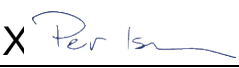


Prüfbericht-Nr.: Test report no.:	60443517-001	Auftrags-Nr.: Order no.:	23870547 030	Seite 1 von 27 Page 1 of 27
Kunden-Referenz-Nr.: Client reference no.:	-	Auftragsdatum: Order date:	2021.04.05	
Auftraggeber: Client:	Schneider Electric			
Prüfgegenstand: Test item:	SmartX IP Controller			
Bezeichnung / Typ-Nr.: Identification / Type no.:	FCC ID: DVE-RPC24			
Auftrags-Inhalt: Order content:	Accredited testing			
Prüfgrundlage: Test specification:	FCC 47 CFR Part 15.247 with parts 15.207 & 15.209 ANSI C63.10: 2013			
Wareneingangsdatum: Date of sample receipt:	2021.04.05			
Prüfmuster-Nr.: Test sample no.:	A003045983-001			
Prüfzeitraum: Testing period:	2021.05.18 – 2021.05.19			
Ort der Prüfung: Place of testing:	Lund, Sweden			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland Sweden			
Prüfergebnis*: Test result*:	Pass			
überprüft von: reviewed by:	 X _____ Signed by: Sam Ebadeh		genehmigt von: authorized by:	 X _____ Signed by: Per Isacson
Datum: 2021.09.20 Date:			Datum: 2021.09.20 Date:	
Stellung / Position:	Technical Expert		Stellung / Position:	Managing Director
Sonstiges / Other:				
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:		Prüfmuster vollständig und unbeschädigt Test item complete and undamaged		
* Legende:	1 = sehr gut P(ass) = entspricht o.g. Prüfgrundlage(n)	2 = gut F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	3 = befriedigend N/A = nicht anwendbar	4 = ausreichend N/T = nicht getestet
* Legend:	1 = very good P(ass) = passed a.m. test specification(s)	2 = good F(ail) = failed a.m. test specification(s)	3 = satisfactory N/A = not applicable	4 = sufficient N/T = not tested
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts.				

Revision History60443517-00160443517-001

REVISION	DATE	REMARKS	AUTHOR
001	2021.09.20	First Release	Sam Ebadeh

Note: Latest revision report will replace all previous reports

This report based on FCC Part 15.247 Template version 1.2

Summary of Test Results

FCC 47 CFR Rule Part	Test Description	Applicability	Report Section	RESULT	REMARKS
15.207	AC Power Line Conducted Emissions (Intentional Radiators)	YES	4.1	N.P.	
15.209	Radiated Emissions (Intentional Radiators)	YES	4.2	PASS	
15.247 (d)	Antenna conducted emissions	NO	4.3	N.P.	Radiated Emissions performed instead
15.247 (d)	Band Edge Compliance (Authorized Band)	YES	4.4	N.P.	
15.247 (d)	Band Edge Compliance (Restricted Band)	YES	4.5	PASS	
15.247 (a)(1)	20dB Bandwidth	YES	4.6	N.P.	
15.247 (a)(1)	Carrier (Hopping Channel) Separation	NO	4.7	N/A	DTS device
15.247 (a)(1)	Number of Hopping Channels	NO	4.8	N/A	DTS device
15.247 (a)(1)	Time of Occupancy (Dwell Time)	NO	4.9	N/A	DTS device
15.247 (a)(2)	6dB Bandwidth	YES	4.10	N.P.	
15.247 (b)	Peak Conducted Output Power	YES	4.11	N.P.	
15.247 (e)	Power Spectral Density	YES	4.12	N.P.	

Possible test case verdicts:

- | | |
|--|-----------------------|
| - Test case does not apply to the test object: | N/A |
| - Test object complies with the requirement: | PASS or COMPLIANT |
| - Test object does not meet the requirement: | FAIL or NOT COMPLIANT |
| - Test case not performed on the test object: | N.P. |

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1. GENERAL INFORMATION

1.1 Test Site

Test Facility:	TÜV Rheinland Sweden AB
Address:	Mobilvägen 10
	223 62 Lund
	Sweden
Swedac Registration Number:	10325
FCC Test Firm Registration Number:	517458
ISED Test Site Registration Number:	24753

1.2 Client Information

Company Name:	Schneider Electric
Address:	Mobilvägen 10
	223 62 Lund
	Sweden
Contact Person:	Fredrik Göth
Contact e-Mail / Telephone	Fredrik.Goth@se.com / +46 104 78 25 91

2. PRODUCT INFORMATION

2.1 General Description

Model name:	SnartX IP Controller
Manufacturer:	Schneider Electric
Model number / Marketing name:	RP-C-16B-F-24V
FCC ID:	DVE-RPC24
Description:	IP based field controller for Building Automation
Ancillary Equipment:	See section 2.7

2.2 Device Characteristics

Type of Power Supply	External
Nominal Supply Voltage	24 VDC
Supply Voltage Range	±15%
Operating Temperature Range	0° to +50°C (32° to 122°F)
Operating Air Humidity Range	Maximum 95% RH non-condensing
Highest Internal Frequency Source	2480 MHz

2.3 Test Samples

EUT #	EUT ID	Description	Used For:
1	A003045983-001	Standard test sample	All tests

2.4 Wireless Technologies and Bands Supported by the EUT

Technology	Band	Frequency Range (Tx)	Evaluation Performed*
Bluetooth LE	2.4 GHz	2402 MHz – 2480 MHz	YES
Zigbee	2.4 GHz	2405 MHz – 2480 MHz	NO

*This statement refers only to this report. Other wireless technologies may be covered by other reports.

2.5 Antenna Information

Technology	Band	Number of Antennas	Antenna Type(s)	Gain (dBi)
Bluetooth LE	2.4 GHz	2	Integrated	+0.8
Zigbee	2.4 GHz	2	Integrated	+0.8

2.6 Wireless Technology Details

Technology	Band	Modulation Type(s)	No. of Channels	Channel Spacing	Adaptivity
Bluetooth LE	2.4 GHz	GFSK	40	2 MHz	N/A
Zigbee	2.4 GHz	O-QPSK	16	5 MHz	N/A

2.7 Ancillary Equipment

Power supply (AC/DC)
Bus loads 3+3 W
Resistor for output loading
Voltmeter
Second Power supply (AC/DC)
UTP RJ45 cable
USB Load
Resistor for temperature simulation

2.8 EUT Diagrams

N/A

3. TEST METHODS

3.1 Test Standards

Testing was performed according to the following standards / references

Standard	Version	Description
FCC 47 CFR 15.247	-	Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.
FCC 47 CFR 15.207	-	Conducted limits
FCC 47 CFR 15.209	-	Radiated emission limits; general requirements

3.2 Additional references

The following standards / references were also considered for the testing

Standard	Version	Description
ANSI C63.10	2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

3.3 Limits

FCC 47 CFR Rule Part	Test Description	Limit Reference (FCC 47 CFR Reference)
15.207	AC Power Line Conducted Emissions (Intentional Radiators)	15.207 (a)
15.209	Radiated Emissions (Intentional Radiators)	15.209 (a) *See Note 1
15.247 (d)	Antenna conducted emissions	15.247 (d)
15.247 (d)	Band Edge Compliance (Authorized Band)	15.247 (d)
15.247 (d)	Band Edge Compliance (Restricted Band)	15.247 (d)
15.247 (a)(1)	20dB Bandwidth	15.247 (a)(1)
15.247 (a)(1)	Carrier (Hopping Channel) Separation	15.247 (a)(1)
15.247 (a)(1)	Number of Hopping Channels	15.247 (a)(1)
15.247 (a)(1)	Time of Occupancy (Dwell Time)	15.247 (a)(1)
15.247 (a)(2)	6dB Bandwidth	15.247 (a)(2)
15.247 (b)	Peak Conducted Output Power	§15.247 (b)(1) [Hopping] §15.247 (b)(3) [Non-Hopping]
15.247 (e)	Power Spectral Density	15.247 (e)

Interpretation of the measurement results has been performed in accordance with ANSI C63.10 section 1.3

Compliance with the requirements has been based on the results of the measurements compared to the specified limits, not taking into account measurement instrumentation uncertainty.

Measurement Uncertainty figures are stated in section 6

Note 1

Radiated Emissions limits in the tables from 47 CFR sections 15.109 & 15.209 are presented in $\mu\text{V/m}$. Measurements on the test system are made in $\text{dB}\mu\text{V/m}$. To convert between these, the following adjustment is used:

$$\text{New Limit} = 20 \log \left(\frac{\text{Original Limit}}{10^6} \right) + 120$$

Example: from 15.209(a) the limit for 30MHz – 88MHz is $100\mu\text{V/m}$ at 3m. This gives:

$$\text{New Limit} = 20 \log \left(\frac{100}{10^6} \right) + 120 = 40\text{dB}\mu\text{V/m at 3m}$$

Additionally, in some cases testing has been performed at distances other than those specified in the tables. When this has occurred, the limits have been adjusted in accordance with the requirements in 47 CFR 15.31, using an extrapolation factor of 40dB/decade at frequencies below 30MHz and 20dB/decade at or above 30MHz

Example: from 15.209(a) the limit for 1.705MHz – 30MHz is $30\mu\text{V/m}$ (=29.54 $\text{dB}\mu\text{V/m}$) at 30m

$$\text{Limit@3m} = \text{Limit@30m} + 40 \log \left(\frac{30}{3} \right) = 29.54 + 40.00 = 69.54 \text{ dB}\mu\text{V/m at 3m}$$

Example: from 15.209(a) the limit for 1GHz – 18GHz is $500\mu\text{V/m}$ (=53.98 $\text{dB}\mu\text{V/m}$) at 3m

$$\text{Limit@1m} = \text{Limit@3m} + 20 \log \left(\frac{3}{1} \right) = 53.98 + 9.54 = 63.52 \text{ dB}\mu\text{V/m at 1m}$$

3.4 Description of Test Methods and Equipment Setup

3.4.1 General Description

Testing was performed in accordance with the various requirements of ANSI C63.4 and ANSI C63.10. Any deviations from the test methods are described in section 3.7

Where different arrangements of equipment were used for different types of measurements, these are tabulated in section 3.4.2 and details of each arrangement are included in subsequent sections

3.4.2 Test Equipment Setup Used by Test Type

FCC 47 CFR Rule Part	Test Description	Test Equipment Used
15.207	AC Power Line Conducted Emissions (Intentional Radiators)	Conducted Emissions
15.209	Radiated Emissions (Intentional Radiators)	SAC5
15.247 (d)	Antenna conducted emissions	CTE
15.247 (d)	Band Edge Compliance (Authorized band)	CTE
15.247 (d)	Band Edge Compliance (Restricted band)	SAC 5
15.247 (a)(1)	20dB Bandwidth	CTE
15.247 (a)(1)	Carrier (Hopping Channel) Separation	CTE
15.247 (a)(1)	Number of Hopping Channels	CTE
15.247 (a)(1)	Time of Occupancy (Dwell Time)	CTE
15.247 (a)(2)	6dB Bandwidth	CTE
15.247 (b)	Peak Conducted Output Power	CTE
15.247 (e)	Power Spectral Density	CTE

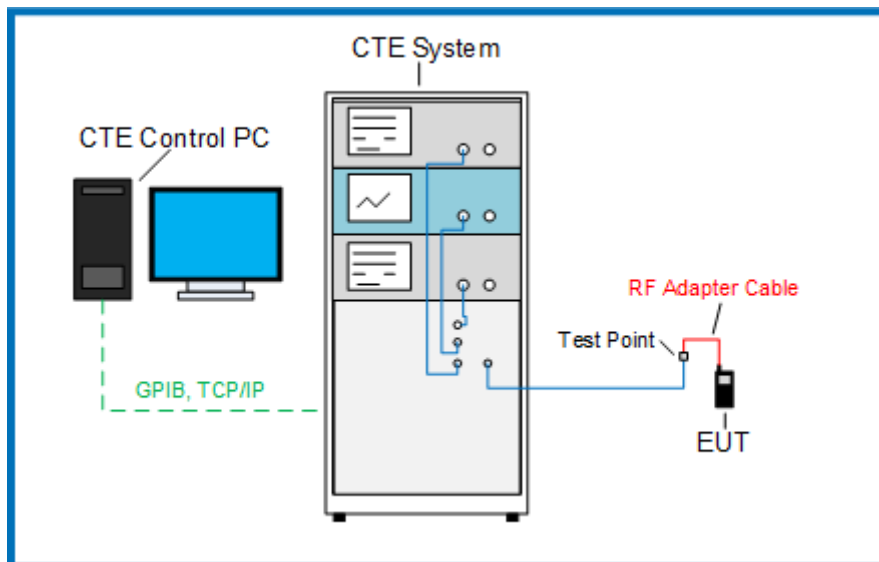
3.4.3 Test Equipment Setup – CTE System

The Comprehensive Test Environment (CTE) system consists of a number of instruments (see section) mounted in a rack together with automated relays and interconnecting hardware. The instruments and other equipment are controlled from a standard PC running software provided by the manufacturer. The RF output of the EUT is connected to the test system via a coaxial cable.

Tests are in the form of pre-defined scripts that can be loaded on the PC. The scripts, as well as the hardware setup, have been verified for conformance with the relevant test specifications.

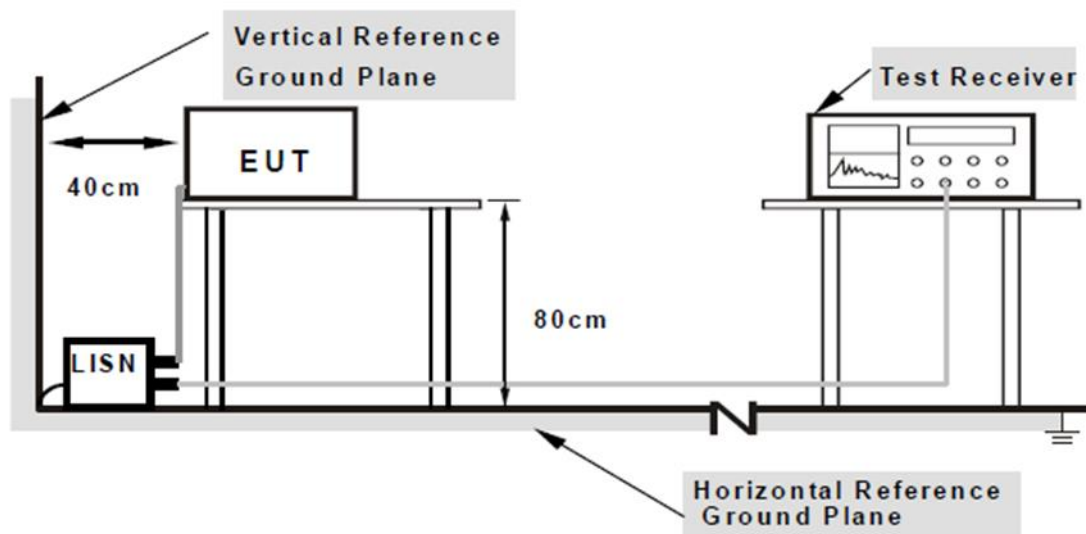
Losses in the cables and interconnects have been measured using the system's own automated routines and are compensated for automatically. Any additional loss in RF adapter cables supplied together with the EUT can be compensated for using the known characteristics of that adapter.

CTE Block Diagram



3.4.4 Test Equipment Setup – Conducted Emissions

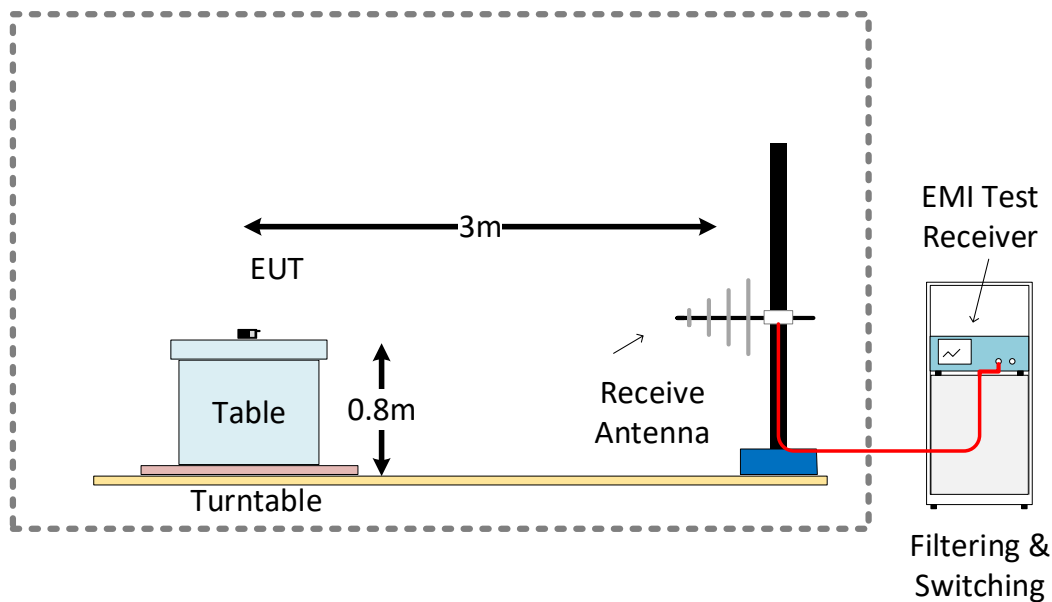
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The LISNs provide $50\Omega/50\mu\text{H}$ of coupling impedance for the measuring instrument.
- The lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched. Emission levels over 10 dB under the prescribed limits could not be reported.



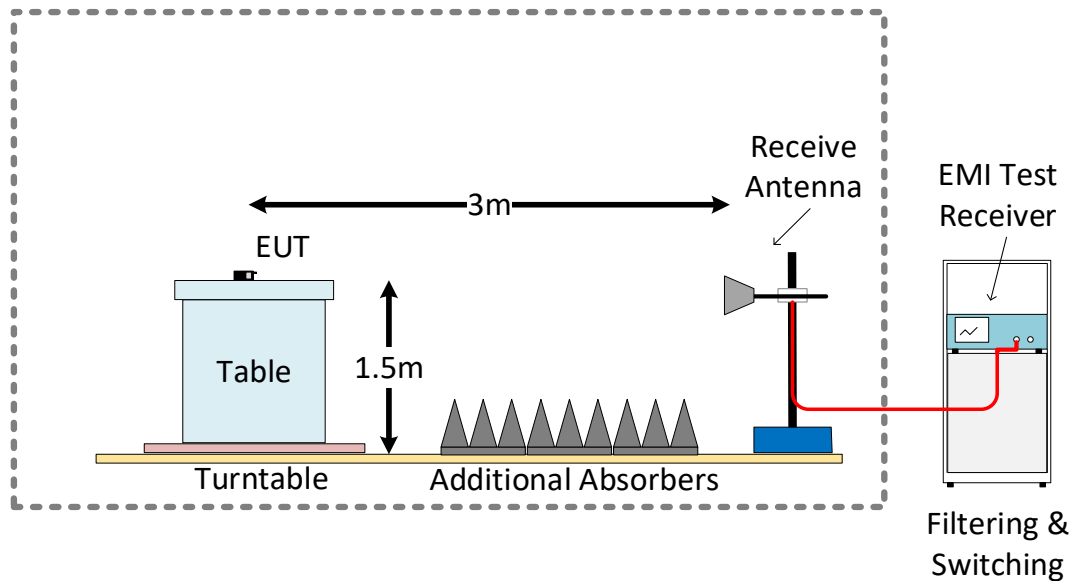
3.4.5 Test Equipment Setup – SAC 5 (Radiated Emissions and Restricted Band Edge)

- For frequency range 30MHz-1GHz Log-Periodic Antenna was used. Antenna elevated from 100 cm from floor to 400 cm from floor, and was placed at 3 m from center of turntable in tilted position. The equipment under test (EUT) was placed at the middle of the turntable at 150 cm height from floor. The antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained.
- For frequency range 1GHz-18GHz horn Antenna was used. Antenna elevated from 100 cm from floor to 200 cm from floor, and was placed at 3 m from center of turntable. The equipment under test (EUT) was placed at the middle of the turntable at 150 cm height from floor. The antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained.
- For frequency range 18GHz-40GHz double horn Antenna was used. Antenna's height was adjusted to 150 cm from floor, and 1 m distance to center of turntable. The equipment under test (EUT) was placed at the middle of the turntable on at 150 cm height from floor.
- For all frequency ranges the turntable was rotated 360° for obtaining the maximum emission.

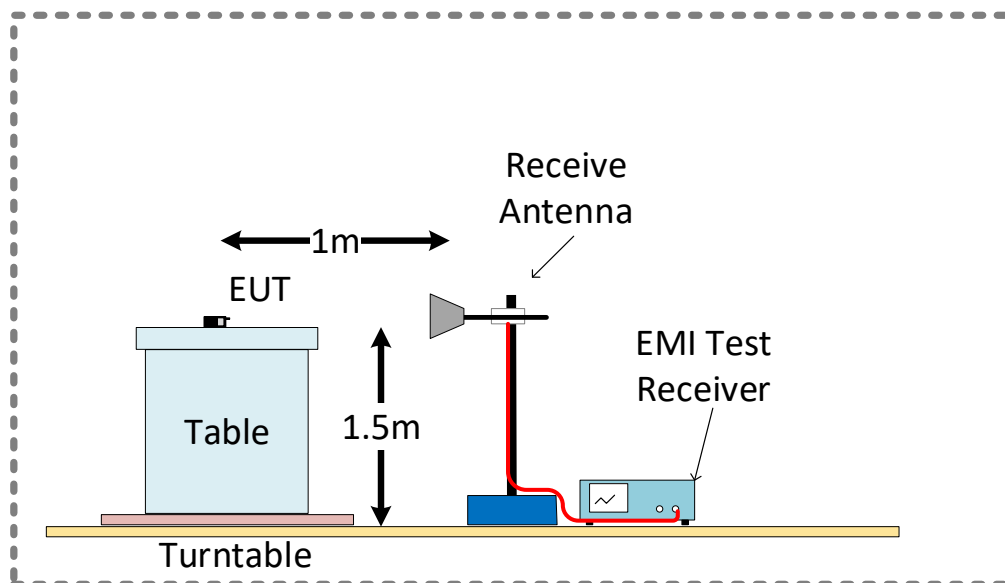
SAC 5 Test Setup Configuration 30MHz – 1GHz



SAC 5 Test Setup Configuration 1GHz – 18GHz



SAC 5 Test Setup Configuration 18GHz – 40GHz



3.5 EUT Configuration During Test

N/A

3.6 EUT Operation Modes

Operation mode	Description
Default	The unit was powered up and was set to transmit continuously on a specific channel with maximum output level.

3.7 Deviations from the Test Standard

None

3.8 Environmental Conditions

3.8.1 Environmental Conditions – SAC5 (Radiated Emissions)

Environmental Conditions Log – SAC5

Date	Time	Temperature (°C)	Relative Humidity (%)
2021.05.18	07:35	20.2	42
2021.05.19	08:16	18.9	45

4. TEST RESULTS

4.1 Test Results – AC Power Line Conducted Emissions (Intentional Transmitter)

4.1.1 AC Power Line Conducted Emissions (Intentional) – Test Summary

Requirement not tested as the device have no AC power input.

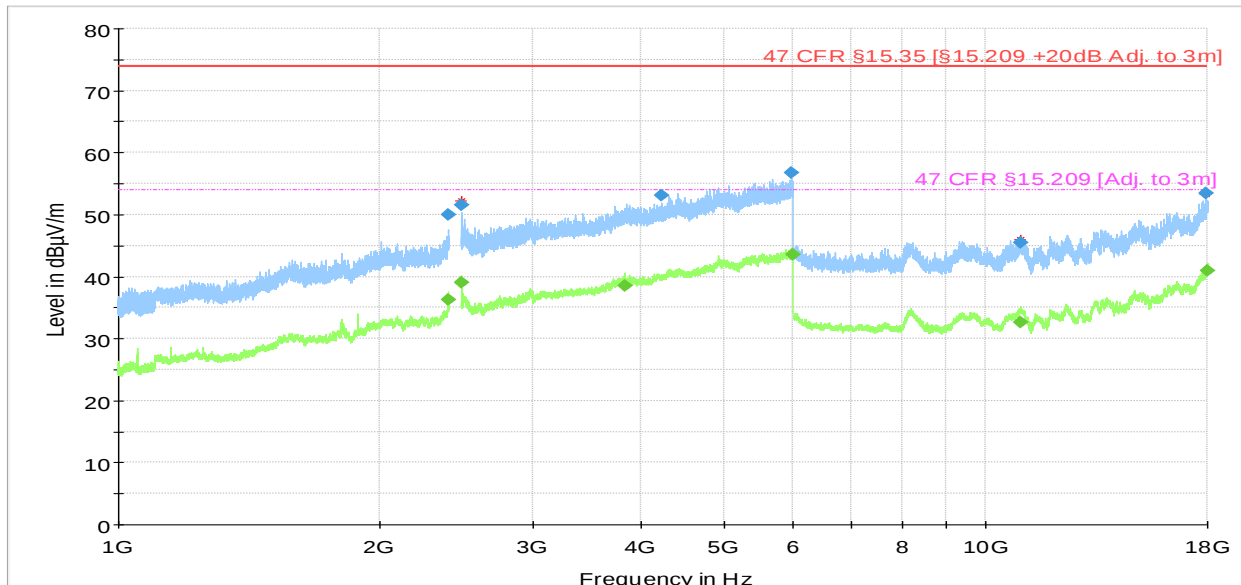
4.2 Test Results – Radiated Emissions (Intentional Transmitter)

4.2.1 Radiated Emissions (Intentional) – Test Summary

Test Specification	FCC 47 CFR 15.209 (Part 15 Subpart C)		
Test Engineer & Date	Simon Palmhager	2021.05.18	
EUT and Ancillary Equipment IDs	A003045983-001	See chapter 2.7	
EUT Operation Mode(s)	Default		
EUT Wireless Configuration(s)	Bluetooth mid channel		
EUT Hardware Configuration(s)	N/A		
Overall Result	PASS		
Test Parameter	Wireless Configuration	Frequency Range	Result
Radiated Emissions	Bluetooth Low Energy 2440 MHz	1 GHz – 18 GHz	PASS

4.2.2 Radiated Emissions (Intentional) – Test Details

Test mode condition	Bluetooth Low Energy Mid channel	
Antenna orientation	Horizontal and Vertical	
Sweep frequency	1 GHz – 18 GHz	
Standard	47 CFR FCC Part 15 subpart C	
EUT	A003045983-001	
Ancillary Equipment	See chapter 2.7	
Test Engineer	Simon Palmhager	Date: 2021.05.18
Chamber details	Chamber: SAC 5	



Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2399.976000	---	36.32	53.98	17.66	1000.0	1000.000	206.0	V	248.0
2399.992110	50.05	---	73.98	23.93	1000.0	1000.000	187.0	H	144.0
2483.519000	---	39.03	53.98	14.95	1000.0	1000.000	125.0	H	248.0
2483.699497	51.56	---	73.98	22.42	1000.0	1000.000	175.0	V	338.0
3838.179000	---	38.55	53.98	15.43	1000.0	1000.000	137.0	V	221.0
4224.485000	53.16	---	73.98	20.82	1000.0	1000.000	102.0	H	22.0
5976.837000	56.72	---	73.98	17.26	1000.0	1000.000	100.0	H	267.0
5983.242000	---	43.53	53.98	10.45	1000.0	1000.000	100.0	V	155.0
10943.795000	45.43	---	73.98	28.55	1000.0	1000.000	175.0	H	292.0
10980.311000	---	32.64	53.98	21.34	1000.0	1000.000	175.0	H	334.0
17944.839000	53.46	---	73.98	20.52	1000.0	1000.000	125.0	H	19.0
17994.931740	---	40.91	53.98	13.07	1000.0	1000.000	210.0	V	8.0

4.3 Test Results – Antenna conducted emissions

4.3.1 Antenna conducted emissions – Test Summary

Requirement not tested as Radiated Emissions was performed.

4.4 Test Results – Band Edge Compliance (Authorized Band)

4.4.1 Band Edge Compliance (Authorized Band) – Test Summary

Requirement not tested.

4.5 Test Results – Band Edge Compliance (Restricted Band)

4.5.1 Band Edge Compliance (Restricted Band) – Test Summary

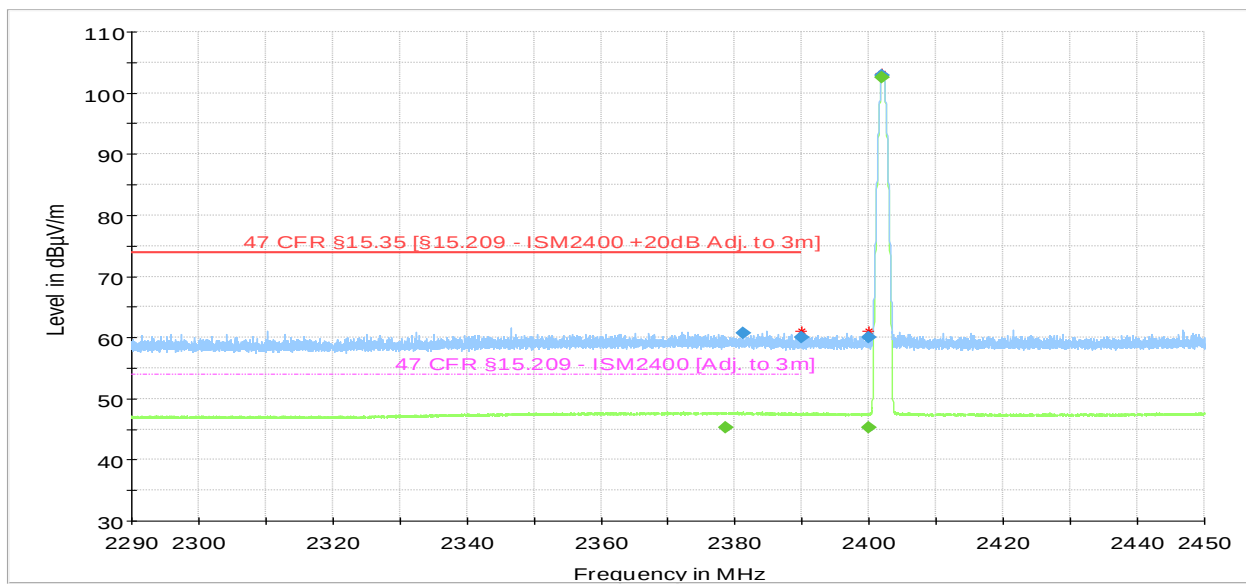
Test Specification	47 CFR 15.209 & 15.247 (d)	
Test Engineer & Date	Niall Forrester	2021.05.18
EUT and Ancillary Equipment IDs	A003045983-001	See chapter 2.7
EUT Operation Mode(s)	Default	
EUT Wireless Configuration(s)	Bluetooth Low Energy	
EUT Hardware Configuration(s)	N/A	
Overall Result	PASS	
Test Parameter	Wireless Configuration	Result*
Emissions at Band Edge (Rest. Band – Low Edge)	BLE 1M 2402 MHz	PASS
Emissions at Band Edge (Rest. Band – High Edge)	BLE 1M 2480 MHz	PASS

* For detailed measurements, see tables and graphs in sections below

4.5.2 Band Edge Compliance (Restricted Band) – Test Details

Restricted Band – Low Edge

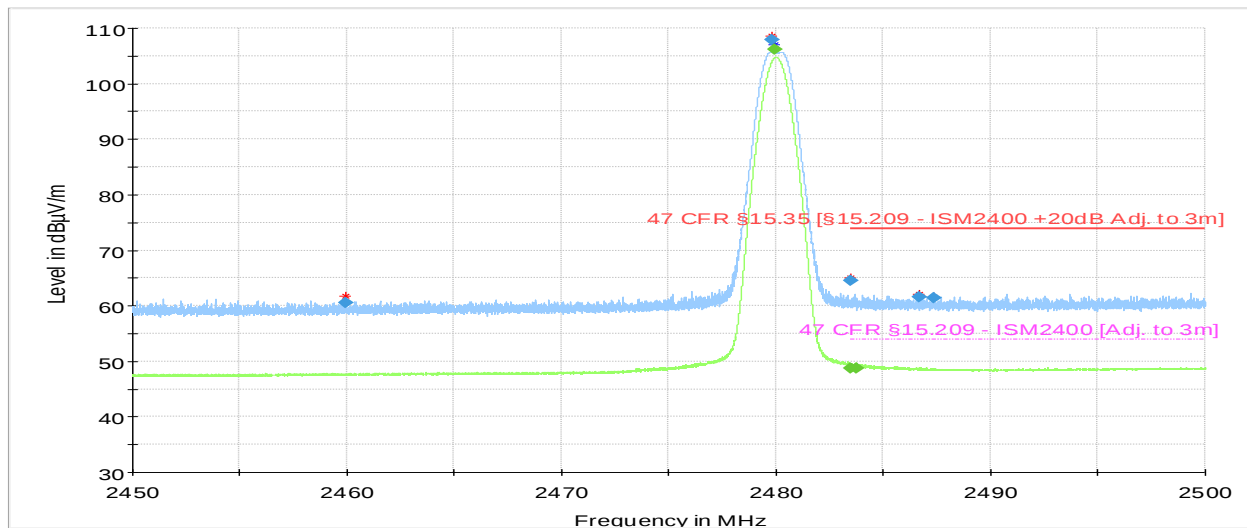
Test mode condition	BLE 1M 2402 MHz	
Antenna orientation	Horizontal and Vertical	
Sweep frequency	1 GHz – 18 GHz Lower Band Edge	
Standard	47 CFR FCC Part 15 subpart C	
EUT	A003045983-001	
Ancillary Equipment	See chapter 2.7	
Test Engineer	Niall Forrester	Date: 2021.05.19
Chamber details	Chamber: SAC 5	



Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2378.528000	---	45.25	53.98	8.73	1000.0	1000.000	145.0	H	331.0
2381.184000	60.72	---	73.98	13.26	1000.0	1000.000	111.0	H	327.0
2390.000000	60.09	---	73.98	13.88	1000.0	1000.000	210.0	H	216.0
2400.000000	---	45.25	---	---	1000.0	1000.000	145.0	H	326.0
2400.000000	59.95	---	---	---	1000.0	1000.000	133.0	H	327.0
2401.984000	102.86	---	---	---	1000.0	1000.000	101.0	V	203.0
2402.000000	---	102.57	---	---	1000.0	1000.000	101.0	V	204.0

Restricted Band – High Edge

Test mode condition	BLE 1M 2480 MHz	
Antenna orientation	Horizontal and Vertical	
Sweep frequency	1 GHz – 18 GHz Higher Band Edge	
Standard	47 CFR FCC Part 15 subpart C	
EUT	A003045983-001	
Ancillary Equipment	See chapter 2.7	
Test Engineer	Niall Forrester	Date: 2021.05.19
Chamber details	Chamber: SAC 5	



Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2459.965000	60.59	---	---	---	1000.0	1000.000	101.0	V	348.0
2479.810000	107.89	---	---	---	1000.0	1000.000	102.0	V	202.0
2479.935000	---	106.26	---	---	1000.0	1000.000	101.0	V	201.0
2480.220000	110.17	---	---	---	1000.0	1000.000	104.0	V	207.0
2483.500000	---	48.71	53.98	5.27	1000.0	1000.000	101.0	V	203.0
2483.500000	64.56	---	73.98	9.42	1000.0	1000.000	101.0	V	207.0
2483.710000	---	48.67	53.98	5.30	1000.0	1000.000	103.0	V	203.0
2486.665000	61.62	---	73.98	12.36	1000.0	1000.000	192.0	H	191.0
2487.335000	61.34	---	73.98	12.64	1000.0	1000.000	210.0	H	264.0
2459.965000	60.59	---	---	---	1000.0	1000.000	101.0	V	348.0

4.6 Test Results – 20dB Bandwidth

4.6.1 20dB Bandwidth – Test Summary

Requirement not tested.

4.7 Test Results – Carrier (Hopping Channel) Separation

4.7.1 Carrier (Hopping Channel) Separation – Test Summary

Requirement not applicable as the device does not apply FHSS.

4.8 Test Results – Number of Hopping Channels

4.8.1 Number of Hopping Channels – Test Summary

Requirement not applicable as the device does not apply FHSS.

4.9 Test Results – Time of Occupancy (Dwell Time)

4.9.1 Time of Occupancy (Dwell Time) – Test Summary

Requirement not applicable as the device does not apply FHSS.

4.10 Test Results – 6dB Bandwidth

4.10.1 6dB Bandwidth – Test Summary

Requirement not tested.

4.11 Test Results – Peak Conducted Output Power

4.11.1 Peak Conducted Output Power – Test Summary

Requirement not tested.

4.12 Test Results – Power Spectral Density

4.12.1 Power Spectral Density – Test Summary

Requirement not tested.

5. TEST EQUIPMENT STATUS

5.1 List of Hardware with Calibration Dates

5.1.1 Hardware List – Conducted Emissions System

Type	Manufacturer	Model	Serial Number / ID	Calibration Date	Calibration Due
Two-Line V-network	Rohde & Schwarz	ENV216	101090 2704076	2020.07.16	2021.07.16
Test Receiver 9KHz to 3.5 GHz	Rohde & Schwarz	ESR3	101674 2704016	2020.07.17	2021.07.17

5.1.2 Hardware List – SAC5 System

Type	Manufacturer	Model	Serial Number / ID	Calibration Date	Calibration Due
EMI Test Receiver	Rohde & Schwarz	ESW44	101760 2881044	2020.07.17	2021.07.17
Ultra Broadband Antenna	Rohde & Schwarz	HL562E	100988 2823181	2019.07.23	2021.07.23
Double Ridged Waveguide Horn Antenna	Rohde & Schwarz	HF907	102678 2823164	2019.07.15	2021.07.15
Control Device	Maturo	NCD	NCD/393/2372.01	N/A	N/A
Open Switch & Control Unit	Rohde & Schwarz	OSP150	100081 2884198	2020.08.04	2021.08.04
Open Switch & Control Unit	Rohde & Schwarz	OSP120	100084 2761253	2020.08.04	2021.08.04
Shielded Filter Unit	Rohde & Schwarz	OSP-F Extension 1	101333 2761265	2020.08.04	2021.08.04
Shielded Filter Unit	Rohde & Schwarz	OSP-F Extension 2	101335 2761266	2020.08.04	2021.08.04
Shielded Filter Unit	Rohde & Schwarz	OSP-F Base Unit	101330 2761262	2020.08.04	2021.08.04
Humidity Temperature Probe	Lufft	OPUS 20	1236.0118.0802.033 2771042	2020.07.31	2022.07.31

5.2 Software / Firmware Versions

Equipment	Software / Firmware Name	Version
Conducted Emissions System	EMC 32	V10.60.10
SAC 5	EMC 32	V10.60.10

6. MEASUREMENT UNCERTAINTY

6.1 Measurement Uncertainty for CTE

Parameter	Uncertainty (Coverage Factor k=2)
Maximum Output Power (15.247b)	±0.51 dB
6dB / 20dB Channel Bandwidth & 99% Occupied bandwidth (15.247a)	<5%
Carrier Frequency Separation (15.247a)	N/A
Number of Hopping Channels (15.247a)	N/A
Time of Occupancy – Dwell Time (15.247a)	N/A
Band Edge Compliance of Conducted Emissions (15.247a)	±1.04 dB
Conducted Spurious Emissions (15.247d)	±2.98 dB
Power Spectral Density (15.247e)	±0.51 dB

6.2 Measurement Uncertainty for Conducted Emissions

Parameter	Uncertainty (Coverage Factor k=2)
Conducted emissions with LISN 150KHz to 30 MHz	2.98 dB

6.3 Measurement Uncertainty for SAC 5 (Radiated Emissions & Band Edge)

Parameter	Uncertainty (Coverage Factor k=2)
Field Strength 10 Hz -9 kHz	3.38 dB
Field Strength 9 kHz -30 MHz	3.38 dB
Field Strength 30 MHz -1000 MHz	3.38 dB
Field Strength 1 GHz -18 GHz	4.88 dB
Field Strength 18 GHz - 40 GHz	5.14 dB

7. PHOTOGRAPHS

7.1 Photographs of the EUT

For photographs see appendix.