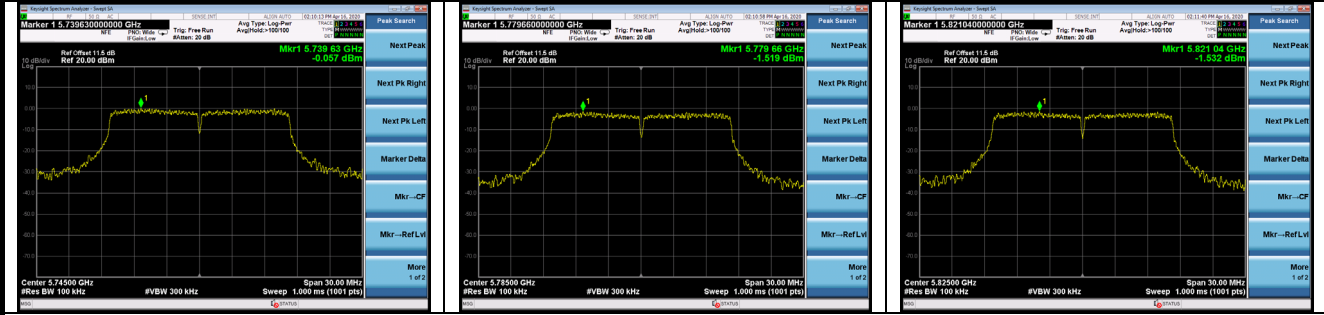
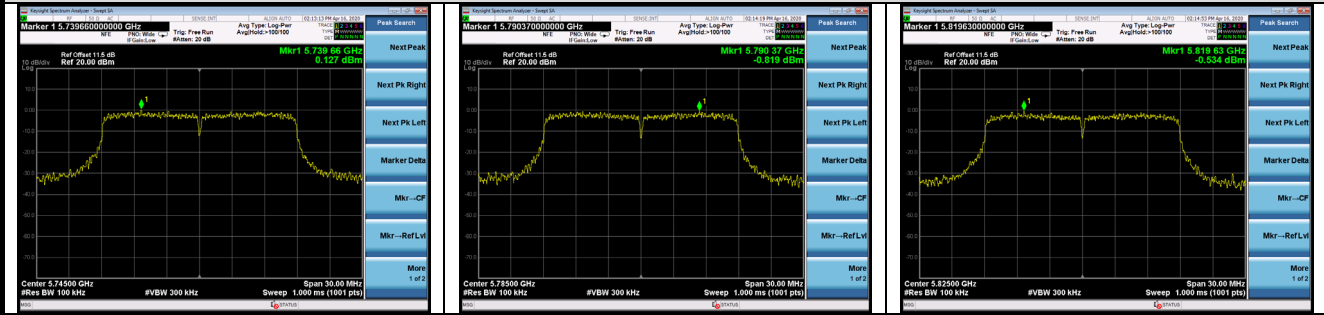


U-NII-3 Band: ANTA

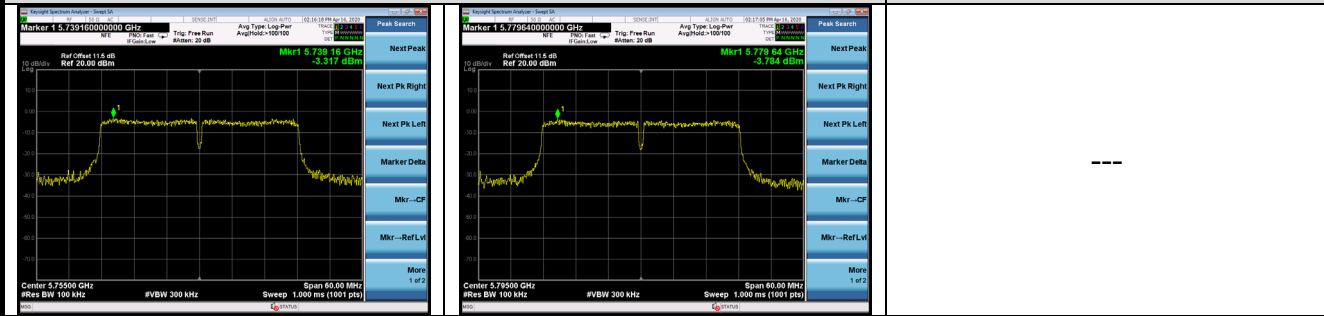
IEEE 802.11a



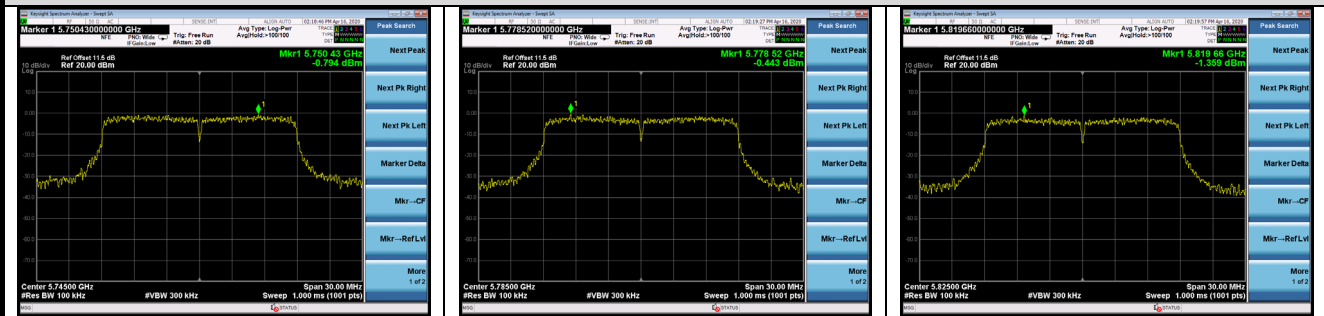
IEEE 802.11n HT20



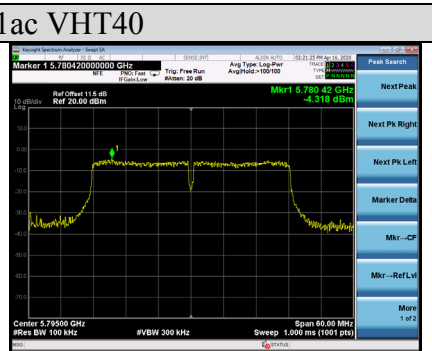
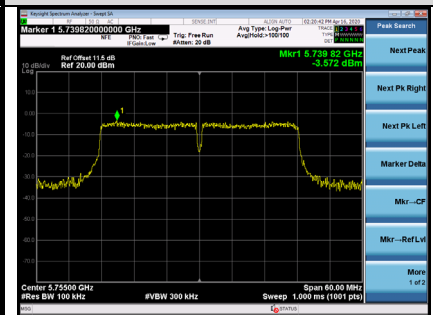
IEEE 802.11n HT40



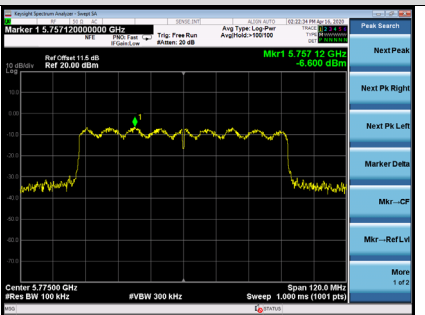
IEEE 802.11ac VHT20



IEEE 802.11ac VHT40

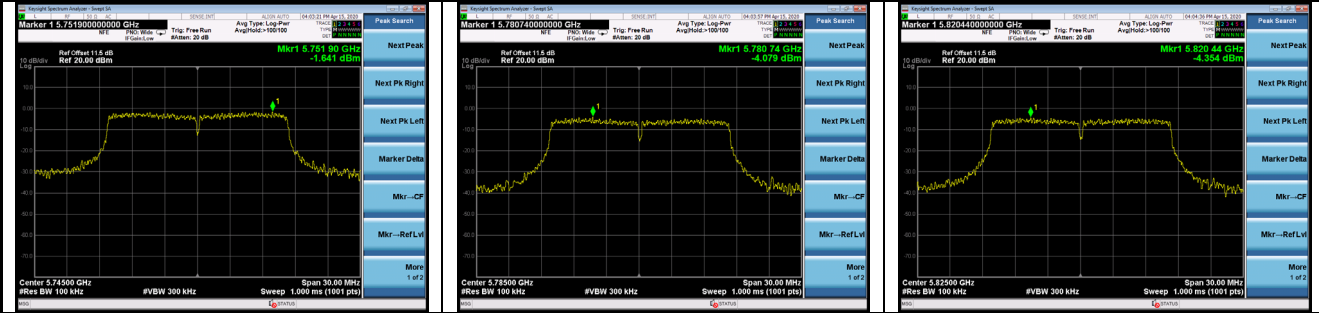


IEEE 802.11ac VHT80

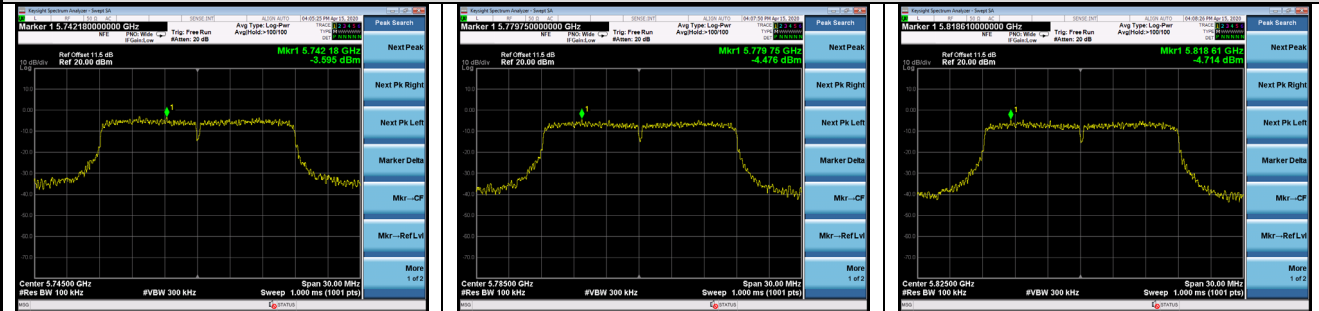


U-NII-3 Band: ANTB

IEEE 802.11a



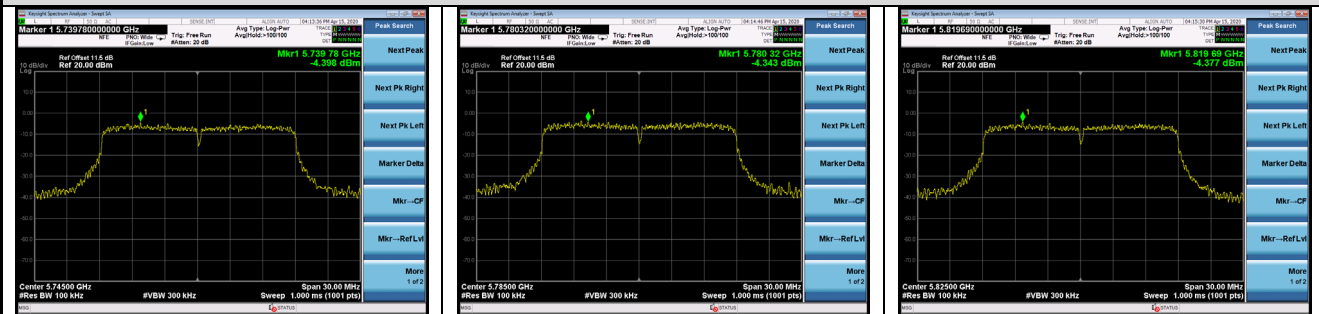
IEEE 802.11n HT20



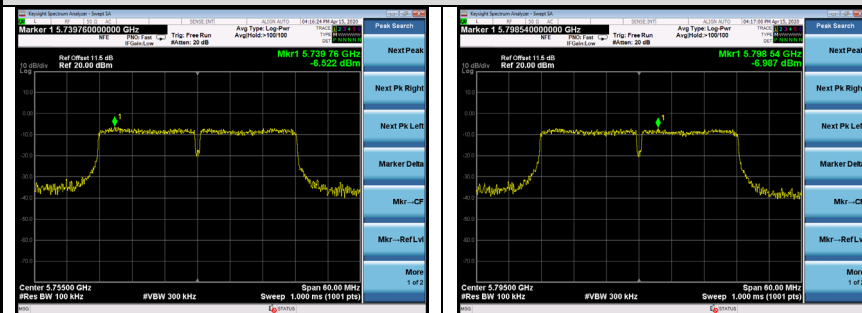
IEEE 802.11n HT40



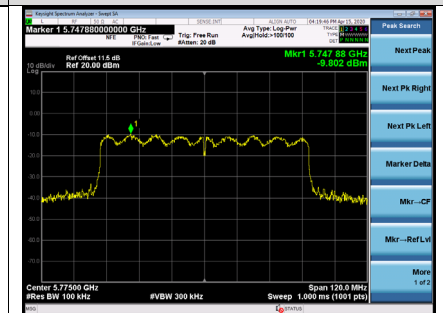
IEEE 802.11ac VHT20



IEEE 802.11ac VHT40



IEEE 802.11ac VHT80



9. FREQUENCY STABILITY MEASUREMENT

9.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
4.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Jun.30,19	1 Year
5.	Attenuator	Agilent	8491B	MY39269201	Oct.13,19	1 Year
6.	RF Cable	EMCI	EMC102-KM-KM 3500	170702	May.13,19	1 Year

9.2. Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

9.3. Test Procedure

Use the test method described in ANSI C63.10 clause 6.8:

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
EUT have transmitted absence of modulation signal and fixed channelise. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings. f_c is declaring of channel frequency. Then the frequency error formula is $(f_c - f) / f \times 10^{-6}$ ppm. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.
2. Extreme temperature rule is -30°C~50°C.

9.4. Test Result

EUT: WiFi module		
M/N: WC0SR2511		
Test date: 2019-04-15	Pressure: 102.7±1.0 kpa	Humidity: 52.5±3.0%
Tested by: Jerry	Test site: RF site	Temperature: 22.7±0.6 °C

Frequency Stability vs. Voltage:

Test Voltage	Temperature	CH	Max. Reading (MHz)		Target Frequency (MHz)	Result (ppm)	
			ANT0	ANT1		ANT0	ANT1
DC 5V	25°C	CH36	5180.0055	5180.0045	5180	1.06	0.87
		CH38	5190.0050	5190.0070	5190	0.96	1.35
		CH40	5200.0050	5200.0075	5200	0.96	1.44
		CH42	5210.0065	5210.0055	5210	1.25	1.06
		CH46	5230.0095	5230.0055	5230	1.82	1.05
		CH48	5240.0105	5240.0105	5240	2.00	2.00
		CH52	5260.0060	5260.0060	5260	1.14	1.14
		CH54	5270.0070	5269.9610	5270	1.33	-7.40
		CH58	5290.0080	5289.9600	5290	1.51	-7.56
		CH60	5300.0080	5299.9580	5300	1.51	-7.92
		CH62	5310.0120	5309.9590	5310	2.26	-7.72
		CH64	5320.0070	5319.9590	5320	1.32	-7.71
		CH100	5500.0095	5499.9595	5500	1.73	-7.36
		CH102	5510.0085	5509.9575	5510	1.54	-7.71
		CH106	5530.0115	5529.9570	5530	2.08	-7.78
		CH118	5590.0115	5589.9565	5590	2.06	-7.78
		CH120	5600.0075	5599.9565	5600	1.34	-7.77
		CH122	5610.0130	5609.9595	5610	2.32	-7.22
		CH134	5670.0125	5669.9560	5670	2.20	-7.76
		CH140	5700.0110	5699.9570	5700	1.93	-7.54
CH149	5745.0240	5745.0390	5745	4.18	6.79		
CH151	5755.0145	5755.0190	5755	2.52	3.30		
CH155	5775.0215	5775.0185	5775	3.72	3.20		
CH157	5785.0305	5785.0300	5785	5.27	5.19		
CH159	5795.0200	5795.0190	5795	3.45	3.28		
CH165	5825.0280	5825.0265	5825	4.81	4.55		

Test Voltage	Temperature	CH	Max. Reading (MHz)		Target Frequency (MHz)	Result (ppm)	
			ANT0	ANT1		ANT0	ANT1
DC 4.25V	25°C	CH36	5180.0065	5180.0055	5180	1.25	1.06
		CH38	5190.0060	5190.0085	5190	1.16	1.64
		CH40	5200.0055	5200.0085	5200	1.06	1.63
		CH42	5210.0075	5210.0065	5210	1.44	1.25
		CH46	5230.0080	5230.0060	5230	1.53	1.15
		CH48	5240.0125	5240.0110	5240	2.39	2.10
		CH52	5260.0070	5260.0075	5260	1.33	1.43
		CH54	5270.0075	5269.9620	5270	1.42	-7.21
		CH58	5290.0090	5289.9610	5290	1.70	-7.37
		CH60	5300.0110	5299.9590	5300	2.08	-7.74
		CH62	5310.0135	5309.9580	5310	2.54	-7.91
		CH64	5320.0090	5319.9575	5320	1.69	-7.99
		CH100	5500.0105	5499.9600	5500	1.91	-7.27
		CH102	5510.0090	5509.9585	5510	1.63	-7.53
		CH106	5530.0135	5529.9585	5530	2.44	-7.50
		CH118	5590.0125	5589.9535	5590	2.24	-8.32
		CH120	5600.0095	5599.9555	5600	1.70	-7.95
		CH122	5610.0135	5609.9585	5610	2.41	-7.40
		CH134	5670.0135	5669.9585	5670	2.38	-7.32
		CH140	5700.0115	5699.9595	5700	2.02	-7.11
		CH149	5745.0245	5745.0395	5745	4.26	6.88
CH151	5755.0155	5755.0200	5755	2.69	3.48		
CH155	5775.0235	5775.0195	5775	4.07	3.38		
CH157	5785.0315	5785.0310	5785	5.45	5.36		
CH159	5795.0210	5795.0210	5795	3.62	3.62		
CH165	5825.0285	5825.0260	5825	4.89	4.46		

Test Voltage	Temperature	CH	Max. Reading (MHz)		Target Frequency (MHz)	Result (ppm)	
			ANT0	ANT1		ANT0	ANT1
DC 5.75V	25°C	CH36	5180.0105	5180.0085	5180	2.03	1.64
		CH38	5190.0045	5190.0025	5190	0.87	0.48
		CH40	5200.0035	5200.0095	5200	0.67	1.83
		CH42	5210.0030	5210.0045	5210	0.58	0.86
		CH46	5230.0060	5230.0065	5230	1.15	1.24
		CH48	5240.0110	5240.0135	5240	2.10	2.58
		CH52	5260.0105	5260.0070	5260	2.00	1.33
		CH54	5270.0080	5269.9635	5270	1.52	-6.93
		CH58	5290.0065	5289.9615	5290	1.23	-7.28
		CH60	5300.0025	5299.9548	5300	0.47	-8.53
		CH62	5310.0160	5309.9575	5310	3.01	-8.00
		CH64	5320.0025	5319.9555	5320	0.47	-8.36
		CH100	5500.0085	5499.9565	5500	1.55	-7.91
		CH102	5510.0045	5509.9570	5510	0.82	-7.80
		CH106	5530.0105	5529.9535	5530	1.90	-8.41
		CH118	5590.0135	5589.9545	5590	2.42	-8.14
		CH120	5600.0065	5599.9535	5600	1.16	-8.30
		CH122	5610.0165	5609.9580	5610	2.94	-7.49
		CH134	5670.0145	5669.9550	5670	2.56	-7.94
		CH140	5700.0135	5699.9530	5700	2.37	-8.25
		CH149	5745.0285	5745.0370	5745	4.96	6.44
CH151	5755.0140	5755.0185	5755	2.43	3.21		
CH155	5775.0255	5775.0180	5775	4.42	3.12		
CH157	5785.0325	5785.0315	5785	5.62	5.45		
CH159	5795.0210	5795.0175	5795	3.62	3.02		
CH165	5825.0275	5825.0260	5825	4.72	4.46		

Frequency Stability vs. Temperature:

Test Voltage	Temperature	CH	Max. Reading (MHz)		Target Frequency (MHz)	Result (ppm)	
			ANT0	ANT1		ANT0	ANT1
DC 5V	0°C	CH36	5180.0030	5180.0020	5180	0.58	0.39
		CH38	5190.0015	5190.0065	5190	0.29	1.25
		CH40	5200.0065	5200.0095	5200	1.25	1.83
		CH42	5210.0025	5210.0075	5210	0.48	1.44
		CH46	5230.0080	5230.0035	5230	1.53	0.67
		CH48	5240.0110	5240.0125	5240	2.10	2.39
		CH52	5260.0025	5260.0080	5260	0.48	1.52
		CH54	5270.0035	5269.9635	5270	0.66	-6.93
		CH58	5290.0055	5289.9615	5290	1.04	-7.28
		CH60	5300.0045	5299.9590	5300	0.85	-7.74
		CH62	5310.0115	5309.9575	5310	2.17	-8.00
		CH64	5320.0065	5319.9565	5320	1.22	-8.18
		CH100	5500.0065	5499.9585	5500	1.18	-7.55
		CH102	5510.0045	5509.9560	5510	0.82	-7.99
		CH106	5530.0120	5529.9545	5530	2.17	-8.23
		CH118	5590.0130	5589.9535	5590	2.33	-8.32
		CH120	5600.0040	5599.9565	5600	0.71	-7.77
		CH122	5610.0165	5609.9560	5610	2.94	-7.84
		CH134	5670.0145	5669.9555	5670	2.56	-7.85
		CH140	5700.0125	5699.9535	5700	2.19	-8.16
CH149	5745.0255	5745.0395	5745	4.44	6.88		
CH151	5755.0160	5755.0180	5755	2.78	3.13		
CH155	5775.0220	5775.0175	5775	3.81	3.03		
CH157	5785.0315	5785.0335	5785	5.45	5.79		
CH159	5795.0225	5795.0145	5795	3.88	2.50		
CH165	5825.0260	5825.0275	5825	4.46	4.72		

Test Voltage	Temperature	CH	Max. Reading (MHz)		Target Frequency (MHz)	Result (ppm)	
			ANT0	ANT1		ANT0	ANT1
DC 5V	10°C	CH36	5180.0035	5180.0025	5180	0.68	0.48
		CH38	5190.0045	5190.0065	5190	0.87	1.25
		CH40	5200.0025	5200.0065	5200	0.48	1.25
		CH42	5210.0035	5210.0065	5210	0.67	1.25
		CH46	5230.0085	5230.0065	5230	1.63	1.24
		CH48	5240.0100	5240.0100	5240	1.91	1.91
		CH52	5260.0075	5260.0040	5260	1.43	0.76
		CH54	5270.0085	5269.9620	5270	1.61	-7.21
		CH58	5290.0065	5289.9615	5290	1.23	-7.28
		CH60	5300.0060	5299.9575	5300	1.13	-8.02
		CH62	5310.0115	5309.9585	5310	2.17	-7.82
		CH64	5320.0060	5319.9565	5320	1.13	-8.18
		CH100	5500.0080	5499.9590	5500	1.45	-7.45
		CH102	5510.0065	5509.9580	5510	1.18	-7.62
		CH106	5530.0120	5529.9575	5530	2.17	-7.69
		CH118	5590.0135	5589.9570	5590	2.42	-7.69
		CH120	5600.0080	5599.9550	5600	1.43	-8.04
		CH122	5610.0135	5609.9580	5610	2.41	-7.49
		CH134	5670.0130	5669.9555	5670	2.29	-7.85
		CH140	5700.0115	5699.9565	5700	2.02	-7.63
		CH149	5745.0230	5745.0385	5745	4.00	6.70
CH151	5755.0125	5755.0175	5755	2.17	3.04		
CH155	5775.0210	5775.0165	5775	3.64	2.86		
CH157	5785.0315	5785.0310	5785	5.45	5.36		
CH159	5795.0210	5795.0185	5795	3.62	3.19		
CH165	5825.0265	5825.0255	5825	4.55	4.38		

Test Voltage	Temperature	CH	Max. Reading (MHz)		Target Frequency (MHz)	Result (ppm)	
			ANT0	ANT1		ANT0	ANT1
DC 5V	20°C	CH36	5180.0010	5180.0035	5180	0.19	0.68
		CH38	5190.0035	5190.0065	5190	0.67	1.25
		CH40	5200.0045	5200.0025	5200	0.87	0.48
		CH42	5210.0090	5210.0035	5210	1.73	0.67
		CH46	5230.0085	5230.0015	5230	1.63	0.29
		CH48	5240.0110	5240.0125	5240	2.10	2.39
		CH52	5260.0100	5260.0055	5260	1.90	1.05
		CH54	5270.0020	5269.9630	5270	0.38	-7.02
		CH58	5290.0060	5289.9620	5290	1.13	-7.18
		CH60	5300.0075	5299.9570	5300	1.42	-8.11
		CH62	5310.0110	5309.9520	5310	2.07	-9.04
		CH64	5320.0030	5319.9565	5320	0.56	-8.18
		CH100	5500.0080	5499.9565	5500	1.45	-7.91
		CH102	5510.0080	5509.9595	5510	1.45	-7.35
		CH106	5530.0120	5529.9545	5530	2.17	-8.23
		CH118	5590.0135	5589.9515	5590	2.42	-8.68
		CH120	5600.0085	5599.9560	5600	1.52	-7.86
		CH122	5610.0145	5609.9515	5610	2.58	-8.65
		CH134	5670.0165	5669.9460	5670	2.91	-9.52
		CH140	5700.0135	5699.9580	5700	2.37	-7.37
		CH149	5745.0265	5745.0400	5745	4.61	6.96
CH151	5755.0175	5755.0210	5755	3.04	3.65		
CH155	5775.0235	5775.0225	5775	4.07	3.90		
CH157	5785.0365	5785.0300	5785	6.31	5.19		
CH159	5795.0245	5795.0165	5795	4.23	2.85		
CH165	5825.0275	5825.0235	5825	4.72	4.03		

Test Voltage	Temperature	CH	Max. Reading (MHz)		Target Frequency (MHz)	Result (ppm)	
			ANT0	ANT1		ANT0	ANT1
DC 5V	30°C	CH36	5180.0120	5180.0125	5180	2.32	2.41
		CH38	5190.0100	5190.0210	5190	1.93	4.05
		CH40	5200.0060	5200.0355	5200	1.15	6.83
		CH42	5210.0095	5210.0095	5210	1.82	1.82
		CH46	5230.0045	5230.0055	5230	0.86	1.05
		CH48	5240.0165	5240.0135	5240	3.15	2.58
		CH52	5260.0045	5260.0010	5260	0.86	0.19
		CH54	5270.0035	5269.9630	5270	0.66	-7.02
		CH58	5290.0020	5289.9685	5290	0.38	-5.95
		CH60	5300.0090	5299.9560	5300	1.70	-8.30
		CH62	5310.0135	5309.9530	5310	2.54	-8.85
		CH64	5320.0085	5319.9550	5320	1.60	-8.46
		CH100	5500.0065	5499.9525	5500	1.18	-8.64
		CH102	5510.0055	5509.9535	5510	1.00	-8.44
		CH106	5530.0105	5529.9460	5530	1.90	-9.76
		CH118	5590.0135	5589.9210	5590	2.42	-14.13
		CH120	5600.0090	5599.9630	5600	1.61	-6.61
		CH122	5610.0140	5609.9650	5610	2.50	-6.24
		CH134	5670.0165	5669.9450	5670	2.91	-9.70
		CH140	5700.0145	5699.9350	5700	2.54	-11.40
		CH149	5745.0260	5745.0250	5745	4.53	4.35
CH151	5755.0110	5755.0230	5755	1.91	4.00		
CH155	5775.0225	5775.0240	5775	3.90	4.16		
CH157	5785.0325	5785.0260	5785	5.62	4.49		
CH159	5795.0240	5795.0315	5795	4.14	5.44		
CH165	5825.0190	5825.0345	5825	3.26	5.92		

Test Voltage	Temperature	CH	Max. Reading (MHz)		Target Frequency (MHz)	Result (ppm)	
			ANT0	ANT1		ANT0	ANT1
DC 5V	40°C	CH36	5180.0020	5180.0150	5180	0.39	2.90
		CH38	5190.0150	5190.0150	5190	2.89	2.89
		CH40	5200.0140	5200.0125	5200	2.69	2.40
		CH42	5210.0160	5210.0215	5210	3.07	4.13
		CH46	5230.0050	5230.0115	5230	0.96	2.20
		CH48	5240.0210	5240.0195	5240	4.01	3.72
		CH52	5260.0090	5260.0150	5260	1.71	2.85
		CH54	5270.0450	5269.9915	5270	8.54	-1.61
		CH58	5290.0195	5289.9850	5290	3.69	-2.84
		CH60	5300.0310	5299.9590	5300	5.85	-7.74
		CH62	5310.0245	5309.9650	5310	4.61	-6.59
		CH64	5320.0265	5319.9860	5320	4.98	-2.63
		CH100	5500.0210	5499.9875	5500	3.82	-2.27
		CH102	5510.0150	5509.9655	5510	2.72	-6.26
		CH106	5530.0010	5529.9560	5530	0.18	-7.96
		CH118	5590.0100	5589.9720	5590	1.79	-5.01
		CH120	5600.0190	5599.9545	5600	3.39	-8.13
		CH122	5610.0220	5609.9695	5610	3.92	-5.44
		CH134	5670.0135	5669.9525	5670	2.38	-8.38
		CH140	5700.0055	5699.9860	5700	0.96	-2.46
		CH149	5745.0230	5745.0320	5745	4.00	5.57
CH151	5755.0295	5755.0195	5755	5.13	3.39		
CH155	5775.0225	5775.0180	5775	3.90	3.12		
CH157	5785.0330	5785.0190	5785	5.70	3.28		
CH159	5795.0230	5795.0360	5795	3.97	6.21		
CH165	5825.0360	5825.0295	5825	6.18	5.06		

Test Voltage	Temperature	CH	Max. Reading (MHz)		Target Frequency (MHz)	Result (ppm)	
			ANT0	ANT1		ANT0	ANT1
DC 5V	50°C	CH36	5180.0235	5180.0125	5180	4.54	2.41
		CH38	5190.0260	5190.0350	5190	5.01	6.74
		CH40	5200.0160	5200.0260	5200	3.08	5.00
		CH42	5210.0230	5210.0125	5210	4.41	2.40
		CH46	5230.0230	5230.0355	5230	4.40	6.79
		CH48	5240.0110	5240.0255	5240	2.10	4.87
		CH52	5260.0160	5260.0120	5260	3.04	2.28
		CH54	5270.0065	5269.9860	5270	1.23	-2.66
		CH58	5290.0035	5289.9500	5290	0.66	-9.45
		CH60	5300.0055	5299.9650	5300	1.04	-6.60
		CH62	5310.0135	5309.9500	5310	2.54	-9.42
		CH64	5320.0055	5319.9460	5320	1.03	-10.15
		CH100	5500.0035	5499.9525	5500	0.64	-8.64
		CH102	5510.0065	5509.9655	5510	1.18	-6.26
		CH106	5530.0120	5529.9535	5530	2.17	-8.41
		CH118	5590.0130	5589.9525	5590	2.33	-8.50
		CH120	5600.0085	5599.9355	5600	1.52	-11.52
		CH122	5610.0235	5609.9255	5610	4.19	-13.28
		CH134	5670.0165	5669.9535	5670	2.91	-8.20
		CH140	5700.0190	5699.9525	5700	3.33	-8.33
		CH149	5745.0260	5745.0385	5745	4.53	6.70
CH151	5755.0255	5755.0210	5755	4.43	3.65		
CH155	5775.0050	5775.0160	5775	0.87	2.77		
CH157	5785.0315	5785.0345	5785	5.45	5.96		
CH159	5795.0315	5795.0175	5795	5.44	3.02		
CH165	5825.0220	5825.0235	5825	3.78	4.03		

10. ANTENNA REQUIREMENT

10.1. Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.407 (a), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

10.2. Antenna Connected Construction

The antennas used for this product are Planar antenna that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is 3.10dBi.

11. DEVIATION TO TEST SPECIFICATIONS

[NONE]

..... THE END