Company: Silver Spring Networks

Test of: MicroAP 5 To: FCC CFR 47 Part 15.247 (FHSS) & IC RSS-247 (900 – 928 MHz)

Report No.: SSNT135-U4\_Conducted Rev A

## **TEST REPORT ADDENDUM - CONDUCTED**



Issue Date: 1<sup>st</sup> February 2017

Master Document Number	Addendum Reports		
SSNIT125 LL4 Mostor	SSNT135-U4_Conducted		
55NT 135-04_Master	SSNT135-U4 Radiated		

This report is only valid in conjunction with the reports listed in the above table. Together these reports address the requirements for the type of device operating under the standard as listed.



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Silver Spring Networks MicroAP 5 FCC CFR 47 Part 15.247 (FHSS) & IC RSS-247 SSNT135-U4 Conducted Rev A **Issue Date:** 1<sup>st</sup> February 2017 3 of 212

# **1. MEASUREMENT AND PRESENTATION OF TEST DATA**

The measurement and graphical data presented in this test report was generated automatically using state-of-the-art technology creating an easy to read report structure. Numerical measurement data is separated from supporting graphical data (plots) through hyperlinks. Numerical measurement data can be reviewed without scrolling through numerous graphical pages to arrive at the next data matrix.

Plots have been relegated into the Appendix 'Graphical Data'.

Test and report automation was performed by MiTest. MiTest is an automated test system developed by MiCOM Labs. MiTest is the first cloud based modular test system enabling end-to-end automation of regulatory compliance testing for conducted RF testing.



The MiCOM Labs "MiTest" Automated Test System" (Patent Pending)

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# 2. TEST RESULTS

# 2.1. 20 dB & 99% Bandwidth

Conducted Test Conditions for 20 dB and 99% Bandwidth						
Standard:	FCC CFR 47:15.247	CC CFR 47:15.247 Ambient Temp. (°C):				
Test Heading:	20 dB and 99 % Bandwidth	32 - 45				
Standard Section(s):	15.247 (a)(1)(i)/(ii)	999 - 1001				
Reference Document(s):	See Normative References					

### Test Procedure for 20 dB and 99% Bandwidth Measurement

The bandwidth at 20 dB and 99 % was measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency.

Testing was performed under ambient conditions at nominal voltage. Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured and reported.

Test configuration and setup used for the measurement was per the Conducted Test Set-up specified in this document.

### Limits for 20 dB and 99% Bandwidth

(a) Operation under the provisions of this Section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:

(1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

(i) For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

(ii) Frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

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Variant:	100 kbps FSK	Duty Cycle (%):	99
Data Rate:	100.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	FSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Test	Ме	asured 20 dB	Bandwidth (M	Hz)	20 dB Band	width (MHz)	Limit	Lowest
Frequency		Poi	rt(s)				Linin	Margin
MHz	а	b	С	d	Highest	Lowest	MHz	MHz
902.3	<u>0.115</u>				0.115	0.115	0.5	-0.39
915.2	<u>0.121</u>				0.121	0.121	0.5	-0.38
926.9	<u>0.114</u>				0.114	0.114	0.5	-0.39

Test		Measured 99% E	Bandwidth (MHz	Maximum		
Frequency		Por	rt(s)	99% Bandwidth		
MHz	а	b	С	d	(MHz)	
902.3	<u>0.106</u>				0.106	
915.2	<u>0.103</u>				0.103	
926.9	<u>0.103</u>				0.103	

Traceability to Industry Recognized Test Methodologies				
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK			
Measurement Uncertainty:	±2.81 dB			

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	150 kbps FSK	Duty Cycle (%):	99
Data Rate:	150.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	FSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Test	Ме	asured 20 dB	Bandwidth (M	Hz)	20 dB Bond	width (MU-)	width (MHz) Limit	
Frequency		Port(s)		20 dB Bandwidth (MHZ)			Margin	
MHz	а	b	С	d	Highest	Lowest	MHz	MHz
902.4	<u>0.181</u>				0.181	0.181	0.5	-0.32
915.2	<u>0.173</u>				0.173	0.173	0.5	-0.33
927.6	<u>0.183</u>				0.183	0.183	0.5	-0.32

Test		Measured 99% E	Bandwidth (MHz	Maximum		
Frequency		Por	rt(s)	Bandwidth		
MHz	а	b	С	d	(MHz)	
902.4	<u>0.167</u>				0.167	
915.2	<u>0.164</u>				0.164	
927.6	<u>0.164</u>				0.164	

Traceability to Industry Recognized Test Methodologies				
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK			
Measurement Uncertainty:	±2.81 dB			

Note: click the links in the above matrix to view the graphical image (plot).

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Variant:	150 kbps GFSK	Duty Cycle (%):	99
Data Rate:	150.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Test	Ме	asured 20 dB	Bandwidth (M	Hz)	20 dB Bond	width (MU-)	Limit	Lowest
Frequency		Poi	rt(s)					Margin
MHz	а	b	С	d	Highest	Lowest	MHz	MHz
902.3	<u>0.183</u>				0.183	0.183	0.5	-0.32
915.2	<u>0.189</u>				0.189	0.189	0.5	-0.31
926.9	<u>0.174</u>				0.174	0.174	0.5	-0.33

Test Frequency		Measured 99% E Por	Bandwidth (MHz rt(s)	Maximum 99% Bondwidth		
MHz	а	b	с	d	(MHz)	
902.3	<u>0.158</u>				0.158	
915.2	<u>0.161</u>				0.161	
926.9	<u>0.166</u>				0.166	

Traceability to Industry Recognized Test Methodologies				
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK			
Measurement Uncertainty:	±2.81 dB			

Note: click the links in the above matrix to view the graphical image (plot).

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Variant:	200 kbps GFSK	Duty Cycle (%):	99
Data Rate:	200.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Test	Ме	asured 20 dB	Bandwidth (M	Hz)	20 dB Bond	width (MU-)	Limit	Lowest
Frequency		Poi	rt(s)		20 dB Bandwidth (MHz)			Margin
MHz	а	b	С	d	Highest	Lowest	MHz	MHz
902.3	<u>0.246</u>				0.246	0.246	0.5	-0.25
915.2	<u>0.227</u>				0.227	0.227	0.5	-0.27
926.9	<u>0.243</u>				0.243	0.243	0.5	-0.26

Test		Measured 99% B	Bandwidth (MHz	Maximum		
Frequency		Poi	rt(s)	99% Bandwidth		
MHz	а	b	с	d	(MHz)	
902.3	<u>0.213</u>				0.213	
915.2	<u>0.216</u>				0.216	
926.9	<u>0.216</u>				0.216	

Traceability to Industry Recognized Test Methodologies				
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK			
Measurement Uncertainty:	±2.81 dB			

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	300 kbps GFSK	Duty Cycle (%):	99
Data Rate:	300.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Test	Ме	asured 20 dB	Bandwidth (M	Hz)	20 dB Bond	width (MU-)	Limit	Lowest
Frequency		Poi	rt(s)				Linin	Margin
MHz	а	b	С	d	Highest	Lowest	MHz	MHz
902.4	<u>0.364</u>				0.364	0.364	0.5	-0.14
915.2	<u>0.367</u>				0.367	0.367	0.5	-0.13
927.6	<u>0.361</u>				0.361	0.361	0.5	-0.14

Test		Measured 99% E	Bandwidth (MHz	Maximum		
Frequency		Por	rt(s)	Bandwidth		
MHz	а	b	С	d	(MHz)	
902.4	<u>0.333</u>				0.333	
915.2	<u>0.330</u>				0.330	
927.6	<u>0.330</u>				0.330	

Traceability to Industry Recognized Test Methodologies				
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK			
Measurement Uncertainty:	±2.81 dB			

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	50 kbps 2FSK	Duty Cycle (%):	99
Data Rate:	50.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	2FSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Test	Ме	asured 20 dB	Bandwidth (M	Hz)	20 dB Band	width (MU-)	Limit	Lowest
Frequency		Poi	rt(s)					Margin
MHz	а	b	С	d	Highest	Lowest	MHz	MHz
902.2	<u>0.085</u>				0.085	0.085	0.5	-0.41
915.0	<u>0.083</u>				0.083	0.083	0.5	-0.42
927.8	<u>0.084</u>				0.084	0.084	0.5	-0.42

Test		Measured 99% E	Bandwidth (MHz	Maximum		
Frequency		Por	t(s)	99% Bandwidth		
MHz	а	b	С	d	(MHz)	
902.2	<u>0.087</u>				0.087	
915.0	<u>0.084</u>				0.084	
927.8	0.085				0.085	

Traceability to Industry Recognized Test Methodologies				
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK			
Measurement Uncertainty:	±2.81 dB			

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	6.25 kbps OQPSK	Duty Cycle (%):	99
Data Rate:	6.25 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	OQPSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Test	Ме	asured 20 dB	Bandwidth (M	Hz)	20 dB Bond	width (MU-)	Limit	Lowest
Frequency		Poi	rt(s)		20 dB Bandwidth (MHz)			Margin
MHz	а	b	с	d	Highest	Lowest	MHz	MHz
902.2	<u>0.126</u>				0.126	0.126	0.5	-0.37
915.0	<u>0.126</u>				0.126	0.126	0.5	-0.37
927.8	<u>0.126</u>				0.126	0.126	0.5	-0.37

Test		Measured 99% I	Bandwidth (MHz	Maximum		
Frequency		Poi	rt(s)	Bandwidth		
MHz	а	b	с	d	(MHz)	
902.2	<u>0.115</u>				0.115	
915.0	<u>0.115</u>				0.115	
927.8	<u>0.115</u>				0.115	

Traceability to Industry Recognized Test Methodologies				
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK			
Measurement Uncertainty:	±2.81 dB			

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	600 kbps OFDM	Duty Cycle (%):	99
Data Rate:	600.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Test	Ме	asured 20 dB	Bandwidth (M	Hz)	20 dB Bond	width (MU-)	Limit	Lowest
Frequency		Poi	rt(s)		20 dB Bandwidth (MHz)			Margin
MHz	а	b	С	d	Highest	Lowest	MHz	MHz
902.4	<u>0.356</u>				0.356	0.356	0.5	-0.14
915.2	<u>0.362</u>				0.362	0.362	0.5	-0.14
927.6	<u>0.359</u>				0.359	0.359	0.5	-0.14

Test		Measured 99% E	Bandwidth (MHz	Maximum		
Frequency		Por	rt(s)	99% Bandwidth		
MHz	а	b	С	d	(MHz)	
902.4	<u>0.300</u>				0.300	
915.2	<u>0.300</u>				0.300	
927.6	0.301				0.301	

Traceability to Industry Recognized Test Methodologies				
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK			
Measurement Uncertainty:	±2.81 dB			

Note: click the links in the above matrix to view the graphical image (plot).



# 2.2. Frequency Hopping Tests

Conducted Test Conditions for Frequency Hopping Measurements							
Standard:	CC CFR 47:15.247         Ambient Temp. (°C):         24.0 - 27.5						
Test Heading:	Frequency Hopping Tests     Rel. Humidity (%):     32 - 45						
Standard Section(s):	15.247 (a)(1)(i)/(ii)	15.247 (a)(1)(i)/(ii) <b>Pressure (mBars):</b> 999 - 1001					
Reference Document(s):	See Normative References, FCC Public Notice DA 00-705						

### **Test Procedure for Frequency Hopping Measurements**

These tests cover the following measurements:

- i) channel separation
- ii) channel occupancy
- iii) dwell time
- iv) number of hopping frequencies

Frequency hopping testing was measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency or hopping mode.

Testing was performed under ambient conditions at nominal voltage. Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured and reported.

Test configuration and setup used for the measurement was per the Conducted Test Set-up specified in this document.

#### Limits for Frequency Hopping Measurements

(a) Operation under the provisions of this Section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:

(1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

(i) For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

(ii) Frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

(iii) Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.



### 2.2.1. Number of Hopping Channels

### Equipment Configuration for Number of Hopping Channels

Variant:	100 kbps FSK	Antenna:	Not Applicable
Data Rate:	100.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	FSK	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	СС
Engineering Test Notes:	None		

### **Test Measurement Results**

Frequency Range (MHz)	Number of Hopping Channels	Limit	Pass / Fail
902.0-910.0	<u>26</u>		
910.0-920.0	<u>34</u>		
920.0-928.0	<u>23</u>		
Total number of Hops	83	50	Pass

Traceability to Industry Recognized Test Methodologies		
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK	
Measurement Uncertainty:	±2.81 dB	

Note: click the links in the above matrix to view the graphical image (plot).

### **Equipment Configuration for Number of Hopping Channels**

Variant:	150 kbps FSK	Antenna:	Not Applicable
Data Rate:	150.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	FSK	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	СС
Engineering Test Notes:	None		

### **Test Measurement Results**

Frequency Range (MHz)	Number of Hopping Channels	Limit	Pass / Fail
902.0-910.0	<u>20</u>		
910.0-920.0	<u>25</u>		
920.0-928.0	<u>19</u>		
Total number of Hops	64	50	Pass

### Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

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### Equipment Configuration for Number of Hopping Channels

Variant:	150 kbps GFSK	Antenna:	Not Applicable
Data Rate:	150.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Frequency Range (MHz)	Number of Hopping Channels	Limit	Pass / Fail
902.0-910.0	<u>26</u>		
910.0-920.0	<u>34</u>		
920.0-928.0	<u>23</u>		
Total number of Hops	83	50	Pass

Traceability to Industry Recognized Test Methodologies		
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK	
Measurement Uncertainty:	±2.81 dB	

Note: click the links in the above matrix to view the graphical image (plot).

### **Equipment Configuration for Number of Hopping Channels**

Variant:	200 kbps GFSK	Antenna:	Not Applicable
Data Rate:	200.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	CC
Engineering Test Notes:	None		

#### **Test Measurement Results**

Frequency Range (MHz)	Number of Hopping Channels	Limit	Pass / Fail
902.0-910.0	<u>26</u>		
910.0-920.0	<u>34</u>		
920.0-928.0	<u>23</u>		
Total number of Hops	83	50	Pass

Traceability to Industry Recognized Test Methodologies		
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK	
Measurement Uncertainty:	±2.81 dB	

Note: click the links in the above matrix to view the graphical image (plot).

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### Equipment Configuration for Number of Hopping Channels

Variant:	300 kbps GFSK	Antenna:	Not Applicable
Data Rate:	300.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Frequency Range (MHz)	Number of Hopping Channels	Limit	Pass / Fail
902.0-910.0	<u>20</u>		
910.0-920.0	<u>25</u>		
920.0-928.0	<u>19</u>		
Total number of Hops	64	50	Pass

Traceability to Industry Recognized Test Methodologies		
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK	
Measurement Uncertainty:	±2.81 dB	

Note: click the links in the above matrix to view the graphical image (plot).

### **Equipment Configuration for Number of Hopping Channels**

Variant:	50 kbps 2FSK	Antenna:	Not Applicable
Data Rate:	50.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	2FSK	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	СС
Engineering Test Notes:	None		

#### **Test Measurement Results**

Frequency Range (MHz)	Number of Hopping Channels	Limit	Pass / Fail
902.0-910.0	<u>40</u>		
910.0-920.0	<u>50</u>		
920.0-928.0	<u>39</u>		
Total number of Hops	129	50	Pass

Traceability to Industry Recognized Test Methodologies		
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK	
Measurement Uncertainty:	±2.81 dB	

Note: click the links in the above matrix to view the graphical image (plot).

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### Equipment Configuration for Number of Hopping Channels

Variant:	6.25 kbps OQPSK	Antenna:	Not Applicable
Data Rate:	6.25 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	OQPSK	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Frequency Range (MHz)	Number of Hopping Channels	Limit	Pass / Fail
902.0-910.0	<u>40</u>		
910.0-920.0	<u>50</u>		
920.0-928.0	<u>39</u>		
Total number of Hops	129	50	Pass

Traceability to Industry Recognized Test Methodologies		
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK	
Measurement Uncertainty:	±2.81 dB	

Note: click the links in the above matrix to view the graphical image (plot).

### **Equipment Configuration for Number of Hopping Channels**

Variant:	600 kbps OFDM	Antenna:	Not Applicable
Data Rate:	600.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	CC
Engineering Test Notes:	None		

#### **Test Measurement Results**

Frequency Range (MHz)	Number of Hopping Channels	Limit	Pass / Fail
902.0-910.0	<u>20</u>		
910.0-920.0	<u>25</u>		
920.0-928.0	<u>19</u>		
Total number of Hops	64	50	Pass

Traceability to Industry Recognized Test Methodologies		
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK	
Measurement Uncertainty:	±2.81 dB	

Note: click the links in the above matrix to view the graphical image (plot).

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### 2.2.2. Channel Separation

### **Equipment Configuration for Channel Separation**

Variant:	100 kbps FSK	Antenna:	Not Applicable
Data Rate:	100.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	FSK	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Center Frequency (MHz)	Chan Separation (MHz)	Limit (MHz)	Pass / Fail
915.2	<u>0.304</u>	0.121	Pass

Traceability to Industry Recognized Test Methodologies		
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK	
Measurement Uncertainty:	±2.81 dB	

Note: click the links in the above matrix to view the graphical image (plot).

### **Equipment Configuration for Channel Separation**

Variant:	150 kbps FSK	Antenna:	Not Applicable
Data Rate:	150.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	FSK	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Center Frequency (MHz)	Chan Separation (MHz)	Limit (MHz)	Pass / Fail
915.2	<u>0.406</u>	0.183	Pass

Traceability to Industry Recognized Test Methodologies		
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK	
Measurement Uncertainty:	±2.81 dB	

Note: click the links in the above matrix to view the graphical image (plot).

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### **Equipment Configuration for Channel Separation**

Variant:	150 kbps GFSK	Antenna:	Not Applicable
Data Rate:	150.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Center Frequency (MHz)	Chan Separation (MHz)	Limit (MHz)	Pass / Fail
915.2	<u>0.308</u>	0.189	Pass

Traceability to Industry Recognized Test Methodologies		
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK	
Measurement Uncertainty:	±2.81 dB	

Note: click the links in the above matrix to view the graphical image (plot).

### **Equipment Configuration for Channel Separation**

Variant:	200 kbps GFSK	Antenna:	Not Applicable
Data Rate:	200.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	CC
Engineering Test Notes:	None		L

### Test Measurement Results

Center Frequency (MHz)	Chan Separation (MHz)	Limit (MHz)	Pass / Fail
915.2	<u>0.305</u>	0.246	Pass

Traceability to Industry Recognized Test Methodologies		
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK	
Measurement Uncertainty:	±2.81 dB	

Note: click the links in the above matrix to view the graphical image (plot).

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### **Equipment Configuration for Channel Separation**

Variant:	300 kbps GFSK	Antenna:	Not Applicable
Data Rate:	300.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Center Frequency (MHz)	Chan Separation (MHz)	Limit (MHz)	Pass / Fail
915.2	<u>0.404</u>	0.367	Pass

Traceability to Industry Recognized Test Methodologies			
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK		
Measurement Uncertainty:	±2.81 dB		

Note: click the links in the above matrix to view the graphical image (plot).

### **Equipment Configuration for Channel Separation**

Variant:	50 kbps 2FSK	Antenna:	Not Applicable
Data Rate:	50.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	2FSK	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	СС
Engineering Test Notes:	None		

### **Test Measurement Results**

Center Frequency (MHz)	Chan Separation (MHz)	Limit (MHz)	Pass / Fail
915.0	<u>0.202</u>	0.085	Pass

Traceability to Industry Recognized Test Methodologies		
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK	
Measurement Uncertainty:	±2.81 dB	

Note: click the links in the above matrix to view the graphical image (plot).

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### **Equipment Configuration for Channel Separation**

Variant:	6.25 kbps OQPSK	Antenna:	Not Applicable
Data Rate:	6.25 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	OQPSK	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Center Frequency (MHz)	Chan Separation (MHz)	Limit (MHz)	Pass / Fail
915.0	<u>0.203</u>	0.126	Pass

Traceability to Industry Recognized Test Methodologies		
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK	
Measurement Uncertainty:	±2.81 dB	

Note: click the links in the above matrix to view the graphical image (plot).

### **Equipment Configuration for Channel Separation**

Variant:	600 kbps OFDM	Antenna:	Not Applicable
Data Rate:	600.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	СС
Engineering Test Notes:	None		

### Test Measurement Results

Center Frequency (MHz)	Chan Separation (MHz)	Limit (MHz)	Pass / Fail
915.2	<u>0.414</u>	0.362	Pass

Traceability to Industry Recognized Test Methodologies			
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK		
Measurement Uncertainty:	±2.81 dB		

Note: click the links in the above matrix to view the graphical image (plot).

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### 2.2.3. Dwell Time

### **Equipment Configuration for Channel Occupancy**

Variant:	100 kbps FSK	Antenna:	Not Applicable
Data Rate:	100.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	FSK	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Channel Frequency(MHz)	Dwell Time (Single Burst) (S)	Channel Occupancy (mS)	Observation Period (S)	Channel Occupancy Limit (mS)	Pass / Fail
915.20	<u>0.021</u>	<u>62.530</u>	20.00	400.000	Pass

Traceability to Industry Recognized Test Methodologies		
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK	
Measurement Uncertainty:	±2.81 dB	

Note: click the links in the above matrix to view the graphical image (plot).

### **Equipment Configuration for Channel Occupancy**

Variant:	150 kbps FSK	Antenna:	Not Applicable
Data Rate:	150.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	FSK	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Channel Frequency(MHz)	Dwell Time (Single Burst) (S)	Channel Occupancy (mS)	Observation Period (S)	Channel Occupancy Limit (mS)	Pass / Fail
915.20	<u>0.020</u>	<u>79.360</u>	20.00	400.000	Pass

Traceability to Industry Recognized Test Methodologies		
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK	
Measurement Uncertainty:	±2.81 dB	

Note: click the links in the above matrix to view the graphical image (plot).

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Silver Spring Networks MicroAP 5 FCC CFR 47 Part 15.247 (FHSS) & IC RSS-247 Serial #: SSNT135-U4\_Conducted Rev A **Issue Date:** 1<sup>st</sup> February 2017

### **Equipment Configuration for Channel Occupancy**

Variant:	150 kbps GFSK	Antenna:	Not Applicable
Data Rate:	150.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Channel Frequency(MHz)	Dwell Time (Single Burst) (S)	Channel Occupancy (mS)	Observation Period (S)	Channel Occupancy Limit (mS)	Pass / Fail
915.20	<u>0.019</u>	<u>57.110</u>	20.00	400.000	Pass

Traceability to Industry Recognized Test Methodologies		
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK	
Measurement Uncertainty:	±2.81 dB	

Note: click the links in the above matrix to view the graphical image (plot).

### **Equipment Configuration for Channel Occupancy**

Variant:	200 kbps GFSK	Antenna:	Not Applicable
Data Rate:	200.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	СС
Engineering Test Notes:	None		

**Test Measurement Results** 

Channel Frequency(MHz)	Dwell Time (Single Burst) (S)	Channel Occupancy (mS)	Observation Period (S)	Channel Occupancy Limit (mS)	Pass / Fail
915.20	<u>0.019</u>	<u>57.720</u>	20.00	400.000	Pass

Traceability to Industry Recognized Test Methodologies		
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK	
Measurement Uncertainty:	±2.81 dB	

Note: click the links in the above matrix to view the graphical image (plot).

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Silver Spring Networks MicroAP 5 To: FCC CFR 47 Part 15.247 (FHSS) & IC RSS-247 Serial #: SSNT135-U4\_Conducted Rev A **Issue Date:** 1<sup>st</sup> February 2017

### **Equipment Configuration for Channel Occupancy**

Variant:	300 kbps GFSK	Antenna:	Not Applicable
Data Rate:	300.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Channel Frequency(MHz)	Dwell Time (Single Burst) (S)	Channel Occupancy (mS)	Observation Period (S)	Channel Occupancy Limit (mS)	Pass / Fail
915.20	<u>0.019</u>	<u>38.480</u>	10.00	400.000	Pass

Traceability to Industry Recognized Test Methodologies		
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK	
Measurement Uncertainty:	±2.81 dB	

Note: click the links in the above matrix to view the graphical image (plot).

### **Equipment Configuration for Channel Occupancy**

Variant:	50 kbps 2FSK	Antenna:	Not Applicable
Data Rate:	50.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	2FSK	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	CC
Engineering Test Notes:	None		

**Test Measurement Results** 

Channel Frequency(MHz)	Dwell Time (Single Burst) (S)	Channel Occupancy (mS)	Observation Period (S)	Channel Occupancy Limit (mS)	Pass / Fail
915.00	<u>0.022</u>	<u>67.330</u>	20.00	400.000	Pass

Traceability to Industry Recognized Test Methodologies		
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK	
Measurement Uncertainty:	±2.81 dB	

Note: click the links in the above matrix to view the graphical image (plot).

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### **Equipment Configuration for Channel Occupancy**

Variant:	6.25 kbps OQPSK	Antenna:	Not Applicable
Data Rate:	6.25 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	OQPSK	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Channel Frequency(MHz)	Dwell Time (Single Burst) (S)	Channel Occupancy (mS)	Observation Period (S)	Channel Occupancy Limit (mS)	Pass / Fail
915.00	<u>0.051</u>	<u>153.910</u>	20.00	400.000	Pass

Traceability to Industry Recognized Test Methodologies		
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK	
Measurement Uncertainty:	±2.81 dB	

Note: click the links in the above matrix to view the graphical image (plot).

### **Equipment Configuration for Channel Occupancy**

Variant:	600 kbps OFDM	Antenna:	Not Applicable
Data Rate:	600.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
Duty Cycle (%):	99.0	Tested By:	CC
Engineering Test Notes:	None		

**Test Measurement Results** 

Channel Frequency(MHz)	Dwell Time (Single Burst) (S)	Channel Occupancy (mS)	Observation Period (S)	Channel Occupancy Limit (mS)	Pass / Fail
915.20	<u>0.022</u>	<u>43.290</u>	10.00	400.000	Pass

Traceability to Industry Recognized Test Methodologies		
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK	
Measurement Uncertainty:	±2.81 dB	

Note: click the links in the above matrix to view the graphical image (plot).

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# 2.3. Output Power

Conducted Test Conditions for Fundamental Emission Output Power									
Standard:	FCC CFR 47:15.247	CC CFR 47:15.247 Ambient Temp. (°C): 24.0 - 27.5							
Test Heading:	Output Power	Dutput Power Rel. Humidity (%): 32 - 45							
Standard Section(s):	15.247 (a)(1), (b)(1)/(2)/(3)	5.247 (a)(1), (b)(1)/(2)/(3) <b>Pressure (mBars):</b> 999 - 1001							
Reference Document(s):	See Normative References								

### Test Procedure for Fundamental Emission Output Power Measurement

In the case of average power measurements an average power sensor was utilized.

For peak power measurements the spectrum analyzer built-in power function was used to integrate peak power over the 20 dB bandwidth.

Testing was performed under ambient conditions, nominal voltage. Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured, summed ( $\Sigma$ ) and reported.

Test configuration and setup used for the measurement was per the Conducted Test Set-up specified in this document. Supporting Information

Calculated Power =  $A + G + Y + 10 \log (1/x) dBm$ 

A = Total Power  $[10^{*}Log10 (10^{a/10} + 10^{b/10} + 10^{c/10} + 10^{d/10})]$ 

G = Antenna Gain

Y = Beamforming Gain

x = Duty Cycle (average power measurements only)

### Limits for Fundamental Emission Output Power

(a) Operation under the provisions of this Section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:

(1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

(b) The maximum peak conducted output power of the intentional radiator shall not exceed the following for frequency hopping systems:

(1) For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

(2) For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

(3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum

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conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.



Variant:	100 kbps FSK	Duty Cycle (%):	99.0
Data Rate:	100.00 KBit/s	Antenna Gain (dBi):	0.00
Modulation:	FSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Test	N	leasured Outp	ut Power (dBn	n)	Calculated	Limit	Margin	
Frequency	Port(s)				Σ Port(s)	Linin	Margin	EUT Power Setting
MHz	а	b	С	d	dBm	dBm	dB	3
902.3	29.51				29.51	30.00	-0.49	31.00
915.2	29.03				29.03	30.00	-0.97	31.00
926.9	28.73				28.73	30.00	-1.27	31.00

### Traceability to Industry Recognized Test Methodologies

Work Instruction: WI-01 MEASURING RF OUTPUT POWER

Measurement Uncertainty: ±1.33 dB

The above measurements are true pulse readings and therefore a Duty Cycling correction factor is not required.

### **Equipment Configuration for Output Power Peak**

Variant:	150 kbps FSK	Duty Cycle (%):	99.0
Data Rate:	150.00 KBit/s	Antenna Gain (dBi):	0.00
Modulation:	FSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Test Frequency	Measured Output Power (dBm) Port(s)				Calculated Total Power Σ Port(s)	Limit	Margin	EUT Power Setting
MHz	а	b	С	d	dBm	dBm	dB	j
902.4	29.42				29.42	30.00	-0.58	31.00
915.2	29.03				29.03	30.00	-0.97	31.00
927.6	28.76				28.76	30.00	-1.24	31.00

### Traceability to Industry Recognized Test Methodologies

 Work Instruction:
 WI-01 MEASURING RF OUTPUT POWER

 Measurement Uncertainty:
 ±1.33 dB

The above measurements are true pulse readings and therefore a Duty Cycling correction factor is not required.

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Variant:	150 kbps GFSK	Duty Cycle (%):	99.0
Data Rate:	150.00 KBit/s	Antenna Gain (dBi):	0.00
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Test	N	leasured Outp	ut Power (dBn	n)	Calculated	Limit	Margin	
Frequency		Ροι	t(s)		Σ Port(s)			Setting
MHz	а	b	С	d	dBm	dBm	dB	Ŭ
902.3	29.26				29.26	30.00	-0.74	31.00
915.2	29.03				29.03	30.00	-0.97	31.00
926.9	28.80				28.80	30.00	-1.20	31.00

### Traceability to Industry Recognized Test Methodologies

Work Instruction: WI-01 MEASURING RF OUTPUT POWER

Measurement Uncertainty: ±1.33 dB

The above measurements are true pulse readings and therefore a Duty Cycling correction factor is not required.

### **Equipment Configuration for Output Power Peak**

Variant:	200 kbps GFSK	Duty Cycle (%):	99.0
Data Rate:	200.00 KBit/s	Antenna Gain (dBi):	0.00
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Test Frequency	Measured Output Power (dBm) Port(s)				Calculated Total Power Σ Port(s)	Limit	Margin	EUT Power Setting
MHz	а	b	С	d	dBm	dBm	dB	J
902.3	28.88				28.88	30.00	-1.12	31.00
915.2	28.87				28.87	30.00	-1.13	31.00
926.9	28.62				28.62	30.00	-1.38	31.00

### Traceability to Industry Recognized Test Methodologies

Work Instruction:WI-01 MEASURING RF OUTPUT POWERMeasurement Uncertainty:±1.33 dB

The above measurements are true pulse readings and therefore a Duty Cycling correction factor is not required.

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Variant:	300 kbps GFSK	Duty Cycle (%):	99.0
Data Rate:	300.00 KBit/s	Antenna Gain (dBi):	0.00
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Test	N	leasured Outp	ut Power (dBn	n)	Calculated Total Power	Limit	Margin	EUT Power
Frequency		Poi	rt(s)		Σ Port(s)		-	Setting
MHz	а	b	С	d	dBm	dBm	dB	Ĵ
902.4	29.33				29.33	30.00	-0.67	31.00
915.2	28.88				28.88	30.00	-1.12	31.00
927.6	28.62				28.62	30.00	-1.38	31.00

### Traceability to Industry Recognized Test Methodologies

Work Instruction: WI-01 MEASURING RF OUTPUT POWER

Measurement Uncertainty: ±1.33 dB

The above measurements are true pulse readings and therefore a Duty Cycling correction factor is not required.

### **Equipment Configuration for Output Power Peak**

Variant:	50 kbps 2FSK	Duty Cycle (%):	99.0
Data Rate:	50.00 KBit/s	Antenna Gain (dBi):	0.00
Modulation:	2FSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Test Frequency	N	leasured Outp Poi	ut Power (dBn t(s)	n)	Calculated Total Power Σ Port(s)	Limit	Margin	EUT Power Setting
MHz	а	b	С	d	dBm	dBm	dB	J
902.2	29.23				29.23	30.00	-0.77	31.00
915.0	29.24				29.24	30.00	-0.76	31.00
927.8	28.77				28.77	30.00	-1.23	31.00

### Traceability to Industry Recognized Test Methodologies

 Work Instruction:
 WI-01 MEASURING RF OUTPUT POWER

 Measurement Uncertainty:
 ±1.33 dB

The above measurements are true pulse readings and therefore a Duty Cycling correction factor is not required.

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Variant:	6.25 kbps OQPSK	Duty Cycle (%):	99.0
Data Rate:	6.25 KBit/s	Antenna Gain (dBi):	0.00
Modulation:	OQPSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Test	N	leasured Outp	ut Power (dBn	n)	Calculated Total Power	Limit	Margin	EUT Power Setting
Frequency		PO	τ(s)		Σ Port(s)			
MHz	а	b	с	d	dBm	dBm	dB	C C
902.2	29.26				29.26	30.00	-0.74	29.00
915.0	29.21				29.21	30.00	-0.79	29.00
927.8	29.26				29.26	30.00	-0.74	29.00

### Traceability to Industry Recognized Test Methodologies

 Work Instruction:
 WI-01 MEASURING RF OUTPUT POWER

 Measurement Uncertainty:
 ±1.33 dB

The above measurements are true pulse readings and therefore a Duty Cycling correction factor is not required.

### **Equipment Configuration for Output Power Peak**

Variant:	600 kbps OFDM	Duty Cycle (%):	99.0
Data Rate:	600.00 KBit/s	Antenna Gain (dBi):	0.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Test Frequency	N	leasured Outp Poi	ut Power (dBn <sup>r</sup> t(s)	n)	Calculated Total Power Σ Port(s)	Limit	Margin	EUT Power Setting
MHz	а	b	С	d	dBm	dBm	dB	J
902.4	28.68				28.68	30.00	-1.32	18.00
915.2	28.57				28.57	30.00	-1.43	18.00
927.6	28.34				28.34	30.00	-1.66	18.00

### Traceability to Industry Recognized Test Methodologies

 Work Instruction:
 WI-01 MEASURING RF OUTPUT POWER

 Measurement Uncertainty:
 ±1.33 dB

The above measurements are true pulse readings and therefore a Duty Cycling correction factor is not required.

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## 2.4. Emissions

### 2.4.1. Conducted Emissions

Conducted Test Conditions for Transmitter Conducted Spurious and Band-Edge Emissions							
Standard:	FCC CFR 47:15.247	Ambient Temp. (°C):	24.0 - 27.5				
Test Heading:	Transmitter Conducted Spurious and Band-Edge Emissions	Rel. Humidity (%):	32 - 45				
Standard Section(s):	15.247 (d)	Pressure (mBars):	999 - 1001				
Reference Document(s):	See Normative References						

### Test Procedure for Transmitter Conducted Spurious and Band-Edge Emissions Measurement

Transmitter Conducted Spurious and Band-Edge emissions were measured at a limit of 30 dBc (average detector) or 20 dBc (peak detector) below the highest in-band spectral density measured with a spectrum analyzer connected to the antenna terminal. Measurements were made while EUT was operating in transmit mode of operation at the appropriate centre frequency closest to the band-edge. Emissions were maximized during the measurement and limits derived from the peak spectral power and drawn on each plot.

Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured separately. Testing was performed under ambient conditions at nominal voltage only.

Test configuration and setup used for the measurement was per the Conducted Test Set-up specified in this document.

### Limits Transmitter Conducted Spurious and Band-Edge Emissions

(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).



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### 2.4.1.1. Conducted Unwanted Spurious Emissions

	Equipment Configuration for Unwanted Emissions Peak							
Variant:	100 kbps FSK	Duty Cycle (%):	99					
Data Rate:	100.00 KBit/s	Antenna Gain (dBi):	Not Applicable					
Modulation:	FSK	Beam Forming Gain (Y):	Not Applicable					
TPC:	Not Applicable	Tested By:	CC					
Engineering Test Notes:	None							

### **Test Measurement Results**

Test	Frequency	Unwanted Emissions Peak (dBm)										
Frequency	Range	P	ort a	Po	rt b	Po	rt c	Po	rt d			
MHz	MHz	SE	Limit	SE	Limit	SE	Limit	SE	Limit			
902.3	30.0 - 10000.0	<u>-33.092</u>	9.00									
915.2	30.0 - 10000.0	<u>-32.777</u>	9.00									
926.9	30.0 - 10000.0	-32.526	8.00									

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS				
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"				

Note: click the links in the above matrix to view the graphical image (plot).



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Variant:	150 kbps FSK	Duty Cycle (%):	99
Data Rate:	150.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	FSK	Beam Forming Gain (Y):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Test	Frequency	Unwanted Emissions Peak (dBm)									
Frequency	Range	P	ort a	Po	rt b	Po	rt c	Po	rt d		
MHz	MHz	SE	Limit	SE	Limit	SE	Limit	SE	Limit		
902.4	30.0 - 10000.0	<u>-32.699</u>	8.00								
915.2	30.0 - 10000.0	<u>-33.222</u>	9.00								
927.6	30.0 - 10000.0	<u>-7.101</u>	8.00								

Traceability to Industry Recognized Test Methodologies				
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS			
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"			

Note: click the links in the above matrix to view the graphical image (plot).



### Equipment Configuration for Unwanted Emissions Peak

Variant:	150 kbps GFSK	Duty Cycle (%):	99
Data Rate:	150.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Test	Frequency		Unwanted Emissions Peak (dBm)						
Frequency	Range	P	ort a	Po	rt b	Po	rt c	Po	rt d
MHz	MHz	SE	Limit	SE	Limit	SE	Limit	SE	Limit
902.3	30.0 - 10000.0	<u>-33.397</u>	8.00						
915.2	30.0 - 10000.0	<u>-33.824</u>	9.00						
926.9	30.0 - 10000.0	-33.472	8.00						

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS				
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"				

Note: click the links in the above matrix to view the graphical image (plot).



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Variant:	200 kbps GFSK	Duty Cycle (%):	99
Data Rate:	200.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Test	Frequency		Unwanted Emissions Peak (dBm)						
Frequency	Range	P	ort a	Po	rt b	Po	rt c	Po	rt d
MHz	MHz	SE	Limit	SE	Limit	SE	Limit	SE	Limit
902.3	30.0 - 10000.0	<u>-33.421</u>	8.00						
915.2	30.0 - 10000.0	<u>-32.486</u>	8.00						
926.9	30.0 - 10000.0	-33.169	8.00						

Traceability to Industry Recognized Test Methodologies				
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS			
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"			

Note: click the links in the above matrix to view the graphical image (plot).


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Variant:	300 kbps GFSK	Duty Cycle (%):	99
Data Rate:	300.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

Test	Frequency		Unwanted Emissions Peak (dBm)							
Frequency	Range	P	Port a		Port b		Port c		Port d	
MHz	MHz	SE	Limit	SE	Limit	SE	Limit	SE	Limit	
902.4	30.0 - 10000.0	<u>-33.718</u>	3.00							
915.2	30.0 - 10000.0	<u>-32.675</u>	8.00							
927.6	30.0 - 10000.0	<u>3.294</u>	8.90							

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS				
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"				

Note: click the links in the above matrix to view the graphical image (plot).



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Variant:	50 kbps 2FSK	Duty Cycle (%):	99
Data Rate:	50.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	2FSK	Beam Forming Gain (Y):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

Test	Frequency		Unwanted Emissions Peak (dBm)						
Frequency	Range	P	ort a	Po	rt b	Po	rt c	Po	rt d
MHz	MHz	SE	Limit	SE	Limit	SE	Limit	SE	Limit
902.2	30.0 - 10000.0	<u>-33.065</u>	9.00						
915.0	30.0 - 10000.0	<u>-32.878</u>	9.00						
927.8	30.0 - 10000.0	<u>-22.791</u>	8.00						

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS				
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"				

Note: click the links in the above matrix to view the graphical image (plot).



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Variant:	6.25 kbps OQPSK	Duty Cycle (%):	99
Data Rate:	6.25 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	OQPSK	Beam Forming Gain (Y):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

Test	Frequency		Unwanted Emissions Peak (dBm)						
Frequency	Range	P	ort a	Port b		Port c		Port d	
MHz	MHz	SE	Limit	SE	Limit	SE	Limit	SE	Limit
902.2	30.0 - 10000.0	<u>-33.025</u>	9.00						
915.0	30.0 - 10000.0	<u>-32.888</u>	9.00						
927.8	30.0 - 10000.0	<u>-23.210</u>	8.00						

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS				
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"				

Note: click the links in the above matrix to view the graphical image (plot).



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Variant:	600 kbps OFDM	Duty Cycle (%):	99
Data Rate:	600.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	OFDM	Beam Forming Gain (Y):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

Test	Frequency		Unwanted Emissions Peak (dBm)						
Frequency	Range	P	ort a	Po	rt b	Ро	rt c	Po	rt d
MHz	MHz	SE	Limit	SE	Limit	SE	Limit	SE	Limit
902.4	30.0 - 10000.0	<u>-33.619</u>	5.00						
915.2	30.0 - 10000.0	<u>-33.267</u>	3.00						
927.6	30.0 - 10000.0	<u>-7.621</u>	3.00						

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS				
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"				

Note: click the links in the above matrix to view the graphical image (plot).



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# 2.4.1.2. Conducted Band-Edge Emissions

Conducted Low Band-Edge Emissions

Equipment Configuration for Conducted Low Band-Edge Emissions (Hopping) Peak

Variant:	100 kbps FSK	Duty Cycle (%):	99.0
Data Rate:	100.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	FSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

# Test Measurement Results

Channel	002 2 MH-					
Frequency:	302.3 WI 12					
Band-Edge	002 0 MHz					
Frequency:	302.0 WII IZ					
Test Frequency	875 0 - 905 0 MHz	,				
Range:	075.0 - 305.0 10112					
	Band-Edge Markers and Limit Revised Limit Mar				Margin	
Port(s)	M1 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
а	<u>-6.46</u>	9.00	902.10			-0.100

Traceability to Industry Recognized Test Methodologies						
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS					
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"					

Note: click the links in the above matrix to view the graphical image (plot).

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Variant:	150 kbps FSK	Duty Cycle (%):	99.0
Data Rate:	150.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	FSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

# **Test Measurement Results**

Band-Edge 902.0 MHz	
Band-Edge 902 0 MHz	
Frequency:	
Test Frequency Range: 875.0 - 905.0 MHz	
Band-Edge Markers and Limit	Revised Limit Margin
Port(s) M1 Amplitude (dBm) Plot Limit (dBm) M2 Frequency (dHz) (dF	litude M2A Frequency (MHz) 3m) (MHz)
<b>a</b> <u>-14.70</u> 9.00 902.20 -	0.200

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS				
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"				

Note: click the links in the above matrix to view the graphical image (plot).

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Variant:	150 kbps GFSK	Duty Cycle (%):	99.0
Data Rate:	150.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

# **Test Measurement Results**

Channel Frequency:	902.3 MHz					
Band-Edge Frequency:	902.0 MHz					
Test Frequency Range:	875.0 - 905.0 MHz					
	Band-Edge Markers and Limit Revised Limit Ma				Margin	
Port(s)	M1 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
а	<u>-6.81</u>	9.00	902.10			-0.100

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS				
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"				

Note: click the links in the above matrix to view the graphical image (plot).

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Variant:	200 kbps GFSK	Duty Cycle (%):	99.0
Data Rate:	200.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

# **Test Measurement Results**

90	02.3 MHz					
Frequency:						
Band-Edge	02.0 MHz					
Frequency:	02.0 10112					
Test Frequency Range: 87	75.0 - 905.0 MHz					
	Band-	Edge Markers and	Limit	Revise	d Limit	Margin
Port(s)	M1 Amplitude (dBm) Plot Limit (dBm) M2 Frequency (MHz) (dBm) (MHz) (MHz) (MHz) (MHz) (MHz)					(MHz)
а	<u>-3.00</u>	9.00	902.10			-0.100

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS				
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"				

Note: click the links in the above matrix to view the graphical image (plot).

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Variant:	300 kbps GFSK	Duty Cycle (%):	99.0
Data Rate:	300.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:	None		

# **Test Measurement Results**

Channel Frequency:	902.4 MHz					
Band-Edge Frequency:	902.0 MHz					
Test Frequency Range:	875.0 - 905.0 MHz					
	Band-	Edge Markers and	Limit	Revise	d Limit	Margin
Port(s)	M1 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
а	<u>-7.78</u>	9.00	902.10			-0.100

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS				
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"				

Note: click the links in the above matrix to view the graphical image (plot).

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Variant:	50 kbps 2FSK	Duty Cycle (%):	99.0
Data Rate:	50.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	2FSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

# **Test Measurement Results**

Frequency:	902.2 MHz					
Band-Edge Frequency:	902.0 MHz					
Test Frequency Range: 8	875.0 - 905.0 MHz					
	Band-	Edge Markers and	Limit	Revise	d Limit	Margin
Port(s)	M1 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
а	<u>-2.31</u>	9.00	902.10			-0.100

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS				
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"				

Note: click the links in the above matrix to view the graphical image (plot).

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Variant:	6.25 kbps OQPSK	Duty Cycle (%):	99.0
Data Rate:	6.25 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	OQPSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:	None	-	

# **Test Measurement Results**

Channel	902.2 MHz					
Frequency:						
Band-Edge	902.0 MHz					
Frequency:						
Test Frequency Range:	875.0 - 905.0 MHz					
	Band	Edge Markers and	Limit	Revise	d Limit	Margin
Port(s)	M1 Amplitude (dBm) Plot Limit (dBm) M2 Frequency (MHz) (dBm) M2A Frequency (MHz) (dBm) (MHz) (MHz) (MHz)					(MHz)
а	<u>5.37</u>	9.00	902.00			0.000
					1	

Traceability to Industry Recognized Test Methodologies						
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS					
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"					

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	600 kbps OFDM	Duty Cycle (%):	99.0
Data Rate:	600.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:	None		

# **Test Measurement Results**

Channel Frequency:	902.4 MHz					
Band-Edge Frequency:	902.0 MHz					
Test Frequency Range:	875.0 - 905.0 MHz					
	Band-	Edge Markers and	Limit	Revise	d Limit	Margin
Port(s)	M1 Amplitude (dBm) Plot Limit (dBm) M2 Frequency (MHz) (dBm) (MHz) (MHz)					(MHz)
а	<u>-12.74</u>	5.00	902.20			-0.200

Traceability to Industry Recognized Test Methodologies						
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS					
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"					

Note: click the links in the above matrix to view the graphical image (plot).

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Variant:	100 kbps FSK	Duty Cycle (%):	99.0
Data Rate:	100.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	FSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:	None		

### Test Measurement Results

Channel Frequency:	902.3 MHz					
Band-Edge Frequency:	902.0 MHz					
Test Frequency Range:	875.0 - 905.0 MHz					
	Band	Edge Markers and	Limit	Revise	d Limit	Margin
Port(s)	M1 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
а	<u>-8.12</u>	9.00	902.10			-0.100

Traceability to Industry Recognized Test Methodologies						
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS					
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"					

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	150 kbps FSK	Duty Cycle (%):	99.0
Data Rate:	150.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	FSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:	None		

# **Test Measurement Results**

Channel	902.4 MHz					
Band-Edge						
Frequency:	902.0 MHz					
Test Frequency Range:	875.0 - 905.0 MHz	:				
	Band-	Edge Markers and	l Limit	Revise	ed Limit	Margin
Port(s)	M1 Amplitude (dBm) Plot Limit (dBm) M2 Frequency (MHz) (dBm) (M2 Frequency (dBm) (MHz) (MHz)				(MHz)	
а	<u>-16.42</u>	9.00	902.20			-0.200

Traceability to Industry Recognized Test Methodologies						
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS					
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"					

Note: click the links in the above matrix to view the graphical image (plot).

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Variant:	150 kbps GFSK	Duty Cycle (%):	99.0
Data Rate:	150.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

# **Test Measurement Results**

Channel Frequency:	902.3 MHz					
Band-Edge Frequency:	902.0 MHz					
Test Frequency Range:	875.0 - 905.0 MHz					
	Band-	Edge Markers and	Limit	Revise	d Limit	Margin
Port(s)	M1 Amplitude (dBm) Plot Limit (dBm) M2 Frequency (MHz) (dBm) (MHz) (dBm) (MHz)				(MHz)	
а	<u>-5.13</u>	9.00	902.10			-0.100

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS				
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"				

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	200 kbps GFSK	Duty Cycle (%):	99.0
Data Rate:	200.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:	None		

# **Test Measurement Results**

Channel	902.3 MHz					
Frequency:						
Band-Edge	902.0 MHz					
Frequency:	002.0 10112					
Test Frequency Range:	875.0 - 905.0 MHz					
	Band	Band-Edge Markers and Limit Revised Limit Margin				
Port(s)	M1 Amplitude (dBm) Plot Limit (dBm) M2 Frequency (MHz) Amplitude (dBm) M2A Frequency (MHz) (MHz)					(MHz)
а	<u>-1.53</u>	8.00	902.00			0.000
		0.00	002100		1	

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS				
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"				

Note: click the links in the above matrix to view the graphical image (plot).

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Variant:	300 kbps GFSK	Duty Cycle (%):	99.0
Data Rate:	300.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:	None		

# **Test Measurement Results**

Channel	902 4 MHz					
Frequency:	002.110112					
Band-Edge	902 0 MHz					
Frequency:	502.0 NII 12					
Test Frequency Range:	875.0 - 905.0 MHz					
	Band	Edge Markers and	Limit	Revise	ed Limit	Margin
Port(s)	M1 Amplitude (dBm) Plot Limit (dBm) M2 Frequency (MHz) (dBm) (MHz) M2A Frequency (dBm) (MHz)				(MHz)	
а	<u>-6.93</u>	9.00	902.10			-0.100

Fraceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS				
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"				

Note: click the links in the above matrix to view the graphical image (plot).

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Variant:	50 kbps 2FSK	Duty Cycle (%):	99.0
Data Rate:	50.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	2FSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:	None		

# **Test Measurement Results**

Channel	902.2 MHz					
Frequency:						
Band-Edge	902.0 MHz					
Frequency:						
Test Frequency Range:	875.0 - 905.0 MHz					
	Band	Band-Edge Markers and Limit Revised Limit Margin				
Port(s)	M1 Amplitude (dBm) Plot Limit (dBm) M2 Frequency (MHz) (dBm) M2A Frequency (MHz) (dBm) (MHz) (I					(MHz)
а	<u>5.09</u>	9.00	902.00			0.000

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS				
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"				

Note: click the links in the above matrix to view the graphical image (plot).

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Variant:	6.25 kbps OQPSK	Duty Cycle (%):	99.0
Data Rate:	6.25 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	OQPSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:	None		

# **Test Measurement Results**

Frequency:	902.2 MHz					
Band-Edge Frequency:	902.0 MHz					
Test Frequency Range:	875.0 - 905.0 MHz					
	Band-	Edge Markers and	Limit	Revise	d Limit	Margin
Port(s)	M1 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
а	<u>7.32</u>	9.00	902.00			0.000

Traceability to Industry Recognized Test Methodologies				
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS			
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"			

Note: click the links in the above matrix to view the graphical image (plot).

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Variant:	600 kbps OFDM	Duty Cycle (%):	99.0
Data Rate:	600.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:	None		

# **Test Measurement Results**

Channel	902.4 MHz					
Band-Edge						
Frequency:	902.0 MHz					
Test Frequency Range:	875.0 - 905.0 MHz					
	Band	Edge Markers and	Limit	Revise	ed Limit	Margin
Port(s)	M1 Amplitude (dBm) Plot Limit (dBm) M2 Frequency (MHz) (dBm) (M2 Frequency (dBm) (MHz)				(MHz)	
а	<u>-6.59</u>	5.00	902.10			-0.100

Traceability to Industry Recognized Test Methodologies				
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS			
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"			

Note: click the links in the above matrix to view the graphical image (plot).

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# Conducted High Band-Edge Emissions

# Equipment Configuration for Conducted Upper Band-Edge Emissions (Hopping) Peak

Variant:	100 kbps FSK	Duty Cycle (%):	99.0
Data Rate:	100.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	FSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

### **Test Measurement Results**

Channel Frequency:	926.9 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
	Band	Edge Markers and	l imit	Roviso	d Limit	Morgin
	Dana	Luge markers and	<b>_</b>	110 1130		wargin
Port(s)	M3 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
Port(s) a	M3 Amplitude (dBm) -32.31	Plot Limit (dBm) 9.00	M2 Frequency (MHz) 927.10	Amplitude (dBm)	M2A Frequency (MHz)	(MHz) -0.900

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS				
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"				

Note: click the links in the above matrix to view the graphical image (plot).

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Variant:	150 kbps FSK	Duty Cycle (%):	99.0
Data Rate:	150.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	FSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None	-	

# **Test Measurement Results**

Channel Frequency:	927.6 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
	Band	Edge Markers and	Limit	Revise	d Limit	Margin
Port(s)	M3 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
а	<u>-18.23</u>	9.00	927.80			-0.200

Traceability to Industry Recognized Test Methodologies					
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS				
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"				

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	150 kbps GFSK	Duty Cycle (%):	99.0
Data Rate:	150.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:	None		

# **Test Measurement Results**

Channel Frequency:	926.9 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
	Band-	Edge Markers and	Limit	Revise	ed Limit	Margin
Port(s)	M3 Amplitude (dBm) Plot Limit (dBm) M2 Frequency (MHz) (dBm) (M2 Frequency (dBm) (MHz)				(MHz)	
а	<u>-33.08</u>	9.00	927.10			-0.900

Traceability to Industry Recognized Test Methodologies						
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS					
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"					

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	200 kbps GFSK	Duty Cycle (%):	99.0
Data Rate:	200.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:	None		

# **Test Measurement Results**

Channel Frequency:	926.9 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
	Band-Edge Markers and Limit Revised Limit Margin					
Port(s)	M3 Amplitude (dBm) Plot Limit (dBm) M2 Frequency (MHz) Amplitude (dBm) M2A Frequency (MHz)					(MHz)
а	<u>-33.65</u>	9.00	927.10			-0.900

Traceability to Industry Recognized Test Methodologies						
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS					
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"					

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	300 kbps GFSK	Duty Cycle (%):	99.0
Data Rate:	300.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:	None		

# **Test Measurement Results**

Channel Frequency:	927.6 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
	Band-Edge Markers and Limit Revised Limit Margin					
Port(s)	M3 Amplitude (dBm) Plot Limit (dBm) M2 Frequency (MHz) Amplitude (dBm) M2A Frequency (MHz)				(MHz)	
а	<u>-6.06</u>	9.00	927.90			-0.100

Traceability to Industry Recognized Test Methodologies						
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS					
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"					

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	50 kbps 2FSK	Duty Cycle (%):	99.0
Data Rate:	50.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	2FSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:	None		

# **Test Measurement Results**

Channel Frequency:	927.8 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
	Band-Edge Markers and Limit Revised Limit Margin					
Port(s)	M3 Amplitude (dBm) Plot Limit (dBm) M2 Frequency (MHz) Amplitude (dBm) M2A Frequency (MHz)				(MHz)	
а	7.27	9.00	928.00			0.000

Traceability to Industry Recognized Test Methodologies						
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS					
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"					

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	6.25 kbps OQPSK	Duty Cycle (%):	99.0
Data Rate:	6.25 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	OQPSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:	None		

# **Test Measurement Results**

Channel Frequency:	927.8 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
	Band-Edge Markers and Limit Revised Limit Margin					
Port(s)	M3 Amplitude (dBm) Plot Limit (dBm) M2 Frequency (MHz) Amplitude (dBm) M2A Frequency (MHz)				(MHz)	
а	<u>6.02</u>	10.19	928.00			0.000

Traceability to Industry Recognized Test Methodologies						
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS					
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"					

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	600 kbps OFDM	Duty Cycle (%):	99.0
Data Rate:	600.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:	None		

# **Test Measurement Results**

Channel Frequency:	927.6 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
	Band	Edge Markers and	Limit	Revise	ed Limit	Margin
Port(s)	M3 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
а	<u>-10.91</u>	4.00	927.90			-0.100

Traceability to Industry Recognized Test Methodologies						
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS					
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"					

Note: click the links in the above matrix to view the graphical image (plot).

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Variant:	100 kbps FSK	Duty Cycle (%):	99.0
Data Rate:	100.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	FSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:	None		

### **Test Measurement Results**

Channel Frequency:	926.9 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
	Band	Edge Markers and	Limit	Revise	d Limit	Margin
Port(s)	M3 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
а	-28.83	9.00	927.10			-0.900

Traceability to Industry Recognized Test Methodologies						
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS					
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"					

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	150 kbps FSK	Duty Cycle (%):	99.0
Data Rate:	150.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	FSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

# **Test Measurement Results**

Channel Frequency:	927.6 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
	Band	Edge Markers and	Limit	Revise	ed Limit	Margin
Port(s)	M3 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
а	<u>-14.69</u>	9.00	927.80			-0.200

Traceability to Industry Recognized Test Methodologies						
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS					
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"					

Note: click the links in the above matrix to view the graphical image (plot).

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Variant:	150 kbps GFSK	Duty Cycle (%):	99.0
Data Rate:	150.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

# **Test Measurement Results**

Channel	926.9 MHz					
Frequency:						
Band-Edge	028 0 MH-					
Frequency:	920.0 IVII 12					
Test Frequency Range:	925.0 - 950.0 MHz					
	Band-	Edge Markers and	Limit	Revise	d Limit	Margin
Port(s)	M3 Amplitude (dBm) Plot Limit (dBm) M2 Frequency (MHz) Amplitude (dBm) M2A Frequency (MHz)					(MHz)
а	-29.47	9.00	927.10			-0.900

Traceability to Industry Recognized Test Methodologies						
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS					
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"					

Note: click the links in the above matrix to view the graphical image (plot).

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Variant:	200 kbps GFSK	Duty Cycle (%):	99.0
Data Rate:	200.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:	None		

# **Test Measurement Results**

Channel Frequency:	926.9 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
	Band-Edge Markers and Limit Revised Limit Margin					
Port(s)	M3 Amplitude (dBm) Plot Limit (dBm) M2 Frequency (MHz) Amplitude (dBm) M2A Frequency (MHz)				(MHz)	
а	<u>-30.87</u>	8.00	927.10			-0.900

Traceability to Industry Recognized Test Methodologies						
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS					
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"					

Note: click the links in the above matrix to view the graphical image (plot).

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Variant:	300 kbps GFSK	Duty Cycle (%):	99.0
Data Rate:	300.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	GFSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	CC
Engineering Test Notes:	None		

# **Test Measurement Results**

Channel Frequency:	927.6 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
	Band	Edge Markers and	Limit	Revise	ed Limit	Margin
Port(s)	M3 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
а	<u>-6.15</u>	9.00	927.90			-0.100

Traceability to Industry Recognized Test Methodologies						
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS					
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"					

Note: click the links in the above matrix to view the graphical image (plot).

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Variant:	50 kbps 2FSK	Duty Cycle (%):	99.0
Data Rate:	50.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	2FSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:	None		

# **Test Measurement Results**

Channel Frequency:	927.8 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
	Band	Edge Markers and	Limit	Revise	d Limit	Margin
Port(s)	M3 Amplitude (dBm) Plot Limit (dBm) M2 Frequency (MHz) Amplitude (dBm) M2A Frequency (MHz)				(MHz)	
а	<u>8.59</u>	9.00	928.00			0.000

Traceability to Industry Recognized Test Methodologies						
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS					
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"					

Note: click the links in the above matrix to view the graphical image (plot).



Variant:	6.25 kbps OQPSK	Duty Cycle (%):	99.0
Data Rate:	6.25 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	OQPSK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:	None		

# **Test Measurement Results**

Channel Frequency:	927.8 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
	Band	Edge Markers and	Limit	Revise	ed Limit	Margin
Port(s)	M3 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
а	<u>4.24</u>	9.02	928.00			0.000

Traceability to Industry Recognized Test Methodologies			
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS		
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"		

Note: click the links in the above matrix to view the graphical image (plot).

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Variant:	600 kbps OFDM	Duty Cycle (%):	99.0
Data Rate:	600.00 KBit/s	Antenna Gain (dBi):	Not Applicable
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	СС
Engineering Test Notes:	None		

# **Test Measurement Results**

Frequency:	.6 IVIHZ					
Band-Edge Frequency: 928	.0 MHz					
Test Frequency Range: 925	.0 - 950.0 MHz					
	Band-Edge Markers and Limit		Revised Limit		Margin	
Port(s) M	3 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
а	<u>-3.71</u>	5.00	927.90			-0.100

Traceability to Industry Recognized Test Methodologies			
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS		
Measurement Uncertainty:	"<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB"		

Note: click the links in the above matrix to view the graphical image (plot).

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Title:Silver Spring Networks MicroAP 5To:FCC CFR 47 Part 15.247 (FHSS) & IC RSS-247Serial #:SSNT135-U4\_Conducted Rev AIssue Date:1st February 2017Page:73 of 212

## A. APPENDIX - GRAPHICAL IMAGES

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## A.1. 20 dB & 99% Bandwidth



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 902.238 MHz : 2.291 dBm M2 : 902.304 MHz : 23.530 dBm Delta1 : 115 KHz : 4.411 dB T1 : 902.245 MHz : 8.992 dBm T2 : 902.351 MHz : 9.397 dBm OBW : 106 KHz	Measured 20 dB Bandwidth: 0.115 MHz Limit: 0.5 kHz Margin: 0.39 MHz

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 915.137 MHz : 1.034 dBm	Measured 20 dB Bandwidth: 0.121 MHz
Sweep Count = 0	M2 : 915.210 MHz : 22.143 dBm	Limit: 0.5 kHz
RF Atten (dB) = 30	Delta1 : 121 KHz : 0.988 dB	Margin: 0.38 MHz
Trace Mode = MAX HOLD	T1 : 915.148 MHz : 5.494 dBm	
	T2 : 915.251 MHz : 7.091 dBm	
	OBW : 103 KHz	

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 926.840 MHz : 1.897 dBm	Measured 20 dB Bandwidth: 0.114 MHz
Sweep Count = 0	M2 : 926.881 MHz : 21.958 dBm	Limit: 0.5 kHz
RF Atten (dB) = 30	Delta1 : 114 KHz : 1.525 dB	Margin: 0.39 MHz
Trace Mode = MAX HOLD	T1 : 926.848 MHz : 7.189 dBm	
	T2 : 926.951 MHz : 8.543 dBm	
	OBW : 103 KHz	

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 902.308 MHz : 2.204 dBm M2 : 902.394 MHz : 22.330 dBm Delta1 : 181 KHz : -0.492 dB T1 : 902.316 MHz : 5.629 dBm T2 : 902.483 MHz : 8.301 dBm OBW : 167 KHz	Measured 20 dB Bandwidth: 0.181 MHz Limit: 0.5 kHz Margin: 0.32 MHz

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 915.109 MHz : -0.934 dBm	Measured 20 dB Bandwidth: 0.173 MHz
Sweep Count = 0	M2 : 915.214 MHz : 21.105 dBm	Limit: 0.5 kHz
RF Atten (dB) = 30	Delta1 : 173 KHz : 5.471 dB	Margin: 0.33 MHz
Trace Mode = MAX HOLD	T1 : 915.116 MHz : 5.200 dBm	-
	T2 : 915.279 MHz : 6.298 dBm	
	OBW : 164 KHz	

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 927.505 MHz : 0.032 dBm M2 : 927.618 MHz : 20.221 dBm Delta1 : 183 KHz : 3.665 dB T1 : 927.517 MHz : 4.815 dBm T2 : 927.681 MHz : 5.120 dBm OBW : 164 KHz	Measured 20 dB Bandwidth: 0.183 MHz Limit: 0.5 kHz Margin: 0.32 MHz

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 902.208 MHz : 0.074 dBm M2 : 902.273 MHz : 20.308 dBm Delta1 : 183 KHz : -0.624 dB T1 : 902.222 MHz : 6.578 dBm T2 : 902.380 MHz : 5.999 dBm OBW : 158 KHz	Measured 20 dB Bandwidth: 0.183 MHz Limit: 0.5 kHz Margin: 0.32 MHz

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 915.106 MHz : -0.296 dBm	Measured 20 dB Bandwidth: 0.189 MHz
Sweep Count = 0	M2 : 915.181 MHz : 20.070 dBm	Limit: 0.5 kHz
RF Atten (dB) = 30	Delta1 : 189 KHz : 1.013 dB	Margin: 0.31 MHz
Trace Mode = MAX HOLD	T1 : 915.119 MHz : 4.494 dBm	°
	T2 : 915.280 MHz : 6.940 dBm	
	OBW : 161 KHz	

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 926.809 MHz : 0.921 dBm	Measured 20 dB Bandwidth: 0.174 MHz
Sweep Count = 0	M2 : 926.893 MHz : 21.811 dBm	Limit: 0.5 kHz
RF Atten $(dB) = 30$	Delta1 : 174 KHz : 5.934 dB	Margin: 0.33 MHz
Trace Mode = MAX HOLD	T1 : 926.815 MHz : 5.210 dBm	-
	T2 : 926.981 MHz : 7.630 dBm	
	OBW : 166 KHz	

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 902.177 MHz : 0.203 dBm M2 : 902.257 MHz : 20.792 dBm Delta1 : 246 KHz : 1.780 dB T1 : 902.194 MHz : 4.079 dBm T2 : 902.406 MHz : 5.616 dBm OBW : 213 KHz	Measured 20 dB Bandwidth: 0.246 MHz Limit: 0.5 kHz Margin: 0.25 MHz

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 915.082 MHz : -0.017 dBm	Measured 20 dB Bandwidth: 0.227 MHz
Sweep Count = 0	M2 : 915.214 MHz : 21.142 dBm	Limit: 0.5 kHz
RF Atten (dB) = 30	Delta1 : 227 KHz : 5.570 dB	Margin: 0.27 MHz
Trace Mode = MAX HOLD	T1 : 915.089 MHz : 6.477 dBm	-
	T2 : 915.305 MHz : 8.336 dBm	
	OBW : 216 KHz	

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 926.778 MHz : -3.720 dBm M2 : 926.910 MHz : 19.912 dBm Delta1 : 243 KHz : 4.497 dB T1 : 926.790 MHz : 6.784 dBm T2 : 927.006 MHz : 6.060 dBm	Measured 20 dB Bandwidth: 0.243 MHz Limit: 0.5 kHz Margin: 0.26 MHz

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 902.220 MHz : 0.707 dBm	Measured 20 dB Bandwidth: 0.364 MHz
Sweep Count = 0	M2 : 902.406 MHz : 21.146 dBm	Limit: 0.5 kHz
RF Atten $(dB) = 30$	Delta1 : 364 KHz : 1.704 dB	Margin: 0.14 MHz
Trace Mode = MAX HOLD	T1 : 902.232 MHz : 7.097 dBm	-
	T2 : 902.566 MHz : 3.198 dBm	
	OBW : 333 KHz	

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 915.015 MHz : 1.053 dBm	Measured 20 dB Bandwidth: 0.367 MHz
Sweep Count = 0	M2 : 915.220 MHz : 21.457 dBm	Limit: 0.5 kHz
RF Atten (dB) = 30	Delta1 : 367 KHz : 1.094 dB	Margin: 0.13 MHz
Trace Mode = MAX HOLD	T1 : 915.032 MHz : 6.013 dBm	-
	T2 : 915.363 MHz : 5.259 dBm	
	OBW : 330 KHz	

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 927.420 MHz : 0.493 dBm	Measured 20 dB Bandwidth: 0.361 MHz
Sweep Count = 0	M2 : 927.577 MHz : 20.552 dBm	Limit: 0.5 kHz
RF Atten (dB) = 30	Delta1 : 361 KHz : 2.188 dB	Margin: 0.14 MHz
Trace Mode = MAX HOLD	T1 : 0 Hz : 500.000 dBm	-
	T2 : 0 Hz : 500.000 dBm	
	OBW : 330 KHz	

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 902.156 MHz : 4.469 dBm	Measured 20 dB Bandwidth: 0.085 MHz
Sweep Count = 0	M2 : 902.176 MHz : 25.210 dBm	Limit: 0.5 kHz
RF Atten (dB) = $30$	Delta1 : 85 KHz : 3.183 dB	Margin: 0.41 MHz
Trace Mode = MAX HOLD	T1 : 902.156 MHz : 4.469 dBm	-
	T2 : 902.243 MHz : 3.762 dBm	
	OBW : 87 KHz	

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 914.958 MHz : 5.812 dBm	Measured 20 dB Bandwidth: 0.083 MHz
Sweep Count = 0	M2 : 915.024 MHz : 25.950 dBm	Limit: 0.5 kHz
RF Atten (dB) = 30	Delta1 : 83 KHz : 0.608 dB	Margin: 0.42 MHz
Trace Mode = MAX HOLD	T1 : 914.958 MHz : 5.812 dBm	-
	T2 : 915.042 MHz : 5.019 dBm	
	OBW : 84 KHz	

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 927.757 MHz : 3.359 dBm	Measured 20 dB Bandwidth: 0.084 MHz
Sweep Count = 0	M2 : 927.775 MHz : 24.634 dBm	Limit: 0.5 kHz
RF Atten (dB) = 30	Delta1 : 84 KHz : 1.753 dB	Margin: 0.42 MHz
Trace Mode = MAX HOLD	T1 : 927.758 MHz : 5.452 dBm	-
	T2 : 927.843 MHz : 3.560 dBm	
	OBW : 85 KHz	

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 902.136 MHz : 2.763 dBm M2 : 902.175 MHz : 23.458 dBm Delta1 : 126 KHz : 2.558 dB T1 : 902.143 MHz : 6.442 dBm T2 : 902.258 MHz : 5.486 dBm OBW : 115 KHz	Measured 20 dB Bandwidth: 0.126 MHz Limit: 0.5 kHz Margin: 0.37 MHz

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 914.936 MHz : 1.950 dBm M2 : 915.025 MHz : 23.070 dBm Delta1 : 126 KHz : 2.890 dB T1 : 914.943 MHz : 6.342 dBm T2 : 915.058 MHz : 5.629 dBm OBW : 115 KHz	Measured 20 dB Bandwidth: 0.126 MHz Limit: 0.5 kHz Margin: 0.37 MHz

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 927.736 MHz : 2.661 dBm M2 : 927.825 MHz : 22.846 dBm Delta1 : 126 KHz : 1.672 dB T1 : 927.743 MHz : 6.161 dBm T2 : 927.858 MHz : 5.498 dBm OBW : 115 KHz	Measured 20 dB Bandwidth: 0.126 MHz Limit: 0.5 kHz Margin: 0.37 MHz

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 902.221 MHz : -6.279 dBm M2 : 902.340 MHz : 13.880 dBm Delta1 : 356 KHz : 0.342 dB T1 : 902.248 MHz : -1.140 dBm T2 : 902.548 MHz : 0.278 dBm OBW : 300 KHz	Measured 20 dB Bandwidth: 0.356 MHz Limit: 0.5 kHz Margin: 0.14 MHz

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 915.023 MHz : -7.058 dBm	Measured 20 dB Bandwidth: 0.362 MHz
Sweep Count = 0	M2 : 915.137 MHz : 13.330 dBm	Limit: 0.5 kHz
RF Atten (dB) = 30	Delta1 : 362 KHz : -1.806 dB	Margin: 0.14 MHz
Trace Mode = MAX HOLD	T1 : 915.050 MHz : 0.451 dBm	-
	T2 : 915.350 MHz : -0.367 dBm	
	OBW : 300 KHz	

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 927.423 MHz : -6.974 dBm	Measured 20 dB Bandwidth: 0.359 MHz
Sweep Count = 0	M2 : 927.546 MHz : 13.713 dBm	Limit: 0.5 kHz
RF Atten (dB) = $30$	Delta1 : 359 KHz : 0.380 dB	Margin: 0.14 MHz
Trace Mode = MAX HOLD	T1 : 927.450 MHz : -1.298 dBm	-
	T2 : 927.752 MHz : -2.258 dBm	
	OBW : 301 KHz	

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## A.2. Frequency Hopping Tests

## A.2.1. Number of Hopping Channels



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.20 MHz
Sweep Count = 0		
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.20 MHz
Sweep Count = 0		
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.20 MHz
Sweep Count = 0		
RF Atten $(dB) = 30$		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.20 MHz
Sweep Count = 0		
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.20 MHz
Sweep Count = 0		
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 927.583 MHz : 29.155 dBm	Channel Frequency: 915.20 MHz
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.20 MHz
Sweep Count = 0		
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.20 MHz
Sweep Count = 0		
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.20 MHz
Sweep Count = 0		
RF Atten $(dB) = 30$		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.20 MHz
Sweep Count = 0		
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.20 MHz
Sweep Count = 0		
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.20 MHz
Sweep Count = 0		
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.20 MHz
Sweep Count = 0		
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.20 MHz
Sweep Count = 0		
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.20 MHz
Sweep Count = 0		
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW		Channel Frequency: 915.00 MHz

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.00 MHz
Sweep Count = 0		
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.00 MHz
Sweep Count = 0		
RF Atten (dB) = 30		
Trace Mode = VIEW		

back to matrix



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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.00 MHz
Sweep Count = 0		
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.00 MHz
Sweep Count = 0		
RF Atten (dB) = 30		
Trace Mode = VIEW		

back to matrix



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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.00 MHz
Sweep Count = 0		
RF Atten (dB) = 30		
Trace Mode = VIEW		

back to matrix



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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.20 MHz
Sweep Count = 0		
RF Atten (dB) = 30		
Trace Mode = VIEW		

back to matrix



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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.20 MHz
Sweep Count = 0		
RF Atten (dB) = 30		
Trace Mode = VIEW		

back to matrix



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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK		Channel Frequency: 915.20 MHz
Sweep Count = 0		
RF Atten (dB) = 30		
Trace Mode = VIEW		

back to matrix



## A.2.2. Channel Separation



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 915.203 MHz : 24.878 dBm	Channel Frequency: 915.20 MHz
Sweep Count = 0	Delta1 : 304 KHz : 1.542 dB	
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 915.204 MHz : 22.592 dBm	Channel Frequency: 915.20 MHz
Sweep Count = 0	Delta1 : 406 KHz : 3.846 dB	
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 915.201 MHz : 22.423 dBm	Channel Frequency: 915.20 MHz
Sweep Count = 0	Delta1 : 308 KHz : 1.432 dB	
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 915.203 MHz : 24.132 dBm	Channel Frequency: 915.20 MHz
Sweep Count = 0	Delta1 : 305 KHz : -3.730 dB	
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 915.204 MHz : 19.312 dBm	Channel Frequency: 915.20 MHz
Sweep Count = 0	Delta1 : 404 KHz : 7.185 dB	
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 915.002 MHz : 17.583 dBm	Channel Frequency: 915.00 MHz
Sweep Count = 0	Delta1 : 202 KHz : 0.793 dB	
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 915.002 MHz : 19.944 dBm	Channel Frequency: 915.00 MHz
Sweep Count = 0	Delta1 : 203 KHz : -3.252 dB	
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 915.201 MHz : 10.811 dBm	Channel Frequency: 915.20 MHz
Sweep Count = 0	Delta1 : 414 KHz : 6.496 dB	
RF Atten (dB) = 30		
Trace Mode = VIEW		

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## A.2.3. Dwell Time



Analyzer Setup	Marker:Time:Amplitude	Test Results
Detector = RMS	M1(915.20 MHz) : 0.023 s : 28.973 dBm	Channel Frequency: 915.20 MHz
Sweep Count = 0	Delta1(915.20 MHz) : 0.021 s : -0.686 dB	
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Time:Amplitude	Test Results
Detector = RMS	M1(915.20 MHz) : 0.041 s : 26.821 dBm	Channel Frequency: 915.20 MHz
Sweep Count = 0	Delta1(915.20 MHz) : 0.020 s : -2.171 dB	
RF Atten $(dB) = 30$		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Time:Amplitude	Test Results
Detector = RMS	M1(915.20 MHz) : 0.075 s : 28.594 dBm	Channel Frequency: 915.20 MHz
Sweep Count = 0	Delta1(915.20 MHz) : 0.019 s : 0.547 dB	
RF Atten $(dB) = 30$		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Time:Amplitude	Test Results
Detector = RMS	M1(915.20 MHz) : 0.065 s : 24.022 dBm	Channel Frequency: 915.20 MHz
Sweep Count = 0	Delta1(915.20 MHz) : 0.019 s : 3.562 dB	
RF Atten (dB) = $30$		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Time:Amplitude	Test Results
Detector = RMS	M1(915.20 MHz) : 0.317 s : 20.846 dBm	Channel Frequency: 915.20 MHz
Sweep Count = 0	Delta1(915.20 MHz) : 0.019 s : 6.996 dB	
RF Atten $(dB) = 30$		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Time:Amplitude	Test Results
Detector = RMS	M1(915.00 MHz) : 0.226 s : 17.697 dBm	Channel Frequency: 915.00 MHz
Sweep Count = 0	Delta1(915.00 MHz) : 0.022 s : -7.712 dB	
RF Atten (dB) = $30$		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Time:Amplitude	Test Results
Detector = RMS	M1(915.00 MHz) : 0.232 s : 25.154 dBm	Channel Frequency: 915.00 MHz
Sweep Count = 0	Delta1(915.00 MHz) : 0.051 s : -2.875 dB	
RF Atten $(dB) = 30$		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Time:Amplitude	Test Results
Detector = RMS	M1(915.20 MHz) : 0.288 s : 10.770 dBm	Channel Frequency: 915.20 MHz
Sweep Count = 0	Delta1(915.20 MHz) : 0.022 s : -5.350 dB	
RF Atten (dB) = $30$		
Trace Mode = VIEW		

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## A.2.4. Channel Occupancy



Analyzer Setup	Marker:Time:Amplitude	Test Results
Detector = RMS Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1(915.20 MHz) : 5.110 s : 24.769 dBm Delta1(915.20 MHz) : 20.000 s : -65.334 dB	Channel Frequency: 915.20 MHz

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Analyzer Setup	Marker:Time:Amplitude	Test Results
Detector = RMS	M1(915.20 MHz) : 1.804 s : 22.530 dBm	Channel Frequency: 915.20 MHz
Sweep Count = 0	Delta1(915.20 MHz) : 20.000 s : -0.075 dB	
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Time:Amplitude	Test Results
Detector = RMS	M1(915.20 MHz) : 4.208 s : 24.377 dBm	Channel Frequency: 915.20 MHz
Sweep Count = 0	Delta1(915.20 MHz) : 20.000 s : -68.041 dB	
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Time:Amplitude	Test Results
Detector = RMS Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1(915.20 MHz) : 6.373 s : 23.092 dBm Delta1(915.20 MHz) : 17.174 s : -68.094 dB	Channel Frequency: 915.20 MHz

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Analyzer Setup	Marker:Time:Amplitude	Test Results
Detector = RMS Sweep Count = 0 BE Atton (dB) = 20	M1(915.20 MHz) : 12.265 s : 24.199 dBm Delta1(915.20 MHz) : 10.000 s : -69.201 dB	Channel Frequency: 915.20 MHz
Trace Mode = VIEW		

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Analyzer Setup	Marker:Time:Amplitude	Test Results
Detector = RMS Sweep Count = 0 RF Atten (dB) = 30	M1(915.00 MHz) : 7.635 s : 25.031 dBm Delta1(915.00 MHz) : 20.000 s : -65.597 dB	Channel Frequency: 915.00 MHz
Trace Mode = VIEW		

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Analyzer Setup	Marker:Time:Amplitude	Test Results
Detector = RMS Sweep Count = 0 RF Atten (dB) = 30	M1(915.00 MHz) : 4.088 s : 27.994 dBm Delta1(915.00 MHz) : 20.000 s : -74.580 dB	Channel Frequency: 915.00 MHz
Trace Mode = VIEW		

back to matrix

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Analyzer Setup	Marker:Time:Amplitude	Test Results
Detector = RMS	M1(915.20 MHz) : 8.537 s : 17.911 dBm	Channel Frequency: 915.20 MHz
Sweep Count = 0	Delta1(915.20 MHz) : 10.000 s : -64.497 dB	
RF Atten (dB) = 30		
Trace Mode = VIEW		

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## A.3. Emissions

## A.3.1. Conducted Emissions

## A.3.1.1. Conducted Unwanted Spurious Emissions



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 889.138 MHz : 29.116 dBm	Limit: 9.00 dBm
Sweep Count = 0	M2 : 6623.387 MHz : -33.092 dBm	Margin: -42.09 dB
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 909.118 MHz : 29.112 dBm	Limit: 9.00 dBm
Sweep Count = 0	M2 : 6723.287 MHz : -32.777 dBm	Margin: -41.78 dB
RF Atten (dB) = 30		-
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 909.118 MHz : 28.398 dBm	Limit: 8.00 dBm
Sweep Count = 0	M2 : 6623.387 MHz : -32.526 dBm	Margin: -40.53 dB
RF Atten (dB) = 30		-
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 889.138 MHz : 28.628 dBm	Limit: 8.00 dBm
Sweep Count = 0	M2 : 6943.066 MHz : -32.699 dBm	Margin: -40.70 dB
RF Atten (dB) = 30		-
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 909.118 MHz : 29.100 dBm	Limit: 9.00 dBm
Sweep Count = 0	M2 : 6963.046 MHz : -33.222 dBm	Margin: -42.22 dB
RF Atten (dB) = 30		-
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 929.098 MHz : 28.691 dBm	Limit: 8.00 dBm
Sweep Count = 0	M2 : 909.118 MHz : -7.101 dBm	Margin: -15.10 dB
RF Atten (dB) = 30		-
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 889.138 MHz : 28.769 dBm	Limit: 8.00 dBm
Sweep Count = 0	M2 : 6563.447 MHz : -33.397 dBm	Margin: -41.40 dB
RF Atten (dB) = 30		-
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 909.118 MHz : 29.104 dBm	Limit: 9.00 dBm
Sweep Count = 0	M2 : 6623.387 MHz : -33.824 dBm	Margin: -42.82 dB
RF Atten (dB) = 30		-
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 909.118 MHz : 28.354 dBm	Limit: 8.00 dBm
Sweep Count = 0	M2 : 6643.367 MHz : -33.472 dBm	Margin: -41.47 dB
RF Atten (dB) = 30		-
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 889.138 MHz : 28.630 dBm	Limit: 8.00 dBm
Sweep Count = 0	M2 : 6603.407 MHz : -33.421 dBm	Margin: -41.42 dB
RF Atten (dB) = 30		-
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 909.118 MHz : 28.486 dBm	Limit: 8.00 dBm
Sweep Count = 0	M2 : 6703.307 MHz : -32.486 dBm	Margin: -40.49 dB
RF Atten (dB) = 30		-
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 909.118 MHz : 28.224 dBm	Limit: 8.00 dBm
Sweep Count = 0	M2 : 6483.527 MHz : -33.169 dBm	Margin: -41.17 dB
RF Atten (dB) = 30		-
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 889.138 MHz : 23.015 dBm	Limit: 3.00 dBm
Sweep Count = 0	M2 : 6983.026 MHz : -33.718 dBm	Margin: -36.72 dB
RF Atten (dB) = 30		-
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 909.118 MHz : 28.525 dBm	Limit: 8.00 dBm
Sweep Count = 0	M2 : 6903.106 MHz : -32.675 dBm	Margin: -40.67 dB
RF Atten (dB) = 30		-
Trace Mode = VIEW		

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Title:Silver Spring Networks MicroAP 5To:FCC CFR 47 Part 15.247 (FHSS) & IC RSS-247Serial #:SSNT135-U4\_Conducted Rev AIssue Date:1st February 2017Page:160 of 212



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 929.098 MHz : 28.901 dBm	Limit: 8.90 dBm
Sweep Count = 0	M2 : 909.118 MHz : 3.294 dBm	Margin: -5.61 dB
RF Atten $(dB) = 30$		, , , , , , , , , , , , , , , , , , ,
Trace Mode = VIEW		

back to matrix

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 889.138 MHz : 29.118 dBm	Limit: 9.00 dBm
Sweep Count = 0	M2 : 6703.307 MHz : -33.065 dBm	Margin: -42.06 dB
RF Atten $(dB) = 30$		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 909.118 MHz : 29.104 dBm	Limit: 9.00 dBm
Sweep Count = 0	M2 : 6603.407 MHz : -32.878 dBm	Margin: -41.88 dB
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 929.098 MHz : 28.860 dBm	Limit: 8.00 dBm
Sweep Count = 0	M2 : 909.118 MHz : -22.791 dBm	Margin: -30.79 dB
RF Atten (dB) = 30		
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 889.138 MHz : 29.100 dBm	Limit: 9.00 dBm
Sweep Count = 0	M2 : 6903.106 MHz : -33.025 dBm	Margin: -42.02 dB
RF Atten (dB) = 30		-
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 909.118 MHz : 29.096 dBm	Limit: 9.00 dBm
Sweep Count = 0	M2 : 6863.146 MHz : -32.888 dBm	Margin: -41.89 dB
RF Atten (dB) = 30		-
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 929.098 MHz : 28.952 dBm	Limit: 8.00 dBm
Sweep Count = 0	M2 : 909.118 MHz : -23.210 dBm	Margin: -31.21 dB
RF Atten (dB) = 30		-
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 889.138 MHz : 25.269 dBm	Limit: 5.00 dBm
Sweep Count = 0	M2 : 6783.226 MHz : -33.619 dBm	Margin: -38.62 dB
RF Atten (dB) = 30		-
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 909.118 MHz : 23.021 dBm	Limit: 3.00 dBm
Sweep Count = 0	M2 : 6943.066 MHz : -33.267 dBm	Margin: -36.27 dB
RF Atten (dB) = 30		-
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 929.098 MHz : 23.759 dBm	Limit: 3.00 dBm
Sweep Count = 0	M2 : 909.118 MHz : -7.621 dBm	Margin: -10.62 dB
RF Atten (dB) = 30		-
Trace Mode = VIEW		

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	Title:	Silver Spring Networks MicroAP 5
	То:	FCC CFR 47 Part 15.247 (FHSS) & IC RSS-247
<b>VIIC</b> VILabs	Serial #:	SSNT135-U4_Conducted Rev A
	Issue Date:	1 <sup>st</sup> February 2017
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## A.3.1.2. Conducted Band-Edge Emissions

Conducted Low Band-Edge Emissions



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 902.000 MHz : -6.460 dBm M2 : 902.114 MHz : 8.683 dBm M3 : 903.557 MHz : 29.116 dBm	Channel Frequency: 902.30 MHz

back to matrix

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 902.000 MHz : -14.695 dBm	Channel Frequency: 902.40 MHz
Sweep Count = 0	M2 : 902.174 MHz : 5.002 dBm	
RF Atten (dB) = 30	M3 : 904.038 MHz : 29.143 dBm	
Trace Mode = VIEW		

back to matrix

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 902.000 MHz : -6.812 dBm	Channel Frequency: 902.30 MHz
Sweep Count = 0	M2 : 902.054 MHz : 0.485 dBm	
RF Atten (dB) = 30	M3 : 903.196 MHz : 29.122 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 902.000 MHz : -2.996 dBm	Channel Frequency: 902.30 MHz
Sweep Count = 0	M2 : 902.054 MHz : 4.065 dBm	
RF Atten (dB) = 30	M3 : 902.355 MHz : 29.114 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 902.000 MHz : -7.784 dBm	Channel Frequency: 902.40 MHz
Sweep Count = 0	M2 : 902.114 MHz : 6.704 dBm	
RF Atten (dB) = 30	M3 : 902.956 MHz : 29.149 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 902.000 MHz : -2.305 dBm	Channel Frequency: 902.20 MHz
Sweep Count = 0	M2 : 902.054 MHz : 8.889 dBm	
RF Atten (dB) = 30	M3 : 904.459 MHz : 29.509 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 902.000 MHz : 5.366 dBm	Channel Frequency: 902.20 MHz
Sweep Count = 0	M2 : 901.994 MHz : 5.366 dBm	
RF Atten (dB) = 30	M3 : 904.098 MHz : 29.550 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 902.000 MHz : -12.738 dBm	Channel Frequency: 902.40 MHz
Sweep Count = 0	M2 : 902.174 MHz : 3.859 dBm	
RF Atten (dB) = 30	M3 : 904.519 MHz : 25.909 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 902.000 MHz : -8.115 dBm	Channel Frequency: 902.30 MHz
Sweep Count = 0	M2 : 902.054 MHz : 0.904 dBm	
RF Atten (dB) = 30	M3 : 902.355 MHz : 29.125 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 902.000 MHz : -16.415 dBm	Channel Frequency: 902.40 MHz
Sweep Count = 0	M2 : 902.174 MHz : 7.079 dBm	
RF Atten (dB) = 30	M3 : 902.475 MHz : 29.125 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 902.000 MHz : -5.134 dBm	Channel Frequency: 902.30 MHz
Sweep Count = 0	M2 : 902.054 MHz : 4.768 dBm	
RF Atten (dB) = 30	M3 : 902.355 MHz : 29.125 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 902.000 MHz : -1.534 dBm	Channel Frequency: 902.30 MHz
Sweep Count = 0	M2 : 901.994 MHz : -1.534 dBm	
RF Atten (dB) = 30	M3 : 902.295 MHz : 28.994 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 902.000 MHz : -6.934 dBm	Channel Frequency: 902.40 MHz
Sweep Count = 0	M2 : 902.054 MHz : 1.622 dBm	
RF Atten (dB) = 30	M3 : 902.355 MHz : 29.112 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 902.000 MHz : 5.088 dBm	Channel Frequency: 902.20 MHz
Sweep Count = 0	M2 : 901.994 MHz : 5.088 dBm	
RF Atten (dB) = 30	M3 : 902.234 MHz : 29.163 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 902.000 MHz : 7.317 dBm	Channel Frequency: 902.20 MHz
Sweep Count = 0	M2 : 901.994 MHz : 7.317 dBm	
RF Atten (dB) = 30	M3 : 902.234 MHz : 29.167 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 902.000 MHz : -6.590 dBm	Channel Frequency: 902.40 MHz
Sweep Count = 0	M2 : 902.054 MHz : -0.871 dBm	
RF Atten (dB) = 30	M3 : 902.355 MHz : 25.645 dBm	
Trace Mode = VIEW		

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## Conducted High Band-Edge Emissions



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 925.401 MHz : 29.133 dBm	Channel Frequency: 926.90 MHz
Sweep Count = 0	M2 : 927.104 MHz : 9.550 dBm	
RF Atten (dB) = 30	M3 : 928.000 MHz : -32.307 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 925.551 MHz : 29.112 dBm	Channel Frequency: 927.60 MHz
Sweep Count = 0	M2 : 927.756 MHz : 18.551 dBm	
RF Atten (dB) = 30	M3 : 928.000 MHz : -18.229 dBm	
Trace Mode = VIEW		

back to matrix

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 926.002 MHz : 29.116 dBm	Channel Frequency: 926.90 MHz
Sweep Count = 0	M2 : 927.104 MHz : 9.544 dBm	
RF Atten (dB) = 30	M3 : 928.000 MHz : -33.078 dBm	
Trace Mode = VIEW		

back to matrix

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 925.952 MHz : 29.145 dBm	Channel Frequency: 926.90 MHz
Sweep Count = 0	M2 : 927.104 MHz : 14.079 dBm	
RF Atten (dB) = 30	M3 : 928.000 MHz : -33.651 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 925.551 MHz : 29.086 dBm	Channel Frequency: 927.60 MHz
Sweep Count = 0	M2 : 927.856 MHz : 9.714 dBm	
RF Atten (dB) = 30	M3 : 928.000 MHz : -6.061 dBm	
Trace Mode = VIEW		

back to matrix



Title:Silver Spring Networks MicroAP 5To:FCC CFR 47 Part 15.247 (FHSS) & IC RSS-247Serial #:SSNT135-U4\_Conducted Rev AIssue Date:1st February 2017Page:191 of 212



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 926.603 MHz : 29.631 dBm	Channel Frequency: 927.80 MHz
Sweep Count = 0	M2 : 927.956 MHz : 18.549 dBm	
RF Atten (dB) = 30	M3 : 928.000 MHz : 7.274 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS	M1 : 926.210 MHz : 30.190 dBm	Channel Frequency: 927.80 MHz
Sweep Count = 0	M2 : 928.000 MHz : 6.016 dBm	
RF Atten (dB) = 30	M3 : 928.000 MHz : 6.016 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 927.154 MHz : 24.805 dBm	Channel Frequency: 927.60 MHz
Sweep Count = 0	M2 : 927.856 MHz : 12.907 dBm	
RF Atten (dB) = 30	M3 : 928.000 MHz : -10.912 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 2470.385 MHz : 26.071 dBm	Channel Frequency: 2472.80 MHz
Sweep Count = 0	M2 : 2472.950 MHz : 19.876 dBm	
RF Atten (dB) = 20	M3 : 2483.500 MHz : -41.204 dBm	
Trace Mode = VIEW		

back to matrix



Title:Silver Spring Networks MicroAP 5To:FCC CFR 47 Part 15.247 (FHSS) & IC RSS-247Serial #:SSNT135-U4\_Conducted Rev AIssue Date:1st February 2017Page:195 of 212



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 2471.154 MHz : 26.097 dBm	Channel Frequency: 2475.20 MHz
Sweep Count = 0	M2 : 2475.387 MHz : 20.891 dBm	
RF Atten (dB) = 20	M3 : 2483.500 MHz : -35.798 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS	M1 : 2427.030 MHz : 27.120 dBm	Channel Frequency: 2427.20 MHz
Sweep Count = 0	M2 : 2427.600 MHz : -20.910 dBm	
RF Atten (dB) = 20	M3 : 2483.460 MHz : -49.705 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS	M1 : 2421.330 MHz : 27.007 dBm	Channel Frequency: 2427.20 MHz
Sweep Count = 0	M2 : 2427.600 MHz : -19.621 dBm	
RF Atten $(dB) = 20$	M3 : 2483.460 MHz : -49.028 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 2453.030 MHz : 24.194 dBm	Channel Frequency: 2454.40 MHz
Sweep Count = 0	M2 : 2454.545 MHz : 14.928 dBm	
RF Atten (dB) = 20	M3 : 2483.500 MHz : -43.117 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 926.854 MHz : 29.125 dBm	Channel Frequency: 926.90 MHz
Sweep Count = 0	M2 : 927.054 MHz : 16.412 dBm	
RF Atten (dB) = 30	M3 : 928.000 MHz : -28.833 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 927.555 MHz : 29.037 dBm	Channel Frequency: 927.60 MHz
Sweep Count = 0	M2 : 927.806 MHz : 10.874 dBm	
RF Atten (dB) = 30	M3 : 928.000 MHz : -14.691 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 926.904 MHz : 29.027 dBm	Channel Frequency: 926.90 MHz
Sweep Count = 0	M2 : 927.104 MHz : 11.364 dBm	
RF Atten (dB) = 30	M3 : 928.000 MHz : -29.468 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 926.854 MHz : 28.651 dBm	Channel Frequency: 926.90 MHz
Sweep Count = 0	M2 : 927.104 MHz : 13.328 dBm	
RF Atten (dB) = 30	M3 : 928.000 MHz : -30.871 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 927.505 MHz : 29.118 dBm	Channel Frequency: 927.60 MHz
Sweep Count = 0	M2 : 927.856 MHz : 13.070 dBm	
RF Atten (dB) = 30	M3 : 928.000 MHz : -6.153 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 927.756 MHz : 29.064 dBm	Channel Frequency: 927.80 MHz
Sweep Count = 0	M2 : 927.956 MHz : 15.736 dBm	
RF Atten (dB) = 30	M3 : 928.000 MHz : 8.594 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS	M1 : 927.790 MHz : 29.017 dBm	Channel Frequency: 927.80 MHz
Sweep Count = 0	M2 : 928.000 MHz : 4.235 dBm	
RF Atten (dB) = 30	M3 : 928.000 MHz : 4.235 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 927.655 MHz : 25.795 dBm	Channel Frequency: 927.60 MHz
Sweep Count = 0	M2 : 927.856 MHz : 9.363 dBm	
RF Atten (dB) = 30	M3 : 928.000 MHz : -3.710 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 2472.651 MHz : 25.741 dBm	Channel Frequency: 2472.80 MHz
Sweep Count = 0	M2 : 2473.030 MHz : 14.397 dBm	
RF Atten (dB) = 20	M3 : 2483.500 MHz : -34.704 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 2475.176 MHz : 24.700 dBm	Channel Frequency: 2475.20 MHz
Sweep Count = 0	M2 : 2475.429 MHz : 13.577 dBm	
RF Atten $(dB) = 20$	M3 : 2483.500 MHz : -37.067 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS	M1 : 2427.160 MHz : 26.385 dBm	Channel Frequency: 2427.20 MHz
Sweep Count = 0	M2 : 2427.533 MHz : -14.014 dBm	
RF Atten (dB) = 20	M3 : 2483.468 MHz : -48.669 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS	M1 : 2427.160 MHz : 26.201 dBm	Channel Frequency: 2427.20 MHz
Sweep Count = 0	M2 : 2427.533 MHz : -12.702 dBm	
RF Atten (dB) = 20	M3 : 2483.468 MHz : -49.585 dBm	
Trace Mode = VIEW		

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK	M1 : 2454.325 MHz : 23.752 dBm	Channel Frequency: 2454.40 MHz
Sweep Count = 0	M2 : 2454.657 MHz : 10.653 dBm	
RF Atten $(dB) = 20$	M3 : 2483.500 MHz : -45.257 dBm	
Trace Mode = VIEW		

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