

Plots of System Verification

Appendix A. Plots of System Verification

The plots for system verification are shown as follows.

Plots of System Verification

Measurement Report
S01 System Check_H2450_250227
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
D2450V2 – SN:735	10.0 x 10.0 x 290.0		Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat,	,		CW, 0--	2450.000, 0	6.66	1.79	39.4

Hardware Setup

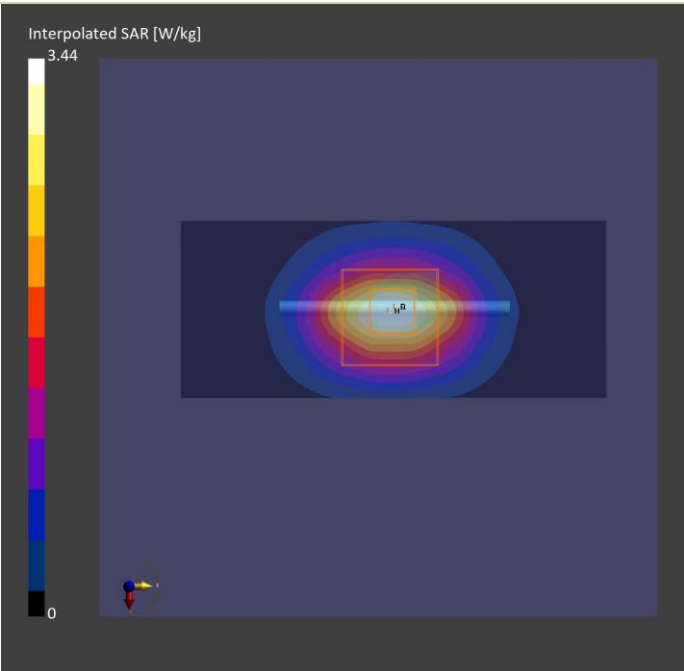
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H19T27N9 , 2025-02-27	EX3DV4 - SN7537, 2024-11-20	DAE4 Sn1431, 2024-07-16

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	48.0 x 96.0	35.0 x 35.0 x 30.0
Grid Steps [mm]	12.0 x 12.0	5.0 x 5.0 x 1.5
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2025-02-27	2025-02-27
psSAR1g [W/kg]	2.59	2.55
psSAR10g [W/kg]	1.19	1.16
Power Drift [dB]	0.01	-0.03



Plots of System Verification

Measurement Report
S02 System Check_H2450_250320
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
D2450V2 – SN:735	10.0 x 10.0 x 290.0		Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat,	,		CW, 0--	2450.0, 0	7.33	1.79	37.9

Hardware Setup

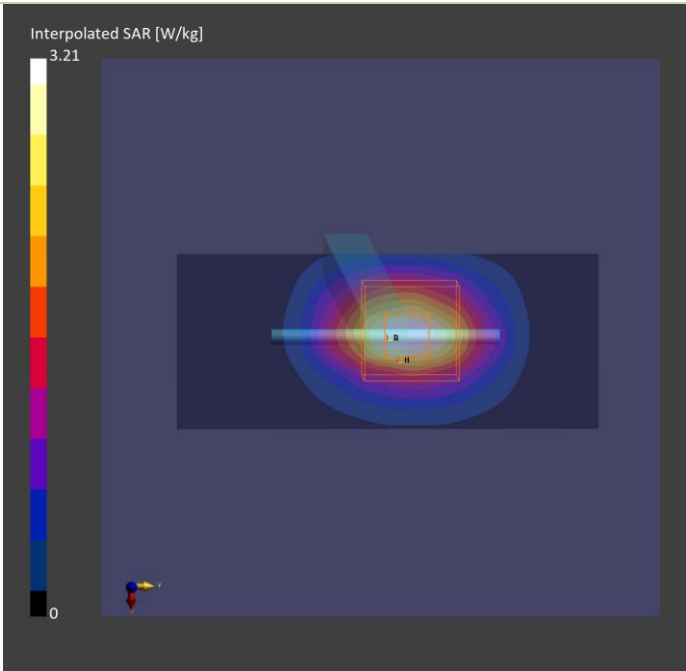
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 1988	H19T27N5 , 2025-Mar-20	EX3DV4 - SN7555, 2024-04-24	DAE4 Sn1698, 2024-11-20

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	48.0 x 96.0	35.0 x 35.0 x 30.0
Grid Steps [mm]	12.0 x 12.0	5.0 x 5.0 x 1.5
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2025-03-20	2025-03-20
psSAR1g [W/kg]	2.49	2.50
psSAR10g [W/kg]	1.17	1.20
Power Drift [dB]	-0.01	-0.01



Plots of Measurement

Appendix B. Plots of Measurement

The SAR plots for highest measured SAR in each exposure configuration, wireless mode and frequency band combination are shown as follows.

Plots of Measurement

Measurement Report

P01 BT_LE-2M_Rear Face_0mm_Ch1_Sample Logi BOLT_Ant Status_Ant 0

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TR0006	134.0 x 100.0 x 48.0		Wireless Mouse

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat,	Rear Face, 0.00	ISM 2.4 GHz Band	Bluetooth, 10670-AAA	2404.000, 1	6.66	1.76	38.5

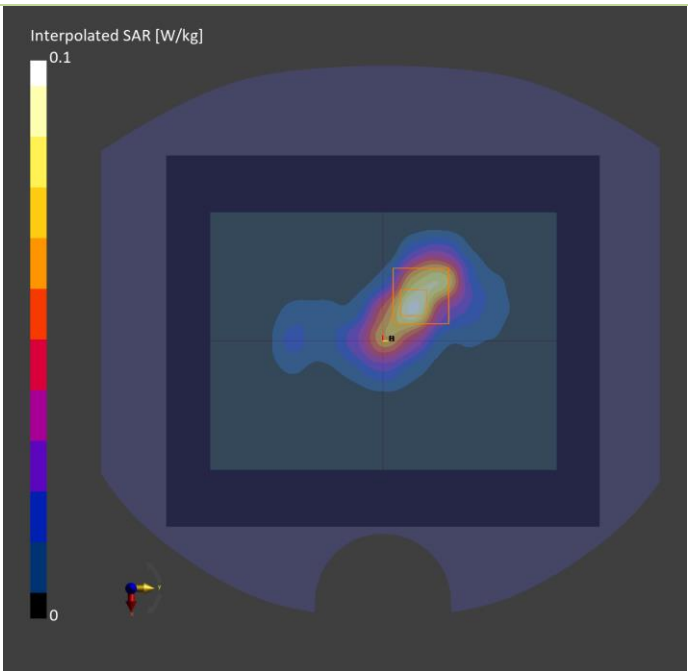
Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H19T27N9 , 2025-02-27	EX3DV4 - SN7537, 2024-11-20	DAE4 Sn1431, 2024-07-16

Scan Setup

	Area Scan	Zoom Scan		Area Scan	Zoom Scan
Grid Extents [mm]	144.0 x 168.0	30.0 x 30.0 x 30.0	Date	2025-02-27	2025-02-27
Grid Steps [mm]	12.0 x 12.0	5.0 x 5.0 x 5.0	psSAR1g [W/kg]	0.072	0.083
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	0.036	0.039
			Power Drift [dB]	-0.12	-0.06
			M2/M1 [%]		53.8
			Dist 3dB Peak [mm]		7.9

Measurement Results



Plots of Measurement

Measurement Report

P02 BT_LE-1M_Rear Face_0mm_CH0_Sample UFY_Ant 0

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TR006,	134.0 x 100.0 x 48.0		Wireless Mouse

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat,	Rear Face, 0.00	ISM 2.4 GHz Band	Bluetooth, 10670-AAA	2402.000, 0	7.33	1.75	38.0

Hardware Setup

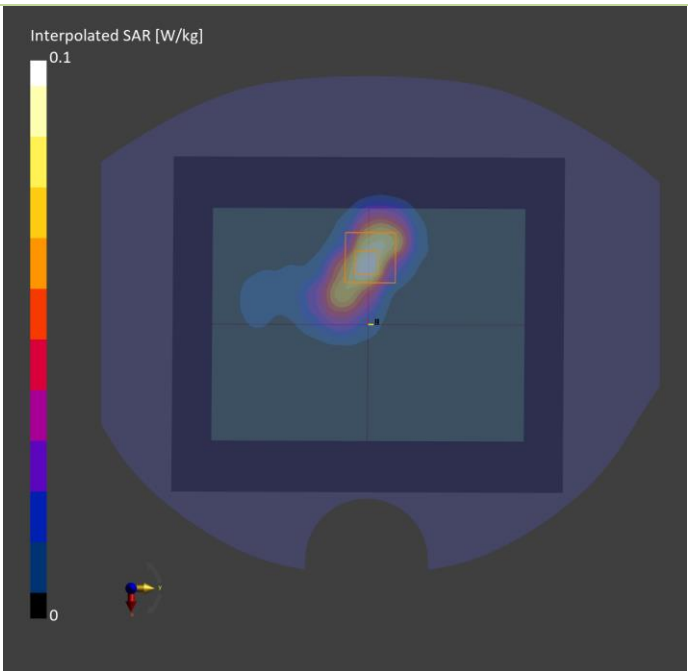
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 1988	H19T27N5 , 2025-Mar-20	EX3DV4 - SN7555, 2024-04-24	DAE4 Sn1698, 2024-11-20

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	144.0 x 168.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	12.0 x 12.0	5.0 x 5.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2025-03-20	2025-03-20
psSAR1g [W/kg]	0.076	0.087
psSAR10g [W/kg]	0.037	0.040
Power Drift [dB]	0.05	0.03
M2/M1 [%]		52.1
Dist 3dB Peak [mm]		8.5



Appendix C. Tissue & System Verification

The measuring results for tissue simulating liquid and system check are shown as below.

Note:

1. For Section 4.3, the dielectric properties of the tissue simulating liquid have been measured within 24 hours before the SAR testing and within ± 10 % of the target values. Liquid temperature during the SAR testing has kept within ± 2 °C.
2. For Section 4.4, The SAR measurement system was validated according to procedures in FCC KDB 865664 D0. The validation status in tabulated summary is as below.
3. For Section 4.5, Comparing to the reference SAR value provided by SPEAG in dipole calibration certificate, the deviation of system check results is within its specification of 10 %. The result indicates the system check can meet the variation criterion and the plots please refer to Appendix A of this report.

Tissue Verification									Validation for CW			Validation for Modulation				System Check					Note			
Plot No.	Frequency (MHz)	Liquid Temp. (°C)	Conductivity (σ)	Permittivity (ε _r)	Targeted Conductivity (σ)	Targeted Permittivity (ε _r)	Deviation Conductivity (σ)	Deviation Permittivity (ε _r)	Sensitivity Range	Probe Linearity	Probe Isotropy	Modulation Type	Duty Factor	PAR	Date	Frequency (MHz)	Targeted 10g SAR (W/kg)	Measured 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)	Dipole S/N	Probe S/N	DAE S/N	Output Power (dBm)
S01	2450	22.3	1.79	39.4	1.8	39.2	-0.56	0.51	Pass	Pass	Pass	OFDM	N/A	Pass	Feb. 27, 2025	2450	24.90	1.16	23.15	-7.05	735	7537	1431	17
S02	2450	21.9	1.79	37.9	1.8	39.2	-0.56	-3.32	Pass	Pass	Pass	OFDM	N/A	Pass	Mar. 20, 2025	2450	24.90	1.2	23.94	-3.84	735	7555	1698	17

Appendix D. Maximum Target Conducted Power

The maximum conducted average power (Unit: dBm) including tune-up tolerance is shown as below.

Tune-up Power (Full)			
Logibolt Ant 0_sample 1			
Mode	Channel	Frequency	Ant 0 Max Tune-up
LE-1M	0	2402	5.0
	19	2440	5.0
	39	2480	5.0
LE-2M	1	2404	5.0
	19	2440	5.0
	38	2478	5.0
BT LE Ant 0_sample 1			
Mode	Channel	Frequency	Max Tune-up
LE-1M	0	2402	5.0
	19	2440	5.0
	39	2480	5.0
LE-2M	1	2404	5.0
	19	2440	5.0
	38	2478	5.0

Tune-up Power (Full)			
UFY Ant 0_sample 2			
Mode	Channel	Frequency	Ant 0 Max Tune-up
GFSK	1	2403	5.0
	42	2444	5.0
	79	2481	5.0
BT LE Ant 0_sample 2			
Mode	Channel	Frequency	Ant 0 Max Tune-up
LE-1M	0	2402	5.0
	19	2440	5.0
	39	2480	5.0
LE-2M	1	2404	5.0
	19	2440	5.0
	38	2478	5.0

Appendix E. Measured Conducted Power Result

The measuring conducted power (Unit: dBm) are shown as below.

Conducted Power (Full)			
Logibolt Ant 0_sample 1			
Mode	Channel	Frequency	SISO Ant 0 Avg. Power
LE-1M	0	2402	4.35
	19	2440	4.19
	39	2480	4.12
LE-2M	1	2404	4.35
	19	2440	4.22
	38	2478	4.15
BT LE Ant 0_sample 1			
Mode	Channel	Frequency	SISO Ant 0 Avg. Power
LE-1M	0	2402	4.5
	19	2440	4.37
	39	2480	4.23
LE-2M	1	2404	4.51
	19	2440	4.39
	38	2478	4.25

Conducted Power (Full)			
UFY Ant 0_sample 2			
Mode	Channel	Frequency	SISO Ant 0 Avg. Power
GFSK	1	2403	4.59
	42	2444	4.39
	79	2481	4.07
BT LE Ant 0_sample 2			
Mode	Channel	Frequency	SISO Ant 0 Avg. Power
LE-1M	0	2402	4.62
	19	2440	4.48
	39	2480	4.33
LE-2M	1	2404	4.59
	19	2440	4.47
	38	2478	4.35

Appendix F. SAR Test Result

SAR Results for Extremity Exposure Condition.

Note:

1. SAR testing for BT was performed on the maximum power mode.
2. The "< 0.001" means there is no SAR value or the SAR is too low to be measured.

Extremity SAR Test Result														
System & Position						DUT	SAR							
Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Channel	Sample	Duty Cycle	Crest Factor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-10g (W/kg)	Scaled SAR-10g (W/kg)
1	BT	LE-2M	Front Curve	0	1	Logi BOLT	84.80	1.18	5.00	4.51	1.12	0	<0.001	0.00
	BT	LE-2M	Rear Face	0	1	Logi BOLT	84.80	1.18	5.00	4.51	1.12	-0.06	0.039	0.05
	BT	LE-2M	Left Side	0	1	Logi BOLT	84.80	1.18	5.00	4.51	1.12	0	<0.001	0.00
	BT	LE-2M	Right Side	0	1	Logi BOLT	84.80	1.18	5.00	4.51	1.12	0	<0.001	0.00
	BT	LE-2M	Top Side	0	1	Logi BOLT	84.80	1.18	5.00	4.51	1.12	0	<0.001	0.00
	BT	LE-2M	Bottom Side	0	1	Logi BOLT	84.80	1.18	5.00	4.51	1.12	0	<0.001	0.00
	BT	LE-2M	Rear Face	0	19	Logi BOLT	84.80	1.18	5.00	4.39	1.15	0.03	0.037	0.05
	BT	LE-2M	Rear Face	0	38	Logi BOLT	84.80	1.18	5.00	4.25	1.19	0.12	0.035	0.05
2	BT	LE-1M	Front Curve	0	0	UFY	92.14	1.09	5.00	4.62	1.09	0	<0.001	0.00
	BT	LE-1M	Rear Face	0	0	UFY	92.14	1.09	5.00	4.62	1.09	0.03	0.04	0.05
	BT	LE-1M	Left Side	0	0	UFY	92.14	1.09	5.00	4.62	1.09	0	<0.001	0.00
	BT	LE-1M	Right Side	0	0	UFY	92.14	1.09	5.00	4.62	1.09	0	<0.001	0.00
	BT	LE-1M	Top Side	0	0	UFY	92.14	1.09	5.00	4.62	1.09	0	<0.001	0.00
	BT	LE-1M	Bottom Side	0	0	UFY	92.14	1.09	5.00	4.62	1.09	0	<0.001	0.00
	BT	LE-1M	Rear Face	0	19	UFY	92.14	1.09	5.00	4.48	1.13	0.12	0.039	0.05
	BT	LE-1M	Rear Face	0	39	UFY	92.14	1.09	5.00	4.33	1.17	-0.07	0.036	0.05

Appendix J. Calibration of Test Equipment List

Calibration of Test Equipment List are shown as below.

Equipment for SAR Test

Equipment	Manufacturer	Model	SN	Cal. Date	Cal. Interval
System Validation Dipole	SPEAG	D2450V2	735	Dec. 13, 2024	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	7537	Nov. 20, 2024	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	7555	Apr. 24, 2024	1 Year
Data Acquisition Electronics	SPEAG	DAE4	1431	Jul. 16, 2024	1 Year
Data Acquisition Electronics	SPEAG	DAE4	1698	Nov. 20, 2024	1 Year
Power Meter	Anritsu	ML2495A	1218009	Nov. 22, 2024	1 Year
Power Sensor	Anritsu	MA2411B	1207252	Nov. 22, 2024	1 Year
Thermometer	YFE	YF-160A	120702365	Sep. 12, 2024	1 Year
Dielectric Assessment Kit	SPEAG	DAK-3.5	1151	Jul. 15, 2024	1 Year
Powersource1	SPEAG	SE_UMS_160 BA	4260	Nov. 11, 2024	1 Year

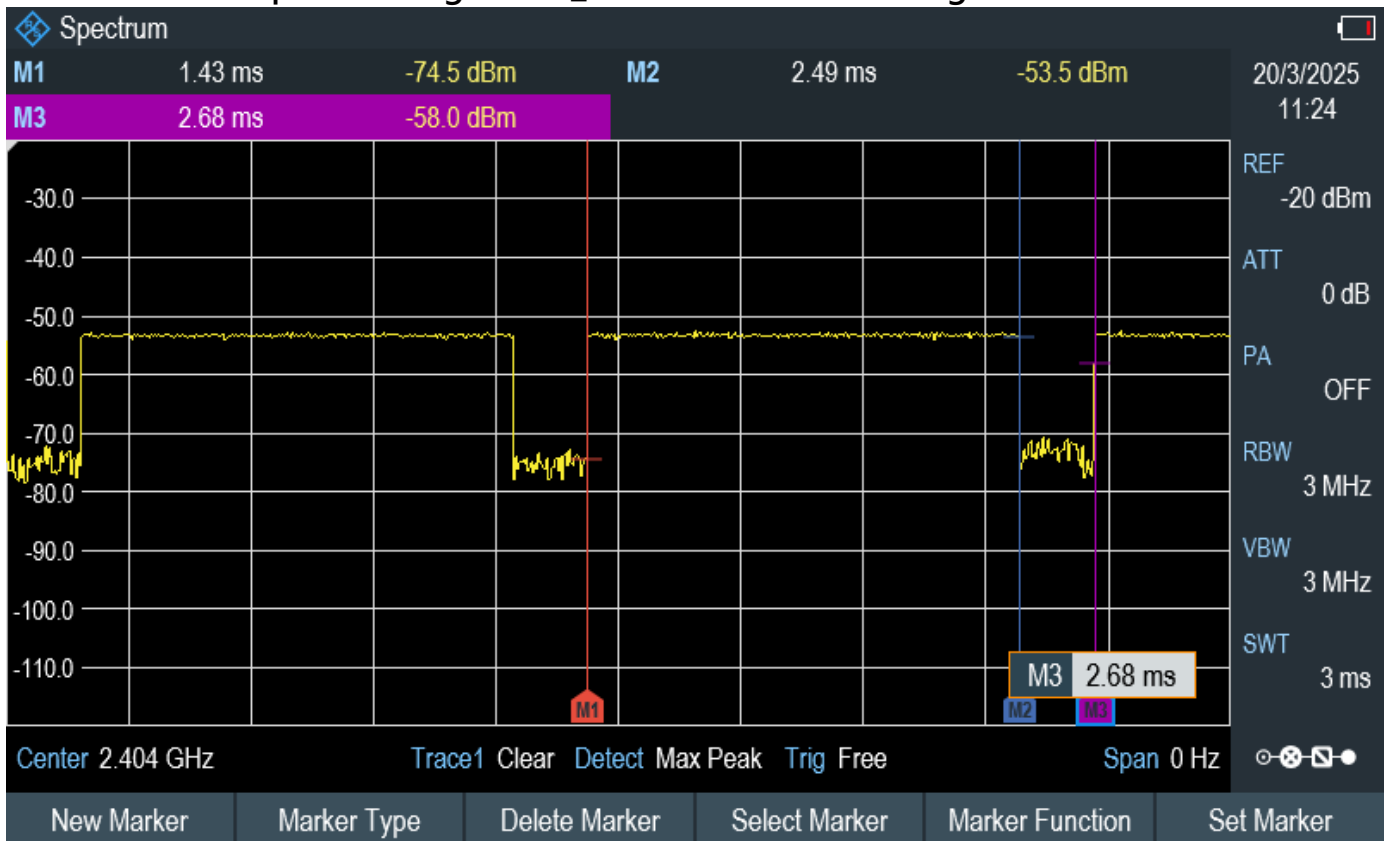
Appendix K. Considerations Related to Bluetooth for Setup and Testing

This device has installed Bluetooth engineering testing software which can provide continuous transmitting RF signal. During Bluetooth SAR testing, this device was operated to transmit continuously at the maximum transmission duty with specified transmission mode, operating frequency, lowest data rate, and maximum output power.

The Bluetooth call box has been used during SAR measurement and the EUT was set to LE mode at the maximum output power. Its duty factor was calculated as below and the measured SAR for Bluetooth would be scaled to the 100% transmission duty factor to determine compliance.

The duty factor of Bluetooth signal are shown as below.

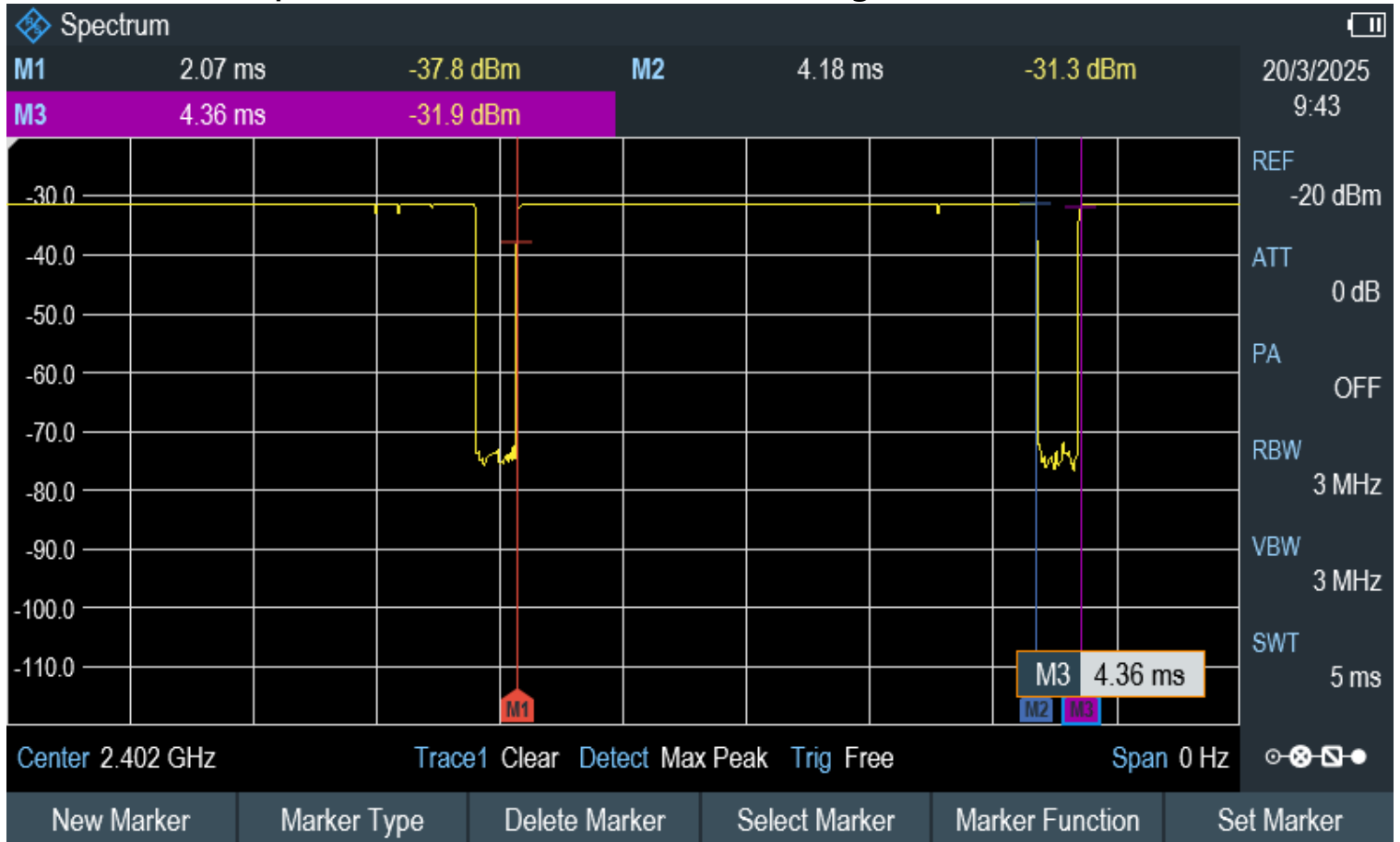
<Time-domain plot for Logi BOLT_LE-2M transmission signal>



The duty factor of Bluetooth signal has been calculated as following.

$$\text{Duty Factor} = \text{Pulse Width} / \text{Total Period} = (2.49 - 1.43) / (2.68 - 1.43) = 84.80\%$$

<Time-domain plot for UFY_LE-1M transmission signal>



The duty factor of Bluetooth signal has been calculated as following.

$$\text{Duty Factor} = \text{Pulse Width} / \text{Total Period} = (4.18 - 2.07) / (4.36 - 2.07) = 92.14\%$$