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2021-05-03

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Test Report

No. TR-43516-07324-17 (Edition 1)

Applicant	Siemens Healthcare GmbH
Type designation	Radio Remote Control WRC NRF
Serial number	11441
Order No.	5422660
Test standards	ARIB STD-T66

Summary

Test Results	Order No. 5422660			
Tests were performed according to: ARIB STD-T66: 3.7 (2014-10)				
Test performed	Test result			
	Passed	Not Passed	Not applicable	Not performed
Antenna Power	☒	☐	☐	☐
Frequency Deviation	☒	☐	☐	☐
Permissible Value of Spurious or Unnecessary Radiation Intensity	☒	☐	☐	☐
Allowable Value for Occupied Bandwidth	☒	☐	☐	☐
Spread Bandwidth	☒	☐	☐	☐
Process Gain	☒	☐	☐	☐
Limit on Secondary Radiation	☒	☐	☐	☐
Antenna Gain	☒	☐	☐	☐

Remarks:

The test results relate only to the individual item which has been tested. Without the written approval of the test laboratory this report may not be reproduced in extracts.

Date of issue	Tested by	Checked by	Test Result
2021-05-03	 SIGN-ID 503459 Michael Ingerl Responsible for testing	 SIGN-ID 504211 Markus Biberger Reviewer	
			☒ Passed ☐ Not passed

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1 Administrative Data

Application details	
Applicant:	Siemens Healthcare GmbH Henri-Dunant-Str. 50 91058 Erlangen
Order number:	5422660
Receipt of EUT:	2021-03-12
Return of EUT:	---
Date(s) of test:	2021-04-28 to 2021-04-29
Note(s):	--
Responsible for testing:	Mr. Michael Ingerl
Responsible for test report:	Mr. Michael Ingerl
Test report checked by:	Mr. Markus Biberger

Report details	
Report number:	TR-43516-07324-17
Edition:	1
Issue date:	2021-05-03

2 Details about the Test Laboratory

Details about the Test Laboratory

Company name:	TÜV SÜD Product Service GmbH
Address:	Äußere Frühlingstraße 45 D-94315 Straubing Germany
Contact:	Mr. Markus Biberger
	Phone: +49 9421 5522-0 Fax: +49 9421 5522-99

3 Description of the Equipment Under Test

Equipment characteristics	
Type designation:	Radio Remote Control WRC NRF
Type of equipment:	10096785
Equipment class:	Equipment for portable use
Highest internal frequency:	22.1148 MHz
Power supply:	Battery supplied
	Nominal: 5 V
	Nominal frequency: DC
Software version:	VA00E
Hardware version:	03

4 Transmitter Technical Characteristics

Equipment characteristics	
Technical description:	Bluetooth Modul
Frequency band of operation	2400 MHz - 2483.5 MHz
Number of transmission channels:	40
Channel spacing:	2 MHz
Channel alignment range:	2402 MHz to 2480 MHz
OFDM system shall have one or more carriers per 1 MHz bandwidth:	Yes ☐ No ☒
Transmitter rated power:	10 dBm / 10 mW/MHz ⁽¹⁾
Antenna maximum gain:	4.4 dBi
Rated E.I.R.P.:	14.4 dBm / 27.5 mW/MHz ⁽²⁾
Type of antenna:	Directional ☐ Omni-directional ☒
Maximum E.I.R.P.:	8.892 dBm / 7.748 mW (tested)
Dwell Time:	0.2 ms
Continuous operation:	Yes ☐ No ☒
Intermittend operation:	Yes ☒ No ☐
Controlled by:	Firmware ☐ Test-Firmware ☒ Chipset developer tool ☐
Transmission protocol:	Bluetooth 4.1
Data Rate:	up to 4 Mbps
Modulation:	DSSS ☐ FHSS ☒

(1) Declared output power at the antenna port of the RF-Section.

(2) Calculated rated E.I.R.P. using the following formula:

$$\text{Transmitter rated power} + \text{max. antenna gain} = \text{Rated E.I.R.P.}$$

$$10 \text{ mW/MHz (10 dBm)} + 4.4 \text{ dBi} = 27.5 \text{ mW/MHz (14.4 dBm)}$$

5 Operation Mode and Configuration of EUT for Test

Operation Mode(s) and tested channels

1. TX continuous modulated [CH0 = 2402 MHz; CH20 = 2440 MHz; CH39 = 2480 MHz]
2. RX continuous [CH0 = 2402 MHz; CH20 = 2440 MHz; CH39 = 2480 MHz]

List of devices connected to EUT

No.	Description	Type designation	Serial no. or ID	Manufacturer
---	---	---	---	---

List of support devices

No.	Description	Type designation	Serial no. or ID	Manufacturer
1	Notebook	E-460	---	Lenovo

6 Annotations to Performed Tests

All transmitter tests were performed using a special testing mode with continuous modulated transmission of pseudo random.

All receiving tests were performed using a special testing mode with continuous receiving.

7 Referenced Regulations

Organisation	Regulation
ARIB	STD-T66 SECOND GENERATION LOW POWER DATA COMMUNICATION SYSTEM / WIRELESS LAN SYSTEM
Ordinance concerning Technical Regulations Conformity Certification etc. of Specified Radio Equipment	Article 2, Clause 1, Item (19) Low power data communications system in the 2.4 GHz band
MIC	Notice No. 88, Annex 43

8 Measurement Uncertainty Values

Radio Testing			
Test	k_p	Expanded Uncertainty	Note
Occupied Bandwidth	2.0	$\pm 1.14 \%$	2
RF-Frequency error	1.96	$\pm 1 \cdot 10^{-7}$	7
RF-Power, conducted carrier	2	$\pm 0.079 \text{ dB}$	2
RF-Power uncertainty for given BER	1.96	$+0.94 \text{ dB} / -1.05$	7
RF power, conducted, spurious emissions	1.96	$+1.4 \text{ dB} / -1.6 \text{ dB}$	7
RF power, radiated			
25 MHz – 4 GHz	1.96	$+3.6 \text{ dB} / -5.2 \text{ dB}$	8
1 GHz – 18 GHz	1.96	$+3.8 \text{ dB} / -5.6 \text{ dB}$	8
18 GHz – 26.5 GHz	1.96	$+3.4 \text{ dB} / -4.5 \text{ dB}$	8
40 GHz – 170 GHz	1.96	$+4.2 \text{ dB} / -7.1 \text{ dB}$	8
Spectral Power Density, conducted	2.0	$\pm 0.53 \text{ dB}$	2
Maximum frequency deviation			
300 Hz – 6 kHz	2	$\pm 2.89 \%$	2
6 kHz – 25 kHz	2	$\pm 0.2 \text{ dB}$	2
Maximum frequency deviation for FM	2	$\pm 2.89 \%$	2
Adjacent channel power 25 MHz – 1 GHz	2	$\pm 2.31 \%$	2
Temperature	2	$\pm 0.39 \text{ K}$	4
(Relative) Humidity	2	$\pm 2.28 \%$	2
DC- and low frequency AC voltage			
DC voltage	2	$\pm 0.01 \%$	2
AC voltage up to 1 kHz	2	$\pm 1.2 \%$	2
Time	2	$\pm 0.6 \%$	2

Radio Interference Emission Testing			
Test	k_p	Expanded Uncertainty	Note
Conducted Voltage Emission			
9 kHz to 150 kHz (50 Ω /50 μ H AMN)	2	± 3.8 dB	1
150 kHz to 30 MHz (50 Ω /50 μ H AMN)	2	± 3.4 dB	1
100 kHz to 200 MHz (50 Ω /5 μ H AMN)	2	± 3.6 dB	1
Discontinuous Conducted Emission			
9 kHz to 150 kHz (50 Ω /50 μ H AMN)	2	± 3.8 dB	1
150 kHz to 30 MHz (50 Ω /50 μ H AMN)	2	± 3.4 dB	1
Conducted Current Emission			
9 kHz to 200 MHz	2	± 3.5 dB	1
Magnetic Fieldstrength			
9 kHz to 30 MHz (with loop antenna)	2	± 3.9 dB	1
9 kHz to 30 MHz (large-loop antenna 2 m)	2	± 3.5 dB	1
Radiated Emission			
Test distance 1 m (ALSE)			
9 kHz to 150 kHz	2	± 4.6 dB	1
150 kHz to 30 MHz	2	± 4.1 dB	1
30 MHz to 200 MHz	2	± 5.2 dB	1
200 MHz to 2 GHz	2	± 4.4 dB	1
2 GHz to 3 GHz	2	± 4.6 dB	1
Test distance 3 m			
30 MHz to 300 MHz	2	± 4.9 dB	1
300 MHz to 1 GHz	2	± 5.0 dB	1
1 GHz to 6 GHz	2	± 4.6 dB	1
Test distance 10 m			
30 MHz to 300 MHz	2	± 4.9 dB	1
300 MHz to 1 GHz	2	± 4.9 dB	1
Radio Interference Power			
30 MHz to 300 MHz	2	± 3.5 dB	1
Harmonic Current Emissions			
			4
Voltage Changes, Voltage Fluctuations and Flicker			
			4

Immunity Testing			
Test	k_p	Expanded Uncertainty	Note
Electrostatic Discharges			4
Radiated RF-Field			
Pre-calibrated field level	2	+32.2 / -24.3 %	5
Dynamic feedback field level	2.05	+21.2 / -17.5 %	3
Electrical Fast Transients (EFT) / Bursts			4
Surges			4
Conducted Disturbances, induced by RF-Fields			
via CDN	2	+15.1 / -13.1 %	6
via EM clamp	2	+42.6 / -29.9 %	6
via current clamp	2	+43.9 / -30.5 %	6
Power Frequency Magnetic Field	2	+20.7 / -17.1 %	2
Pulse Magnetic Field			4
Voltage Dips, Short Interruptions and Voltage Variations			4
Oscillatory Waves			4
Conducted Low Frequency Disturbances			
Voltage setting	2	± 0.9 %	2
Frequency setting	2	± 0.1 %	2
Electrical Transient Transmission in Road Vehicles			4

Note 1:

The expanded uncertainty reported according to CISPR 16-4-2:2003-11 is based on a standard uncertainty multiplied by a coverage factor of $k_p = 2$, providing a level of confidence of $p = 95.45\%$

Note 2:

The expanded uncertainty reported according to UKAS Lab 34 (Edition 1, 2002-08) is based on a standard uncertainty multiplied by a coverage factor of $k_p = 2$, providing a level of confidence of $p = 95.45\%$

Note 3:

The expanded uncertainty reported according to UKAS Lab 34 (Edition 1, 2002-08) is based on a standard uncertainty multiplied by a coverage factor of $k_p = 2.05$, providing a level of confidence of $p = 95.45\%$

Note 4:

It has been demonstrated that the used test equipment meets the specified requirements in the standard with at least a 95% confidence.

Note 5:

The expanded uncertainty reported according to IEC 61000-4-3 is based on a standard uncertainty multiplied by a coverage factor of $k_p = 2$, providing a level of confidence of $p = 95.45\%$

Note 6:

The expanded uncertainty reported according to IEC 61000-4-6 is based on a standard uncertainty multiplied by a coverage factor of $k_p = 2$, providing a level of confidence of $p = 95.45\%$

Note 7:

The expanded uncertainty reported according ETSI TR 100 028 V1.4.1 (all parts) is based on a standard uncertainty multiplied by a coverage factor of $k_p = 1.96$, providing a level of confidence of $p = 95.45\%$

Note 8:

The expanded uncertainty reported according to ETSI TR 102 273 V1.2.1 (all parts) is based on a standard uncertainty multiplied by a coverage factor of $k_p = 1.96$, providing a level of confidence of $p = 95.45\%$

9 Test Results

Test results in accordance with ARIB STD-T66 are shown in the table below.

Section	Test performed	Specification clause	Page	Test Result
9.1	Antenna power	3.2 (2)	15	Passed
9.2	Frequency deviation	3.2 (4)	17	Passed
9.3	Permissible Value of Spurious or Unnecessary Radiation Intensity	3.2 (6)	19	Passed
9.4	Allowable Value for Occupied Bandwidth	3.2 (7)	24	Passed
9.5	Spread Bandwidth	3.2 (8)	27	Passed
9.6	Process Gain	3.2 (9)	30	Passed
9.7	Limit on Secondary Radiation	3.3 (1)	31	Passed
9.8	Antenna Gain	3.6 (2)	35	Passed

9.1 Antenna power and antenna tolerance

9.1.1 Specification Reference

ARIB STD-T66, Clause 3.2 (2)

9.1.2 Equipment Under Test

Radio Remote Control WRC NRF, S/N: 11441

9.1.3 Test Method

The EUT was measured with a spectrum analyser The channel power function of the analyser was used to determine the power in a 1 MHz bandwidth and with respect to the occupied bandwidth of the signal.

Operational Mode: TX continuous modulated

9.1.4 Environmental Conditions

Ambient Temperature	23.0	°C
Relative Humidity	31.0	%
Barometric Pressure	971	hPa

9.1.5 Test Results

Antenna power

Frequency (MHz)	Result (dBm)	Result (mW/MHz)
2402	8.792	7.572
2440	8.892	7.748
2480	8.426	6.960

Antenna power tolerance

Frequency (MHz)	Measured Result		Declared Power (rated E.I.R.P.)		Difference (%)
	(dBm)	(mW/MHz)	(dBm)	(mW/MHz)	
2402	8.792	7.572	10.0	10.0	-24.28
2440	8.892	7.748	10.0	10.0	-22.52
2480	8.426	6.960	10.0	10.0	-30.40

ARIB STD T-66, Limit Clause 3.2 (3)

≤ 10 mW

The upper and lower allowable deviations in antenna power are +20% and -80%, respectively. However, these limits are for maximum rate antenna power. If the antenna power is reduced for communication reasons, there are no regulated upper or lower allowable deviations.

Date of test:	2021-04-29
Operator:	Michael Ingerl
Test site:	Non shielded room

Test Result	
☒	Passed
☐	Not passed

9.1.6 Test Equipment List

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Signal and Spectrum Analysator	Rohde & Schwarz	FSV40 for TS8997	20219	24	2022-01-31
Switching device	Rohde & Schwarz	OSP120 for TS8997	20248	24	2022-02-28
Testsystem 2,4 & 5 GHz Band	Rohde & Schwarz	TS8997	20251	24	2022-01-31
Switching device	Rohde & Schwarz	OSP120 for TS8997	38807	36	2023-11-30
EMC measurement software	Rohde & Schwarz	EMC32 V10.50.00	44381	N/A	N/A

9.2 Frequency deviation

9.2.1 Specification Reference

ARIB STD-T66, Clause 3.2 (4)

9.2.2 Equipment Under Test

Radio Remote Control WRC NRF, S/N: 11441

9.2.3 Test Method

The EUT was connected to an analyser and controlled by a test setup. The EUT was set to transmit continuously on the dedicated transmission channel. The 20 dBc method marker method was used to determine the carrier centre frequency using the 20 dBc method. The PPM was calculated as a quotient of the measured frequency and the declared centre frequency (per million).

Operational Mode: TX continuous modulated

9.2.4 Environmental Conditions

Ambient Temperature	23.0	°C
Relative Humidity	31.0	%
Barometric Pressure	971	hPa

9.2.5 Test Results

Frequency (MHz)	Measured Frequency (MHz)	Frequency Error (ppm)
2402	2401.97014	-12.43
2440	2439.98601	-5.74
2480	2479.97741	-9.11

ARIB STD T-66, Limit Clause 3.2 (4)

$\pm 50 \times 10^{-6}$ (= ± 50 ppm).

Date of test:	2021-04-29
Operator:	Michael Ingerl
Test site:	Non shielded room

Test Result	
☒	Passed
☐	Not passed

9.2.6 Test Equipment List

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Signal and Spectrum Analysator	Rohde & Schwarz	FSV40 for TS8997	20219	24	2022-01-31
Switching device	Rohde & Schwarz	OSP120 for TS8997	20248	24	2022-02-28
Testsystem 2,4 & 5 GHz Band	Rohde & Schwarz	TS8997	20251	24	2022-01-31
Switching device	Rohde & Schwarz	OSP120 for TS8997	38807	36	2023-11-30
EMC measurement software	Rohde & Schwarz	EMC32 V10.50.00	44381	N/A	N/A

9.3 Permissible Value of Spurious or Unnecessary Radiation Intensity

9.3.1 Specification Reference

ARIB STD-T66, Clause 3.2 (6)

9.3.2 Equipment Under Test

Radio Remote Control WRC NRF, S/N: 11441

9.3.3 Test Method

The EUT was measured with an analyser through sufficient attenuation. A test set was used to control the EUT. An average detector, average trace was used with sufficient sweeps to allow the trace to stabilise.

Operational Mode: TX continuous modulated

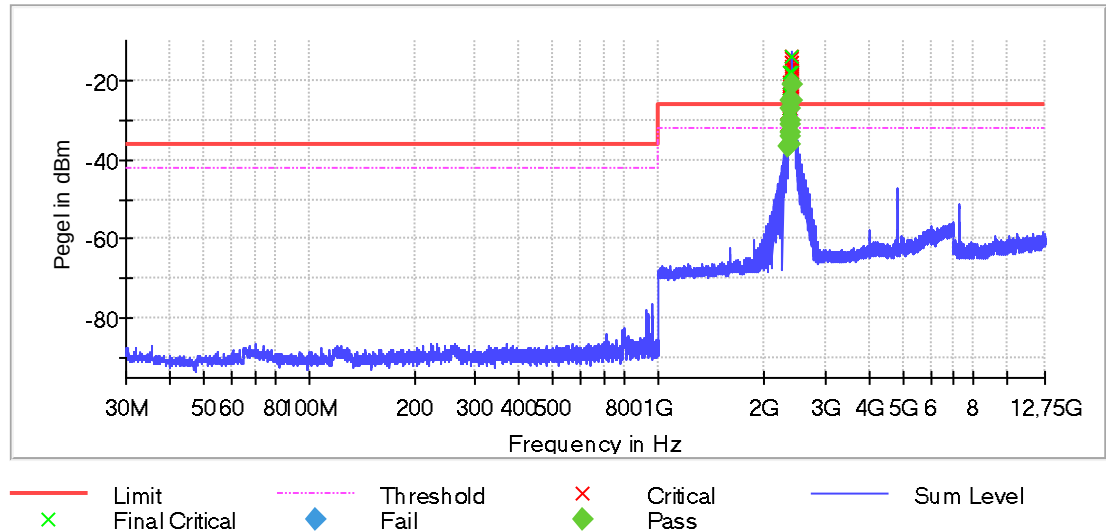
9.3.4 Environmental Conditions

Ambient Temperature	22.0	°C
Relative Humidity	39.0	%
Barometric Pressure	977	hPa

9.3.5 Test Results

2402 MHz

Spurious

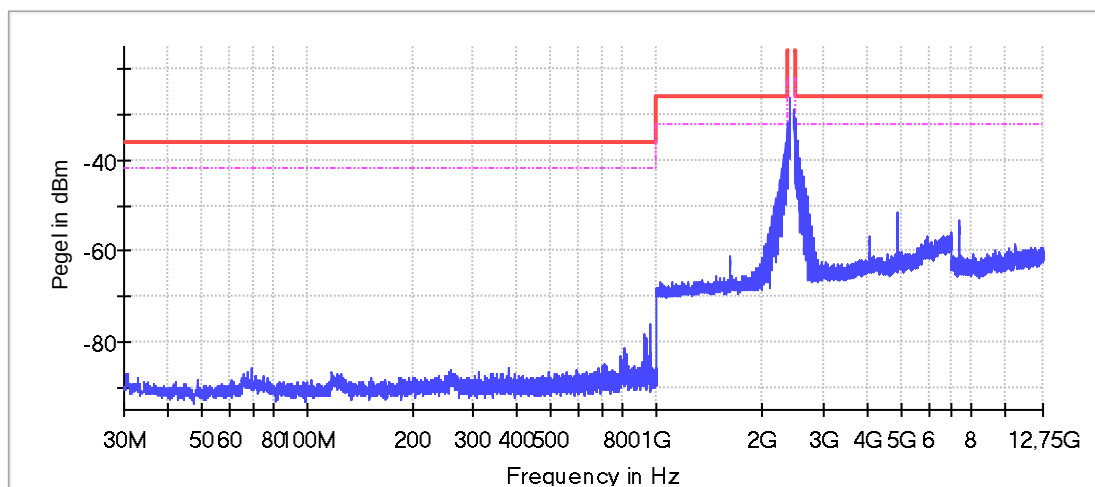


Final measurements

Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
2357.765084	-31.0	-36.8	-26.0	10.8	PASS
2362.763299	-30.0	-35.9	-26.0	9.9	PASS
2367.261692	-28.7	-34.3	-26.0	8.3	PASS
2372.759729	-27.0	-33.2	-26.0	7.2	PASS
2377.258122	-25.3	-31.3	-26.0	5.3	PASS
2382.756159	-23.7	-30.3	-26.0	4.3	PASS
2386.254909	-22.0	-27.1	-26.0	1.1	PASS
2390.753302	-18.1	-25.0	-16.0	9.0	PASS
2393.252410	-18.0	-25.1	-16.0	9.1	PASS
2397.750803	-13.9	-20.8	-16.0	4.8	PASS

2440 MHz

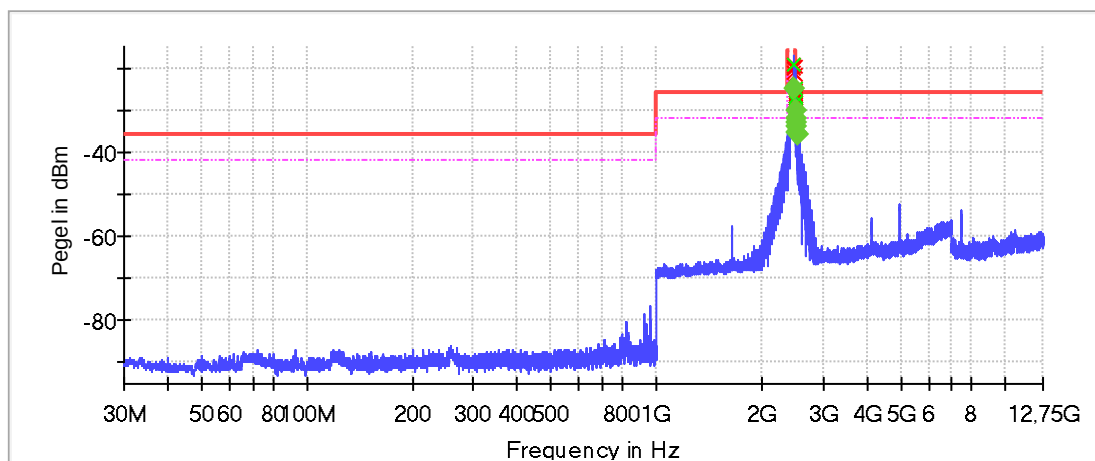
Spurious



— Limit — Threshold × Critical — Sum Level × Final Critical

2480 MHz

Spurious



— Limit — Threshold × Critical — Sum Level × Final Critical
× Final Critical ◆ Fail ◆ Pass

Final measurements

Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
2486.749842	-19.4	-25.0	-16.0	9.0	PASS
2496.749355	-24.8	-30.2	-26.0	4.2	PASS
2501.749111	-26.7	-31.9	-26.0	5.9	PASS
2506.748868	-28.1	-33.1	-26.0	7.1	PASS
2512.248600	-29.5	-34.1	-26.0	8.1	PASS
2517.748332	-30.2	-35.3	-26.0	9.3	PASS
2522.748089	-31.6	-35.6	-26.0	9.6	PASS

ARIB STD-T66. Limit Clause 3.2 (6)

Frequency Range	Limit
2387 MHz to 2400 MHz and 2483.5 MHz to 2496.5 MHz	25 µW or -16 dBm
9 kHz to <2387 MHz and >2496.5 MHz to 25 GHz	2.5 µW or -26 dBm

Date of test:	2021-04-28
Operator:	Michael Ingerl
Test site:	Non shielded room

Test Result	
☒	Passed
☐	Not passed

9.3.6 Test Equipment List

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Signal and Spectrum Analysator	Rohde & Schwarz	FSV40 for TS8997	20219	24	2022-01-31
Switching device	Rohde & Schwarz	OSP120 for TS8997	20248	24	2022-02-28
Testsystem 2,4 & 5 GHz Band	Rohde & Schwarz	TS8997	20251	24	2022-01-31
Switching device	Rohde & Schwarz	OSP120 for TS8997	38807	36	2023-11-30
EMC measurement software	Rohde & Schwarz	EMC32 V10.50.00	44381	N/A	N/A

9.4 Allowable Value for Occupied Bandwidth

9.4.1 Specification Reference

ARIB STD-T66. Clause 3.2 (7)

9.4.2 Equipment Under Test

Radio Remote Control WRC NRF, S/N: 11441

9.4.3 Test Method

The EUT was measured radiated using a spectrum analyser with suitable attenuation. The resolution bandwidth was set to approximately 1 % of the occupied bandwidth and sufficient time was allowed for the trace to build. The occupied bandwidth function on the analyser was used to generate the result.

Operational Mode: TX continuous modulated

9.4.4 Environmental Conditions

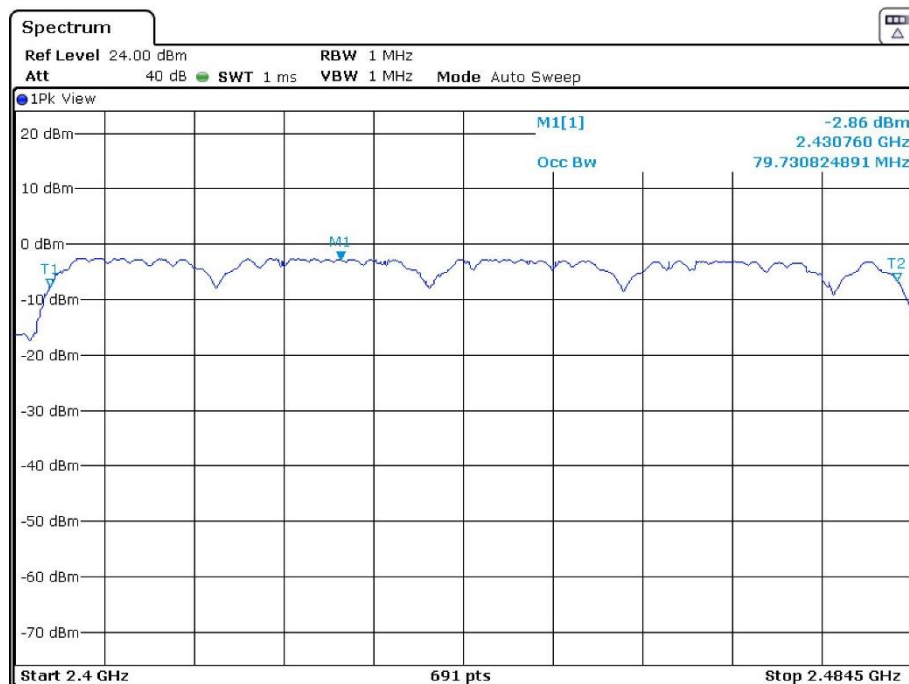
Ambient Temperature	23.0	°C
Relative Humidity	31.0	%
Barometric Pressure	971	hPa

9.4.5 Test Results

Frequency (MHz)	99% Occupied Bandwidth (MHz)
2402	1.068
2440	1.043
2480	1.043

99% Occupied Bandwidth (MHz) – Hopping on
79.73 MHz

Hopping on



Date: 29.APR.2021 13:03:56

ARIB STD T-66. Limit Clause 3.2 (7)

Permissible value of occupied frequency bandwidth for transmission devices using a FH system. a DS-FH hybrid system. or a FH-OFDM hybrid system is at most 83.5MHz; for transmission devices using an OFDM system is at most 38MHz; and for transmission devices using any other system the necessary frequency bandwidth is at most 26MHz.

Date of test:	2021-04-29
Operator:	Michael Ingerl
Test site:	Non shielded room

Test Result	
☒	Passed
☐	Not passed

9.4.6 Test Equipment List

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Signal and Spectrum Analysator	Rohde & Schwarz	FSV40 for TS8997	20219	24	2022-01-31
Switching device	Rohde & Schwarz	OSP120 for TS8997	20248	24	2022-02-28
Testsystem 2,4 & 5 GHz Band	Rohde & Schwarz	TS8997	20251	24	2022-01-31
Switching device	Rohde & Schwarz	OSP120 for TS8997	38807	36	2023-11-30
EMC measurement software	Rohde & Schwarz	EMC32 V10.50.00	44381	N/A	N/A

9.5 Spread Bandwidth

9.5.1 Specification Reference

ARIB STD-T66. Clause 3.2 (8)

9.5.2 Equipment Under Test

Radio Remote Control WRC NRF, S/N: 11441

9.5.3 Test Method

The EUT was connected to an analyser through suitable attenuation. The occupied bandwidth function of the analyser was used to complete the measurements.

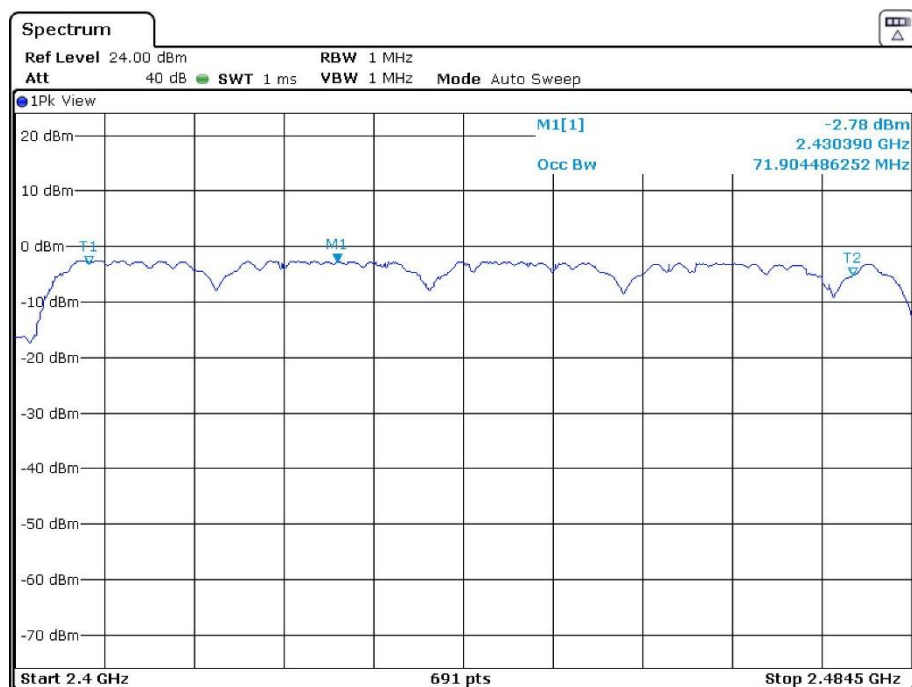
Operational Mode: TX continuous modulated

9.5.4 Environmental Conditions

Ambient Temperature	23.0	°C
Relative Humidity	31.0	%
Barometric Pressure	971	hPa

9.5.5 Test Results

90% Occupied Bandwidth (MHz)
71.90



Date: 29.APR.2021 13:05:03

ARIB STD T-66. Limit Clause 3.2 (7)

For spread spectrum systems. the spread bandwidth must be at least 500kHz.

Date of test:	2021-04-29
Operator:	Michael Ingerl
Test site:	Non shielded room

Test Result	
☒	Passed
☐	Not passed

9.5.6 Test Equipment List

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Signal and Spectrum Analysator	Rohde & Schwarz	FSV40 for TS8997	20219	24	2022-01-31
Switching device	Rohde & Schwarz	OSP120 for TS8997	20248	24	2022-02-28
Testsystem 2,4 & 5 GHz Band	Rohde & Schwarz	TS8997	20251	24	2022-01-31
Switching device	Rohde & Schwarz	OSP120 for TS8997	38807	36	2023-11-30
EMC measurement software	Rohde & Schwarz	EMC32 V10.50.00	44381	N/A	N/A

9.6 Process Gain

9.6.1 Specification Reference

ARIB STD-T66. Clause 3.2 (9)

9.6.2 Equipment Under Test

Radio Remote Control WRC NRF, S/N: 11441

9.6.3 Test Method

The EUT has been declared to support a maximum transmission rate of 4 Mbps. The EUT supports a maximum number of 40 channels.

Therefore the spread factor is a function of the spread bandwidth divided by the transmission rate; the quotient is multiplied by the number of hopping channels.

9.6.4 Test Results

This test was performed with the modulation type that resulted in the highest process gain result.

Spread Bandwidth (MHz)	Transmission Rate (Mbps)	Calculated Process Gain	Result
71.90	4	17.98	Pass

ARIB STD T-66. Limit Clause 3.2 (9)

For spread spectrum systems. the process gain must be at least 5.

Date of test:	2021-04-29
Operator:	Michael Ingerl
Test site:	Non shielded room

Test Result	
☒	Passed
☐	Not passed

9.7 Limit on Secondary Radiation

9.7.1 Specification Reference

ARIB STD-T66. Clause 3.3 (1)

9.7.2 Equipment Under Test

Radio Remote Control WRC NRF, S/N: 11441

9.7.3 Test Method

The EUT was measured with an analyser through sufficient attenuation. A test set was used to control the EUT. An average detector, average trace was used with sufficient sweeps to allow the trace to stabilise.

Operational Mode: RX continuous

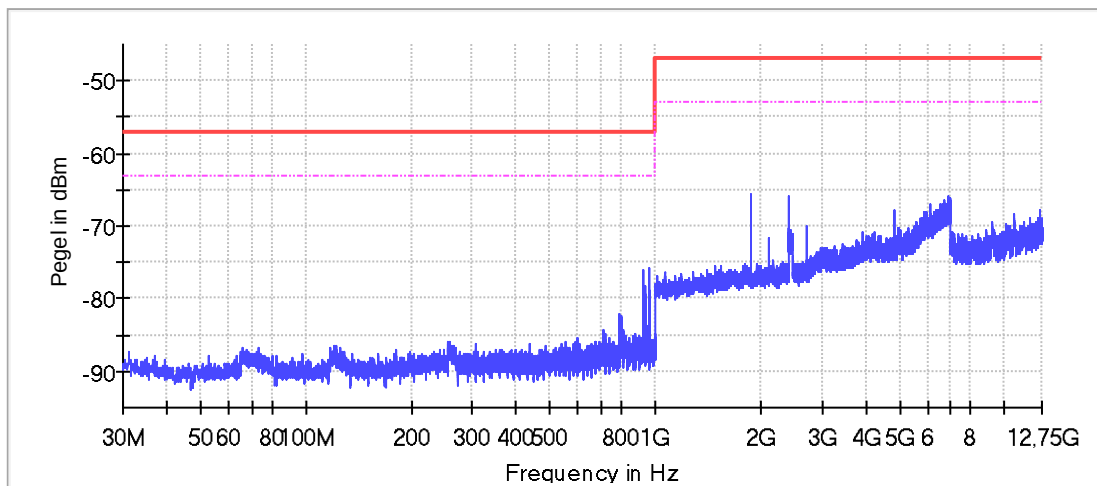
9.7.4 Environmental Conditions

Ambient Temperature	22.0	°C
Relative Humidity	39.0	%
Barometric Pressure	977	hPa

9.7.5 Test Results

2402 MHz

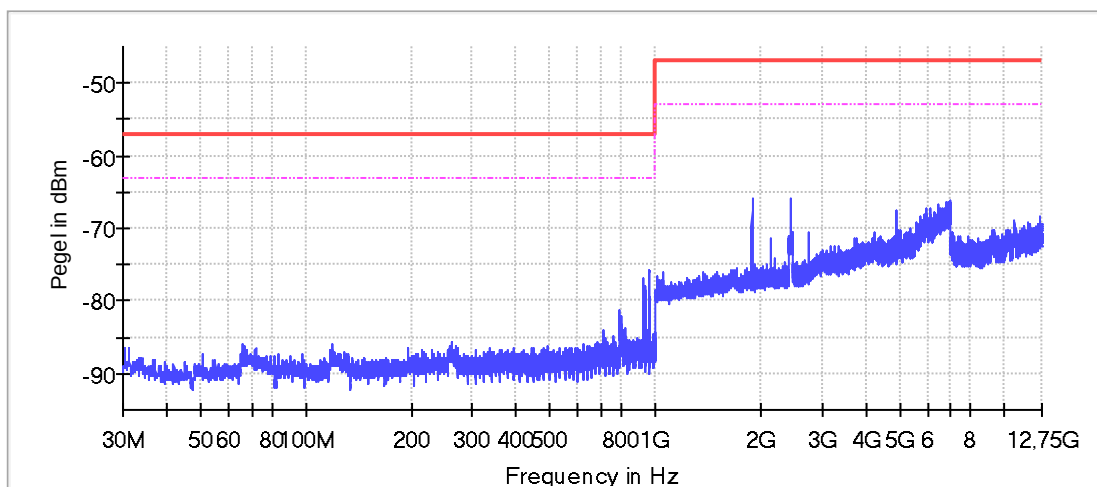
Spurious



— Limit - - - Threshold × Critical — Sum Level × Final Critical

2440 MHz

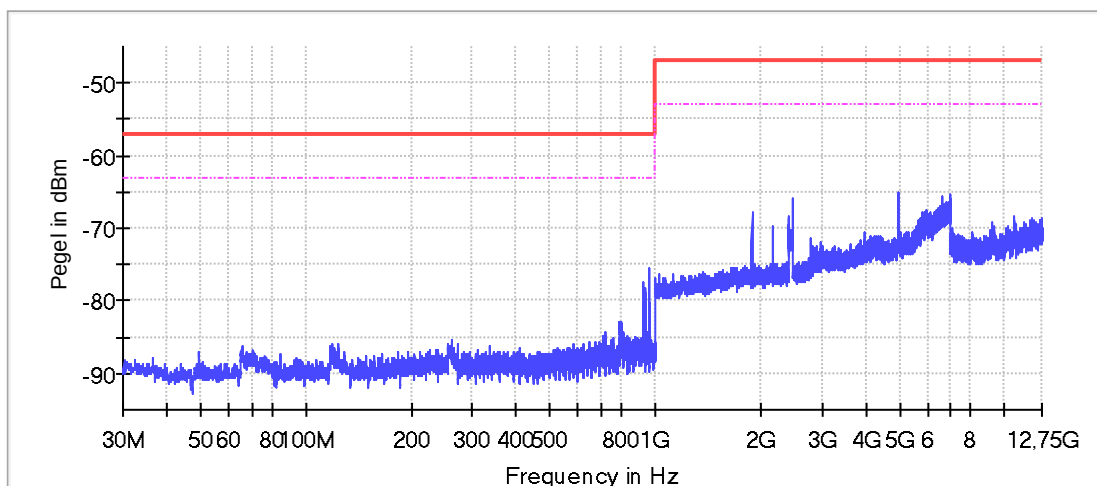
Spurious



— Limit - - - Threshold × Critical — Sum Level × Final Critical

2480 MHz

Spurious



— Limit - - - Threshold × Critical — Sum Level × Final Critical

ARIB STD-T66. Limit Clause 3.3 (1)

The limit at which secondary radiation will not hinder the function of other radio equipment is. if a fictional antenna circuit with the same electrical constant as the receiving antenna were to be used in calculations. at most 4nW if using a frequency below 1GHz and at most 20nW if using a frequency above or equal to 1 GHz.

Date of test:	2021-04-28
Operator:	Michael Ingerl
Test site:	Non shielded room

Test Result	
☒	Passed
☐	Not passed

9.7.6 Test Equipment List

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Signal and Spectrum Analysator	Rohde & Schwarz	FSV40 for TS8997	20219	24	2022-01-31
Switching device	Rohde & Schwarz	OSP120 for TS8997	20248	24	2022-02-28
Testsystem 2,4 & 5 GHz Band	Rohde & Schwarz	TS8997	20251	24	2022-01-31
Switching device	Rohde & Schwarz	OSP120 for TS8997	38807	36	2023-11-30
EMC measurement software	Rohde & Schwarz	EMC32 V10.50.00	44381	N/A	N/A

9.8 Antenna Gain

9.8.1 Specification Reference

ARIB STD-T66. Clause 3.6 (2)

9.8.2 Test Method

The antenna gain of the used antenna was declared by the manufacturer.

9.8.3 Test Results

According to manufacturer's declaration the used antennne has a gain of **4.4 dBi** and the declared RF power of the device has 10 dBm (10 mW).

ARIB STD-T66. Limit Clause 3.6 (2)

The absolute gain of transmitting antennas must be at most 12.14 dB.

Date of test:	2021-04-29
Operator:	Michael Ingerl
Test site:	Non shielded room

Test Result	
☒	Passed
☐	Not passed

10 Revision History

Revision History			
<i>Edition</i>	<i>Date</i>	<i>Issued by</i>	<i>Modifications</i>
1	2021-05-03	Michael Ingerl	First Edition