

FCC - TEST REPORT

Report Number : **68.930.20.0010.01** Date of Issue: September 2, 2020

Model : H5L, H6L, H5C, H6C

Product Type : Ultrasound Scanner

Applicant : Guangzhou SonoHealth Medical Technologies Co., Ltd

Address : Room 601, Building 3, No.7 Ruitai Road, Huangpu District, 510530
Guangzhou, PEOPLE'S REPUBLIC OF CHINA

Production Factory : Guangzhou SonoHealth Medical Technologies Co., Ltd

Address : Room 601, Building 3, No.7 Ruitai Road, Huangpu District, 510530
Guangzhou, PEOPLE'S REPUBLIC OF CHINA

Test Result : ☒ **Positive** ☐ **Negative**

Total pages including Appendices : **35**

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

1. Table of contents

1.	Table of contents	2
2.	Details about the test laboratory.....	3
3.	Description of the Equipment under test.....	4
4.	Summary of Test Standards.....	5
5.	Summary of Test Results.....	6
6.	General Remarks.....	7
7.	Test setups.....	9
8.	Systems test configuration.....	10
9.	Technical Requirement	11
10.	Test Equipment List.....	34
11.	System Measurement Uncertainty.....	35

2. Details about the test laboratory

Details about the Test Laboratory

Test Site 1

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
Building 12&13, Zhiheng Wisdomland Business Park,
Nantou Checkpoint Road 2, Nanshan District,
Shenzhen City, 518052,
P. R. China

FCC Registration Number: 514049

Telephone: 86 755 8828 6998
Fax: 86 755 8828 5299

3. Description of the Equipment under test

Product:	Ultrasound Scanner
Model no.:	H5L, H6L, H5C, H6C
FCC ID:	2AWWG000
Options and accessories:	NIL
Rating:	3.85VDC, 5600mAh 3.885Wh (supplied by Internal Rechargeable Lithium Battery) or Wireless charger input: 5W, Charging port power input: DC5V, 1A.
RF Transmission Frequency:	5725-5850MHz
No. of Operated Channel:	5745MHz, 5765MHz, 5785MHz, 5805MHz, 5825MHz
Modulation:	OFDM
Antenna Type:	Ceramic Antenna
Antenna Gain:	2.4dBi
Description of the EUT:	The EUT supports Wi-Fi 5.8G 11N20 mode and wireless charging functions. The wireless charging function only is receiver.

4. Summary of Test Standards

Test Standards	
FCC Part 15 Subpart E, 10-1-2019 Edition	PART 15 - RADIO FREQUENCY DEVICES Subpart E - Unlicensed National Information Infrastructure Devices

Test Method:

KDB 789033 D02 General UNII Test Procedures New Rules v02r01

ANSI C63.10-2013, American National Standard for Testing Unlicensed Wireless Devices

5. Summary of Test Results

Test Condition	Test Result		
	Pass	Fail	N/A
15.407(e) Emission bandwidth	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.407(a)(i) Maximum Conducted Output Power	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.407(a)(i) Maximum Power Spectral Density	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.407(b)(1), 15.407(b)(2), 15.407(b)(3), 15.407(b)(4), 15.407(b)(6) 15.407(b)(7) 15.209 Unwanted Emissions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.407(b)(i), 15.407(b)(5), 15.407(b)(7), 15.209 Band edge compliance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.407(g) Frequencies Stability	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.407(h) Dynamic Frequency Selection (DFS). a	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15.203 Antenna Requirement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Remark: ^a The EUT is Clients Device without Radar Detection.

Note 1: The EUT uses an ceramic antenna, which gain is 2.4dBi max. It is considered sufficiently to comply with the provisions of this section

6. General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: 2AWWG000, complies with the FCC Part 15, Subpart E rules.

The differences of models as below:

H series product model difference table		
Model	H5L、H6L	H5C、H6C
Dimension	the host is the same, the probe part is different	
PCB	same	
Construction	the host is the same, the probe part is different	
Enclosure Material	same	
Schematic	same	
Components	same	
PCB Layouts	same	
Operation	same	
Software	same	
Power Supply	same	
Additional Information	linear probe	convex probe

So all the tests were applied on H5L, other models were deemed to comply with rule requirements, it supports Wi-Fi 5.8G 11N20 mode and wireless charging functions. The working frequency of Wi-Fi is 5745MHz-5825MHz. The wireless charging function only is receiver.

This report only for 5.8G wifi 5745MHz-5825MHz.

SUMMARY:

All tests according to the regulations cited on page 5 were

n - Performed

o - **Not** Performed

The Equipment Under Test

n - **Fulfills** the general approval requirements.

o - **Does not** fulfill the general approval requirements.

Sample Received Date: May 26, 2020

Testing Start Date: May 28, 2020

Testing End Date: September 2, 2020

TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch –

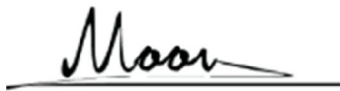
Reviewed by:

Prepared by:

Tested by:



John Zhi
Section Manager



Moon Xiong
Project Engineer

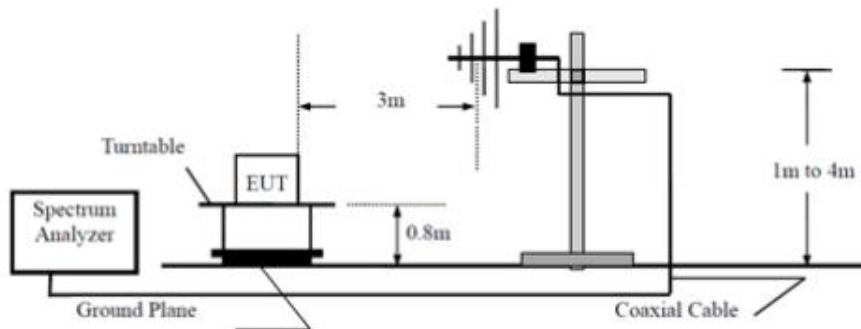


Louise Liu
Test Engineer

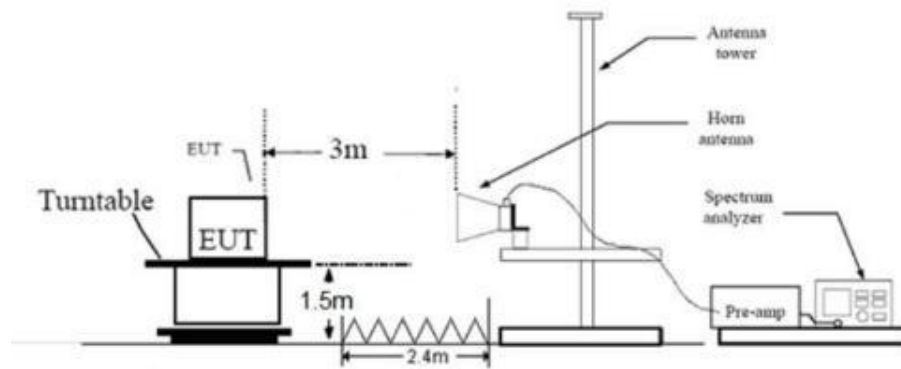
7. Test setups

7.1 Radiated test setups

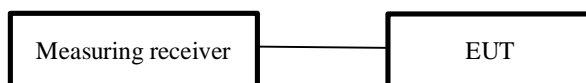
Below 1GHz



Above 1GHz



7.2 Conducted RF test setups



8. Systems test configuration

The system was configured to channel:

Test Mode	Channel (MHz)		
802.11n HT20	5G WIFI-Band 4		
	CH149 (5745MHz),	CH157(5785MHz)	CH165 (5825MHz)

9. Technical Requirement

9.1 Emission bandwidth

The EUT was placed on 0.8m height table, the RF output of EUT was connected to the test receiver by RF cable. The path loss was compensated to the results for each measurement.

1、Test Method of 26dB Bandwidth

According to KDB789033 D02

- a) Set RBW = approximately 1% of the emission bandwidth.
- b) Set the VBW > RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

Limit: No limit

2、Test Method of 6dB Bandwidth

According to KDB789033 D02

- a) Set RBW = 100KHz
- b) Set the video bandwidth (VBW) $\geq 3 \times$ RBW
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Limit: $\geq 500\text{KHz}$

3、Test Method of 99% Bandwidth

According to KDB789033 D02

- a) Set center frequency to the nominal EUT channel center frequency
- b) Set span = 1.5 times to 5.0 times the OBW.
- c) Set RBW = 1 % to 5 % of the OBW
- d) Set VBW $\geq 3 \cdot$ RBW
- e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
- f) Use the 99 % power bandwidth function of the instrument (if available).
- g) If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is

reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

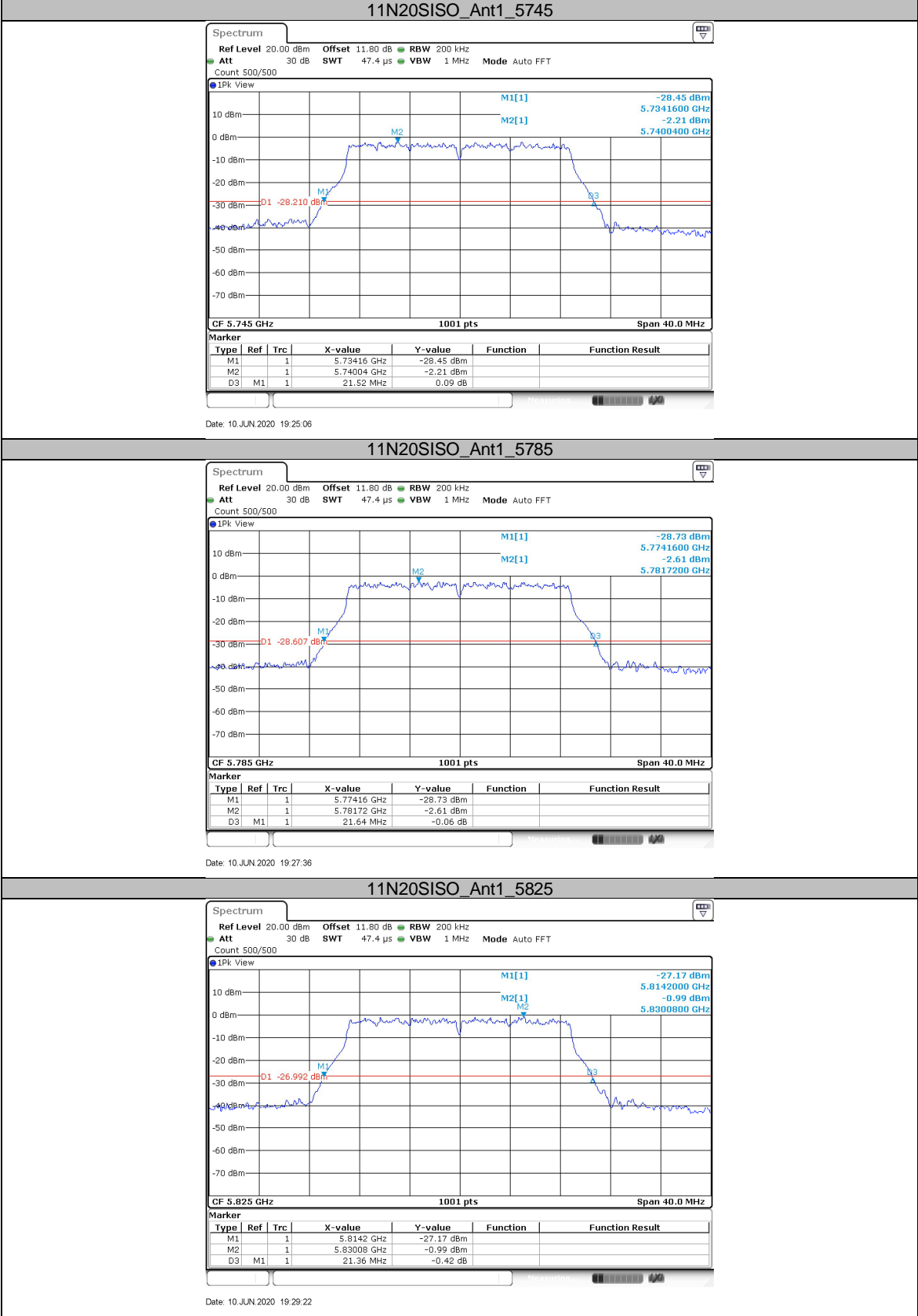
Limit: No limit

26dB Bandwidth Test result:

TestMode	Antenna	Channel	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11N20SISO	Ant1	5745	21.520	5734.160	5755.680	---	PASS
		5785	21.640	5774.160	5795.800	---	PASS
		5825	21.360	5814.200	5835.560	---	PASS



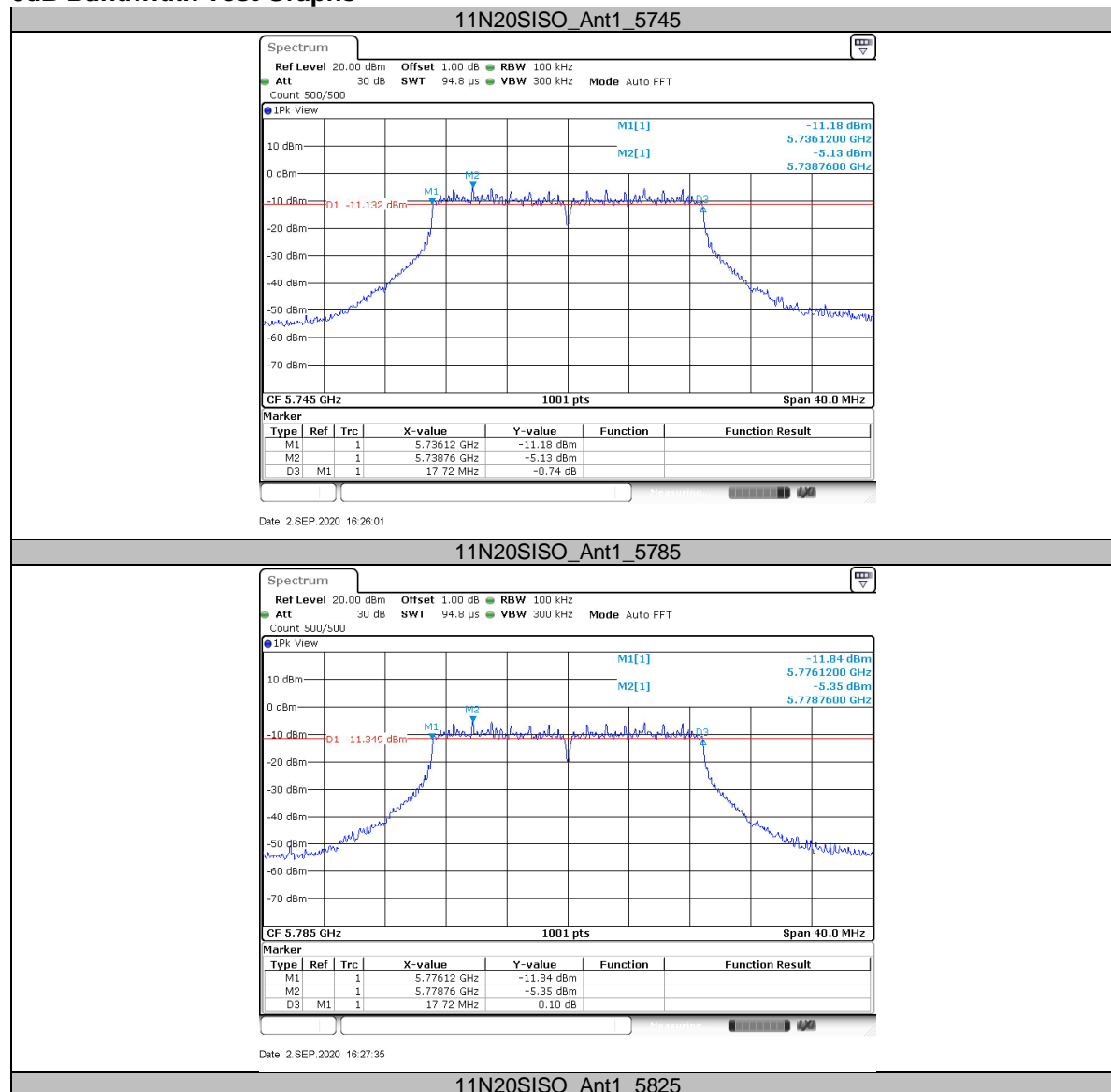
26dB Bandwidth Test Graphs

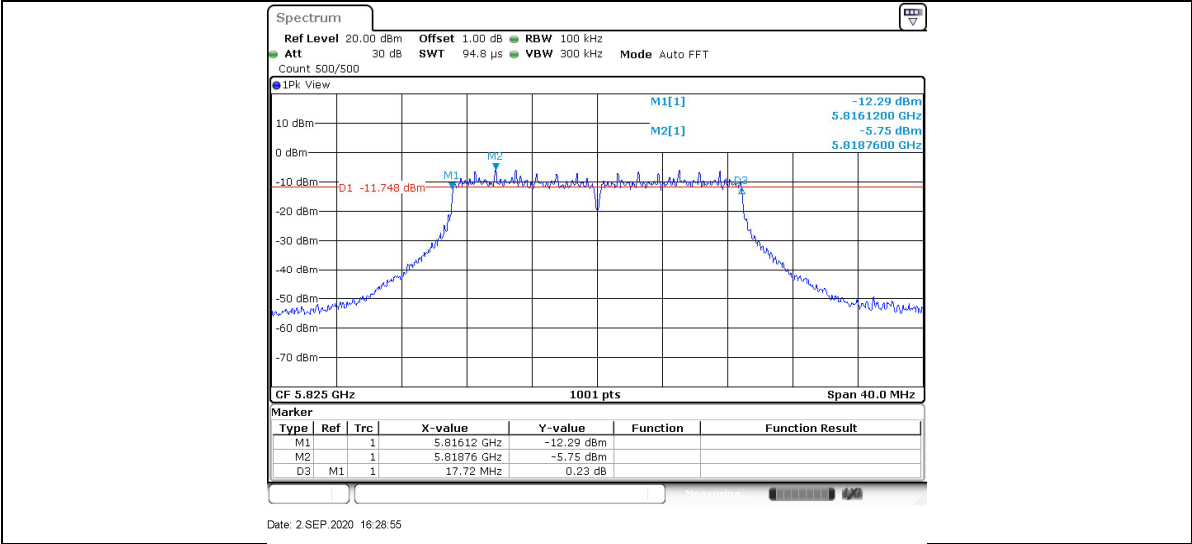


6dB Bandwidth Test Result

TestMode	Antenna	Channel	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11N20SISO	Ant1	5745	17.720	5736.120	5753.840	0.5	PASS
		5785	17.720	5776.120	5793.840	0.5	PASS
		5825	17.720	5816.120	5833.840	0.5	PASS

6dB Bandwidth Test Graphs





9.2 Maximum conducted output power

Test Method

According to KDB789033 D02

The EUT was placed on 0.8m height table, the RF output of EUT was connected to the test receiver by RF cable. The path loss was compensated to the results for each measurement.

Limits: The maximum conducted output power over the frequency band of operation shall be 1W for 5.725-5.85GHz Band, provided the maximum antenna gain does not exceed 6dBi.

Test result as below table

802.11N20 modulation Test Result

Frequency (MHz)	Conducted Peak Output Power (dBm)	Limit (dBm)	Result
Low channel 5745MHz	7.013	30	Pass
Middle channel 5785MHz	7.254	30	Pass
High channel 5825MHz	6.018	30	Pass

9.3 Maximum power spectral density

Test Method

According to KDB789033 D02

The EUT was placed on 0.8m height table, the RF output of EUT was connected to the test receiver by RF cable. The path loss was compensated to the results for each measurement.

specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or bandwidth" to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 KHz bandwidth, the following adjustments to the procedures apply:

- a) Set $RBW \geq 1/T$, where T is defined in section II.B.I.a).
- b) Set $VBW \geq 3 RBW$.
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10\log(500\text{kHz}/RBW)$ to the measured result, whereas RBW (< 500 KHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add $10\log(1\text{MHz}/RBW)$ to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 KHz for the sections 5.c) and 5.d) above, since RBW=100 KHz is available on nearly all spectrum analyzers.

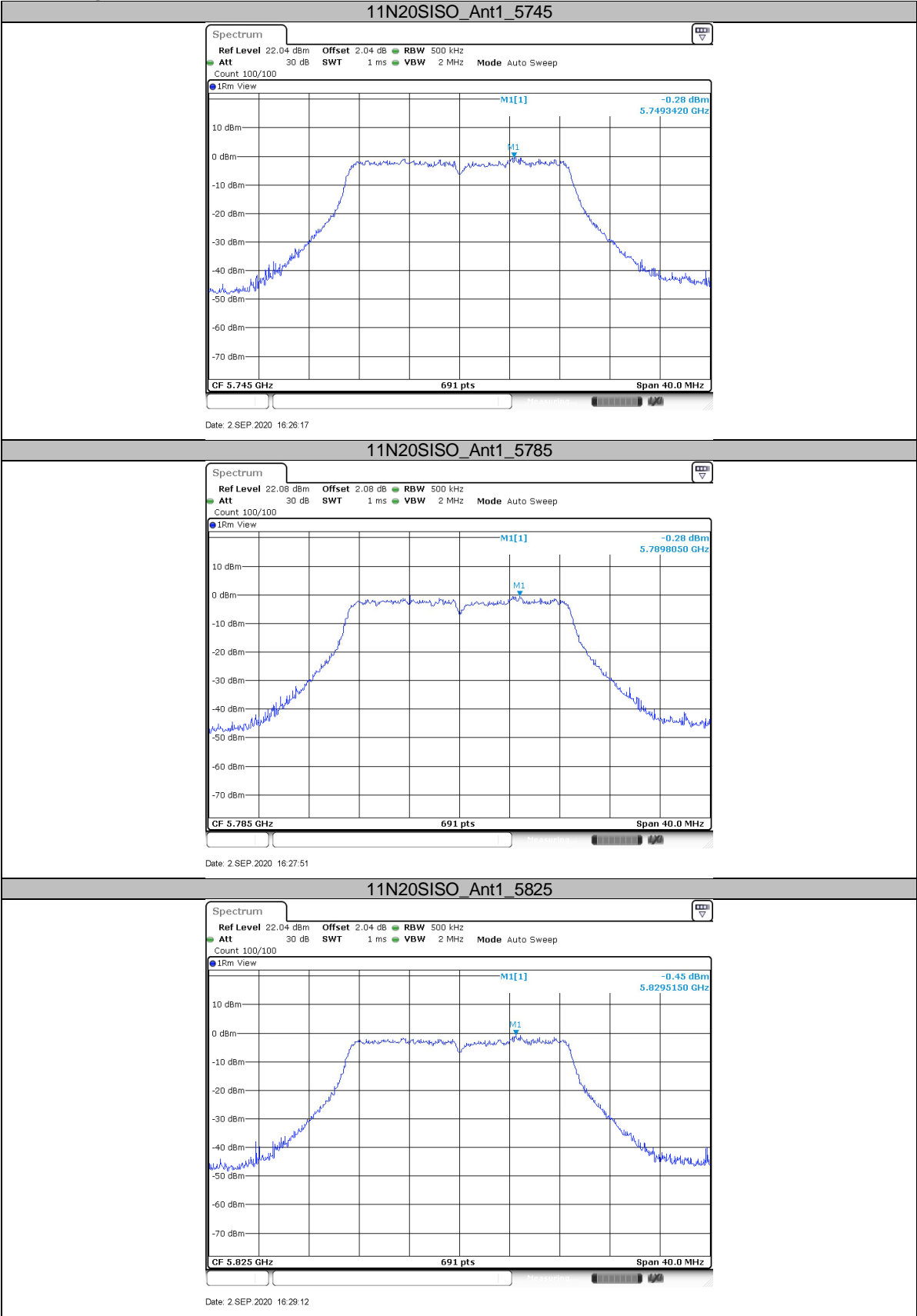
Limit: The maximum power spectral density shall not exceed 30dBm for the 5.8GHz Band in any 1 megahertz band.

Test Result

TestMode	Channel(MHz)	Result(dBm/500KHz)	Limit(dBm/500KHz)	Verdict
11N20SISO	5745	-0.28	<=30	PASS
	5785	-0.28	<=30	PASS
	5825	-0.45	<=30	PASS



Test Graphs



9.4 Unwanted emissions

Test Method

According to KBD789033 D02

The EUT was placed on 0.8m height table, the RF output of EUT was connected to the test receiver by RF cable. The path loss was compensated to the results for each measurement.

Limits:

For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

The provisions of §15.205 apply to intentional radiators operating under this section.

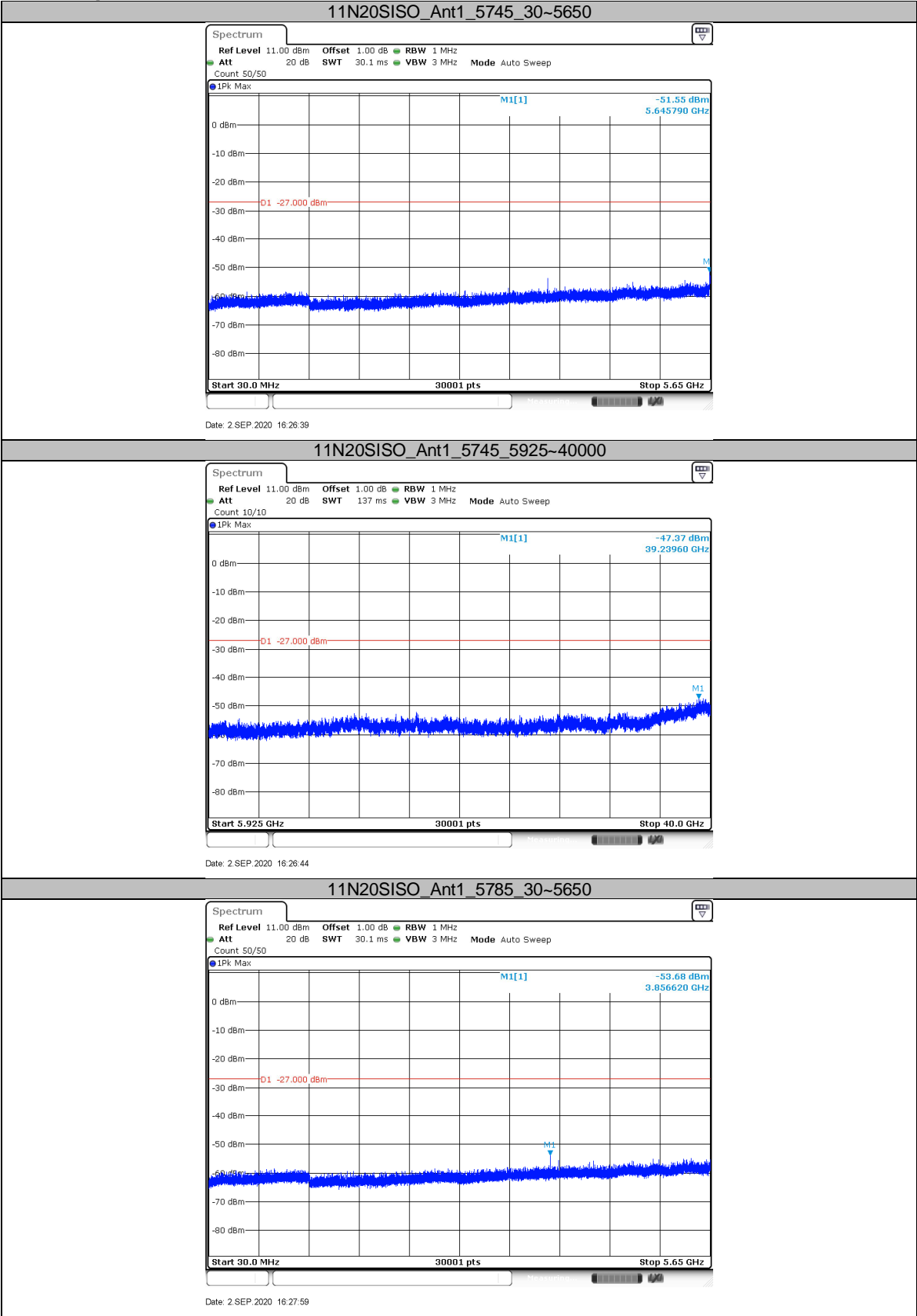
Conducted Spurious Emission

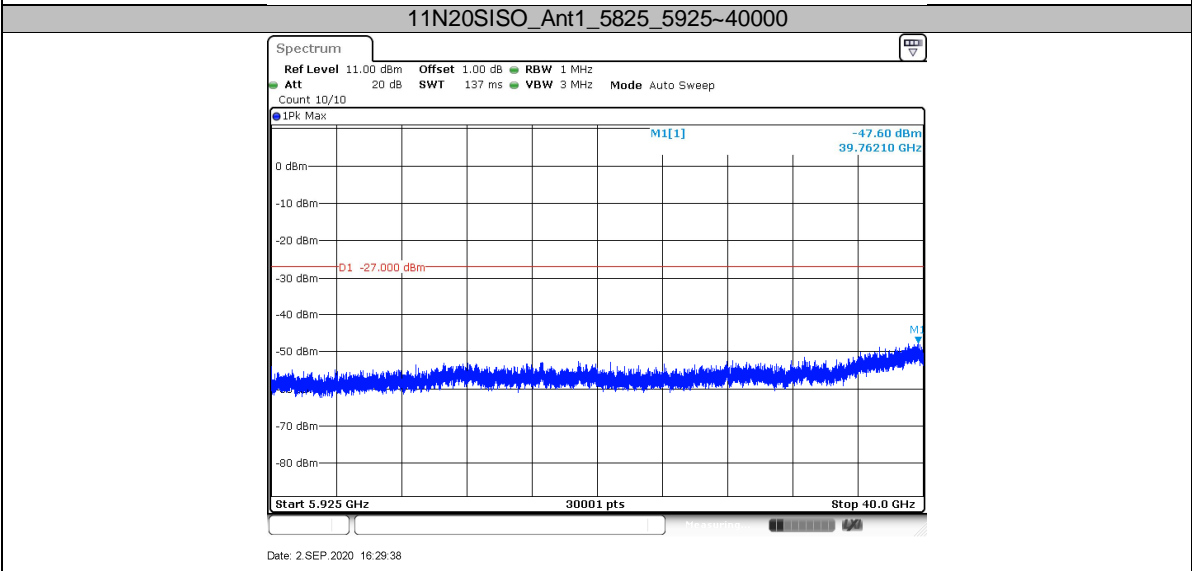
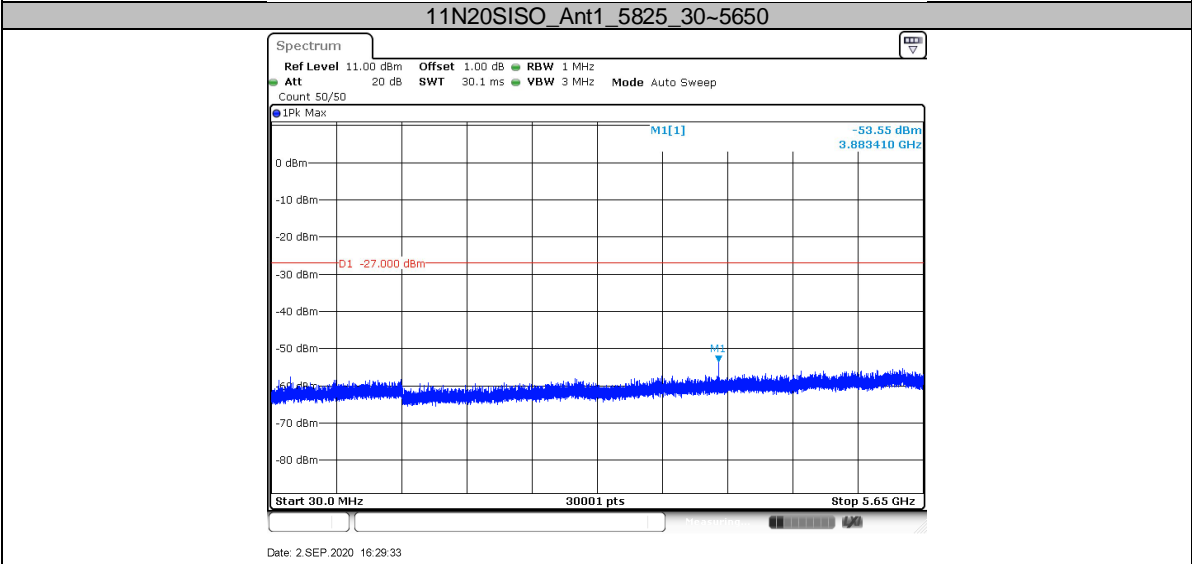
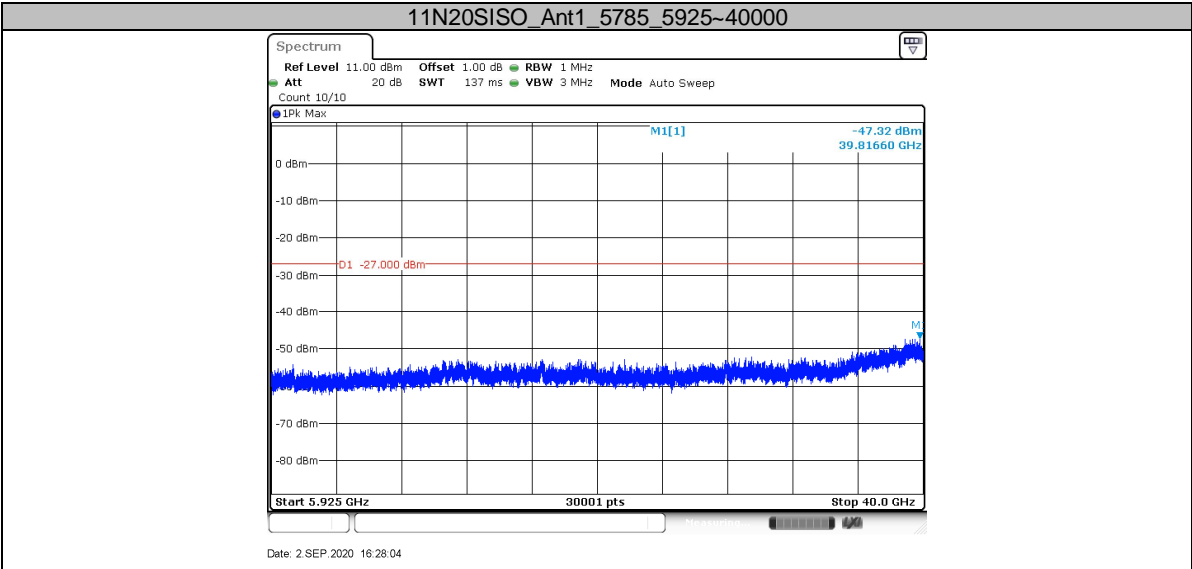
Test result:

TestMode	Channel	FreqRange(MHz)	Max. Fre(MHz)	Max. Level(dBm/MHz)	Limit(dBm/MHz)	Verdict
11N20SISO	5745	30~5650	30~5650	-51.55	<=-27	PASS
		5925~40000	5925~40000	-47.37	<=-27	PASS
	5785	30~5650	30~5650	-53.68	<=-27	PASS
		5925~40000	5925~40000	-47.32	<=-27	PASS
	5825	30~5650	30~5650	-53.55	<=-27	PASS
		5925~40000	5925~40000	-47.6	<=-27	PASS



Test Graphs





Transmitting spurious emission test result as below (Radiated Mode):**Test Method**

1. The EUT was placed on a turn table which is 1.5m above ground plane for above 1GHz and 0.8m above ground for below 1GHz at 3meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference – receiving antenna, which was mounted on the top of a variable – height antenna tower.
3. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned
5. Use the following spectrum analyzer settings According to C63.10:
For Above 1GHz
Span = wide enough to capture the peak level of the in-band emission and all spurious
RBW = 1MHz, VBW \geq RBW for peak measurement and VBW = 10Hz for average measurement, Sweep = auto, Detector function = peak, Trace = max hold.
For Below 1GHz
Use the following spectrum analyzer settings:
Span = wide enough to capture the peak level of the in-band emission and all spurious
RBW = 100 KHz, VBW \geq RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 KHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average ((duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor (20log(1/duty cycle)).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.

Limit

According to part 15.247(d), the radio emission outside the operating frequency band 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. Radiated emissions which fall in the restricted

bands, as defined in section 15.205, must comply with the radiated emission limits specified in section 15.209.

Frequency MHz	Field Strength uV/m	Field Strength dBµV/m	Detector
30-88	100	40	QP
88-216	150	43.5	QP
216-960	200	46	QP
960-1000	500	54	QP
Above 1000	500	54	AV
Above 1000	5000	74	PK

1. Remark: According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

Transmitting spurious emission test result as below:

802.11N20 Modulation 5745MHz Test Result

Frequency Range	Frequency	Emission Level	Polarization	Limit	Margin	Detector	Result
MHz	MHz	dBuV/m		dBuV/m	dB		
30-1000	943.632222	39.97	Horizontal	46.0	6.03	QP	Pass
30-1000	945.572222	35.13	Vertical	46.00	10.87	QP	Pass
1000-40000	14497.500000	46.67	Horizontal	74.00	27.33	PK	Pass
1000-40000	12075.500000	44.52	Vertical	74.00	29.48	PK	Pass

802.11N20 Modulation 5785MHz Test Result

Frequency Range	Frequency	Emission Level	Polarization	Limit	Margin	Detector	Result
MHz	MHz	dBuV/m		dBuV/m	dB		
30-1000	--	--	Horizontal	--	--	QP	Pass
30-1000	--	--	Vertical	--	--	QP	Pass
1000-40000	10827.000000	45.54	Horizontal	74.00	28.46	PK	Pass
1000-40000	31241.250000	45.43	Vertical	74.00	28.57	PK	Pass

802.11N20 Modulation 5825MHz Test Result

Frequency Range	Frequency	Emission Level	Polarization	Limit	Margin	Detector	Result
MHz	MHz	dBuV/m		dBuV/m	dB		
30-1000	--	--	Horizontal	--	--	QP	Pass
30-1000	--	--	Vertical	--	--	QP	Pass
1000-40000	2415.000000	52.65	Horizontal	74.00	15.35	PK	Pass
1000-40000	13272.500000	45.36	Vertical	74.00	28.64	PK	Pass

Remark:

- (1) Level= Reading Level + Correction Factor
- (2) Below 1GHz: Correction Factor=Antenna Factor + Cable Loss
- (3) Above1GHz: Correction Factor = Antenna Factor + Cable Loss- Amplifier Gain
(The Reading Level is recorded by software which is not shown in the sheet)
- (4) "*" means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205.
- (5) We test all modes and only the worst case for each bandwidth recorded in the report.
- (6) Testing is carried out with frequency rang 30MHz to 40GHz, which data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (7) The Low frequency, which start from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

9.5 Band Edge

Test Method

According to KBD789033 D02

The EUT was placed on 0.8m height table, the RF output of EUT was connected to the test receiver by RF cable. The path loss was compensated to the results for each measurement.

Limits:

For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.

Test Result:

TestMode	ChName	Channel(MHz)	FreqRange(MHz)	Result(dBm/MHz)	Limit(dBm/MHz)	Verdict
11N20SISO	Low	5745	5650~5700	-40.74	4.20	PASS
			5700~5720	-41.8	14.06	PASS
			5720~5725	-39.21	26.24	PASS
			5760~5650	-42.77	-27	PASS
	High	5825	5850~5855	-41.37	18.03	PASS
			5855~5875	-40.04	10.38	PASS
			5875~5925	-41.7	-18.51	PASS
			5925~5935	-42.17	-27	PASS



Test Graphs



Spectrum

Ref Level 20.00 dBm Offset 3.40 dB RBW 1 MHz
 Att 30 dB SWT 1 ms VBW 3 MHz Mode Auto Sweep

Count 300/300

1Pk View

Limit Check
 Line Limit

PASS
 PASS

M1[1] -39.21 dBm
 M2[1] -41.80 dBm
 M3 -40.74 dBm
 M4 -42.77 dBm

Start 5.645 GHz 691 pts Stop 5.76 GHz

Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1	1	1	5.724667 GHz	-39.21 dBm		
M2	1	1	1	5.7145 GHz	-41.80 dBm		
M3	1	1	1	5.692167 GHz	-40.74 dBm		
M4	1	1	1	5.6455 GHz	-42.77 dBm		

Date: 2.SEP.2020 16:31:16

Spectrum

Ref Level 20.00 dBm Offset 3.40 dB RBW 1 MHz
 Att 30 dB SWT 1 ms VBW 3 MHz Mode Auto Sweep

Count 300/300

1Pk View

Limit Check
 Line Limit

Limit PASS
 PASS

M1[1] -41.37 dBm
 5.851065 GHz

M2[1] -40.04 dBm
 5.856348 GHz

M1 -41.70 dBm
 5.851065 GHz

M2 -42.17 dBm
 5.856348 GHz

M3 -41.70 dBm
 5.866478 GHz

M4 -42.17 dBm
 5.932848 GHz

Start 5.8 GHz 691 pts Stop 5.935 GHz

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1	1	5.851065 GHz	-41.37 dBm		
M2	1	1	5.856348 GHz	-40.04 dBm		
M3	1	1	5.866478 GHz	-41.70 dBm		
M4	1	1	5.932848 GHz	-42.17 dBm		

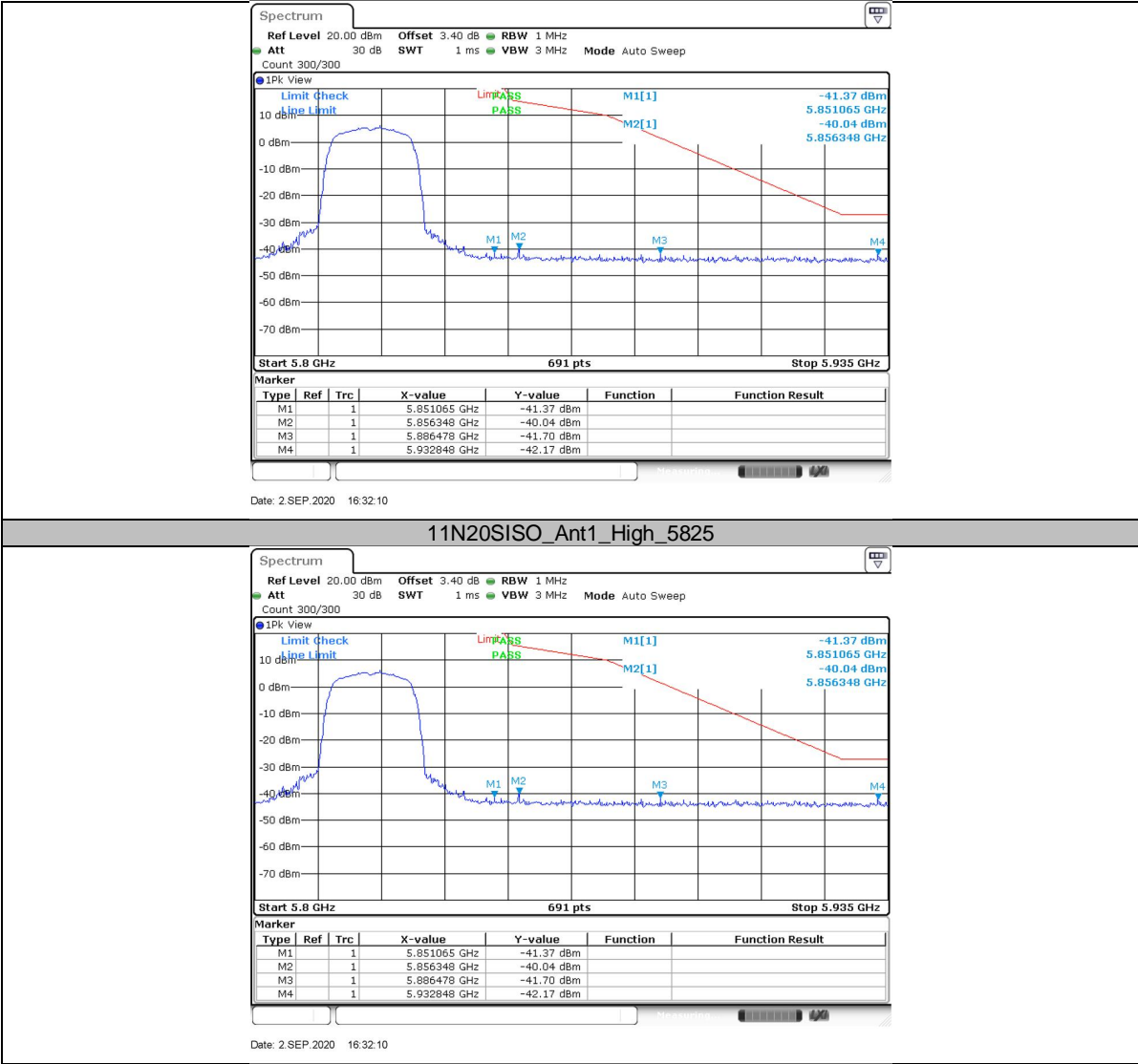
Date: 2.SEP.2020 16:32:10

The screenshot shows a spectrum analyzer interface. At the top, the title is "Spectrum". Below it, the settings are: Ref Level 20.00 dBm, Offset 3.40 dB, RBW 1 MHz, Att 30 dB, SWT 1 ms, VBW 3 MHz, Mode Auto Sweep. The frequency range is from 300.000 to 300.000 MHz. The vertical axis is labeled "dBm" and ranges from -70 to 10. A blue trace shows a signal with a peak around 300.000 MHz. A red line labeled "Limit" is drawn across the plot. Markers M1, M2, M3, and M4 are placed on the trace. The following table summarizes the marker data:

Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1		1	5.851065 GHz	-41.37 dBm		
M2	1		1	5.856348 GHz	-40.04 dBm		
M3	1		1	5.886478 GHz	-41.70 dBm		
M4	1		1	5.932848 GHz	-42.17 dBm		

Date: 2.SEP.2020 16:32:10

EMC_SZ_FR_24.00 FCC
Release 2017-06-13



9.6 Frequencies Stability

Test Method

1. The EUT was placed on 0.8m height table, the RF output of EUT was connected to the test receiver by RF cable. The path loss was compensated to the results for each measurement.
2. Set Centre Frequency of the channel under test.
3. Set Detector PEAK
4. Set RBW: 10KHz, VBW: 3RBW
5. Set Span: Encompass the entire emissions bandwidth (EBW) of the signal.
6. Allow the trace to stabilize, find the peak value of the power envelope and record the frequency, then calculated the frequency drift.

The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.

Technical description temperature is -40°C to 85°C

Limit: 20ppm

Test Results (All conditions and all modes were performed, only list Worst-Case in the report)

Test result:

Voltage								
TestMode	Antenna	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11N20SISO	Ant1	5745	NV	NT	-33000	-5.744125	20	PASS
			LV	NT	-28000	-4.873803	20	PASS
			HV	NT	-25000	-4.35161	20	PASS
		5785	NV	NT	-31000	-5.358686	20	PASS
			LV	NT	-21000	-3.630078	20	PASS
			HV	NT	-20000	-3.457217	20	PASS
		5825	NV	NT	-20000	-3.433476	20	PASS
			LV	NT	-19000	-3.261803	20	PASS
			HV	NT	-19000	-3.261803	20	PASS

Temperature								
TestMode	Antenna	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11N20SISO	Ant1	5745	NV	-30	-23000	-4.003481	20	PASS
			NV	-20	-21000	-3.655352	20	PASS
			NV	-10	-20000	-3.481288	20	PASS
			NV	0	-19000	-3.307224	20	PASS
			NV	10	-18000	-3.133159	20	PASS
			NV	20	-17000	-2.959095	20	PASS
			NV	30	-16000	-2.78503	20	PASS
			NV	40	-14000	-2.436902	20	PASS
			NV	50	-12000	-2.088773	20	PASS
		5785	NV	-30	-20000	-3.457217	20	PASS
			NV	-20	-19000	-3.284356	20	PASS
			NV	-10	-19000	-3.284356	20	PASS
			NV	0	-19000	-3.284356	20	PASS
			NV	10	-18000	-3.111495	20	PASS
			NV	20	-18000	-3.111495	20	PASS
			NV	30	-18000	-3.111495	20	PASS
			NV	40	-18000	-3.111495	20	PASS
			NV	50	-18000	-3.111495	20	PASS
		5825	NV	-30	-19000	-3.261803	20	PASS
			NV	-20	-19000	-3.261803	20	PASS
			NV	-10	-19000	-3.261803	20	PASS
			NV	0	-19000	-3.261803	20	PASS
			NV	10	-19000	-3.261803	20	PASS
			NV	20	-19000	-3.261803	20	PASS
			NV	30	-19000	-3.261803	20	PASS
			NV	40	-19000	-3.261803	20	PASS
			NV	50	-19000	-3.261803	20	PASS

10. Test Equipment List

Radiated Emission Test

DESCRIPTION	MANUFACTURER	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 26	68-4-74-14-002	101269	1	2021-6-29
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	68-4-80-14-002	707	1	2021-8-4
Horn Antenna	Rohde & Schwarz	HF907	68-4-80-14-005	102294	1	2021-7-15
Wideband Horn Antenna	Q-PAR	QWH-SL-18-40-K-SG	68-4-80-14-008	12827	1	2021-8-5
Pre-amplifier	Rohde & Schwarz	SCU 18	68-4-29-14-001	102230	1	2021-6-21
Attenuator	Agilent	8491A	68-4-81-16-001	MY39264334	1	2021-6-21
3m Semi-anechoic chamber	TDK	9X6X6	68-4-90-14-001	----	3	2022-12-29
Test software	Rohde & Schwarz	EMC32	68-4-90-14-001-A10	Version9.15.00	N/A	N/A

TS8997 Test System

DESCRIPTION	MANUFACTURER	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
Signal Generator	Rohde & Schwarz	SMB100A	68-4-48-14-001	108272	1	2021-6-21
Vector Signal Generator	Rohde & Schwarz	SMBV100A	68-4-48-18-001	262825	1	2021-6-21
Signal Analyzer	Rohde & Schwarz	FSV40	68-4-74-14-004	101030	1	2021-6-21
Vector Signal Generator	Rohde & Schwarz	SMU 200A	68-4-48-14-003	105324	1	2021-6-21
RF Switch Module	Rohde & Schwarz	OSP120/O SP-B157	68-4-93-14-003	101226/100851	1	2021-6-21
Power Splitter	Weinschel	1580	68-4-85-14-001	SC319	1	2021-7-7
10dB Attenuator	Weinschel	4M-10	68-4-81-14-003	43152	1	2021-7-16
10dB Attenuator	R&S	DNF	68-4-81-14-004	DNF-001	1	2021-6-21
10dB Attenuator	R&S	DNF	68-4-81-14-005	DNF-002	1	2021-6-21
10dB Attenuator	R&S	DNF	68-4-81-14-006	DNF-003	1	2021-6-21
10dB Attenuator	R&S	DNF	68-4-81-14-007	DNF-004	1	2021-6-21
Test software	Rohde & Schwarz	EMC32	68-4-48-14-003-A10	Version 10.38.00	N/A	N/A
Test software	Tonscend	System for BT/WIFI	68-4-74-14-006-A13	Version 2.5.77.0418	N/A	N/A

11. System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

Items	Extended Uncertainty
Uncertainty for Radiated Emission in 3m chamber 30MHz-1000MHz	Horizontal: 4.63dB; Vertical: 4.61dB;
Uncertainty for Radiated Emission in 3m chamber 1000MHz-18000MHz	Horizontal: 4.65dB; Vertical: 4.64dB;
Uncertainty for Radiated Spurious Emission 18000MHz-40000MHz	Horizontal: 4.51dB; Vertical: 4.50dB;
Uncertainty Evaluation for Power Spectral Density Conducted measurement	1.17dB
Uncertainty Evaluation for Spurious emissions Conducted measurement	1.43dB
Uncertainty for Conducted RF test with TS 8997	RF Power Conducted: 1.31dB Frequency test involved: 0.6×10 ⁻⁷ or 1%

THE END