

# **RADIO TEST REPORT**

## **FCC ID: 2AOGIZWA046**

**Product:** Home Energy Meter 8  
**Trade Mark:** AEOTEC  
**Model No.:** ZWA046-A 2P 200A  
**Family Model:** N/A  
**Report No.:** S23112701612001

### **Prepared for**

AEOTEC LIMITED  
OFFICE 4 10/F KWAN CHART TOWER NO. 6 TONNOCHY ROAD  
WANCHAI HK,China

### **Prepared by**

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TEST RESULT CERTIFICATION

Applicant's name : AEOTEC LIMITED
Address : OFFICE 4 10/F KWAN CHART TOWER NO. 6 TONNOCHY ROAD WANCHAI HK,China
Manufacturer's Name : AEOTEC LIMITED
Address : OFFICE 4 10/F KWAN CHART TOWER NO. 6 TONNOCHY ROAD WANCHAI HK,China

Product description

Product name : Home Energy Meter 8
Trademark : AEOTEC
Model and/or type reference : ZWA046-A 2P 200A
Family Model : N/A
Test Sample Number : S231127016012
Standards : FCC Part15.249

Test procedure : ANSI C63.10-2013

This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test :
Date (s) of performance of tests : Nov 27, 2023~ Jan 05, 2024
Date of Issue : Jan 05, 2024
Test Result : Pass

Prepared By : Mukzi Lee (Project Engineer)

Reviewed By : Aaron Cheng (Supervisor)

Approved By : Alex Li (Manager)

**Table of Contents**

**Page**

<b>1 . SUMMARY OF TEST RESULTS</b>	<b>5</b>
1.1 TEST FACILITY	6
1.2 MEASUREMENT UNCERTAINTY	6
<b>2 . GENERAL INFORMATION</b>	<b>7</b>
2.1 GENERAL DESCRIPTION OF EUT	7
2.2 DESCRIPTION OF TEST MODES	8
2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	9
2.4 DESCRIPTION OF SUPPORT UNITS (CONDUCTED MODE)	10
2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS	11
<b>3 . ANTENNA REQUIREMENT</b>	<b>12</b>
3.1 STANDARD REQUIREMENT	12
3.2 EUT ANTENNA	12
3.3 CONDUCTED EMISSION MEASUREMENT	13
3.3.1 POWER LINE CONDUCTED EMISSION LIMITS	13
3.3.2 TEST PROCEDURE	14
3.3.3 DEVIATION FROM TEST STANDARD	14
3.3.4 TEST SETUP	14
3.3.5 TEST RESULT	15
3.4 RADIATED EMISSION MEASUREMENT	17
3.4.1 RADIATED EMISSION LIMITS	17
3.4.2 TEST PROCEDURE	18
3.4.3 DEVIATION FROM TEST STANDARD	18
3.4.4 TEST RESULTS (BELOW 30MHZ)	20
3.4.5 TEST RESULTS (BELOW 1000 MHZ)	21
3.4.6 TEST RESULTS (ABOVE 1000 MHZ)	25
3.4.7 TEST RESULTS (RESTRICTED BANDS REQUIREMENTS)	27
<b>4. BANDWIDTH TEST</b>	<b>31</b>
4.1 TEST PROCEDURE	31
4.2 DEVIATION FROM STANDARD	31
4.3 TEST SETUP	31
4.4. TEST RESULTS	32

### Revision History

Report No.	Version	Description	Issued Date
S23112701612001	Rev.01	Initial issue of report	Jan 05, 2024

**1. SUMMARY OF TEST RESULTS**

Test procedures according to the technical standards:

<b>FCC Part15, Subpart C (15.249)</b>			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	Pass	
15.203	Antenna Requirement	Pass	
15.249 15.209	Radiated Spurious Emission	Pass	
15.249(2)	Frequency Tolerance	Pass	
15.249(a)	Fundamental Measurement	Pass	
15.205	Band Edge Emission	Pass	
15.215	Occupied Bandwidth	Pass	

**1.1 TEST FACILITY**

Shenzhen NTEK Testing Technology Co., Ltd  
 Add. : 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R. China.  
 FCC FRN Registration No.:463705; IC Registration No.:9270A-1  
 CNAS Registration No.:L5516

**1.2 MEASUREMENT UNCERTAINTY**

The reported uncertainty of measurement  $y \pm U$  , where expended uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$  , providing a level of confidence of approximately **95 %**.

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 1.38\text{dB}$
2	RF power,conducted	$\pm 0.16\text{dB}$
3	Spurious emissions,conducted	$\pm 0.21\text{dB}$
4	All emissions,radiated(<1G)	$\pm 4.68\text{dB}$
5	All emissions,radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^\circ\text{C}$
7	Humidity	$\pm 2\%$
8	Occupied Bandwidth	$\pm 3.70\text{dB}$

## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

Product Feature and Specification	
Equipment	Home Energy Meter 8
Trade Mark	AEOTEC
FCC ID	2AOGIZWA046
Model No.	ZWA046-A 2P 200A
Family Model	N/A
Model Difference	N/A
Operating Frequency	908.4 MHz~916MHz
Modulation	GFSK
Number of Channels	2 Channels
Antenna Type	External Antenna
Antenna Gain	2dBi
Adapter	N/A
Battery	N/A
Power Rating	AC 120V,60Hz, 0.4W
HW Version	AA 20230811
FW version	1.0.0
SW Version	N/A

Note:

1. For a more detailed features description, please refer to the manufacturer’s specifications or the User's Manual.
- 2.

Channel	Frequency(MHz)
01	908.4
02	916

**2.2 DESCRIPTION OF TEST MODES**

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	CH01(908.4MHz)
Mode 2	CH02(916MHz)

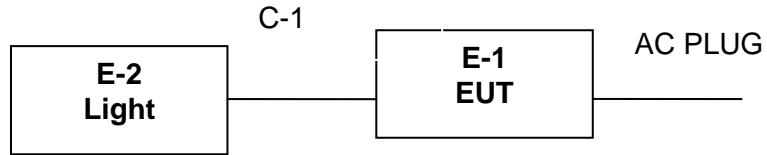
For Radiated Spurious Emission	
Pretest Mode	Description
Mode 1	CH01(908.4MHz)
Mode 2	CH02(916MHz)

For Conducted Emission	
Final Test Mode	Description
Mode 1	CH01(908.4MHz)
Mode 2	CH02(916MHz)



### 2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

For Conducted Test Cases



Radiated Spurious Emission Test



**2.4 DESCRIPTION OF SUPPORT UNITS (CONDUCTED MODE)**

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Model/Type No.	Series No.	Note
E-1	Home Energy Meter 8	ZWA046-C 1P 200A	N/A	EUT
E-2	Light	N/A	N/A	Peripherals

Item	Cable Type	Shielded Type	Ferrite Core	Length	Note
C-1	Power Cable	NO	NO	0.8m	

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

## 2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

### Radiation& Conducted Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4440A	MY41000130	2023.03.27	2024.03.26	1 year
2	Spectrum Analyzer	Agilent	N9020A	MY49100060	2023.05.29	2024.05.28	1 year
3	Spectrum Analyzer	R&S	FSV40	101417	2023.05.29	2024.05.28	1 year
4	Test Receiver	R&S	ESPI7	101318	2023.03.27	2024.03.26	1 year
5	Bilog Antenna	TESEQ	CBL6111D	31216	2023.03.16	2024.03.15	1 year
6	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2023.05.06	2026.05.05	3 year
7	Horn Antenna	SCHWARZBECK	BBHA 9120 D	2816	2023.01.12	2026.01.11	3 year
8	Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	803	2022.11.07	2025.11.06	3 year
9	Amplifier	EMC	EMC051835 SE	980246	2023.05.29	2024.05.28	1 year
10	Active Loop Antenna	SCHWARZBECK	FMZB 1519 B	055	2023.05.29	2024.05.28	1 year
11	Power Meter	DARE	RPR3006W	15I00041SN O84	2023.05.29	2024.05.28	1 year
12	Test Cable (9KHz-30MHz)	N/A	R-01	N/A	2022.06.17	2025.06.16	3 year
13	Test Cable (30MHz-1GHz)	N/A	R-02	N/A	2022.06.17	2025.06.16	3 year
14	High Test Cable(1G-40G Hz)	N/A	R-03	N/A	2022.06.17	2025.06.16	3 year
15	Filter	TRILTHIC	2400MHz	29	2023.03.26	2026.03.25	3 year
16	temporary antenna connector (Note)	NTS	R001	N/A	N/A	N/A	N/A

**Note:**

We will use the temporary antenna connector (soldered on the PCB board) When conducted test  
And this temporary antenna connector is listed within the instrument list

### 3. ANTENNA REQUIREMENT

#### 3.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 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.

#### 3.2 EUT ANTENNA

The EUT antenna is permanent attached External Antenna (Gain:2dBi). It comply with the standard requirement.

### 3.3 CONDUCTED EMISSION MEASUREMENT

#### 3.3.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5			66 - 56 *	56 - 46 *	CISPR
0.50 -5.0			56.00	46.00	CISPR
5.0 -30.0			60.00	50.00	CISPR

0.15 -0.5			66 - 56 *	56 - 46 *	LP002.
0.50 -5.0			56.00	46.00	LP002.
5.0 -30.0			60.00	50.00	LP002.

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

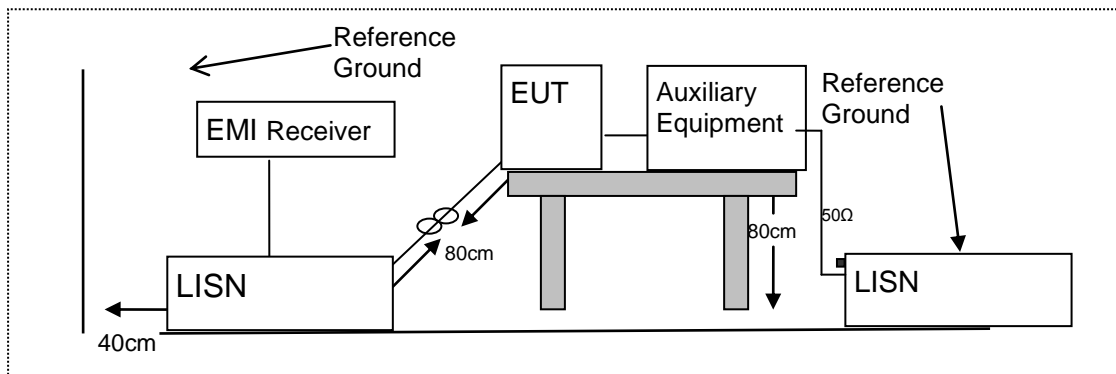
**3.3.2 TEST PROCEDURE**

- a. The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

**3.3.3 DEVIATION FROM TEST STANDARD**

No deviation

**3.3.4 TEST SETUP**



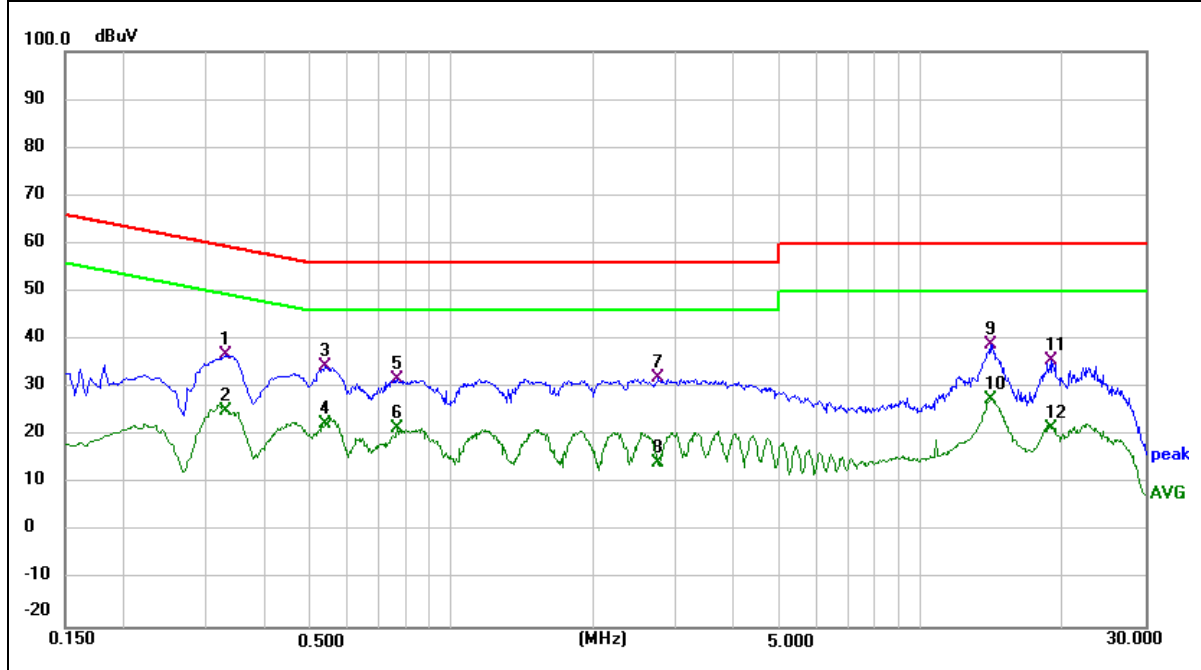
**3.3.5 TEST RESULT**

EUT :	Home Energy Meter 8	Model Name. :	ZWA046-A 2P 200A
Temperature :	25 °C	Relative Humidity :	55%
Pressure :	1010hPa	Phase :	L
Test Voltage :	AC 120V/60Hz	Test Mode :	Mode 1

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.3300	26.41	10.30	36.71	59.45	-22.74	QP
0.3300	14.99	10.30	25.29	49.45	-24.16	AVG
0.5380	23.79	10.73	34.52	56.00	-21.48	QP
0.5380	11.63	10.73	22.36	46.00	-23.64	AVG
0.7660	20.66	11.20	31.86	56.00	-24.14	QP
0.7660	10.42	11.20	21.62	46.00	-24.38	AVG
2.7580	22.32	9.67	31.99	56.00	-24.01	QP
2.7580	4.79	9.67	14.46	46.00	-31.54	AVG
14.0180	29.31	9.70	39.01	60.00	-20.99	QP
14.0180	17.76	9.70	27.46	50.00	-22.54	AVG
18.8340	25.83	9.72	35.55	60.00	-24.45	QP
18.8340	11.87	9.72	21.59	50.00	-28.41	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

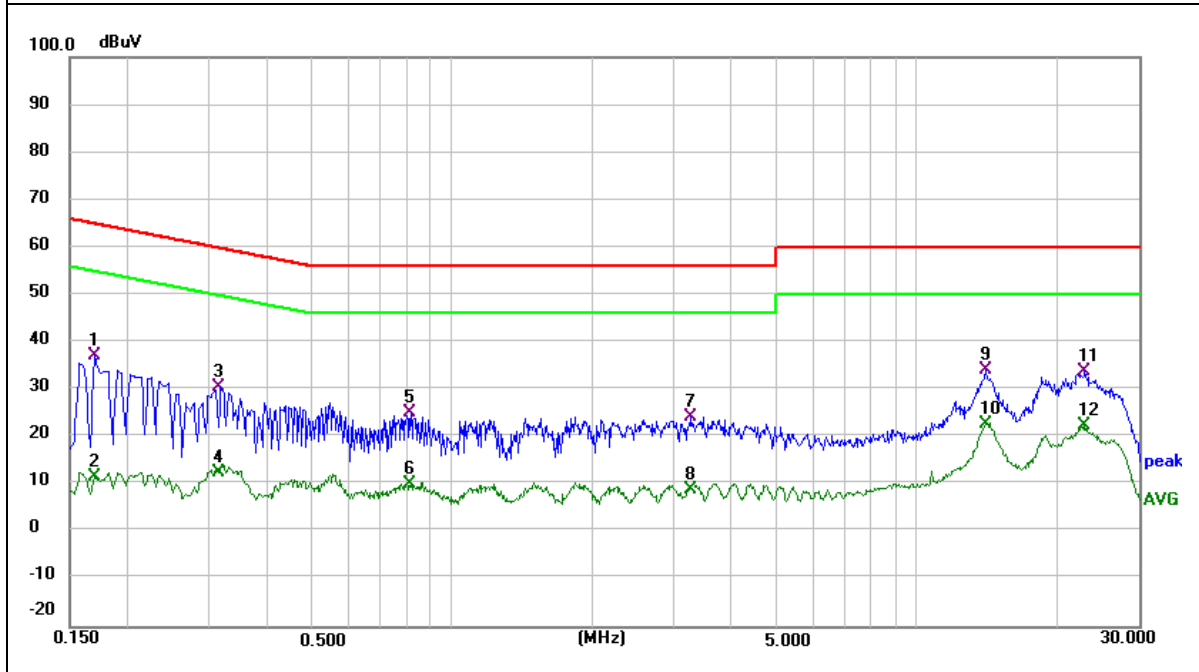


EUT :	Home Energy Meter 8	Model Name. :	ZWA046-A 2P 200A
Temperature :	25 °C	Relative Humidity :	55%
Pressure :	1010hPa	Phase :	N
Test Voltage :	AC 120V/60Hz	Test Mode :	Mode 1

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measurement (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.1700	27.26	9.97	37.23	64.96	-27.73	QP
0.1700	1.76	9.97	11.73	54.96	-43.23	AVG
0.3140	20.24	10.26	30.50	59.86	-29.36	QP
0.3140	2.23	10.26	12.49	49.86	-37.37	AVG
0.8139	13.95	11.28	25.23	56.00	-30.77	QP
0.8139	-1.16	11.28	10.12	46.00	-35.88	AVG
3.2620	14.45	9.67	24.12	56.00	-31.88	QP
3.2620	-0.57	9.67	9.10	46.00	-36.90	AVG
13.9900	24.33	9.70	34.03	60.00	-25.97	QP
13.9900	13.19	9.70	22.89	50.00	-27.11	AVG
22.8980	24.20	9.67	33.87	60.00	-26.13	QP
22.8980	12.67	9.67	22.34	50.00	-27.66	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.





### 3.4 RADIATED EMISSION MEASUREMENT

#### 3.4.1 Radiated Emission Limits ( FCC 15.209 )

Frequencies (MHz)	Field Strength (micorvolts/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
Frequency (MHz)	Limit (dBuV)	
30~88	40	3
88~216	43.5	3
216~960	46	3
960 -10000	54.00	3
*902 - 928	94.00	3

Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission level (dBuV/m)=20log Emission level (uV/m).
- (3) \*Note: This is the limit for the fundamental frequency.

#### LIMITS OF RADIATED EMISSION MEASUREMENT ( FCC 15.249)

Frequency of Emission (MHz)	Field Strength of fundamental ((millivolts /meter)	Field Strength of Harmonics (microvolts/meter)
902-928	50	500

Notes:

- (1) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1MHz / 1MHz for Peak

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

**3.4.2 TEST PROCEDURE**

- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 m for below 1GHz and 1.5m for above 1GHz the ground at a 3 meter. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m for below 1GHz and 1.5m for above 1GHz; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

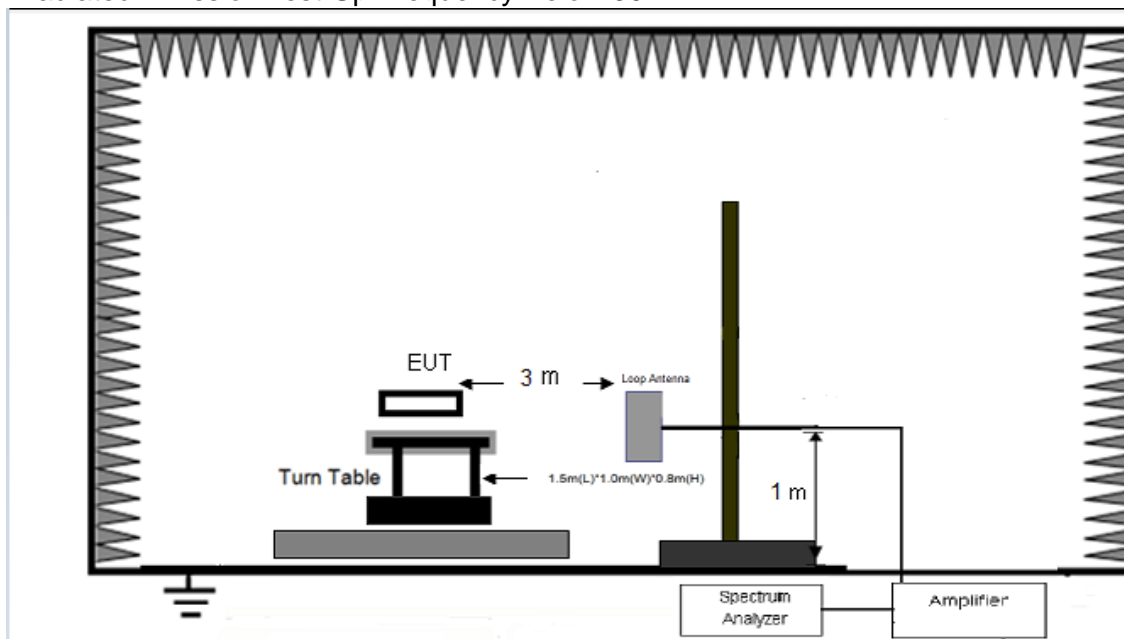
Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

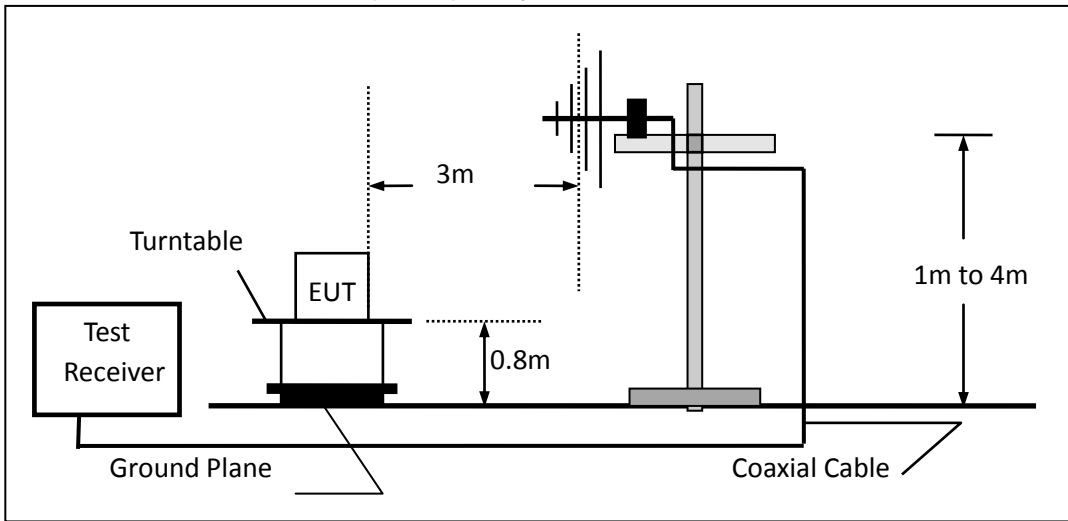
**3.4.3 DEVIATION FROM TEST STANDARD**

No deviation

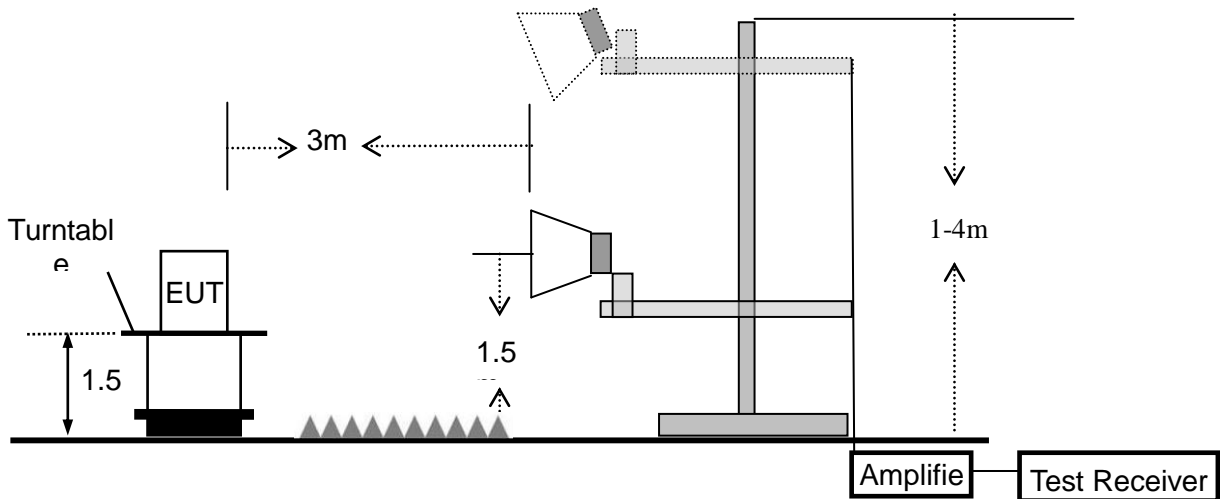
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



### 3.4.4 TEST RESULTS (BELOW 30MHZ)

EUT :	Home Energy Meter 8	Model Name. :	ZWA046-A 2P 200A
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	AC 120V
Test Mode :	TX	Polarization :	--

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

Note:

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

Remark :1. Emission level in dBuV/m=20 log (uV/m)

2. Measurement was performed at an antenna to the closed point of EUT distance of meters.

3. For Frequency 9kHz~30MHz:

Distance extrapolation factor =40log(Specific distance/ test distance)(dB);

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

For Frequency above 30MHz:

Distance extrapolation factor =20log(Specific distance/ test distance)(dB);

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

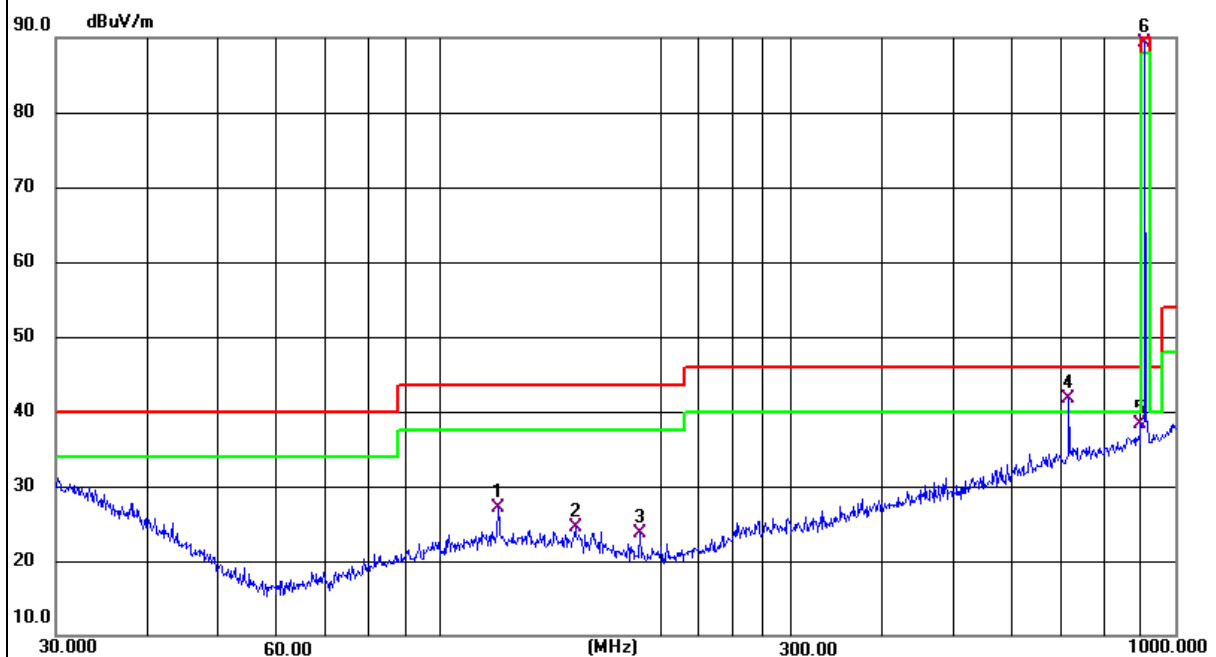
**3.4.5 TEST RESULTS (BELOW 1000 MHZ)**

EUT :	Home Energy Meter 8	Model Name :	ZWA046-A 2P 200A
Temperature :	25 °C	Relative Humidity :	51%
Pressure :	1010 hPa	Test Voltage :	AC 120V
Test Mode :	Mode 1-TX-908.4MHz	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
119.8555	8.53	18.63	27.16	43.50	-16.34	QP
152.6640	6.30	18.29	24.59	43.50	-18.91	QP
187.0956	7.25	16.41	23.66	43.50	-19.84	QP
716.6820	13.66	28.09	41.75	46.00	-4.25	QP
896.9964	7.77	30.58	38.35	46.00	-7.65	QP
908.4000	58.51	30.72	89.23	94.00	-4.77	QP

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.

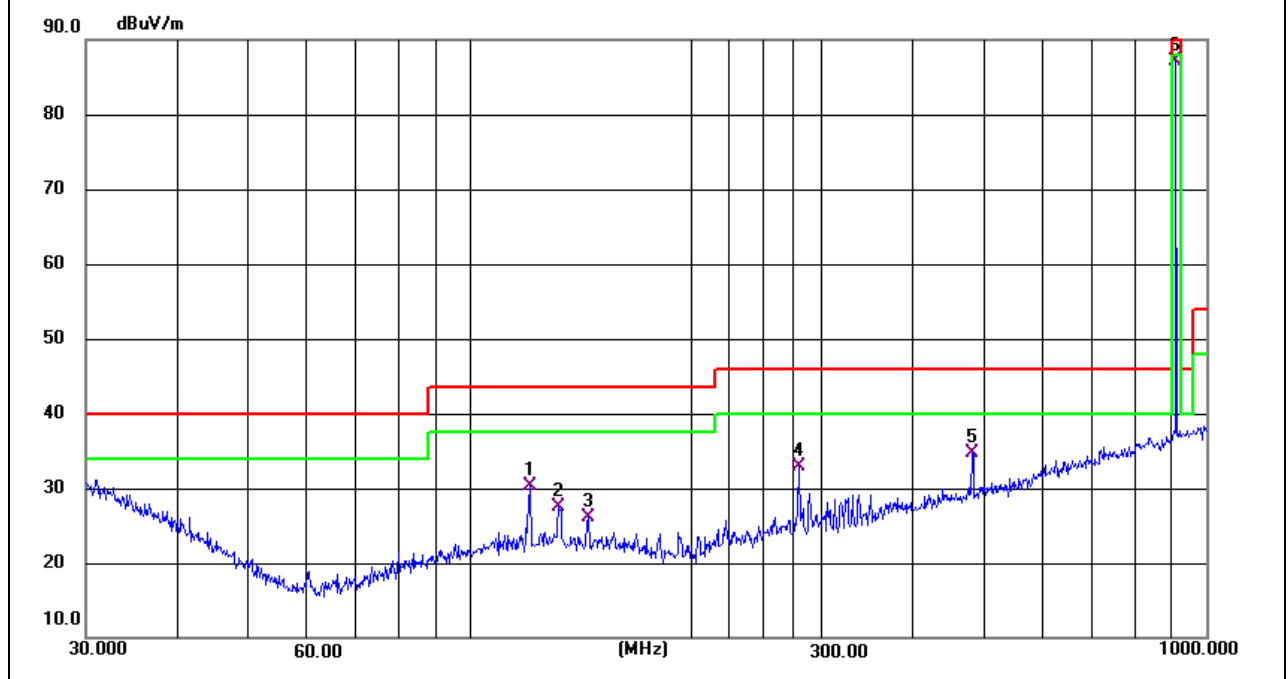


EUT :	Home Energy Meter 8	Model Name :	ZWA046-A 2P 200A
Temperature :	25 °C	Relative Humidity :	51%
Pressure :	1010 hPa	Test Voltage :	AC 120V
Test Mode :	Mode 1-TX-908.4MHz	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
120.6991	11.65	18.63	30.28	43.50	-13.22	QP
131.7577	8.69	18.72	27.41	43.50	-16.09	QP
144.8417	7.59	18.48	26.07	43.50	-17.43	QP
279.0436	13.01	19.81	32.82	46.00	-13.18	QP
480.5276	10.25	24.54	34.79	46.00	-11.21	QP
908.4000	56.34	30.72	87.06	94.00	-6.94	QP

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.

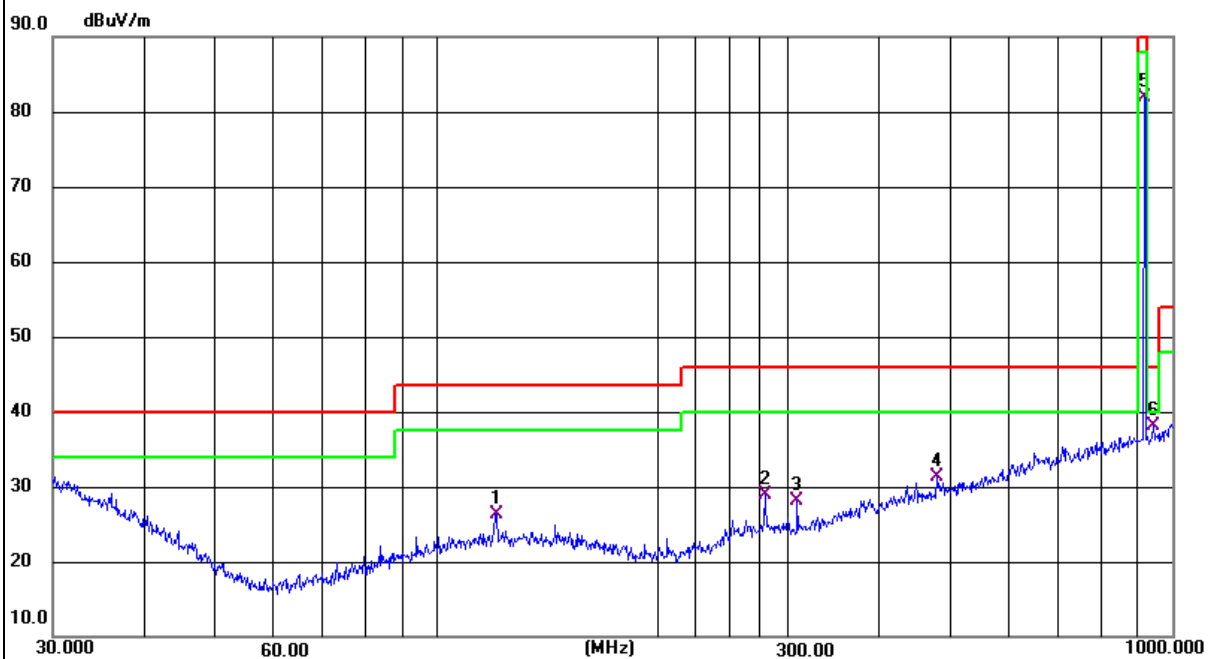


EUT :	Home Energy Meter 8	Model Name :	ZWA046-A 2P 200A
Temperature :	25 °C	Relative Humidity :	51%
Pressure :	1010 hPa	Test Voltage :	AC 120V
Test Mode :	Mode 2-TX-916MHz	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
120.6991	7.75	18.63	26.38	43.50	-17.12	QP
279.0436	9.06	19.81	28.87	46.00	-17.13	QP
308.9125	7.96	20.18	28.14	46.00	-17.86	QP
478.8455	6.86	24.50	31.36	46.00	-14.64	QP
916.0000	51.21	30.79	82.00	94.00	-12.00	QP
942.1304	7.08	31.08	38.16	46.00	-7.84	QP

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

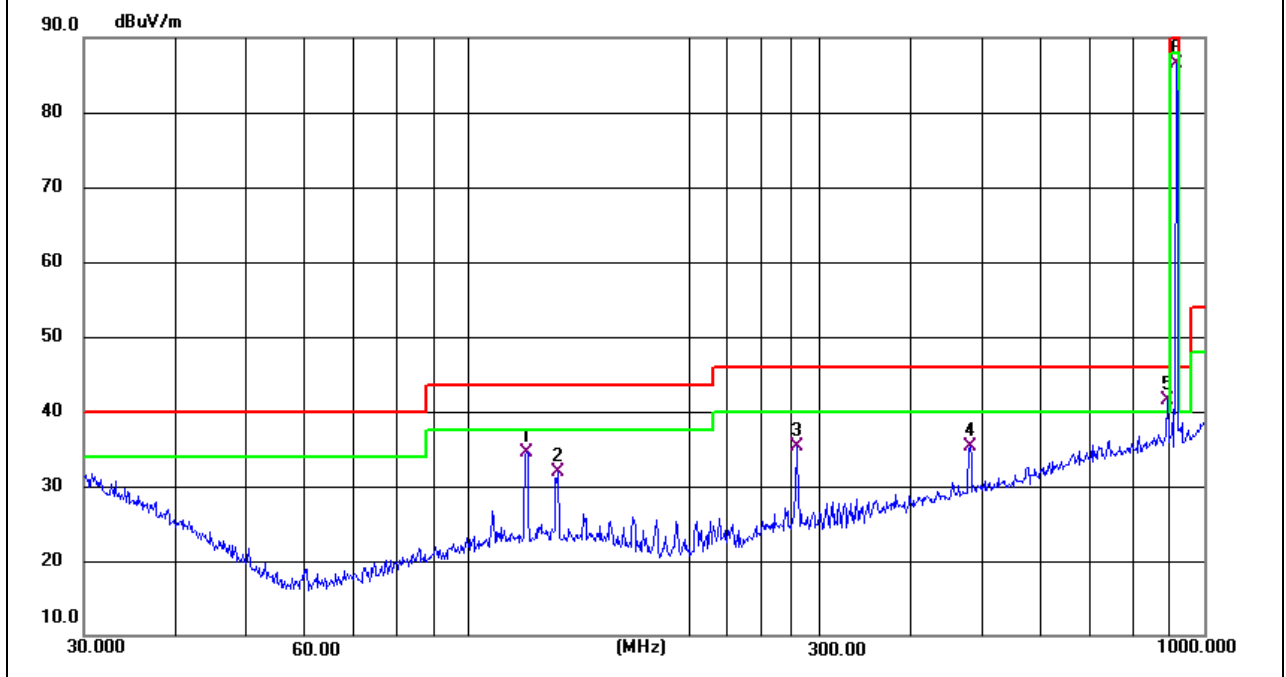


EUT :	Home Energy Meter 8	Model Name :	ZWA046-A 2P 200A
Temperature :	25 °C	Relative Humidity :	51%
Pressure :	1010 hPa	Test Voltage :	AC 120V
Test Mode :	Mode 2-TX-916MHz	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
119.8555	15.94	18.63	34.57	43.50	-8.93	QP
132.2204	13.23	18.72	31.95	43.50	-11.55	QP
279.0436	15.50	19.81	35.31	46.00	-10.69	QP
480.5276	10.68	24.54	35.22	46.00	-10.78	QP
890.7277	10.91	30.51	41.42	46.00	-4.58	QP
916.0000	55.65	30.79	86.44	94.00	-7.56	QP

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.





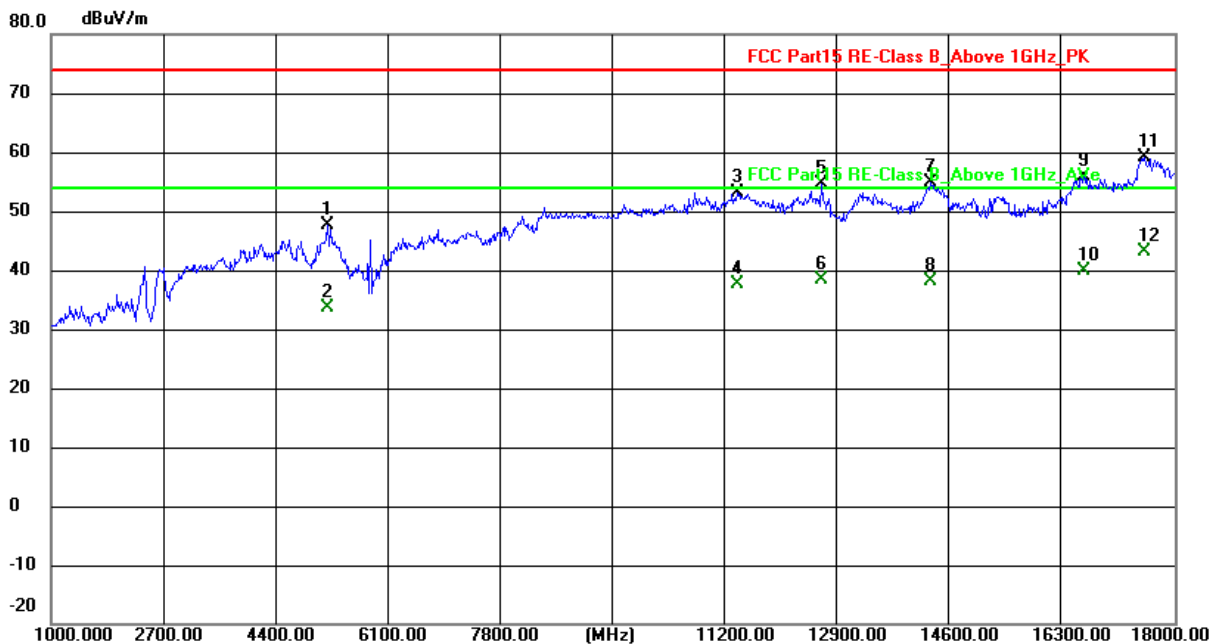
**3.4.6 TEST RESULTS (ABOVE 1000 MHZ)**

EUT :	Home Energy Meter 8	Model Name :	ZWA046-A 2P 200A
Temperature :	25 °C	Relative Humidity :	51%
Pressure :	1010 hPa	Test Voltage :	AC 120V
Test Mode :	Mode 2	Polarization :	Horizontal

All the modulation modes have been tested, and the worst result was report as below:

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
5182.000	55.87	-8.13	47.74	74.00	-26.26	peak
5182.000	41.67	-8.13	33.54	54.00	-20.46	AVG
11387.000	51.10	2.14	53.24	74.00	-20.76	peak
11387.000	35.57	2.14	37.71	54.00	-16.29	AVG
12662.000	52.97	1.72	54.69	74.00	-19.31	peak
12662.000	36.57	1.72	38.29	54.00	-15.71	AVG
14311.000	51.66	3.16	54.82	74.00	-19.18	peak
14311.000	34.86	3.16	38.02	54.00	-15.98	AVG
16623.000	51.35	4.51	55.86	74.00	-18.14	peak
16623.000	35.42	4.51	39.93	54.00	-14.07	AVG
17541.000	52.78	6.26	59.04	74.00	-14.96	peak
17541.000	36.98	6.26	43.24	54.00	-10.76	AVG

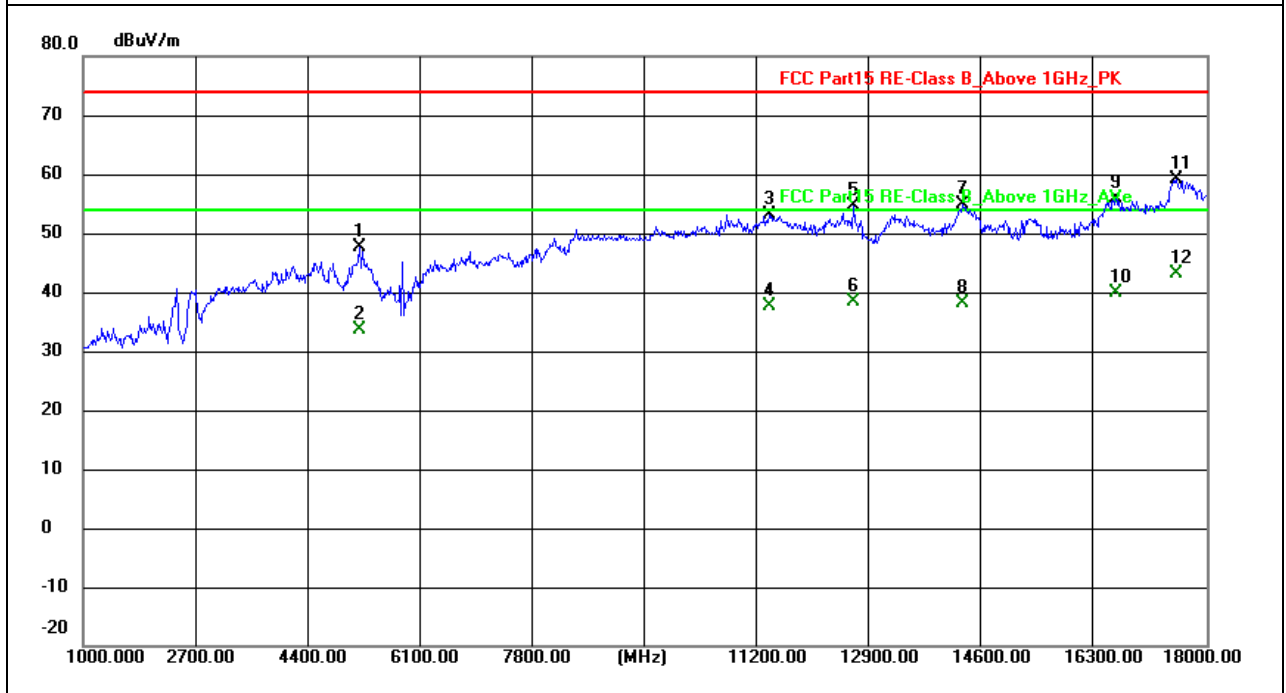
Remark:  
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT :	Home Energy Meter 8	Model Name :	ZWA046-A 2P 200A
Temperature :	25 °C	Relative Humidity :	51%
Pressure :	1010 hPa	Test Voltage :	AC 120V
Test Mode :	Mode 2	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
5182.000	55.87	-8.13	47.74	74.00	-26.26	peak
5182.000	41.67	-8.13	33.54	54.00	-20.46	AVG
11387.000	51.10	2.14	53.24	74.00	-20.76	peak
11387.000	35.57	2.14	37.71	54.00	-16.29	AVG
12662.000	52.97	1.72	54.69	74.00	-19.31	peak
12662.000	36.57	1.72	38.29	54.00	-15.71	AVG
14311.000	51.66	3.16	54.82	74.00	-19.18	peak
14311.000	34.86	3.16	38.02	54.00	-15.98	AVG
16623.000	51.35	4.51	55.86	74.00	-18.14	peak
16623.000	35.42	4.51	39.93	54.00	-14.07	AVG
17541.000	52.78	6.26	59.04	74.00	-14.96	peak
17541.000	36.98	6.26	43.24	54.00	-10.76	AVG

Remark:  
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

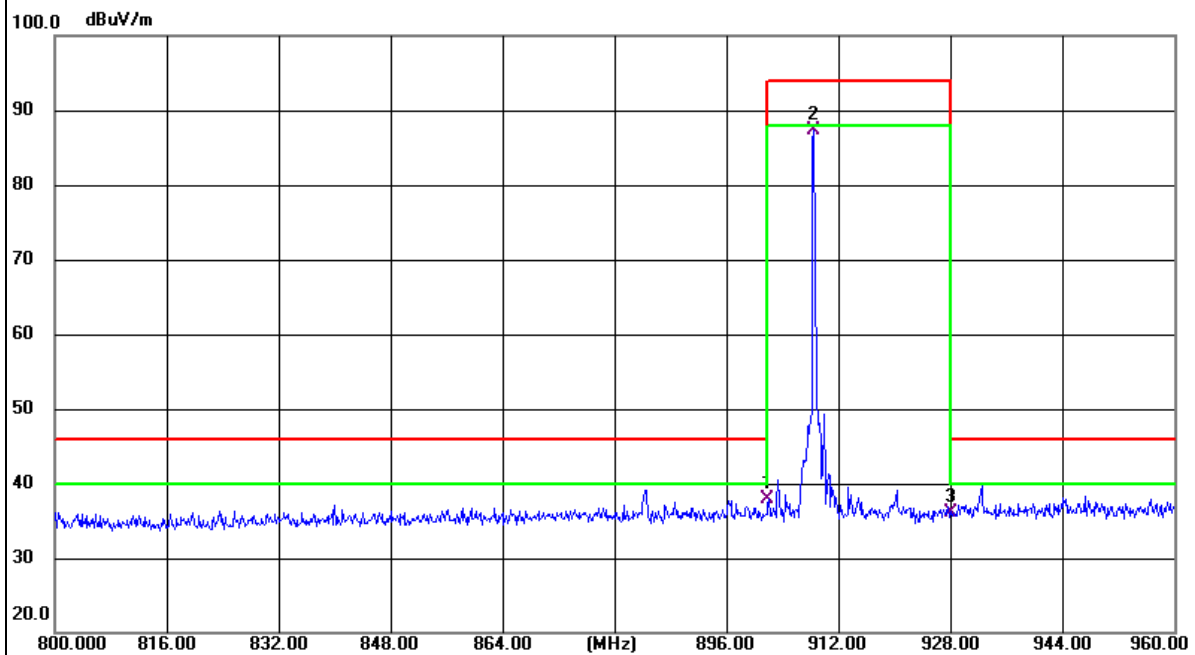


**3.4.7 TEST RESULTS (RESTRICTED BANDS REQUIREMENTS)**

EUT :	Home Energy Meter 8	Model Name :	ZWA046-A 2P 200A
Temperature :	25 °C	Relative Humidity :	51%
Pressure :	1010 hPa	Test Voltage :	AC 120V
Test Mode :	Mode1-TX-908.4MHz	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
902.0000	7.18	30.63	37.81	46.00	-8.19	QP
908.4800	56.65	30.70	87.35	94.00	-6.65	QP
928.0000	5.26	30.93	36.19	46.00	-9.81	QP

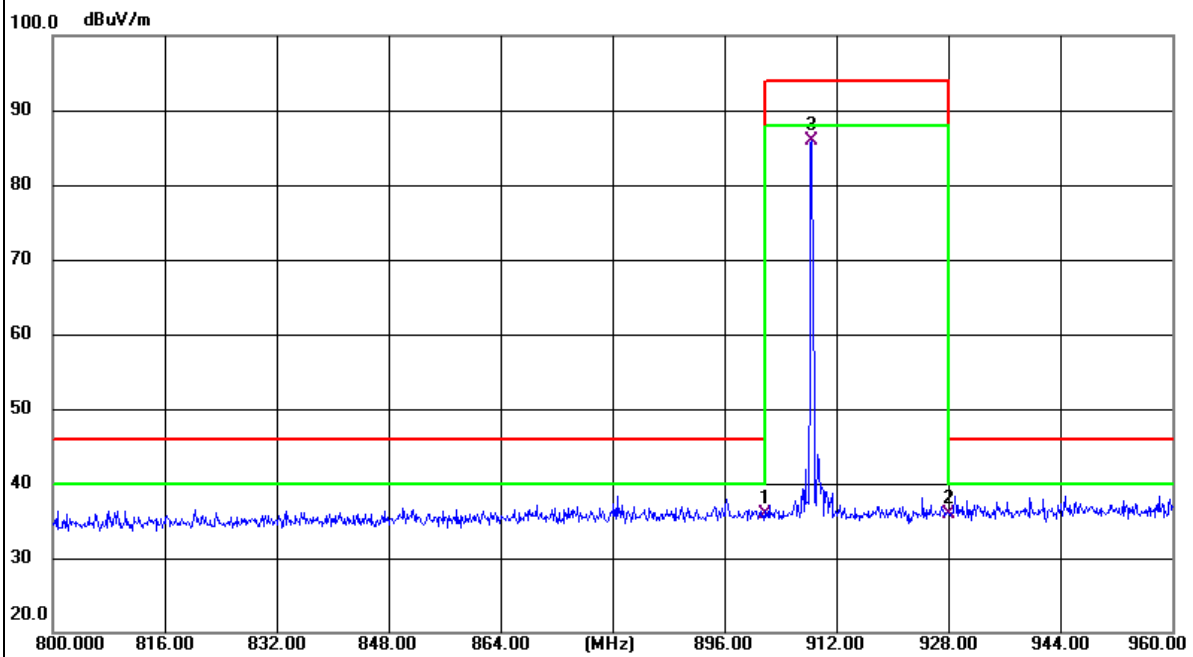
Remark:  
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT :	Home Energy Meter 8	Model Name :	ZWA046-A 2P 200A
Temperature :	25 °C	Relative Humidity :	51%
Pressure :	1010 hPa	Test Voltage :	AC 120V
Test Mode :	Mode1-TX-908.4MHz	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
902.0000	5.31	30.63	35.94	46.00	-10.06	QP
928.0000	4.98	30.93	35.91	46.00	-10.09	QP
908.4800	55.15	30.70	85.85	94.00	-8.15	QP

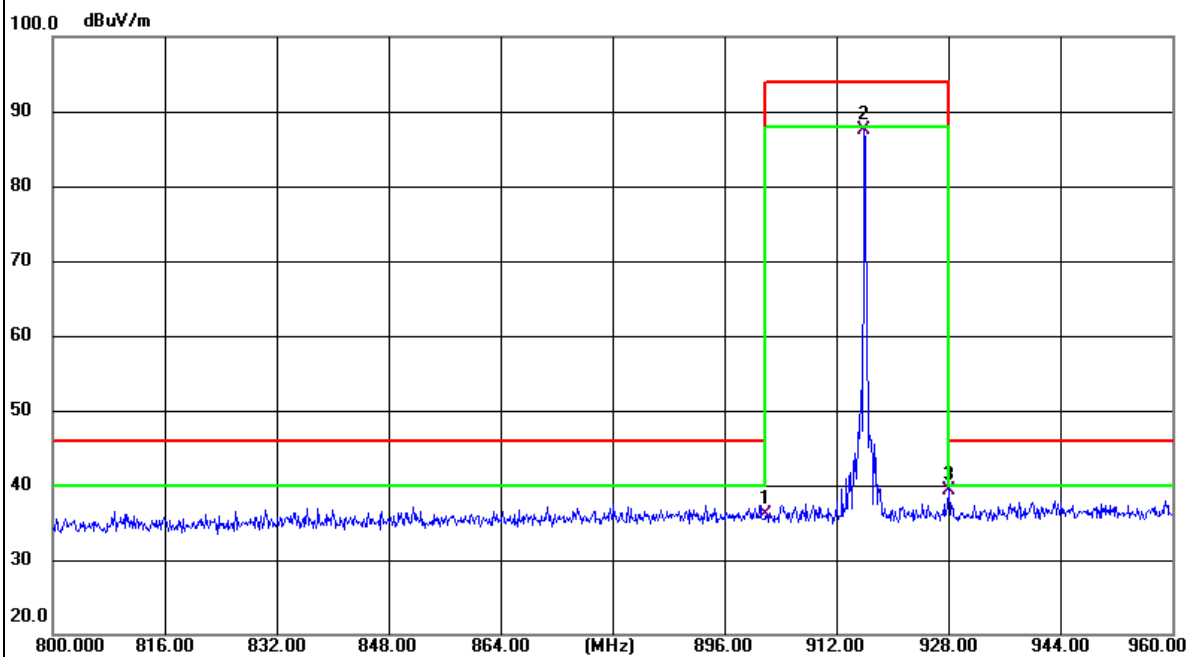
Remark:  
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT :	Home Energy Meter 8	Model Name :	ZWA046-A 2P 200A
Temperature :	25 °C	Relative Humidity :	51%
Pressure :	1010 hPa	Test Voltage :	AC 120V
Test Mode :	Mode3-TX-916MHz	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
902.0000	5.39	30.63	36.02	46.00	-9.98	QP
916.0000	56.64	30.79	87.43	94.00	-6.57	QP
928.0000	8.45	30.93	39.38	46.00	-6.62	QP

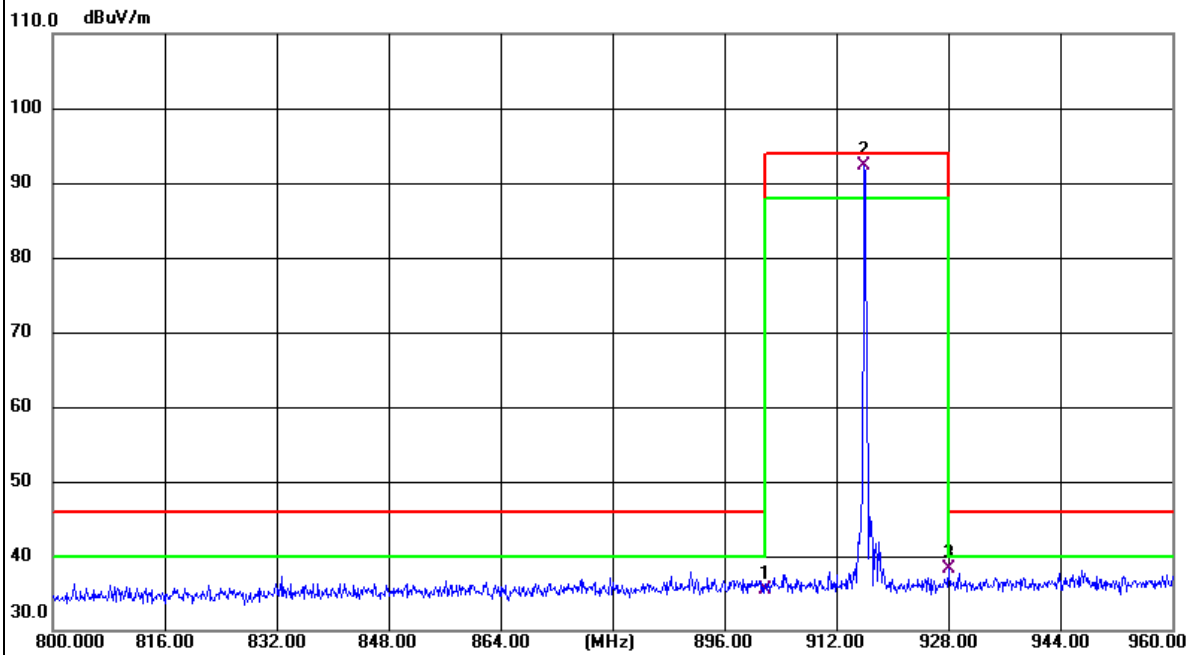
Remark:  
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT :	Home Energy Meter 8	Model Name :	ZWA046-A 2P 200A
Temperature :	25 °C	Relative Humidity :	51%
Pressure :	1010 hPa	Test Voltage :	AC 120V
Test Mode :	Mode3-TX-916MHz	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
902.0000	4.92	30.63	35.55	46.00	-10.45	QP
916.0000	61.56	30.79	92.35	94.00	-1.65	QP
928.0000	7.45	30.93	38.38	46.00	-7.62	QP

Remark:  
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



## 4. BANDWIDTH TEST

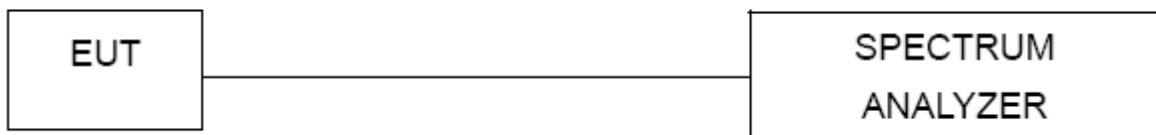
### 4.1 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- b. Spectrum Setting : The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the actual occupied / x dB bandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value., Sweep time = Auto.

### 4.2 DEVIATION FROM STANDARD

No deviation.

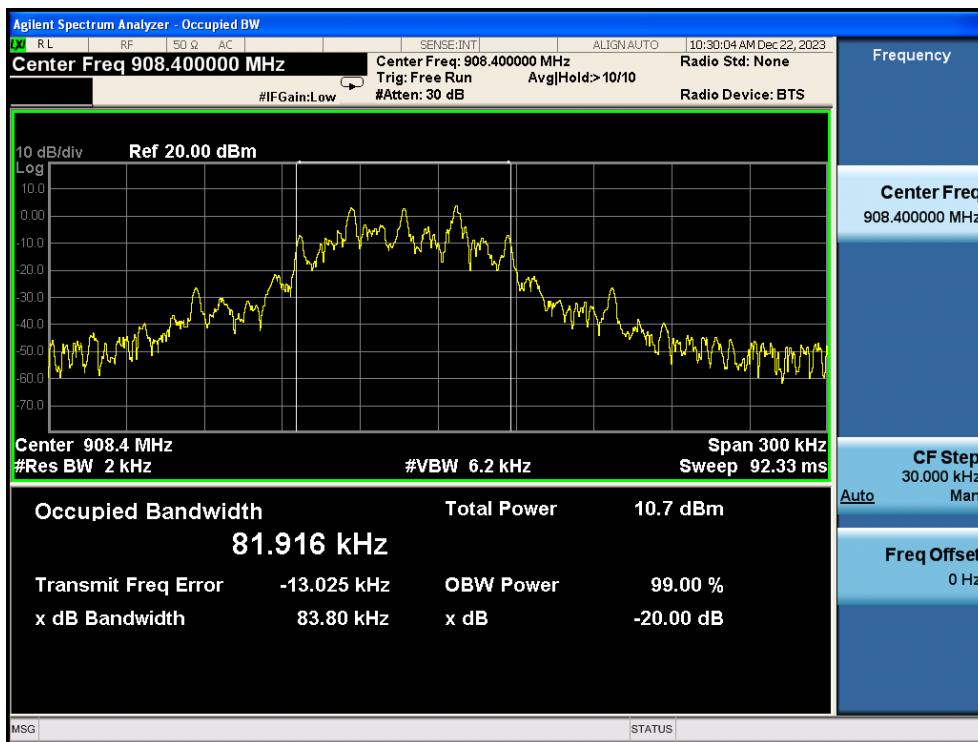
### 4.3 TEST SETUP



**4.4. TEST RESULTS**

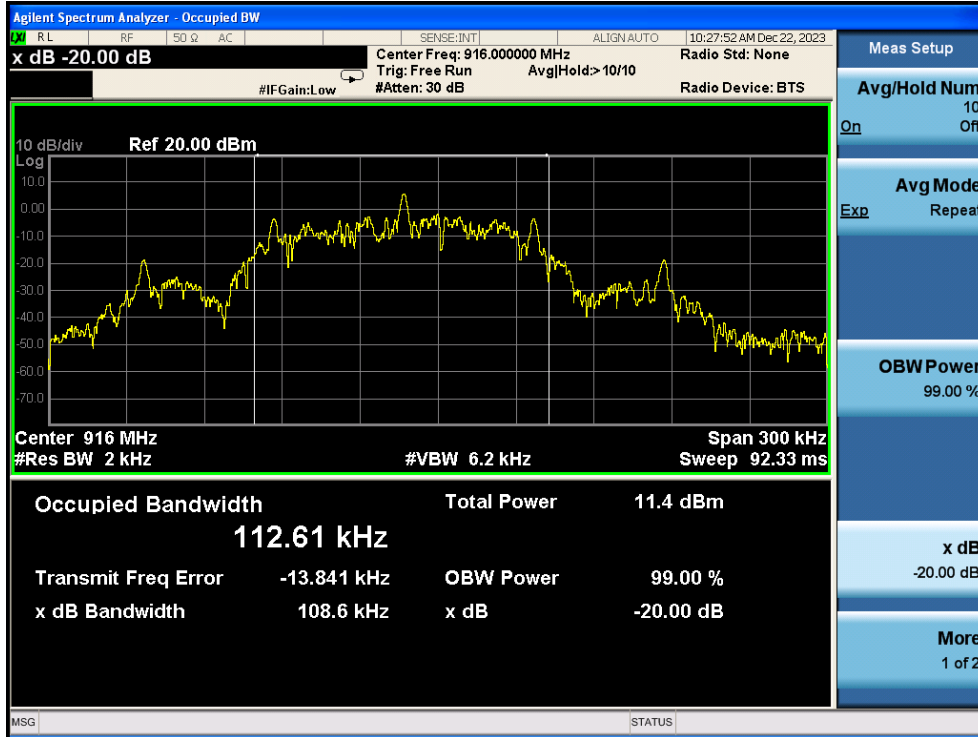
EUT :	Home Energy Meter 8	Model Name :	ZWA046-A 2P 200A
Temperature :	26 °C	Relative Humidity :	53%
Pressure :	1020 hPa	Test Power :	AC 120V
Test Mode :	Mode 1/ Mode 2		

Test Channel	Frequency (MHz)	20 dBc Bandwidth (KHz)
CH01	908.4	83.80





Test Channel	Frequency (MHz)	20 dBc Bandwidth (KHz)
CH02	916	108.6



END OF REPORT