



# **RADIO TEST REPORT**

## **AS/NZS 4268:2017**

**Product :** IP Camera

**Trade Mark :** Sricam

**Model Name :** SP012

**Serial Model :** SP005, SP006, SP007, SP008, SP009,  
SP009B, SP009C, SP010, SP011, SP013,  
SP014, SP015, SP016, SP017, SP018,  
SP019, SP020, SP023, NVS001, NVS002.

**Report No. :** SER171225622002E

### **Prepared for**

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### **Prepared by**

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**TEST RESULT CERTIFICATION**

**Applicant's name** ..... : Shenzhen Sricctv Technology Co., Ltd  
**Address** ..... : The 4th Floor of Building46, 5th Industrial Park of Huaide  
Cuigang, Fuyong Street, Bao'an, Shenzhen, China  
**Manufacturer's Name** ..... : Shenzhen Sricctv Technology Co., Ltd  
**Address** ..... : The 4th Floor of Building46, 5th Industrial Park of Huaide  
Cuigang, Fuyong Street, Bao'an, Shenzhen, China  
**Product description**  
**Product name** ..... : IP Camera  
**Trademark** ..... : Sricam  
**Model and/or type reference** : SP012  
**Serial Model** : SP005, SP006, SP007, SP008, SP009, SP009B, SP009C,  
SP010, SP011, SP013, SP014, SP015, SP016, SP017, SP018,  
SP019, SP020, SP023, NVS001, NVS002.  
**Rating(s)** ..... : DC 5V from adapter  
**Standards** ..... : AS/NZS 4268:2017

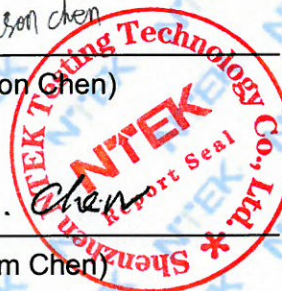
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**Date of Test** ..... :  
**Date (s) of performance of tests** ..... : 26 Dec. 2017 ~09 Mar. 2018  
**Date of Issue** ..... : 09 Mar. 2018  
**Test Result** ..... : **Pass**

**Testing Engineer** : Lake Xie  
(Lake Xie)

**Technical Manager** : Jason Chen  
(Jason Chen)

**Authorized Signatory** : Sam Chen  
(Sam Chen)





**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 TEST CONDITIONS AND CHANNEL	8
2.3 DESCRIPTION OF TEST CONDITIONS	9
2.4 DESCRIPTION OF SUPPORT UNITS	10
2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS	11
<b>3 . MAXIMUM EIRP FOR AUSTRALIA AND NEW ZEALAND</b>	<b>12</b>
3.1 APPLIED PROCEDURES / LIMIT	12
3.2 MEASURING INSTRUMENTS AND SETTING	12
3.3 TEST PROCEDURES	12
3.4 TEST SETUP LAYOUT	12
3.5 EUT Operation during Test	12
3.6 TEST RESULT	13
<b>4 . PEAK POWER DENSITY</b>	<b>15</b>
4.1 APPLIED PROCEDURES / LIMIT	15
4.2 TEST PROCEDURES	15
4.3 TEST SETUP LAYOUT	15
4.4 EUT OPERATION DURING TEST	15
4.5 TEST RESULT	16
<b>5 . TRANSMITTER SPURIOUS EMISSIONS FOR AUSTRALIA AND NEW ZEALAND</b>	<b>19</b>
5.1 APPLIED PROCEDURES / LIMIT	19
5.2 MEASURING INSTRUMENTS SETTING & TEST PROCEDURES	19
5.3 TEST SETUP LAYOUT	20
5.4 EUT OPERATION DURING TEST	20
5.5 TEST RESULT(30MHz ~ 1000MHz)	21
5.6 TEST RESULT(1000MHz ~ 12750MHz)	22
<b>6. EMISSION BANDWIDTH</b>	<b>23</b>
6.1 LIMITS OF OCCUPIED CHANNEL BANDWIDTH	23



<b>Table of Contents</b>	<b>Page</b>
6.2 TEST PROCEDURE	23
6.3 DEVIATION FROM TEST STANDARD	23
6.4 TEST SETUP	23
6.5 TEST RESULTS	24
7. OPERATING FREQUENCIES	29
7.1 APPLIED PROCEDURES / LIMIT	29
7.2 TEST PROCEDURES	29
7.3 TEST SETUP LAYOUT	30
7.4 EUT OPERATION DURING TEST	30
7.5 TEST RESULTS	31
8. RECEIVER EMISSIONS FOR AUSTRALIA AND NEW ZEALAND	33
8.1 APPLIED PROCEDURES / LIMIT	33
8.2 TEST PROCEDURES	33
8.3 TEST SETUP LAYOUT	33
8.3 EUT OPERATION DURING TEST	33
8.4 TEST RESULTS	34
9. EUT TEST PHOTO	35
APPENDIX-PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS	



## 1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

AS/NZS 4268:2017				
Standard	Test Item	Limit	Frequency Range (MHz)	Applicable (Yes/No)
TRANSMITTER PARAMETERS				
AS/NZS 4268:2017	Maximum EIRP for Australia and New Zealand	See AS/NZS 4268:2017 Table1	2400-2483.5 For 2.4G WIFI	Y
AS/NZS 4268:2017	Peak power spectral density	See AS/NZS 4268:2017 Table1 Note 2	2400-2483.5 For 2.4G WIFI	Y
AS/NZS 4268:2017 ETSI EN 300328 V1.9.1	Transmitter spurious emissions for Australia and New Zealand	AS/NZS 4268:2017 Clause 6.4 ETSI EN 300328 V1.9.1 Clause 4.3.2.9.3	2400-2483.5 For 2.4G WIFI	Y
AS/NZS 4268:2017 ETSI EN 300328 V1.9.1	Emission bandwidth	AS/NZS 4268:2017 Clause 6.5 ETSI EN 300328 V1.9.1 Clause 4.3.2.7.3	2400-2483.5 For 2.4G WIFI	Y
AS/NZS 4268:2017 ETSI EN 300328 V1.9.1	Operating frequencies	AS/NZS 4268:2017 Clause 6.6 & Table1	2400-2483.5 For 2.4G WIFI	Y
RECEIVER PARAMETERS				
AS/NZS 4268:2017 ETSI EN 300328 V1.9.1	Receiver Spurious Radiations	AS/NZS 4268:2017 Clause 7.1 ETSI EN 300328 V1.9.1 Clause 4.3.2.10.3	2400-2483.5 For 2.4G WIFI	Y



### 1.1 TEST FACILITY

Shen NTEK Testing Technology Co., Ltd.

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FCC Registered No.: 463705 IC Registered 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	$\pm 2\%$



## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

Equipment	IP Camera	
Trade Mark	Sricam	
Model Name.	SP012	
Serial Model	SP005, SP006, SP007, SP008, SP009, SP009B, SP009C, SP010, SP011, SP013, SP014, SP015, SP016, SP017, SP018, SP019, SP020, SP023, NVS001, NVS002.	
Model Difference	All the model are the same circuit and RF module, except the appearance.	
Product Description	The EUT is IP Camera	
	Operation Frequency:	802.11b/g/n(20MHz): 2412~2472MHz 802.11n(40MHz):2422~2462MHz
	Modulation Type:	IEEE 802.11b : DSSS (DBPSK, DQPSK, CCK) IEEE 802.11g/n (HT20/HT40) : OFDM (64QAM, 16QAM, QPSK, BPSK)
	Number Of Channel	Please see Note 2.
	Antenna Designation:	External Antenna
	Antenna Gain(Peak)	2dBi
	EIRP Power:	14.3 dBm (Max.)
	Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.	
Channel List	Refer to below	
Adapter	Model:KA1503-0502000AUS Input: 100-240V~50/60Hz 0.35A Output: 5V---2000mA	
Battery	N/A	
Hardware Version	N/A	
Software 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 List							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	05	2432	09	2452	13	2472
02	2417	06	2437	10	2457		
03	2422	07	2442	11	2462		
04	2427	08	2447	12	2467		

## 2.2 TEST CONDITIONS AND CHANNEL

	Normal Test Conditions	Extreme Test Conditions
Temperature	15°C - 35°C	-20°C ~ 40°C Note: (1)
Relative Humidity	20% - 75%	N/A
Supply Voltage	DC 5V	/

802.11b/g/n(20MHz)		
Test Channel	EUT Channel	Test Frequency (MHz)
lowest	CH01	2412
middle	CH07	2442
highest	CH13	2472

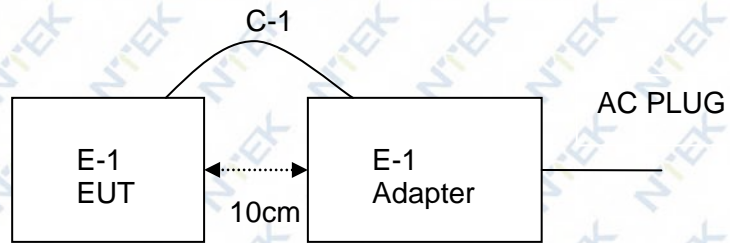
802.11n(40MHz)		
Test Channel	EUT Channel	Test Frequency (MHz)
lowest	CH03	2422
middle	CH07	2442
highest	CH11	2462

Note:

- (1) The HT40°C and LT -20°C was declared by manufacturer, The EUT couldn't be operate normally with higher or lower temperature.
- (2) The measurements are performed at the highest, middle, lowest available channels.



### 2.3 DESCRIPTION OF TEST CONDITIONS





## 2.4 DESCRIPTION OF SUPPORT UNITS

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	Brand	Model/Type No.	Series No.	Note
E-1	IP Camera	Sricam	SP012	N/A	EUT
E-2	Adapter	N/A	KA1503-0502000AUS	N/A	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	Power Cable	NO	120cm	N/A

**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

	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45108040	2017.06.06	2018.06.05	1 year
2	Spectrum Analyzer	Agilent	N9020A	MY49100060	2017.10.26	2018.10.25	1 year
3	EMI Test Receiver	Agilent	N9038A	MY53227146	2017.06.06	2018.06.05	1 year
4	Test Receiver	R&S	ESPI	101318	2017.06.06	2018.06.05	1 year
5	Bilog Antenna	TESEQ	CBL6111D	31216	2017.04.09	2018.04.08	1 year
6	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2017.06.06	2018.06.05	1 year
7	Horn Antenna	EM	EM-AH-1018 0	2011071402	2017.04.09	2018.04.08	1 year
8	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2017.07.06	2018.07.05	1 year
9	Amplifier	EMC	EMC051835 SE	980246	2017.08.09	2018.08.08	1 year
10	Amplifier	MITEQ	TTA1840-35- HG	177156	2017.06.06	2018.06.05	1 year
11	Loop Antenna	ARA	PLA-1030/B	1029	2017.06.06	2018.06.05	1 year
12	Power Meter	DARE	RPR3006W	15I00041SN O84	2017.08.09	2018.08.08	1 year
13	Test Cable (9KHz-30MHz)	N/A	R-01	N/A	2017.04.21	2020.04.20	3 year
14	Test Cable (30MHz-1GHz)	N/A	R-02	N/A	2017.04.21	2020.04.20	3 year
15	High Test Cable(1G-40G Hz)	N/A	R-03	N/A	2017.04.21	2020.04.20	3 year
16	High Test Cable(1G-40G Hz)	N/A	R-04	N/A	2017.04.21	2020.04.20	3 year
17	temporary antenna connector (Note)	NTS	R001	N/A	N/A	N/A	N/A



### 3. MAXIMUM EIRP FOR AUSTRALIA AND NEW ZEALAND

#### 3.1 APPLIED PROCEDURES / LIMIT

Clause	Test Item	Limit
6.3	Effective radiated power	4W (36 dBm)

#### 3.2 MEASURING INSTRUMENTS AND SETTING

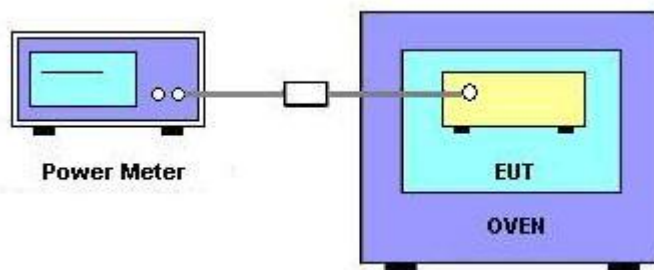
Please refer to section 4.1.1 in this report. The following table is the setting of the power meter.

Power Meter Parameter	Setting
Filter No.	Auto
Measurement time	0.135 s ~ 26 s
Used Average Sensor	URV5-Z4

#### 3.3 TEST PROCEDURES

- Since a temporary antenna connector can be attached on the RF output port, so conducted measurement method was used in this case.
- A wide band power meter with a matched thermocouple detector was used to directly measure the output power from the RF output port of the EUT in continuously transmitting mode.
- The  $EIRP = A + G + 10 \cdot \log(1/x)$ , where A is the power measured in (1), G is the gain of the antenna of the EUT in dBi and x is the duty cycle of the EUT in continuously transmitting mode.
- The measurement shall be repeated at the lowest, the IP Cameradle, and the highest channel of the stated frequency range. These measurements shall also be performed at normal and extreme test conditions.

#### 3.4 TEST SETUP LAYOUT



#### 3.5 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.



### 3.6 TEST RESULT

EUT :	IP Camera	Model Name :	SP012
Temperature :	20°C	Relative Humidity:	60 %
Pressure :	1012 hPa	Test Voltage :	DC 5V(NORMAL)
Test Mode :	802.11b Mode CH1 / CH7 / CH13		

TEST CONDITIONS				Total e.i.r.p ( dBm )		
				CH01	CH07	CH13
V nom (V)	5	T nom (°C)	20	14.0	14.1	14.3
		T max (°C)	40	14.2	13.8	13.6
		T min (°C)	-20	13.8	13.6	13.9
Max e.i.r.p Power				14.3		
Limits				36dBm		
Result				Complies		

EUT :	IP Camera	Model Name :	SP012
Temperature :	20°C	Relative Humidity:	60 %
Pressure :	1012 hPa	Test Voltage :	DC 5V(NORMAL)
Test Mode :	802.11g Mode CH1 / CH7 / CH13		

TEST CONDITIONS				Total e.i.r.p ( dBm )		
				CH01	CH07	CH13
V nom (V)	5	T nom (°C)	20	9.0	9.5	9.2
		T max (°C)	40	9.2	9.1	9.4
		T min (°C)	-20	8.9	9.0	9.2
Max e.i.r.p Power				9.5		
Limits				36dBm		
Result				Complies		



EUT :	IP Camera	Model Name :	SP012
Temperature :	20°C	Relative Humidity:	60 %
Pressure :	1012 hPa	Test Voltage :	DC 5V(NORMAL)
Test Mode :	802.11n20 Mode CH1 / CH7 / CH13		

TEST CONDITIONS				Total e.i.r.p ( dBm )		
				CH01	CH07	CH13
V nom (V)	5	T nom (°C)	20	9.7	9.0	9.4
		T max (°C)	40	9.5	9.2	9.1
		T min (°C)	-20	9.3	8.9	9.3
Max e.i.r.p Power				9.7		
Limits				36dBm		
Result				Complies		

EUT :	IP Camera	Model Name :	SP012
Temperature :	20°C	Relative Humidity:	60 %
Pressure :	1012 hPa	Test Voltage :	DC 5V(NORMAL)
Test Mode :	802.11n40 Mode CH3 / CH7 / CH11		

TEST CONDITIONS				Total e.i.r.p ( dBm )		
				CH01	CH07	CH13
V nom (V)	5	T nom (°C)	20	9.2	9.0	9.4
		T max (°C)	40	9.4	9.2	9.6
		T min (°C)	-20	8.8	8.9	9.2
Max e.i.r.p Power				9.6		
Limits				36dBm		
Result				Complies		



#### 4. PEAK POWER DENSITY

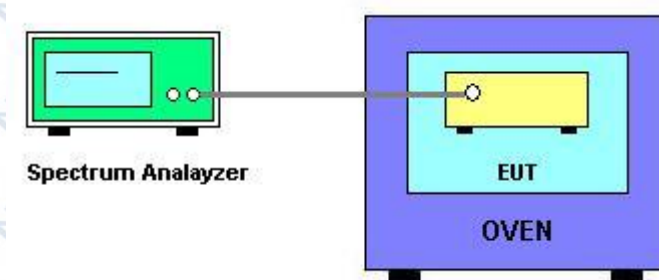
##### 4.1 APPLIED PROCEDURES / LIMIT

Clause	Test Item	Limit
AS/NZS 4268:2017	Peak power density	25 mW/MHz

##### 4.2 TEST PROCEDURES

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW  $\geq 3$  kHz.
4. Set the VBW  $\geq 3 \times$  RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

##### 4.3 TEST SETUP LAYOUT



##### 4.4 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.



## 4.5 TEST RESULT

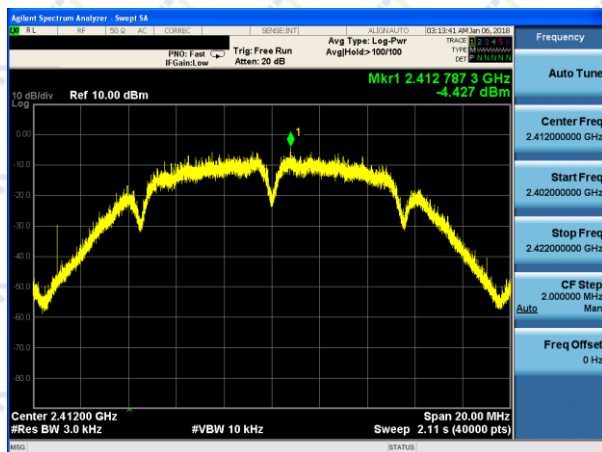
EUT :	IP Camera	Model Name :	SP012
Temperature :	20°C	Relative Humidity:	60 %
Pressure :	1012 hPa	Test Voltage :	DC 5V(NORMAL)
Test Mode :	802.11 b/g/n(HT20,HT40) Mode		

Mode	Channel	Frequency	Power Density (dBm)	Limit (dBm)	Result
802.11b	Low	2412 MHz	-4.427	13.98	Pass
	Middle	2442 MHz	-7.634	13.98	Pass
	High	2472 MHz	-6.185	13.98	Pass
802.11g	Low	2412 MHz	-10.547	13.98	Pass
	Middle	2442 MHz	-11.170	13.98	Pass
	High	2472 MHz	-11.439	13.98	Pass
802.11n20	Low	2412 MHz	-10.952	13.98	Pass
	Middle	2442 MHz	-10.077	13.98	Pass
	High	2472 MHz	-11.097	13.98	Pass
802.11n40	Low	2422 MHz	-16.021	13.98	Pass
	Middle	2442 MHz	-15.790	13.98	Pass
	High	2462 MHz	-16.653	13.98	Pass



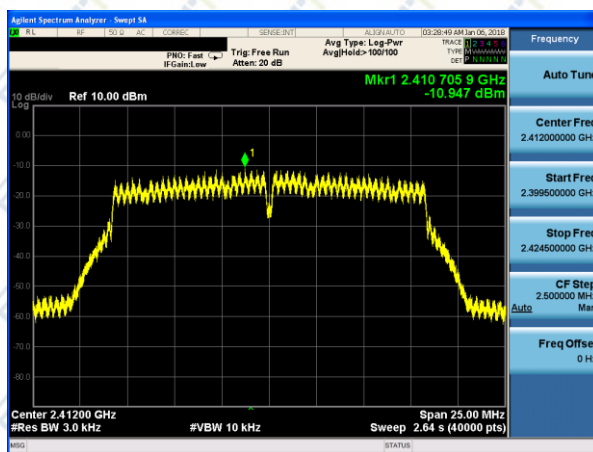
## Test plot For (802.11b)

CH 1

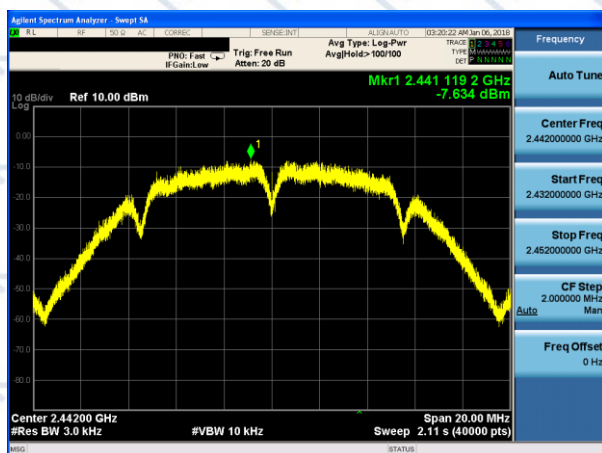


## Test plot For (802.11g)

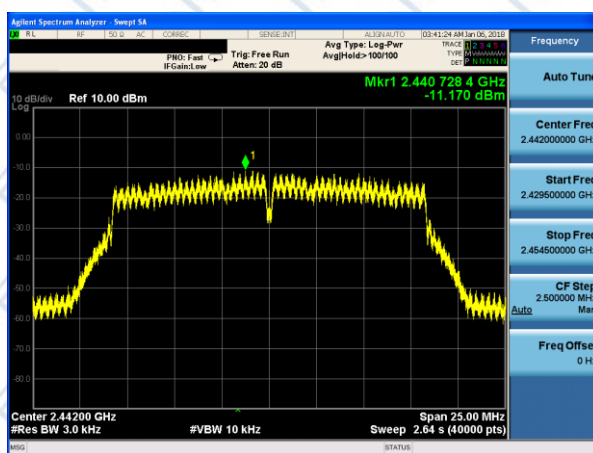
CH 1



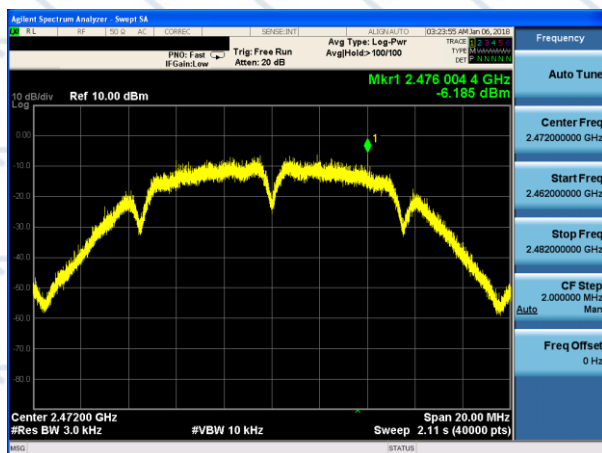
CH 7



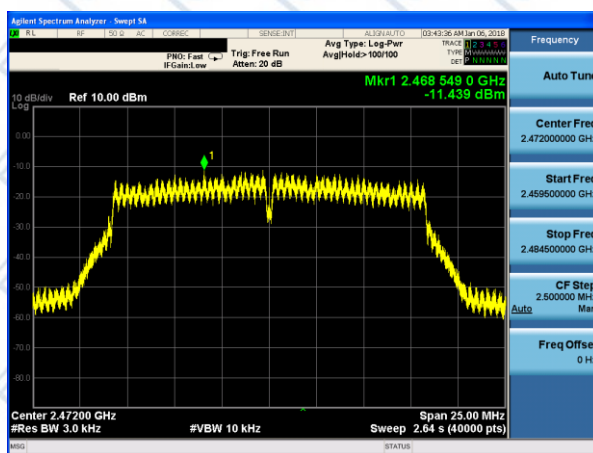
CH 7



CH 13



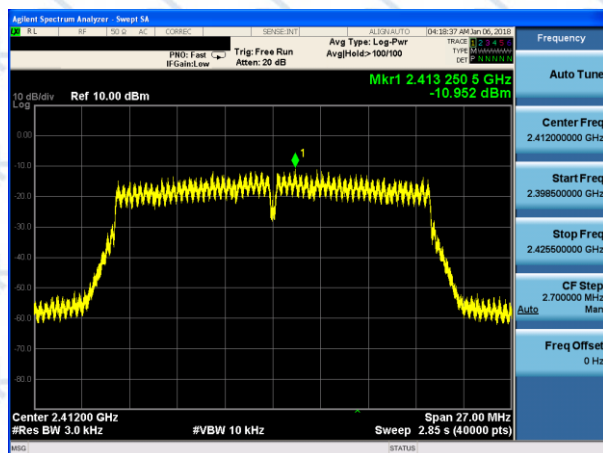
CH 13





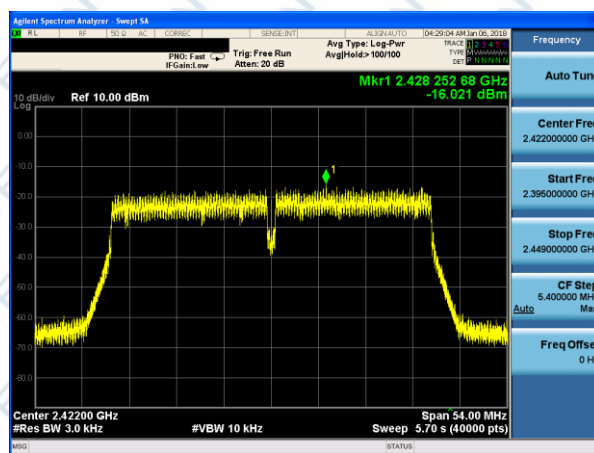
## Test plot For (802.11n20)

CH 1

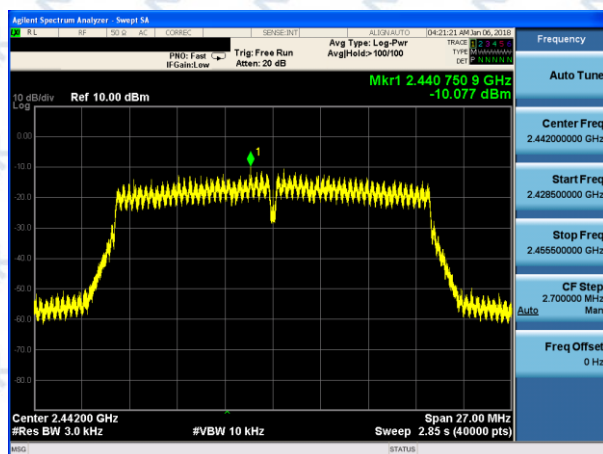


## Test plot For (802.11n40)

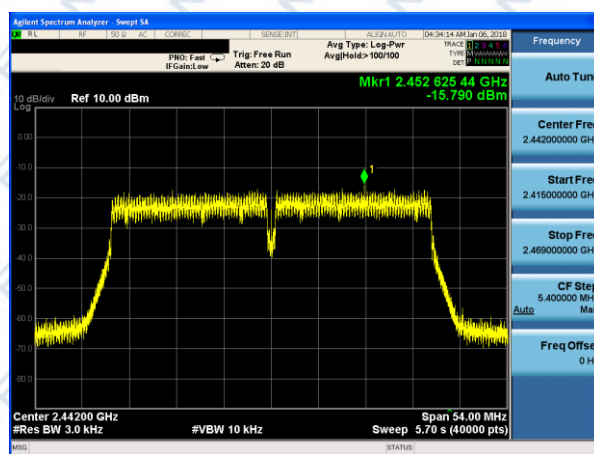
CH 3



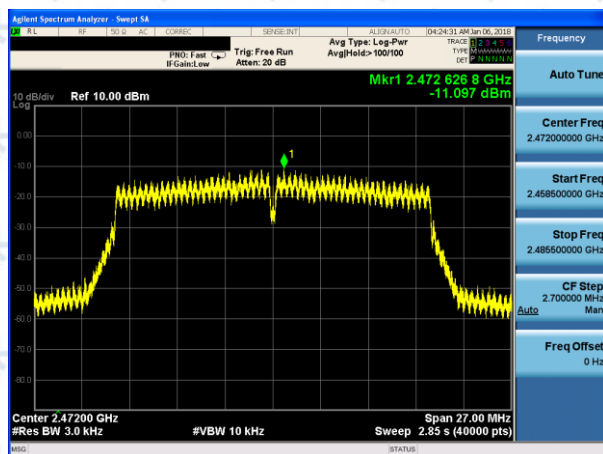
CH 7



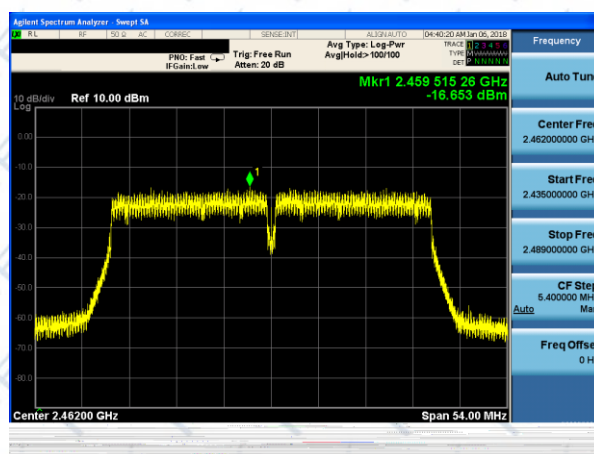
CH 7



CH 13



CH 11





## 5. TRANSMITTER SPURIOUS EMISSIONS FOR AUSTRALIA AND NEW ZEALAND

### 5.1 APPLIED PROCEDURES / LIMIT

Refer to chapter 4.3.2.9.3 of ETSI EN 300328 V1.9.1

TRANSMITTER UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN		
Frequency Range	Maximum Power Limit (E.R.P.( $\leq 1$ GHz) E.I.R.P.( $> 1$ GHz))	Bandwidth
30 MHz to 47 MHz	-36dBm	100 kHz
47 MHz to 74 MHz	-54dBm	100 kHz
74 MHz to 87.5 MHz	-36dBm	100 kHz
87.5 MHz to 118 MHz	-54dBm	100 kHz
118 MHz to 174 MHz	-36dBm	100 kHz
174 MHz to 230 MHz	-54dBm	100 kHz
230 MHz to 470 MHz	-36dBm	100 kHz
470 MHz to 862 MHz	-54dBm	100 kHz
862 MHz to 1 GHz	-36dBm	100 kHz
1 GHz ~ 12.75 GHz	-30dBm	1 MHz

### 5.2 MEASURING INSTRUMENTS SETTING & TEST PROCEDURES

Refer to chapter 5.4.9.2 of ETSI EN 300328 V1.9.1

Measurement	
<input type="checkbox"/> Conducted measurement	<input checked="" type="checkbox"/> Radiated measurement

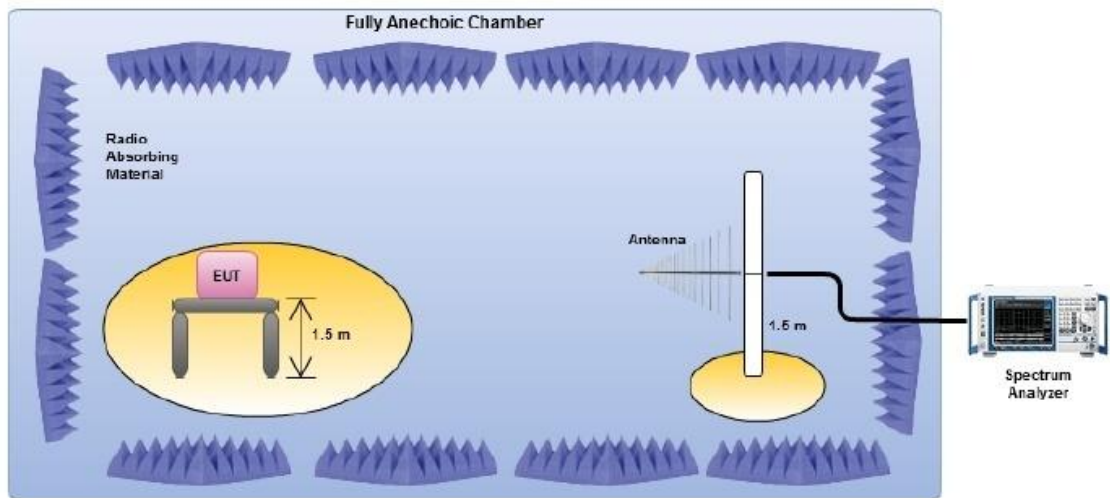
The setting of the Spectrum Analyzer

RBW	100K(<1GHz) / 1M(>1GHz)
VBW	300K(<1GHz) / 3M(>1GHz)



### 5.3 TEST SETUP LAYOUT

#### (A) Radiated Emission Test Set-Up Frequency Below 1 GHz



#### 5.4 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

For the initial investigation on the highest, middle, lowest frequency in 30-1000MHz, no significant differences in spurious emissions were observed between these 3 modes. The worst test data was shown



## 5.5 TEST RESULT (30MHz ~ 1000MHz)

EUT :	IP Camera	Model Name :	SP012
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Power :	DC 5V
Test Mode :	TX-802.11b		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	
V	48.02	-95.26	30.97	-64.29	-54	-10.29	peak
V	56.54	-96.26	24.86	-71.40	-36	-35.40	peak
V	150.12	-96.62	26.92	-69.70	-54	-15.70	peak
V	208.36	-96.21	24.97	-71.24	-36	-35.24	peak
V	283.23	-95.90	31.82	-64.08	-36	-28.08	peak
V	387.68	-96.11	37.16	-58.95	-54	-4.95	peak
H	108.32	-95.32	28.91	-66.41	-54	-12.41	peak
H	150.86	-96.16	21.18	-74.98	-54	-20.98	peak
H	366.75	-96.50	26.92	-69.58	-54	-15.58	peak
H	581.02	-95.29	25.67	-69.62	-36	-33.62	peak
H	797.14	-96.00	30.41	-65.59	-36	-29.59	peak
H	868.06	-95.49	33.35	-62.14	-54	-8.14	peak

**Remark:**

1. Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level – Limit;
2. All the modes had been tested, but only the worst data recorded in the report.



## 5.6 TEST RESULT(1000MHz ~ 12750MHz)

EUT :	IP Camera	Model Name :	SP012
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Power :	DC 5V
Test Mode :	TX-802.11b		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	
operation frequency:2412							
V	1252.74	-54.49	-2.88	-57.37	-30	-27.37	peak
V	1958.73	-47.64	7.19	-40.45	-30	-10.45	peak
V	3245.79	-48.13	9.25	-38.88	-30	-8.88	peak
H	2400.31	-48.27	-3.97	-52.24	-30	-22.24	peak
H	2949.89	-52.91	0.87	-52.04	-30	-22.04	peak
H	3861.97	-54.30	9.25	-45.05	-30	-15.05	peak
operation frequency:2442							
V	1177.24	-50.82	-2.55	-53.37	-30	-23.37	peak
V	1964.55	-54.27	1.37	-52.90	-30	-22.90	peak
V	3182.65	-49.42	9.46	-39.96	-30	-9.96	peak
H	2459.76	-48.44	-1.88	-50.32	-30	-20.32	peak
H	2950.14	-48.24	1.21	-47.03	-30	-17.03	peak
H	3901.58	-51.12	9.46	-41.66	-30	-11.66	peak
operation frequency:2472							
V	1292.68	-47.24	-4.69	-51.93	-30	-21.93	peak
V	1937.99	-54.43	7.20	-47.23	-30	-17.23	peak
V	3255.89	-48.68	9.29	-39.39	-30	-9.39	peak
H	2418.92	-49.79	-2.74	-52.53	-30	-22.53	peak
H	2889.91	-52.87	0.92	-51.95	-30	-21.95	peak
H	3992.63	-47.48	9.29	-38.19	-30	-8.19	peak

**Remark:**

1. Absolute Level= ReadingLevel+ Factor, Margin= Limit- Absolute Level;
2. All the modes had been tested, but only the worst data recorded in the report.



## 6. EMISSION BANDWIDTH

### 6.1 LIMITS OF OCCUPIED CHANNEL BANDWIDTH

Refer to ASNZS 4268: 2017 Clause 6.5 & chapter 4.3.2.7.3 of ETSI EN 300 328 V1.9.1

### 6.2 TEST PROCEDURE

Refer to chapter 5.4.7.2 of ETSI EN 300 328 V1.9.1

Measurement	
<input checked="" type="checkbox"/> Conducted measurement	<input type="checkbox"/> Radiated measurement

The setting of the Spectrum Analyzer

Center Frequency	The centre frequency of the channel under test
Frequency Span	2 x Nominal Channel Bandwidth
Detector	RMS
RBW	~ 1 % of the span without going below 1 %
VBW	3 x RBW
Trace	Max hold
Sweep time	1s

### 6.3 DEVIATION FROM TEST STANDARD

No deviation

### 6.4 TEST SETUP



These measurements only were performed at normal test conditions. The measurement shall be performed only on the lowest and the highest frequency within the stated frequency range. In case of conducted measurements the transmitter shall be connected to the measuring equipment via suitable attenuator. Controlling software has been activated to set the EUT on specific status.



## 6.5 TEST RESULTS

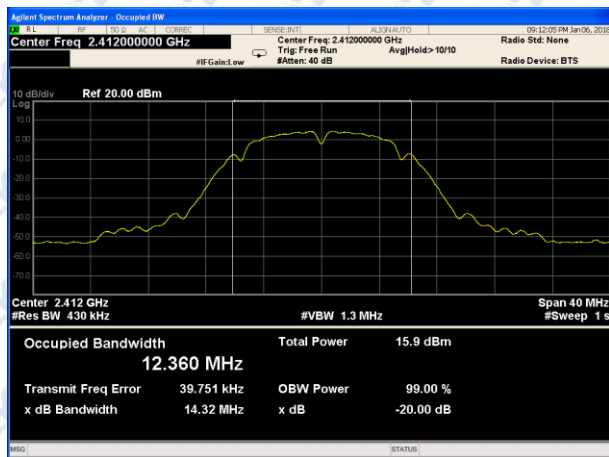
EUT :	IP Camera	Model Name :	SP012
Temperature :	20°C	Relative Humidity :	60 %
Pressure :	1012 hPa	Test Voltage :	DC 5V
Test Mode :	802.11b/g/n(HT20,HT40) Mode CH1 / CH13, CH3 / CH11		

CHANNEL	CHANNEL FREQUENCY (MHz)	99%OCCUPIED BANDWIDTH	Measured frequencies		Limit	PASS /FAIL
		(MHz)	FL (MHz)	FH (MHz)		
802.11b						
01	2412	12.360	2404.93	2419.15	FL>2400MHz and FH<2483.5 MHz	PASS
13	2472	12.399	2464.85	2479.15		PASS
802.11g						
01	2412	16.472	2403.18	2420.90	FL>2400MHz and FH<2483.5 MHz	PASS
13	2472	16.474	2463.10	2480.90		PASS
802.11n20						
01	2412	17.647	2402.70	2421.38	FL>2400MHz and FH<2483.5 MHz	PASS
13	2472	17.650	2462.62	2481.38		PASS
802.11n40						
03	2422	36.294	2402.92	2441.08	FL>2400MHz and FH<2483.5 MHz	PASS
11	2462	36.299	2442.92	2481.08		PASS

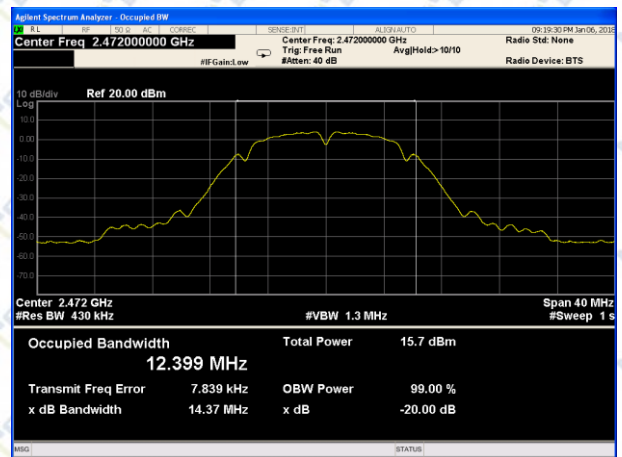


## Test Plot

(802.11b) 99% Power Bandwidth plot on channel 1



(802.11b) 99% Power Bandwidth plot on channel 13



(802.11b) Measured frequencies plot on channel 1



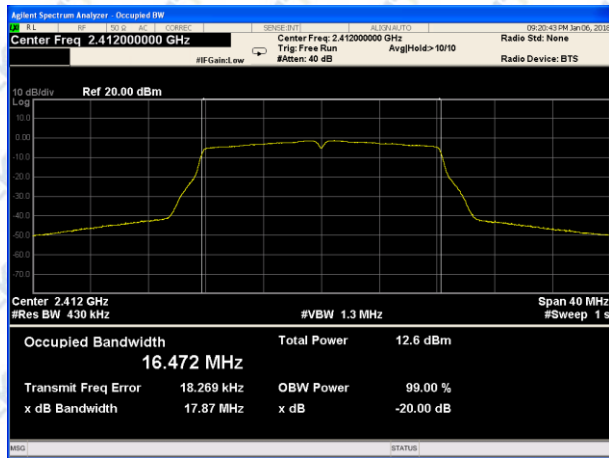
(802.11b) Measured frequencies plot on channel 13



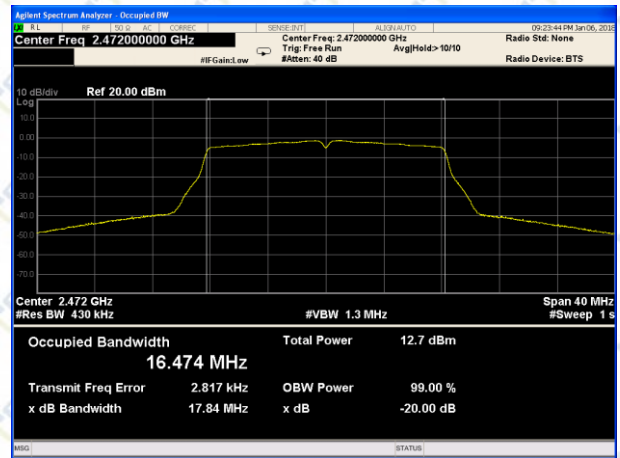


## Test Plot

(802.11g) 99% Power Bandwidth plot on channel 1



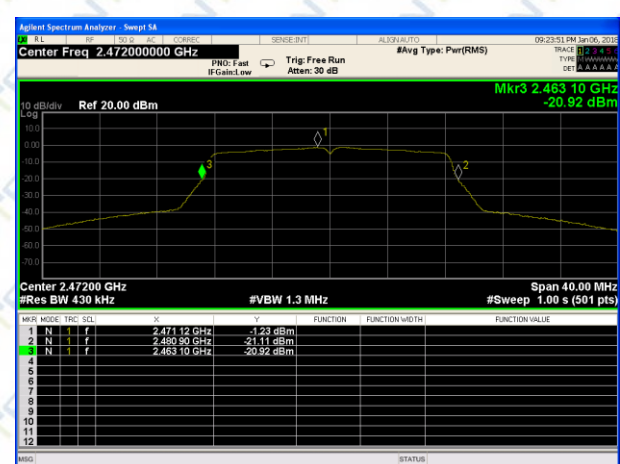
(802.11g) 99% Power Bandwidth plot on channel 13



(802.11g) Measured frequencies plot on channel 1

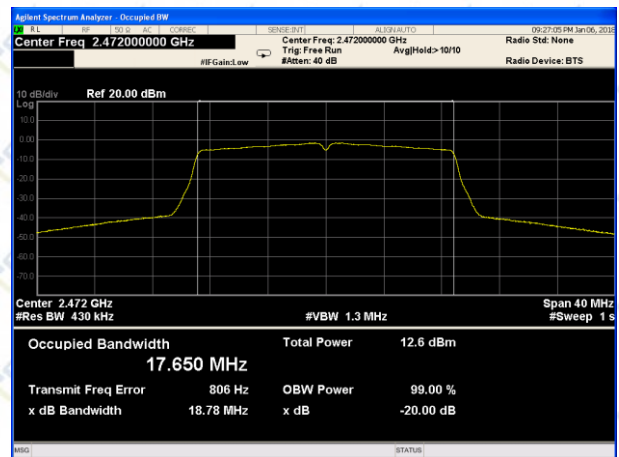


(802.11g) Measured frequencies plot on channel 13





(802.11n20) 99% Power Bandwidth plot on  
channel 13



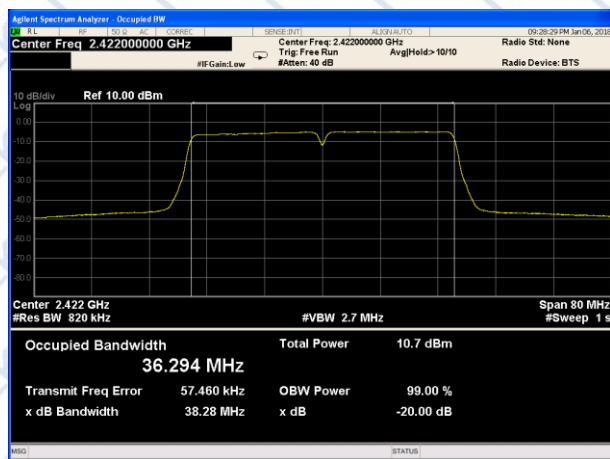
(802.11n20) Measured frequencies plot on channel 13



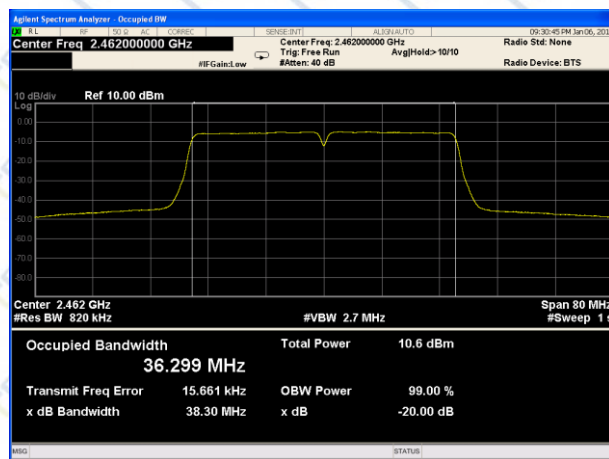


## Test Plot

(802.11n40) 99% Power Bandwidth plot on  
channel 3



(802.11n40) 99% Power Bandwidth plot on  
channel 11



(802.11n40) Measured frequencies plot on  
channel 3



(802.11n40) Measured frequencies plot on  
channel 11





## 7. OPERATING FREQUENCIES

### 7.1 APPLIED PROCEDURES / LIMIT

According to AS/NZS 4268:2017 Clause 6.6. Emission bandwidth shall be within the designate frequency band. This requirement applies to all transmitters, whether single frequency or multichannel.

According to AS/NZS 4268:2017 Clause 6.6.1. Emission bandwidth shall be within the designated frequency band. This requirement applies to all transmitters, whether single frequency or multichannel.

### 7.2 TEST PROCEDURES

Also refer to clause 6.6.1, Australian limits and clause 6.6.2, New Zealand limits.

Testing is to be conducted under normal and extreme test conditions.

For testing purposes, multi-channel transmitters may be tested on the highest and lowest available channels only (for upper and lower band edges respectively), to demonstrate compliance.

Compliance is determined by using the emission bandwidth test method given in Clause 8.3.2.

The upper and lower frequency limits of the emission bandwidth shall lay within the permitted frequency band at all times to meet requirements. The test report shall include details of the modulation scheme used as per Article 2, Appendix 1 of the International Telecommunication Union Radio Regulation (Edition of 2001).

An alternative method of assessment is to use a combination of results for the measured emission bandwidth test and frequency stability test performed according to the standards listed below. If the modulated emission is symmetrical about the carrier frequency, then the upper and lower frequency limits of the emission can be determined by adding and subtracting half the emission bandwidth from the unmodulated carrier frequency measured under all test conditions. This assumes that the application of modulation does not affect frequency stability.

Equipment and frequency range Method of measurement

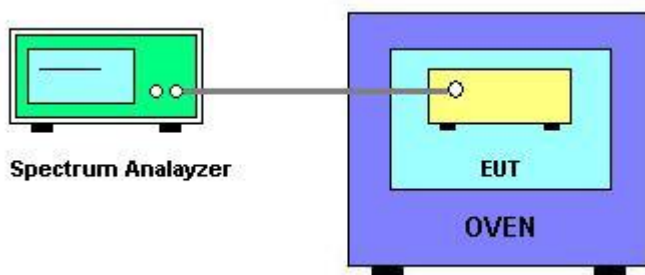
The designated frequency band is the permitted operating frequency band in Table 1 or 2 or the operating frequency limits of the GURL.

#### NOTES:

1. Telecommand or telemetry transmissions should have the transmission enabled for at least 3 s so that all sidebands and modulation products may be observed.
2. Alternative test methods may be required for pulse modulated transmitters(e.g. radar), spread spectrum and more complex digital modulation types.



### 7.3 TEST SETUP LAYOUT



### 7.4 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.



## 7.5 TEST RESULTS

EUT :	IP Camera	Model Name :	SP012
Temperature :	26 °C	Relative Humidity:	60 %
Pressure :	1012 hPa	Test Voltage :	DC 5V(Normal)
Test Mode :	TX 802.11b Mode CH1 / CH13		

TEST CONDITIONS				Frequency range ( MHz )	
				f <sub>L</sub> CH1	f <sub>H</sub> CH13
T nom (°C)	20.00	V nom (V)	5	2405.12	2478.85
T min (°C)	-20.00	V nom (V)	5	2405.13	2478.89
T max (°C)	40.00	V nom (V)	5	2405.08	2478.95
Min. f <sub>L</sub> / Max. f <sub>H</sub> Band Edges				2405.08	2478.92
Other EU / Australia / NZ Limits				f <sub>L</sub> > 2400.0 MHz	f <sub>H</sub> < 2483.5 MHz
Result				Complies	

EUT :	IP Camera	Model Name :	SP012
Temperature :	26 °C	Relative Humidity:	60 %
Pressure :	1012 hPa	Test Voltage :	DC 5V
Test Mode :	TX 802.11g Mode CH1 / CH13		

TEST CONDITIONS				Frequency range ( MHz )	
				f <sub>L</sub> CH1	f <sub>H</sub> CH13
T nom (°C)	20.00	V nom (V)	5	2403.15	2480.85
T min (°C)	-20.00	V nom (V)	5	2403.27	2480.84
T max (°C)	40.00	V nom (V)	5	2403.19	2480.79
Min. f <sub>L</sub> / Max. f <sub>H</sub> Band Edges				2403.10	2480.84
Other EU / Australia / NZ Limits				f <sub>L</sub> > 2400.0 MHz	f <sub>H</sub> < 2483.5 MHz
Result				Complies	



EUT :	IP Camera	Model Name :	SP012
Temperature :	26 °C	Relative Humidity:	60 %
Pressure :	1012 hPa	Test Voltage :	DC 5V
Test Mode :	TX 802.11n20 Mode CH1 / CH13		

TEST CONDITIONS				Frequency range ( MHz )	
				f <sub>L</sub> CH1	f <sub>H</sub> CH13
T nom (°C)	20.00	V nom (V)	5	2402.65	2481.24
T min (°C)	-20.00	V nom (V)	5	2402.61	2481.25
T max (°C)	40.00	V nom (V)	5	2402.59	2481.29
Min. f <sub>L</sub> / Max. f <sub>H</sub> Band Edges				2402.51	2481.55
Other EU / Australia / NZ Limits				f <sub>L</sub> > 2400.0 MHz	f <sub>H</sub> < 2483.5 MHz
Result				Complies	

EUT :	IP Camera	Model Name :	SP012
Temperature :	26 °C	Relative Humidity:	60 %
Pressure :	1012 hPa	Test Voltage :	DC 5V
Test Mode :	TX 802.11n40 Mode CH3 / CH11		

TEST CONDITIONS				Frequency range ( MHz )	
				f <sub>L</sub> CH3	f <sub>H</sub> CH11
T nom (°C)	20.00	V nom (V)	5	2402.45	2481.85
T min (°C)	-20.00	V nom (V)	5	2402.49	2481.79
T max (°C)	40.00	V nom (V)	5	2402.42	2481.89
Min. f <sub>L</sub> / Max. f <sub>H</sub> Band Edges				2402.51	2481.55
Other EU / Australia / NZ Limits				f <sub>L</sub> > 2400.0 MHz	f <sub>H</sub> < 2483.5 MHz
Result				Complies	



## 8. RECEIVER EMISSIONS FOR AUSTRALIA AND NEW ZEALAND

### 8.1 APPLIED PROCEDURES / LIMIT

Clause	Test Item	Frequency(MHz)	Limit
6.4	Spurious emissions	30-1000	-57dBm
	(narrowband)	1000-12750	-47dBm

### 8.2 TEST PROCEDURES

Please refer to section 5.2.

### 8.3 TEST SETUP LAYOUT

This test setup layout is the same as that shown in section 5.3

### 8.3 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously receiving mode.



## 8.4 TEST RESULTS

EUT :	IP Camera	Model Name :	SP012
Temperature :	20°C	Relative Humidity :	53 %
Pressure :	1012 hPa	Test Power :	DC 5V
Test Mode :	RX-802.11b		

## BELOW 1G

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	
V	41.09	-96.03	25.36	-70.67	-57	-13.67	peak
V	53.91	-96.06	18.02	-78.04	-57	-21.04	peak
V	141.37	-95.76	23.65	-72.11	-57	-15.11	peak
V	238.18	-95.04	26.62	-68.42	-57	-11.42	peak
V	289.14	-96.70	30.63	-66.07	-57	-9.07	peak
V	392.00	-95.46	33.72	-61.74	-57	-4.74	peak
H	89.66	-95.80	27.09	-68.71	-57	-11.71	peak
H	161.92	-95.77	16.97	-78.80	-57	-21.80	peak
H	380.05	-96.31	20.16	-76.15	-57	-19.15	peak
H	597.11	-96.48	24.52	-71.96	-57	-14.96	peak
H	767.02	-96.84	28.86	-67.98	-57	-10.98	peak
H	887.03	-95.93	32.61	-63.32	-57	-6.32	peak

**Remark:**

1. Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level – Limit.
2. All the modes had been tested, but only the worst data recorded in the report.

## ABOVE 1G

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	
V	1211.65	-63.33	-4.92	-68.25	-47	-21.25	peak
V	1744.58	-64.41	-1.84	-66.25	-47	-19.25	peak
V	2242.17	-63.21	-1.27	-64.48	-47	-17.48	peak
V	2796.70	-63.89	7.58	-56.31	-47	-9.31	peak
V	3438.78	-63.69	8.75	-54.94	-47	-7.94	peak
V	4892.01	-64.49	9.68	-54.81	-47	-7.81	peak
H	1488.36	-63.09	-5.62	-68.71	-47	-21.71	peak
H	2383.04	-64.29	-1.65	-65.94	-47	-18.94	peak
H	2890.32	-63.66	3.69	-59.97	-47	-12.97	peak
H	3943.60	-64.29	5.32	-58.97	-47	-11.97	peak
H	4659.70	-64.51	9.68	-54.83	-47	-7.83	peak
H	5489.57	-67.61	14.30	-53.31	-47	-6.31	peak

**Remark:**

1. Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level – Limit.
2. All the modes had been tested, but only the worst data recorded in the report.



## 9. EUT TEST PHOTO

### Spurious Emissions Measurement Photos

