



Variant FCC RF Test Report

APPLICANT : DAP Technologies
EQUIPMENT : Rugged Mobile Tablet Computer
BRAND NAME : DAP
MODEL NAME : 9000WBWV1
MARKETING NAME : M9010
FCC ID : T5M9000WBWV1
STANDARD : FCC Part 15 Subpart E
CLASSIFICATION : Unlicensed National Information Infrastructure (UNII)

The product was integrated the WLAN Module (Brand Name: Summit Data Communications / Model Name: SDC-PE15N, FCC ID: TWG-SDCPE15N) during the test.

This is a variant report which is only valid together with the original test report. The product was received on Jul. 07, 2011 and completely tested on Sep. 19, 2011. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 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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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR170707-03B	Rev. 01	This is a variant report by removing Zigbee function. All the test cases were performed on original report which can be referred to Sporton Report Number FR170707C as appendix C. Based on the original report, only the worst cases of Transmitter Radiated Emissions and AC Conducted Emission Tests were verified.	Oct. 26, 2011



SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.407(b)	A9.3	Frequency Band Edges	$\leq -17, -27$ dBm (depend on band)&15.209(a)	Pass	-
3.2	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 11.8 dB at 0.52 MHz
3.3	15.407(b)	A9.3	Transmitter Radiated Emission	$\leq -17, -27$ dBm (depend on band)&15.209(a)	Pass	Under limit 6.44 dB at 35.13 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	9000WBWV1
Marketing Name	M9010
FCC ID	T5M9000WBWV1
Tx/Rx Frequency Range	5150 MHz ~ 5250 MHz 5250 MHz ~ 5350 MHz 5470 MHz ~ 5725 MHz
Antenna Type	PIFA Antenna
HW Version	Merlion P3
SW Version	MER_00.00.10
Type of Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Production Unit

Remark:

1. For other wireless features of this EUT, test report will be issued separately.
2. This test report recorded only product characteristics and test results of Unlicensed National Information Infrastructure (UNII).
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: +886-3-3273456 / FAX: +886-3-3284978		
Test Site No.	Sporton Site No.		FCC/IC Registration No.
	CO05-HY	03CH05-HY	722060/4086B-1

1.5 Applied Standards

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

- ♦ FCC Part 15 Subpart E
- ♦ FCC Public Notice DA 02-2138, (Measurement Guidelines of UNII)
- ♦ ANSI C63.4-2003
- ♦ IC RSS-210 Issued 8
- ♦ IC RSS-Gen Issue 3

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 Name	FCC ID	Data Cable	Power Cord
1.	Mouse	Logitech	M90	FCC DoC	Shielded, 1.8 m	N/A
2.	(USB) Mouse	DELL	MOC5UO	FCC DoC	Shielded, 1.8 m	N/A
3.	iPod Earphone	Apple	N/A	FCC DoC	Unshielded, 1.2 m	N/A
4. .	GPS Station	T&E	GS-50	N/A	N/A	Unshielded, 1.8 m
5. .	Bluetooth Earphone	Motorola	S705	IHDT6GH1	N/A	N/A
6. .	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
7. .	Notebook	DELL	P20G	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m



2 Test Configuration of Equipment Under Test

2.1 Carrier Frequency Channel

802.11a Carrier Frequency Channel							
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
36	5180	40	5200	44	5220	48	5240
52	5260	56	5280	60	5300	64	5320
100	5500	104	5520	108	5540	112	5560
116	5580	132	5660	136	5680	140	5700

802.11n (BW 20MHz) Carrier Frequency Channel							
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
36	5180	40	5200	44	5220	48	5240
52	5260	56	5280	60	5300	64	5320
100	5500	104	5520	108	5540	112	5560
116	5580	132	5660	136	5680	140	5700

802.11n (BW 40MHz) Carrier Frequency Channel							
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
38	5190	46	5230	54	5270	62	5310
102	5510	110	5550	118	5590	134	5670



2.2 Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: radiation (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

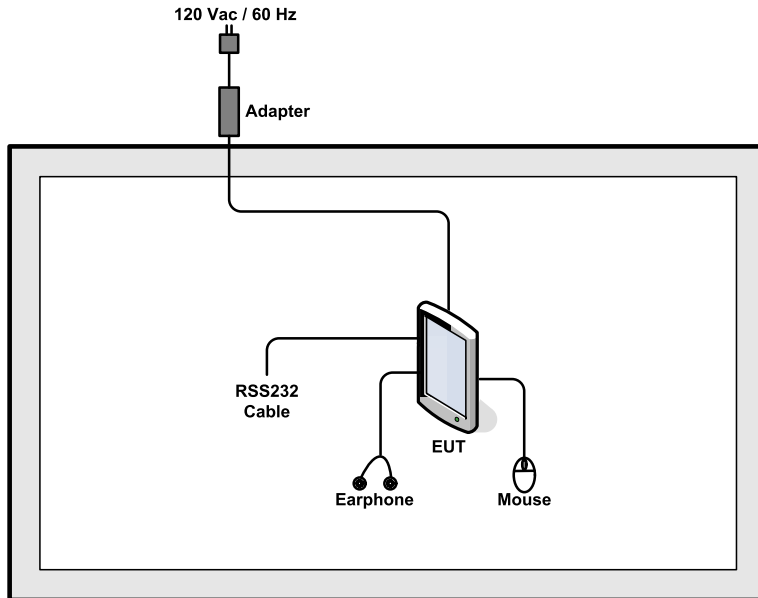
Pre-scanned tests, X, Y, Z in three orthogonal panels, were conducted to determine the final configuration from all possible combinations, laptop / tablet modes.

The following tables are showing the test modes as the worst cases (E2 plane) and recorded in this report.

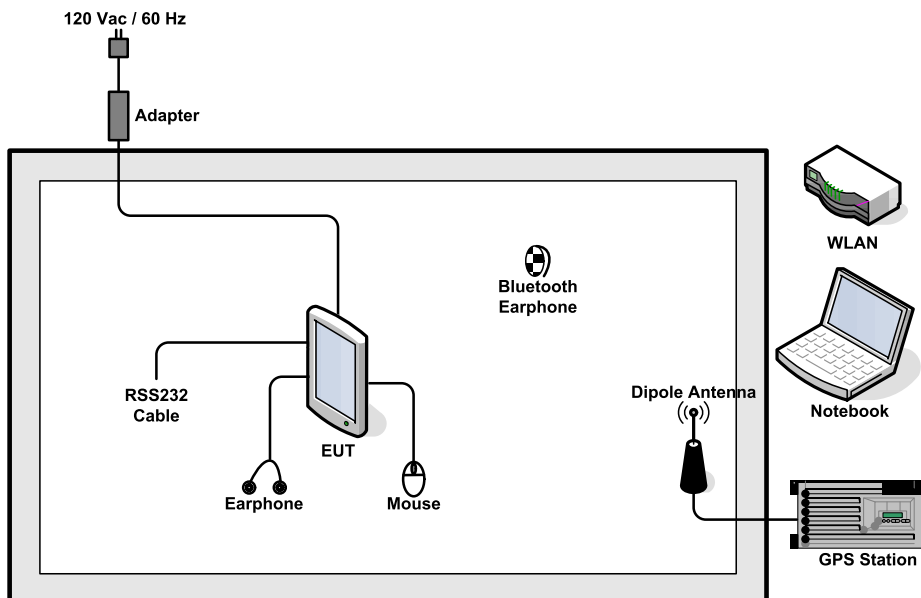
Test Cases	
Test Item	802.11a/n (Modulation : OFDM)
Radiated TCs	■ Mode 1: 802.11n_CH62_5310 MHz (BW 40M)
AC Conducted Emission	Mode 1 : WLAN Link + Bluetooth Link + TC + Adapter + GPS Rx
Remark: TC stands for Test Configuration, and consists of iPod earphone, USB Mouse, and MPEG4.	

2.3 Connection Diagram of Test System

< Radiated Emissions Mode >



< AC Conducted Emission Mode >





2.4 RF Utility

The programmed RF Utility "SRU" is installed in EUT to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testing.



3 Test Result

3.1 Band Edges Measurement

3.1.1 Limit of Band Edges

- (1) For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz. For transmitters operating in the 5.25–5.35 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz. Devices operating in the 5.25–5.35 GHz band that generate emissions in the 5.15–5.25 GHz band must meet all applicable technical requirements for operation in the 5.15–5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of –27 dBm/MHz in the 5.15–5.25 GHz band. For transmitters operating in the 5.47–5.725 GHz band: all emissions outside of the 5.47–5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.
- (2) The provisions of Section 15.205 Restricted bands of operation of this part apply to intentional radiators operating under this section.

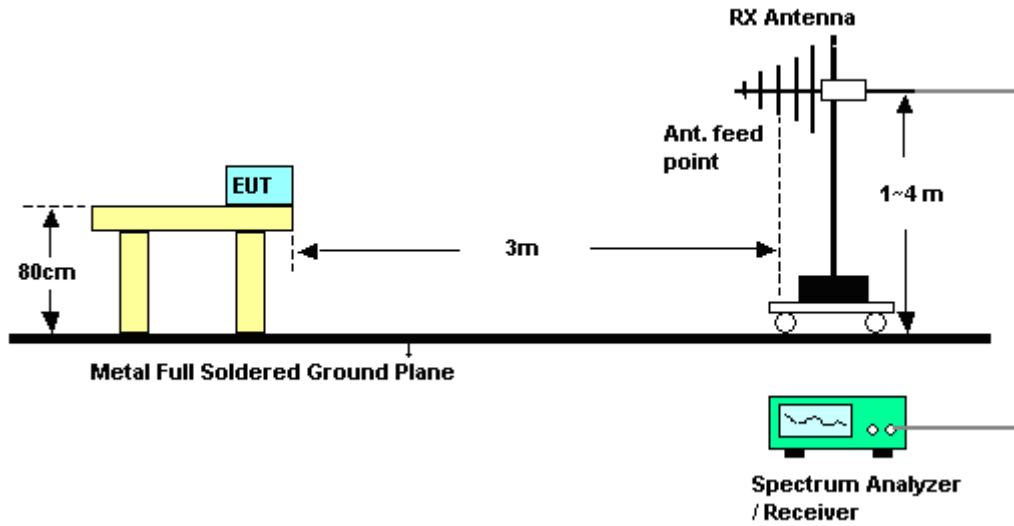
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. Set both RBW / VBW of spectrum analyzer to 1MHz / 3MHz with convenient frequency span including 1MHz bandwidth from band edge.
2. The band edges was measured and recorded.

3.1.4 Test Setup





3.1.5 Test Result of Radiated Band Edges

Test Mode :	Mode 1	Temperature :	23~26°C
Test Band :	802.11n (BW 40MHz)	Relative Humidity :	54~58%
Test Channel :	62	Test Engineer :	Wii Chang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5132	51.6	-22.4	74	44.33	33.93	6.68	33.34	161	240	Peak
5132	38.68	-15.32	54	31.41	33.93	6.68	33.34	161	240	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5140	52.09	-21.91	74	44.8	33.95	6.68	33.34	100	332	Peak
5140	39.03	-14.97	54	31.74	33.95	6.68	33.34	100	332	Average

3.2 AC Conducted Emission Measurement

3.2.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

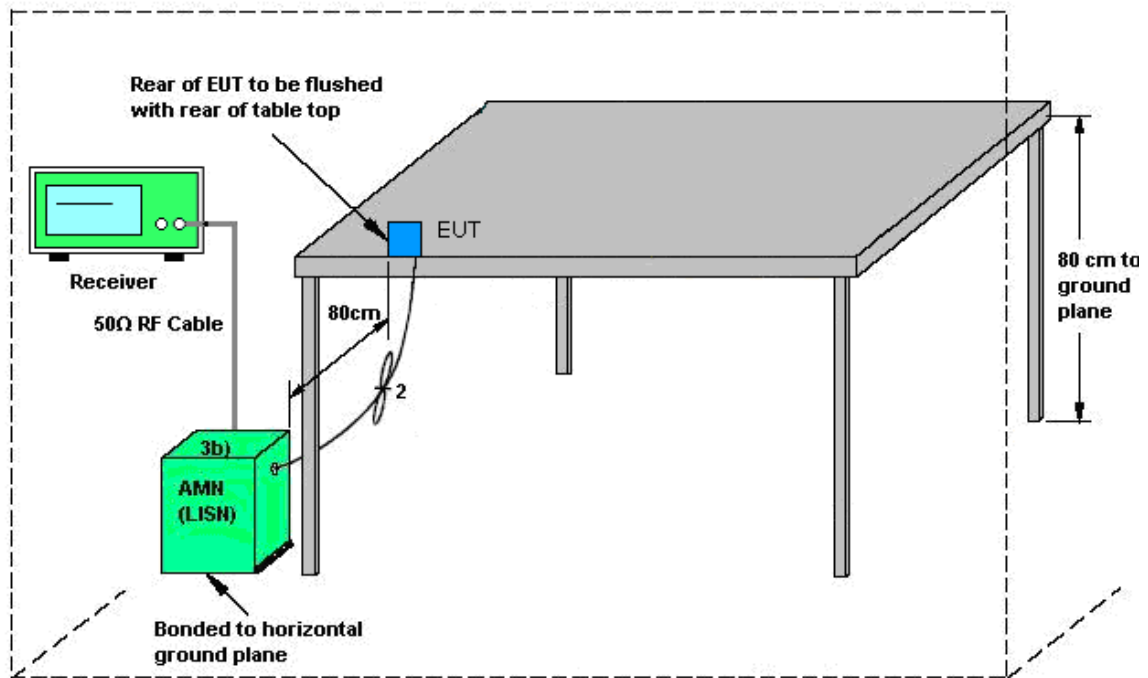
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. Please follow the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All the support units are connecting to the other LISN.
5. The LISN provides 50 ohm coupling impedance for the measuring instrument.
6. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
7. Both sides of AC line were checked for maximum conducted interference.
8. The frequency range from 150 kHz to 30 MHz was searched.
9. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.2.4 Test Setup

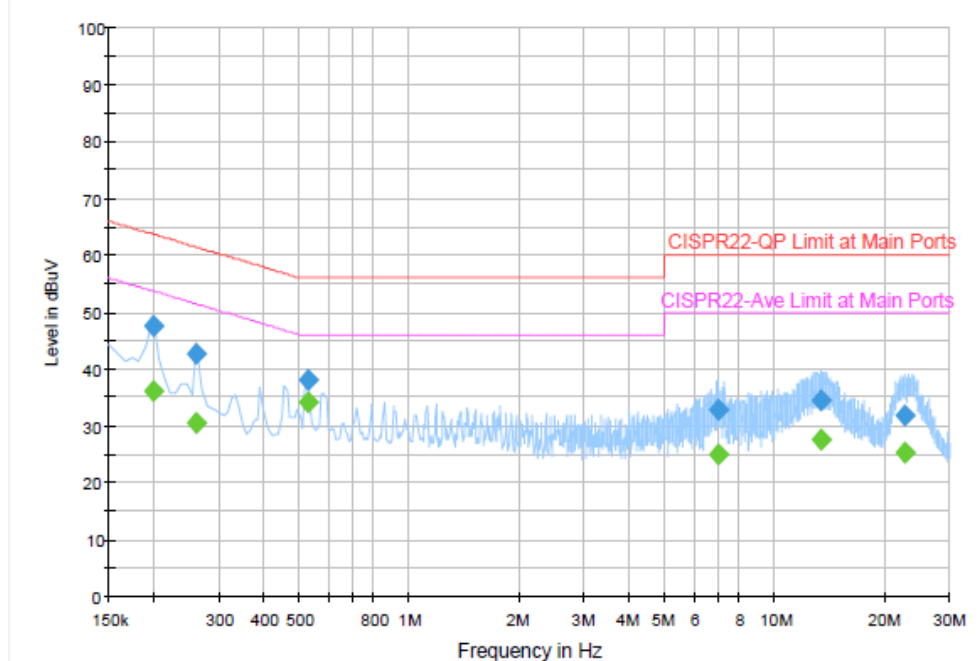


AMN = Artificial mains network (LISN)
AE = Associated equipment
EUT = Equipment under test
ISN = Impedance stabilization network



3.2.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN Link + Bluetooth Link + TC + Adapter + GPS Rx		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result 1

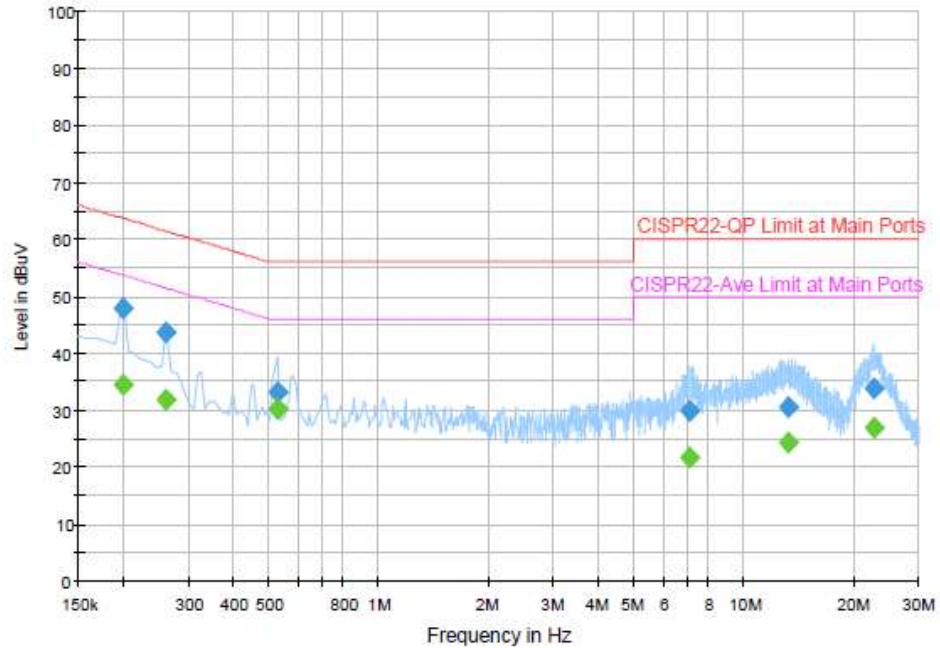
Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.198000	47.5	Off	L1	19.4	16.2	63.7
0.262000	42.6	Off	L1	19.4	18.8	61.4
0.526000	37.9	Off	L1	19.4	18.1	56.0
6.950000	32.8	Off	L1	19.5	27.2	60.0
13.382000	34.5	Off	L1	19.6	25.5	60.0
22.502000	31.8	Off	L1	19.8	28.2	60.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.198000	36.1	Off	L1	19.4	17.6	53.7
0.262000	30.6	Off	L1	19.4	20.8	51.4
0.526000	34.2	Off	L1	19.4	11.8	46.0
6.950000	24.9	Off	L1	19.5	25.1	50.0
13.382000	27.5	Off	L1	19.6	22.5	50.0
22.502000	25.3	Off	L1	19.8	24.7	50.0



Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN Link + Bluetooth Link + TC + Adapter + GPS Rx		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.198000	47.9	Off	N	19.4	15.8	63.7
0.262000	43.6	Off	N	19.4	17.8	61.4
0.526000	33.2	Off	N	19.4	22.8	56.0
7.078000	30.0	Off	N	19.6	30.0	60.0
13.246000	30.6	Off	N	19.7	29.4	60.0
22.662000	33.8	Off	N	19.8	26.2	60.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.198000	34.4	Off	N	19.4	19.3	53.7
0.262000	31.7	Off	N	19.4	19.7	51.4
0.526000	30.3	Off	N	19.4	15.7	46.0
7.078000	21.5	Off	N	19.6	28.5	50.0
13.246000	24.4	Off	N	19.7	25.6	50.0
22.662000	26.8	Off	N	19.8	23.2	50.0



3.3 Radiated Emission Measurement

3.3.1 Limit of Radiated Emission

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

- (1) For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz.
- (2) For transmitters operating in the 5.25–5.35 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz. Devices operating in the 5.25–5.35 GHz band that generate emissions in the 5.15–5.25 GHz band must meet all applicable technical requirements for operation in the 5.15–5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of –27 dBm/MHz in the 5.15–5.25 GHz band.
- (3) For transmitters operating in the 5.47–5.725 GHz band: all emissions outside of the 5.47–5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.
- (4) The provisions of Section 15.205 Restricted bands of operation of this part apply to intentional radiators operating under this section.

Note: The following formula is used to convert the EIRP to field strength.

$$E = \frac{1000000\sqrt{30P}}{3} \text{ } \mu\text{V/m, where P is the eirp (Watts)}$$

EIRP (dBm)	Field Strength at 3m (dBuV/m)
- 27	68.3

3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

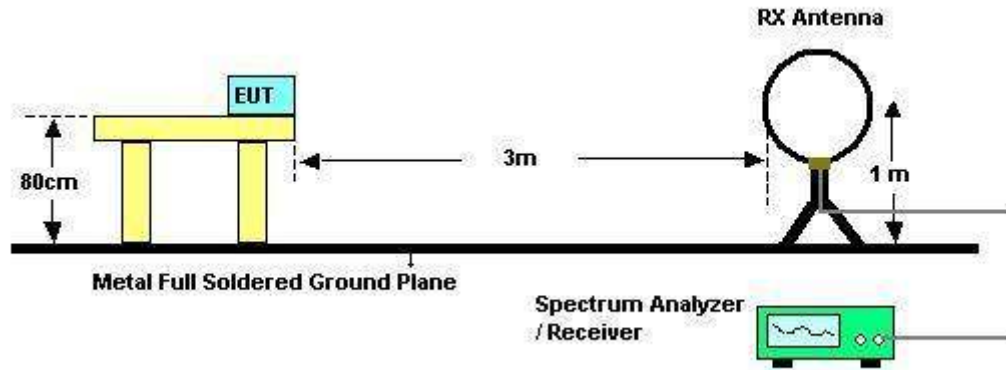


3.3.3 Test Procedures

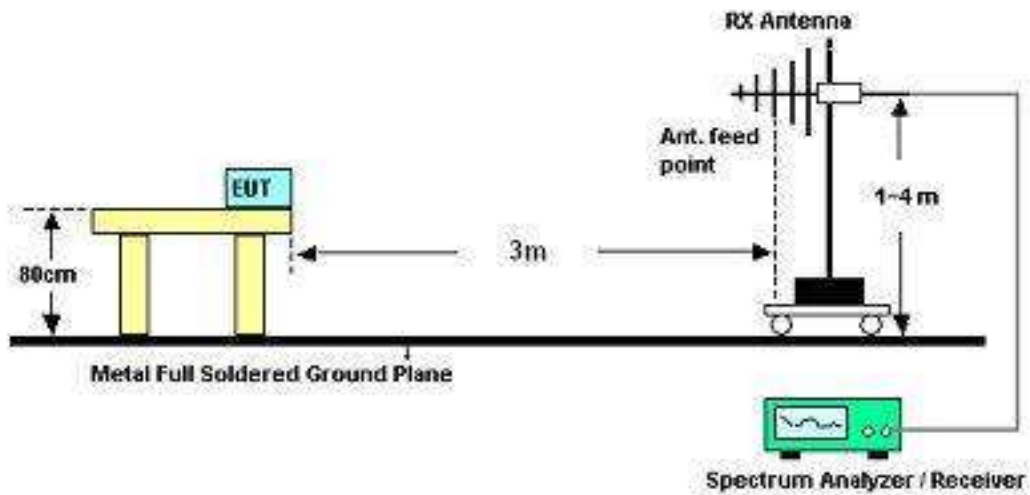
1. The testing follows the guidelines in FCC Public Notice DA 02-2138, (Measurement Guidelines of UNII)
2. The EUT was placed on a rotatable table top 0.8 meter above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest radiation.
5. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
6. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
7. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
8. For testing below 1GHz, If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the quasi-peak method and reported.
9. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.3.4 Test Setup

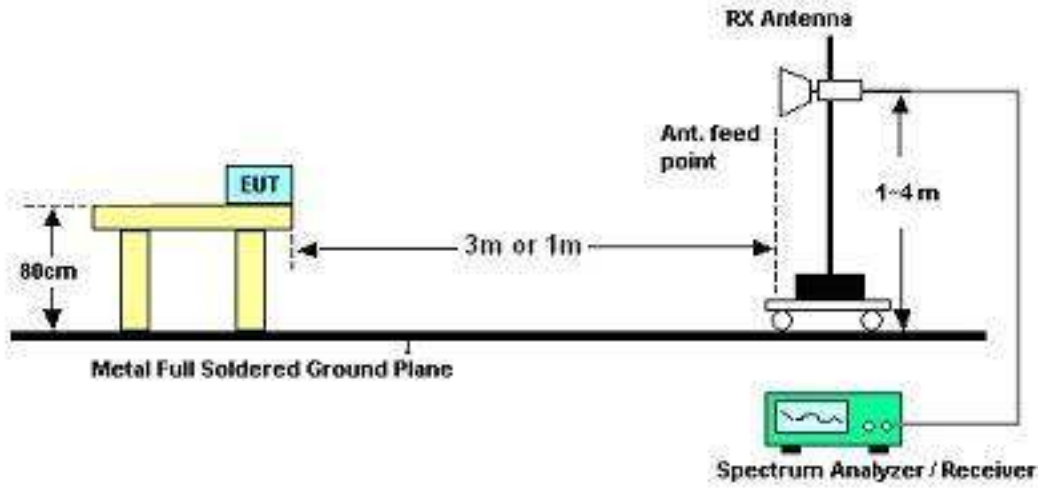
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz





3.3.5 Test Results of Radiated Emissions (9kHz ~ 30MHz)

Temperature	23~26°C	Humidity	54~58%
Test Engineer	Wii Chang		

Freq. (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log(\text{specific distance} / \text{test distance})$ (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.



3.3.6 Test Result of Radiated Emission (30MHz ~ 10th Harmonic)

Test Mode :	Mode 1	Temperature :	23~26°C
Test Channel :	62	Relative Humidity :	54~58%
Test Engineer :	Wii Chang	Polarization :	Horizontal
Remark :	5310 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
36.75	27.36	-12.64	40	43.55	14.59	0.74	31.52	100	22	Peak
166.62	22.34	-21.16	43.5	43.33	9.18	1.36	31.53	-	-	Peak
282.18	26.95	-19.05	46	44.58	11.99	1.74	31.36	-	-	Peak
300	29.67	-16.33	46	47	12.16	1.78	31.27	-	-	Peak
311.9	28.03	-17.97	46	45.01	12.49	1.81	31.28	-	-	Peak
447.7	28.52	-17.48	46	41.65	15.88	2.14	31.15	-	-	Peak
5132	38.68	-15.32	54	31.41	33.93	6.68	33.34	161	240	Average
5132	51.6	-22.4	74	44.33	33.93	6.68	33.34	161	240	Peak
5310	74.02	-	-	66.34	34.12	6.81	33.25	161	240	Average
5310	93.35	-	-	85.67	34.12	6.81	33.25	161	240	Peak
5407.3	43.27	-10.73	54	32.4	34.2	6.88	33.21	161	240	Average
5407.3	55.1	-18.9	74	44.23	34.2	6.88	33.21	161	240	Peak



Test Mode :	Mode 1	Temperature :	23~26°C
Test Channel :	62	Relative Humidity :	54~58%
Test Engineer :	Wii Chang	Polarization :	Vertical
Remark :	5310 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
35.13	33.56	-6.44	40	48.86	15.48	0.74	31.52	100	74	Peak
68.07	23.42	-16.58	40	48.32	5.7	0.9	31.5	-	-	Peak
165.81	20.2	-23.3	43.5	41.12	9.25	1.36	31.53	-	-	Peak
311.9	18.85	-27.15	46	35.83	12.49	1.81	31.28	-	-	Peak
359.5	21.35	-24.65	46	36.98	13.73	1.92	31.28	-	-	Peak
479.9	23.09	-22.91	46	35.4	16.61	2.19	31.11	-	-	Peak
5140	39.03	-14.97	54	31.74	33.95	6.68	33.34	100	332	Average
5140	52.09	-21.91	74	44.8	33.95	6.68	33.34	100	332	Peak
5310	76.95	-	-	69.27	34.12	6.81	33.25	100	332	Average
5310	96.16	-	-	88.48	34.12	6.81	33.25	100	332	Peak
5386.53	46.9	-7.1	54	39.08	34.18	6.86	33.22	100	332	Average
5386.53	54.91	-19.09	74	47.09	34.18	6.86	33.22	100	332	Peak



4 List of Measuring Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
EMI Test Receive	R&S	ESCI 7	100724	9kHz~7GHz	Aug. 22, 2011	Aug. 21, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz – 30MHz	Dec. 03, 2010	Dec. 02, 2011	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz – 30MHz	Dec. 01, 2010	Nov. 30, 2011	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	N/A	Conduction (CO05-HY)
GPS Station	T&E	GS-50	N/A	N/A	N/A	N/A	Conduction (CO05-HY)
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)
Horn Antenna	ESCO	3117	66584	1GHz ~ 18GHz	Aug. 04, 2011	Aug. 03, 2012	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-0010 1800-30-10P	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)

5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Contribution	Uncertainty of X_i		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.10	Normal (k=2)	0.05
Cable Loss	0.10	Normal (k=2)	0.05
AMN Insertion Loss	2.50	Rectangular	0.63
Receiver Specification	1.50	Rectangular	0.43
Site Imperfection	1.39	Rectangular	0.80
Mismatch	+0.34 / -0.35	U-Shape	0.24
Combined Standard Uncertainty $U_c(y)$	1.13		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.26		

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

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 (1GHz ~ 40GHz)

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 EP170707-03 as below.



1. External Photograph of EUT

Brand Name: DAP / Model Name: 9000WBWV1 / Marketing Name: M9010





Brand Name: DAP / Model Name: 9000WBWV1 / Marketing Name: M9010





2. Photograph of Accessory

Brand Name: DAP / Model Name: 9000WBWV1 / 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
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: 9000WBWV1 / Marketing Name: M9010



Brand Name: DAP / Model Name: 9000WBWV1 / Marketing Name: M9010



Brand Name: DAP / Model Name: 9000WBWV1 / Marketing Name: M9010

Battery 1



Brand Name: DAP / Model Name: 9000WBWV1 / Marketing Name: M9010

Battery 2



3. Internal Photograph of EUT

Brand Name: DAP / Model Name: 9000WBWV1 / Marketing Name: M9010





Brand Name: DAP / Model Name: 9000WBWV1 / Marketing Name: M9010

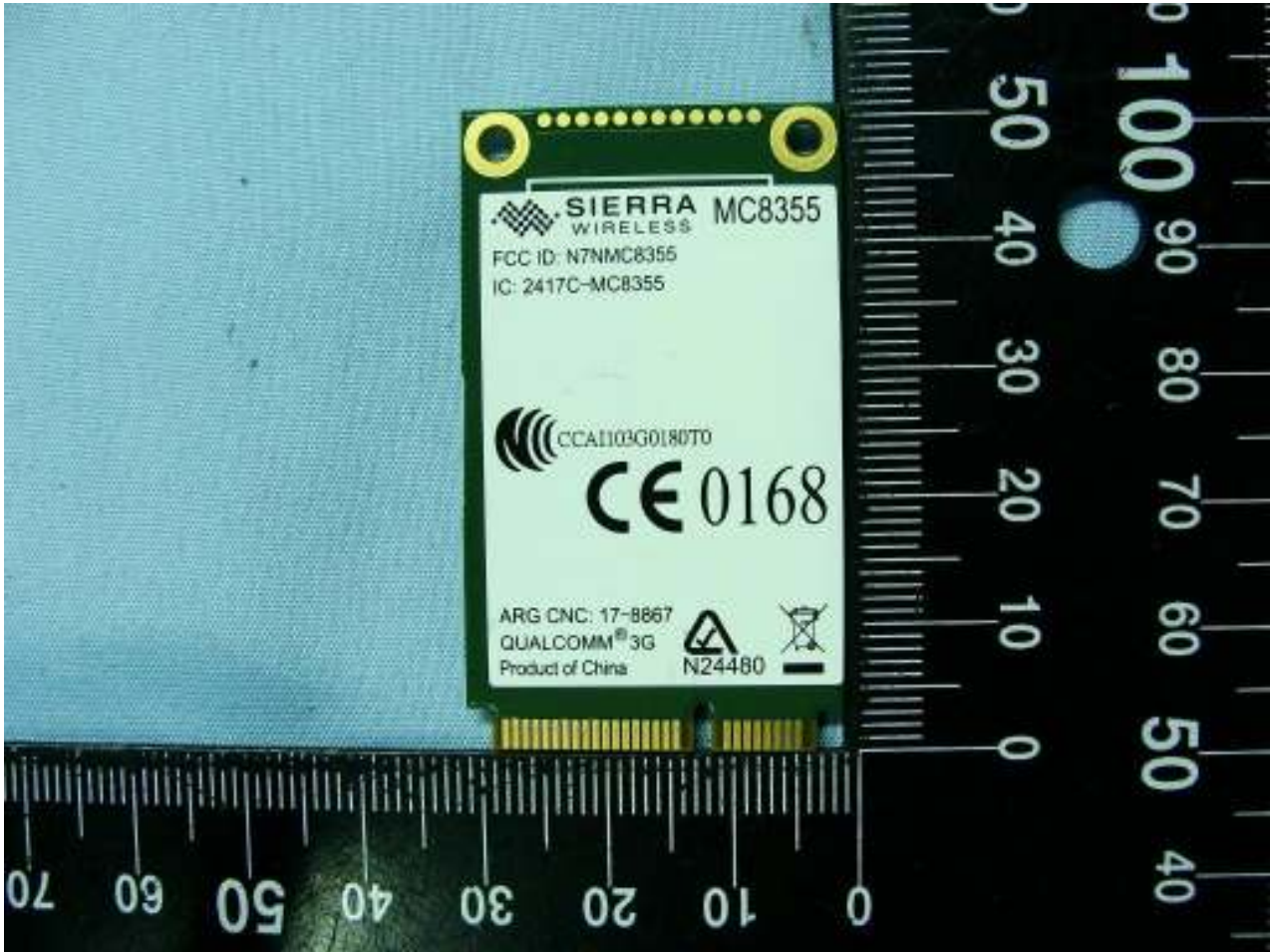


Brand Name: DAP / Model Name: 9000WBWV1 / Marketing Name: M9010

WWAN and GPS Module

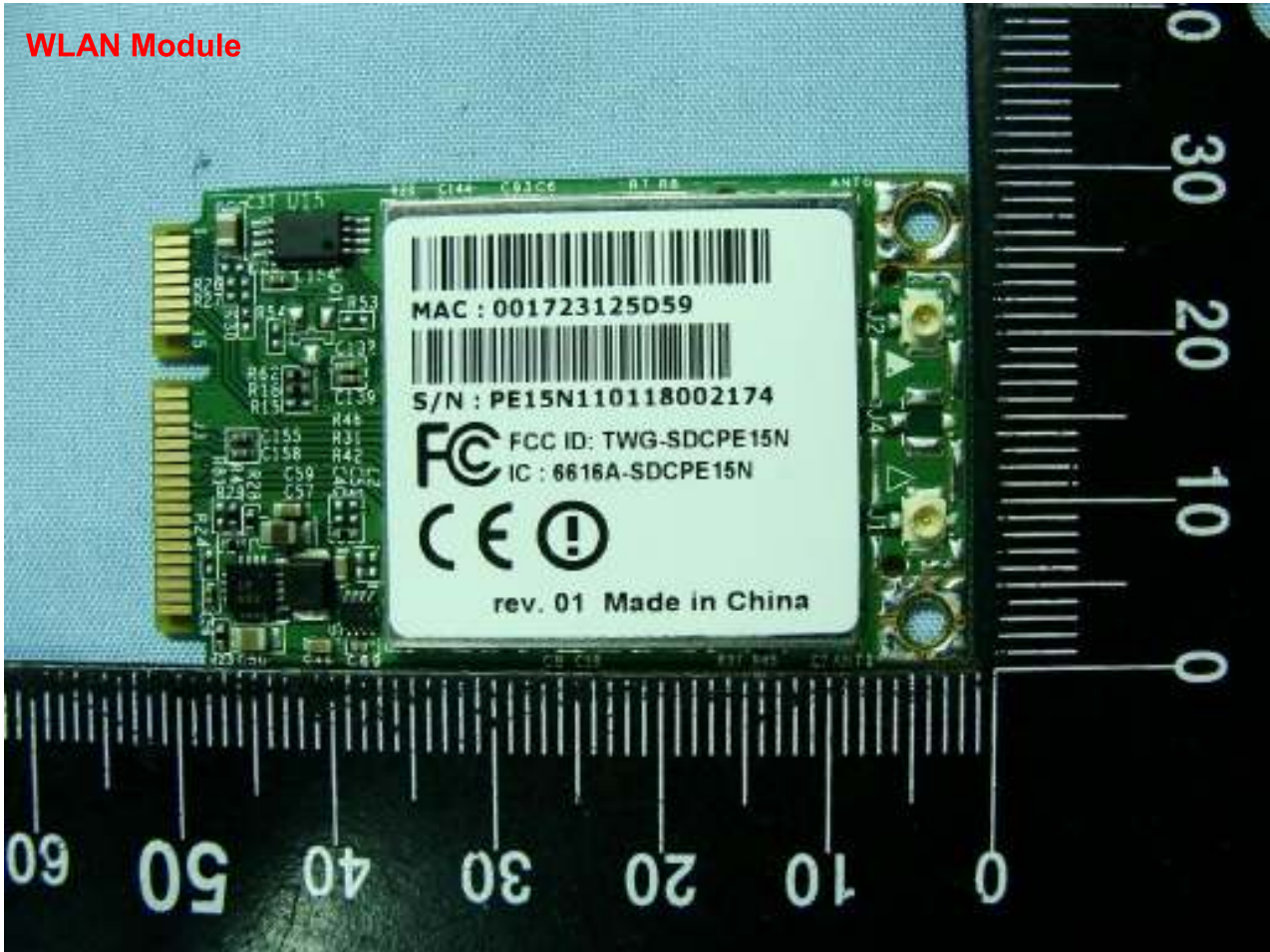


Brand Name: DAP / Model Name: 9000WBWV1 / Marketing Name: M9010

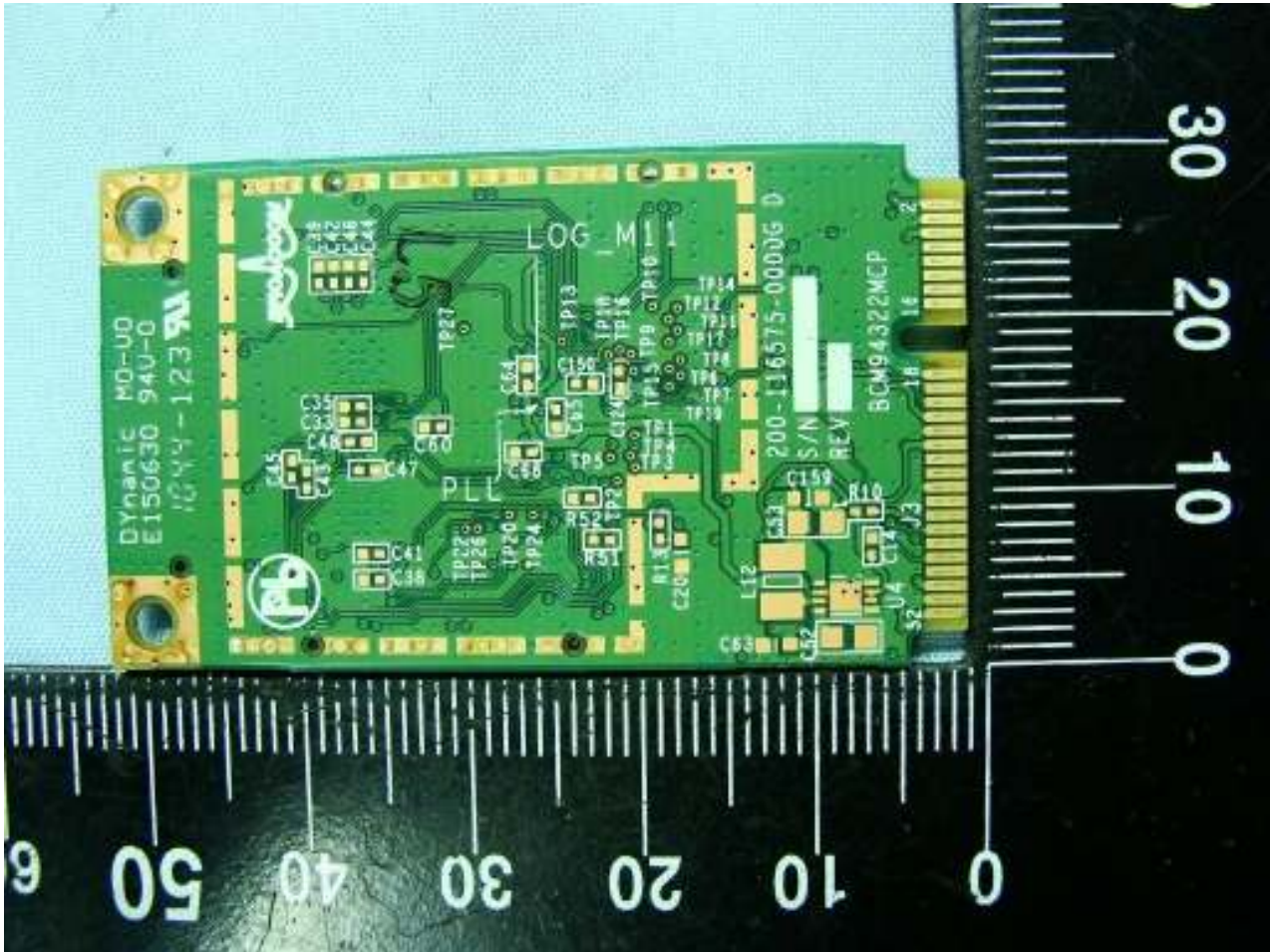


Brand Name: DAP / Model Name: 9000WBWV1 / Marketing Name: M9010

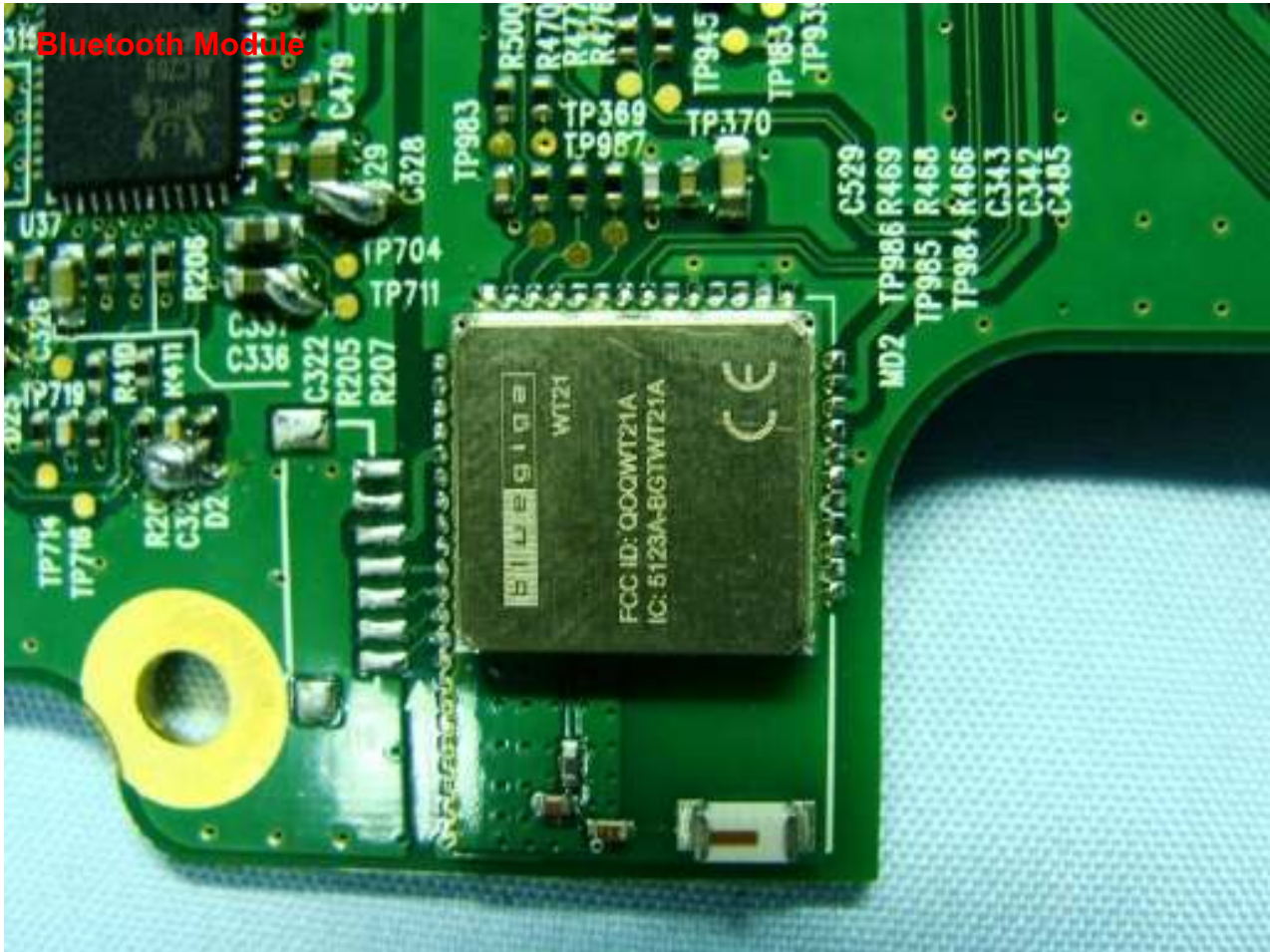
WLAN Module



Brand Name: DAP / Model Name: 9000WBWV1 / Marketing Name: M9010

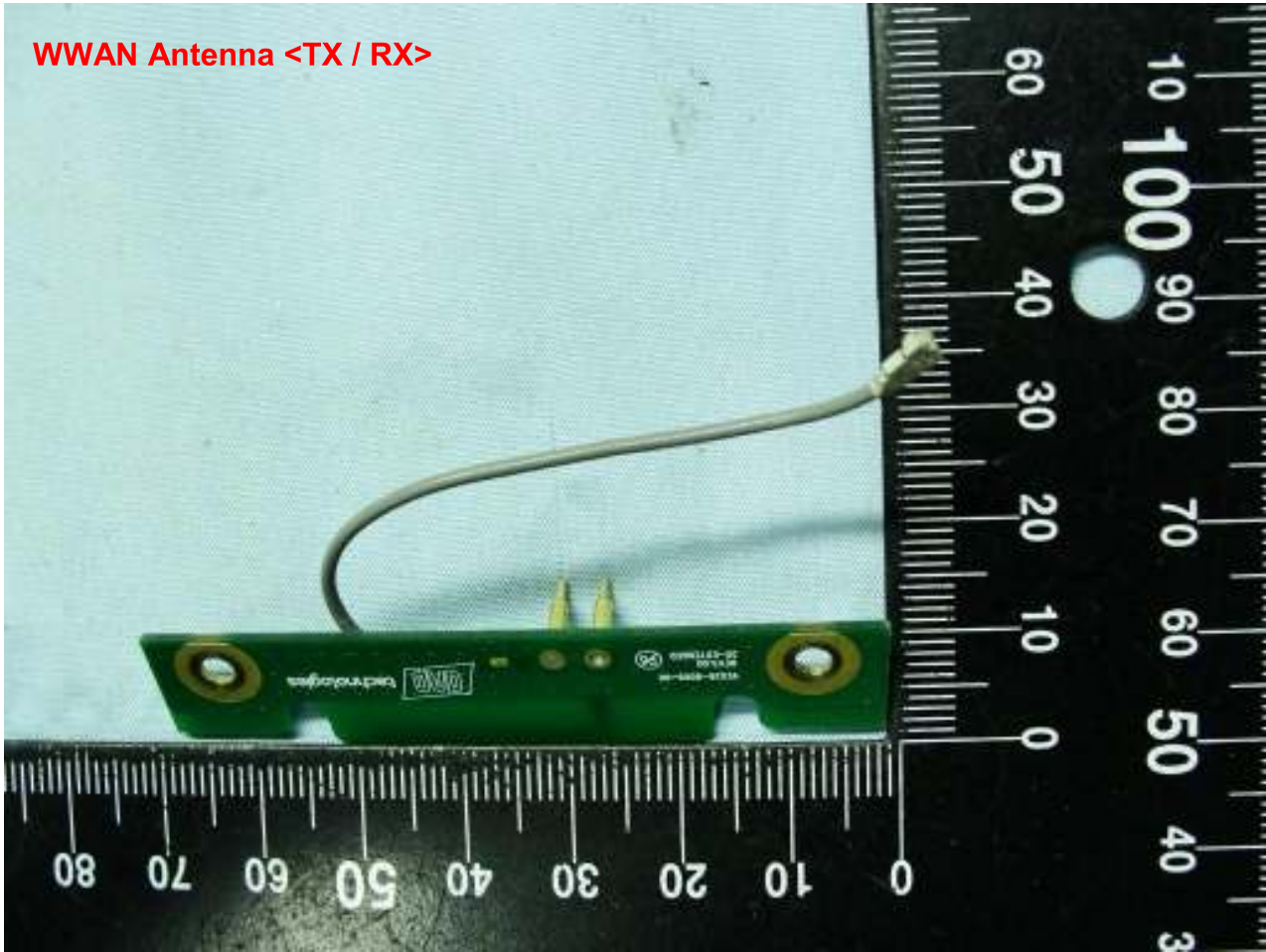


Brand Name: DAP / Model Name: 9000WBWV1 / Marketing Name: M9010

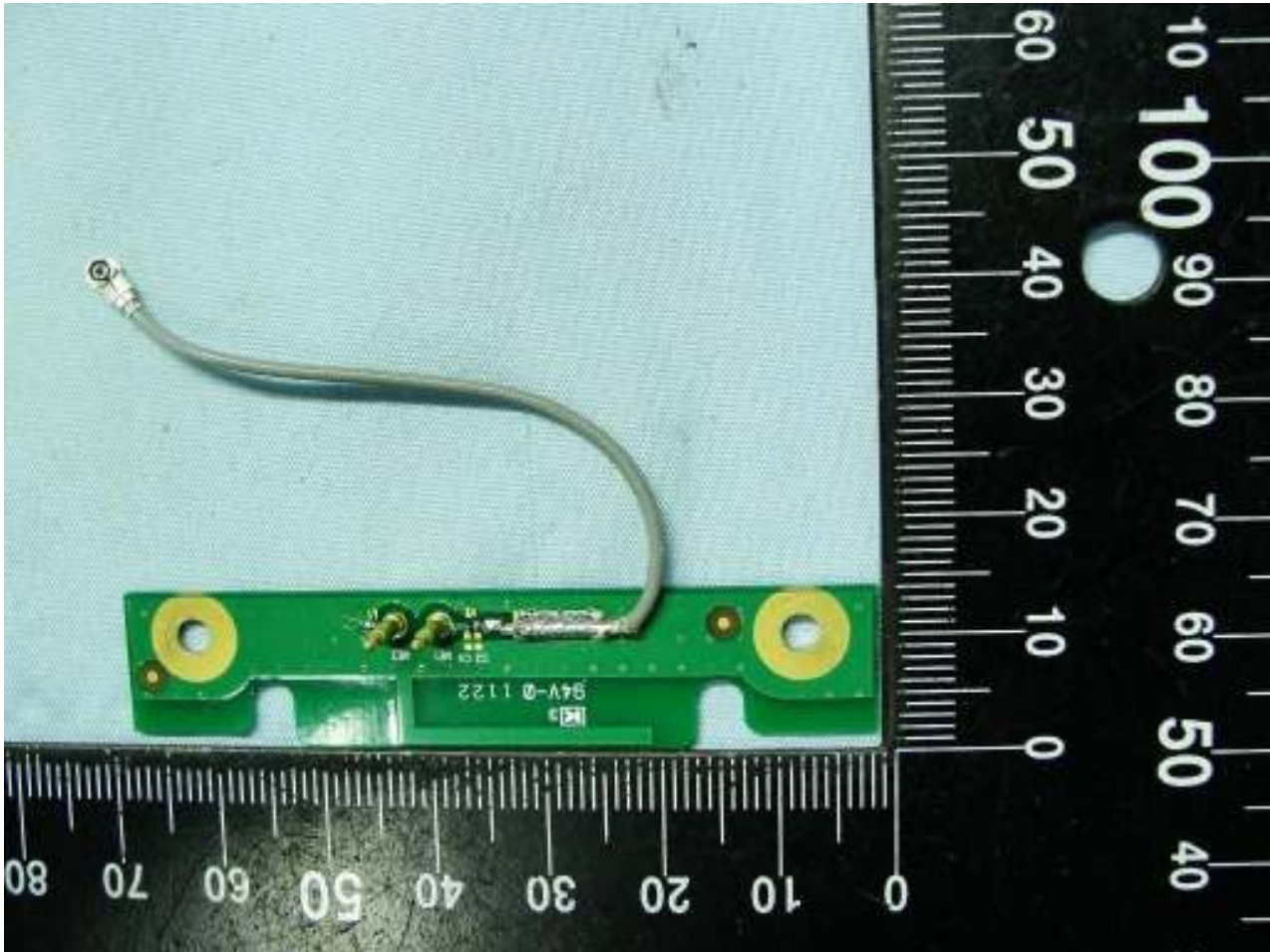


Brand Name: DAP / Model Name: 9000WBWV1 / Marketing Name: M9010

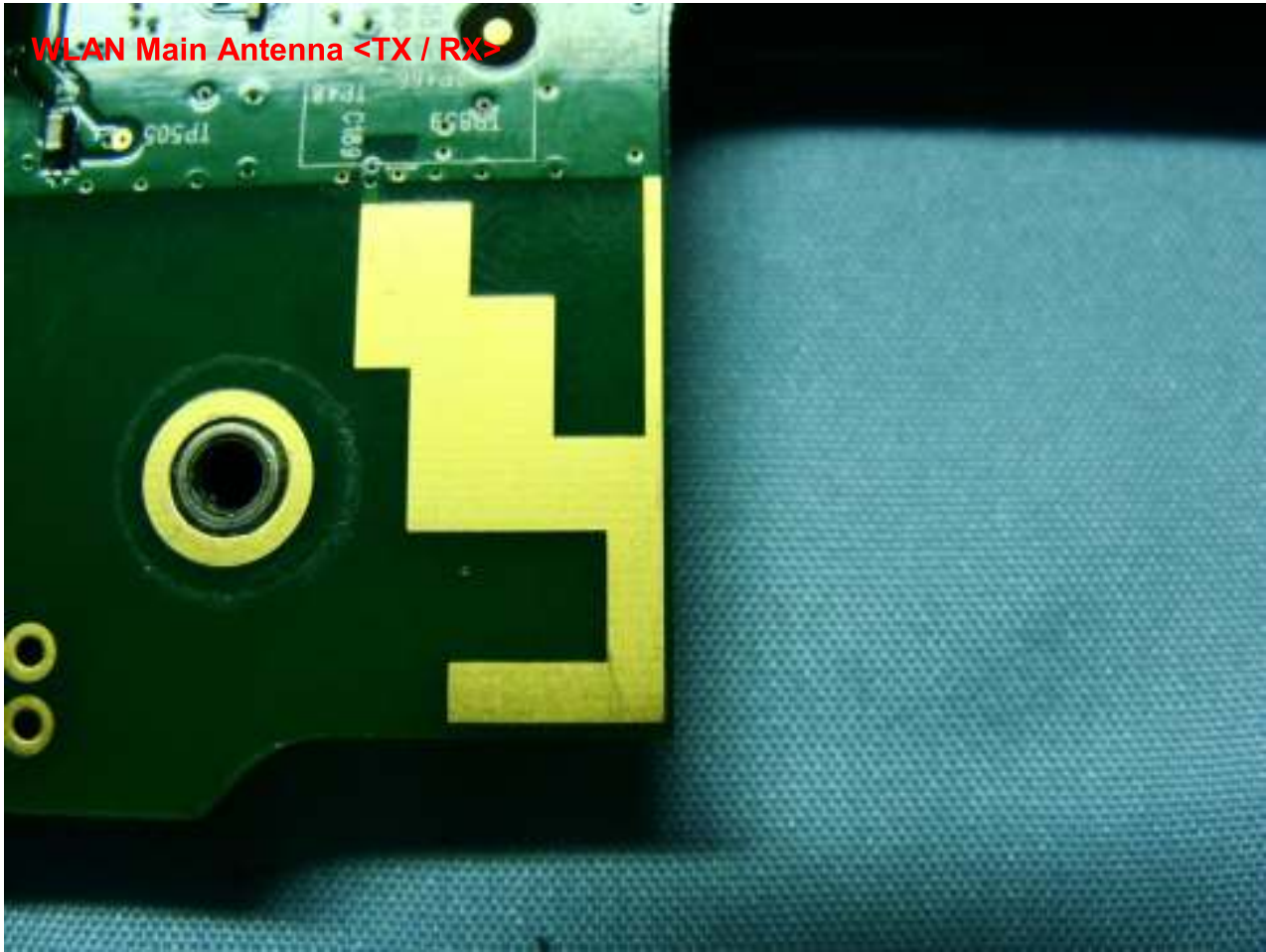
WWAN Antenna <TX / RX>



Brand Name: DAP / Model Name: 9000WBWV1 / Marketing Name: M9010



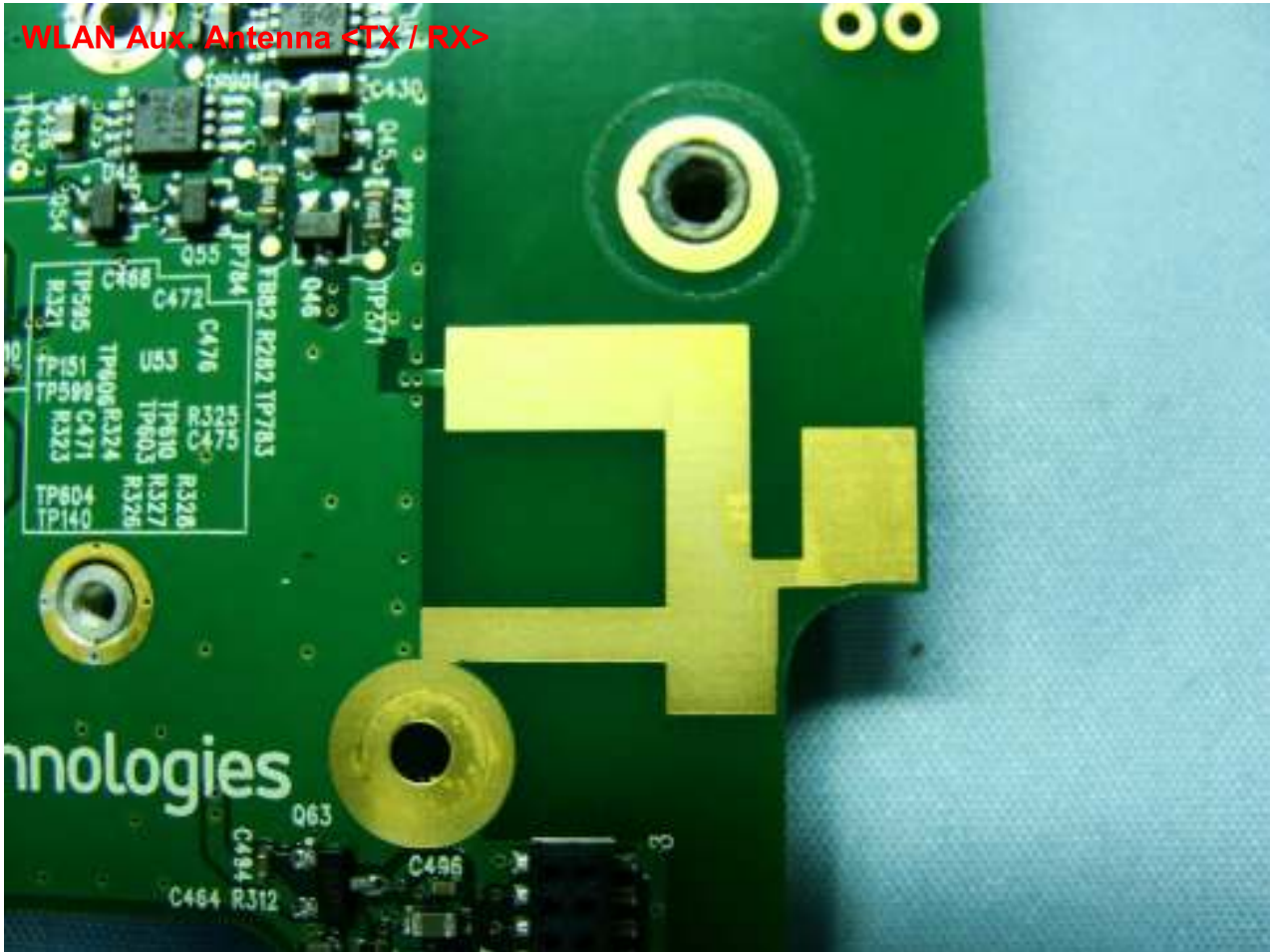
Brand Name: DAP / Model Name: 9000WBWV1 / Marketing Name: M9010





Brand Name: DAP / Model Name: 9000WBWV1 / Marketing Name: M9010

WLAN Aux. Antenna <TX / RX>



Brand Name: DAP / Model Name: 9000WBWV1 / Marketing Name: M9010

Bluetooth Antenna <TX / RX>



Brand Name: DAP / Model Name: 9000WBWV1 / Marketing Name: M9010

GPS Antenna <RX>



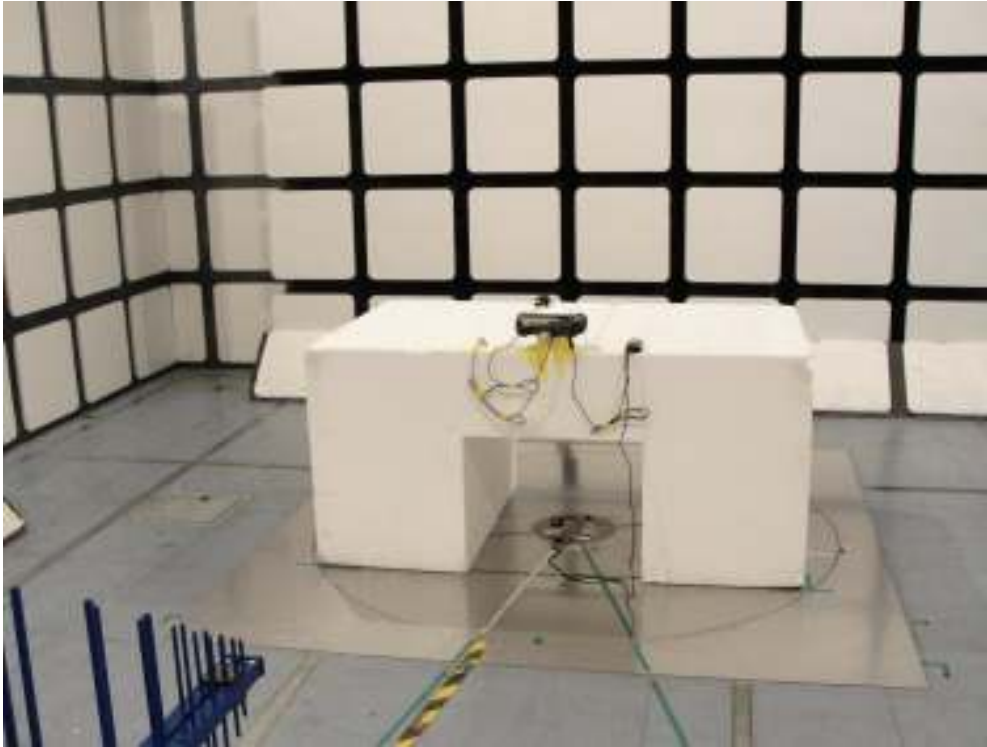
Appendix B. Setup Photographs

<Conducted Emission>



<Radiated Emission>

LF



HF

