



Specified Low Power Radio Equipment Article 2 Clause 1 Item (19)

2.4 GHz Bluetooth LE

CERTIFICATION TEST REPORT

FOR

LED Massage Headset

MODEL NUMBER: ISW-EKR201L

REPORT NUMBER: U-4792146367-OR1V2

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Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2026-05-28	Initial issue	Taylor Kwon
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1. Attestation of Test Results

COMPANY NAME: iMediSync Inc.
5F Saman Bldg, 520 Teheran-ro, Gangnam-gu Seoul, 06181, Korea

EUT DESCRIPTION: LED Massage Headset

MODEL NUMBER: ISW-EKR201L

ADDITIONAL MODEL NUMBER: ISW-EKR201

DATE TESTED: 2026-05-01 ~ 2026-05-20

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
Specified Low Power Radio Equipment Article 2 Paragraph 1 Item (19)	Pass

UL Korea, Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Korea, Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by IAS, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL Korea, Ltd. By:



ChangMin Kim
Senior Laboratory Engineer
UL Korea, Ltd.

Tested By:



Taylor Kwon
Senior Laboratory Technician
UL Korea, Ltd.

1.1. Equipment Description

ISW-EKR201L is a LED Massage Headset with Bluetooth LE.
This test report addresses the Bluetooth LE operational mode.

1.2. Details of Test Equipment (EUT)

- Equipment Type LED Massage Headset
- Model No. ISW-EKR201L
- Type of test Equipment Portable Type
- Manufacturer EM-Tech.CO., LTD
12-10, 327-gil, Simin-daero, Dongan-gu, Anyang-si,
Gyeonggi-do Korea

1.3. Equipment Configuration

The EUT is consisted of the following component provided by the manufacturer.

Use*	Product Type	Manufacturer	Model	Comments
EUT	LED Massage Headset	EM-Tech.CO., LTD	ISW-EKR201L	-
Note: Use = EUT - Equipment Under Test, AE - Auxiliary/Associated Equipment. SIM - Simulator (Not Subjected to Test)				

1.4. Technical Data

Item	Description
Frequency Ranges	2 402 MHz ~ 2 480 MHz
Kind of modulation (s)	GFSK
Channel	40 Channel
Antenna Gain	Max. 5.07 dBi
Supply Voltage	DC 3.7 V

Note : All the technical data described above were provided by the manufacturer.

1.5. Antenna Information

- Antenna Type : Dielectric Chip Antenna
- Transmit Gain dBi : Max. 5.07 dBi
- Polarization : Linear

1.6. Equipment Type

- ☐ Radio and ancillary equipment for fixed or semi-fixed use
☐ Radio and ancillary equipment for vehicular mounted use
☒ Radio and ancillary equipment for portable or handheld use
- ☒ Stand alone ☐ Host connected
☐ Self contained single unit ☐ Module with associated connection or interface

1.7. Description of additional model name

Model Name	Model Name Designation	Differences
ISW-EKR201L	Basic model	The ISW-EKR201 model is specified without an LED function, and it has no other differences compared to the basic model.
ISW-EKR201	Additional model	

2. Test Specification

The following test specifications and standards have been applied and used for testing.

- 1) Specified Low Power Radio Equipment Article 2 Paragraph 1 Item (19)
Radio equipment for low-power data communications system radio station using a radio wave of 2,400 – 2,483.5 MHz
- 2) The test was performed in accordance with MIC Notification No. 88 of 2004, Annex 43.

3. Test Conditions

3.1. Equipment Used During Test

Use*	Product Type	Manufacturer	Model	Comments
EUT	LED Massage Headset	EM-Tech.CO., LTD	ISW-EKR201L	-
AE	Test Jig	EM-Tech.CO., LTD	N/A	-
Note: Use = EUT - Equipment Under Test, AE - Auxiliary/Associated Equipment. SIM - Simulator (Not Subjected to Test)				

3.2. Power Interface

Mode #	Rated Voltage (V)	Current (A)	Power (W)	Frequency (DC/AC-Hz)	Phases (#)	Comments
1	3.7 V	-	-	DC	-	V _{NOM} Connected to Battery

3.3. Operating Frequencies

Mode #	Frequency tested
1	2 402 MHz ~ 2 480 MHz (Bluetooth LE)

3.4. Operation Modes

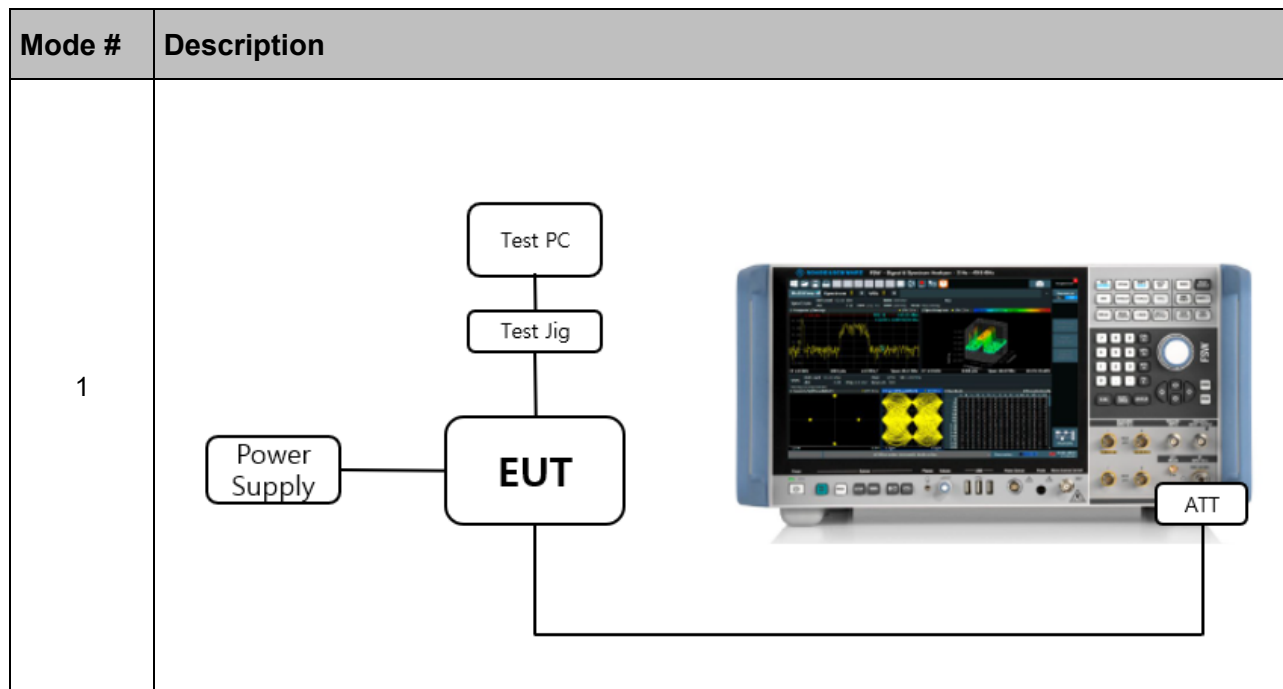
Mode #	Description
1	Configure the UUT for Traffic mode
2	Configure the UUT for Idle mode
Note: The worst-case condition is determined by the baseline measurement of RF output power out of various modulations and data rates. (Worst case: BLE 1 Mbps(255 pkt))	

3.5. Environment Conditions

Test Location : RF Shield room

Parameters	Test Condition	Normal condition
Temperatuer	25.6 °C	(5 ~ 35) °C
Humidity	49.6 % R.H	(45 ~ 85) % R.H

3.6. Test Configurations



TEST SETUP

Test software exercised the EUT to enable BLE mode.

EUT Operation test setup

- Test Software : nRF connect
- Power Setting : 0 dBm (default)

3.7. List of Test Equipment

Description	Manufacturer	Model	Identifier	Cal. Date	Next Cal. Date	Cal. by	Cal Method Note1
Spectrum Analyzer	Rohde & Schwarz	FSW50	101567	2025-07-14	2026-07-14	HCT	c)
Signal Generator	Rohde & Schwarz	SMB100A	184060	2026-03-04	2027-03-04	HCT	c)
DC Power Supply	SM Techno	SDP30-5D	305DWA003	2025-07-14	2026-07-14	HCT	c)
Attenuator	Centric RF	C040-10	N/A	2025-12-30	2026-12-30	HCT	c)
Power Sensor	KEYSIGHT	U2052XA	MY60000079	2025-12-30	2026-12-30	HCT	c)
Digital Multimeter	Fluke Corporation	17B+	51260820WS	2025-07-14	2026-07-14	HCT	c)
Humidity/Baro/Temp DATA RECORDER	Lutron	MHB-382SD	AM.00223	2025-12-30	2026-12-30	HCT	c)

Note 1: Calibration Method

- a): Calibration conducted by the National Institute of Information and Communications Technology~NICT~ or a designated calibration agency under Article 102-18 paragraph (1)~ TELEC EngineeringCenter, Intertek Japan K.K., Keysight Technologies, Inc~.
- b): Correction conducted pursuant to the provisions of Article 135 or Article 144 of the MeasurementLaw (Law No. 51 of 1992)~Japan Calibration Service Syste~
- c): Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted bythe NICT or a designated calibration agency under Article 102-18 paragraph (1)~ TELEC EngineeringCenter, Intertek Japan K.K., Keysight Technologies, Inc~.
- d): Calibration conducted by using other equipment that listed above from a) to c)

4. Summary Table

Certification Ordinance Article 2 Clause 1 Item19				
Test Description	Test Limit		Test Condition	Test Result Note 1 Note 3
Frequency Tolerance	±50×10 ⁻⁶ (50 ppm)		Conducted	C Note 2
Occupied Bandwidth	< 26 MHz or below			C
RF Output Power Tolerance	< 10mW / +20 %			C
Unwanted (Spurious) Emission Strength	30 MHz ~ 2 387MHz	< 2.5uW/MHz		C
	2 387 MHz ~ 2 400MHz	< 25uW/MHz		
	2 483.5 MHz ~2496.5MHz	< 25uW/MHz		
	2 496.5 MHz ~ 12 500 MHz	< 2.5uW/MHz		
Secondary Emitted Radio Wave Strength	30 MHz ~ 1 000MHz	< 4nW	C	
	1 000 MHz to 12 500 MHz	< 20nW		
Interference Prevention Function	-		-	C
Note 1: C=Comply NC=Not Comply NT=Not Tested NA=Not Applicable				
Note 2: FT (ppm) = [(Measured value(MHz) – Operating frequency(MHz)) / Operating frequency(MHz)] × 10 ⁶ * The frequency tolerance value is calculated from the data value of the test plot.				
Note 3: This product is designed to shut down below 3.5 V. Therefore, testing was conducted at 3.5 V, which represents the minimum operating voltage just before shutdown				

5. Test Procedures

5.1 Frequency Tolerance

- 5.1.1 Operating Condition of the Equipment Under Test (EUT)
 - 1) Set the EUT to the test frequency and transmit.
 - 2) Disable modulation and transmit an unmodulated continuous wave.
 - A. If continuous unmodulated transmission is not possible, the EUT may transmit unmodulated burst signals, or operate in a modulation mode that produces a distinctive spectrum which allows the carrier frequency to be identified on a spectrum analyzer.
- 5.1.2 Measurement Procedure
 - 1) For continuous or continuous-burst unmodulated waves, measure the frequency directly using a frequency meter.
 - 2) For burst signals, measure over a time interval sufficient to obtain adequate accuracy, then calculate and record the average value as the measurement result.
 - 3) For modulation modes that generate a distinctive spectral pattern, measure the frequency of that spectrum using a spectrum analyzer.

5.2 Occupied bandwidth

- 5.2.1 Operating Condition of the Equipment Under Test (EUT)
 - 1) Set the EUT to the test frequency and modulate it using the standard coded test signal.
 - 2) For OFDM systems operating in burst mode, use the modulation state in which the time ratio of the minimum number of subcarriers is minimized.
- 5.2.2 Conditions for Measuring Instruments
 - A spectrum analyzer shall be configured as follows:
 - Center Frequency: Test frequency
 - Span (Sweep Frequency Range): Approximately 2× to 3.5× the permissible limit specified in the technical regulations
 - Resolution Bandwidth (RBW): ≤ 3% of the permissible limit
 - Video Bandwidth (VBW): Approximately equal to the resolution bandwidth
 - Input Level: Set so that the carrier level is sufficiently above the analyzer noise floor
 - Sweep Time: Minimum value ensuring required measurement accuracy
(For burst signals: long enough to include at least one full burst per sample)
 - Sweep Mode: Continuous sweep
 - Detector Mode: Positive peak (*Note*)
 - Display Mode: Max hold (*Note*)

Note:

For OFDM systems operating in non-burst mode:

- Average at least 10 traces
 - Use sample detector mode
- 5.2.3 Measurement Procedure
 - 1) Configure the spectrum analyzer as specified in Section 2.
 - 2) Position the EUT and the measurement antenna so that polarization, height, and direction maximize received power.
 - If insufficient dynamic range is obtained, reduce the antenna-to-EUT distance.
 - 3) Continue sweeping until no further change appears on the display, then export all data points to a computer array.
 - 4) Convert each data point from dB to linear power.
 - 5) Sum all linear power values to obtain the total power.
 - 6) Starting from the lowest frequency, accumulate power upward until reaching 0.5% of the total power.
 - Convert the corresponding data point to frequency → Lower Frequency Limit

- 7) Starting from the highest frequency, accumulate power downward until reaching 0.5% of the total power.
 - Convert the corresponding data point to frequency → Upper Frequency Limit

5.3 RF Output Power

5.3.1 Operating Condition of the Equipment Under Test (EUT)

- 1) Set the EUT to the test frequency and operate in continuous transmission or continuous-burst mode.
- 2) If spread-spectrum coding is used, the EUT shall apply the designated test spreading code and be modulated with the standard coded test signal.
- 3) For OFDM systems operating in burst mode, use the modulation state in which the proportion of symbols with the *minimum number of subcarriers* is maximized.
- 4) For frequency-hopping systems, stop hopping (disable spreading) during measurement.

5.3.2 Conditions for Measuring Instruments

- (1) Spectrum Analyzer Noise Bandwidth Correction
Measure the equivalent noise bandwidth (ENBW) when using a 1 MHz resolution bandwidth. Convert the indication to a 1 MHz equivalent bandwidth.

If the spreading bandwidth is ≤ 1 MHz, correction is performed only when:

$$\frac{\text{Spreading Bandwidth (MHz)}}{\text{ENBW (MHz)}} > 1$$

- (2) Dummy Load (Attenuator)
The attenuation value must be adjusted to provide the spectrum analyzer with an optimal input signal level.
- (3) Spectrum Analyzer Settings for Maximum-Power Frequency Search
 - Center frequency: Test frequency
 - Span: Approximately twice the occupied bandwidth
 - RBW: 1 MHz
 - VBW: Approximately 3× the RBW
 - Sweep time: Minimum time ensuring measurement accuracy
(For burst signals: at least one burst per sample)
 - Trigger: Free run
 - Sweep mode: Continuous
 - Detector: Positive peak
 - Display: Max hold
- (4) Spectrum Analyzer Settings for Power Measurement
 - Center frequency: Frequency giving maximum received power
 - Span: 0 Hz (zero-span mode)
 - RBW: 1 MHz
 - VBW: Approximately equal to RBW
 - Sweep mode: Continuous

5.3.3 Measurement Procedure

- (1) For frequency-hopping systems
 - 1) Confirm from submitted documentation that:
 - Hopping intervals are equally spaced and ≤ 1 MHz, and
 - Occurrence probability for each hopping frequency is uniform.
 - 2) Connect the RF power meter to the dummy load and measure total RF power.
 - 3) Divide the total power by the spreading bandwidth to calculate the average power per MHz.
 - 4) The antenna power is determined as follows:
 - Continuous wave: Use the value from (c).
 - Burst: Correct using the transmission duty cycle to calculate the in-burst average.

- (2) For OFDM or Direct-Sequence Spread Spectrum
 - 2) Configure the analyzer as in Section 5.3.2 (3).
 - 3) Sweep repeatedly until power stabilization, then measure the frequency with maximum 1 MHz power.
 - 4) Switch to zero-span mode per Section 5.3.2 (4).
 - 5) Connect an RF power meter to the analyzer's IF output.
 - 6) Antenna power:
 - Continuous wave: corrected RF power value
 - Burst mode: apply duty-cycle correction to obtain in-burst average power
 - f. If multiple subcarrier modulation types exist, measure each and record the maximum value.
- (3) Other Modulation Types
 - 1) Measure total power using an RF power meter at the dummy-load output.
 - 2) For burst operation: correct with duty cycle to obtain in-burst average power.

5.4 Unwanted (Spurious) Emission Strength

5.4.1 Measurement Method for Unwanted Emissions in the Spurious Domain

5.4.1.1 Operating Condition of the Equipment Under Test (EUT)

The EUT shall be placed in the same operational condition as used for occupied bandwidth measurement.

5.4.1.2 Conditions for Measuring Instruments

- (1) Except for spectrum analyzer settings, all conditions shall match those used for occupied bandwidth measurement.
- (2) Spectrum Analyzer Settings for Measuring Unwanted Emission Power
 - Center frequency: Carrier or identified unwanted emission frequency
 - Span: 0 Hz
 - RBW: Reference bandwidth
 - VBW: $\approx$ RBW
 - Y-axis scale: 10 dB/div
 - Input level: Maximum usable dynamic-range level
 - Sweep mode: Single sweep
 - Detector: Sample (positive-peak when peak values are required)
- (3) Spectrum Analyzer Settings for Searching Unwanted Emissions
 - Sweep range: Entire spurious domain
 - RBW: Reference bandwidth
 - VBW: $\approx$ RBW
 - Sweep time: Minimum ensuring required accuracy
 - Y-axis scale: 10 dB/div
 - Sweep mode: Single sweep
 - Detector: Positive peak
 - FHSS exception: sweep time must cover ≥ 1 hopping cycle; burst signals require sweep time = (Span/RBW) $\times$ burst period

5.4.1.3 Measurement Procedure

For Equipment without Integrated Antenna

- 1) Set analyzer as in 5.4.1.2 (2) and measure carrier amplitude.
- 2) Set analyzer as in 5.4.1.2 (3) and sweep to search for unwanted emissions.

- 3) If the emission does not satisfy the limit, narrow the sweep span progressively to determine the exact frequency.
- 4) If the emission is clearly within limits, detailed measurement (step e) may be omitted.
- 5) Measure unwanted emission amplitude using settings in 5.4.1.2 (2).
- 6) Near the carrier, RBW may be narrowed; convert the level to the reference bandwidth value.

5.4.2 Measurement Method for Spurious Emissions in the Out-of-Band Domain

5.4.2.1 Operating Condition of the Equipment Under Test (EUT)

The EUT shall be placed in the same operational condition as used for occupied bandwidth measurement.

5.4.2.2 Conditions for Measuring Instruments

- 1) Same conditions as occupied bandwidth measurement, except analyzer settings.
- 2) Analyzer settings for searching spurious emissions are identical to those used for unwanted emission search.
- 3) Analyzer settings for measuring spurious emission:
 - Center frequency: Carrier or identified spurious frequency
 - Span: 0 Hz
 - RBW: 10 Hz – 1 kHz (or ≥ 1 kHz when frequency span exceeds 10 MHz)
 - Sweep mode: Single sweep
 - Detector: Sample (positive-peak for peak values and FHSS near-carrier cases)
 - Display: Max hold (for FHSS near-carrier emissions)

5.4.2.3 Measurement Procedure

Measurements follow the same steps as unwanted emission measurement in the spurious domain.

5.5 Secondary Emitted Radio Wave Strength

5.5.1 Operating Condition of the Equipment Under Test (EUT)

The EUT shall be configured so that the test frequency can be continuously received at all times during the measurement.

5.5.2 Conditions for Measuring Instruments

(1) Spectrum Analyzer Settings for Searching Secondary Emissions

- Sweep Frequency Range: From 30 MHz to $5\times$ the carrier frequency
- Resolution Bandwidth (RBW):
 - 100 kHz for frequencies below 1 GHz
 - 1 MHz for frequencies at or above 1 GHz
- Video Bandwidth (VBW): Approximately equal to RBW
- Sweep Time: Minimum time that ensures required measurement accuracy
- Sweep Mode: Single sweep
- Detector Mode: Positive-peak detection

(2) Spectrum Analyzer Settings for Measuring Secondary Emission Level

- Center Frequency: Frequency of the identified secondary emission
- Span: 0 Hz (zero-span)
- Resolution Bandwidth:

- 100 kHz (< 1 GHz)
- 1 MHz ($\geq$ 1 GHz)
- Video Bandwidth: Same as RBW
- Sweep Time: Minimum ensuring required accuracy
- Sweep Mode: Single sweep
- Detector Mode: Sample or RMS detection

5.5.3 Measurement Procedure

(1) Searching for Secondary Emissions

- 1) Configure the spectrum analyzer according to Section 5.5.2 (1).
- 2) Search for the maximum amplitude of secondary emissions across the required frequency range.

(2) Measuring Secondary Emission Levels

For each detected secondary emission:

- 1) If the detected secondary emission level is $\leq 1/10$ of the permissible limit,
→ use the searched value directly as the measurement result.
- 2) If the detected level is $> 1/10$ of the permissible limit:
 - Narrow the sweep span progressively to improve center-frequency accuracy.
 - Measure the emission frequency precisely.
 - Apply the settings of Section 5.5.2 (2).
 - Perform averaging as necessary and measure the secondary emission power.

5.6 Interference Prevention Function

5.6.1 Operating Condition of the Equipment Under Test (EUT)

The EUT shall be placed in its normal operating condition during testing.

5.6.2 Conditions for Measuring Instruments

- (1) The demodulator must be able to demodulate the EUT's transmitted signal and display the content of the identification code. [tele.soumu.go.jp]
- (2) opposing device must be capable of transmitting the same type of identification code as the EUT.

5.6.3 Measurement Procedure

(1) When the EUT automatically transmits an identification code

- 1) The EUT transmits the identification code specified by the technical regulations.
- 2) The demodulator verifies that the transmitted identification code is correct.

(2) When the EUT automatically receives an identification code

- 1) The opposing device transmits the identification code specified by the technical regulations.
- 2) Using a dedicated jig, verify that normal communication occurs between the EUT and the opposing device.
- 3) The opposing device then transmits an identification code different from the specified one.
- 4) Verify that the EUT stops transmission or correctly indicates that the received identification code is different.

6. Test Results

6.1 Bluetooth LE 1 Mbps (Rated Voltage)

Peak Antenna Gain	5.07	dBi
Declaration Output Power	2.00	mW
Declaration Output Power	3.01	dBm
E.I.R.P.	8.08	dBm
Voltage	3.70 V DC	

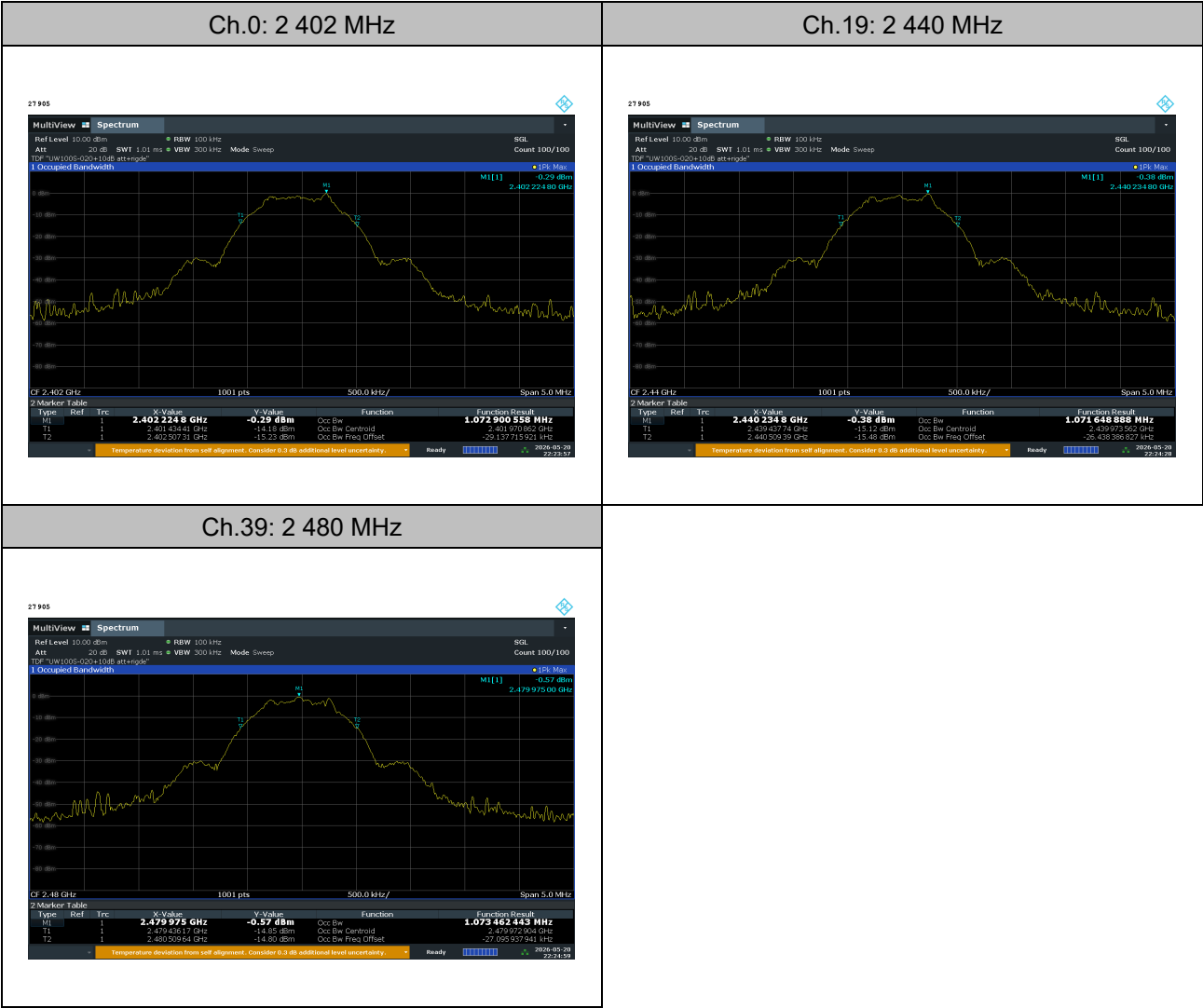
Transmission Time	ON TIME	2.140	ms
	OFF TIME	0.354	ms

Measurement Frequency		MHz	2402	2440	2480	Result	Limit
Channel Number		Ch.	0	19	39	---	---
Frequency Measurements		MHz	2401.972	2439.971	2479.970	---	---
Frequency Tolerance		ppm	-11.710	-12.048	-12.159	PASS	±50×10-6(50ppm)
Occupied Bandwidth		MHz	1.073	1.072	1.073	PASS	26MHz or below
RF Output Power		mW	0.895	0.847	0.789	PASS	10mW or below
RF Output Power Tolerance		%	-55.232	-57.639	-60.557		+20 %
Unwanted (Spurious) Emission Strength	30 to 2387MHz	uW/MHz	0.006	0.009	0.003	PASS	2.5uW/MHz or below
		MHz	2338.740	2375.750	303.930	-----	
	2387 to 2400MHz	uW/MHz	1.820	0.021	0.016	PASS	25uW/MHz or below
		MHz	2399.932	2399.742	2393.757	-----	
	2483.5 to 2496.5MHz	uW/MHz	0.002	0.007	0.206	PASS	25uW/MHz or below
		MHz	2493.460	2484.770	2483.588	-----	
	2496.5 to 12500MHz	uW/MHz	0.004	0.005	0.005	PASS	2.5uW/MHz or below
		MHz	7898.370	7963.890	7987.897	-----	
Secondary Emitted Radio Wave Strength	30 to 1000MHz	nW	0.032	0.031	0.032	PASS	4nW or below
		MHz	318.013	307.538	295.414	-----	
	1000 to 12500MHz	nW	0.439	0.467	0.406	PASS	20nW or below
		MHz	7988.400	7995.300	7996.500	-----	
Interference Prevention Function			C8:24:AD:DF:E1:52			GOOD	

6.1.1 Test Plot Frequency Tolerance



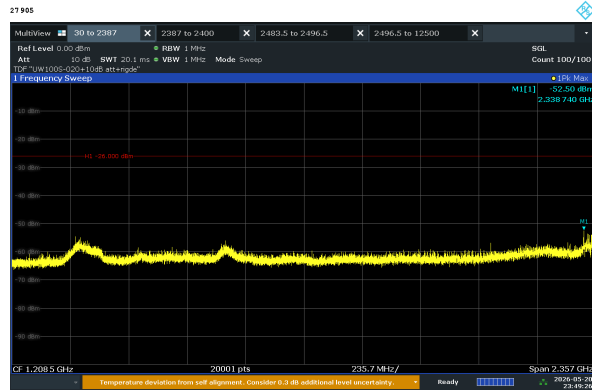
6.1.2 Test Plot Occupied Bandwidth



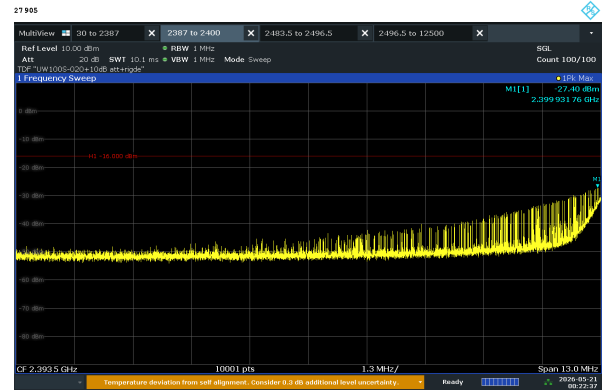
6.1.3 Test Plot Unwanted(Spurious) Emission Strength

Ch.0: 2 402 MHz

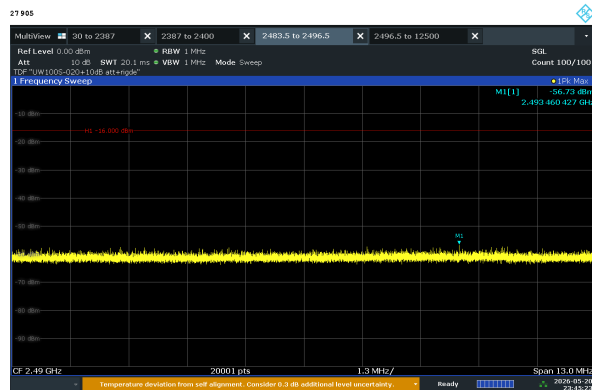
30 MHz ~ 2 387 MHz



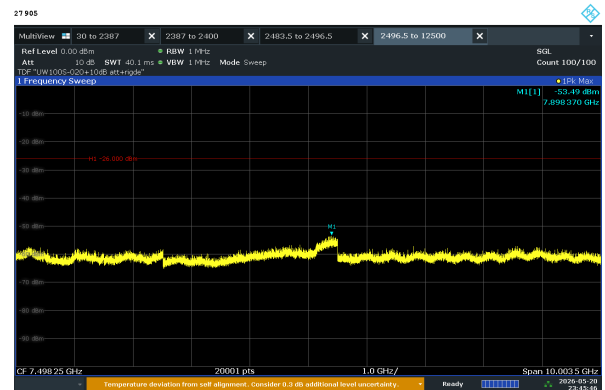
2 387 MHz ~ 2 400 MHz



2 483.5 MHz ~ 2 496.5 MHz

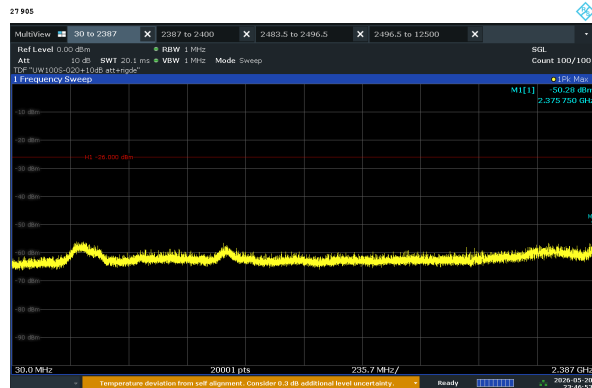


2 496.5 MHz ~ 12.5 GHz

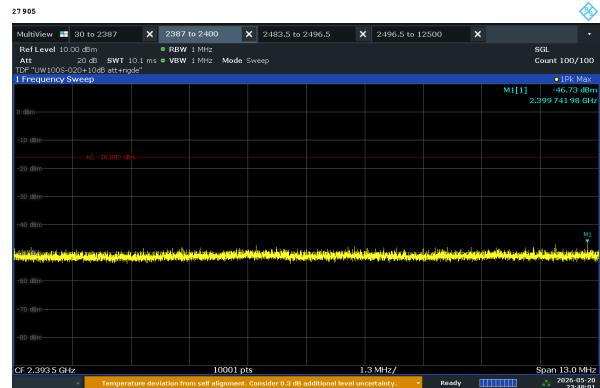


Ch.19: 2 440 MHz

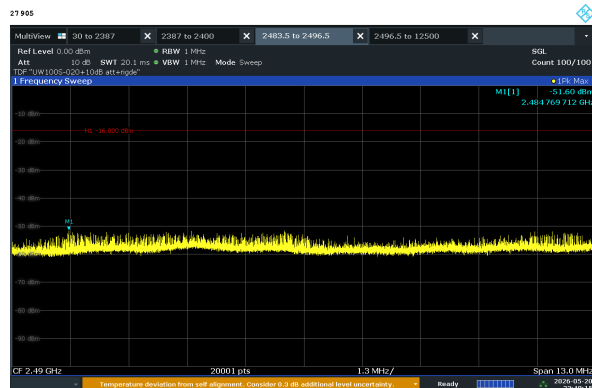
30 MHz ~ 2 387 MHz



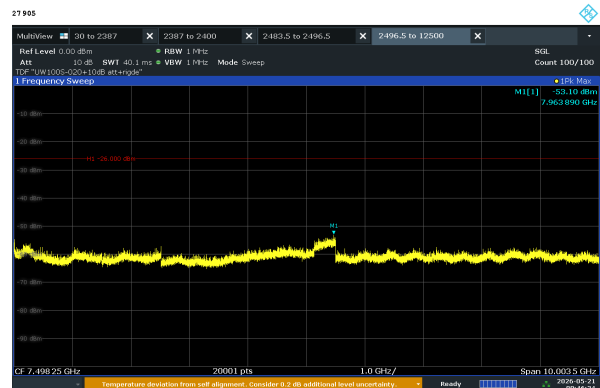
2 387 MHz ~ 2 400 MHz



2 483.5 MHz ~ 2 496.5 MHz

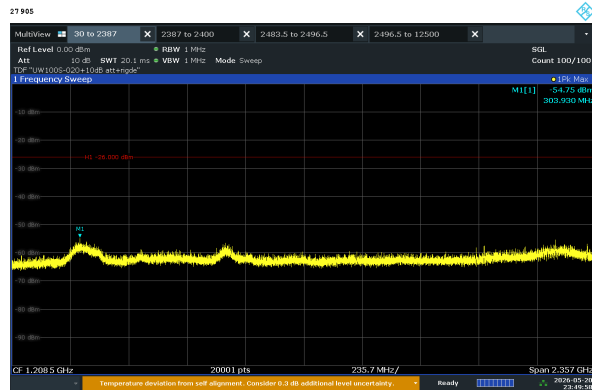


2 496.5 MHz ~ 12.5 GHz



Ch.39: 2 480 MHz

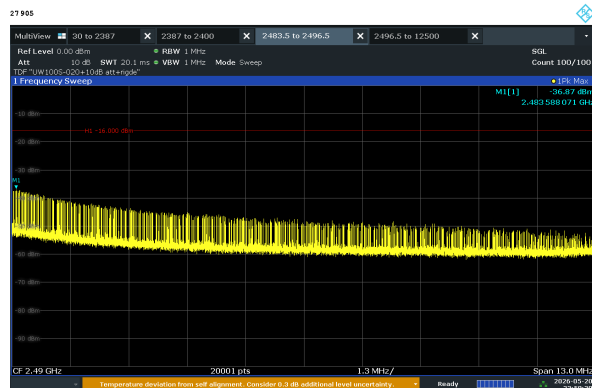
30 MHz ~ 2 387 MHz



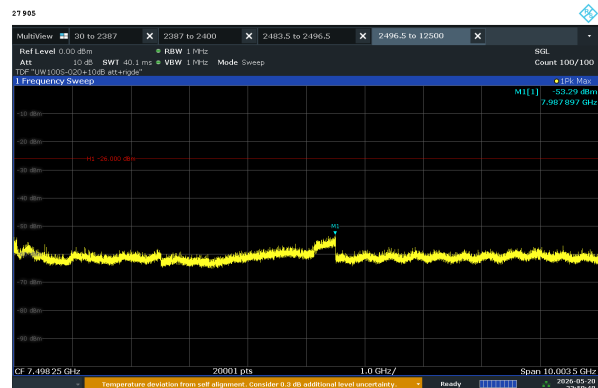
2 387 MHz ~ 2 400 MHz



2 483.5 MHz ~ 2 496.5 MHz



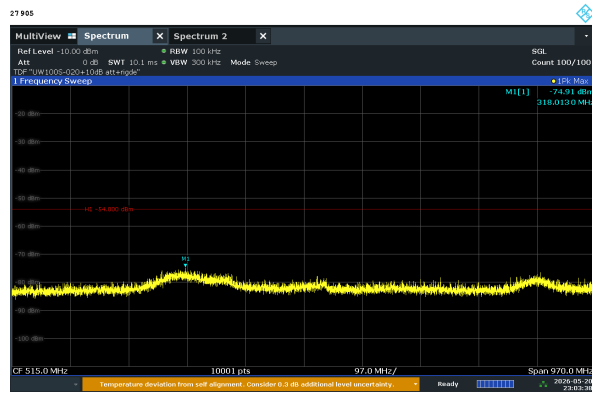
2 496.5 MHz ~ 12.5 GHz



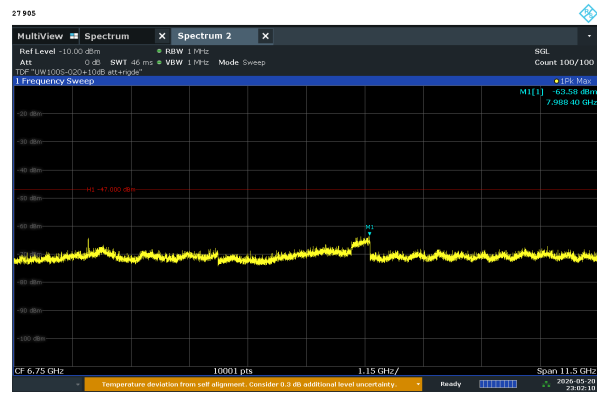
6.1.4 Test Plot Secondary Emitted Radio Wave Strength

Ch.0: 2 402 MHz

30 MHz ~ 1 GHz

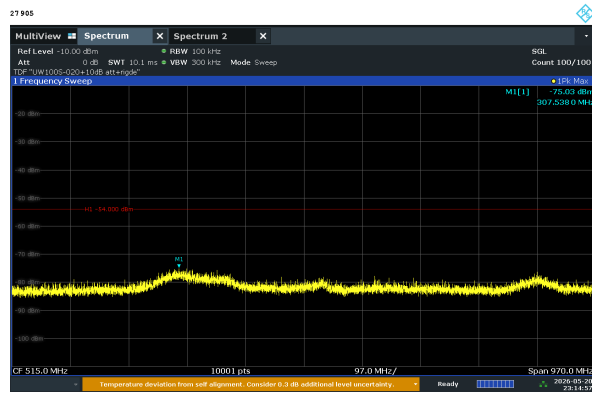


1 GHz ~ 12.5 GHz

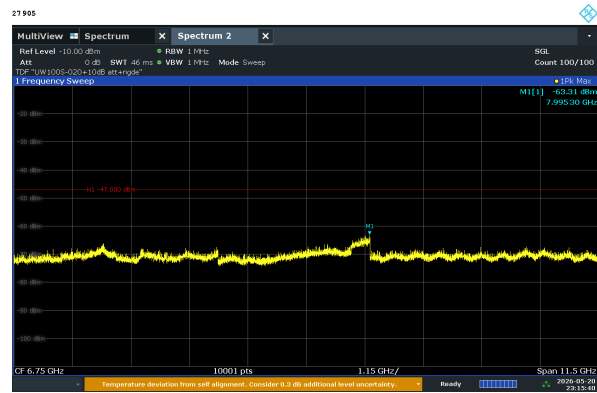


Ch.19: 2 440 MHz

30 MHz ~ 1 GHz

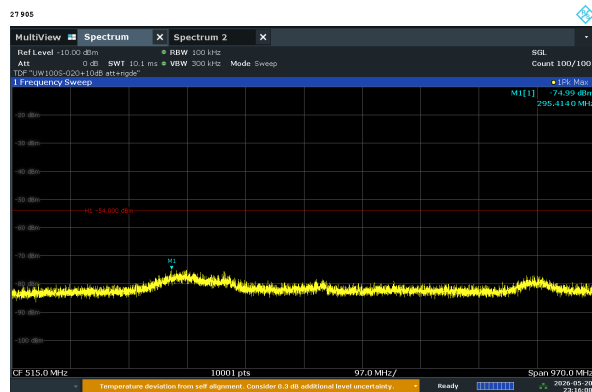


1 GHz ~ 12.5 GHz

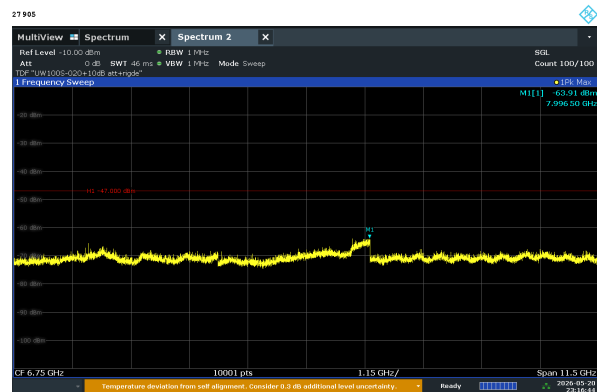


Ch.39: 2 480 MHz

30 MHz ~ 1 GHz



1 GHz ~ 12.5 GHz



6.2 Bluetooth LE 1 Mbps (Minimum Operating Voltage)

Peak Antenna Gain	5.07	dBi
Declaration Output Power	2.00	mW
Declaration Output Power	3.01	dBm
E.I.R.P.	8.08	dBm
Voltage	3.50 V DC	

Transmission Time	ON TIME	2.148	ms
	OFF TIME	0.354	ms

Measurement Frequency		MHz	2402	2440	2480	Result	Limit
Channel Number		Ch.	0	19	39	---	---
Frequency Measurements		MHz	2401.971	2439.971	2479.970	---	---
Frequency Tolerance		ppm	-11.884	-12.025	-12.055	PASS	±50×10-6(50ppm)
Occupied Bandwidth		MHz	1.068	1.080	1.071	PASS	26MHz or below
RF Output Power		mW	0.881	0.838	0.778	PASS	10mW or below
RF Output Power Tolerance		%	-55.948	-58.124	-61.098		+20 %
Unwanted (Spurious) Emission Strength	30 to 2387MHz	uW/MHz	0.004	0.003	0.003	PASS	2.5uW/MHz or below
		MHz	2370.090	2376.100	321.610	-----	
	2387 to 2400MHz	uW/MHz	2.109	0.018	0.015	PASS	25uW/MHz or below
		MHz	2399.951	2390.935	2399.483	-----	
	2483.5 to 2496.5MHz	uW/MHz	0.002	0.007	0.213	PASS	25uW/MHz or below
		MHz	2487.594	2487.017	2483.565	-----	
	2496.5 to 12500MHz	uW/MHz	0.005	0.005	0.005	PASS	2.5uW/MHz or below
		MHz	7944.884	7797.840	7882.865	-----	
Secondary Emitted Radio Wave Strength	30 to 1000MHz	nW	0.033	0.033	0.037	PASS	4nW or below
		MHz	310.253	314.230	315.685	-----	
	1000 to 12500MHz	nW	0.407	0.500	0.404	PASS	20nW or below
		MHz	7932.100	7791.800	7932.100	-----	
Interference Prevention Function			C8:24:AD:DF:E1:52			GOOD	

* This product is designed to shut down below 3.5 V. Therefore, testing was conducted at 3.5 V, which represents the minimum operating voltage just before shutdown

Ch.0: 2 402 MHz

27 905

MultiView Spectrum

Ref Level 20.00 dBm
Att 30 dB SWF 836 μ s (-8.2 ms) RBW 5 kHz Mode Auto FFT
TOP NH1005-0204-006 att:avg1

Frequency Sweep

10% Clw

MI(1) -0.31 dBm
2.401 971 830 GHz

CF 2.402 GHz 1001 pts 60.0 kHz/ Span 600.0 kHz

2 Marker Table

Type	Ref	Freq	Y Value	Count	Function	Function Result
M1	1	2.401 971 83 GHz	-0.31 dBm			2.401 971 453 6 GHz

Temperature deviation from self alignment. Consider 0.3 dB additional level uncertainty. Ready 2026-05-20 21:17:50

Ch.19: 2 440 MHz

27 905

MultiView Spectrum

Ref Level 20.00 dBm
Att 30 dB SWF 836 μ s (-8.2 ms) RBW 5 kHz Mode Auto FFT
TOP NH1005-0204-006 att:avg1

Frequency Sweep

10% Clw

MI(1) -0.40 dBm
2.439 970 630 GHz

CF 2.44 GHz 1001 pts 60.0 kHz/ Span 600.0 kHz

2 Marker Table

Type	Ref	Freq	Y Value	Count	Function	Function Result
M1	1	2.439 970 63 GHz	-0.40 dBm			2.439 970 659 4 GHz

Temperature deviation from self alignment. Consider 0.3 dB additional level uncertainty. Ready 2026-05-20 21:18:24

Ch.39: 2 480 MHz

27 905

MultiView Spectrum

Ref Level 20.00 dBm
Att 30 dB SWF 836 μ s (-8.2 ms) RBW 5 kHz Mode Auto FFT
TOP NH1005-0204-006 att:avg1

Frequency Sweep

10% Clw

MI(1) -0.72 dBm
2.479 970 030 GHz

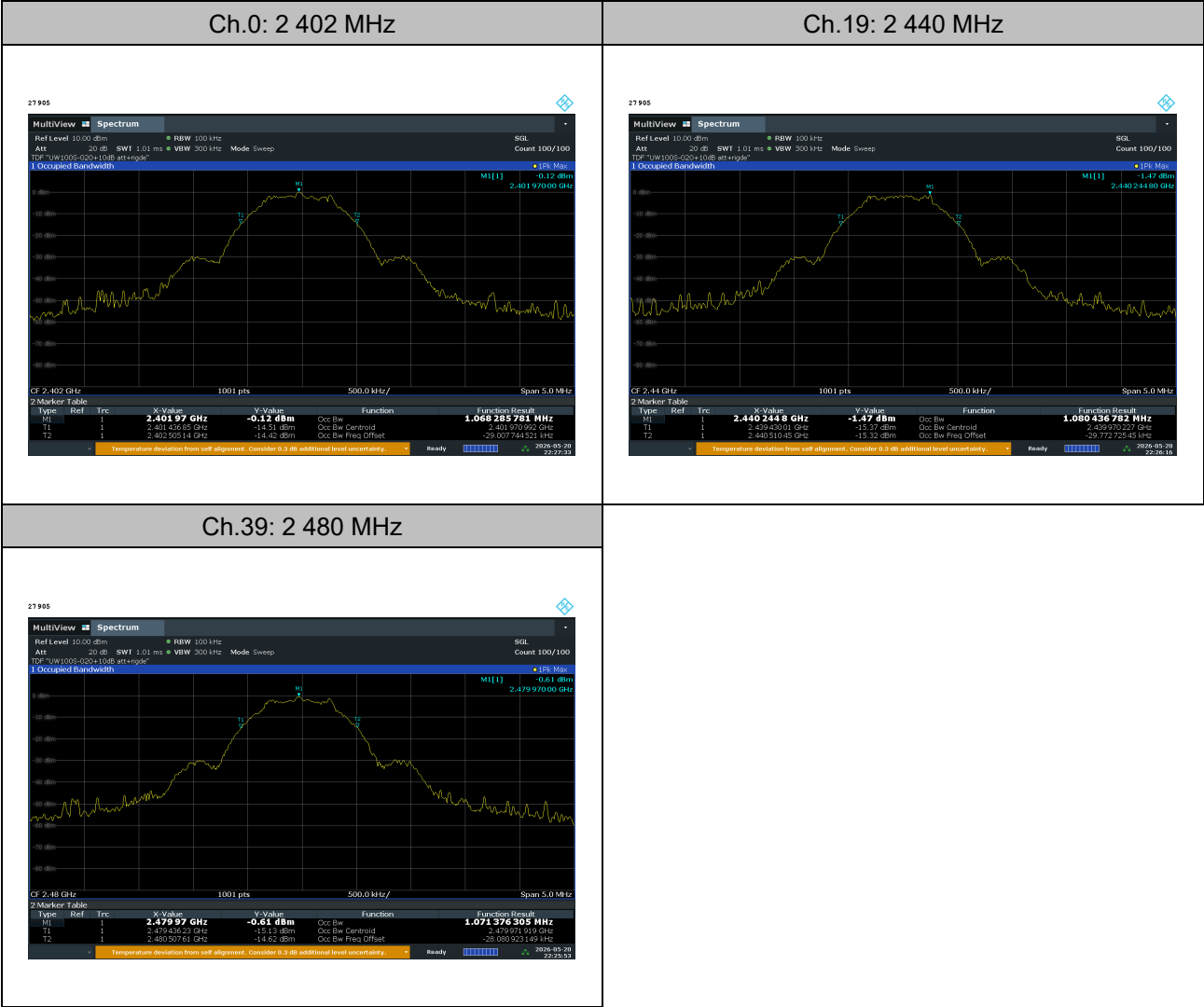
CF 2.48 GHz 1001 pts 60.0 kHz/ Span 600.0 kHz

2 Marker Table

Type	Ref	Freq	Y Value	Count	Function	Function Result
M1	1	2.479 970 03 GHz	-0.72 dBm			2.479 970 103 0 GHz

Temperature deviation from self alignment. Consider 0.3 dB additional level uncertainty. Ready 2026-05-20 21:17:50

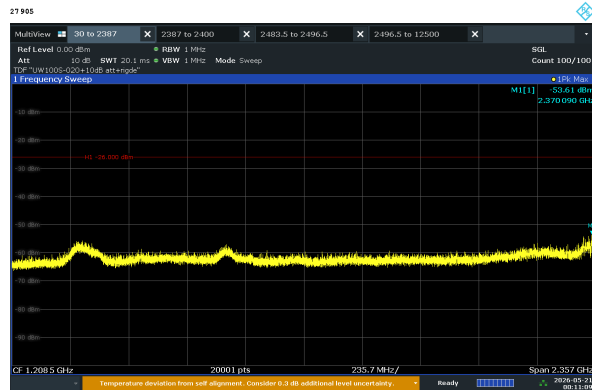
6.2.2 Test Plot Occupied Bandwidth



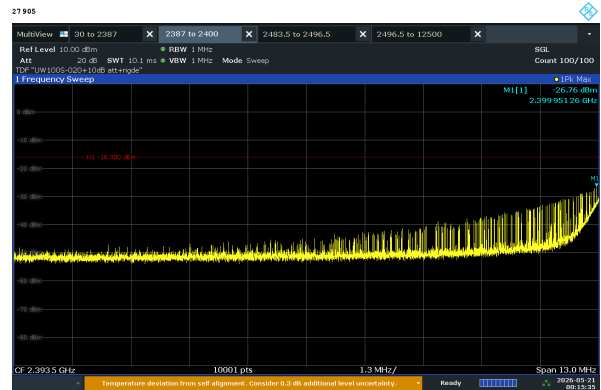
6.2.3 Test Plot Unwanted(Spurious) Emission Strength

Ch.0: 2 402 MHz

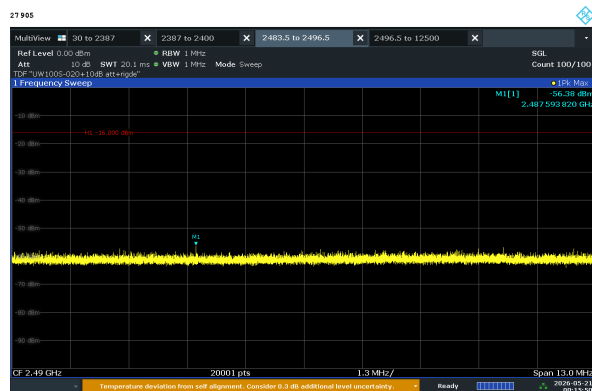
30 MHz ~ 2 387 MHz



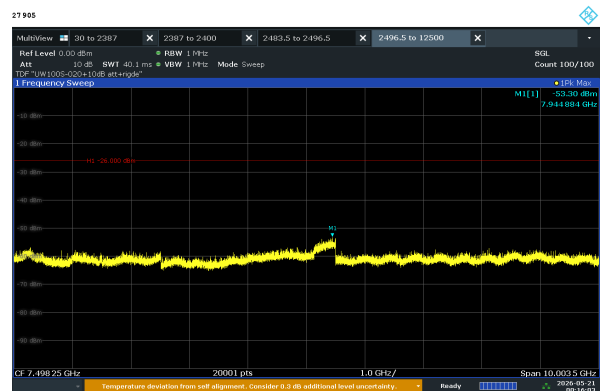
2 387 MHz ~ 2 400 MHz



2 483.5 MHz ~ 2 496.5 MHz

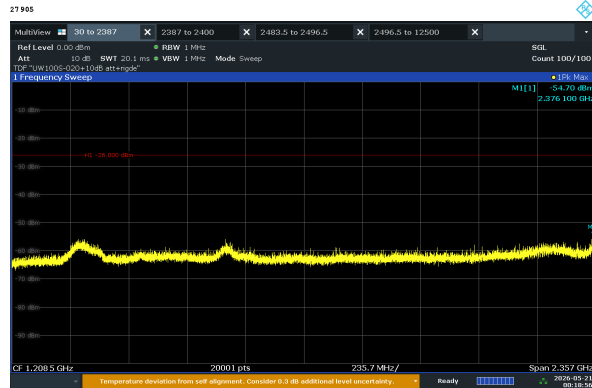


2 496.5 MHz ~ 12.5 GHz

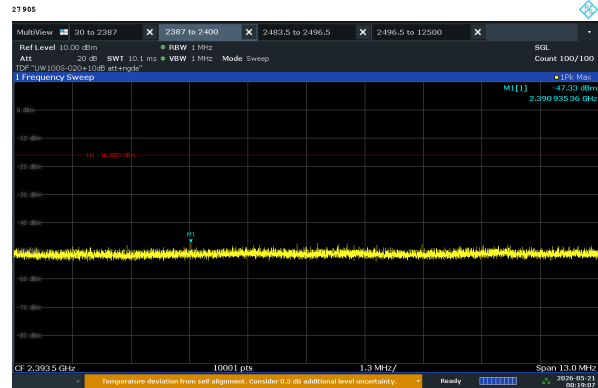


Ch.19: 2 440 MHz

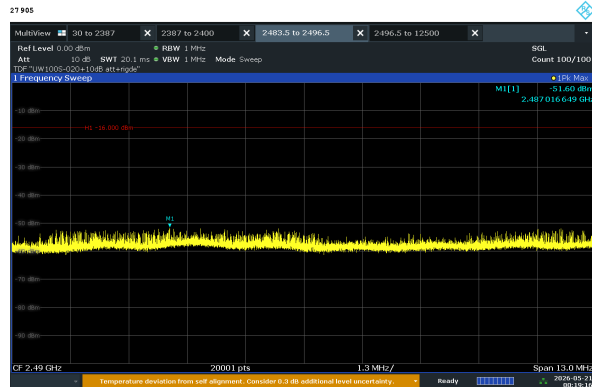
30 MHz ~ 2 387 MHz



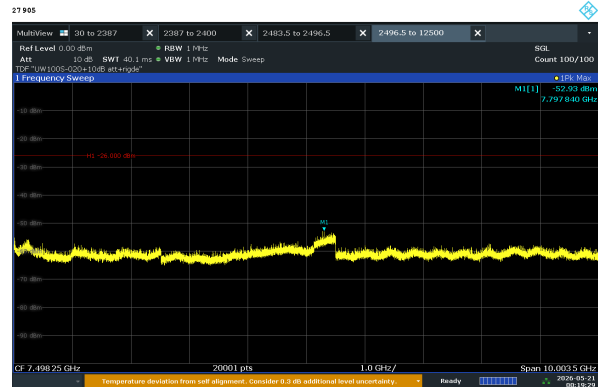
2 387 MHz ~ 2 400 MHz



2 483.5 MHz ~ 2 496.5 MHz

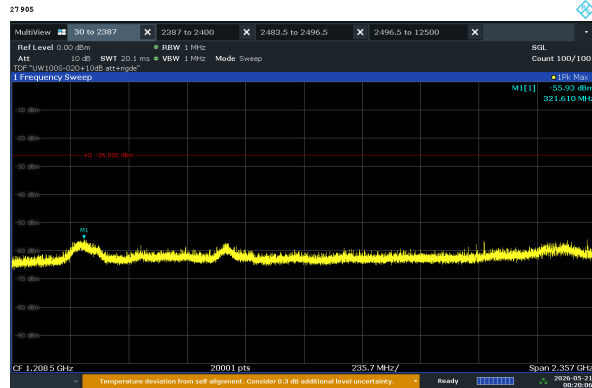


2 496.5 MHz ~ 12.5 GHz



Ch.39: 2 480 MHz

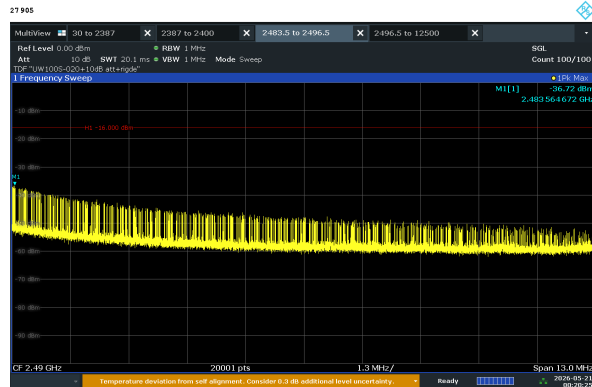
30 MHz ~ 2 387 MHz



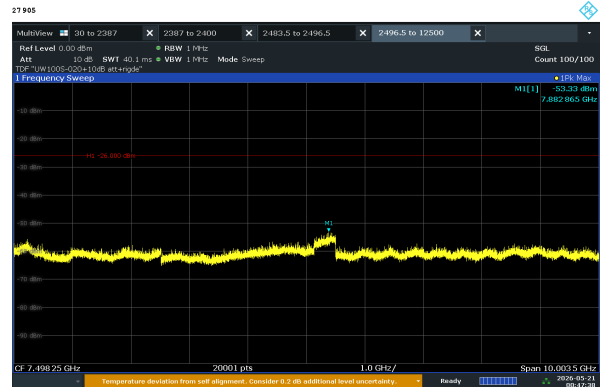
2 387 MHz ~ 2 400 MHz



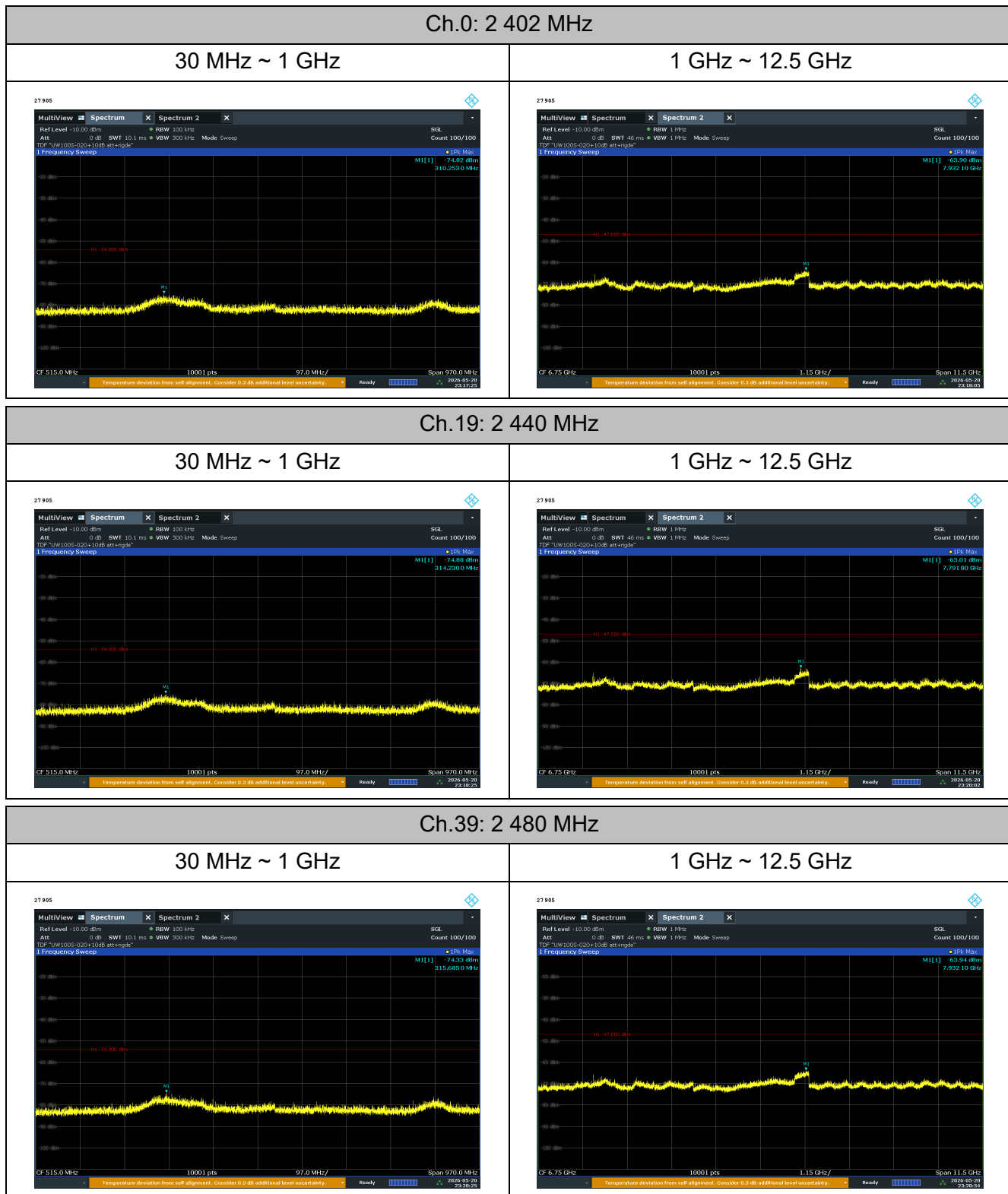
2 483.5 MHz ~ 2 496.5 MHz



2 496.5 MHz ~ 12.5 GHz



6.2.4 Test Plot Secondary Emitted Radio Wave Strength



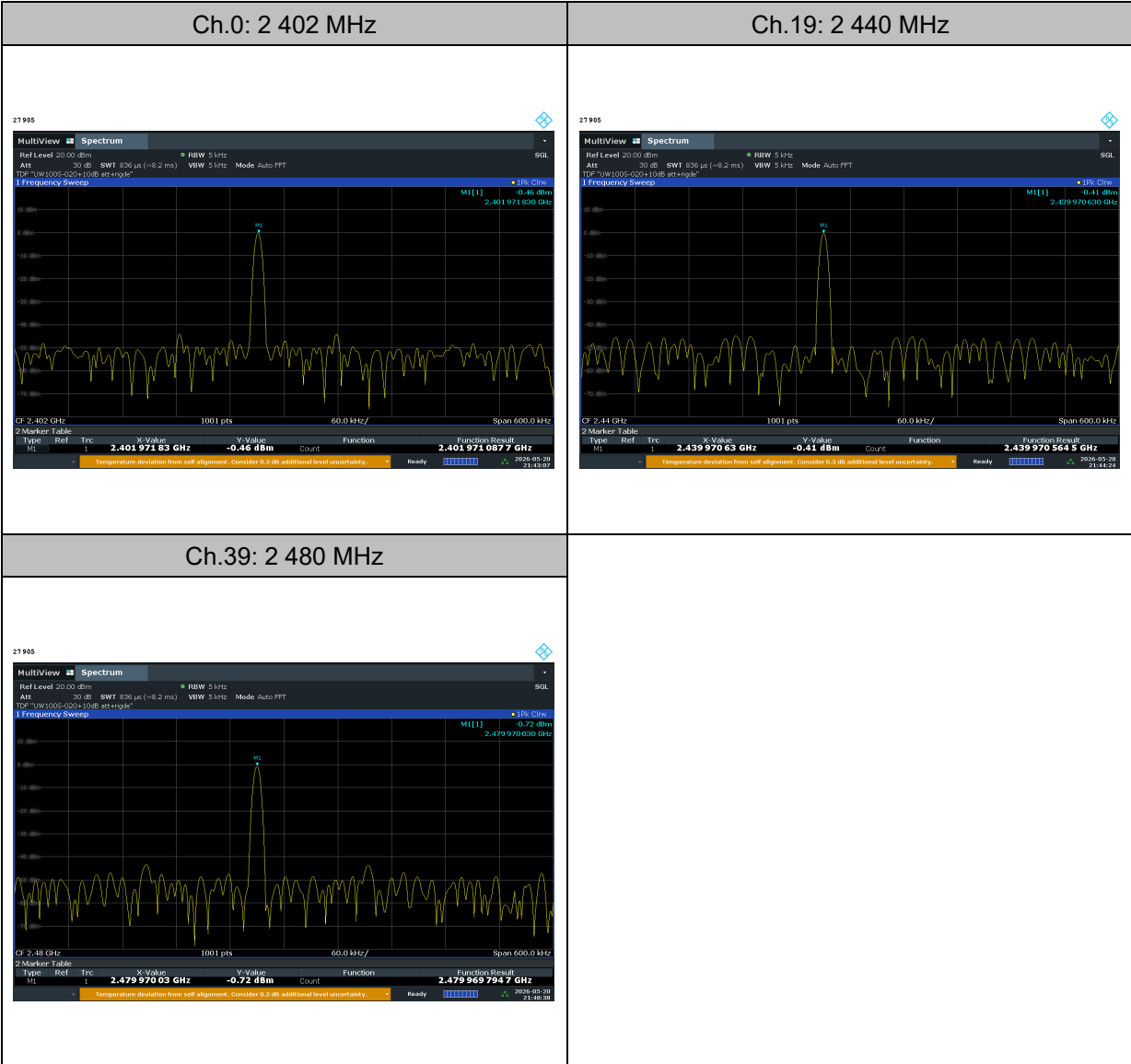
6.3 Bluetooth LE 1 Mbps (+10% Voltage)

Peak Antenna Gain	5.07	dBi
Declaration Output Power	2.00	mW
Declaration Output Power	3.01	dBm
E.I.R.P.	8.08	dBm
Voltage	4.07 V DC	

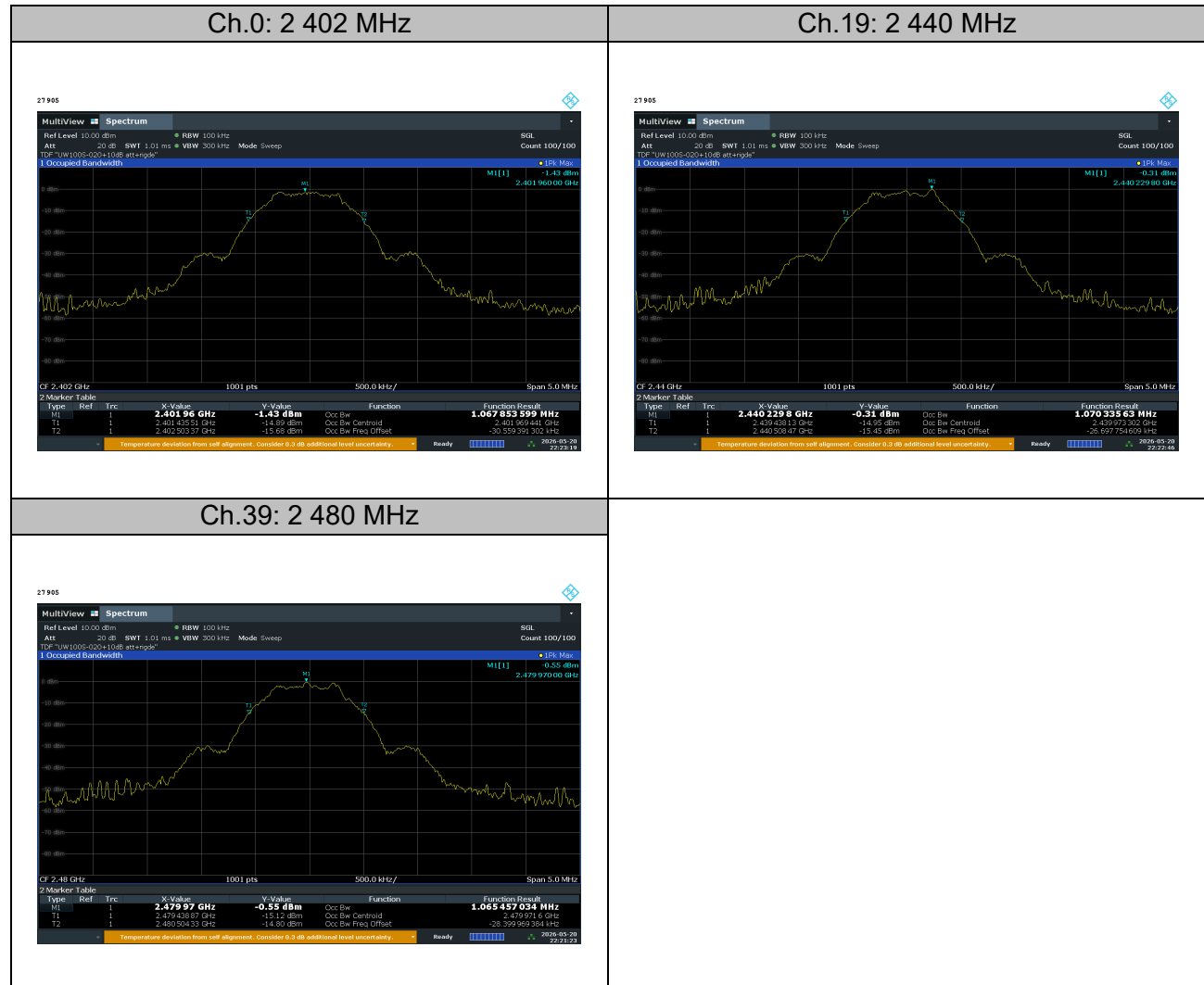
Transmission Time	ON TIME	2.140	ms
	OFF TIME	0.354	ms

Measurement Frequency		MHz	2402	2440	2480	Result	Limit
Channel Number		Ch.	0	19	39	---	---
Frequency Measurements		MHz	2401.971	2439.971	2479.970	---	---
Frequency Tolerance		ppm	-12.037	-12.064	-12.180	PASS	±50×10-6(50ppm)
Occupied Bandwidth		MHz	1.068	1.070	1.065	PASS	26MHz or below
RF Output Power		mW	0.865	0.830	0.773	PASS	10mW or below
RF Output Power Tolerance		%	-56.752	-58.507	-61.366		+20 %
Unwanted (Spurious) Emission Strength	30 to 2387MHz	uW/MHz	0.006	0.008	0.003	PASS	2.5uW/MHz or below
		MHz	2337.330	2376.100	315.830	-----	
	2387 to 2400MHz	uW/MHz	1.858	0.018	0.014	PASS	25uW/MHz or below
		MHz	2399.906	2397.849	2395.720	-----	
	2483.5 to 2496.5MHz	uW/MHz	0.002	0.007	0.200	PASS	25uW/MHz or below
		MHz	2494.005	2489.582	2483.505	-----	
	2496.5 to 12500MHz	uW/MHz	0.004	0.004	0.005	PASS	2.5uW/MHz or below
		MHz	7991.398	7868.361	7902.871	-----	
Secondary Emitted Radio Wave Strength	30 to 1000MHz	nW	0.041	0.034	0.035	PASS	4nW or below
		MHz	303.949	312.581	306.956	-----	
	1000 to 12500MHz	nW	0.420	0.505	0.467	PASS	20nW or below
		MHz	7901.000	7891.800	7889.500	-----	
Interference Prevention Function			C8:24:AD:DF:E1:52			GOOD	

6.3.1 Test Plot Frequency Tolerance



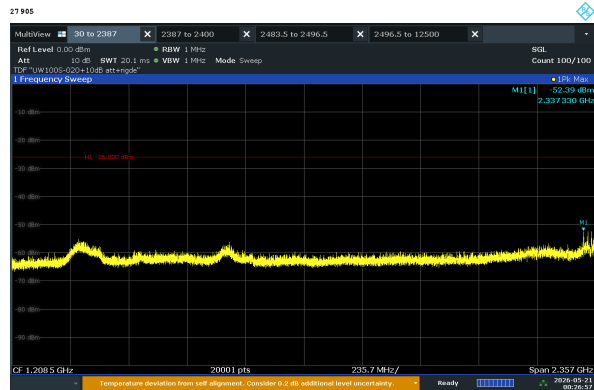
6.3.2 Test Plot Occupied Bandwidth



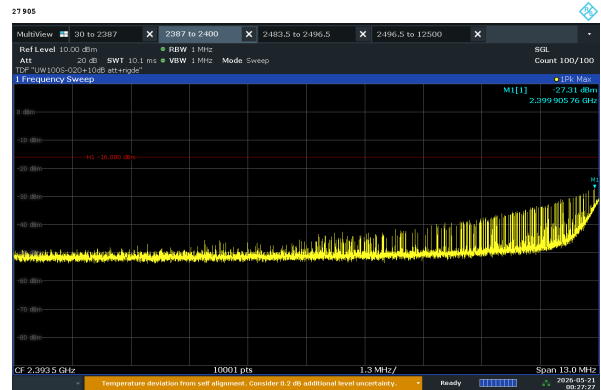
6.3.3 Test Plot Unwanted(Spurious) Emission Strength

Ch.0: 2 402 MHz

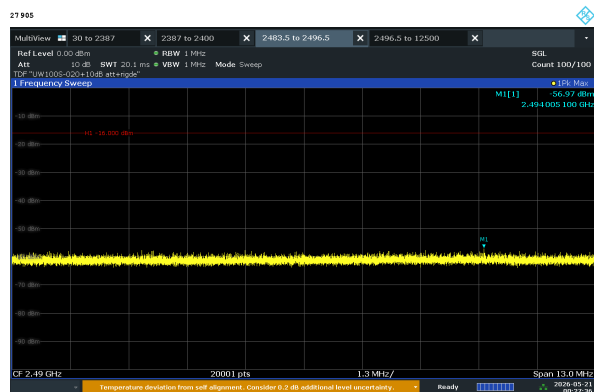
30 MHz ~ 2 387 MHz



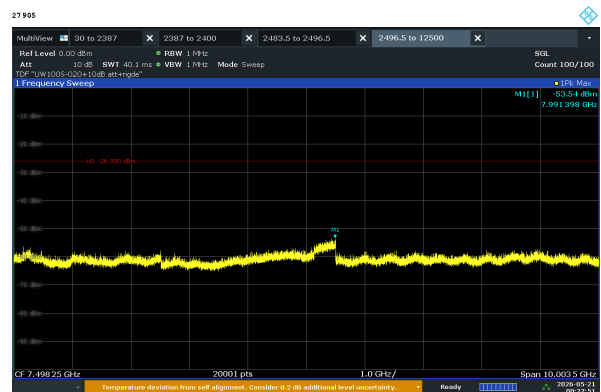
2 387 MHz ~ 2 400 MHz



2 483.5 MHz ~ 2 496.5 MHz

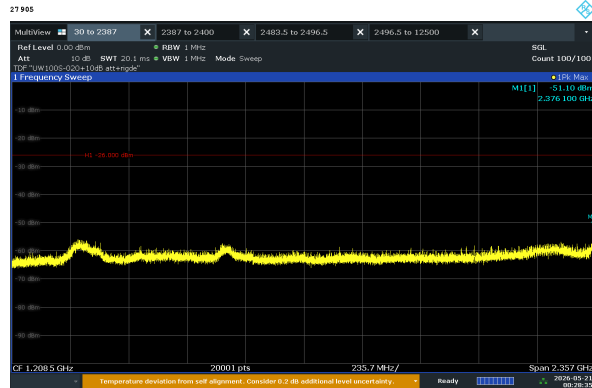


2 496.5 MHz ~ 12.5 GHz

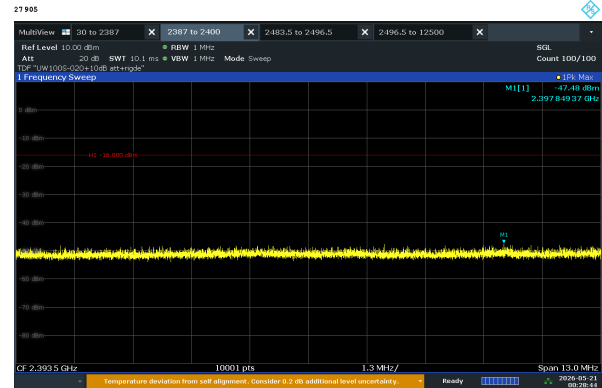


Ch.19: 2 440 MHz

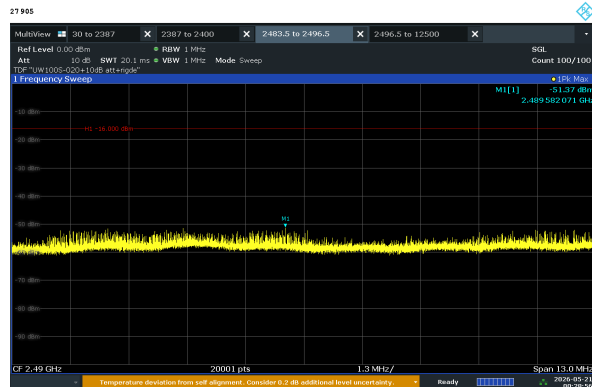
30 MHz ~ 2 387 MHz



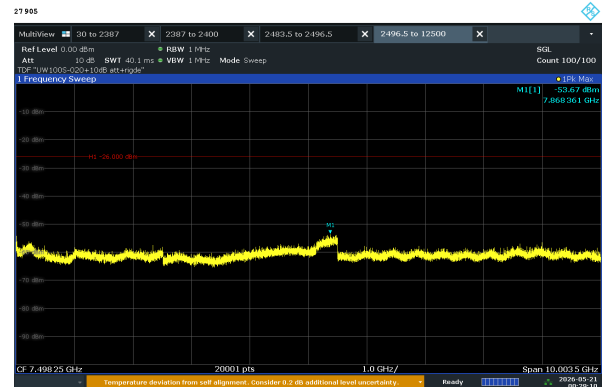
2 387 MHz ~ 2 400 MHz



2 483.5 MHz ~ 2 496.5 MHz

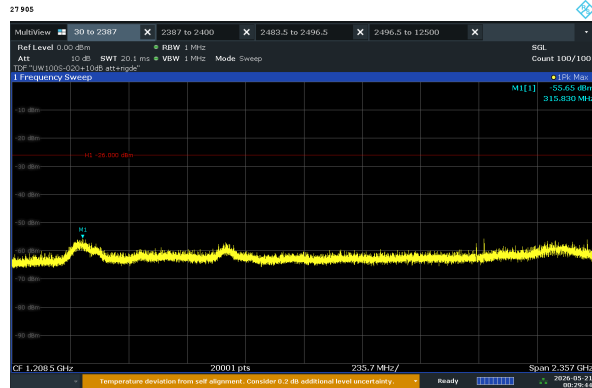


2 496.5 MHz ~ 12.5 GHz

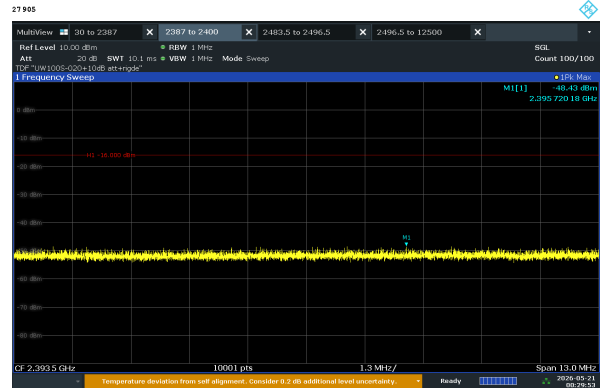


Ch.39: 2 480 MHz

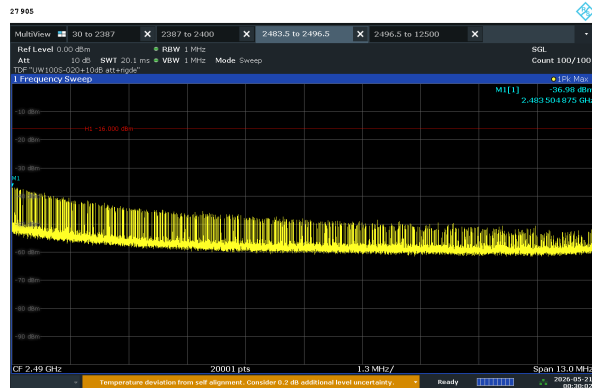
30 MHz ~ 2 387 MHz



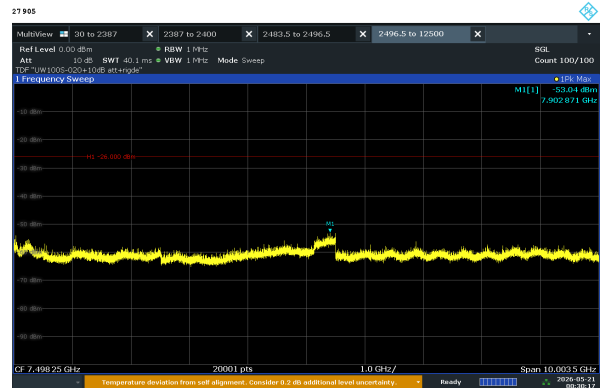
2 387 MHz ~ 2 400 MHz



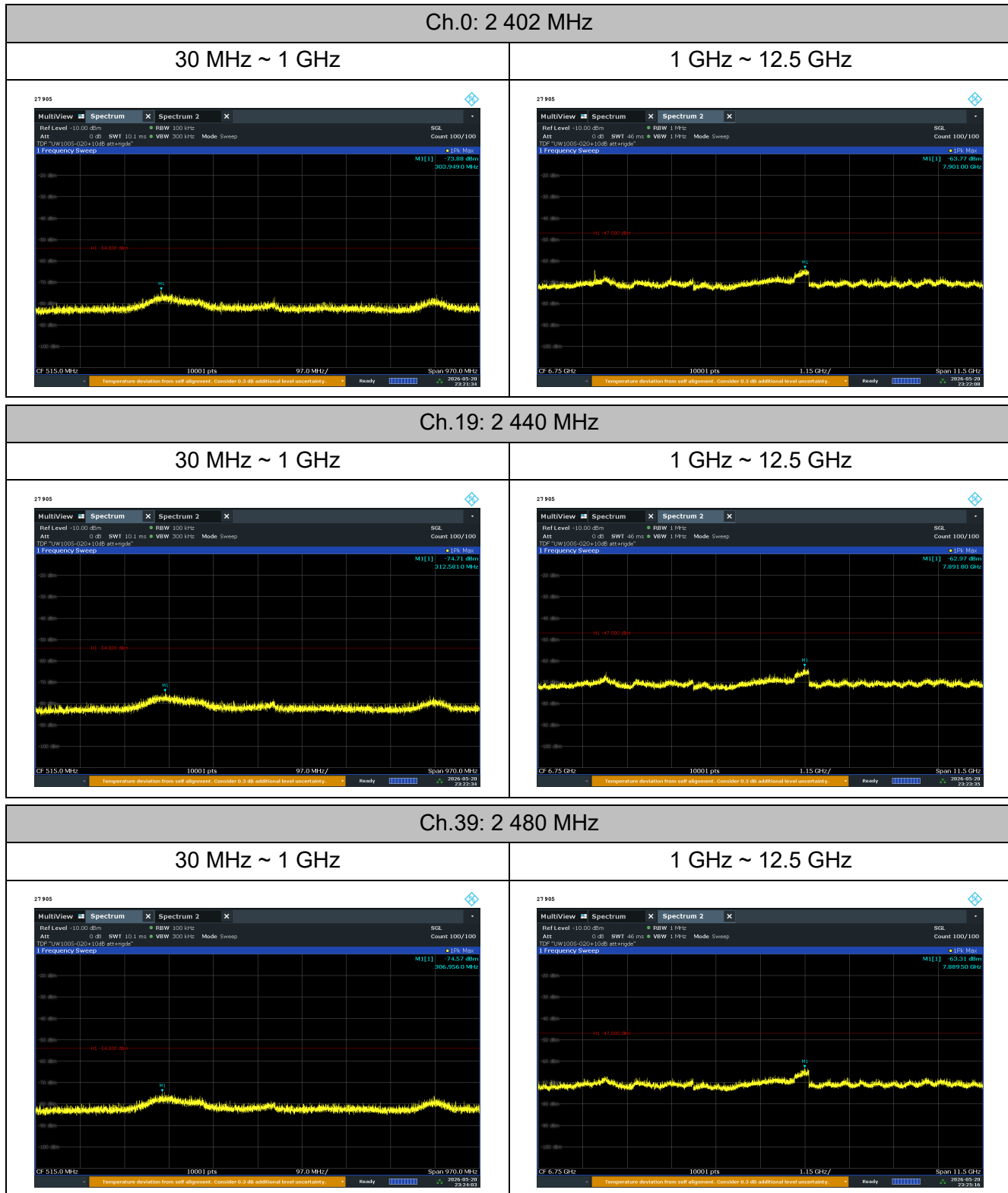
2 483.5 MHz ~ 2 496.5 MHz



2 496.5 MHz ~ 12.5 GHz



6.3.4 Test Plot Secondary Emitted Radio Wave Strength



- END OF TEST REPORT -