

Arda (Zhejiang) Electric Co., Ltd.

RF TEST REPORT

Report Type:

RF report

Model:

MT6580

REPORT NUMBER:

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FCC ID: 2BUHV-ARDA01

IC: 35286-ARDA01

PMN: MT6580

HVIN: MT6580

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:

47CFR Part 15 (2024): Radio Frequency Devices (Subpart C)

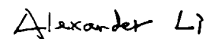
ANSI C63.10-2020 +Cor. 1-2023 +C63.10a-2024 +Errata to C63.10a-2024: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

RSS-247 Issue 4 (July 2025): Digital Transmission Systems, Frequency Hopping Systems and Licence-Exempt Local Area Network Devices in 902-928 MHz, 2400-2483.5 MHz, 5150-5350 MHz, and 5470-5895 MHz bands

RSS-Gen Issue 5, Amendment 2 (February 2021): General Requirements for Compliance of Radio Apparatus

PREPARED BY:

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Reviewer
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Revision History

Report No.	Version	Description	Issued Date
251101025HAN-001	Rev. 01	Initial issue of report	March 26, 2026

Measurement result summary

TEST ITEM	FCC REFERENCE	IC REFERENCE	RESULT
Minimum 6dB Bandwidth	15.247(a)(2)	RSS-247 Issue 4 Clause 6.2	Pass
Maximum conducted output power and e.i.r.p.	15.247(b)(3)	RSS-247 Issue 4 Clause 6.2	Pass
Power spectrum density	15.247(e)	RSS-247 Issue 4 Clause 6.2	Pass
Emission outside the frequency band	15.247(d)	RSS-247 Issue 4 Clause 6.6	Pass
Radiated Emissions in restricted frequency bands	15.247(d), 15.205&15.209	RSS-Gen Issue 5 Clause 8.9&8.10	Pass
Power line conducted emission	15.207(a)	RSS-Gen Issue 5 Clause 8.8	Pass
Occupied bandwidth	-	RSS-Gen Issue 5 Clause 6.7	Tested
Antenna requirement	15.203	-	Pass

Notes: 1: NA =Not Applicable

2: Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.

3: Additions, Deviations and Exclusions from Standards: None.

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1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	WiFi and Bluetooth module
Type/Model/PMN/HVIN:	MT6580
Description of EUT:	The EUT covered in the report is WiFi and Bluetooth module.
Rating:	5 VDC
EUT type:	☒ Table top ☐ Floor standing
Software Version:	/
Hardware Version:	/
Sample received date:	November 25, 2025
Date of test:	December 10, 2025 ~ January 10, 2026

1.2 Technical Specification

Frequency Band:	2400MHz ~ 2483.5MHz
Support Standards:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n(HT20), IEEE 802.11n(HT40)
Type of Modulation:	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n(HT20): OFDM (64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n(HT40): OFDM (64-QAM, 16-QAM, QPSK, BPSK)
Channel Number:	11 Channels for 802.11b, 802.11g and 802.11n(HT20) 7 Channels for 802.11n(HT40)
Channel Separation:	5MHz
Antenna:	External Antenna, 2.89dBi

1.3 Antenna information

Mode	Tx/Rx Function	Beamforming function	CDD function	Directional gain (dBi)
802.11b	1Tx/1Rx	NO	NO	-
802.11g	1Tx/1Rx	NO	NO	-
802.11n(HT20)	1Tx/1Rx	NO	NO	-
802.11n(HT40)	1Tx/1Rx	NO	NO	-

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1.4 Description of Test Facility

Name:	Intertek Testing Services (Shanghai FTZ) Co., Ltd.
Address:	Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L21189
	FCC Accredited Lab Designation Number: CN0175
	IC Registration Lab CAB identifier.: CN0014
	VCCI Registration Lab Member No: 3598 (Registration No.: R-14243, G-10845, C-14723, T-12252)
	A2LA Accreditation Lab Certificate Number: 3309.02

TEST REPORT

2 TEST SPECIFICATIONS

2.1 Standards or specification

47CFR Part 15 (2024)

ANSI C63.10-2020 +Cor. 1-2023 +C63.10a-2024 +Errata to C63.10a-2024

KDB 558074 (v05r02)

RSS-247 Issue 4 (July 2025)

RSS-Gen Issue 5, Amendment 2 (February 2021)

2.2 Mode of operation during the test

While testing transmitting mode of EUT, the internal modulation and continuously transmission was applied.

Software name	Manufacturer	Version	Supplied by
Platform-Tools	-	-	Client

The lowest, middle and highest channel were tested as representatives.

Frequency Band (MHz)	Mode	Lowest (MHz)	Middle (MHz)	Highest (MHz)
2400-2483.5	802.11b	2412	2437	2462
	802.11g	2412	2437	2462
	802.11n(HT20)	2412	2437	2462
	802.11n(HT40)	2422	2437	2452

Data rate and Power setting:

The pre-scan for the conducted power with all rates in each modulation and bands was used, and the worst case was found and used in all test cases. After this pre-scan, we choose the following table of the data rate as the worst case.

Frequency Band (MHz)	Mode	Worst case data rate	Power Setting
2400-2483.5	802.11b	1Mbps	Default
	802.11g	6Mbps	Default
	802.11n(HT20)	MCS0	Default
	802.11n(HT40)	MCS0	Default

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2.3 Test software list

Test Items	Software	Manufacturer	Version
Conducted emission	EMC-I	SKET	V1.5.0.4
Radiated emission	EMC-I	SKET	V1.5.0.4

2.4 Test peripherals list

Item No.	Name	Band and Model	Description
1	Laptop	HP ProBook 6470b	100-240V AC, 50/60Hz
2	RF cable	/	0.2m length; 0.5dB loss

2.5 Test environment condition:

Test items	Temperature	Humidity
Minimum 6dB Bandwidth	25°C	43%RH
Maximum conducted output power and e.i.r.p.		
Power spectrum density		
Emission outside the frequency band		
Occupied bandwidth		
Radiated Emissions in restricted frequency bands	24°C	43%RH
Power line conducted emission	23°C	44%RH

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2.6 Instrument list

Conducted Emission					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☒	Test Receiver	R&S	ESR7	EC 6194	2026-02-17
☒	A.M.N.	R&S	ESH2-Z5	EC 3119	2026-07-22
☒	Shielded room	Zhongyu	-	EC 2838	2027-01-08
Radiated Emission					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☒	Test Receiver	R&S	ESIB 26	EC 3045	2026-08-05
☒	Test Receiver	R&S	ESR	EC6501	2026-09-10
☒	TRILOG broadband Antenna	Schwarzbeck	VULB9168	EC 6402	2026-04-06
☒	Pre-amplifier	Tonscend	tap01018050	EC 6432-1	2026-12-03
☒	Horn antenna	Tonscend	bha9120d	EC 6432-2	2026-04-10
☒	Horn antenna	TOYO	HAP18-26W	EC 4792-3	2026-09-12
☒	Semi-anechoic chamber	Albatross project	-	EC 3048	2026-07-11
RF test					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☒	PXA Signal Analyzer	Keysight	N9030A	EC 5338	2026-05-25
☒	Vector Signal Generator	Agilent	N5182B	EC 5175	2026-03-11
☒	Universal Radio Communication Tester	R&S	CMW500	EC5944	2027-03-11
Additional instrument					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☒	Therom-Hygrograph	Testo	175h1	EC 6640	2026-08-03
☒	Therom-Hygrograph	Testo	175h1	EC 6643	2026-08-25

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2.7 Measurement uncertainty

The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Test item	Measurement uncertainty
Maximum peak output power	$\pm 0.74\text{dB}$
Radiated Emissions in restricted frequency bands below 1GHz	$\pm 4.90\text{dB}$
Radiated Emissions in restricted frequency bands above 1GHz	$\pm 5.02\text{dB}$
Emission outside the frequency band	$\pm 2.89\text{dB}$
Power line conducted emission	$\pm 3.19\text{dB}$

TEST REPORT

3 Minimum 6dB bandwidth

Test result: **PASS**

3.1 Limit

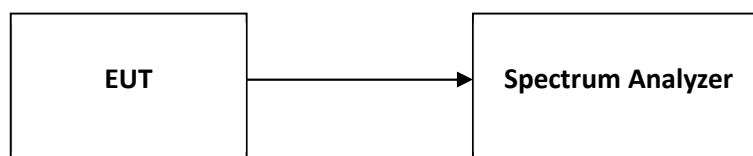
For systems using digital modulation techniques that may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz bands, the minimum 6 dB bandwidth shall be at least 500 kHz.

3.2 Measurement Procedure

The EUT was tested according to Subclause 11.8 of ANSI C63.10.

- a) Set RBW = 100 kHz.
- 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.

3.3 Test Configuration



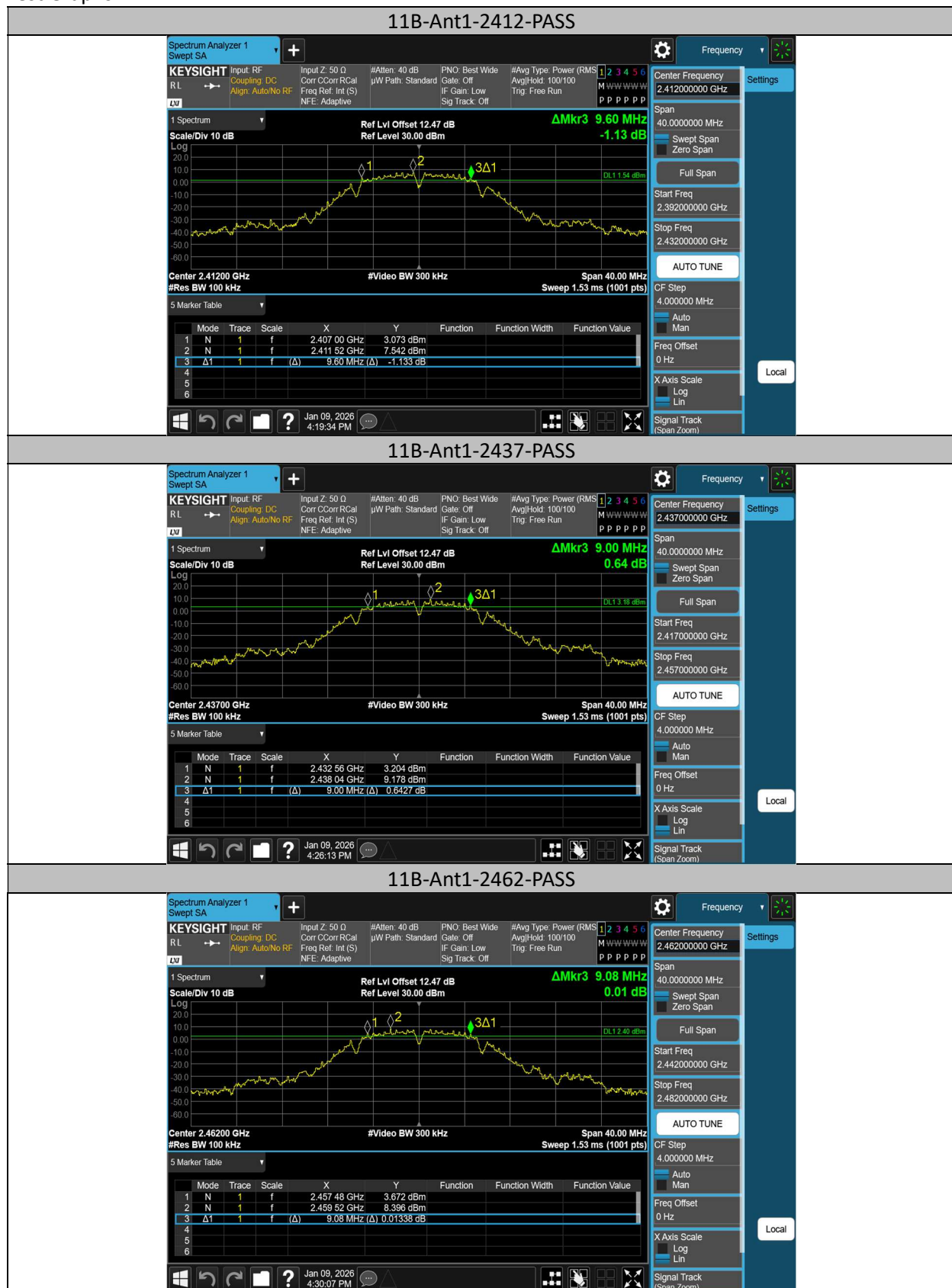
TEST REPORT

3.4 Test Results of Minimum 6dB bandwidth

TestMode	Antenna	Frequency[MHz]	-6 dB Bandwidth (MHz)	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
b	Ant1	2412	9.600	2407.000	2416.600	0.5	PASS
b	Ant1	2437	9.000	2432.560	2441.560	0.5	PASS
b	Ant1	2462	9.080	2457.480	2466.560	0.5	PASS
g	Ant1	2412	14.240	2405.360	2419.600	0.5	PASS
g	Ant1	2437	15.320	2429.480	2444.800	0.5	PASS
g	Ant1	2462	13.200	2455.720	2468.920	0.5	PASS
n20	Ant1	2412	15.640	2404.520	2420.160	0.5	PASS
n20	Ant1	2437	12.880	2431.640	2444.520	0.5	PASS
n20	Ant1	2462	15.320	2454.280	2469.600	0.5	PASS
n40	Ant1	2422	35.120	2404.480	2439.600	0.5	PASS
n40	Ant1	2437	33.920	2420.680	2454.600	0.5	PASS
n40	Ant1	2452	35.040	2434.560	2469.600	0.5	PASS

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Test Graphs



11G-Ant1-2412-PASS



11G-Ant1-2437-PASS



11G-Ant1-2462-PASS



11N20-Ant1-2412-PASS



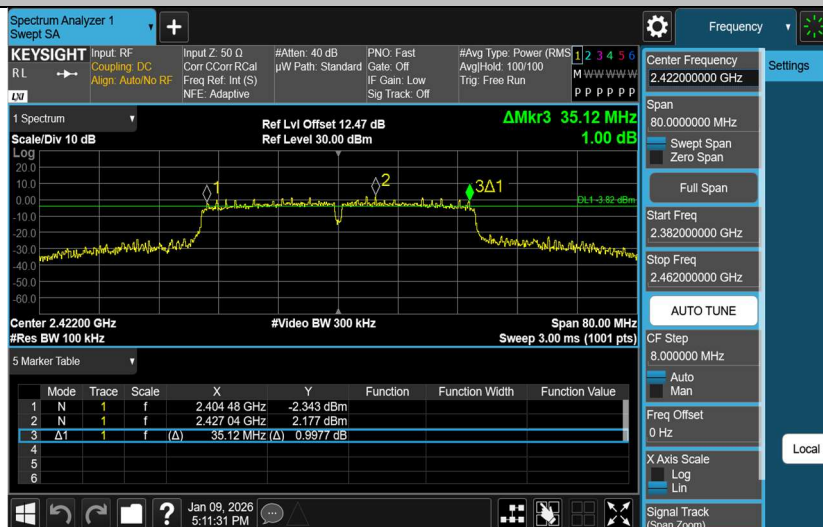
11N20-Ant1-2437-PASS



11N20-Ant1-2462-PASS



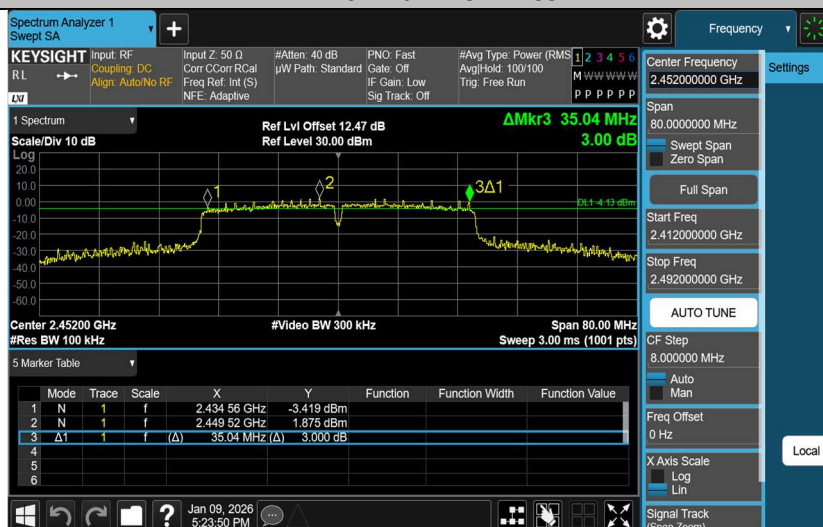
11N40-Ant1-2422-PASS



11N40-Ant1-2437-PASS



11N40-Ant1-2452-PASS



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4 Maximum conducted output power and e.i.r.p.

Test result: PASS

4.1 Limit

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 W. (The e.i.r.p. shall not exceed 4 W)

If the transmitting antenna of directional gain greater than 6dBi is used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi. If there have a beam forming type, the limit should be the minimum of 30dBm and 30+ (6 –antenna gain-beam forming gain).

4.2 Measurement Procedure

The EUT was tested according to Subclause 11.9.2.2 of ANSI C63.10.

- a) Measure the duty cycle, x , of the transmitter output signal as described in Section 6.0.
- b) Set span to at least $1.5 \times \text{OBW}$.
- c) Set RBW = 1 % to 5 % of the OBW, not to exceed 1 MHz.
- d) Set VBW $\geq 3 \times \text{RBW}$.
- e) Number of points in sweep $\geq 2 \times \text{span} / \text{RBW}$. (This gives bin-to-bin spacing $\leq \text{RBW}/2$, so that narrowband signals are not lost between frequency bins.)
- f) Sweep time = auto.
- g) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
- h) Do not use sweep triggering. Allow the sweep to “free run”.
- i) Trace average at least 100 traces in power averaging (i.e., RMS) mode; however, the number of traces to be averaged shall be increased above 100 as needed such that the average accurately represents the true average over the on and off periods of the transmitter.
- j) Compute power by integrating the spectrum across the OBW of the signal using the instrument’s band power measurement function with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.
- k) Add $10 \log (1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on- and off-times of the transmission). For example, add $10 \log (1/0.25) = 6 \text{ dB}$ if the duty cycle is 25 %.

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4.3 Test Configuration

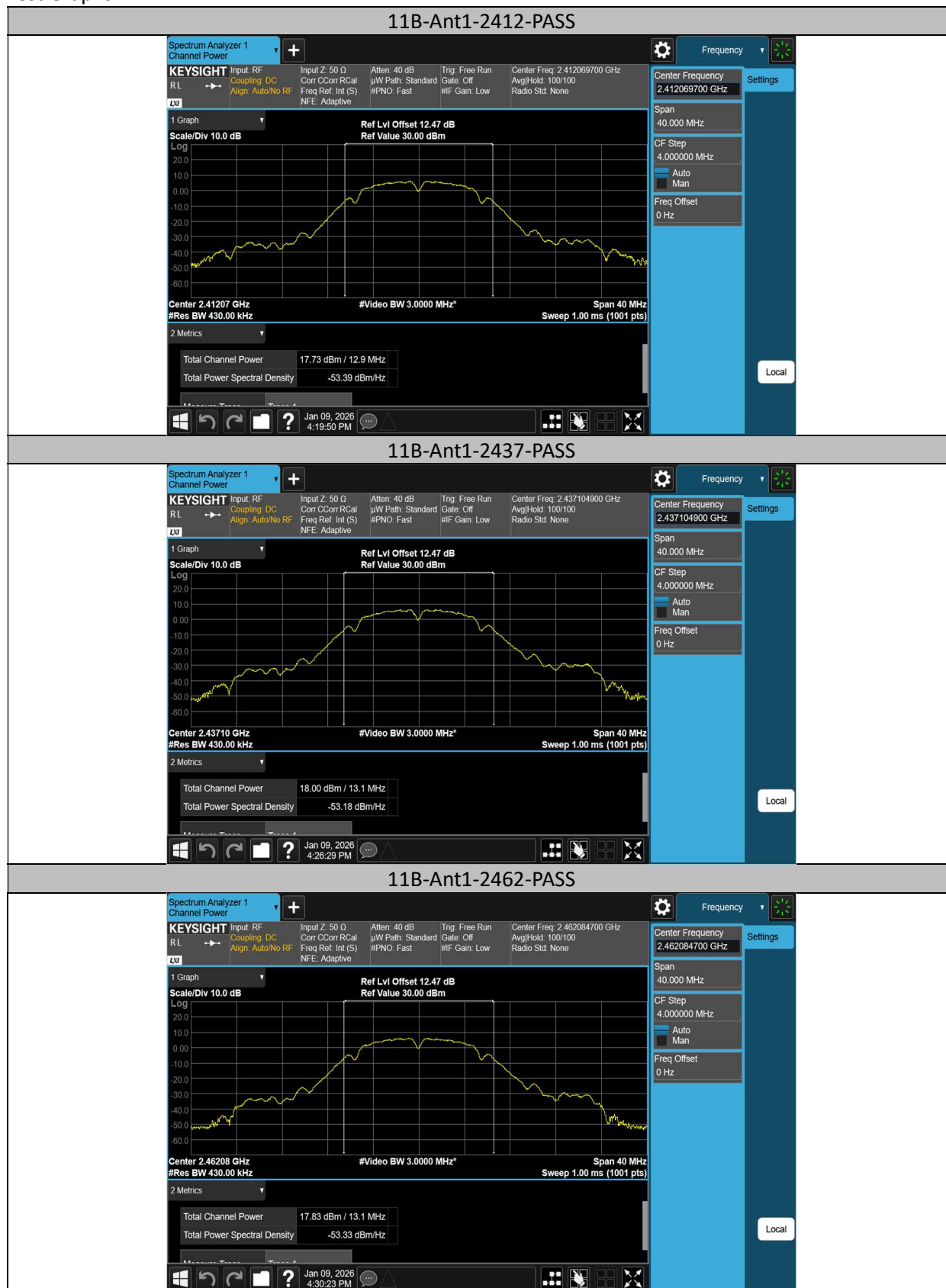


4.4 Test Results of Maximum conducted output power

TestMode	Antenna	Frequency [MHz]	Peak Power [dBm]	Conducted Limit [dBm]	EIRP [dBm]	EIRP Limit[dBm]	Verdict
b	Ant1	2412	17.73	30	20.62	36	PASS
b	Ant1	2437	18.00	30	20.89	36	PASS
b	Ant1	2462	17.83	30	20.72	36	PASS
g	Ant1	2412	13.92	30	16.81	36	PASS
g	Ant1	2437	15.41	30	18.30	36	PASS
g	Ant1	2462	15.74	30	18.63	36	PASS
n20	Ant1	2412	13.95	30	16.84	36	PASS
n20	Ant1	2437	15.37	30	18.26	36	PASS
n20	Ant1	2462	16.13	30	19.02	36	PASS
n40	Ant1	2422	15.60	30	18.49	36	PASS
n40	Ant1	2437	15.64	30	18.53	36	PASS
n40	Ant1	2452	15.63	30	18.52	36	PASS

TEST REPORT

Test Graphs





11N20-Ant1-2412-PASS



11N20-Ant1-2437-PASS



11N20-Ant1-2462-PASS



11N40-Ant1-2422-PASS



11N40-Ant1-2437-PASS



11N40-Ant1-2452-PASS



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5 Power spectrum density

Test result: PASS

5.1 Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission.

If the transmitting antenna of directional gain greater than 6dBi is used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi. If there have a beam forming type, the limit should be the minimum of 8dBm/MHz and 8+ (6 –antenna gain-beam forming gain).

5.2 Measurement Procedure

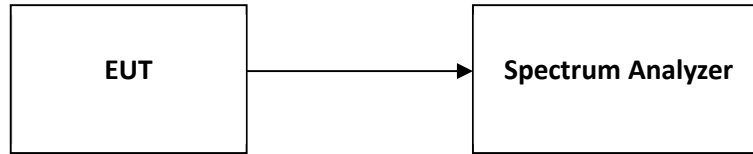
The EUT was tested according to Subclause 11.10 of ANSI C63.10.

This procedure is applicable when the EUT cannot be configured to transmit continuously (i.e., duty cycle < 98 %), and when sweep triggering/signal gating cannot be used to measure only when the EUT is transmitting at its maximum power control level, and when the transmission duty cycle is constant (i.e., duty cycle variations are less than $\pm 2\%$):

- a) Measure the duty cycle (x) of the transmitter output signal as described in Section 6.0.
- b) Set instrument center frequency to DTS channel center frequency.
- c) Set span to at least $1.5 \times \text{OBW}$.
- d) Set RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- e) Set VBW $\geq 3 \times \text{RBW}$.
- f) Detector = power averaging (RMS) or sample detector (when RMS not available).
- g) Ensure that the number of measurement points in the sweep $\geq 2 \times \text{span}/\text{RBW}$.
- h) Sweep time = auto couple.
- i) Do not use sweep triggering. Allow sweep to “free run”.
- j) Employ trace averaging (RMS) mode over a minimum of 100 traces.
- k) Use the peak marker function to determine the maximum amplitude level.
- l) Add $10 \log (1/x)$, where x is the duty cycle measured in step (a), to the measured PSD to compute the average PSD during the actual transmission time.
- m) If resultant value exceeds the limit, then reduce RBW (no less than 3 kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span in order to meet the minimum measurement point requirement as the RBW is reduced).

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5.3 Test Configuration



5.4 Test Results of Power spectrum density

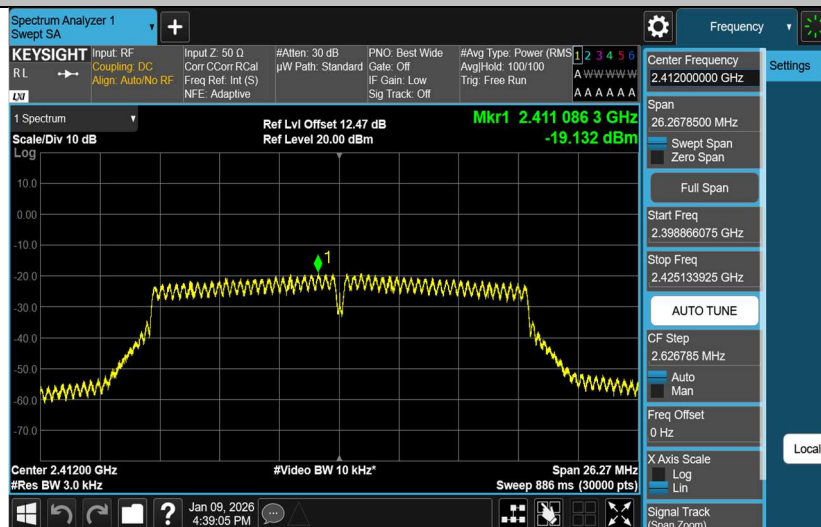
TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
b	Ant1	2412	-13.47	8	PASS
b	Ant1	2437	-12.17	8	PASS
b	Ant1	2462	-13.31	8	PASS
g	Ant1	2412	-19.04	8	PASS
g	Ant1	2437	-17.06	8	PASS
g	Ant1	2462	-16.40	8	PASS
n20	Ant1	2412	-18.98	8	PASS
n20	Ant1	2437	-16.62	8	PASS
n20	Ant1	2462	-16.28	8	PASS
n40	Ant1	2422	-18.59	8	PASS
n40	Ant1	2437	-18.46	8	PASS
n40	Ant1	2452	-18.09	8	PASS

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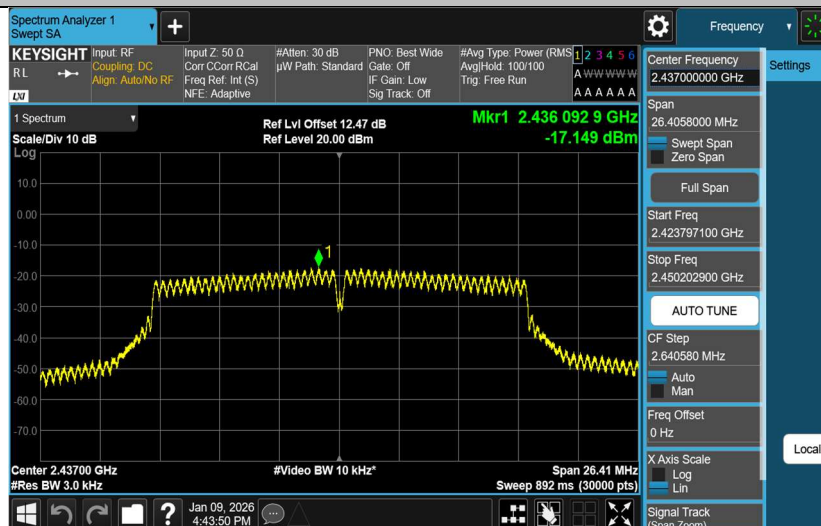
Test Graphs



11G-Ant1-2412-PASS

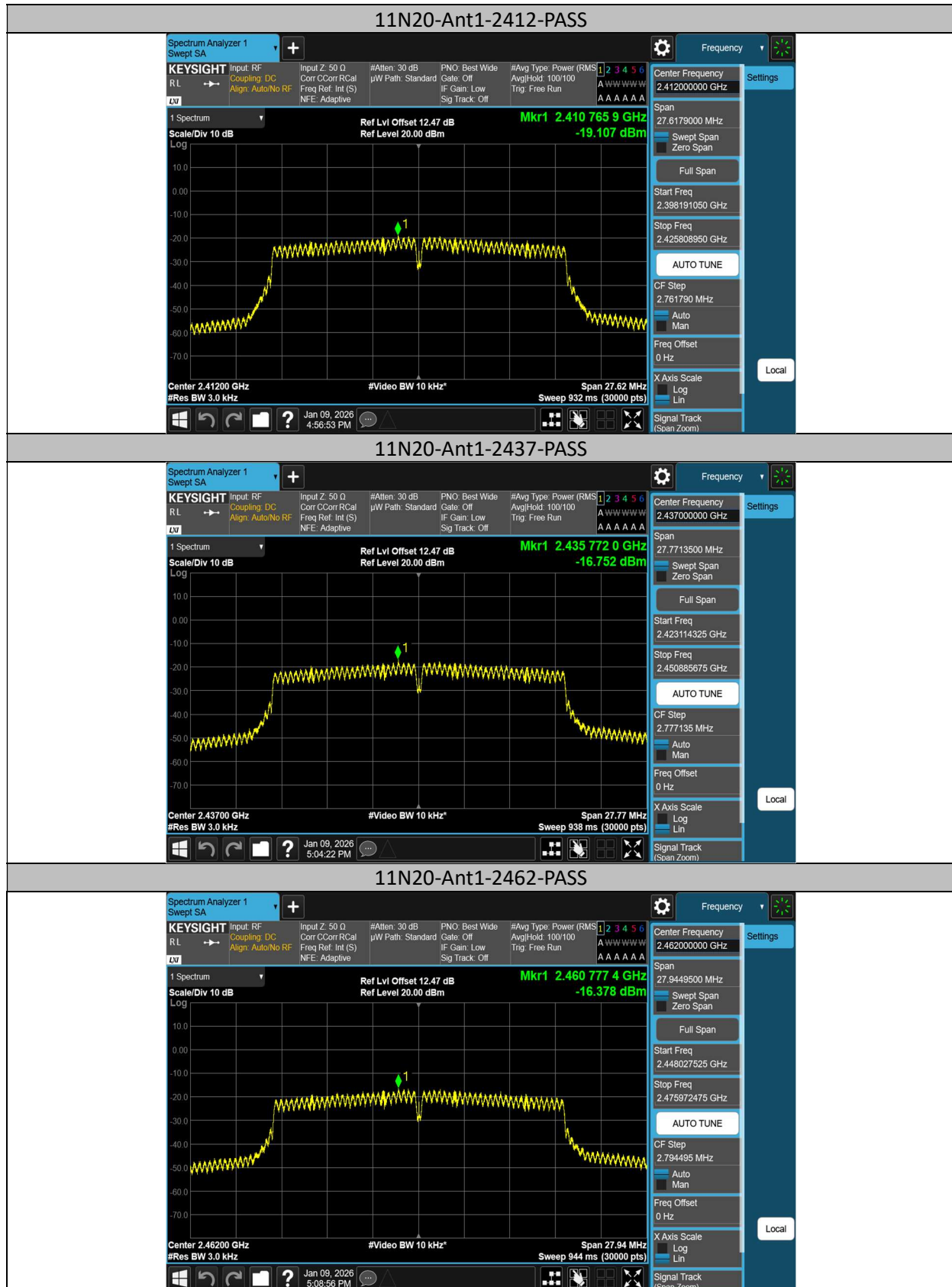


11G-Ant1-2437-PASS

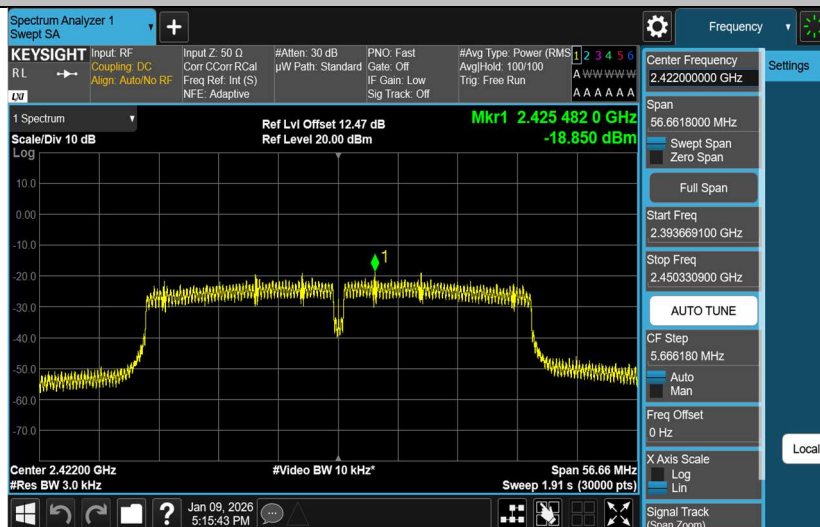


11G-Ant1-2462-PASS

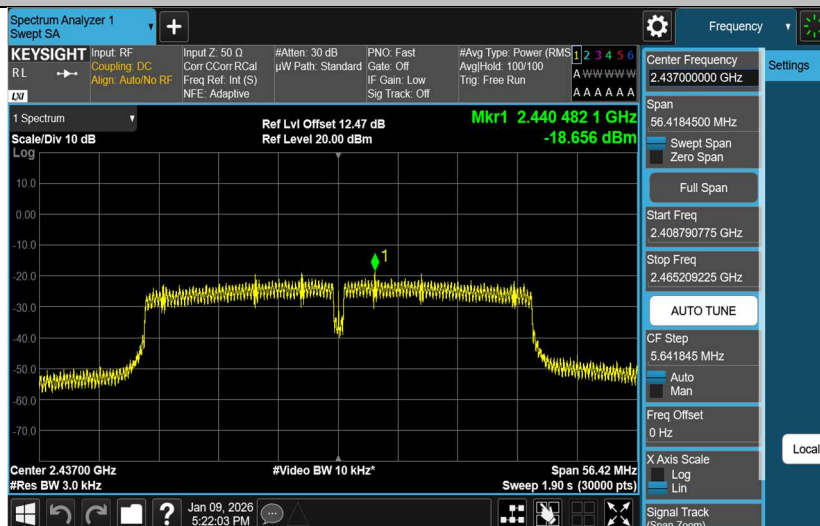




11N40-Ant1-2422-PASS



11N40-Ant1-2437-PASS



11N40-Ant1-2452-PASS

