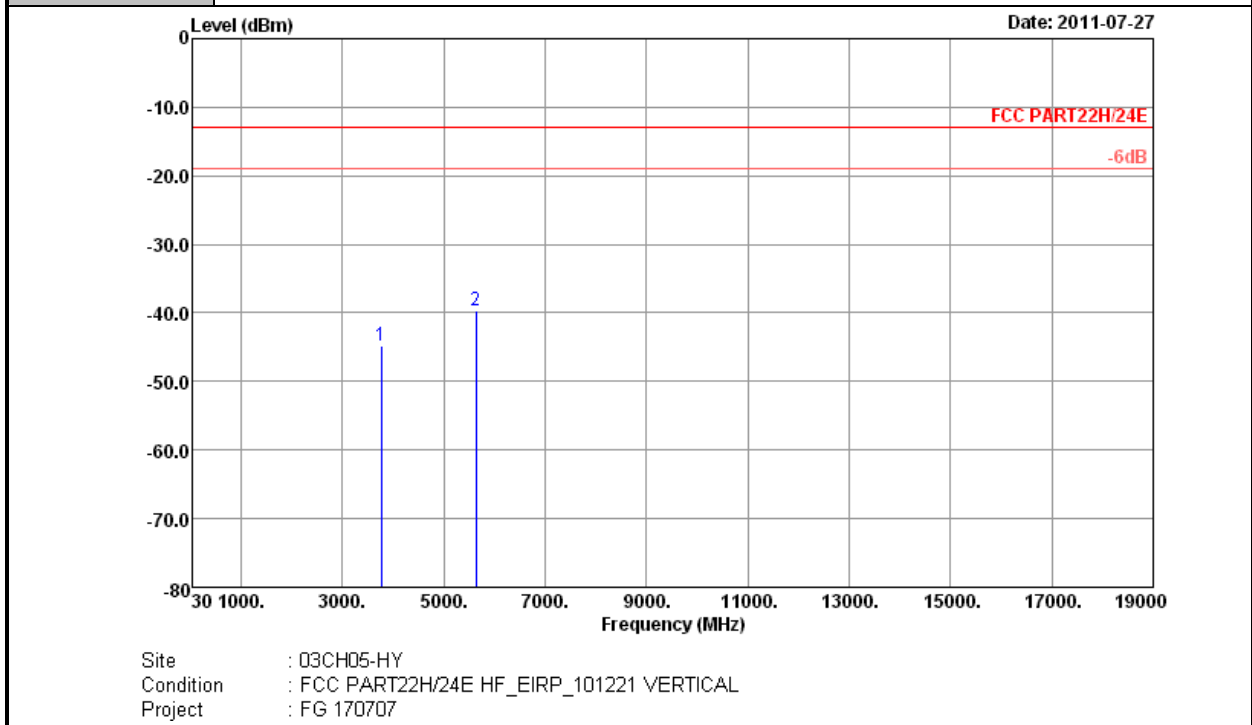
Band :	GSM1900	Temperature :	24~25°C
Test Mode :	GPRS 10 Link	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-43.00	-13	-30.00	-56.34	-49.13	2.93	9.06	H	Pass
5636	-38.47	-13	-25.47	-57.15	-45.39	3.91	10.83	H	Pass



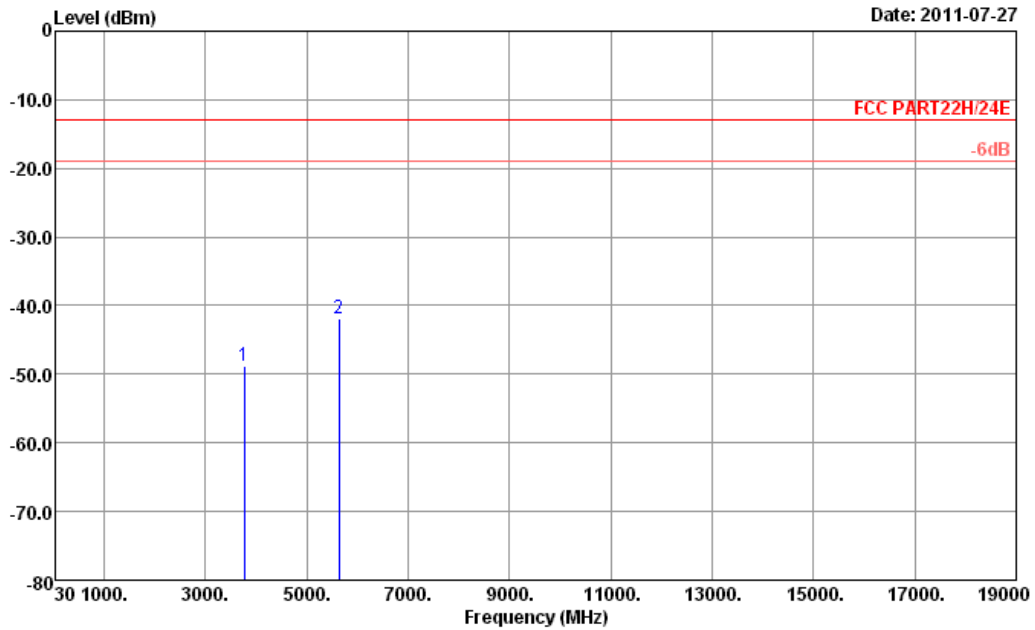
Band :	GSM1900	Temperature :	24~25°C
Test Mode :	GPRS 10 Link	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-44.69	-13	-31.69	-57.94	-50.82	2.93	9.06	V	Pass
5636	-39.71	-13	-26.71	-58.34	-46.63	3.91	10.83	V	Pass



Band :	GSM1900	Temperature :	24~25°C
Test Mode :	EDGE 8 Link	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

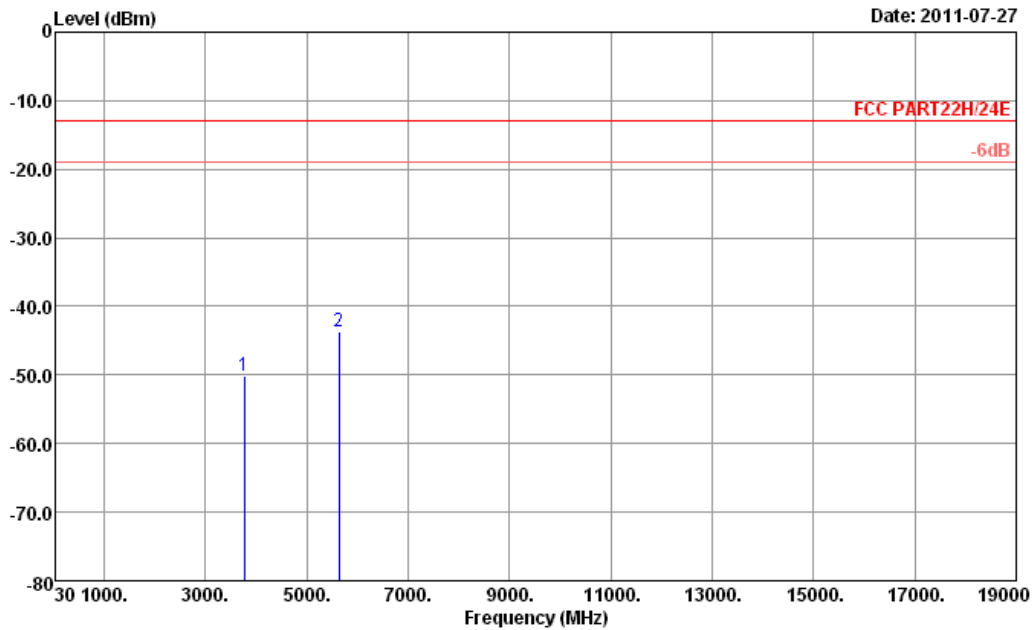


Site : 03CH05-HY
 Condition : FCC PART22H/24E HF_EIRP_101221 HORIZONTAL
 Project : FG 170707

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-48.83	-13	-35.83	-62.12	-54.96	2.93	9.06	H	Pass
5636	-41.80	-13	-28.80	-60.47	-48.72	3.91	10.83	H	Pass



Band :	GSM1900	Temperature :	24~25°C
Test Mode :	EDGE 8 Link	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

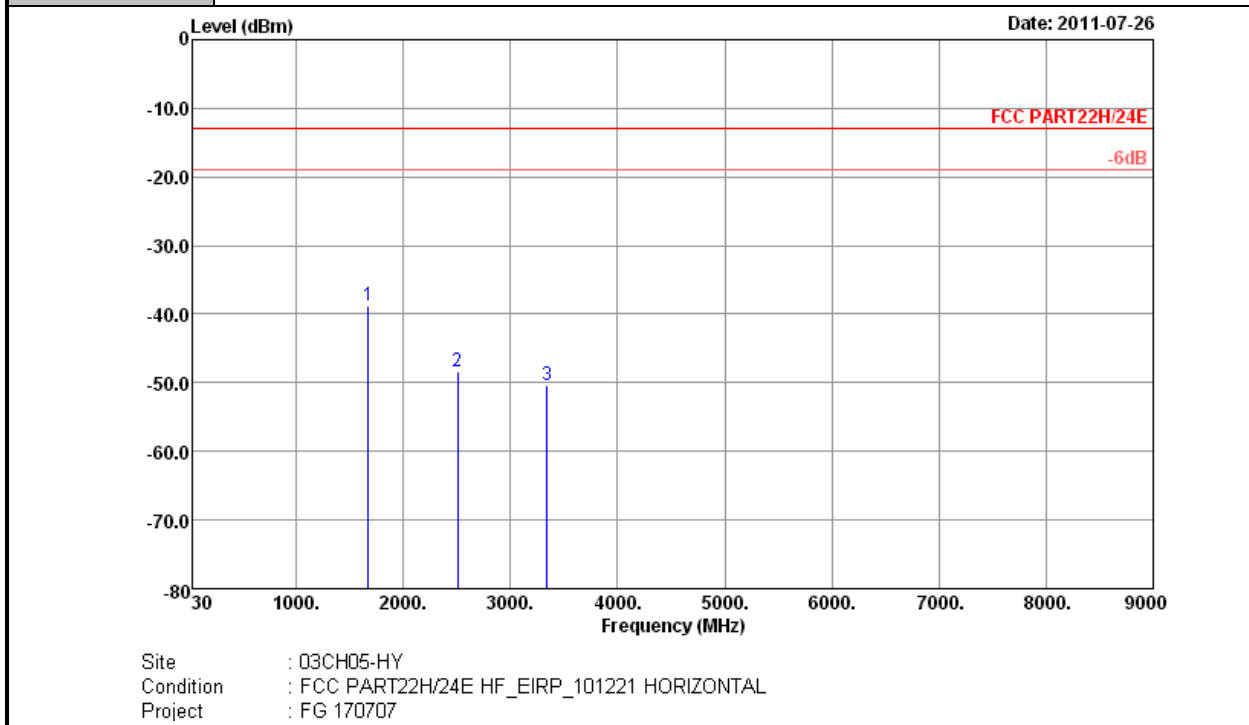


Site : 03CH05-HY
 Condition : FCC PART22H/24E HF_EIRP_101221 VERTICAL
 Project : FG 170707

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-50.25	-13	-37.25	-63.41	-56.38	2.93	9.06	V	Pass
5636	-43.61	-13	-30.61	-62.23	-50.53	3.91	10.83	V	Pass



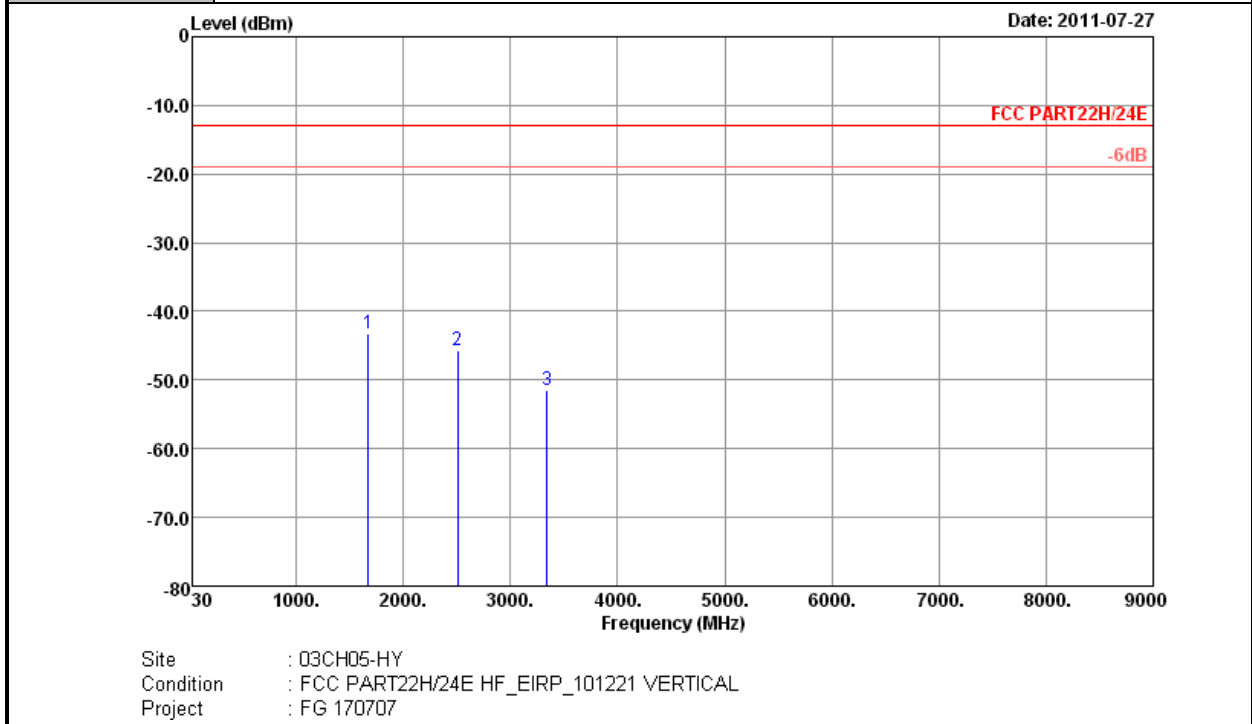
Band :	WCDMA Band V	Temperature :	24~25°C
Test Mode :	RMC 12.2Kbps Link	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-38.86	-13	-25.86	-44.62	-40.05	2.15	5.49	H	Pass
2509	-48.37	-13	-35.37	-57.43	-50.26	2.38	6.41	H	Pass
3345	-50.31	-13	-37.31	-61.59	-53.64	2.86	8.34	H	Pass



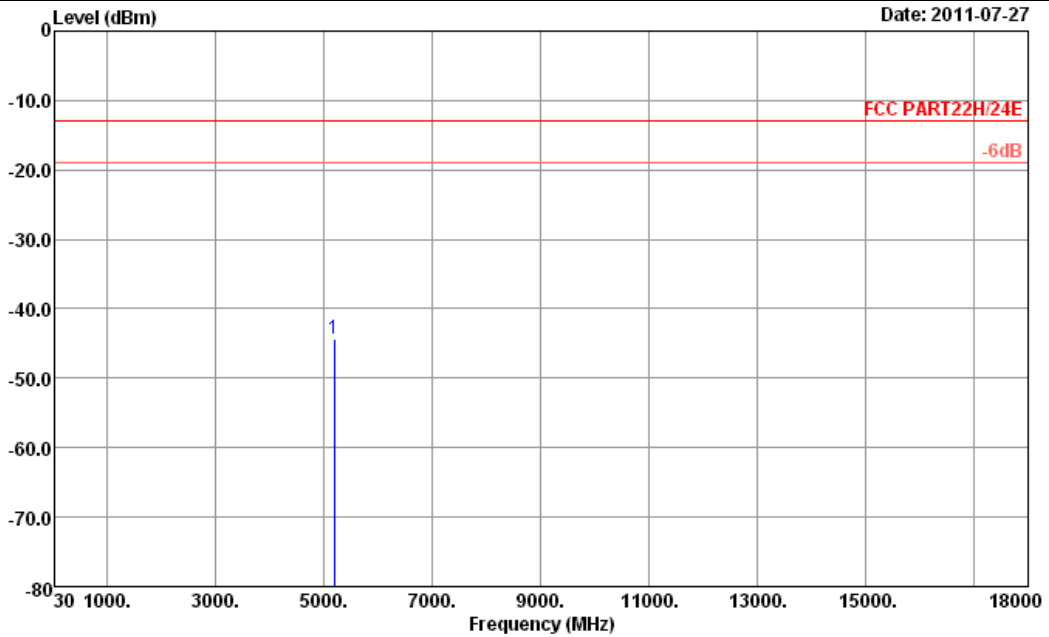
Band :	WCDMA Band V	Temperature :	24~25°C
Test Mode :	RMC 12.2Kbps Link	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-43.16	-13	-30.16	-48.89	-44.35	2.15	5.49	V	Pass
2509	-45.62	-13	-32.62	-54.59	-47.51	2.38	6.41	V	Pass
3345	-51.53	-13	-38.53	-62.63	-54.86	2.86	8.34	V	Pass



Band :	WCDMA Band IV	Temperature :	24~25°C
Test Mode :	RMC 12.2Kbps Link	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

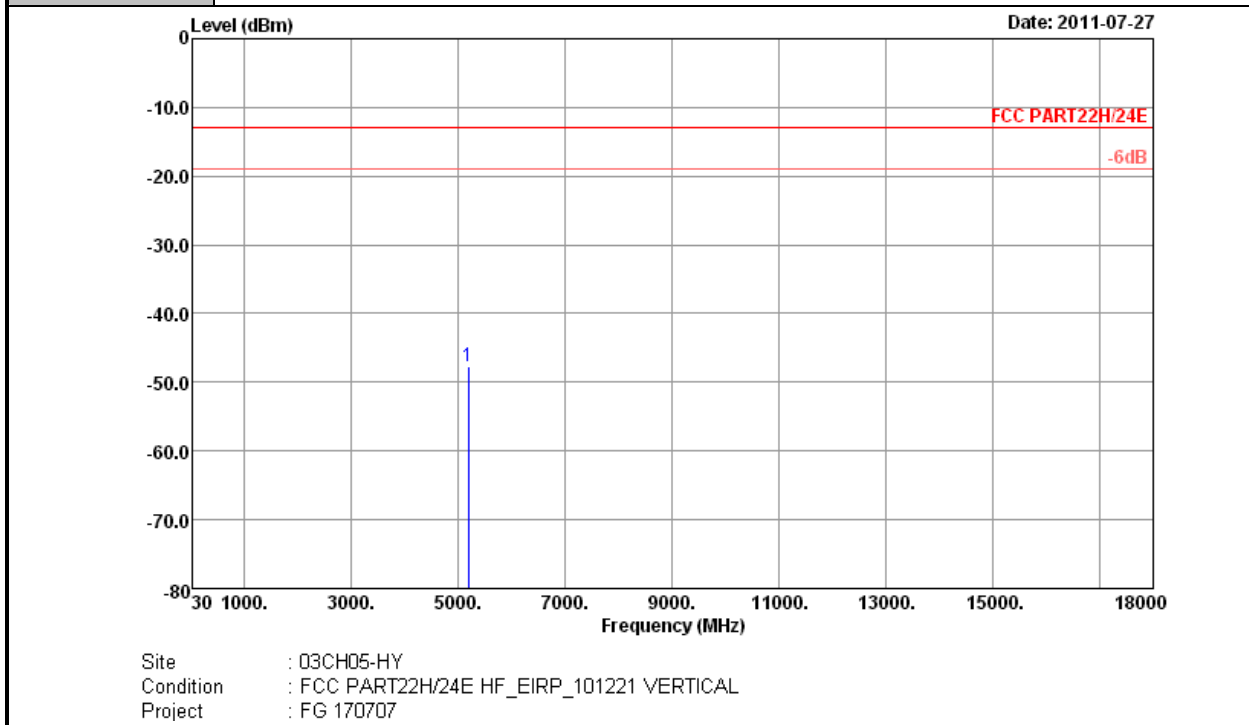


Site : 03CH05-HY
 Condition : FCC PART22H/24E HF_EIRP_101221 HORIZONTAL
 Project : FG 170707

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5197.8	-44.35	-13	-31.35	-61.92	-51.29	3.78	10.72	H	Pass



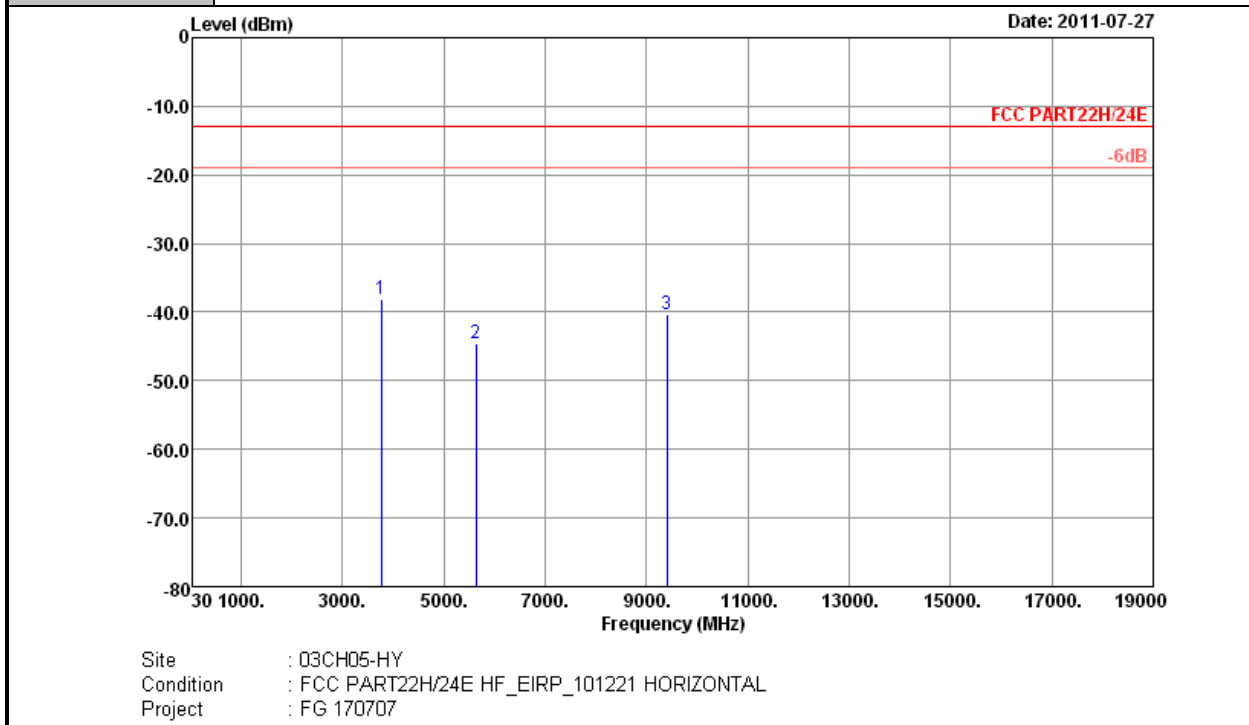
Band :	WCDMA Band IV	Temperature :	24~25°C
Test Mode :	RMC 12.2Kbps Link	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5197.8	-47.62	-13	-34.62	-65.14	-54.56	3.78	10.72	V	Pass



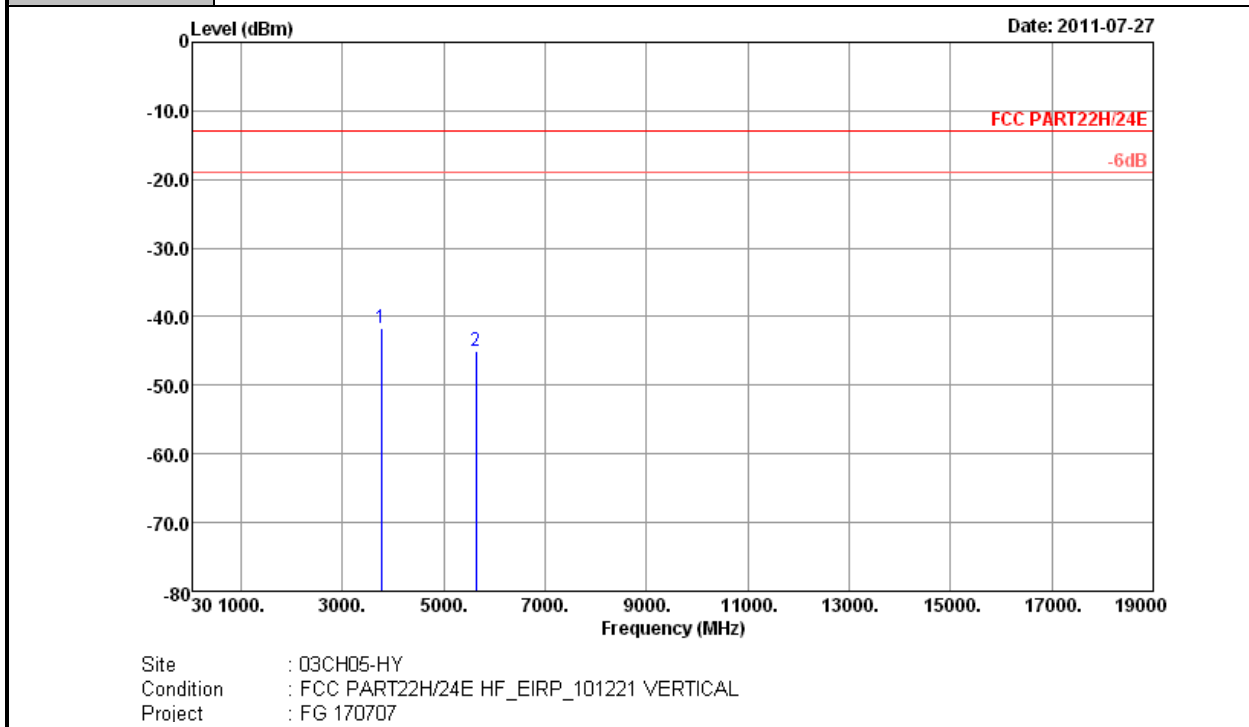
Band :	WCDMA Band II	Temperature :	24~25°C
Test Mode :	RMC 12.2Kbps Link	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-38.03	-13	-25.03	-51.32	-44.16	2.93	9.06	H	Pass
5636	-44.62	-13	-31.62	-63.3	-51.54	3.91	10.83	H	Pass
9396	-40.36	-13	-27.36	-64	-48.32	5.40	13.36	H	Pass



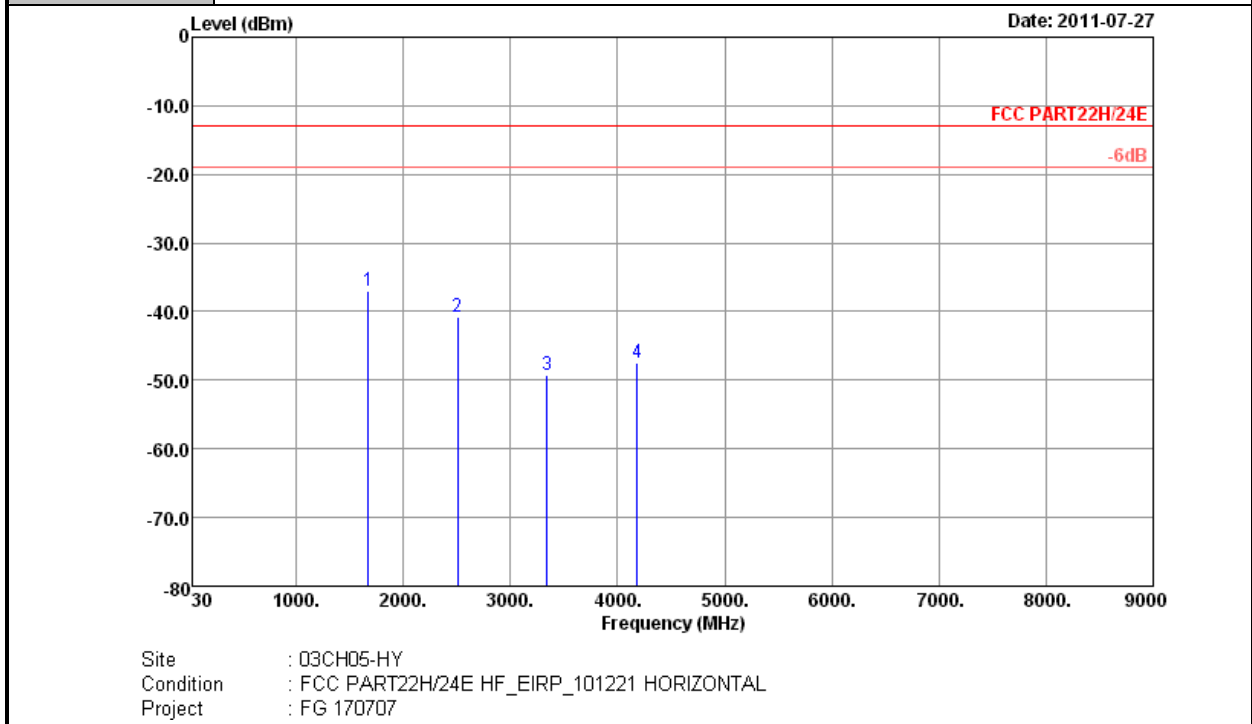
Band :	WCDMA Band II	Temperature :	24~25°C
Test Mode :	RMC 12.2Kbps Link	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-41.76	-13	-28.76	-55.06	-47.89	2.93	9.06	V	Pass
5636	-45.11	-13	-32.11	-63.71	-52.03	3.91	10.83	V	Pass



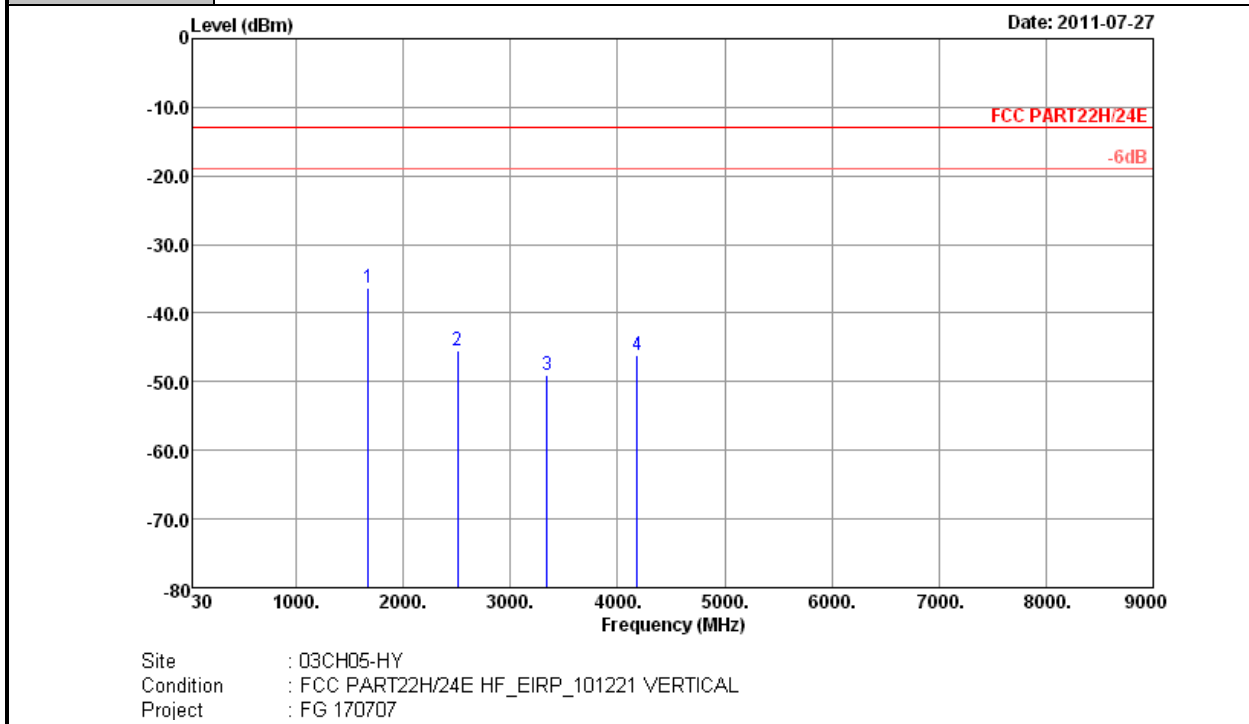
Band :	CDMA2000 BC0	Temperature :	24~25°C
Test Mode :	1xEV-DO Rev. 0 Link	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-36.92	-13	-23.92	-42.79	-38.11	2.15	5.49	H	Pass
2509	-40.67	-13	-27.67	-49.73	-42.56	2.38	6.41	H	Pass
3345	-49.35	-13	-36.35	-60.53	-52.68	2.86	8.34	H	Pass
4182	-47.41	-13	-34.41	-62.42	-51.35	3.26	9.35	H	Pass



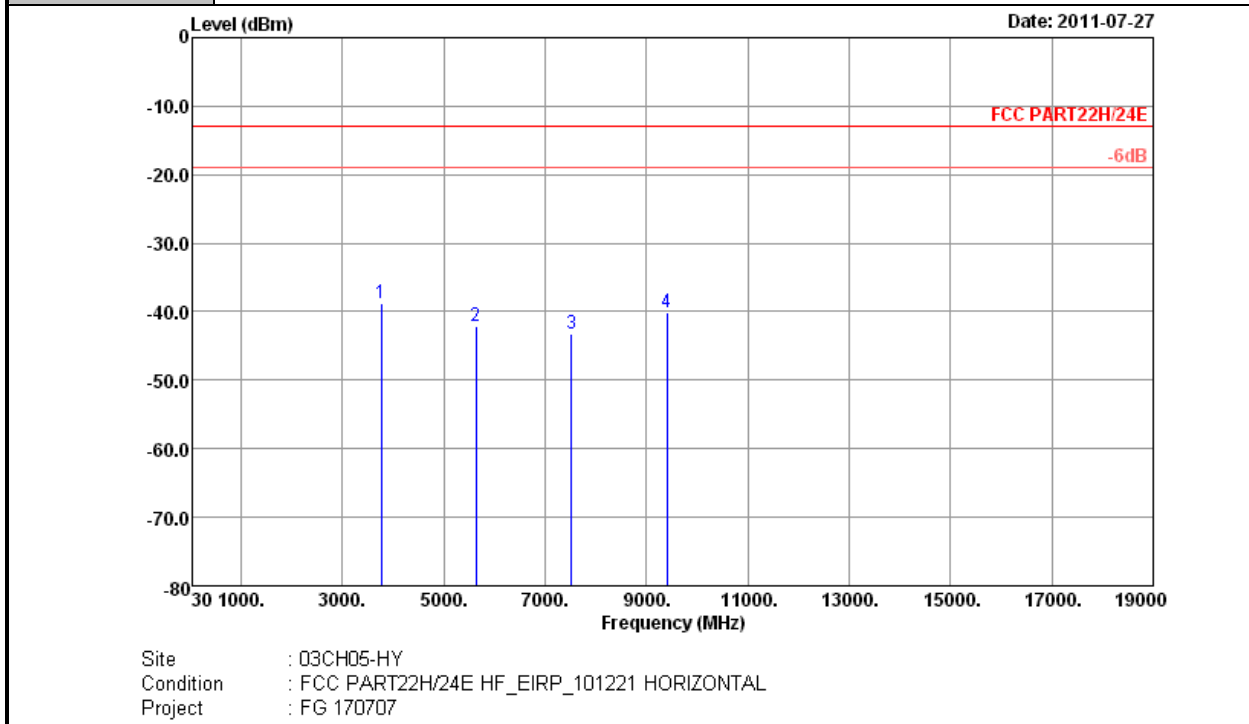
Band :	CDMA2000 BC0	Temperature :	24~25°C
Test Mode :	1xEV-DO Rev. 0 Link	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1672	-36.36	-13	-23.36	-42.04	-37.55	2.15	5.49	V	Pass
2509	-45.54	-13	-32.54	-54.59	-47.43	2.38	6.41	V	Pass
3345	-49.03	-13	-36.03	-60.41	-52.36	2.86	8.34	V	Pass
4182	-46.09	-13	-33.09	-61.11	-50.03	3.26	9.35	V	Pass



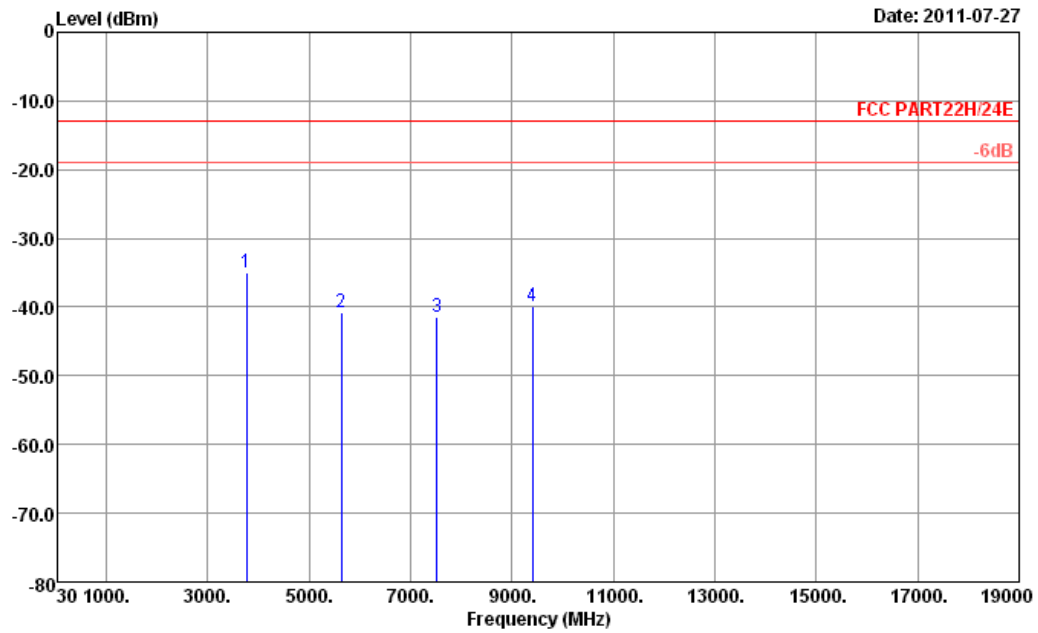
Band :	CDMA2000 BC1	Temperature :	24~25°C
Test Mode :	1xEV-DO Rev. 0 Link	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-38.69	-13	-25.69	-52.13	-44.82	2.93	9.06	H	Pass
5636	-42.12	-13	-29.12	-60.66	-49.04	3.91	10.83	H	Pass
7520	-43.31	-13	-30.31	-64.96	-51.33	4.60	12.62	H	Pass
9396	-40.15	-13	-27.15	-63.8	-48.11	5.40	13.36	H	Pass



Band :	CDMA2000 BC1	Temperature :	24~25°C
Test Mode :	1xEV-DO Rev. 0 Link	Relative Humidity :	46~47%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Site : 03CH05-HY
 Condition : FCC PART22H/24E HF_EIRP_101221 VERTICAL
 Project : FG 170707

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
3760	-35.05	-13	-22.05	-48.16	-41.18	2.93	9.06	V	Pass
5636	-40.77	-13	-27.77	-59.38	-47.69	3.91	10.83	V	Pass
7520	-41.43	-13	-28.43	-63.12	-49.45	4.60	12.62	V	Pass
9396	-39.85	-13	-26.85	-63.78	-47.81	5.40	13.36	V	Pass



4 List of Measuring Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP30	101352	9KHz-30GHz	Nov. 03, 2010	Nov. 02, 2011	Radiation (03CH05-HY)
COM-POWER	Double Ridge Horn	AH-118	701030	1HGz~18GHz	N/A	N/A	Radiation (03CH05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2725	30MHz ~ 1GHz	Nov. 06, 2010	Nov. 05, 2011	Radiation (03CH05-HY)
Turn Table	HD	Deis HD 2000	420/611	0 - 360 degree	N/A	N/A	Radiation (03CH05-HY)
Antenna Mast	HD	MA 240	240/666	1 m - 4 m	N/A	N/A	Radiation (03CH05-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 19, 2010	Aug. 18, 2011	Radiation (03CH05-HY)
COM-POWER	COM-POWER	PA-103	161075	1KHz - 1GHz	Mar. 29, 2011	Mar. 28, 2012	Radiation (03CH05-HY)
Pre Amplifier	EMCI	EMC051845	SN980048	1HGz~18GHz	Jul. 19, 2011	Jul. 18, 2012	Radiation (03CH05-HY)
Preamplifier	MITEQ	AMF-7D-00 101800-30-1	159087	1HGz~18GHz	Feb. 21, 2011	Feb. 20, 2012	Radiation (03CH05-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1GHz- 26.5GHz	Apr. 14, 2011	Apr. 13, 2012	Radiation (03CH05-HY)
System Simulator	R&S	CMU200	117591	N/A	Oct. 18, 2010	Oct. 17, 2011	Radiation (03CH05-HY)

5 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Contribution	Uncertainty of X_i		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.41	Normal (k=2)	0.21
Antenna Factor Calibration	0.83	Normal (k=2)	0.42
Cable Loss Calibration	0.25	Normal (k=2)	0.13
Pre-Amplifier Gain Calibration	0.27	Normal (k=2)	0.14
RCV/SPA Specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site Imperfection	1.43	Rectangular	0.83
Mismatch	+0.39 / -0.41	U-Shape	0.28
Combined Standard Uncertainty $U_c(y)$	1.27		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.54		

Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Contribution	Uncertainty of X_i		$u(X_i)$	C_i	$C_i * u(X_i)$
	dB	Probability Distribution			
Receiver Reading	± 0.10	Normal (k=2)	0.10	1	0.10
Antenna Factor Calibration	± 1.70	Normal (k=2)	0.85	1	0.85
Cable Loss Calibration	± 0.50	Normal (k=2)	0.25	1	0.25
Receiver Correction	± 2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	± 1.50	Rectangular	0.87	1	0.87
Site Imperfection	± 2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20\text{Log}(1-\Gamma_1*\Gamma_2)$	+0.34 / -0.35	U-Shape	0.244	1	0.244
Combined Standard Uncertainty $U_c(y)$	2.36				
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.72				



Appendix A. Photographs of EUT

Please refer to Sporton report number EP170707 as below.

1. External Photograph of EUT

Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010





Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010





2. Photograph of Accessory

Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010

List of Accessory:

Specification of Accessory		
AC Adapter	Brand Name	CINCON ELECTRONICS
	Model Name	TRG36A15 12E03
Battery 1	Brand Name	DAP
	Model Name	VE026-8034
Battery 2	Brand Name	DAP
	Model Name	VE026-8035
LCD Panel	Brand Name	SGD
	Model Name	GNTW70NNBA1E0
Camera 1	Brand Name	DEMARREN
	Model Name	Q5M03A
WWAN Module	Brand Name	Sierra Wireless
	Model Name	MC8355
WLAN Module	Brand Name	Summit Data Communications
	Model Name	SDC-PE15N
Bluetooth Module	Brand Name	Bluegiga
	Model Name	WT21-A
Zigbee Module	Brand Name	Atmel
	Model Name	ATmega128RFA1
Power Cord 1	Brand Name	QUAIL
	Model Name	1062.079(NAM032)
Power Cord 2	Brand Name	QUAIL
	Model Name	8002.079(NAM033)
Power Cord 3	Brand Name	QUAIL
	Model Name	9657.079(NAM034)

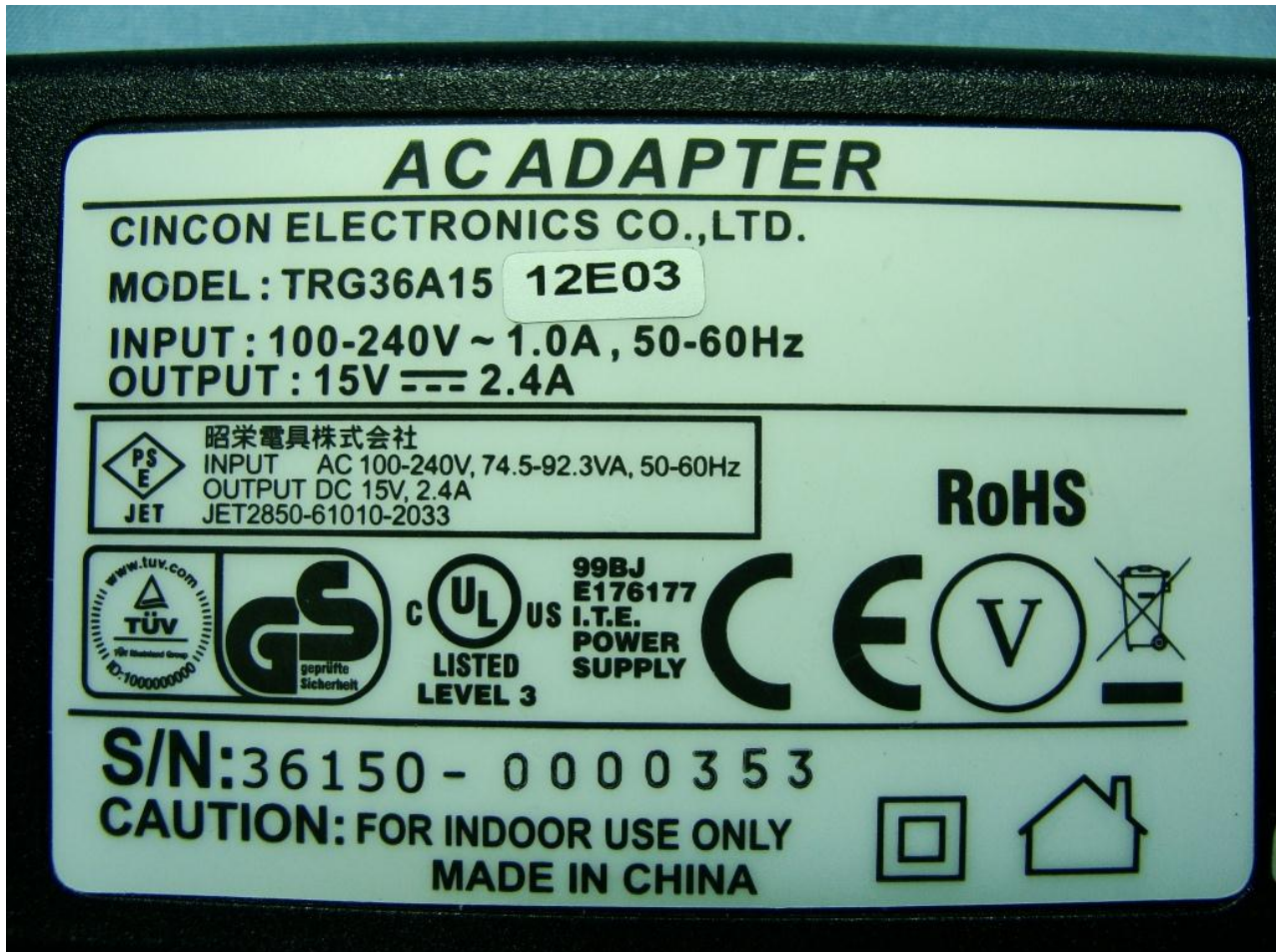
Remark: For accessories equipped with this EUT, please refer to the following photos.



Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010

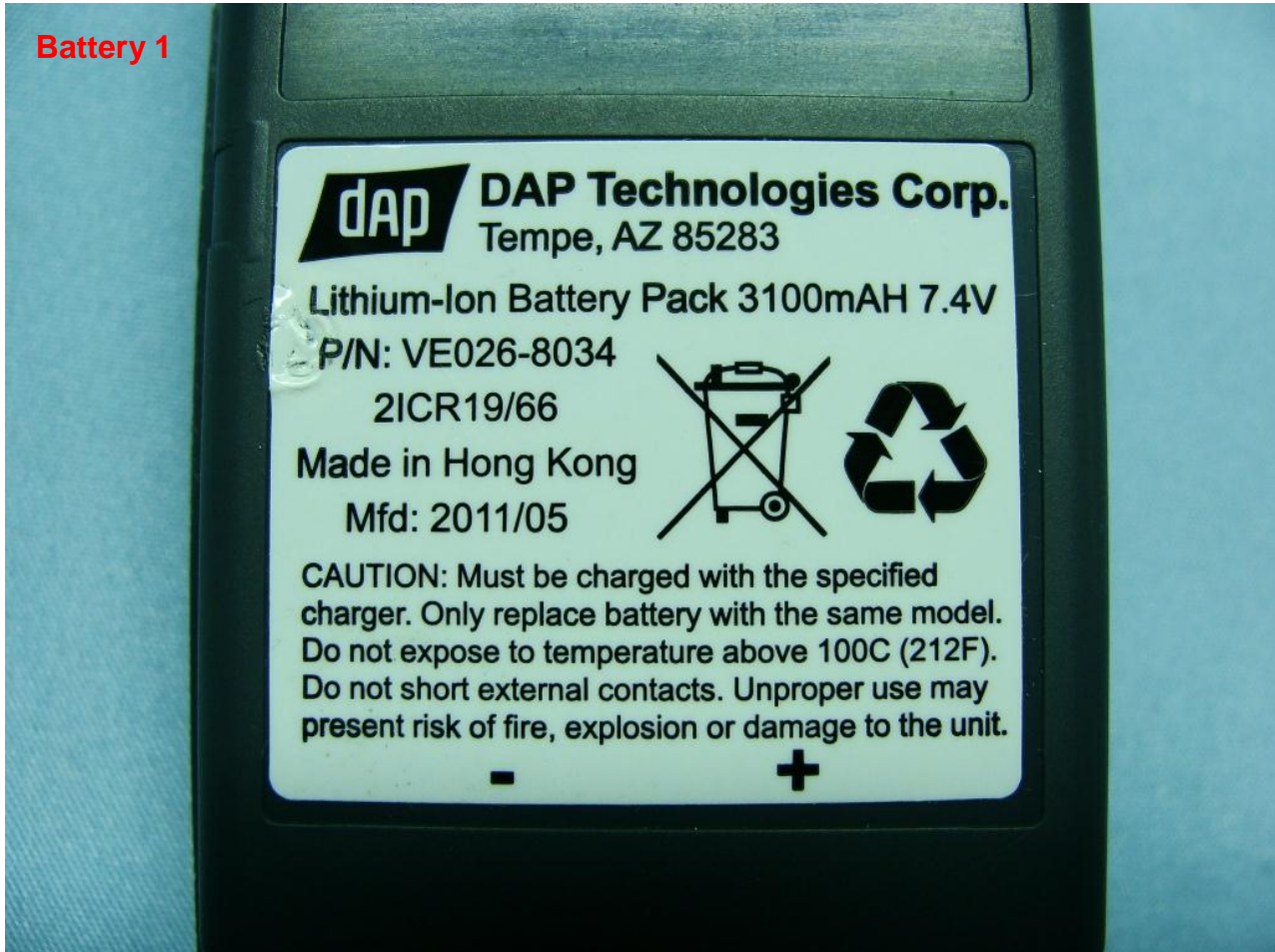


Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010



Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010

Battery 1



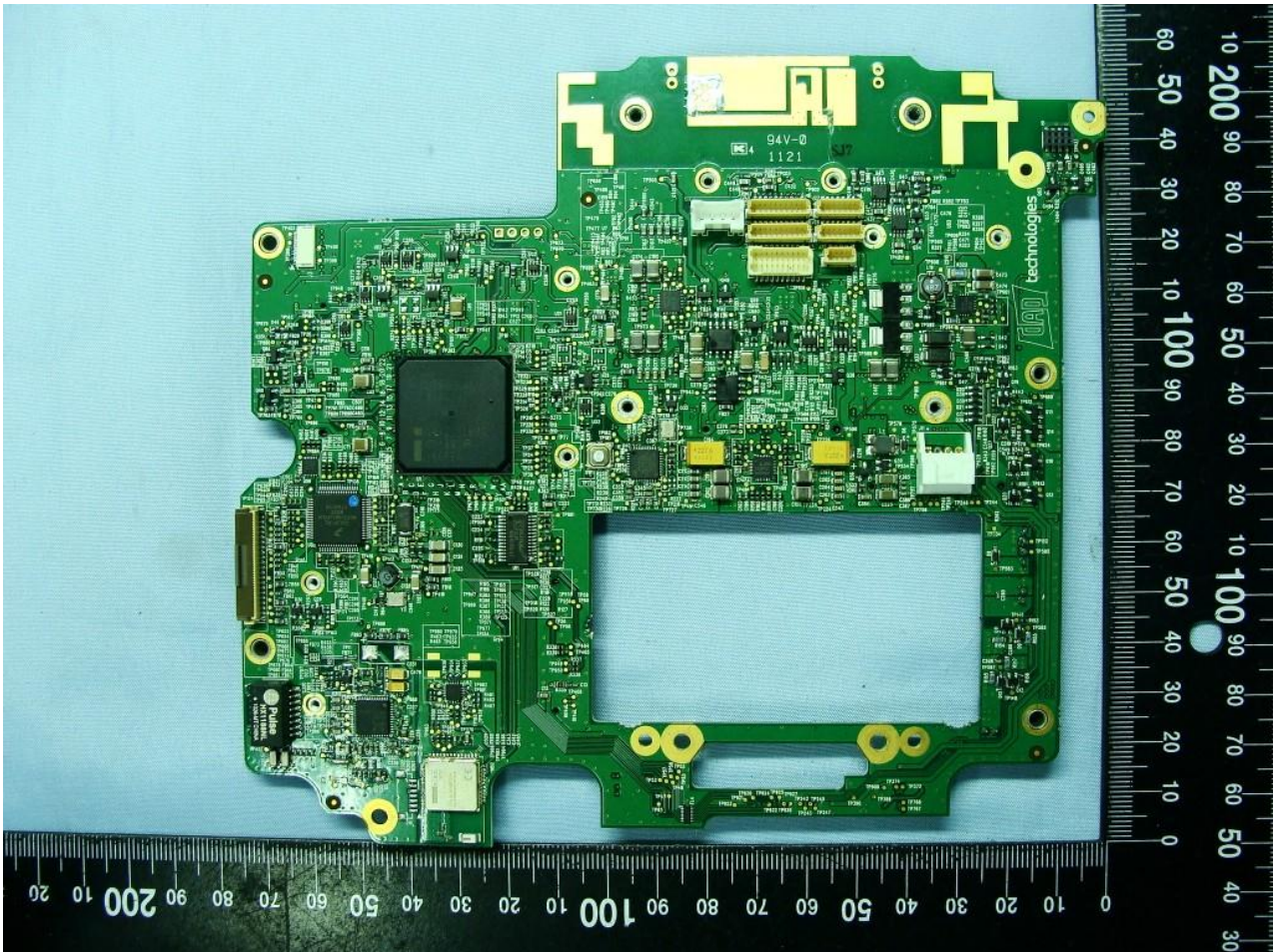
Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010

Battery 2

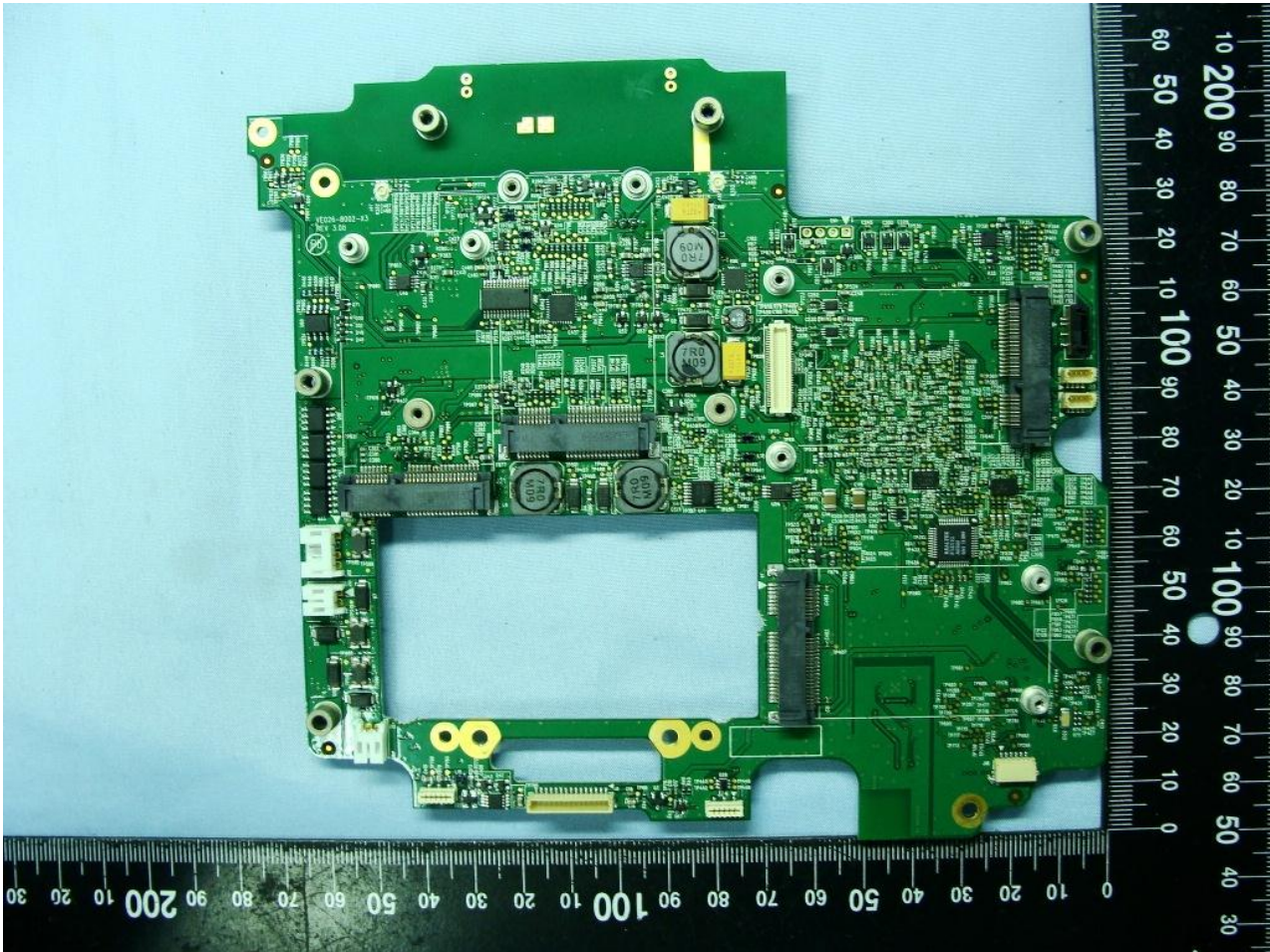


3. Internal Photograph of EUT

Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010

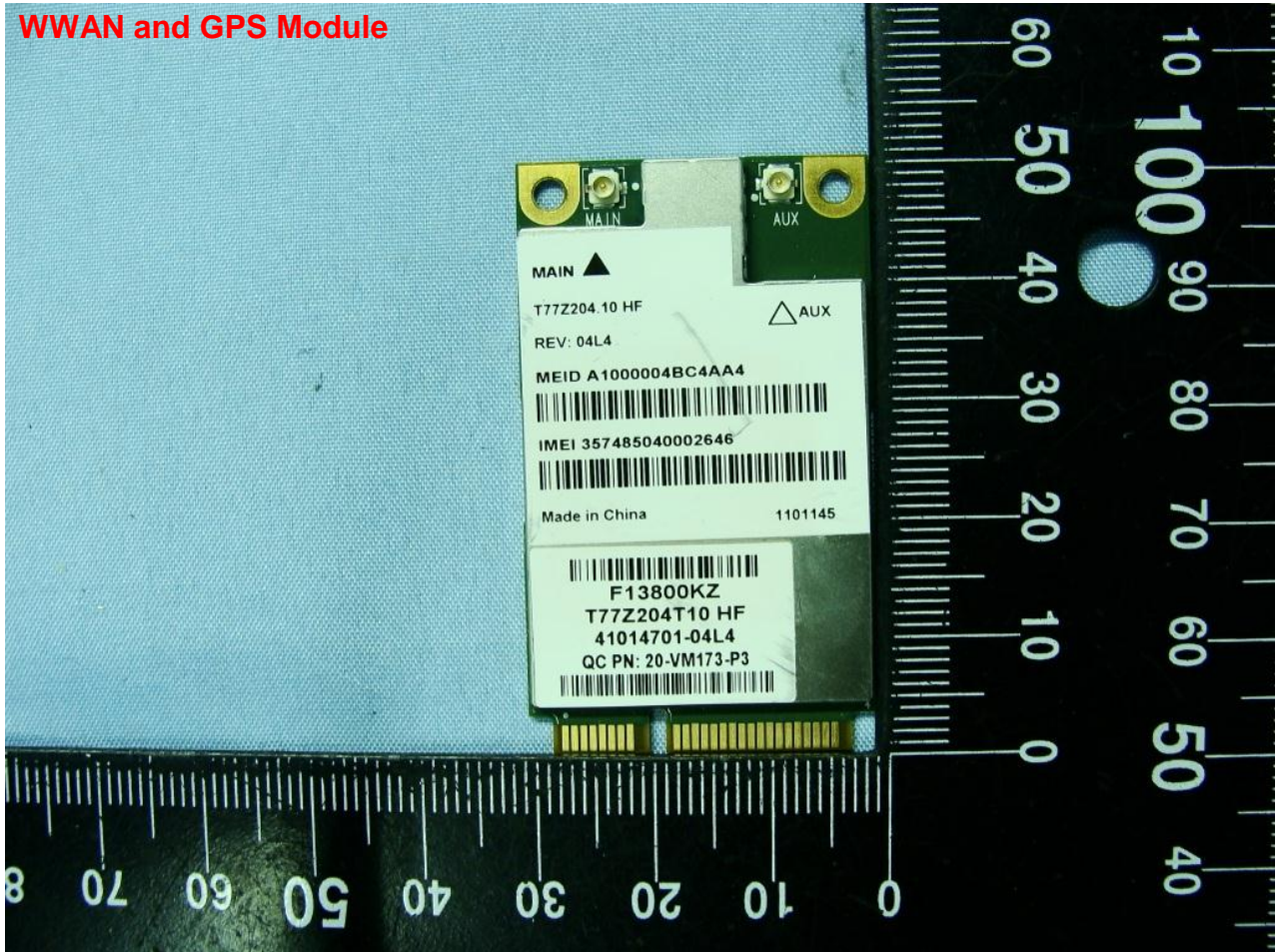


Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010

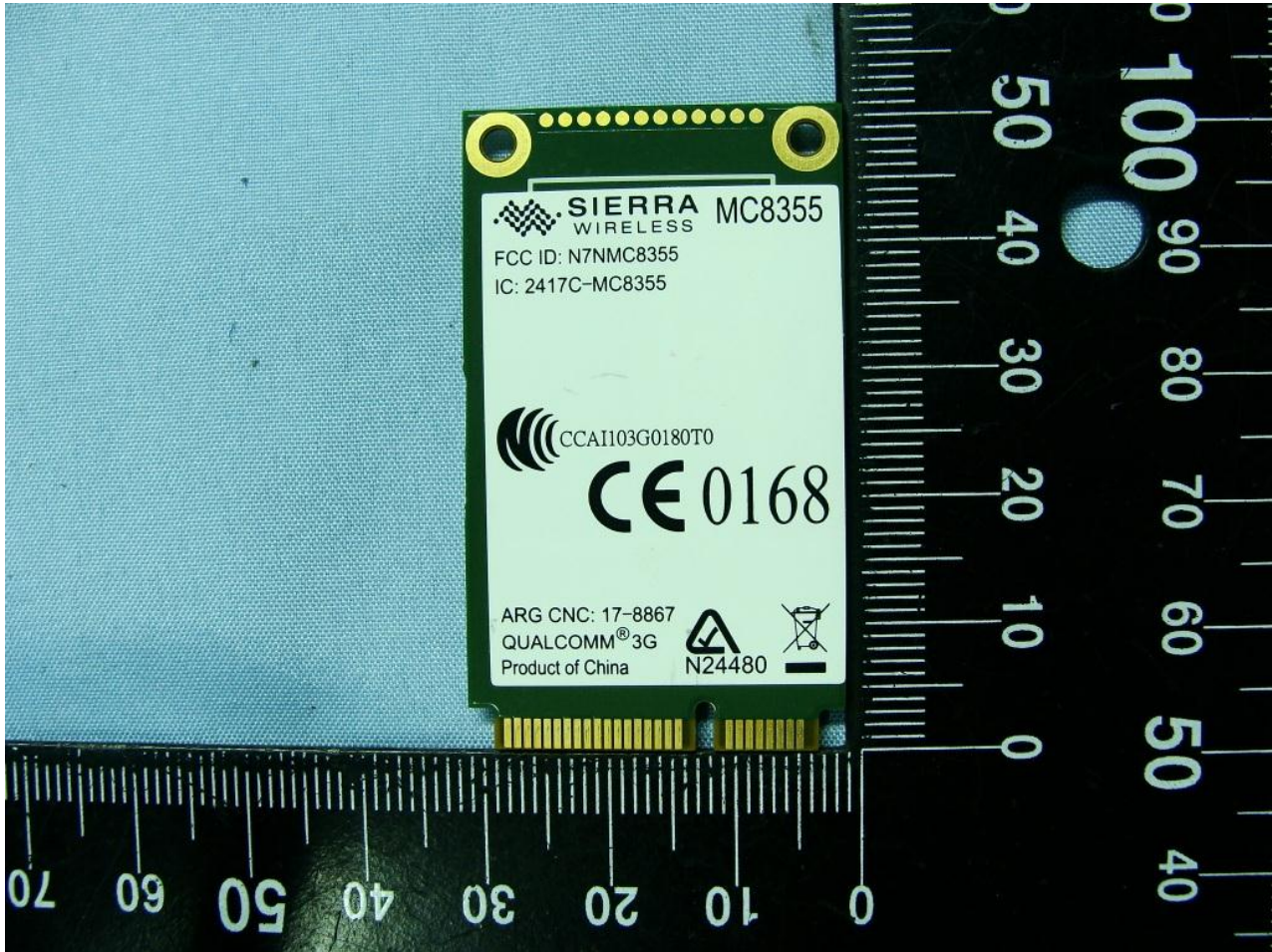


Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010

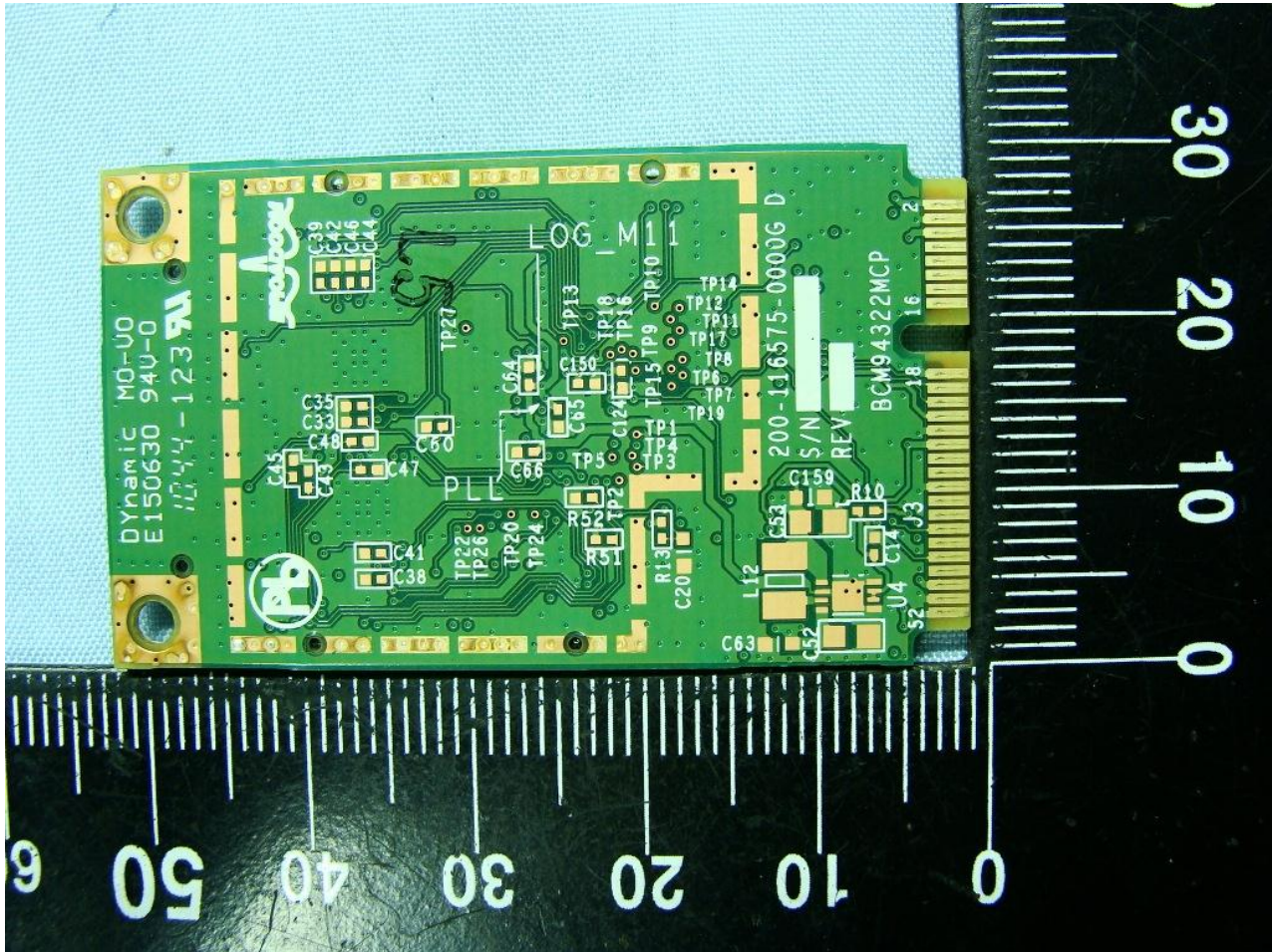
WWAN and GPS Module



Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010

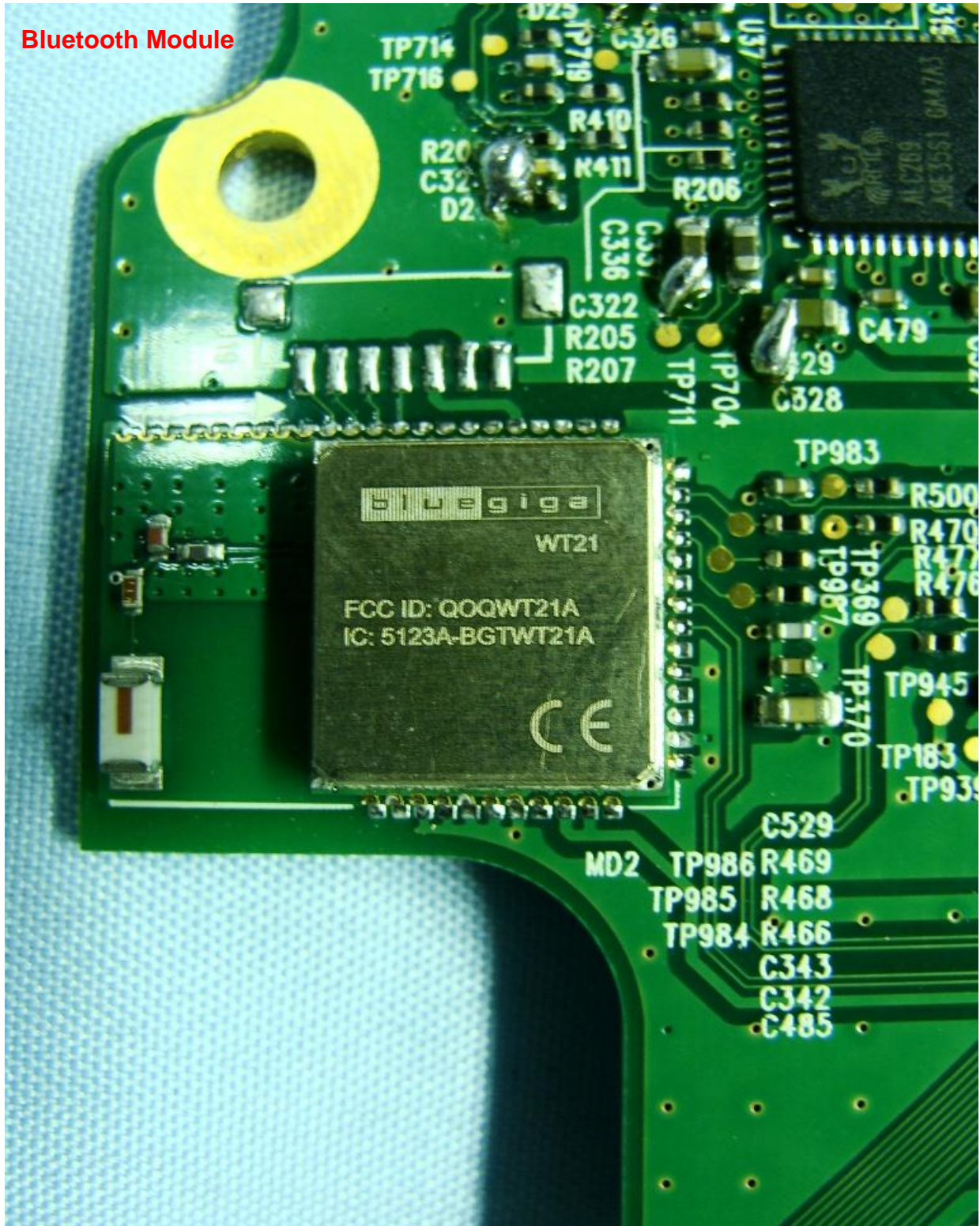


Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010



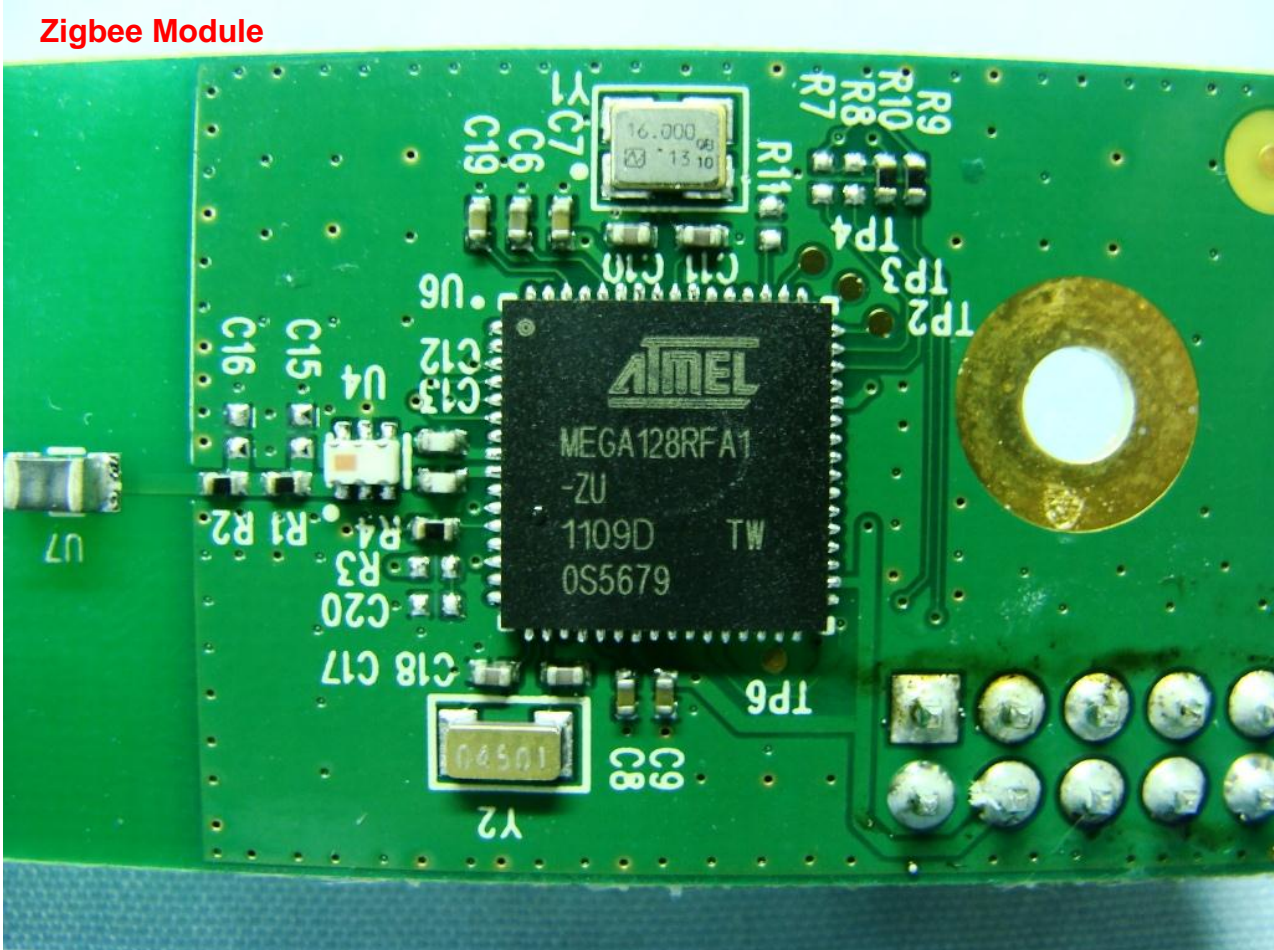
Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010

Bluetooth Module



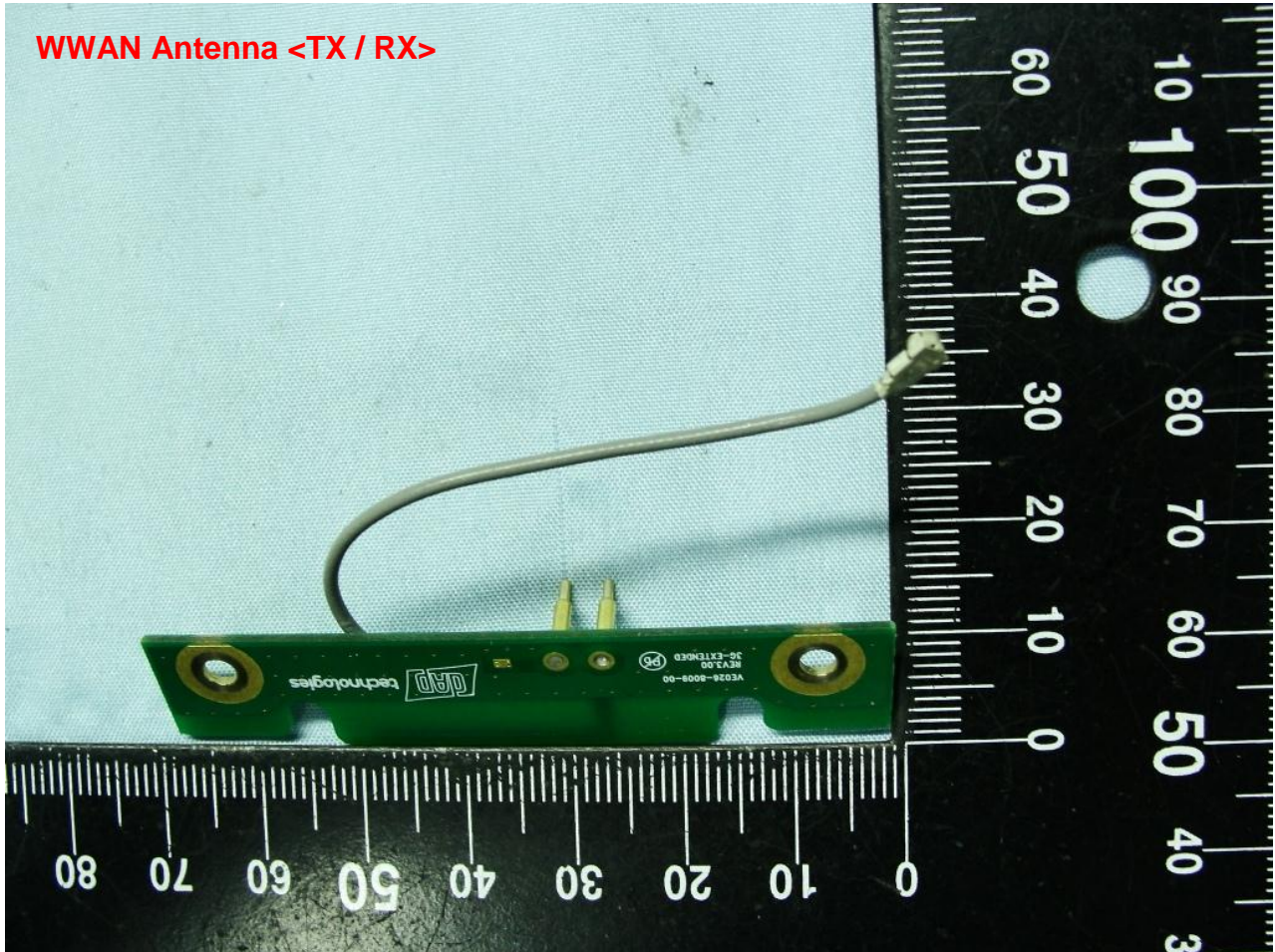
Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010

Zigbee Module

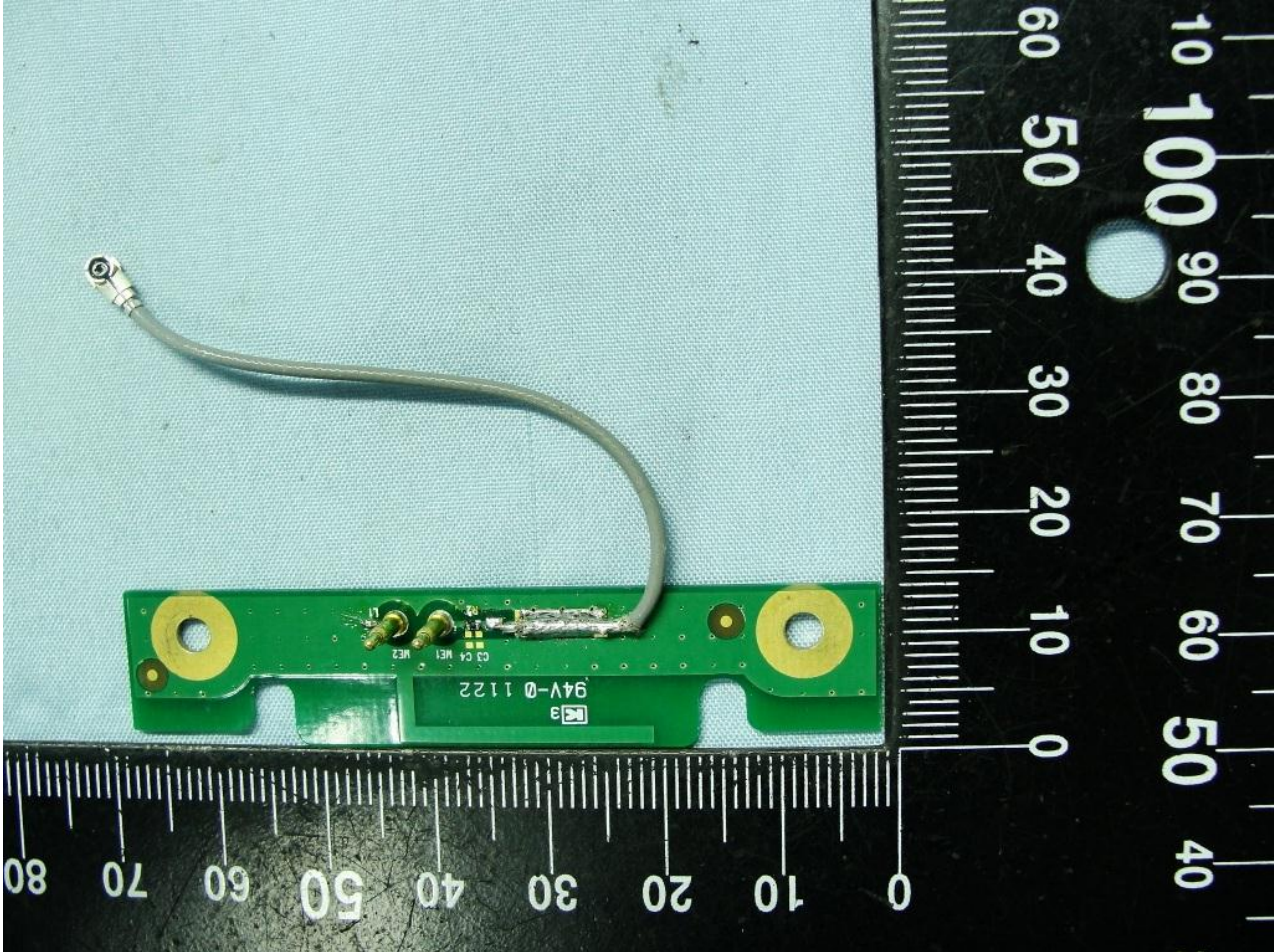




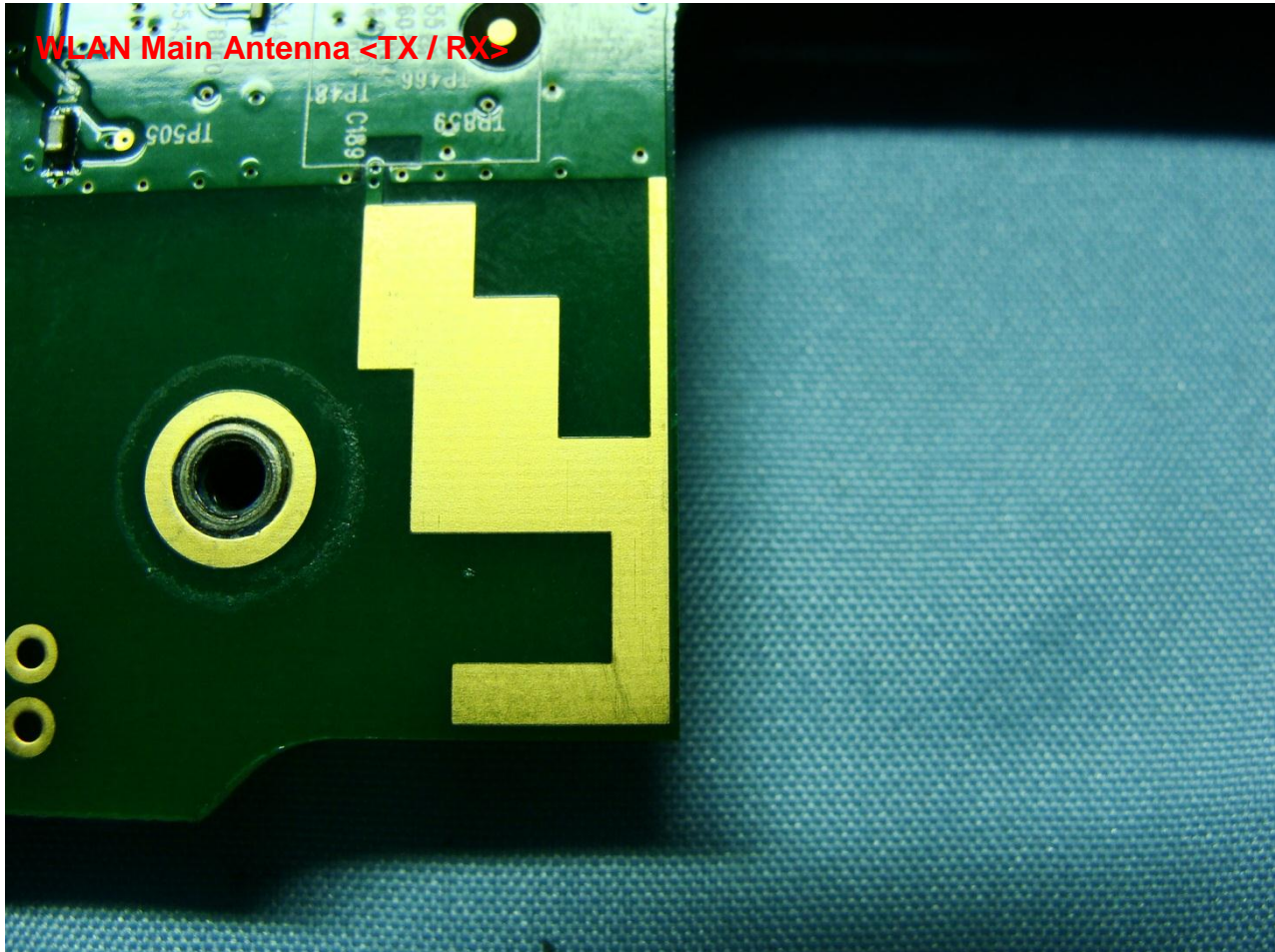
Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010



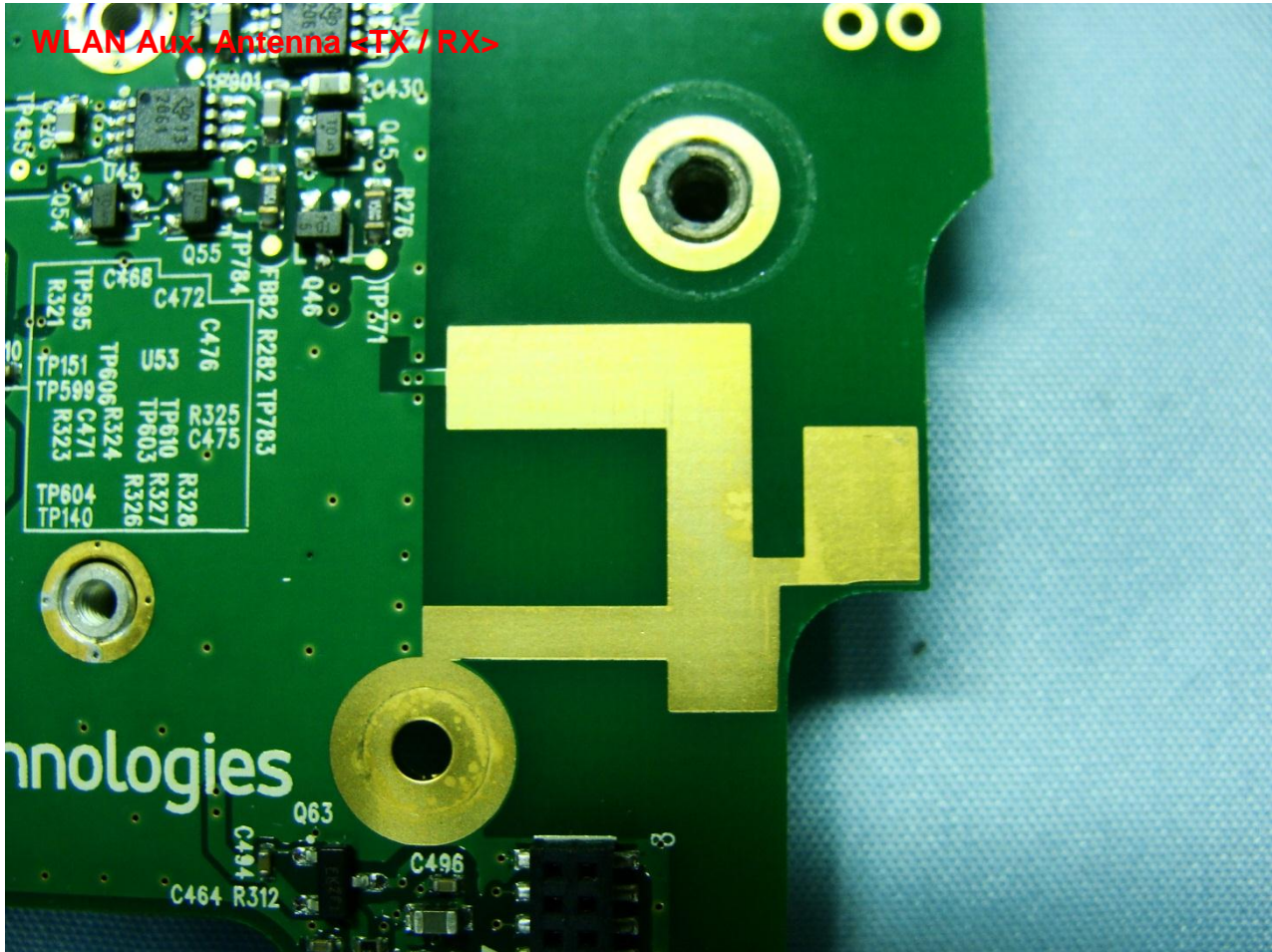
Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010



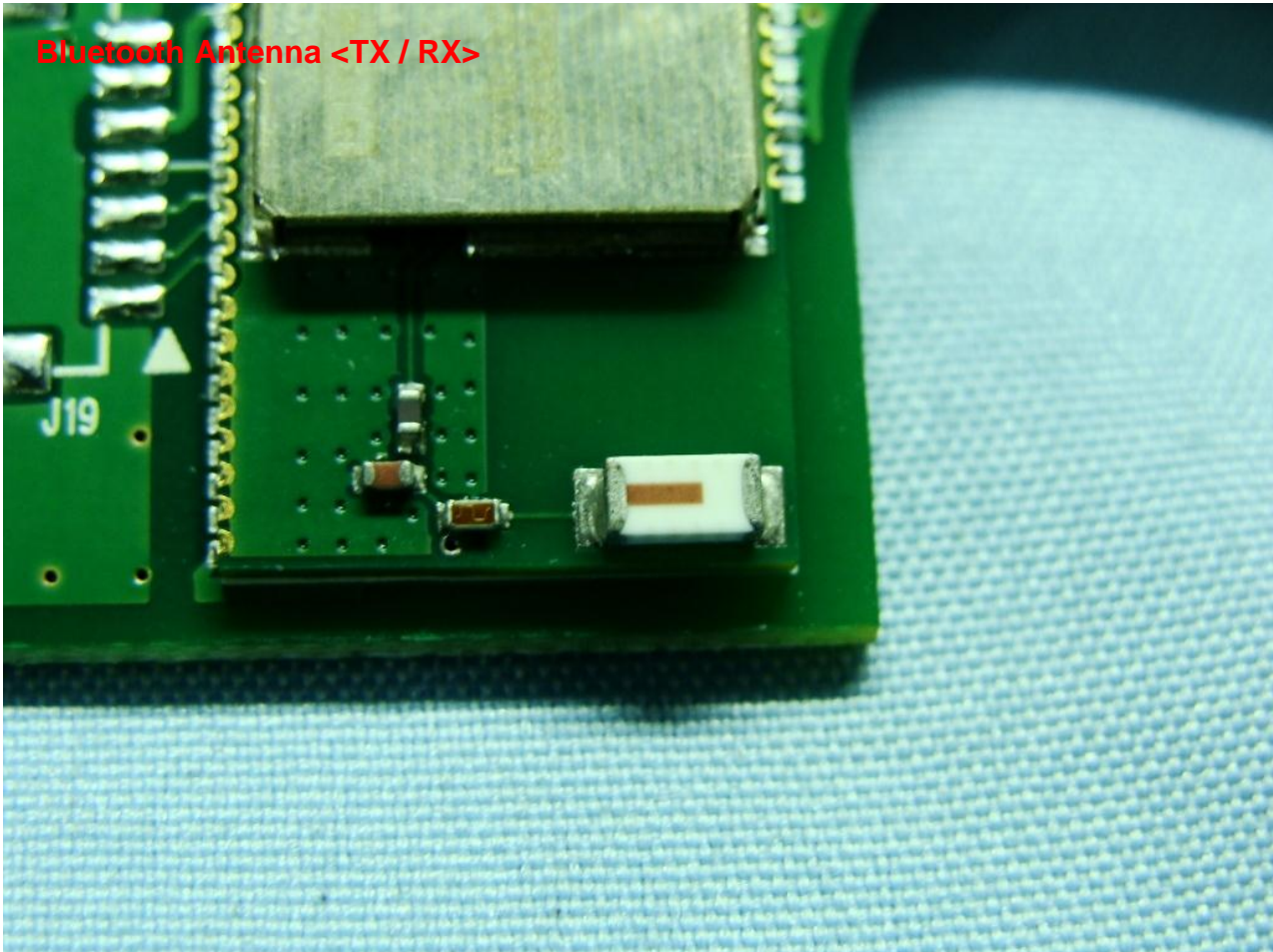
Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010



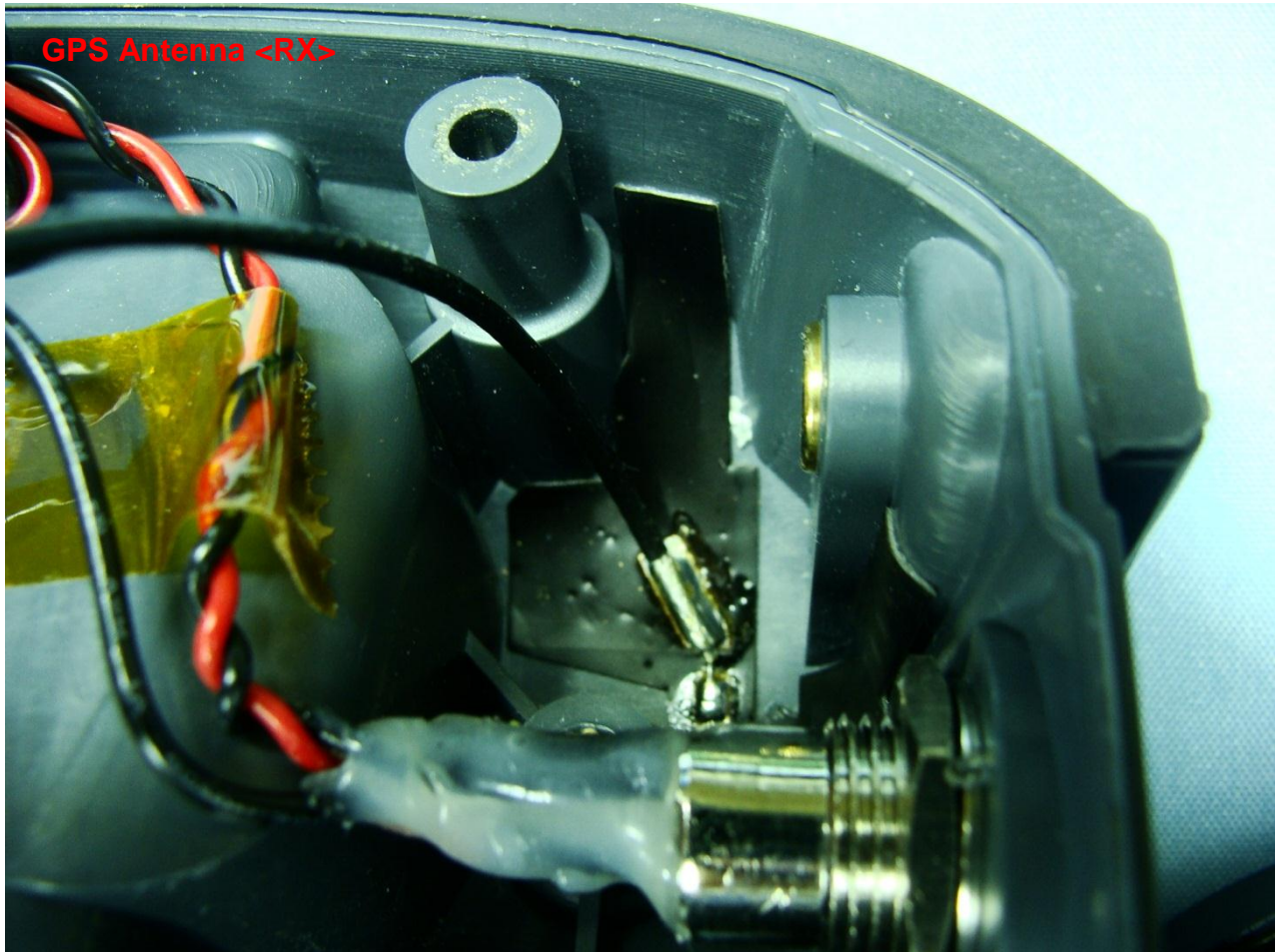
Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010



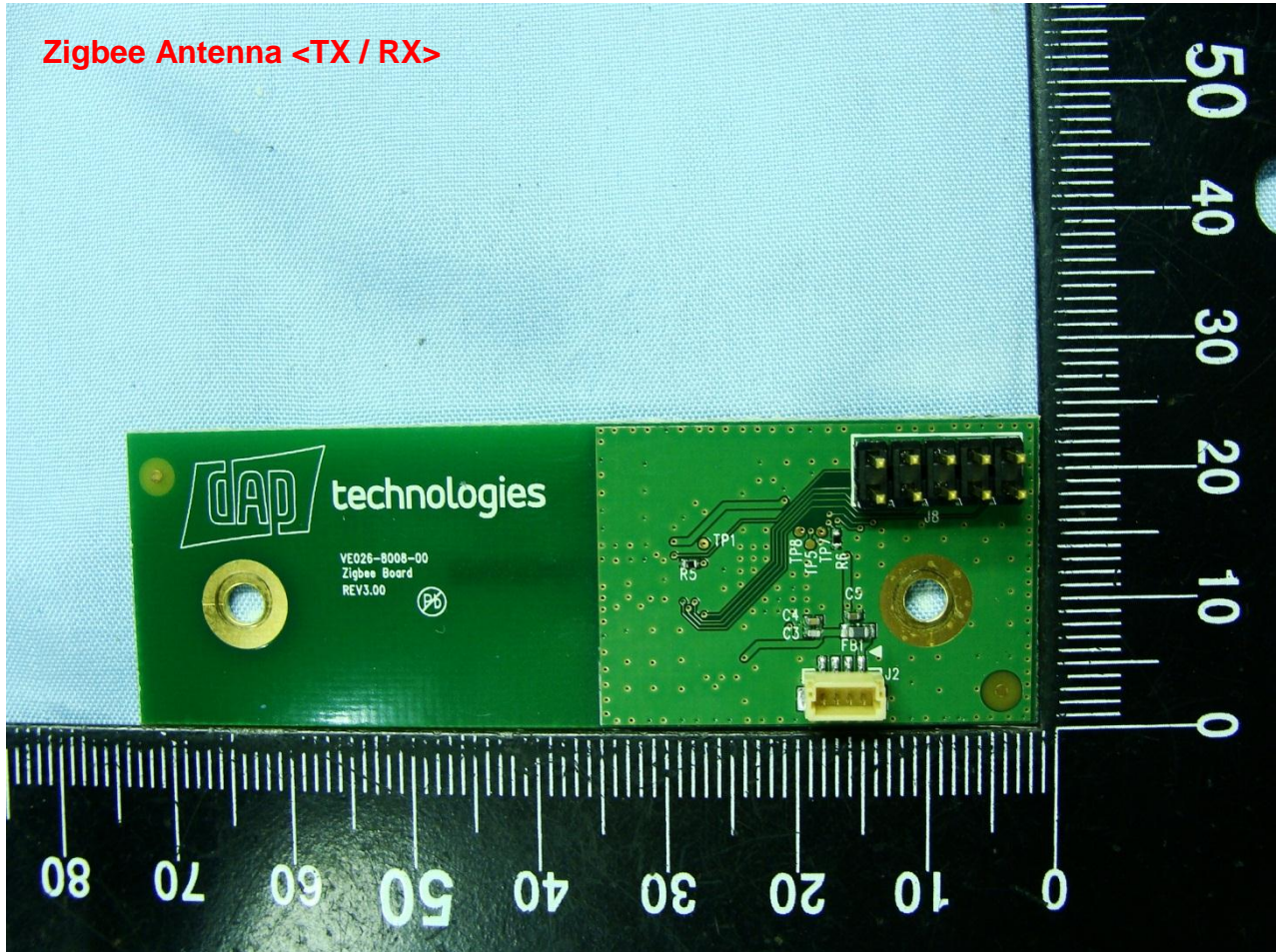
Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010



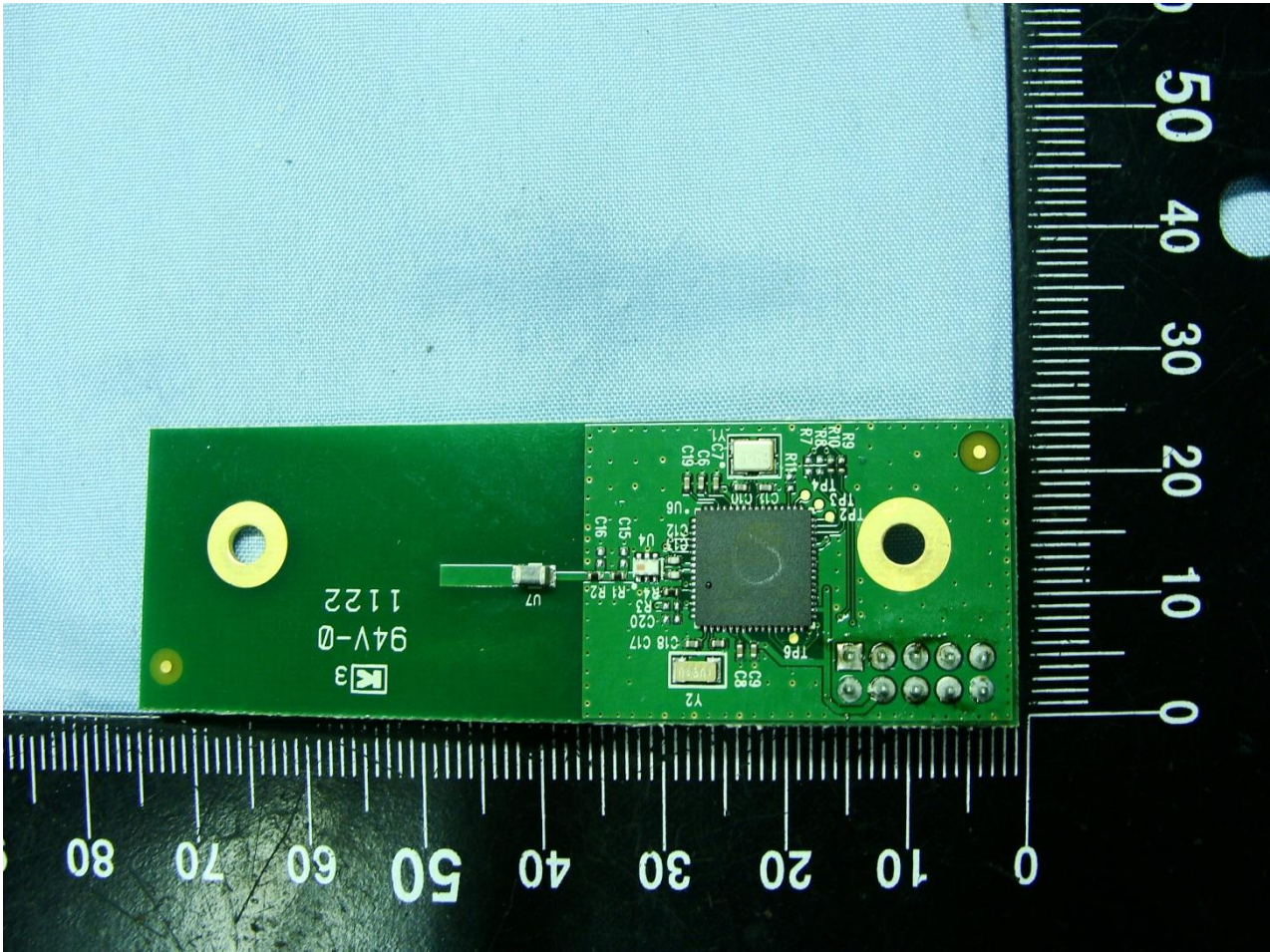
Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010



Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010



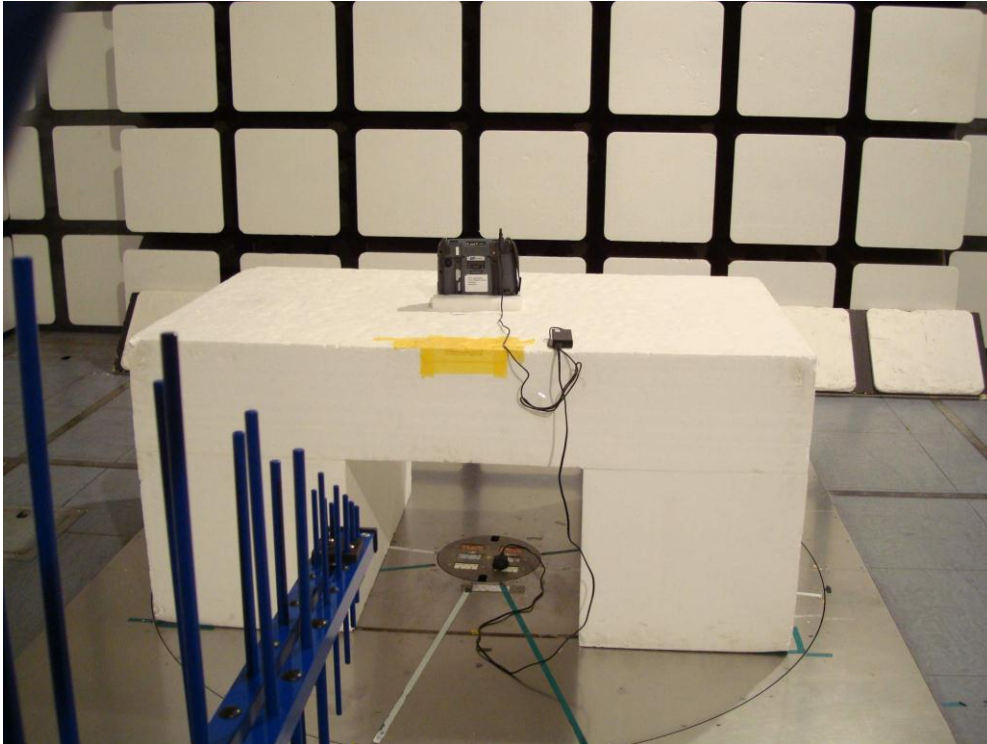
Brand Name: DAP / Model Name: 9000WBWZV1 / Marketing Name: M9010



Appendix B. Setup Photographs

<Radiated Emission>

LF



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