

Radio Test Report

Manufacturer: BreatheOx Limited T/A Albus Health
Model: Albus Home G2



In accordance with ARIB STD-T73
Technology: (57-64 GHz FMCW RADAR)

Prepared for: BreatheOx Limited T/A Albus Health
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COMMERCIAL-IN-CONFIDENCE

Document 75966228-01 Issue 01

SIGNATURE

NAME	JOB TITLE	RESPONSIBLE FOR	ISSUE DATE
Steve Marshall	Senior Engineer	Authorised Signatory	08 April 2026

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD document control rules.

EXECUTIVE SUMMARY

A sample of this product was tested and found to be compliant with ARIB STD-T73: V2.0 for the tests detailed in section 1.3.



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1 Report Summary

1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
01	First version	08-Apr-2026

Table 1

1.2 Introduction

Applicant	BreatheOx Limited T/A Albus Health
Manufacturer	BreatheOx Limited T/A Albus Health
Model Number(s)	G2 Home
Serial Number(s)	28800239 & 28460086
Hardware Version(s)	Albus Home G2
Software Version(s)	v23.03.03
Number of Samples Tested	2
Test Specification/Issue/Date	ARIB STD-T73: V2.0
Order Number	PO-0028
Date	03-November-2025
Date of Receipt of EUT	19-November-2025 and 09-December-2025
Start of Test	22-December-2025
Finish of Test	02-April-2026
Name of Engineer(s)	Roscoe Harrison
Related Document(s)	Notification No.88 of MIC, 2004 ANSI C63.10 (2020)



1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with ARIB STD-T73 is shown below.

Section	Specification Clause	Test Description	Result	Comments/Base Standard
Configuration and Mode: DC Powered - 60GHz				
2.1	Article 2, Item (19) Notice 88, Appendix 43	Voltage Variations	Pass	
	Volume 2, Clause 3.2 (1)	Modulation Method	Declaration	
2.2	Volume 2, Clause 3.2(2) & 3.2(3)	Antenna Power and Tolerance of Antenna Power	Pass	
2.3	Volume 2, Clause 3.2(4) & 3.2(5)	Tolerance of Frequency and Permissible Value of Occupied Bandwidth	Pass	
2.4	Volume 2, Clause 3.2(6)	The Permissible Value for the Strength of Spurious Emissions of Unwanted Emissions	Pass	
2.5	Volume 2, Clause 3.3(1)	Limit on secondary radiated emissions	Pass	
2.6	Volume 2, Clause 3.4(1)	Interference Prevention Function	Declaration	
2.7	Volume 2, Clause 3.4(2)	Transmitting Time Restricting Device	Pass	
2.8	Volume 2, Clause 3.7	The Permissible Values for the Strength Exposed a Human Body to a Radio Wave.	Pass	

Table 2



1.4 Customer Supplied Form

Equipment Description

Technical Description: <i>(Please provide a brief description of the intended use of the equipment including the technologies the product supports)</i>		Albus Home is a tabletop, plug & play passive device that normally sits on the user's bedside and that records audio, movement information and environmental parameters for the purpose of assessing various biomarkers for participants in clinical studies. These will typically be run by pharmaceutical companies with health participants or those with some conditions such as respiratory. The purpose of the device is to record data for future analysis in the cloud.	
Manufacturer:		BreatheOx Limited (Trading as Albus Health)	
Model:		Albus Home G2	
Part Number:		332-C0 & 532-V0	
Hardware Version:		V2	
Software Version:		V23.02.00	
FCC ID of the product under test – see guidance here		2BGXS-G2 Contains FCC ID: 2AKZA-QCA9377 & XMR201903EG25G	
IC ID of the product under test – see guidance here		32679-G2 Contains IC ID: 22364-QCA9377 & 10224A-201903EG25G	
Device Category	Mobile ☐	Portable ☒	Fixed ☐
Equipment is fitted with an Audio Low Pass Filter		Yes ☐	No ☒

Intentional Radiators

Technology	WiFi See Laird LWB5+ datasheet (453-00046)	4G LTE cat-4 See Quectel EG25-G datasheet	60GHz Radar TI IWR6843AOP
Frequency Range (MHz to MHz)	2.4-2.473 GHz 5.15-5.35 GHz 5.47-5.725 GHz 5.725-5.85 GHz	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28 LTE-TDD: B38/B39/B40/B41 WCDMA: B1/B2/B4/B5/B6/B8/B19 GSM: 850/900/1800/1900MHz	60-64GHz
Conducted Declared Output Power (dBm)	max 16.5dBm but depends on freq and modulation	max 33dBm but depends on band used	13 dBm
Antenna Gain (dBi)	EMF2449A1-10MH4L 2.8dBi @2.4GHz 3.4dBi @5G	Molex 2091420180 698-960MHz: 1.2dBi 1710-2690MHz: 5.2dBi 3300-3800MHz: 2.7dBi	Single RF chip with built in antenna
Supported Bandwidth(s) (MHz) (e.g. 1 MHz, 20 MHz, 40 MHz)	20/40/80MHz	1.4/3/5/10/15/20 MHz	4GHz range in each chirp.
Modulation Scheme(s) (e.g. GFSK, QPSK etc)	BPSK, QPSK, CCK, 16- QAM, 64-QAM, and 256-QAM	various	FMCW
ITU Emission Designator (see guidance here) (not mandatory for Part 15 devices)		8M93G7D / 8M91G7D	N/A
Bottom Frequency (MHz)	2.4GHz		60GHz
Middle Frequency (MHz)			
Top Frequency (MHz)	5.85GHz		64GHz



Un-intentional Radiators

Highest frequency generated or used in the device or on which the device operates or tunes	1.5 GHz
Lowest frequency generated or used in the device or on which the device operates or tunes	40 MHz
Class A Digital Device (Use in commercial, industrial or business environment) ☐	
Class B Digital Device (Use in residential environment only) ☒	

AC Power Source

AC supply frequency:	Not Applicable	Hz
Voltage		V
Max current:		A
Single Phase ☐ Three Phase ☐		

DC Power Source

Nominal voltage:	12V	V
Extreme upper voltage:	13.3V	V
Extreme lower voltage:	10V	V
Max current:	1.5A	A

Battery Power Source

Voltage:	No battery	V
End-point voltage:		V (Point at which the battery will terminate)
Alkaline ☐ Leclanche ☐ Lithium ☐ Nickel Cadmium ☐ Lead Acid* ☐ *(Vehicle regulated)		
Other ☐	Please detail:	

Charging

Can the EUT transmit whilst being charged	Yes ☐ No ☐
---	--

Temperature

Minimum temperature:	0	°C
Maximum temperature:	40	°C



Cable Loss

Adapter Cable Loss (Conducted sample)		dB
--	--	----

Antenna Characteristics

Antenna connector ☐			State impedance		Ohm
Temporary antenna connector ☐			State impedance		Ohm
Integral antenna ☒	Type:	4G LTE, multi band	Gain	698-960MHz: 1.2dBi 1710-2690MHz: 5.2dBi 3300-3800MHz: 2.7dBi (from datasheet)	dBi
Integral antenna ☒	Type:	WiFi dual band	Gain	2.8dBi @2.4GHz 3.4dBi @5GHz (from datasheet)	dBi
Integral antenna ☒	Type:	60GHz radar MIMO patch antenna (antenna-on-package)	Gain	See IWR6843AOP datasheet from TI	
External antenna ☐	Type:		Gain		dBi

For external antenna only:
Standard Antenna Jack ☐ If yes, describe how user is prohibited from changing antenna (if not professional installed):
Equipment is only ever professionally installed ☐
Non-standard Antenna Jack ☐
All part 15 applications will need to show how the antenna gain was derived either from a manufacturer data sheet or a measurement. Where the gain of the antenna is inherently accounted for as a result of the measurement, such as field strength measurements on a part 15.249 or 15.231 device, so the gain does not necessarily need to be verified. However, enough information regarding the construction of the antenna shall be provided. Such information maybe photographs, length of wire antenna etc.

Ancillaries (if applicable)

Manufacturer:	Globtek power supply	Part Number:	
Model:	WR9QE1500CCPCIMNAR6 B	Country of Origin:	China

I hereby declare that the information supplied is correct and complete.

Name: Jose Sanchez
Position held: CTO
Date: 08 October 2025

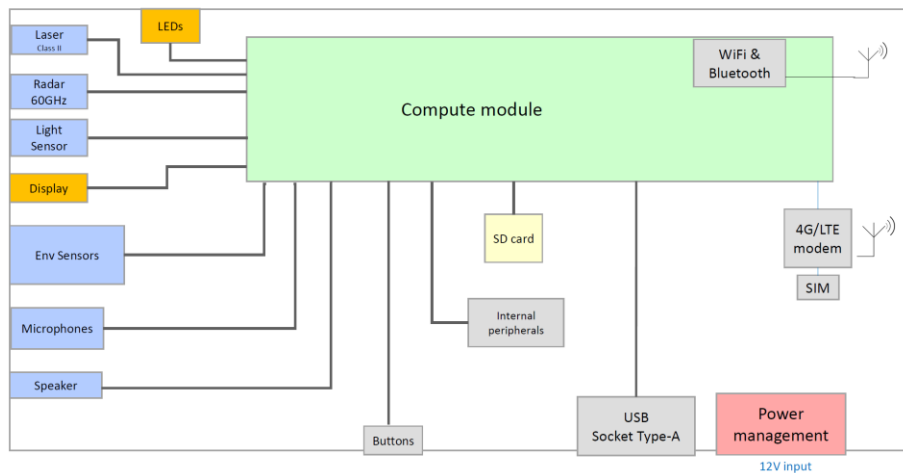
1.5 Product Information

1.5.1 Technical Description

Albus Home is a tabletop, plug & play passive device that normally sits on the user's bedside and that records audio, movement information and environmental parameters for the purpose of assessing various biomarkers for participants in clinical studies. These will typically be run by pharmaceutical companies with health participants or those with some conditions such as respiratory. The purpose of the device is to record data for future analysis in the cloud.

The technologies used are better described with a high-level system diagram as follows:

Albus Home RD v2 - Simplified System block diagram





1.6 Deviations from the Standard

No deviations from the applicable test standard were made during testing.

1.7 EUT Modification Record

The table below details modifications made to the EUT during the test programme.

The modifications incorporated during each test are recorded on the appropriate test pages.

Modification State	Description of Modification still fitted to EUT	Modification Fitted By	Date Modification Fitted
Model: Albus Home G2, Serial Number: 28460086			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: Albus Home G2, Serial Number: 28800239			
0	As supplied by the customer	Not Applicable	Not Applicable
1	<p>Device Firmware updated by customer via cellular link to device so that "RADAR Mute (Continuous Receiving mode) is now possible. Version info from customer via email : "v23.03.03_rftest04"</p> <p>Radar Mute mode uses the following command: "prep_rf_test /usr/share/radar/setup_commands_mute.txt"</p> <p>Roscoe Harrison verified this command functions correctly.</p>	Jesse Hamer	30-January-2026
2	<p>The previously fitted RF absorber material (Mod State 2) was removed.</p> <p>A single sheet absorber material (TDK IFM16-030EB300X200) was applied over (top & bottom surfaces of "daughter" PCB, wrapped around the edge covering the exposed track/pads in an unpopulated area (space) for a BLE/WiFi RF module on the "daughter" PCB.</p> <p>Reason: To suppress a spur identified at 3 GHz in previous mod state.</p>	Zsolt Gaspar	09-February-2026

Table 3



1.8 Test Location

TÜV SÜD conducted the following tests at our Octagon House Test Laboratory.

Test Name	Name of Engineer(s)	Accreditation
Configuration and Mode: DC Powered - 60GHz		
Voltage Variations	Roscoe Harrison	UKAS
Antenna Power and Tolerance of Antenna Power	Roscoe Harrison	UKAS
Tolerance of Frequency and Permissible Value of Occupied Bandwidth	Roscoe Harrison	UKAS
The Permissible Value for the Strength of Spurious Emissions of Unwanted Emissions	Roscoe Harrison	UKAS
Limit on secondary radiated emissions	Roscoe Harrison	UKAS
Interference Prevention Function	Roscoe Harrison	UKAS
Transmitting Time Restricting Device	Roscoe Harrison	UKAS
The Permissible Values for the Strength Exposed a Human Body to a Radio Wave.	Roscoe Harrison	UKAS

Table 4

Laboratory Address: TÜV SÜD, Octagon House,
Concorde Way, Fareham, Hampshire,
PO15 5RL, United Kingdom

2 Test Details

2.1 Voltage Variations

2.1.1 Specification Reference

Article 2, Item (19) Notice 88, Appendix 43

2.1.2 Equipment Under Test and Modification State

Albus Home G2, S/N:28460086 - Modification State 0

2.1.3 Date of Test

07-January-2026 to 13-January-2026

2.1.4 Test Method

DC Powered - 60GHz

This test is performed in accordance with "Appendix 88 : Test Methods for Radio Equipment listed in Article 2, Paragraph 1, Item 11-31 of the certification regulations"(*), Section 2 :

The applied DC input voltage to the DUT DC input socket was set to $\pm 10\%$ of the nominal voltage specified by the manufacturer whilst the input voltage to the RF circuit was measured.

The test is performed with the DC input voltage set at the following voltages :

$V_{in} = (V_{nominal} - (10\% * V_{nominal}))$,

$V_{in} = V_{nominal}$

$V_{in} = V_{nominal} + (10\% * V_{nominal})$.

If it is confirmed that the output voltage fluctuates by less than $\pm 1\%$ of the nominal voltage, the device is to be assessed at the rated nominal voltage only.

If it is confirmed that the output voltage fluctuates by less than $\pm 10\%$ of the nominal voltage, but more than $\pm 1\%$, the device is to be assessed at the rated nominal voltages and the upper and lower voltage limits of the fluctuation range.

2.1.5 Environmental Conditions

Ambient Temperature 21.6 - 22.4 °C

Relative Humidity 28.2 - 44.3 %



2.1.6 Test Results

DC Powered - 60GHz

Input Supply Voltage (V)	Measured Voltage at RADAR chip "Vout_PA" pin (V)
10.8	1.002
12.0	1.001
13.2	1.002

Table 5 - Voltage Variation Results



Figure 1 - Photograph showing V(in) setup for the minimum DC voltage (10.8V).



Figure 2 - Photograph showing the voltage was measured to the RF Circuitry socket
($V_{\min} = 10.8 \text{ V DC}$ at DC socket input)



Figure 3 - Photograph showing $V(\text{in})$ setup for the nominal DC voltage (12.0V).



**Figure 4 : Photograph showing the voltage was measured to the RF Circuitry socket
(V(in) = 12.0 V DC at DC socket input)**

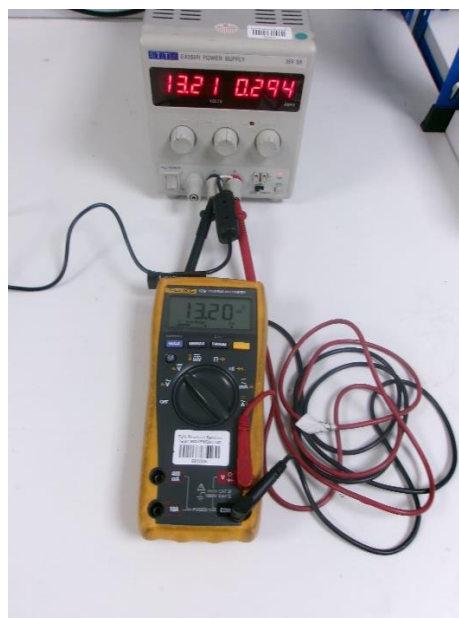


Figure 5 - Photograph showing V(in) setup for the maximum DC voltage (13.2V).



Figure 6 - Photograph showing the test point at which the voltage was measured to the RF Circuitry (V_in = 13.2V DC at DC input socket)

2.1.7 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Multimeter	Fluke	79 Series III	611	12	02-Feb-2026
True RMS Multimeter	Fluke	179	4006	12	21-Mar-2026
Digital multi-meter	Iso-tech	IDM93N	4435	12	06-Mar-2026
Thermo-hygro-Barometer	PCE Instruments	PCE-THB-40	5472	12	18-Jun-2026
Power Supply	TTI	EX355R	5573	-	TU

Table 6

TU - Traceability Unscheduled



2.2 Antenna Power and Tolerance of Antenna Power

2.2.1 Specification Reference

ARIB STD-T73, Volume 2, Clause 3.2(2) & 3.2(3)

2.2.2 Equipment Under Test and Modification State

Albus Home G2, S/N: 28800239 - Modification State 0

2.2.3 Date of Test

07-January-2026 to 13-January-2026

2.2.4 Test Method

DC Powered - 60GHz

This test is performed in accordance with the EIRP limit stated in ARIB STD-T73 v2.0 Clause 3.2 (2), using the test methods described within:

" MIC Notification No 88 for Radio Equipment listed within Article 2, Paragraph 1, Item 11-31 (of the Certification Regulations) Sections 8 & 13.

The following tests methods have also been referenced for guidance :

ANSI C63.10 Clauses 9.6, 9.7 & 9.8.

ANSI C63.10 Clause 4.1.5.2.8 and Annex L guidance for FMCW devices.

The DUT has no conducted RF port and also uses separate embedded antenna array solutions for Rx and Tx, both of which are integrated onto the RADAR integrated circuit. Conducted measurements are not possible, therefore the test according to MIC Notification 88, Section 6 cannot be used.

A radiated method applicable for internal antennas was used instead.

The EUT was setup at a height of 1.5m on a non-conducting platform.

A measurement antenna (horn) was attached to the external mixer, and all faces of the EUT were swept to determine the position resulting in the maximum level. The EUT was then positioned in this orientation and the measurement antenna placed at a measurement distance of 1m (in the far-field region).

The measurement analyser has separate correction factors applied to compensate for the Antenna Correction Factor and the external mixer conversion loss factor (Down-converter gain) for the used mm-Wave downconverter model.

The Centre frequency was set to the emission peak, denoted by "Marker 1".

An analyzer span setting of 7 GHz has been used.

A 1 MHz resolution bandwidth and 3 MHz video bandwidth are used.

A peak search marker was used to determine the peak power level and this value was noted.

The equation from TMS-265, p9 was rearranged to allow the electric field strength to be determined from a given EIRP power density in a 1 MHz resolution bandwidth and measurement distance :

$$E(\text{dBuV/m}) = \text{EIRP}(\text{dBm}) - (20 \cdot \log(d[\text{m}]) + 104.77$$

A chosen measurement distance of 1m is used.

This follows ANSI C63.10 Section 9.1.4 guidance, and is checked that the Measurement distance $\geq$ Far-field boundary distance for the 57-64 GHz measurement range.

The device uses bursted FMCW modulation.

Using ANSI C63.10 Annex L guidance, the Desensitization correction factor applicable for peak detected signals was calculated using equation L.1 :

$$\alpha = \frac{1}{\sqrt{1 + \left(\frac{2 \ln(2)}{\pi} \right)^2 \left(\frac{BW_{\text{Chirp}}}{T_{\text{Chirp}} B^2} \right)^2}} \quad (\text{L.1})$$

where

α	is the reduction in amplitude
BW_{Chirp}	is the FMCW Chirp Bandwidth
T_{Chirp}	is the FMCW Chirp Time
B	is the 3 dB IF Bandwidth = RBW

NOTE—This assumes that the analyzer sweep time is negligible (i.e., Sweep Time $\gg T_{\text{Chirp}}$) or that the analyzer is in the zero span mode.

Where $BW_{\text{chirp}} = 4275 \text{ MHz}$ (Measured), $T_{\text{chirp}} = 58 \mu\text{s} (*)$ and $\text{RBW} = 1 \text{ MHz}$.

((*) = This is stated by the client as the time duration during which the transmitter is active.)

(alpha) = 15.124 dB

$$\text{EIRP Power_Uncorrected_dBm} = E(\text{dBuV/m}) + (20 \cdot \log(d(\text{m})) - 104.77$$

For peak-detected powers, The EIRP Power (Corrected) is then calculated by summing the desensitization factor " α " to the uncorrected EIRP power (dBm) calculated earlier:

$$\begin{aligned} \text{EIRP Power_Corrected_dBm} &= \text{"EIRP power_Uncorrected_dBm"} + \alpha \\ &= -2.78 \text{ dBm} + 15.124 \text{ dB} \\ &= +12.344 \text{ dBm} \end{aligned}$$

The peak power is considered the "worst case".

The peak power is then converted to mW units using ANSI C63.10 Equation 24:

$$EIRP_{\text{Linear}} = 10^{[(EIRP_{\text{Log}} - 30)/10]}$$

where

$EIRP_{\text{Linear}}$	is the equivalent isotropic radiated power, in Watts
$EIRP_{\text{Log}}$	is the equivalent isotropic radiated power, in dBm

$$\text{EIRP power (Corrected) (mW)} = 10^{(\text{"EIRP power_Corrected_dBm"}/10)} = 17.156 \text{ mW}$$

This result may be compared against the ARIB STD-T73 Vol 2 Section 3.2 (2) test limit which is



+13dBm or 20mW.

Sweep Time

The measurement sweep time used for measurement is set in accordance with ANSI C63.10 Annex L3 guidance for "Peak detected signals" where Sweep time > 3*(Signal period) * (Span) / (RBW) is used.

2.2.5 Environmental Conditions

Ambient Temperature 21.6 - 22.2 °C
Relative Humidity 28.1 - 44.3 %

2.2.6 Test Results

DC Powered - 60GHz

Mode	Polarisation	Measured EIRP (dBm)	Measured EIRP (mW)	Limit (dBm)	Manufacturer Declared EIRP (mW)	Difference between Measured and Declared EIRP (%)	Verdict
FMCW Device. ("Japan Short Frame" command sent)).	Horizontal	12.344 (peak) (PDF corrected)	17.156 (peak) (PDF corrected)	13	19.953	-14.016	Pass

Table 7 - Antenna Power and Tolerance Results

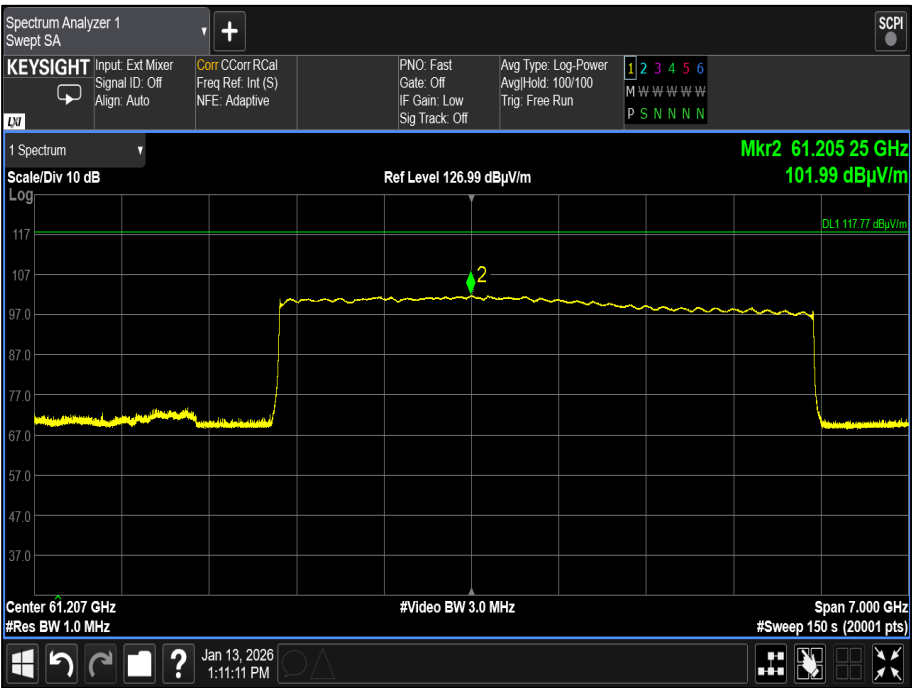


Figure 7 - FMCW Device. ("Japan Short Frame" mode active)). Horizontal polarization.

ARIB STD-T73, Limit Clause 3.2(2) and 3.2(3)

The antenna power shall be 0.01W (10 dBm) or less.
The equivalent isotropic radiated power shall be 13 dBm or less.

The tolerance of the antenna power, which is the maximum permissible tolerance from designated or fixed antenna power, shall be +50% in the upper limit and -70% in the lower limit.

2.2.7 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
3m Semi-Anechoic Chamber	Rainford	RF Chamber 5	1545	36	23-Apr-2027
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
True RMS Multimeter	Fluke	179	4006	12	21-Mar-2026
Emissions Software	TUV SUD	EmX V3.6.1	5125	-	Software
Thermo-hygro-Barometer	PCE Instruments	PCE-THB-40	5472	12	18-Jun-2026
SAX WR15 (50-75 GHz)	Virginia Diodes	N9029AV15	6076	12	O/P Mon
Horn Antenna 50-75GHz	Custom Microwave Inc.	HO15R	6109	24	12-Apr-2026
MXA Signal Analyzer	Keysight Technologies	N9020B	6876	24	31-Aug-2026

Table 8

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment

2.3 Tolerance of Frequency and Permissible Value of Occupied Bandwidth

2.3.1 Specification Reference

ARIB STD-T73, Clause Volume 2, Clause 3.2(4) & 3.2(5)

2.3.2 Equipment Under Test and Modification State

Albus Home G2, S/N: 28800239 - Modification State 0

2.3.3 Date of Test

22-December-2025 to 16-January-2026

2.3.4 Test Method

Tolerance of Frequency

The "Tolerance of Frequency" test is performed to the test requirements of :
ARIB STD-T73 Volume 2 Clause 3.2 (4) "Tolerance of Frequency" using guidance from
ANSI C63.10 Clause 9.8, Clause 4.1.5.2.8 and
ANSI C63.10 Annex L4 for FMCW devices.

The transmission centre frequency has been evaluated using the measured lower and upper 99% boundary frequencies.

Transmission Centre frequency = (F(lower)) + (F(upper)) /2

The resulting transmission Centre frequency is checked to be within the wanted operating band boundaries.

Permissible Value of Occupied Bandwidth

The "Permissible Value of Occupied Bandwidth" test is performed to the test requirements of :
ARIB STD-T73 Volume 2 Clause 3.2(5) "The permissible value of occupied frequency bandwidth".

The test method of ANSI C63.10 clause 9.4 has been used with the following deviations :
The sweep time is set in accordance with ANSI C63.10 Annex L4 (relevant for FMCW radar devices) using N=3.

An RMS detector type is used.

A maximum hold trace is used to obtain the maximum average trace as per ARIB clause 3.2 (5) requirements.

2.3.5 Environmental Conditions

Ambient Temperature	19.4 - 21.5 °C
Relative Humidity	40.2 - 56.0 %

2.3.6 Test Results

DC Powered - 60GHz

Mode	F _{LOWER} (GHz)	F _{UPPER} (GHz)	99% Occupied Bandwidth (GHz)	Verdict
FMCW mode (Normal, Modulated operation), DUT White LED (constant). Default config - Japan). 50mS Frame period	59.6548	63.9556	4.3008	Pass

Table 9 - Occupied Bandwidth Results

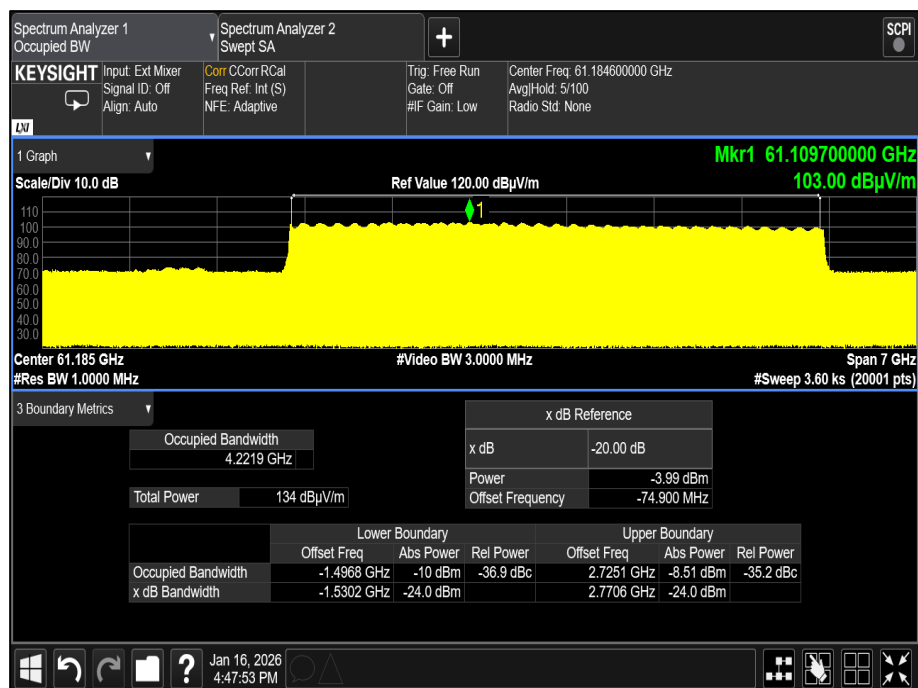


Figure 8 - FMCW mode (Normal, Modulated operation), DUT White LED (constant). Default config - Japan). 50mS Frame period

ARIB STD T-73, Limit Clause 3.2(4) and 3.2(5)

The frequency tolerance, which is the maximum permissible departure of the centre frequency of the frequency band occupied by emission from the centre of assigned frequency, shall be within the designated frequency range of 57.0 GHz to 64.0 GHz.

The permissible value of occupied frequency bandwidth (When the average power which is radiated over the upper frequency limit of the spectrum and the average power below the lower frequency limit of the spectrum are equal to 0.5% of total average power respectively, the bandwidth between the upper limit frequency and the lower limit frequency is called as occupied frequency bandwidth), shall be less than 7 GHz.



2.3.7 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
3m Semi-Anechoic Chamber	Rainford	RF Chamber 5	1545	36	23-Apr-2027
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
True RMS Multimeter	Fluke	179	4006	12	21-Mar-2026
Emissions Software	TUV SUD	EmX V3.6.1	5125	-	Software
Thermo-hygro-Barometer	PCE Instruments	PCE-THB-40	5472	12	18-Jun-2026
SAX WR15 (50-75 GHz)	Virginia Diodes	N9029AV15	6076	12	O/P Mon
Horn Antenna 50-75GHz	Custom Microwave Inc.	HO15R	6109	24	12-Apr-2026
MXA Signal Analyzer	Keysight Technologies	N9020B	6876	24	31-Aug-2026

Table 10

TU - Traceability Unscheduled

O/P Mon – Output Monitored using calibrated equipment



2.4 The Permissible Value for the Strength of Spurious Emissions of Unwanted Emissions and Out of Band Emissions

2.4.1 Specification Reference

ARIB STD-T73, Clause Volume 2, Clause 3.2(6)

2.4.2 Equipment Under Test and Modification State

Albus Home G2, S/N: 28800239 - Modification State 0
Albus Home G2, S/N: 28800239 - Modification State 2

2.4.3 Date of Test

29-January-2026 to 02-April-2026

2.4.4 Test Method

DC Powered - 60GHz

This test is performed in accordance with:

ARIB STD-T73 Vol 2 Clause 3.2 (6), using test setup guidance from:

Notification No 88 (MIC, 2004)

ANSI C63.10 Clause 9 ("Procedures for testing millimeter-wave systems" and

ANSI C63.10 Annex L ("Desensitization Factor and Sweep time considerations for measurements of FMCW signals")

Measurement frequency range boundaries

The minimum frequency tested was 30 MHz.

The maximum frequency tested was 130 GHz which is sufficient to include the 2nd harmonic of the DUT.

Measurement of FMCW Devices

Guidance from ANSI C63.10 Annex L3 for FMCW devices is used to set the "search" sweep measurements whilst using a Peak detector.

Guidance from ANSI C63.10 Annex L4 for FMCW devices is used to set the "search" sweep measurements whilst using an RMS detector.

Conversion of test limit to an equivalent field strength (Spurious Domain)

The EIRP power spectral density (in a 1 MHz bandwidth) is used to calculate the equivalent E-field strength for each frequency measurement range using the following equation :

$$E(\text{dBuV/m}) = \text{EIRP}(\text{dBm}) - 20 \cdot \text{LOG}(d(\text{m})) + 104.77$$

The measurement distance is chosen to just exceed the far field boundary distance condition on every measurement frequency range at the lowest test frequency (largest wavelength) but remains close enough to give sufficient measurement noise floor margin below the spurious emission limits and out of band limits.

Test Frequencies (GHz)	Chosen Measurement Distance "d", (m)	Power Spectral Density (dBm/MHz)	Equivalent E-Field strength at measurement distance "d". (dBuV/m)	Max dimension of Measurement antenna (m)	Far Field Boundary Distance (m), (Worst case)
40 - 50	1	-30	74.77	0.046079	0.5662
50 - 55.62	1	-30	74.77	0.036705	0.4491
55.62 – 57	1	-26	78.77	0.036705	0.4996
64 – 67.5	1	-26	78.77	0.036705	0.5748
67.5 – 75	1	-30	74.77	0.036705	0.6063
75 - 90	0.6	-30	79.21	0.029865	0.4460
90 - 110	0.3	-30	85.23	0.019722	0.2334
110 – 130	0.3	-30	85.23	0.019722	0.2853

Table 11 – Far field boundary calculations for spurious domain

Far field boundary distance = $(2 \cdot D^2) / \lambda$ (From ANSI C63.10 9.1.4 guidance).

Conversion of test limit to an equivalent field strength (Out of Band Domain)

The Out of Band domain limit is 4 dB higher than for the spurious emissions.

Following the same methodology as for "Spurious Emissions", the measurement distance is chosen to exceed far field boundary distance at the lowest test frequency, but also be close enough to achieve sufficient margin below the out of band limit. :

Test Frequencies (GHz)	Chosen Measurement Distance "d", (m)	Power Spectral Density (dBm/MHz)	Equivalent E-Field strength at measurement distance "d". (dBuV/m)	Max dimension of Measurement antenna (m)	Far Field Boundary Distance (m), (Worst case)
55.62 – 57	1	-26	78.77	0.036705	0.4996
64 – 67.5	1	-26	78.77	0.036705	0.5748

Table 12 – Far field boundary calculations for out-of-band domain

Reference Level Offset Calculation (Valid for 40 - 50 GHz range only)

$$\begin{aligned} \text{Reference Level Offset (dBuV/m)} &= (\text{Horn ACF at 45 GHz_TE6111}) + (\text{End Launcher Loss(typ)_TE6138}) + (1.85\text{mm Cable Loss_TE6100}) + (\text{Adaptor Loss_TE6087}) \\ &= 40.284 \text{ dB (ACF)} + 0.5\text{dB} + 6.91\text{dB} + 0.5\text{dB} \\ &= 48.194 \text{ dB} \end{aligned}$$

Reference Level Offset (Valid for 50 - 130 GHz ranges)

For all measurements performed at frequency measurement ranges >50 GHz, an external down-converter to the measurement analyzer is used as part of the receiving test setup. The specific downconverter model used depends on the frequency range being measured.

Corrections for the downconverter gain (correct for model and configuration type), antenna correction factor and the IF coaxial cable loss have been applied separately as analyzer corrections.

Down converter mode “C”, Block downconversion

For measurements in the 50 – 90 GHz range, the downconverter is configured in “Block Down-conversion Mode” using the high frequency LO input port (SAX “Configuration C”) has been used. In this mode, a fixed-frequency local oscillator at $(f_{LO}/6)$ is supplied from an external signal generator. This is amplified and multiplied by a factor of 6 and the resulting fixed-frequency local oscillator signal drives the LO port of the receive mixer. A portion of the RF spectrum is “block down-converted” to a lower frequency range (same frequency span) at the “IF” port. The IF output connects directly to the “RF input port of the spectrum analyzer.

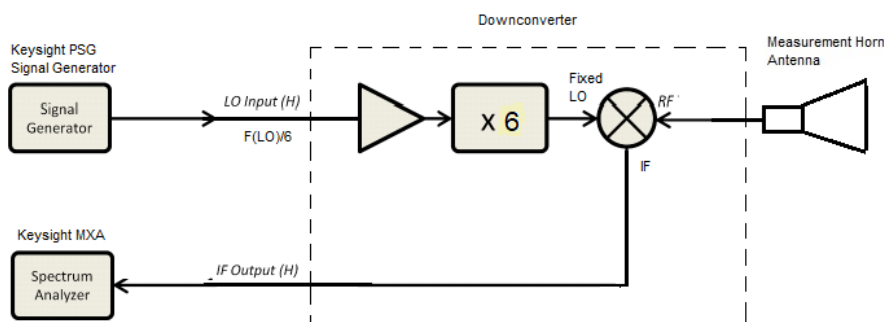


Figure 9 – SAX “Configuration C”, Block Down-conversion mode.

This configuration is suitable where strong RF signals are present at the receive mixer, and allows IF images to be rejected by the internal filtering of the spectrum analyzer.

This table below shows the operating parameters of the test setup using this downconverter configuration :

Table 13 : Measurement parameters of Downconverter using Block Down-conversion mode (SAX "Configuration C")

Frequency Range (GHz)	Spectrum Slice Identification	F(LO)/6 (GHz)	F(LO) (GHz)	RF measurement range (GHz)		IF Output range (GHz)
			(Fixed)	Lower limit – Upper limit		
50 - 75	“A1”	8.23	49.38	50	56	0.62 – 6.62
50 - 75	“A2”	9.23	55.38	56	62.5	0.62 – 7.12
50 - 75	“A3”	10.32	61.92	62.5	69	0.58 – 7.08
50 - 75	“A4”	11.40	68.40	69	75	0.60 – 6.60
75 - 90	“B3”	12.40	74.40	75	82	0.60 – 7.60
75 - 90	“B4”	13.57	81.42	82	90	0.58 – 8.58

Down converter mode "A", Spectrum Analyzer Extension mode

For measurements in the 90 – 130 GHz range, the downconverter is configured in "Spectrum Analyzer Extension" mode (SAX "Configuration A"). In this mode, a swept local oscillator signal at (F_LO/6) and a fixed IF signal at 322.5MHz are multiplexed onto the same coaxial cable connection, connected via the "External Mixer" port of the Spectrum analyser.

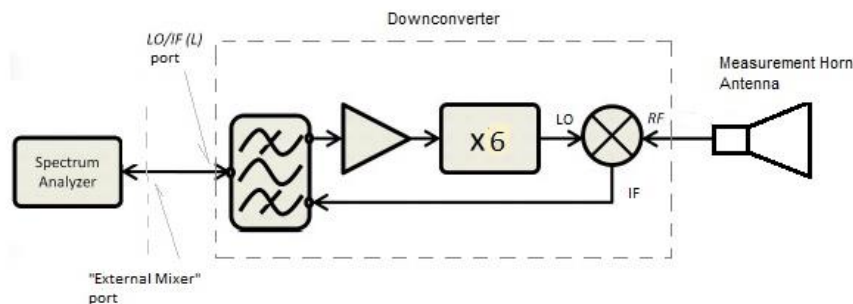


Figure 10 – SAX "Configuration A", Spectrum Analyzer Extension mode.

The fixed frequency IF signal is split from the swept local oscillator signal using a diplexer. The swept local oscillator signal is amplified and frequency multiplied by a factor of 6 or 12 depending on the downconverter used and the wanted frequency range. The resulting wanted local oscillator signal drives the LO port of the receive mixer.

The fixed IF frequency is isolated using the diplexer filtering and processed by the spectrum analyser.

In this mode, the analyzer does have the capability to perform IF image rejection of static, fixed frequency signals using DSP processing.

For fast moving FMCW swept signals, this capability is disabled due to DSP processing time limitations.

In both downconverter configurations, the measurement horn antenna waveguide flange is mated directly onto the down-converter waveguide flange.

There are no RF components between the two waveguide flanges, and therefore no reference level offset applies.

All measured E-field strengths are converted to EIRP power levels (dBm units) using equation :

$$E(\text{dBuV/m}) = \text{EIRP}(\text{dBm}) - 20 \cdot \text{LOG}(d(\text{m})) + 104.77$$

Sweep time, Sweep Points & Frequency Span

For peak detected measurements in the ranges 40-50GHz and 90-130GHz, the frequency span for the “Search” emissions plots is set in accordance with the Band edge boundaries, Measurement equipment limitations and the Power spectral density limits defined within ARIB STD-T73 Vol 2 Section 3.2 (6)(b) Table 3.4 .

The number of plot sweep points is set to exceed $\geq (2 \times \text{Span} / \text{RBW})$.

The sweep time for peak detected plots is set according to C63.10 Annex L3 guidance, using $N=3$.

For the measurement of any emissions using a peak detector made >40 GHz, the span, sweep points and sweep time settings have all been divided by a factor 10, whilst maintaining compliance with C63.10 Annex L3 guidance.

For average detected measurements made in the frequency ranges 50 – 90 GHz, the frequency span for the “Search” emissions plot is chosen to split each frequency range into “slices” where each frequency slice covers a frequency span within measurement equipment limitations. The test limits are set and defined in accordance with the Power spectral density limits defined within ARIB STD-T73 Vol 2 Section 3.2 (6)(b) Table 3.4.

The sweep time for average detected plots is set according to C63.10 Annex L4 guidance. In practice, a sweep time setting of 20S was found to be sufficient for measuring the DUT whilst operating in the Fast frame RADAR transmission mode, such that the trace does not change for longer sweep-time settings.

The number of plot sweep points is set to exceed $\geq (1 \times \text{Span} / \text{RBW})$.

2.4.5 Environmental Conditions

Ambient Temperature	17.2 – 19.9 °C
Relative Humidity	40.3 - 48.5 %



2.4.6 Test Results

DC Powered - 60GHz

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Angle (°)	Height (cm)	Polarisation	Orientation
*							

Table 14 – Radiated Emissions Results - Transmit, 30 MHz to 40 GHz

*No emissions were found within 10 dB of the limit.

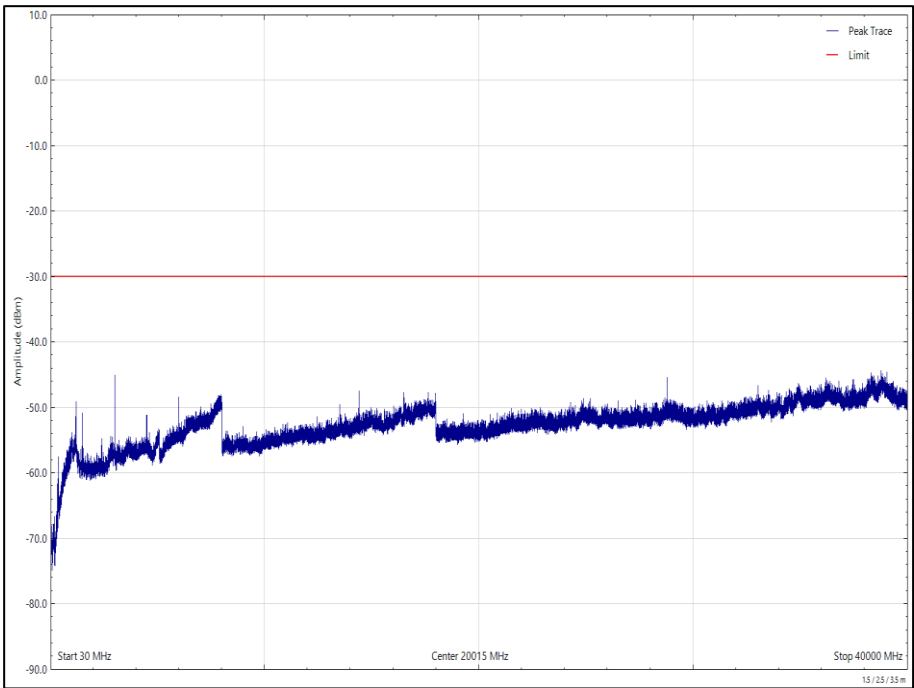


Figure 11 - 30 MHz to 40 GHz, Transmit, Horizontal, EUT Orientation: X

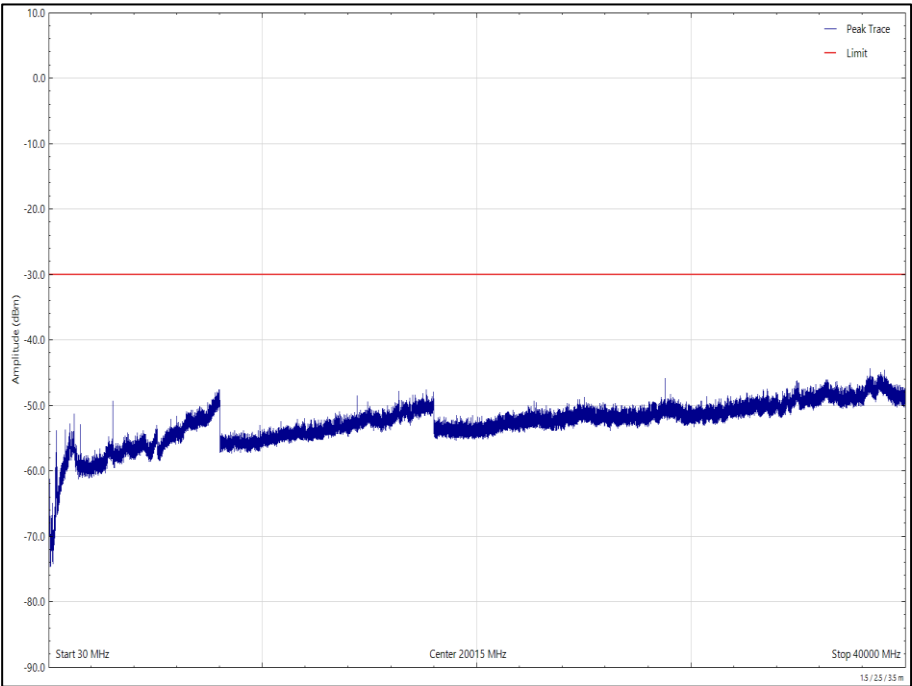


Figure 12 - 30 MHz to 40 GHz, Transmit, Vertical, EUT Orientation: X

Frequency (GHz)	IF Frequency of Measurement marker) (GHz)	Detector Type	Polarisation	Measurement distance, (m)	Level (dBm)	Limit (dBm)	Margin (dB)
74.814	6.414	RMS	Horizontal	1	-33.639	-30.00	-3.639
74.804	6.404	RMS	Horizontal	1	-33.678	-30.00	-3.678
74.817	6.417	RMS	Horizontal	1	-33.691	-30.00	-3.691
74.810	6.410	RMS	Horizontal	1	-33.716	-30.00	-3.716
74.807	6.407	RMS	Horizontal	1	-33.718	-30.00	-3.718
74.819	6.419	RMS	Horizontal	1	-33.742	-30.00	-3.742

Table 15 – Radiated Emissions Results - Transmit, 40 GHz to 130 GHz

No other emissions were found within 10 dB of the limit for measurement frequencies ≤ 40 GHz.
No other emissions were found within 6 dB of the limit for measurement frequencies in the range $40 < x \leq 130$ GHz.

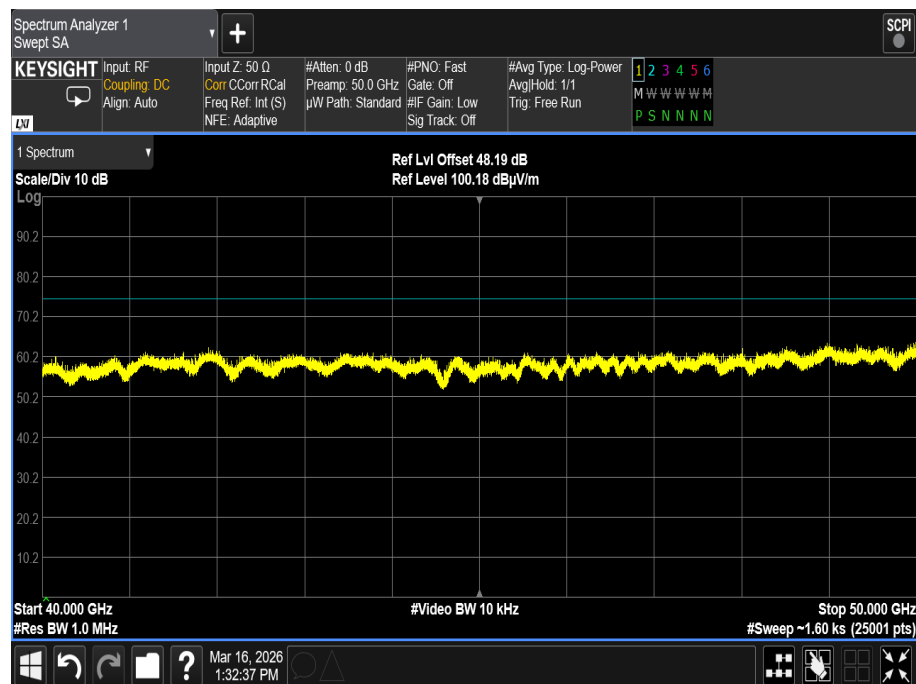


Figure 13 - 40 GHz to 50 GHz, Transmit, Test distance 1m, Horizontal polarization, Spurious domain, Peak detector, Downconverter mode “A”

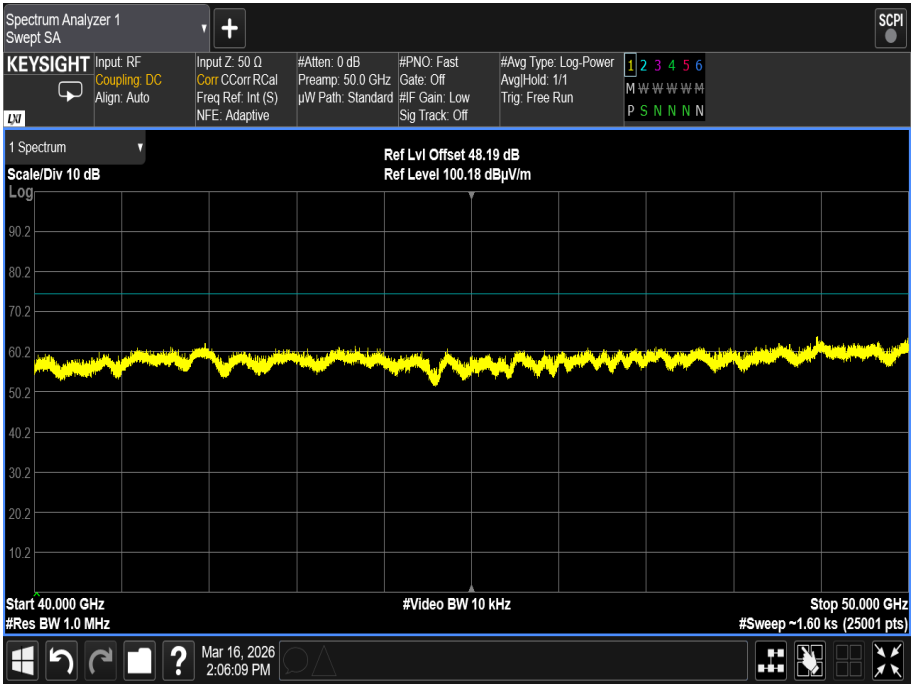


Figure 14 - 40 GHz to 50 GHz, Transmit, Test distance 1m, Vertical polarization, Spurious domain, Peak detector, Downconverter mode “A”

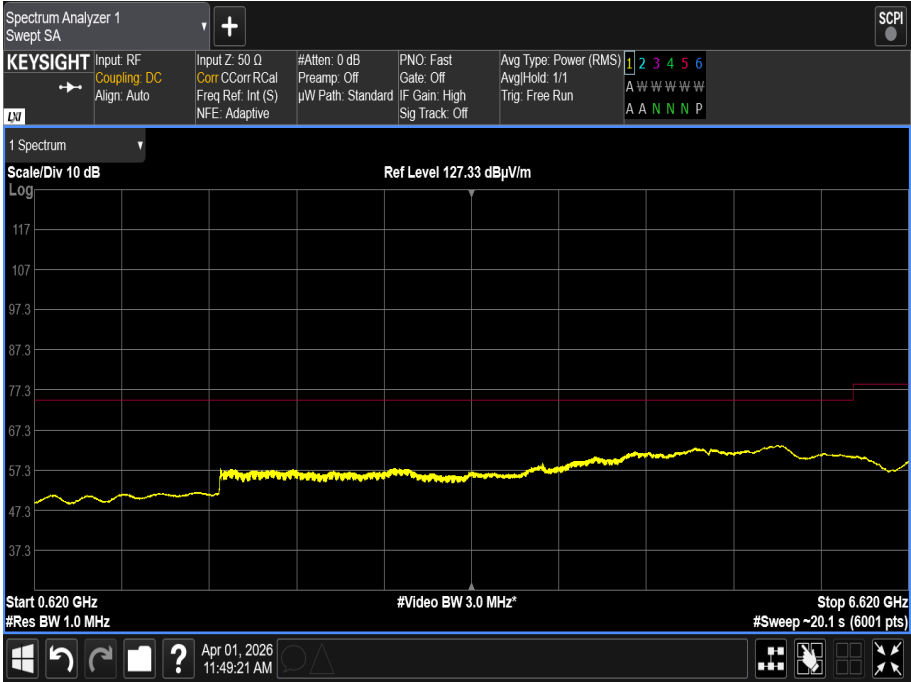


Figure 15 - 50 GHz to 56 GHz, Transmit, Test distance 1m, Horizontal polarization, Spurious domain < 55.62 GHz, RMS detector, Downconverter mode “C”, Slice “A1”

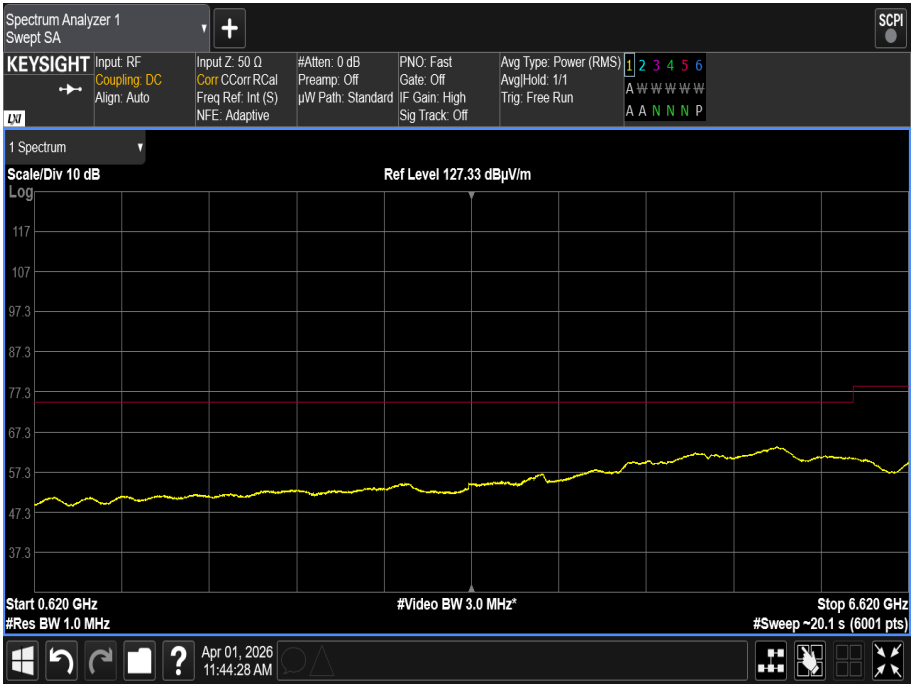


Figure 16 - 50 GHz to 56 GHz, Transmit, Test distance 1m, Vertical polarization, Spurious domain ≤ 55.62 GHz and Out of Band domain $55.62 < x < 57$ GHz, RMS detector, Downconverter mode “C”, Slice “A1”

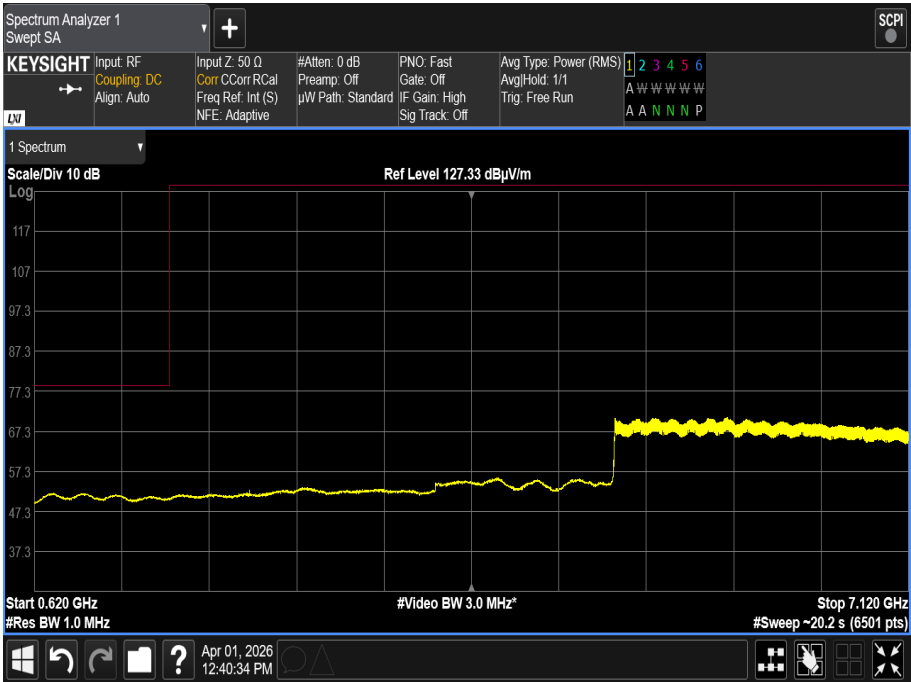


Figure 17 – 56 GHz to 62.5 GHz, Transmit, Test distance 1m, Horizontal polarization, Out-of-Band domain < 57 GHz, RMS detector, Downconverter mode “C”, Slice “A2”

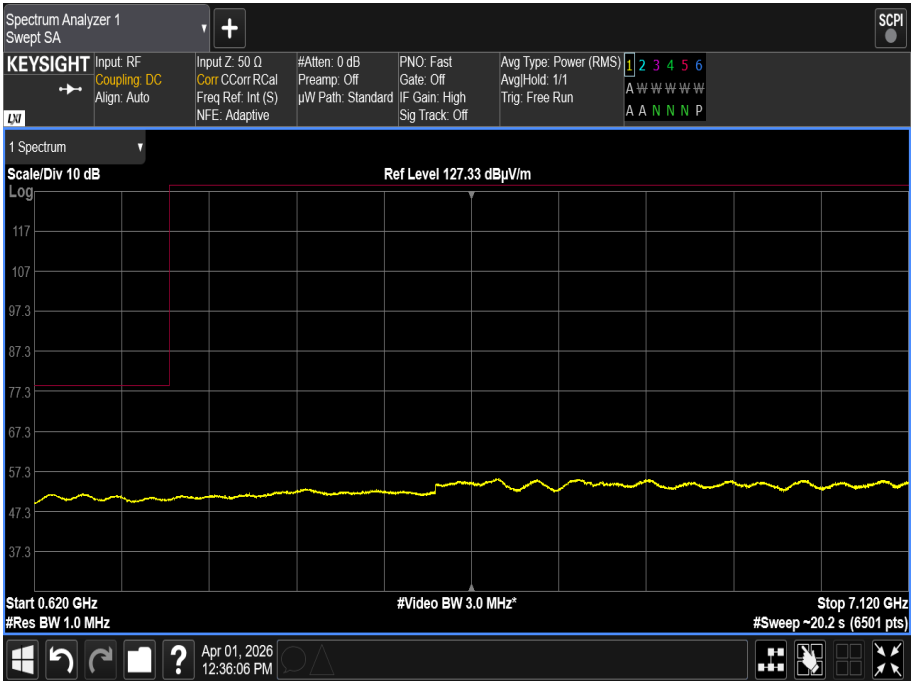


Figure 18 - 56 GHz to 62.5 GHz, Transmit, Test distance 1m, Vertical polarization, Out-of-Band domain <57 GHz, RMS detector, Downconverter mode “C”, Slice “A2”

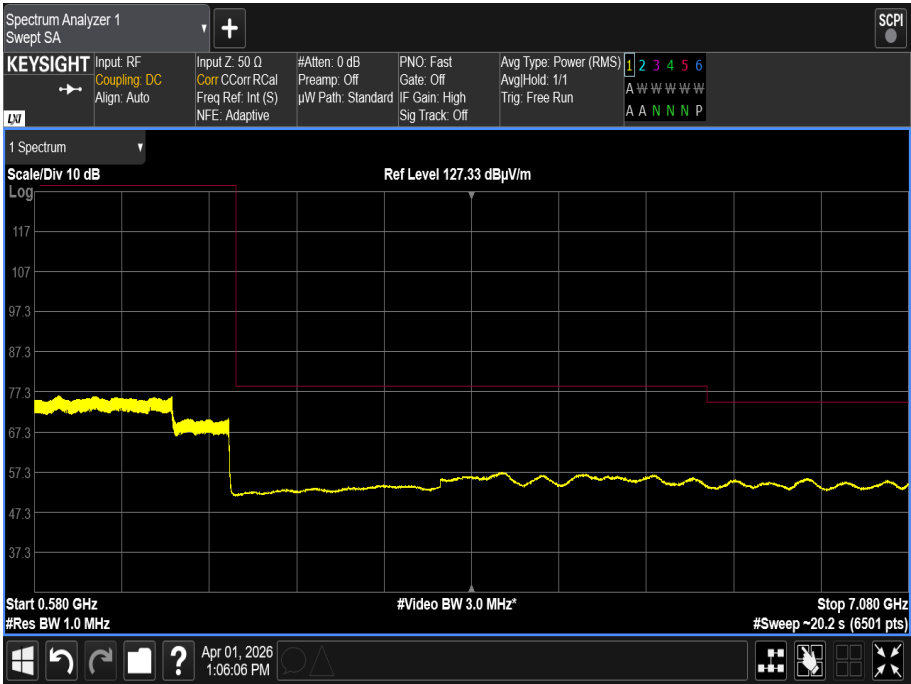


Figure 19 – 62.5 GHz to 69 GHz, Transmit, Test distance 1m, Horizontal polarization, Out-of-Band domain $64 < x \leq 67.5$ GHz and Spurious domain $67.5 < x < 69$ GHz, RMS detector, Downconverter mode “C”, Slice “A3”

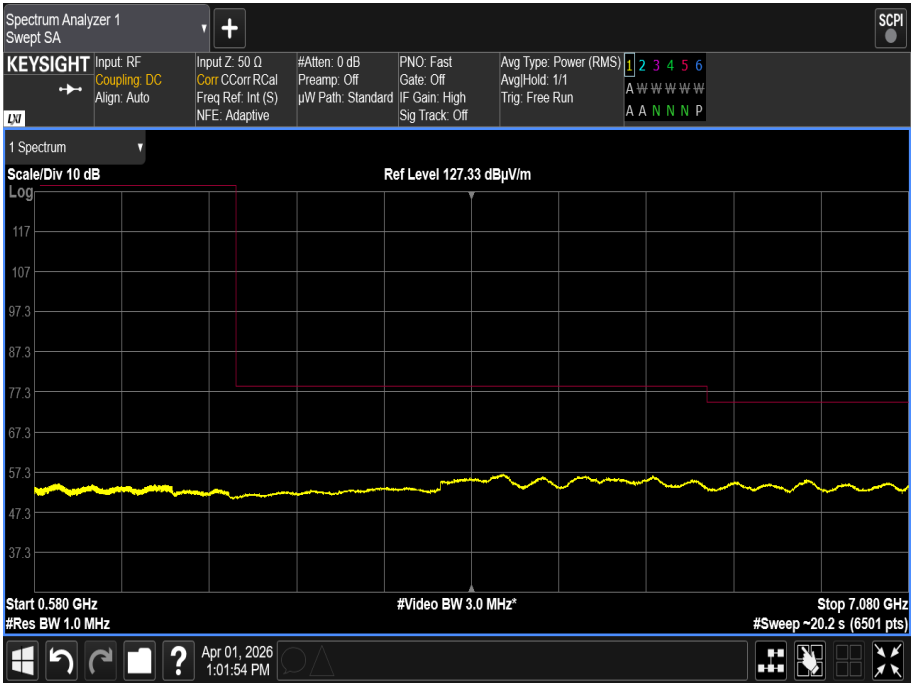


Figure 20 – 62.5 GHz to 69 GHz, Transmit, Test distance 1m, Vertical polarization, Out-of-Band domain $64 < x \leq 67.5$ GHz and Spurious domain $67.5 < x < 69$ GHz, RMS detector, Downconverter mode “C”, Slice “A3”

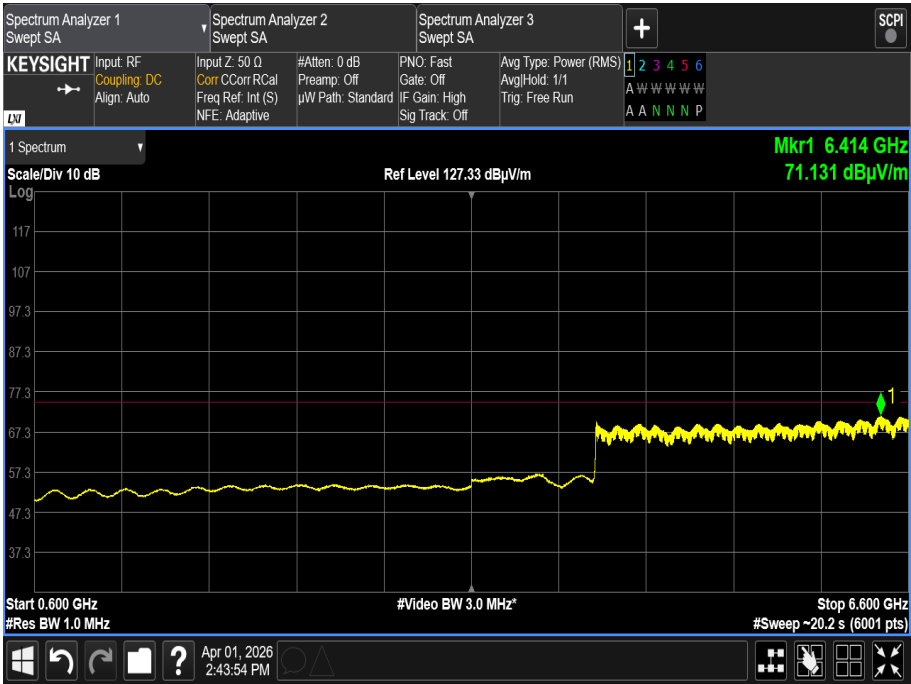


Figure 21 - 69 GHz to 75 GHz, Transmit, Test distance 1m, Horizontal polarization, Spurious domain, Mkr 1, RMS detector, Downconverter mode “C”, Slice “A4”

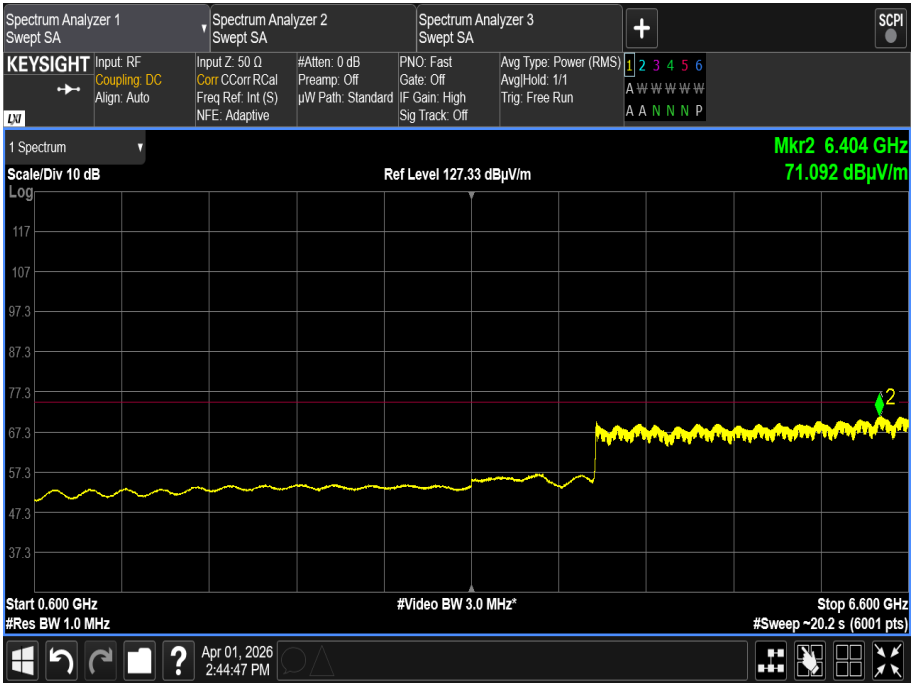


Figure 22 – 69 GHz to 75 GHz, Transmit, Test distance 1m, Horizontal polarization, Spurious domain, Mkr 2, RMS detector, Downconverter mode “C”, Slice “A4”

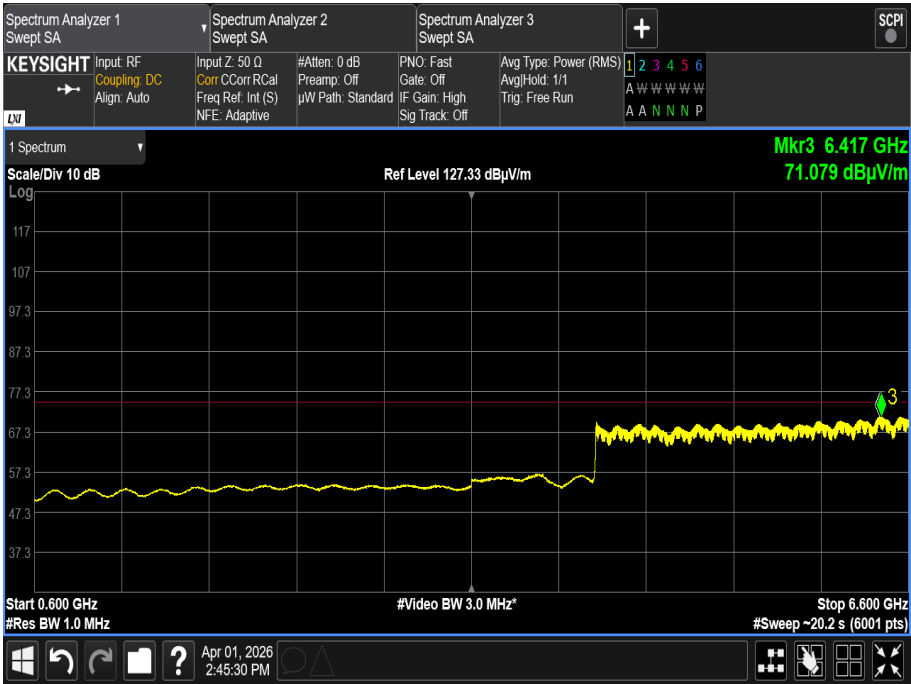


Figure 23 – 69 GHz to 75 GHz, Transmit, Test distance 1m, Horizontal polarization, Spurious domain, Mkr 3, RMS detector, Downconverter mode “C”, Slice “A4”

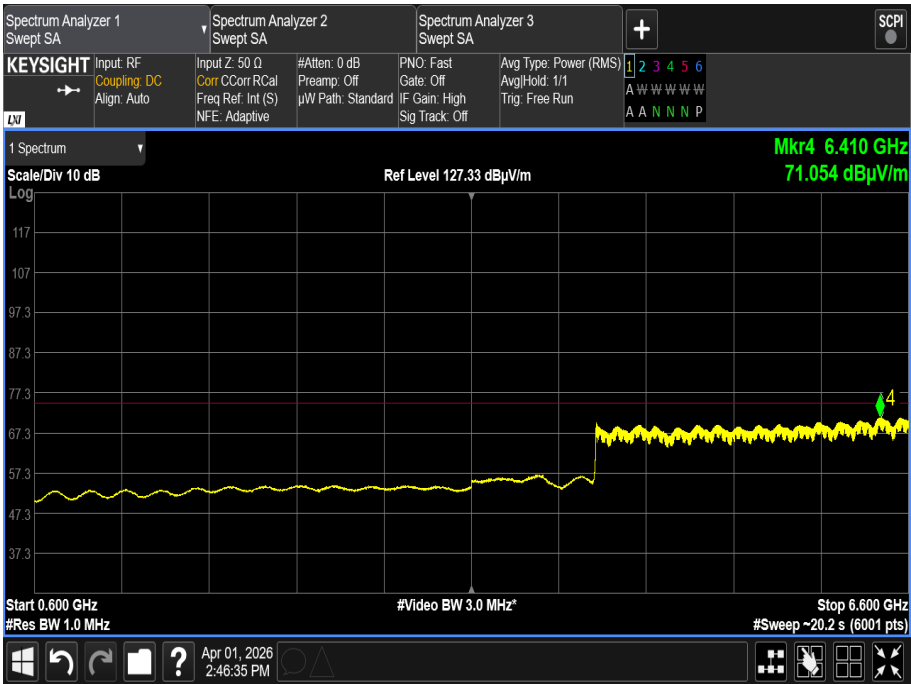


Figure 24 – 69 GHz to 75 GHz, Transmit, Test distance 1m, Horizontal polarization, Spurious domain, Mkr 4, RMS detector, Downconverter mode “C”, Slice “A4”

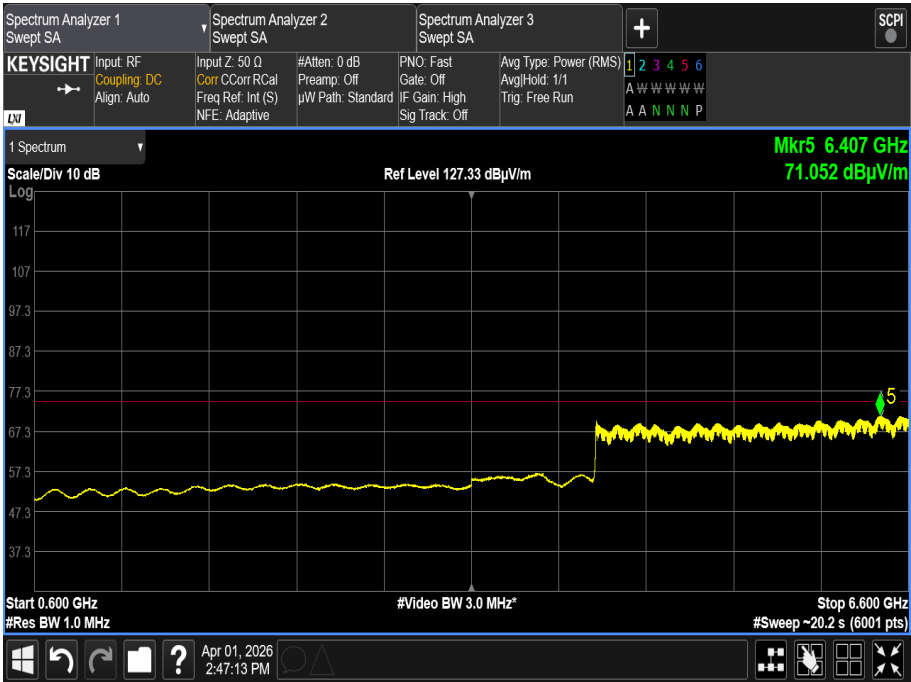


Figure 25 – 69 GHz to 75 GHz, Transmit, Test distance 1m, Horizontal polarization, Spurious domain, Mkr 5, RMS detector, Downconverter mode “C”, Slice “A4”

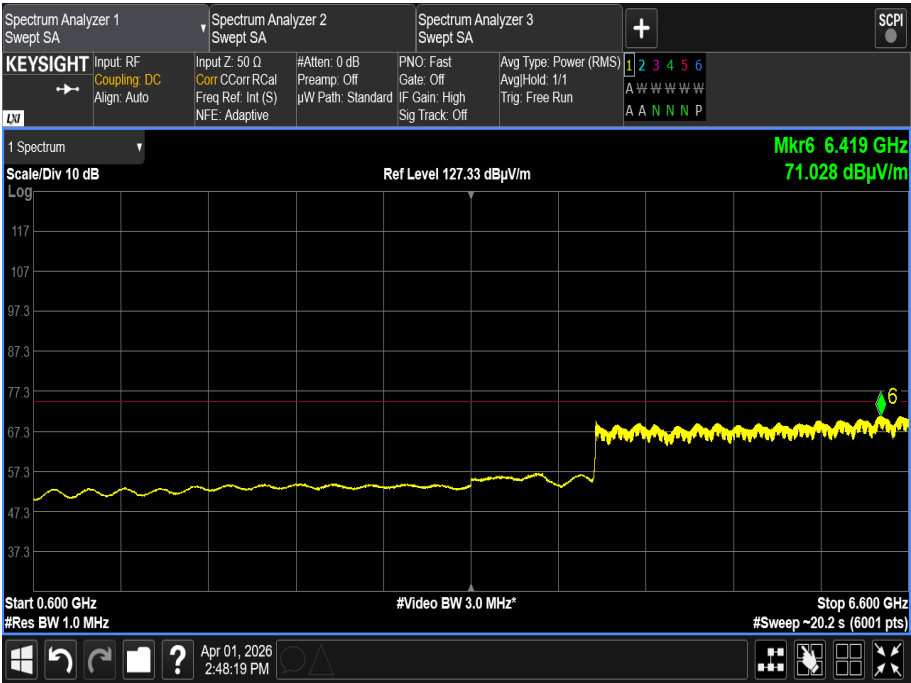


Figure 26 – 69 GHz to 75 GHz, Transmit, Test distance 1m, Horizontal polarization, Spurious domain, Mkr 6, RMS detector, Downconverter mode “C”, Slice “A4”

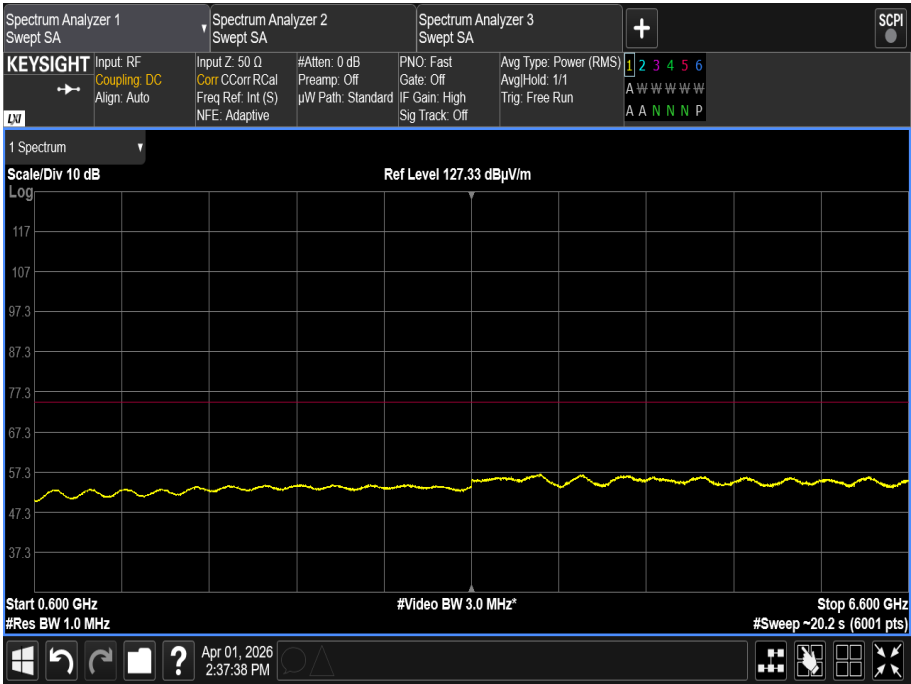


Figure 27 - 69 GHz to 75 GHz, Transmit, Test distance 1m, Vertical polarization, Spurious domain, RMS detector, Downconverter mode “C”, Slice “A4”

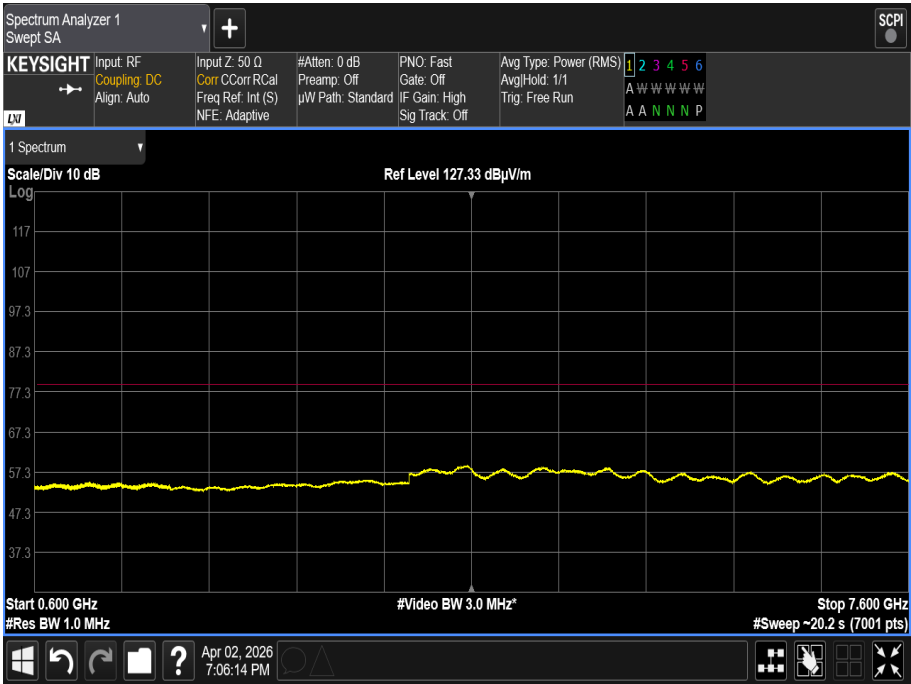


Figure 28 – 75 GHz to 82 GHz, Transmit, Test distance 0.6m, Horizontal polarization, Spurious domain, RMS detector, Downconverter mode “C”, Slice “B3”

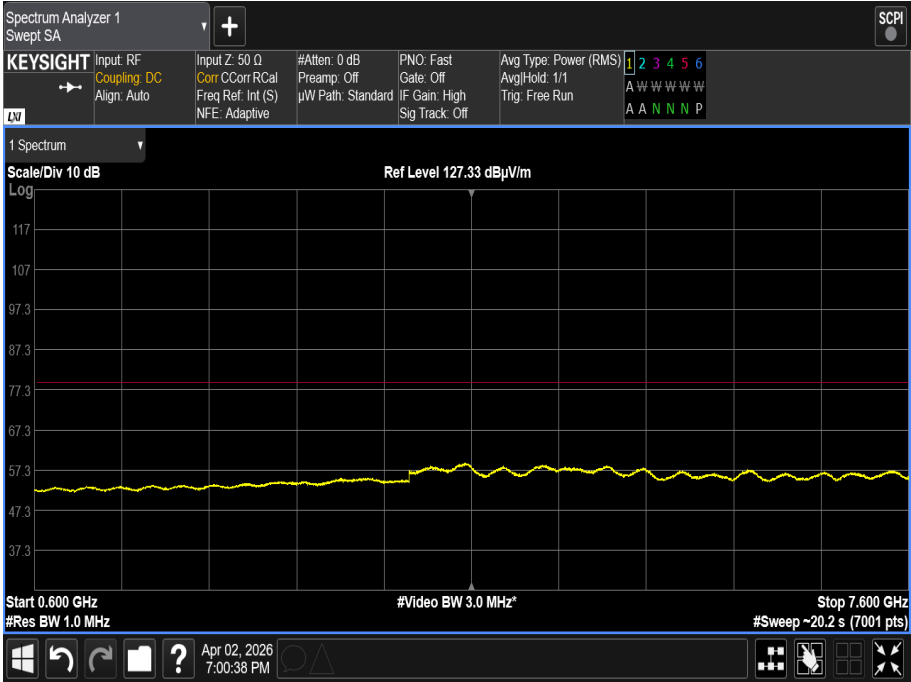


Figure 29 – 75 GHz to 82 GHz, Transmit, Test distance 0.6m, Vertical polarization, Spurious domain, RMS detector, Downconverter mode “C”, Slice “B3”

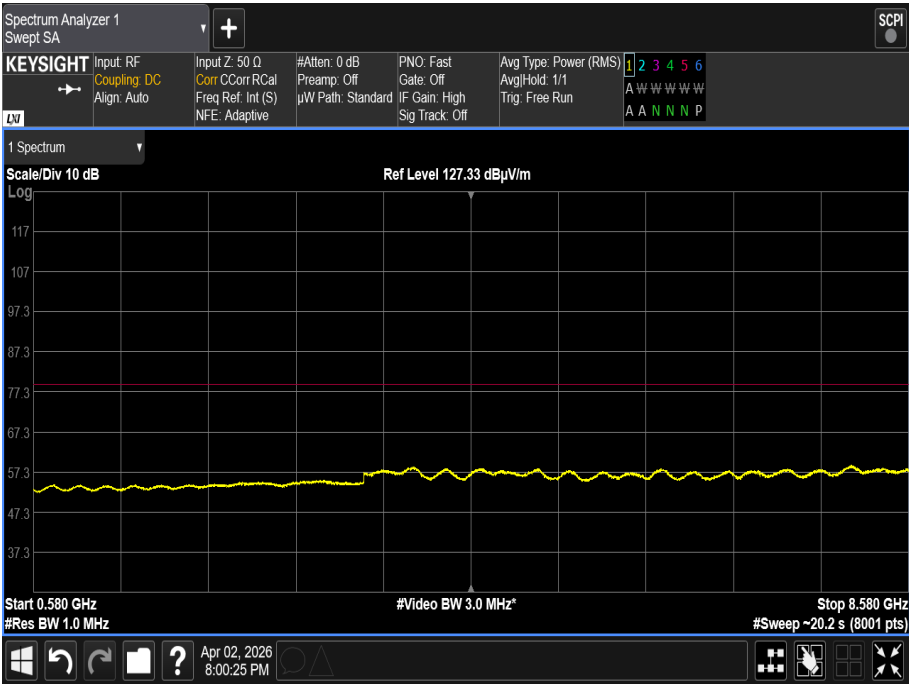


Figure 30 – 82 GHz to 90 GHz, Transmit, Test distance 0.6m, Horizontal polarization, Spurious domain, RMS detector, Downconverter mode “C”, Slice “B4”

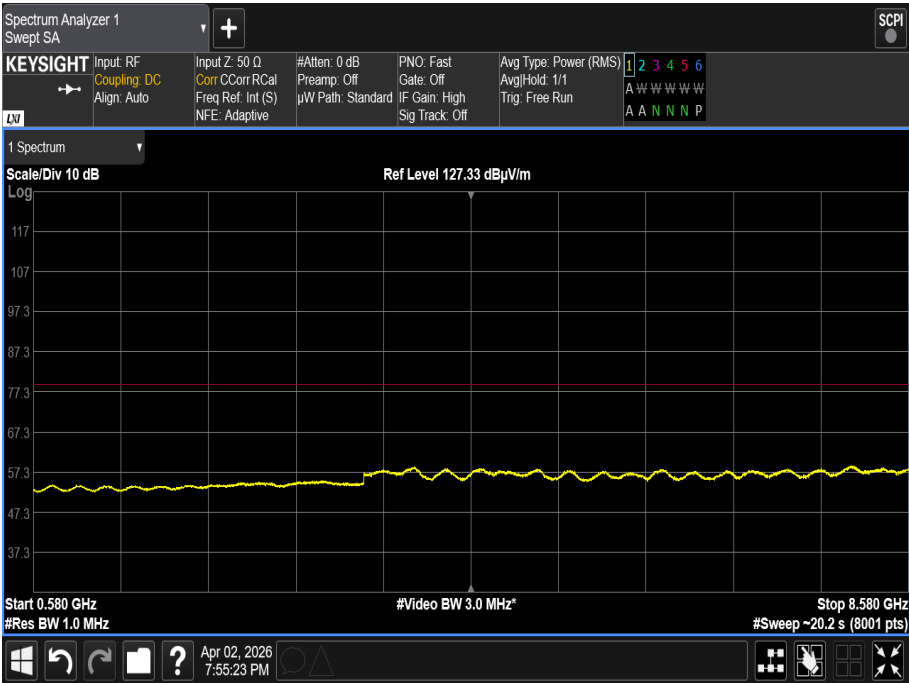


Figure 31 – 82 GHz to 90 GHz, Transmit, Test distance 0.6m, Vertical polarization, Spurious domain, RMS detector, Downconverter mode “C”, Slice “B4”

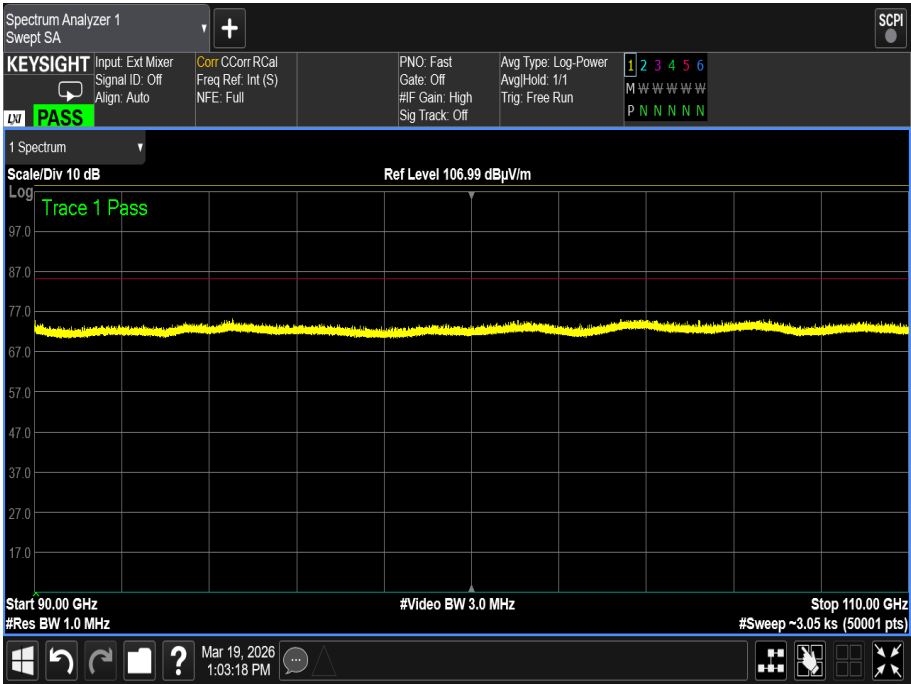


Figure 32 - 90 GHz to 110 GHz, Transmit, Test distance 0.3m, Horizontal polarization, Spurious domain, Peak detector, Downconverter mode “A”

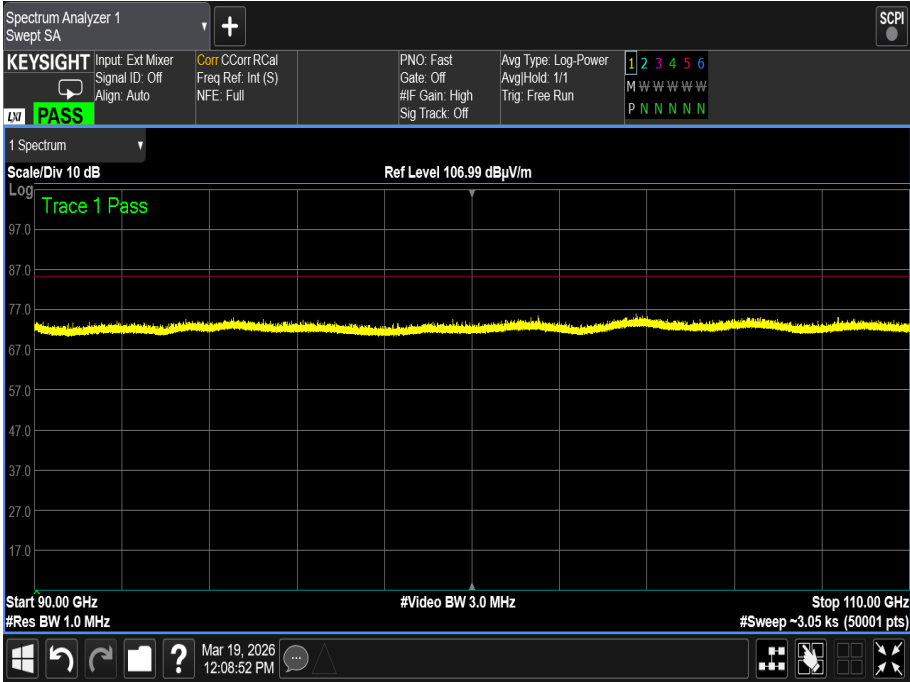


Figure 33 - 90 GHz to 110 GHz, Transmit, Test distance 0.3m, Vertical polarization, Spurious domain, Peak detector, Downconverter mode “A”

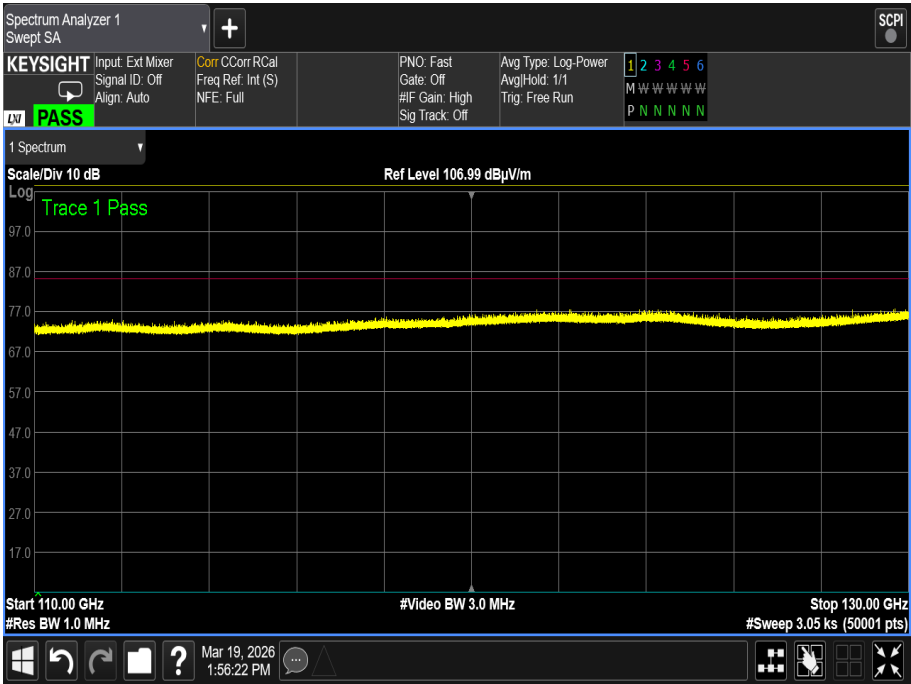


Figure 34 - 110 GHz to 130 GHz, Transmit, Test distance 0.3m, Horizontal polarization, Spurious domain, Peak detector, Downconverter mode “A”

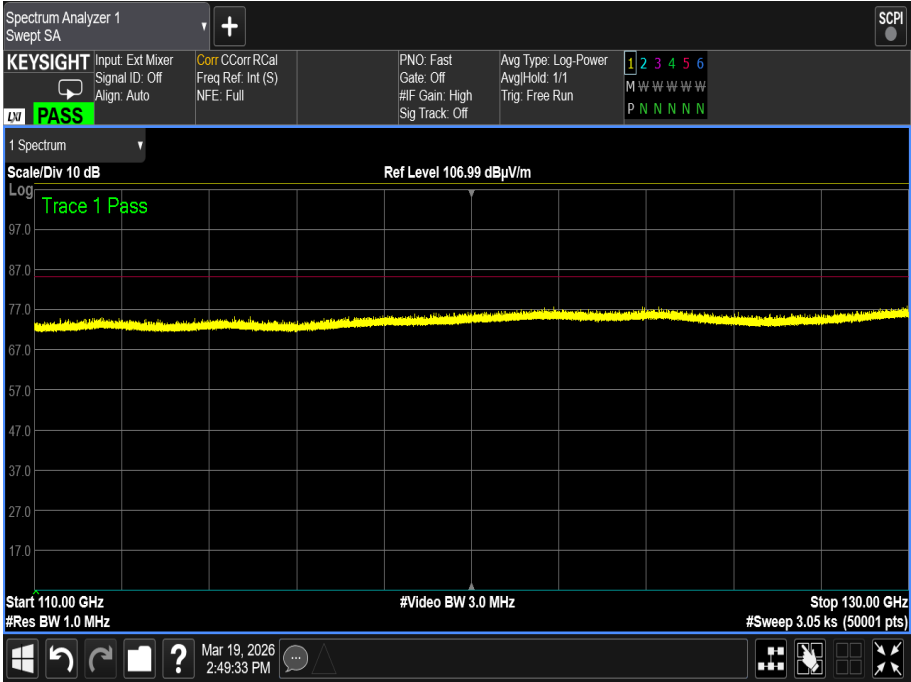


Figure 35 - 110 GHz to 130 GHz, Transmit, Test distance 0.3m, Vertical polarization, Spurious domain, Peak detector, Downconverter mode “A”



ARIB STD T-73, Limit Clause 3.2(6)(b)

The permissible values for the strength of unwanted emissions shall be less than that shown in the table below:

Frequency	Permissible value for the strength of unwanted emissions	Note
55.62 GHz or less	-30 dBm/MHz	Spurious Domain
Above 55.62 GHz to 57 GHz or less	-26 dBm/MHz	Out-of-band Domain
Above 64 GHz to 67.5 GHz or less	-26 dBm/MHz	Out-of-band Domain
Above 67.5 GHz	-30 dBm/MHz	Spurious Domain

Table 16 - Emission Limits

2.4.7 Test Location and Test Equipment Used

This test was carried out in
EMC Chamber 5 between 30/01/2026 and 09/02/2026,
RF Chamber 11 between 16/02/2026 and 19/02/2026,
EMC Chamber 5 between 16/03/2026 and 19/03/2026 and
EMC Chamber 5 between 27/03/2026 and 02/04/2026.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Antenna (DRG, 18 GHz to 40 GHz)	Link Microtek Ltd	AM180HA-K-TU2	230	24	08-Oct-2026
Pre-Amplifier (18 GHz to 40 GHz)	Phase One	PSO4-0087	1534	12	20-Oct-2026
3m Semi-Anechoic Chamber	Rainford	RF Chamber 5	1545	36	23-Apr-2027
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
True RMS Multimeter	Fluke	179	4006	12	21-Mar-2026
True RMS Multimeter	Fluke	179	4006	12	23-Mar-2027
Digital Multi-meter	Iso-tech	IDM93N	4435	12	06-Mar-2026
1 metre SMA Cable	Florida Labs	SMS-235SP-39.4-SMS	4512	12	21-Oct-2026
Mast Controller	Maturo GmbH	NCD	4810	-	TU
Tilt Antenna Mast	Maturo GmbH	TAM 4.0-P	4811	-	TU
Antenna (DRG, 1 GHz to 10.5 GHz)	Schwarzbeck	BBHA9120B	4848	12	05-Jul-2026
4dB Attenuator	Pasternack	PE7047-4	4935	-	TU
Test Receiver	Rohde & Schwarz	ESW44	5084	12	08-Jan-2027
Emissions Software	TUV SUD	EmX V3.6.1	5125	-	Software
3m Semi-Anechoic Chamber	Rainford	RF Chamber 11	5136	36	14-Nov-2027
Mast and Turntable Controller	Maturo	Maturo NCD	5159	-	TU
Turntable	Maturo	TT 15WF	5160	-	TU
Pre-amplifier (30 dB, 1GHz to 18GHz)	Schwarzbeck	BBV 9718 C	5261	12	17-Apr-2026
Thermo-hygro-Barometer	PCE Instruments	PCE-THB-40	5472	12	18-Jun-2026
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB-40	5476	12	05-Feb-2027
Cable (K-Type to K-Type, 1 m)	Junkosha	MWX241-01000KMSKMS/A	5511	12	06-Jun-2026
Cable (K-Type to K-Type, 1 m)	Junkosha	MWX241-01000KMSKMS/A	5512	12	06-Jun-2026
Cable (SMA to SMA, 2 m)	Junkosha	MWX221-	5517	12	06-Jun-2026



Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
		02000AMSAMS/A			
Power Supply	TTI	EX355R	5573	-	TU
Pre-Amplifier (8 GHz to 18 GHz)	Wright Technologies	APS06-0061	5596	12	28-Oct-2026
Antenna (DRG, 7.5 GHz to 18 GHz)	Schwarzbeck	HWRD750	5610	12	29-Nov-2026
SAX WR15 (50-75 GHz)	Virginia Diodes	N9029AV15	6076	12	O/P Mon
SAX WR8.0 (90-140 GHz)	Virginia Diodes	N9029AV08	6079	12	O/P Mon
Adapter 2.4mm F to 2.9mm F	Keysight Technologies	E8257D	6084	-	TU
Adapter 2.4mm F to 1.85mm F	Eravant	SCT-2MVF-UB	6086		TU
Signal Generator (250 MHz – 67 GHz)	Keysight Technologies	E8257D	6090	24	30-May-2026
SAX WR12 (60-90 GHz)	Virginia Diodes	N9029AV12	6091	-	O/P Mon
Cable 1.85mm MM 48inch	Eravant	SCW VMVM048 F1	6100		O/P Mon
Horn Antenna 90-140GHz	Custom Microwave Inc.	HO8R	6104	24	12-Apr-2026
Horn Antenna 60-90GHZ	Custom Microwave Inc.	HO12R	6107	24	12-Apr-2026
Horn Antenna 50-75GHz	Custom Microwave Inc.	HO15R	6109	24	12-Apr-2026
Horn Antenna 40-60GHz	Custom Microwave Inc.	HO19R	6111	24	12-Apr-2026
MXA Signal Analyzer	Keysight Technologies	N9020B	6876	24	31-Aug-2026

Table 17

TU - Traceability Unscheduled

O/P Mon – Output Monitored using calibrated equipment

2.5 Limit on secondary radiated emissions

2.5.1 Specification Reference

ARIB STD-T73, Clause Volume 2, Clause 3.3(1)

2.5.2 Equipment Under Test and Modification State

Albus Home G2, S/N: 28800239 - Modification State 1
Albus Home G2, S/N: 28800239 - Modification State 2

2.5.3 Date of Test

30-January-2026 to 9-February-2026

2.5.4 Test Method

DC Powered - 60GHz

This test is performed in accordance with ARIB STD-T73 Vol 2 Clause 3.3 (1) using test setup guidance from these Standard documents :

Notification No 88 (MIC, 2004) and
ANSI C63.10 Clause 9 and Annex L ("Desensitization Factor and Sweep time considerations for measurements of FMCW signals")

Measurement frequency range boundaries

The minimum frequency tested was 30 MHz.

The maximum frequency tested was 8 GHz. This is sufficient to include the 5th harmonic of the highest unintentional radiator frequency, confirmed as being 1.5 GHz. This is present whilst the device is in this state.

Measurement test distance

The measurement test distance chosen for each frequency range upto 8 GHz is chosen so that Measurement distance, $d \gg$ Far field boundary distance thus ensuring measurements are captured in the Far-field region :

Test Frequencies (GHz)	Chosen Measurement Distance "d", (m)	Power Spectral Density (dBm/MHz)	Equivalent E-Field strength at measurement distance "d". (dBuV/m)	Max dimension of Measurement antenna (m)	Far Field Boundary Distance (m), (Worst case)
0.03 - 1	3	-30	65.23	1.5	0.45
1 - 8	1	-30	74.77	0.182	0.220827

Table 18 – Measurement Distance and Limit Calculations

The far field boundary distance is defined by " D^2/λ ", where "D" is the maximum dimension of the measurement antenna.

Conversion of test limit to an equivalent field strength

The test limit is a power level of 20 nW, which is equivalent to a power spectral density of -46.98 dBm / 1 MHz where 1 MHz is the measurement bandwidth.

This PSD figure is then used to calculate the equivalent E-field strength for each frequency measurement range to determine the electric field strength, E(dBuV/m) :

$$E(\text{dBuV/m}) = \text{EIRP}(\text{dBm}) - 20 \cdot \text{LOG}(d(\text{m})) + 104.77$$

For d=3m :

$$E(\text{dBuV/m}) = -46.98 \text{ dBm/MHz} - (20 \cdot \text{LOG}(3)) + 104.77 = 65.23 \text{ dBuV/m @ 3m.}$$

For d=1m :

$$E(\text{dBuV/m}) = -46.98 \text{ dBm/MHz} - (20 \cdot \text{LOG}(1)) + 104.77 = 74.77 \text{ dBuV/m @ 1m.}$$

Sweep time, Sweep Points & Frequency Span

The frequency span for the search emissions are set in accordance with the band edge boundaries and measurement equipment limitations.

The plot sweep points are set to $\geq (2 \times \text{Span} / \text{RBW})$.

The sweep time for peak detected plots is set according to C63.10 Annex L3 using N=3.

2.5.5 Environmental Conditions

Ambient Temperature	18.6 - 19.3 °C
Relative Humidity	44.3 – 54.1 %

2.5.6 Test Results

DC Powered - 60GHz

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Angle (°)	Height (cm)	Polarisation	Orientation
5999.761	-50.04	-47	-3.04	320	144	Horizontal	X
7499.980	-51.12	-47	-4.12	187	174	Horizontal	X
4500.080	-52.28	-47	-5.28	280	297	Horizontal	X

Table 19 – Radiated Emissions Results - Receive, 30 MHz to 40 GHz

No other emissions were found within 6 dB of the limit.

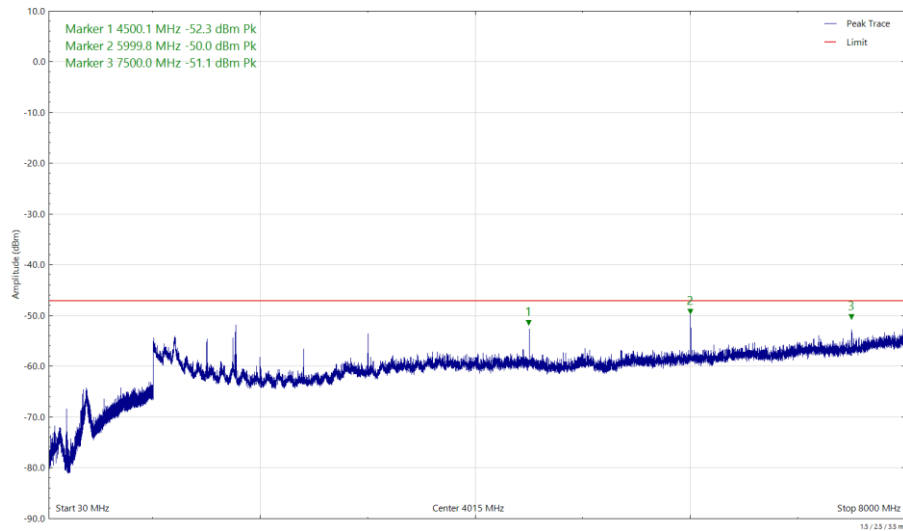


Figure 36 - 30 MHz to 8 GHz, Receive, Horizontal polarization, EUT Orientation: X

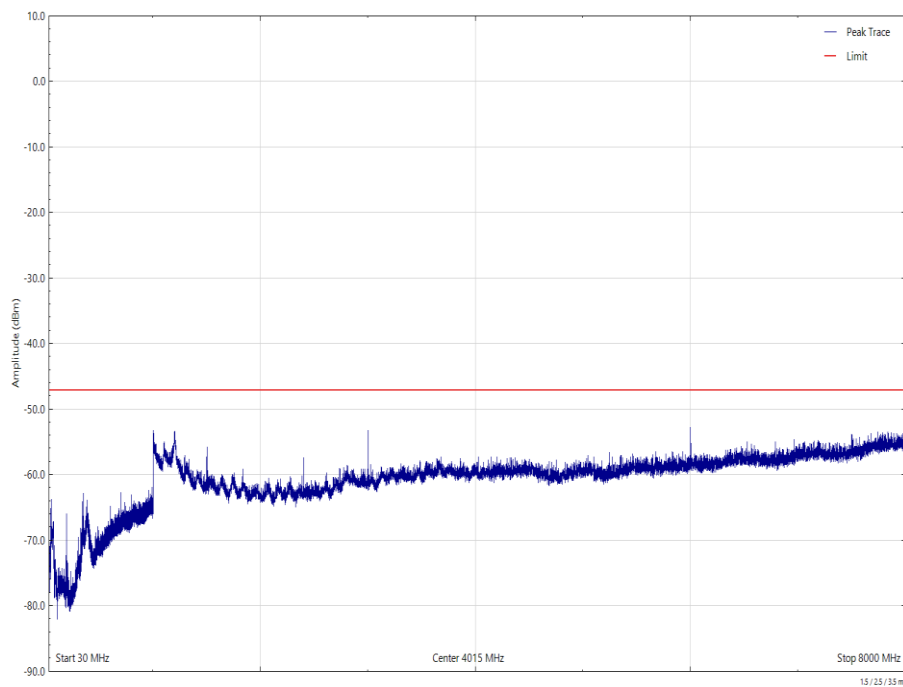


Figure 37 - 30 MHz to 8 GHz, Receive, Vertical polarization, EUT Orientation: X

ARIB STD T-73, Limit Clause 3.2(6)(b)

The power limit of secondary emission, which does not cause any adverse effect to the functions of other equipment, in case of measuring with the pseudo antenna circuit which has the same electric characteristics as the receiving antenna shall be less than 20 nW (-47 dBm).

2.5.7 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
3m Semi-Anechoic Chamber	Rainford	RF Chamber 5	1545	36	23-Apr-2027
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
True RMS Multimeter	Fluke	179	4006	12	21-Mar-2026
Digital multi-meter	Iso-tech	IDM93N	4435	12	06-Mar-2026
1 metre SMA Cable	Florida Labs	SMS-235SP-39.4-SMS	4512	12	21-Oct-2026
Mast Controller	Maturo GmbH	NCD	4810	-	TU
Tilt Antenna Mast	Maturo GmbH	TAM 4.0-P	4811	-	TU
Antenna (DRG, 1 GHz to 10.5 GHz)	Schwarzbeck	BBHA9120B	4848	12	05-Jul-2026
4dB Attenuator	Pasternack	PE7047-4	4935	-	TU
Test Receiver	Rohde & Schwarz	ESW44	5084	12	08-Jan-2027
Emissions Software	TUV SUD	EmX V3.6.1	5125	-	Software
3m Semi-Anechoic Chamber	Rainford	RF Chamber 11	5136	36	14-Nov-2027
Mast and Turntable Controller	Maturo	Maturo NCD	5159	-	TU
Turntable	Maturo	TT 15WF	5160	-	TU
Pre-amplifier (30 dB, 1GHz to 18GHz)	Schwarzbeck	BBV 9718 C	5261	12	17-Apr-2026
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB-40	5472	12	18-Jun-2026
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB-40	5476	12	05-Feb-2027
Cable (SMA to SMA, 2 m)	Junkosha	MWX221-02000AMSAMS/A	5517	12	06-Jun-2026
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9168	6635	24	25-Jul-2027
Cable Assy 8m (N to N) 18GHz	Junkosha	MWX221-08000NMSNMS/B	7050	12	03-Oct-2026

Table 20

TU - Traceability Unscheduled

O/P Mon – Output Monitored using calibrated equipment



2.6 Interference Prevention Function

2.6.1 Specification Reference

ARIB STD-T73, Clause Volume 2, Clause 3.4(1)

2.6.2 Equipment Under Test and Modification State

Albus Home G2, S/N: 28800239 - Modification State 0

2.6.3 Date of Test

08-January-2026

2.6.4 Test Method

DC Powered - 60GHz

A declaration was made by the applicant to describe how the device is able to show compliance with the ARIB STD-T73 Vol 2 Clause 3.4 (1) requirements.

2.6.5 Environmental Conditions

Ambient Temperature 23.3 °C

Relative Humidity 38.0 %

2.6.6 Test Results

DC Powered - 60GHz

The manufacturer provided the following declaration describing how the EUT can distinguish between the reflected transmitted wave and those from other radio devices:

The device satisfies the requirement to identify whether the receiving wave is a reflection of its own transmission or a transmission from another radio station through the FMCW Stretch Processing (De-chirping) mechanism and Intermediate Frequency (IF) Filtering.

The discrimination is achieved through the following physical and signal processing characteristics:

1. Heterodyne Mixing (De-chirping) Process

The radar operates by mixing the received signal (Rx) with the instantaneously transmitted signal (Tx). When the received wave is a reflection of the device's own transmission, the Rx chirp is a time-delayed replica of the Tx chirp. The mixing of these two coherent signals produces a distinct "beat frequency" (constant IF) and this falls within the valid passband of the system.

If the receiving wave is from another radio station (even one using a similar LFM waveform), the signals will be asynchronous. The slope, timing, and phase of the foreign signal will not align with the used Tx signal. When mixed, these uncorrelated signals do not produce a constant beat frequency.

2. Intermediate Frequency (IF) Filtering

Signals from other stations, being uncorrelated and asynchronous, result in high-frequency components or wideband noise that largely falls outside the cutoff frequency of the IF filter and are attenuated/rejected.

3. Coherent Integration

Reflections are phase-coherent across multiple chirps/frames, allowing them to be integrated into distinct peaks. Interference from other stations lacks this frame-to-frame phase coherence.



ARIB STD-T73, Limit Clause 3.4(1)

The function shall be able to identify whether the receiving wave is reflected of the transmitting wave or transmitted from other radio station by examining characteristics which is a modulation method or other properties of the receiving wave.



2.7 Transmitting Time Restricting Device

2.7.1 Specification Reference

ARIB STD-T73, Clause Volume 2, Clause 3.4(2)

2.7.2 Equipment Under Test and Modification State

Albus Home G2, S/N: 28800239 - Modification State 0

2.7.3 Date of Test

06-January-2026

2.7.4 Test Method

DC Powered - 60GHz

This test is performed in accordance with ARIB STD-T73 Vol 2 Clause 3.4 (2) and ANSI C63.10 Section 9.9 guidance.

The device is controlled to operate in the "Japan Default Mode" setup via programming commands sent via an USB-RS232 connection.

The time duration of each "chirp" burst is measured using an Oscilloscope and a mm-Wave Schottky diode detector coupled to a WR-12 measurement horn.

A spectrum analyzer & downconverter was not used to measure this DUT because the analyzer is bandwidth limited (<< Frequency deviation of device). A swept Local Oscillator source (with time limitations) also makes this method unsuitable for measuring FMCW RADAR devices.

The measurement horn is placed a short distance away (~30cm) from the device under test and the radiated RF from the DUT within approximately within the 60-90GHz band is envelope detected.

The detector DC output is displayed on an Oscilloscope trace.

Displayed negative going pulses correspond with the detected presence of an FMCW RADAR "chirp" transmission.

Cursors are then placed on the screen to allow time duration measurement of the Transmit "ON" time for all of the transmitted FMCW "chirps" within a transmission frame period.

For the "Japan Default Mode" operating mode, the transmission frame period = 50mS.

The time durations for each of the consecutive RADAR "chirps" which can be contained within any 33mS measurement time window are summed, to obtain the total maximum transmission time which can occur within any 33mS measurement window. This result is then evaluated against the maximum permissible transmission time specified in the standard clause.

2.7.5 Environmental Conditions

Ambient Temperature	15.4 °C
Relative Humidity	31.0 %

2.7.6 Test Results

DC Powered - 60GHz

Mode	Transmit on time per chirp (mS)	Number of Transmissions in any 33mS period:	Total Transmit time in any 33mS period (mS)	Verdict
Japan Default Mode (50mS period)_Chirp 1	0.056	≤ 6 FMCW "Chirps"	≤ 0.336	Pass
Japan Default Mode (50mS period)_Chirp 2	0.056	≤ 6 FMCW "Chirps"	≤ 0.336	Pass
Japan Default Mode (50mS period)_Chirp 3	0.056	≤ 6 FMCW "Chirps"	≤ 0.336	Pass
Japan Default Mode (50mS period)_Chirp 4	0.056	≤ 6 FMCW "Chirps"	≤ 0.336	Pass
Japan Default Mode (50mS period)_Chirp 5	0.056	≤ 6 FMCW "Chirps"	≤ 0.336	Pass
Japan Default Mode (50mS period)_Chirp 6	0.056	≤ 6 FMCW "Chirps"	≤ 0.336	Pass

Table 21 - Transmission Time Results

The number of detected transmissions will depend upon where and with what time delay the 33mS measurement period is triggered with respect to the “start” timing reference point of any transmission frame.

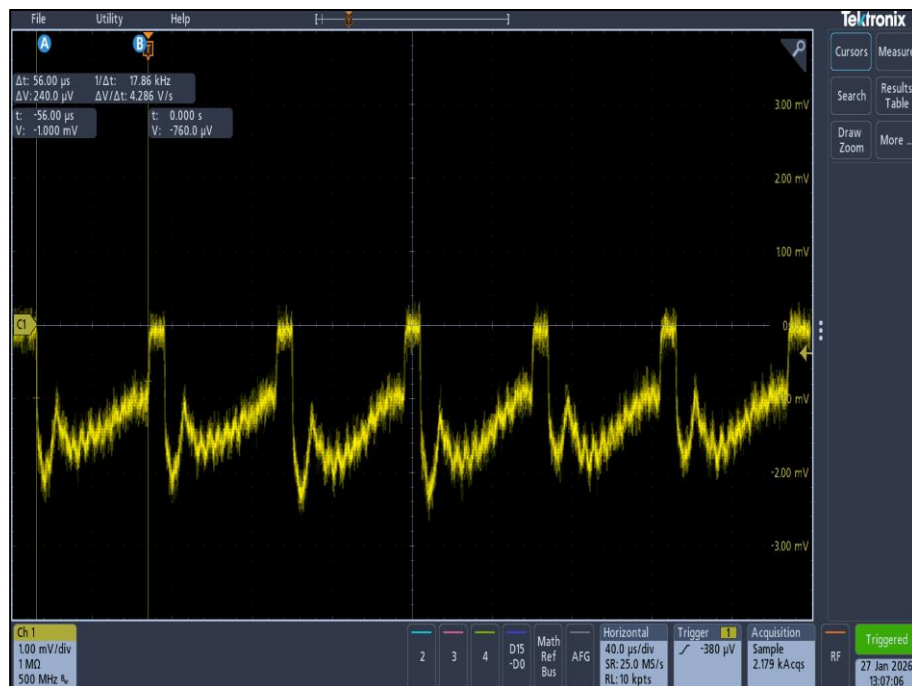


Figure 38 – Time domain plot, 400µs sweep, Transmitter “ON” time per FMCW chirps, Japan Default Mode (50mS period), Chirp 1 duration measurement

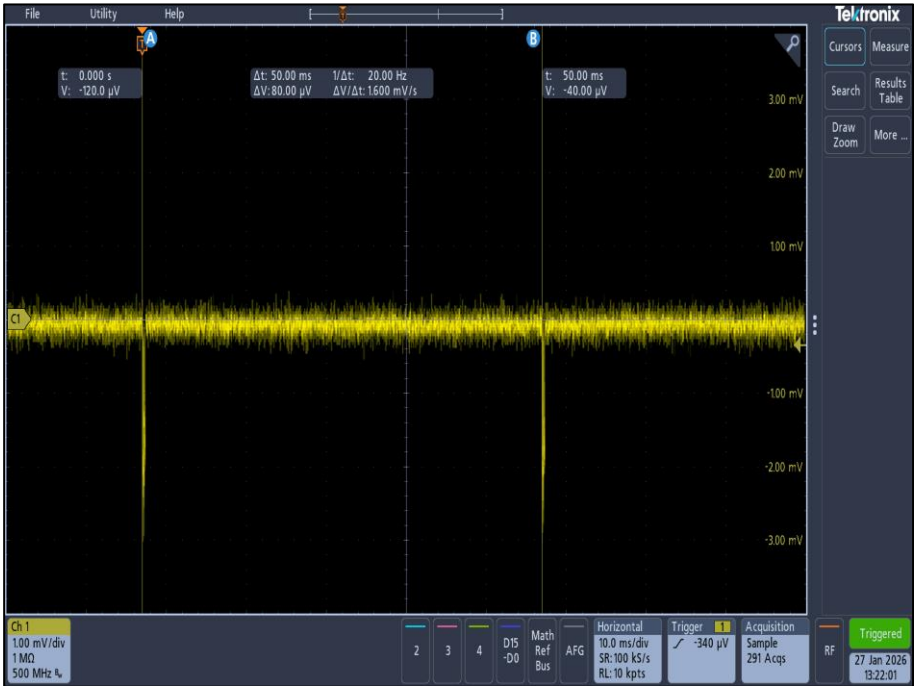


Figure 39 – Time domain plot, 100mS sweep time (encapsulating 1 full frame period), Japan Default Mode (50mS frame period), Chirp 1

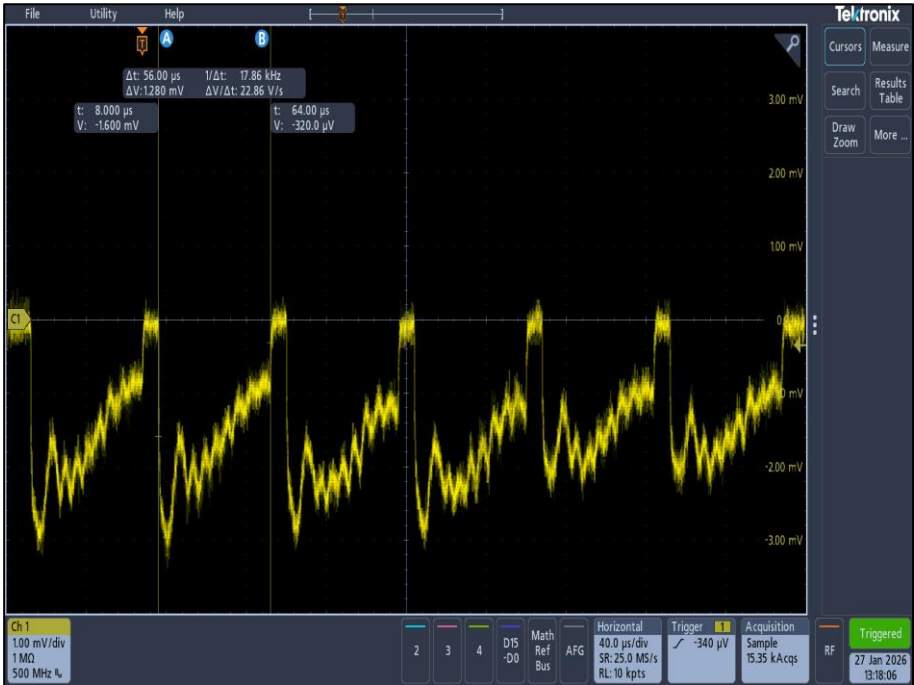


Figure 40 – Time domain plot, 400uS sweep time, Transmitter “ON” time per FMCW chirp, Japan Default Mode (50mS period), Chirp 2 duration measurement

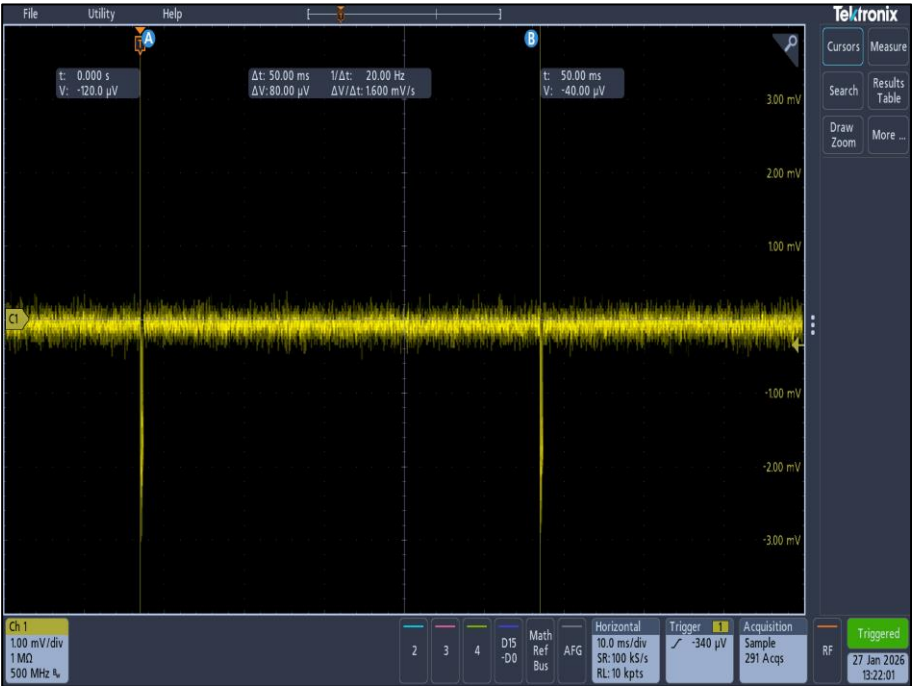


Figure 41 – Time domain plot, 100ms sweep time (encapsulating 1 full frame period), Japan Default Mode (50ms period), Chirp 2

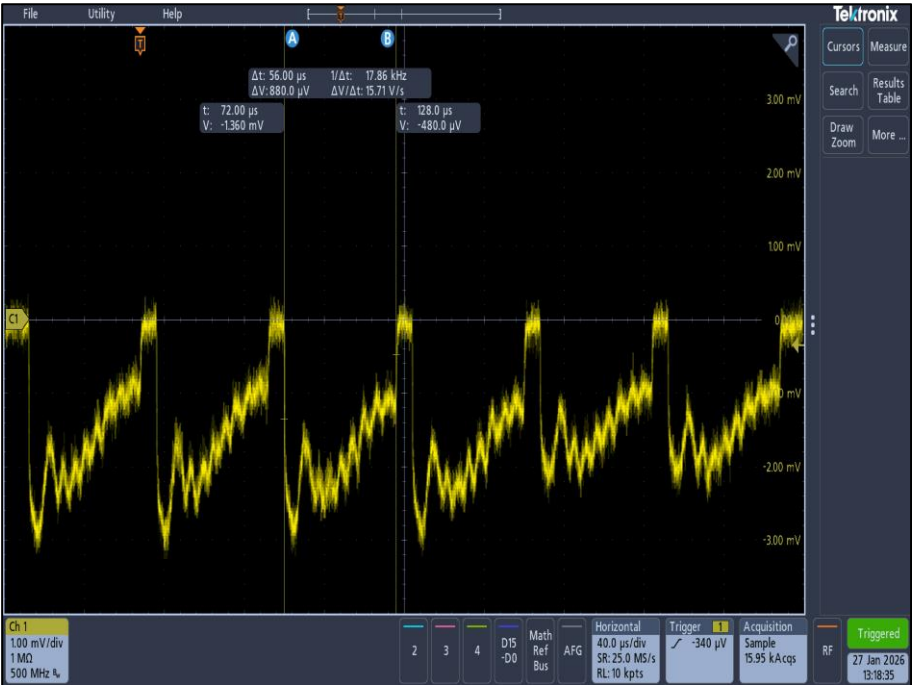


Figure 42 – Time domain plot, 400us sweep time, Transmitter “ON” time per FMCW “chirp”, Japan Default Mode (50ms period), Chirp 3 duration measurement

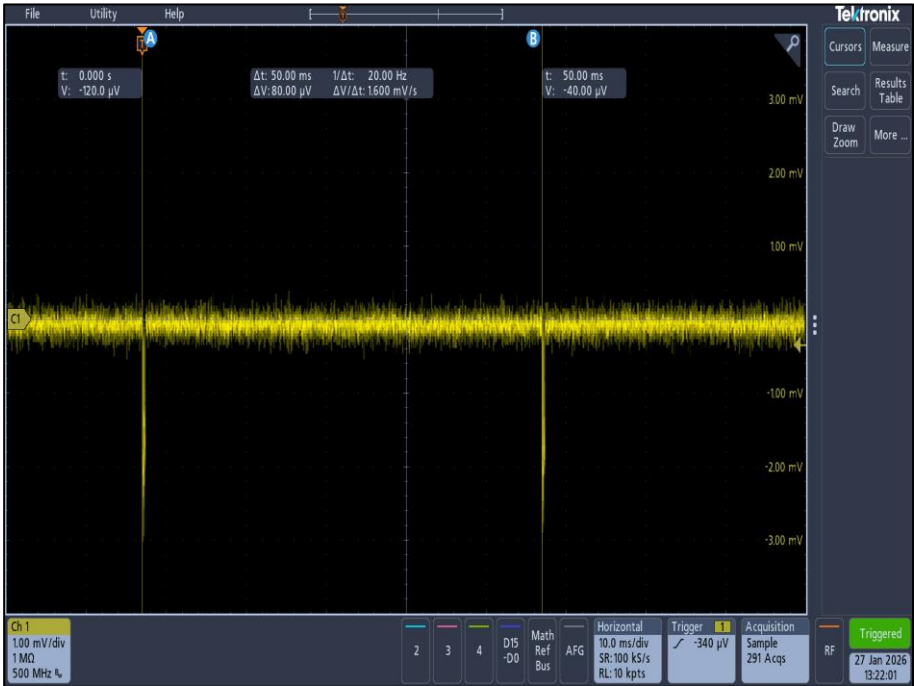


Figure 43 – Time domain plot, 100mS sweep time (encapsulating 1 full frame period), Japan Default Mode (50mS period), Chirp 3

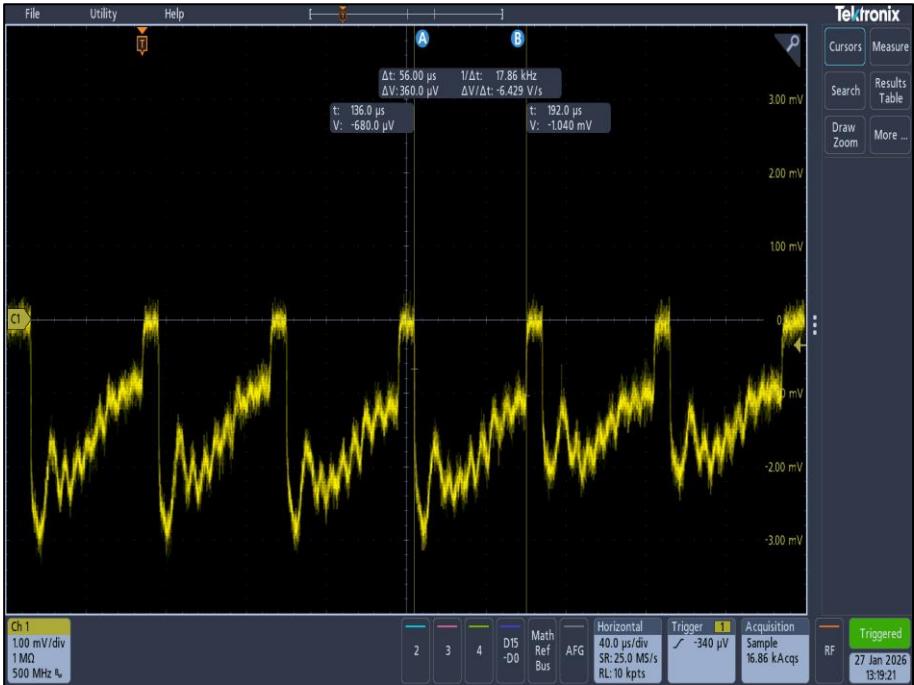


Figure 44 – Time domain plot, 400uS sweep time, Transmitter “ON” time per FMCW “chirp”, Japan Default Mode (50mS period), Chirp 4 duration measurement

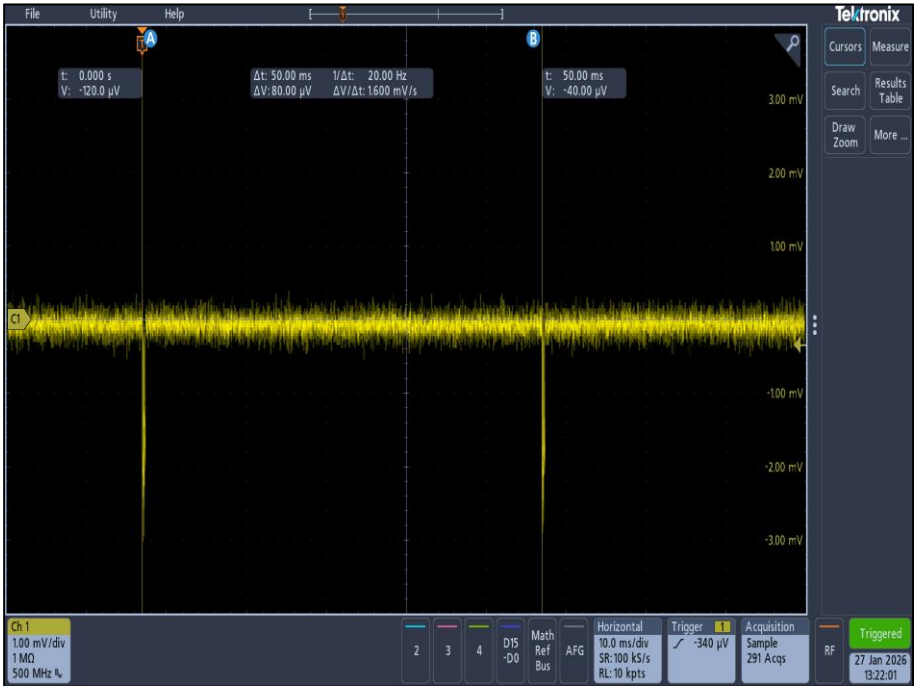


Figure 45 – Time domain plot, 100ms sweep time (encapsulating 1 full frame period), Japan Default Mode (50ms period), Chirp 4

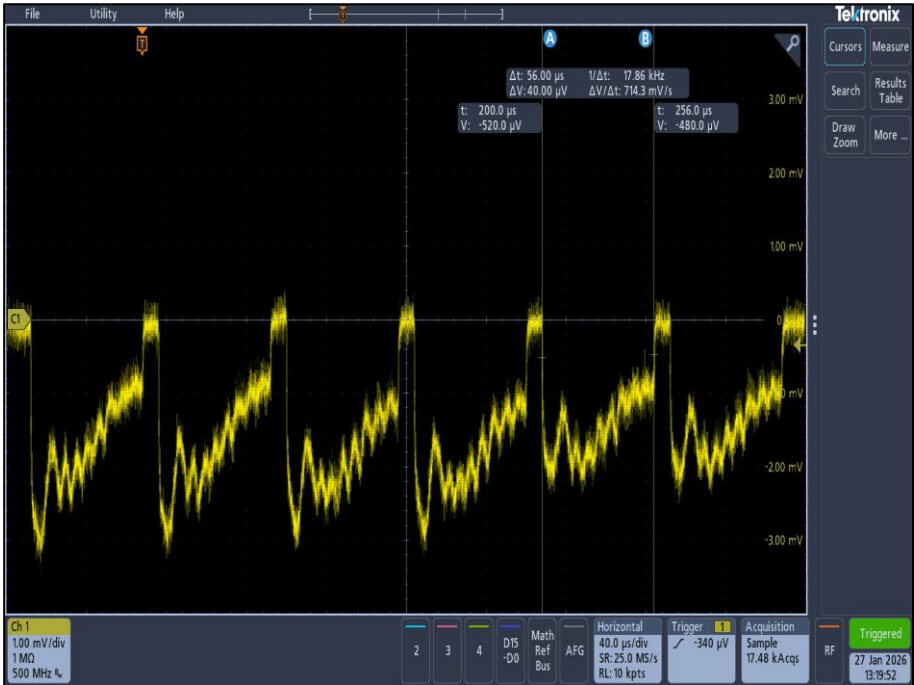


Figure 46 – Time domain plot, 400μs sweeptime, Transmitter “ON” time per FMCW “chirp”, Japan Default Mode (50ms period), Chirp 5 duration measurement

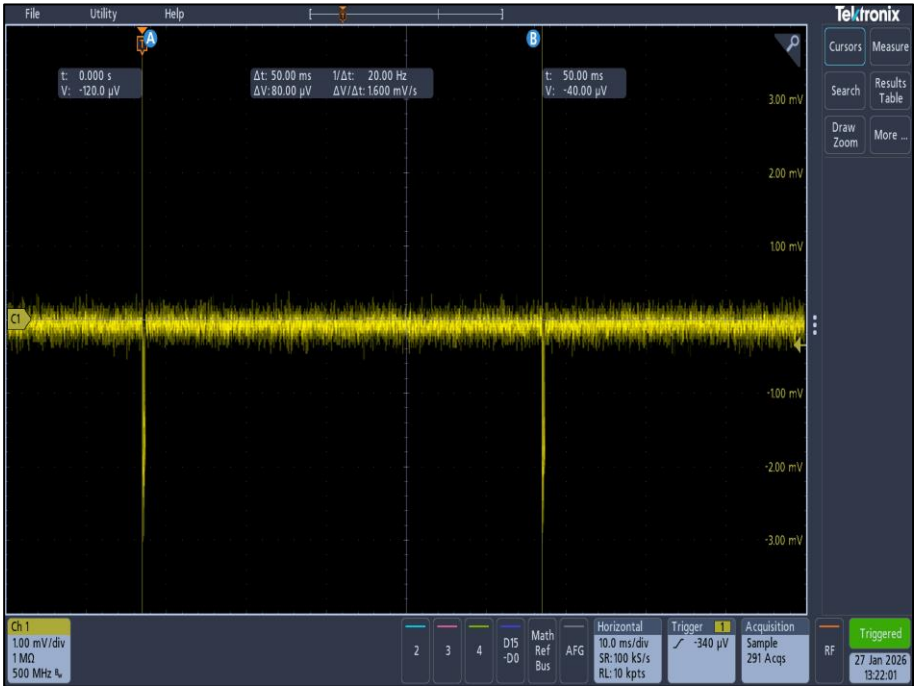


Figure 47 – Time domain plot, 100mS sweep time (encapsulating 1 full frame period), Japan Default Mode (50mS period), Chirp 5

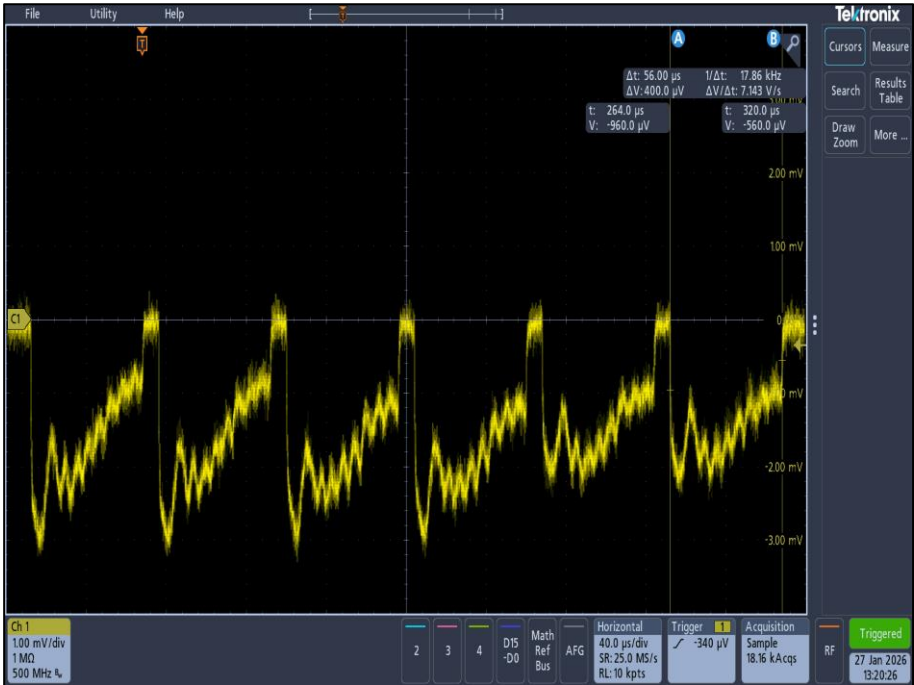


Figure 48 – Time domain plot, 400uS sweep time, Transmitter “ON” time per FMCW chirp, Japan Default Mode (50mS period), Chirp 6 duration measurement

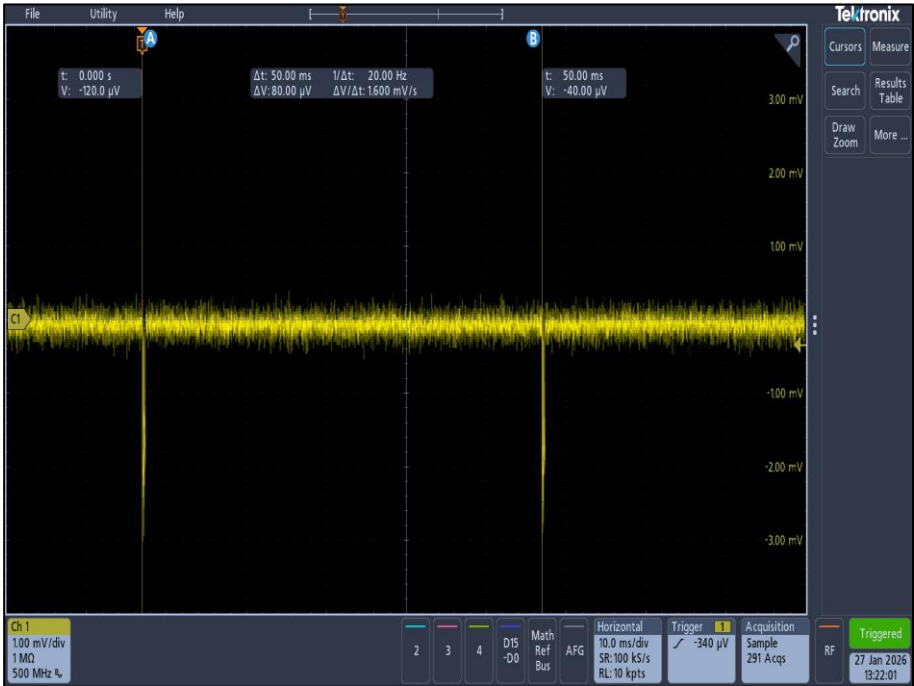


Figure 49 – Time domain plot, 100mS sweep time (encapsulating 1 full frame period), Japan Default Mode (50mS period)_Chirp 6

ARIB STD-T73, Limit Clause 3.4(2)

Total transmission time per unit time shall be 3.3 mS or less. The unit time is 33 mS or more.



2.7.7 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
3m Semi-Anechoic Chamber	Rainford	RF Chamber 5	1545	36	23-Apr-2027
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Digital multi-meter	Iso-tech	IDM93N	4435	12	06-Mar-2026
Emissions Software	TUV SUD	EmX V3.6.1	5125	-	Software
Thermo-hygro-Barometer	PCE Instruments	PCE-THB-40	5472	12	18-Jun-2026
Horn Antenna 60-90GHZ	Custom Microwave Inc.	HO12R	6107	24	12-Apr-2026
1 GHz Digital Oscilloscope	Tektronix	MDO34	6221	12	29-Oct-2026
Zero-Bias Detector	Mini-Circuits	WR12ZBD-F06	6594	-	TU

Table 22

TU - Traceability Unscheduled

O/P Mon – Output Monitored using calibrated equipment

2.8 The Permissible Values for the Strength Exposed a Human Body to a Radio Wave.

2.8.1 Specification Reference

ARIB STD-T73, Clause Volume 2, Clause 3.7

2.8.2 Equipment Under Test and Modification State

Albus Home G2, S/N: 28800239 - Modification State 0

2.8.3 Date of Test

20-January-2026 to 24-March-2026

2.8.4 Test Method

DC Powered – 60 GHz

This device has been assessed on the basis that the 60 GHz FMCW radar transmitter is the only active transmitter and that all other contained transmitters are inactive. Under this scenario, radio equipment which have a mean power output of $\leq 20\text{mW}$ are exempt under the requirements of Ordinance Radio Equipment (ORE 14.2).

2.8.5 Test Results

DC Powered - 60GHz

Mode	Frequency (GHz)	EIRP (mW)	Limit (mW)	Verdict
"Japan" Default Mode	57	17.156 *	20	Pass

Table 23 – EIRP Power measured result and EIRP Power limit

* The measured EIRP power result from Section 2.2.6 has been referenced.

ARIB STD-T73, Limit Clause 3.7

In the case where a radio equipment used for sensors for detecting or measuring mobile objects transmits a radio wave alone, the strength of a radio wave which is exposed a human body shall be 2 mW/cm^2 or less per 1cm^2 of arbitrary body surface.

MIC Ordinance Regulating Radio Equipment Article 14-2

Radio equipment whose mean power is 20 mW or less.

3 Photographs

3.1 Equipment Under Test (EUT)



Figure 50 – “RF Voltage Tap - Japan” Albus Health “G2” Home, DUT_Front, Serial number 28460086



Figure 51 – “RF Voltage Tap - Japan” Albus Health “G2” Home, DUT_Rear, Serial number 28460086



Figure 52 – “RF Voltage Tap”, Albus Health “G2”, DUT_Base_Identification label**



Figure 53 – “RF Radiated sample – Japan”, Albus Health “G2”, DUT_Front, Serial number 288000239



Figure 54 - “RF Radiated sample – Japan”, Albus Health “G2”, DUT_Rear, Serial number 28800239



Figure 55 - “RF Radiated sample – Japan”, Albus Health “G2”, DUT_Base, Identification Label**



**Region specific part numbers will be applicable for Japan. Part number for future production models specifically for Japan will be "532-V0"



4 Test Equipment Information

4.1 Customer Support Equipment

The following customer supplied test equipment was used during testing covered by this document.

Instrument	Manufacturer	Type No	Serial Number	Calibration Period (months)	Calibration Due
USB - Serial (RS232) Cable	Albus Health	-	-		-
Power Supply	Albus Health	-	PSG1-1239		-

Table 24

5 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

Test Name	Measurement Uncertainty
Voltage Variations	-
Antenna Power and Tolerance of Antenna Power	± 4.91 dB
Tolerance of Frequency and Permissible Value of Occupied Bandwidth	± 60.033 MHz
The Permissible Value for the Strength of Spurious Emissions of Unwanted Emissions	30 MHz to 1 GHz: ± 5.2 dB 1 to 40 GHz: ± 6.3 dB 40 to 67 GHz: ± 3.06 dB 50 to 120 GHz: ± 4.91 dB 90 to 220 GHz: ± 4.09 dB
Limit on secondary radiated emissions	30 MHz to 1 GHz: ± 5.2 dB 1 to 40 GHz: ± 6.3 dB
Interference Prevention Function	-
Transmitting Time Restricting Device	± 0.3 %
The Permissible Values for the Strength Exposed a Human Body to a Radio Wave.	-

Table 25

Measurement Uncertainty Decision Rule

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115:2023, Clause 4.3.4 (Simple Acceptance). The measurement results are directly compared with the test limit to determine conformance with the requirements of the standard.

Risk: The uncertainty of measurement about the measured result is negligible with regard to the final pass/fail decision. The measurement result can be directly compared with the test limit to determine conformance with the requirement (compare IEC Guide 115). The level of risk to falsely accept and falsely reject items is further described in ILAC-G8.