Certificate # 2951.01

TEST REPORT

Applicant	Zhiwei Robotics Corp.
Address	Room 603, 2 Boyun Road, Pudong, Shanghai P.R. China

Manufacturer or Supplier	Zhiwei Robotics Corp.
Address	Room 603, 2 Boyun Road, Pudong, Shanghai P.R. China
Product	UNIHIKER
Brand Name	N/A
Model	DFR0706
Additional Model & Model Difference	N/A
Date of tests	Dec. 02, 2022 ~ Feb. 06, 2023

The submitted sample of the above equipment has been tested according to the requirements of the following standard:

☒ **EN 300 328 V2.2.2 (2019-07)**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Andy Zhu Supervisor / EMC Department	Approved by Glyn He Assistant Manager / EMC Department
Andy	Date: Mar. 09, 2023

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RE2211WDG0121-1	Original release	Mar. 09, 2023

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

EN 300 328 V2.2.2		
Clause	**Test Parameter**	**Results**
	TRANSMITTER PARAMETERS	
4.3.1.2	RF Output Power	Pass
4.3.2.3	Power Spectral Density (Modulations other than FHSS equipment)	Pass
4.3.1.3	Duty cycle, Tx-sequence, Tx-gap (Non-adaptive equipment)	Not Applicable
4.3.1.4	Accumulated Transmit Time, Frequency Occupation and Hopping Sequence (FHSS equipment)	Pass
4.3.1.5	Hopping Frequency Separation (FHSS equipment)	Pass
4.3.1.6	Medium Utilisation (Non-Adaptive Equipment)	Not Applicable
4.3.1.7	Adaptivity (Adaptive Equipment)	Not Applicable (Note)
4.3.1.8	Occupied Channel Bandwidth	Pass
4.3.1.9	Transmitter Unwanted Emission in the OOB Domain	Pass
4.3.1.10	Transmitter Unwanted Emissions in the Spurious Domain	Pass
4.3.1.13	Geo-location capability	Not Applicable
	Receiver Parameters	
4.3.1.11	Receiver Spurious Emissions	Pass
4.3.1.12	Receiver Blocking	Pass

Note: These requirements do not apply for equipment with a maximum declared RF Output power of less than 10 dBm EIRP or for equipment when operating in a mode where the RF Output power is less than 10 dBm EIRP.

1.1 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
Spectrum Analyzer	Rohde&Schwarz	FSV3044	101326	July 20, 23
Bilog Antenna	SCHWARZBECK	VULB 9168	01281	Jun. 19, 23
Pre-Amplifier	Agilent	8447D	2944A10488	Aug. 03, 23
3m Semi-anechoic Chamber	ETS-Lindgren	9m*6m*6m	D3040003DG-1	July 30, 24
Coaxial RF Cable	Joinfront	JFAA6-NMNM-8000	2100033742	July. 11, 23
Coaxial RF Cable	Joinfront	JFAR-NMBNCM-2000	2100033742	July. 11, 23
Coaxial RF Cable	Joinfront	JFAR-BNCMSMM-500	2100033742	July. 11, 23
Test software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A
Horn Antenna	ETS-Lindgren	3117	00240041	Jun. 19, 23
Horn Antenna	SCHWARZBECK	BBHA 9170	01024	Oct. 16, 23
Pre-Amplifier (1GHz-18GHz)	SCHWARZBECK	BBV 9718C	00142	Jun. 14, 23
Pre-Amplifier (18GHz-40GHz)	Rohde&Schwarz	SCU40	100437	Oct. 27, 23
Coaxial RF Cable	Joinfront	JFAA6-NMSMM-2000	2100033742	July. 11, 23
Coaxial RF Cable	Joinfront	JFAA6-NMSMM-800	2100033742	July. 11, 23
Spectrum Analyzer	Rohde&Schwarz	FSV40	101094	Jan. 16, 23
Progammble Temperature&Humidity Chamber	Hongjin	HYC-TH-225DH	DG-180746	Feb. 16, 23
Attenuator	MINI	BW-S10W2+	S130129FGE2	N/A
DC Source	Agilent	E3640A	MY40004013	Feb. 23, 23
Test software	ADT	ADT_RF Test Software V6.6.5.3	N/A	N/A
Test software	ADT	ADT_RF Test Software V6.6.5.4	N/A	N/A

NOTES:

1. The test was performed in 966 Chamber and RF Test Shielding Room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.
4. Test site: No. 122, Houjie Avenue West Houjie Town, Dongguan City Guangdong Province, 523960, People's Republic of China.

For Receiver Blocking test and Adaptivity test:

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
Wireless Connectivity Tester	Rohde&Schwarz	CMW270	101601	Nov. 01, 23
MXA VEXTOR SIGNAL	Agilent	N5182A	MY50140530	Jan. 11, 24
Signal Generator	HP	8665B	3744A1293	Feb. 16, 23
Signal Generator	Agilent	E4421B	US40051152	Oct. 30, 23
MXA signal analyzer	Agilent	N9020A	MY49100060	Apr. 19, 23
Frequency Analyzer	Keysight	N9010B	MY60240432	Nov. 01, 23
Power Sensor(8*8)	Tonscend	JS0806-2	188060112	Feb. 23, 23
DC Source	Agilent	E3640A	MY40004013	Feb. 23, 23
Shield Box	TOJOIN	MS4345-C	SZA18A 3038	N/A
Attenuator	TOJOIN	CHB-8-90-1-B 50SMA	0803002	N/A
COM Power Splitter	TOJOIN	PS-TX-2B	020801	N/A
COM Power Splitter	TOJOIN	PS-TX-2B	020802	N/A
Test software	TonScend	JS1120-3-1	JS-001	N/A

NOTES:

1. The test was performed in RF Test Shielding Room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
3. Test site: No. 122, Houjie Avenue West Houjie Town, Dongguan City Guangdong Province, 523960, People's Republic of China.

1.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Parameter	Uncertainty
Occupied Channel Bandwidth	±1.132 %
RF output power, conducted	±0.56dB
Power Spectral Density, conducted	±1.017dB
Unwanted Emissions, conducted	±1.017dB
All emissions, radiated	±4.84dB
Temperature	±0.23°C
Supply voltages	±0.1 %
Time	±4 %

1.3 MAXIMUM MEASUREMENT UNCERTAINTY

For the test methods, according to ETSI EN 300 328 standard, the measurement uncertainty figures shall be calculated in accordance with ETR 100 028-1 [4] and shall correspond to an expansion factor (coverage factor) k = 1,96 or k = 2 (which provide confidence levels of respectively 95 % and 95,45 % in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).

Maximum measurement uncertainty

Parameter	Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±1,5 dB
Power Spectral Density, conducted	±3 dB
Unwanted Emissions, conducted	±3 dB
All emissions, radiated	±6 dB
Temperature	±3 °C
Supply voltages	±3 %
Time	±5 %

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	UNIHIKER
TEST MODEL	DFR0706
ADDITIONAL MODEL	N/A
NOMINAL VOLTAGE	DC 5V From USB host unit
OPERATING TEMPERATURE RNAGE	-20 ~ +60℃
MODULATION TECHNOLOGY	FHSS, DTS
MODULATION TYPE	GFSK, π/4 DQPSK, 8DPSK For FHSS BT-LE (1Mbps) for DTS
OPERATING FREQUENCY	2402MHz ~ 2480MHz
ADAPTIVE/NON-ADAPTIVE	☐ non-adaptive Equipment ☒ adaptive Equipment without the possibility to switch to a non-adaptive mode ☐ adaptive Equipment which can also operate in a non-adaptive mode
EIRP (MAX.)	3.52dBm
ANTENNA TYPE	PCB Antenna, -2.16dBi Gain
DATA CABLE SUPPLIED	USB Line: Unshielded, detachable, 1.0m

NOTES:

1. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.
2. For the test results, the EUT had been tested with all conditions, but only the worst case was shown in test report.
3. Please refer to the EUT photo document (Reference No.: 2211WDG0121) for detailed product photo.

2.2 DESCRIPTION OF TEST MODES

79 channels are provided to BT (GFSK, π/4 DQPSK, 8 DPSK)

CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)
0	**2402**	20	2422	40	2442	60	2462
1	2403	21	2423	41	2443	61	2463
2	2404	22	2424	42	2444	62	2464
3	2405	23	2425	43	2445	63	2465
4	2406	24	2426	44	2446	64	2466
5	2407	25	2427	45	2447	65	2467
6	2408	26	2428	46	2448	66	2468
7	2409	27	2429	47	2449	67	2469
8	2410	28	2430	48	2450	68	2470
9	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	**78**	**2480**
19	2421	**39**	**2441**	59	2461		

40 channels are provided to BT-LE (1Mbps)

CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHZ)
0	**2402**	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	**19**	**2440**	29	2460	**39**	**2480**

2.2.1 CONFIGURATION OF SYSTEM UNDER TEST

Please see section 4 photograph of the test configuration for reference.

2.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT Configure Mode	Applicable to									Description
	ROP	PSD	ATT/FO/HS	HFS	OCB	OOB	SE< 1G	SE≥ 1G	RB	
A	√	√	√	√	√	√	√	√	√	Powered by notebook + BT link

Where **ROP:** RF Output Power **PSD:** Power Spectral Density

ATT/MFO/HS: Accumulated Transmit Time / Frequency Occupation/ Hopping Sequence **DC/TS/TG:** Duty Cycle/ Tx-Sequence / Tx-gap

HFS: Hopping Frequency Separation **OCB:** Occupied Channel Bandwidth

OOB: Transmitter r unwanted emissioin in the out-of-band domain **SE<1G:** Spurious Emissions below 1GHz

SE≥1G: Spurious Emissions above 1GHz **RB:** Receiver Blocking

RF OUTPUT POWER TEST:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet type, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	Hopping mode	FHSS	GFSK	DH5
A	0 to 78	Hopping mode	FHSS	8DPSK	3DH5
A	0 to 39	0,19, 39	DTS	GFSK	1 Mbps

POWER SPECTRAL DENSITY TEST:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 39	0,19, 39	DTS	GFSK	1 Mbps

ACCUMULATED TRANSMIT TIME / FREQUENCY OCCUPATION / HOPPING SEQUENCE:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet type, data rates and antenna ports (if EUT with antenna diversity architecture).

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	Hopping mode	FHSS	GFSK	DH1, DH3, DH5
A	0 to 78	Hopping mode	FHSS	8DPSK	3DH1, 3DH3, 3DH5

HOPPING FREQUENCY SEPARATION:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet type, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	0, 78	FHSS	GFSK	DH5
A	0 to 78	0, 78	FHSS	8DPSK	3DH5

OCCUPIED CHANNEL BANDWIDTH:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet type, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT configure mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	0, 78	FHSS	GFSK	DH5
A	0 to 78	0, 78	FHSS	8DPSK	3DH5
A	0 to 39	0, 39	DTS	GFSK	1 Mbps

TRANSMITTER UNWANTED EMISSION IN THE OUT-OF-BAND DOMAIN:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet type, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT configure mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	Hopping mode	FHSS	GFSK	DH5
A	0 to 78	Hopping mode	FHSS	8DPSK	3DH5
A	0 to 39	0, 39	DTS	GFSK	1 Mbps

SPURIOUS EMISSIONS TEST (BELOW 1 GHZ):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet type, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT configure mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	78	FHSS	GFSK	DH5

SPURIOUS EMISSIONS TEST (ABOVE 1 GHZ):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet type, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT configure mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	0, 78	FHSS	GFSK	DH5
A	0 to 78	0, 78	FHSS	8DPSK	3DH5
A	0 to 39	0, 39	DTS	GFSK	1 Mbps

RECEIVER BLOCKING TEST:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Packet Type
A	0 to 78	Hopping mode	FHSS	GFSK	DH5
A	0 to 39	0, 39	DTS	GFSK	1 Mbps

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
ROP	25deg. C, 60%RH	DC 5V from notebook	Ryker
PSD	25deg. C, 60%RH	DC 5V from notebook	Ryker
ATT/MFO/HS	25deg. C, 60%RH	DC 5V from notebook	Ryker
HFS	25deg. C, 60%RH	DC 5V from notebook	Ryker
OCB	25deg. C, 60%RH	DC 5V from notebook	Ryker
OOB	25deg. C, 60%RH	DC 5V from notebook	Ryker
SE<1G	25deg. C, 55%RH	DC 5V from notebook	Jelly
SE≥1G	25deg. C, 55%RH	DC 5V from notebook	Jelly
RB	26deg. C, 59%RH	DC 5V from notebook	Howard

2.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Notebook	DELL	Latitude 5420	127710614	N/A
2	Wireless router	ASUS	RT-AX86U	M9IG3800G773JZN	N/A
3	TF Card(8G)	Kingston	SDC4/8GB	J4L8F-9P6T27-8XBD6	N/A
4	USB Driver 3.0(16G)	Kingston	DTSE9G2/16GB	YVLP9-B8HTAQ-XXAYB	N/A
5	IO Extender	N/A	N/A	N/A	N/A
6	LED Module *5	N/A	N/A	N/A	N/A
7	Rotation Sensor	N/A	N/A	N/A	N/A
8	Digital Push Button	N/A	N/A	N/A	N/A
9	IR Ther mometer	N/A	N/A	N/A	N/A

NO.	DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	AC Line: Unshielded, Detachable 1.0m;DC Line: Unshielded, Detachable 2.0m.
2	AC Line: Unshielded, Detachable 0.8m;DC Line: Unshielded, Detachable 1.2m.
3-5	N/A
6-9	Input/Output Line: Unshielded,Detachable 0.2m

2.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

EN 300 328 V2.2.2 (2019-07)

All test items have been performed and recorded as per the above standards.

3 TEST PROCEDURE AND RESULTS

TRANSMITTER PARAMETERS

3.1 RF OUTPUT POWER

3.1.1 LIMITS OF RF OUTPUT POWER

CONDITION	FREQUENCY BAND	LIMIT (E.I.R.P)
Under all test conditions	2400 ~ 2483.5 MHz	AV: 20dBm

3.1.2 TEST PROCEDURES

Refer to chapter 5.4.2.2 of EN 300 328 V2.2.2.

MEASUREMENT METHOD	
☒ Conducted measurement	☐ Radiated measurement

3.1.3 DEVIATION FROM TEST STANDARD

No deviation.

3.1.4 TEST SETUP

The measurement was performed at both normal environmental conditions and at the extremes of the operating temperature. This measurement was performed during normal operation (hopping) and operating on all hopping positions. The equipment was configured to operate under its worst case situation with respect to output power. (In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator.)

3.1.5 TEST RESULTS

TEST CONDITION			EIRP POWER (dBm)	LIMIT (dBm)
GFSK				
Tnom(℃)	+25	Vnom(v)	2.08	20
Tmin(℃)	-20		2.21	20
Tmax(℃)	+60		1.97	20
8DPSK				
Tnom(℃)	+25	Vnom(v)	3.29	20
Tmin(℃)	-20		**3.52**	20
Tmax(℃)	+60		3.14	20

NOTE: EIRP = Conducted output power + ANT Gain

TEST CONDITION			EIRP POWER (dBm)			LIMIT (dBm)
			(CH0) 2402 MHz	(CH19) 2440 MHz	(CH39) 2480 MHz	
BT-LE (1Mbps)						
T_{nom}(℃)	+25	Vnom(v)	2.16	2.20	2.23	20
T_{min}(℃)	-20		2.27	**2.54**	2.53	20
T_{max}(℃)	+60		2.05	1.70	1.76	20

NOTE: EIRP = Conducted output power + ANT Gain

3.2 POWER SPECTRAL DENSITY

3.2.1 LIMIT OF POWER SPECTRAL DENSITY

CONDITION	FREQUENCY BAND	LIMIT (e.i.r.p.)
Under normal conditions	2400 ~ 2483.5 MHz	10dBm / 1MHz

3.2.2 TEST PROCEDURE

Refer to chapter 5.4.3.2 of ETSI EN 300 328 V2.2.2.

Measurement Method	
☒ Conducted measurement	☐ Radiated measurement
☒ Option 1: For equipment with continuous and non-continuous transmissions	
☐ Option 2: For equipment with continuous transmission capability or for equipment operating (or with the capability to operate) with a constant duty cycle (e.g. Frame Basedequipment)	

3.2.3 DEVIATION FROM TEST STANDARD

No deviation.

3.2.4 TEST SETUP

The test setup has been constructed as the normal test condition. In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator. Controlling software has been activated to set the EUT on specific status.

3.2.5 TEST RESULTS

BT-LE (1Mbps)

CHANNEL	CHANNEL FREQUENCY (MHz)	POWER DENSITY (dBm/1MHz) (E.I.R.P)	LIMIT (dBm/1MHz) (E.I.R.P)	PASS/FAIL
0	2402	2.09	10	PASS
19	2440	2.12	10	PASS
39	2480	2.17	10	PASS

3.3 ACCUMULATED TRANSMIT TIME, FREQUENCY OCCUPATION AND HOPPING SEQUENCE

3.3.1 LIMITS OF ACCUMULATED TRANSMIT TIME, FREQUENCY OCCUPATION AND HOPPING SEQUENCE

Accumulated Transmit Time	
Condition	**Limit**
☐Non-adaptive frequency hopping systems	≤ 15 ms
☒Adaptive frequency hopping systems	≤ 400 ms

Frequency Occupation	
Condition	**Limit**
☐Non-adaptive frequency hopping systems	Equal to one dwell time within a period not exceeding four times the product of the dwell time per hop and the number of hopping frequencies in use.
☒Adaptive frequency hopping systems	

hopping Sequence(s)	
Condition	**Limit**
☐Non-adaptive frequency hopping systems	≥5 hopping frequencies or 15/minimum Hopping Frequency Separation in MHz, whichever is the greater.
☒Adaptive frequency hopping systems	Operating frequency band ≥58.45MHz (Operating over a minimum of 70 % of the operating in the band 2,4 GHz to 2,4835 GHz)
	≥15 hopping frequencies or 15/minimum Hopping Frequency Separation in MHz, whichever is the greater.

3.3.2 TEST PROCEDURE

Refer to chapter 5.4.4.2 of EN 300 328 V2.2.2.

Measurement	
☒Conducted measurement	☐ Radiated measurement

3.3.3 DEVIATION FROM TEST STANDARD

No deviation

3.3.4 TEST SETUP

The measurement was performed at normal environmental conditions only. The equipment was configured to operate at its maximum Dwell Time and maximum Duty Cycle. The measurement was performed on a minimum of 2 hopping frequencies chosen arbitrary from the actual hopping sequence. (In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator.)

3.3.5 TEST RESULTS

GFSK:

Accumulated Transmit Time									
Mode	Number of Hopping Channel	Number of transmission in a period (channel number*0.4 sec)				Length of transmission time (ms)	Result (ms)	Limit (ms)	Pass / Fail
		Period (Sec)	Sweep time (Sec)	Times in a sweep	Number in a period				
DH1	79	31.6	4	41	323.90	0.511	165.5129	400	Pass
DH3	79	31.6	4	20	158.00	1.678	265.124	400	Pass
DH5	79	31.6	4	13	102.70	2.940	301.938	400	Pass

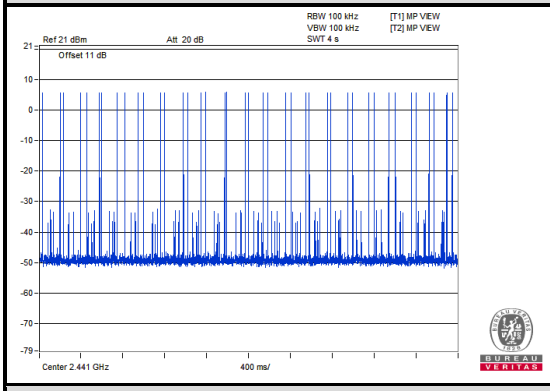
8DPSK:

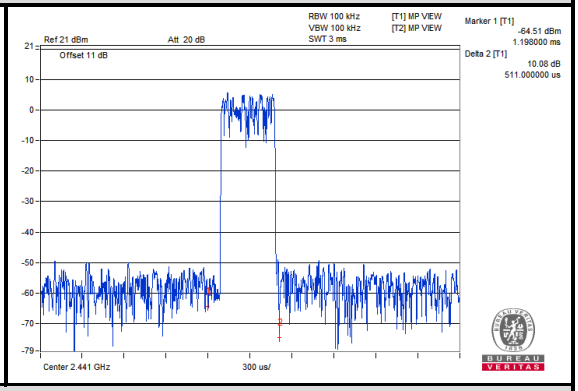
Accumulated Transmit Time									
Mode	Number of Hopping Channel	Number of transmission in a period (channel number*0.4 sec)				Length of transmission time (ms)	Result (ms)	Limit (ms)	Pass / Fail
		Period (Sec)	Sweep time (Sec)	Times in a sweep	Number in a period				
3DH1	79	31.6	4	40	316.00	0.425	134.300	400	Pass
3DH3	79	31.6	4	18	142.20	1.700	241.740	400	Pass
3DH5	79	31.6	4	14	110.60	2.960	327.376	400	Pass

NOTE: Test plots of the transmitting time slot are shown as below.

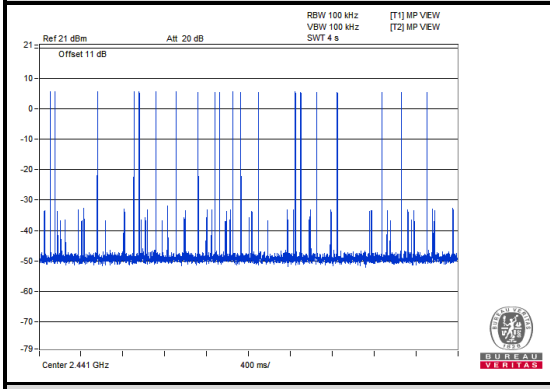
GFSK:

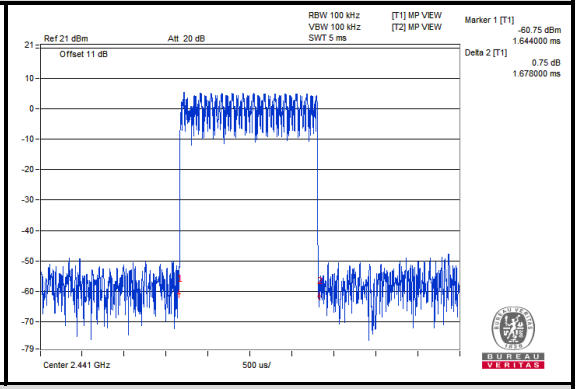
DH1



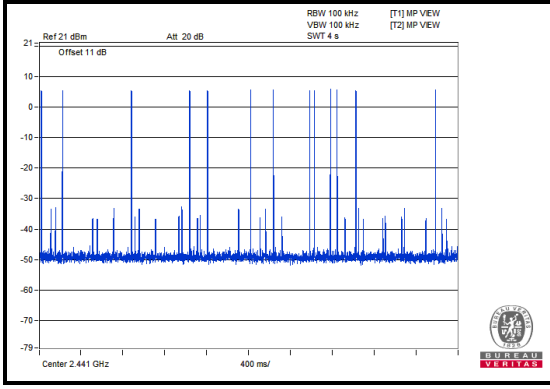


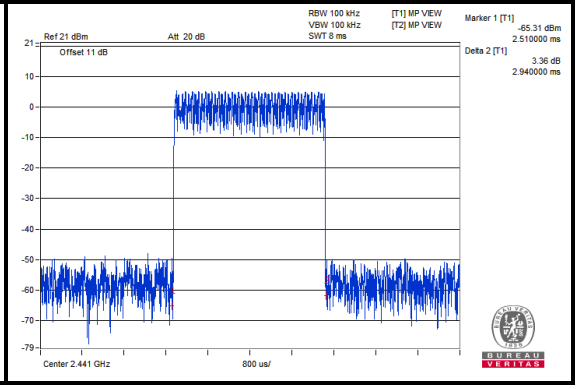
DH3





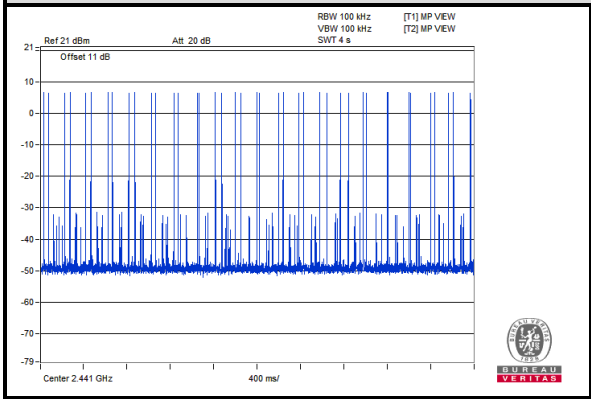
DH5

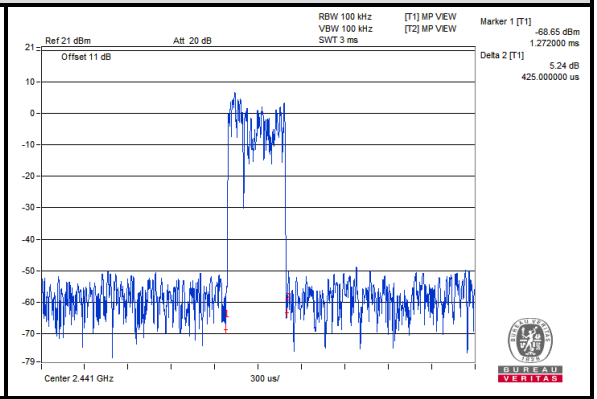




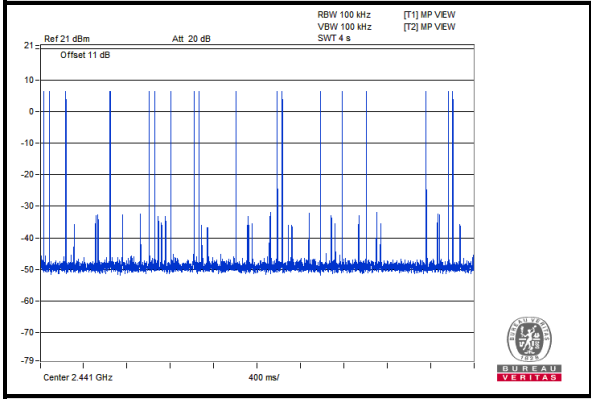
8DPSK

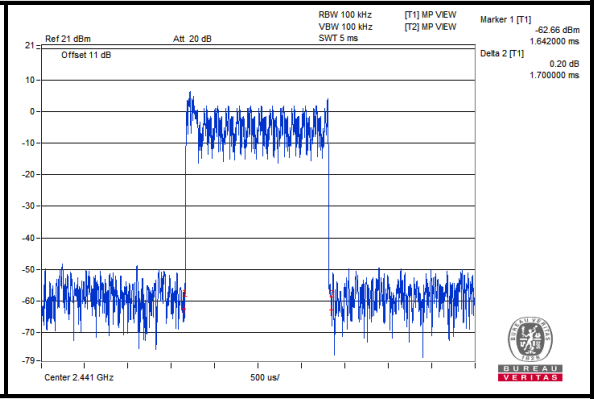
3DH1



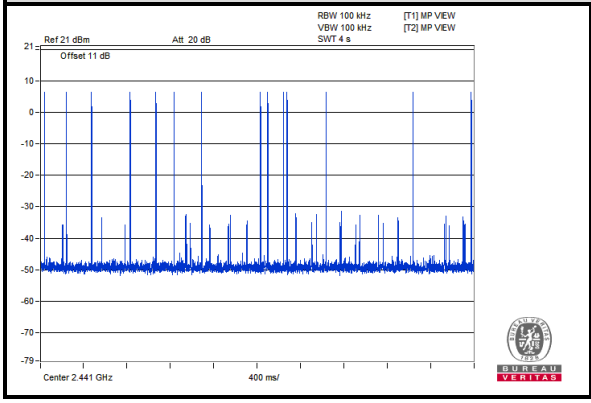


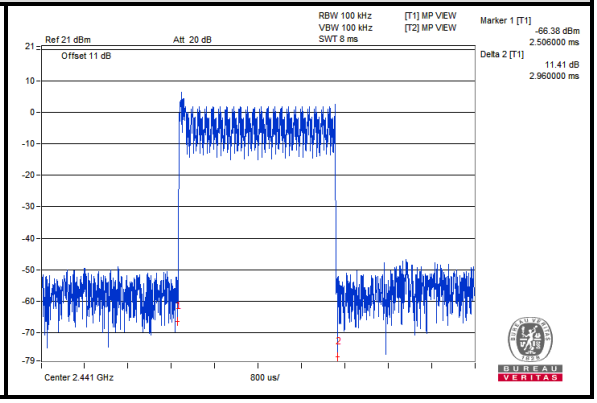
3DH3





3DH5





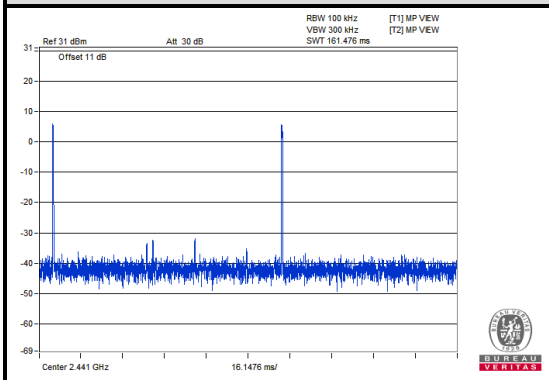
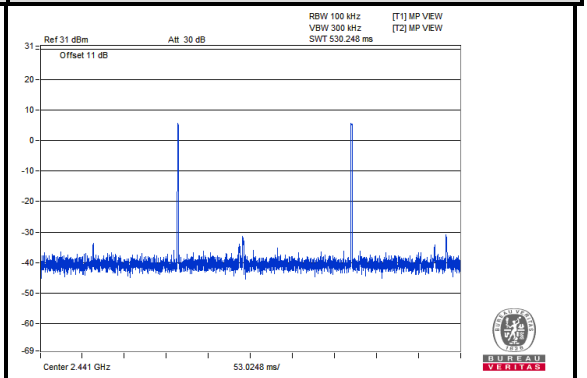
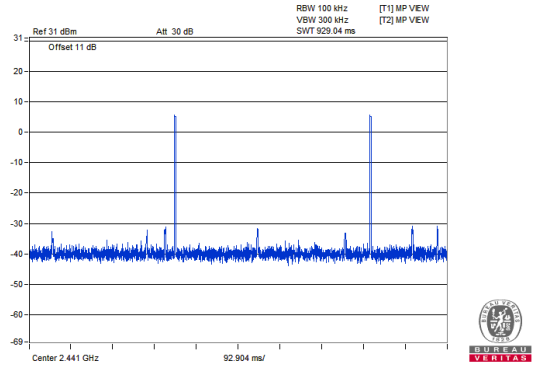
GFSK

MINIMUM FREQUENCY OCCUPATION TIME						
Mode	Number of Hopping Channel	Number of transmission in a period of 4*Dwell time*number of hopping channel	Length of transmission time (ms)	Result (ms)	Minimum Limit (ms)	PASS / FAIL
DH1	79	2	0.511	1.022	0.511	PASS
DH3	79	2	1.678	3.356	1.678	PASS
DH5	79	2	2.940	5.880	2.94	PASS

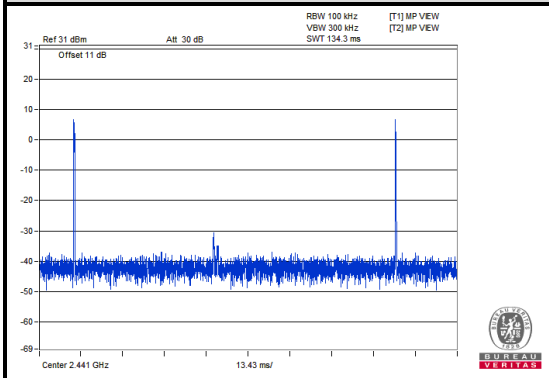
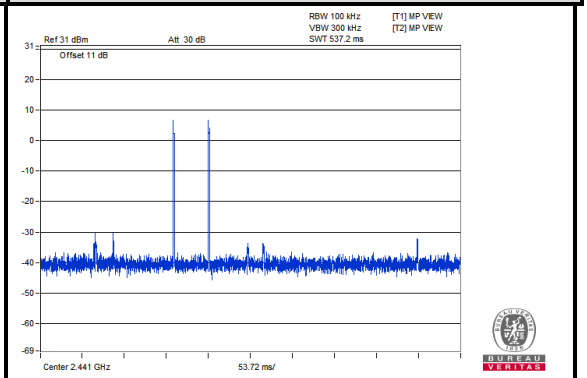
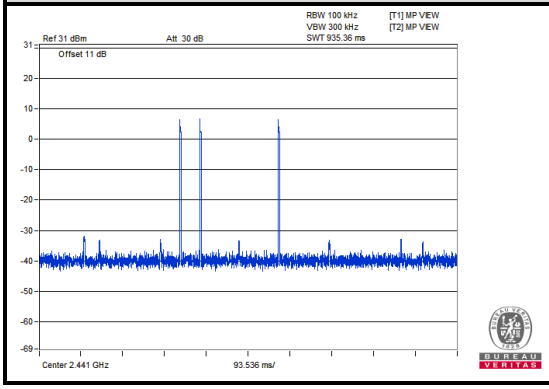
8DPSK

MINIMUM FREQUENCY OCCUPATION TIME						
Mode	Number of Hopping Channel	Number of transmission in a period of 4*Dwell time*number of hopping channel	Length of transmission time (ms)	Result (ms)	Minimum Limit (ms)	PASS / FAIL
3DH1	79	2	0.425	0.850	0.425	PASS
3DH3	79	2	1.700	3.400	1.700	PASS
3DH5	79	3	2.960	8.880	2.960	PASS

GFSK

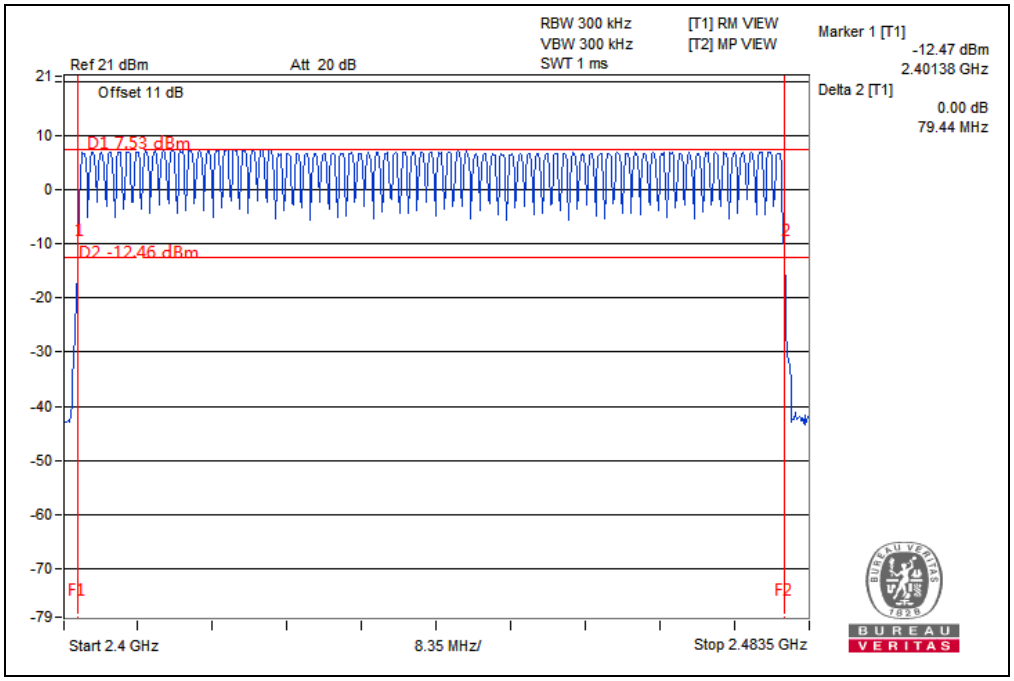
DH1	DH3
	
DH5	
	

8DPSK

3DH1	3DH3
	
3DH5	
	

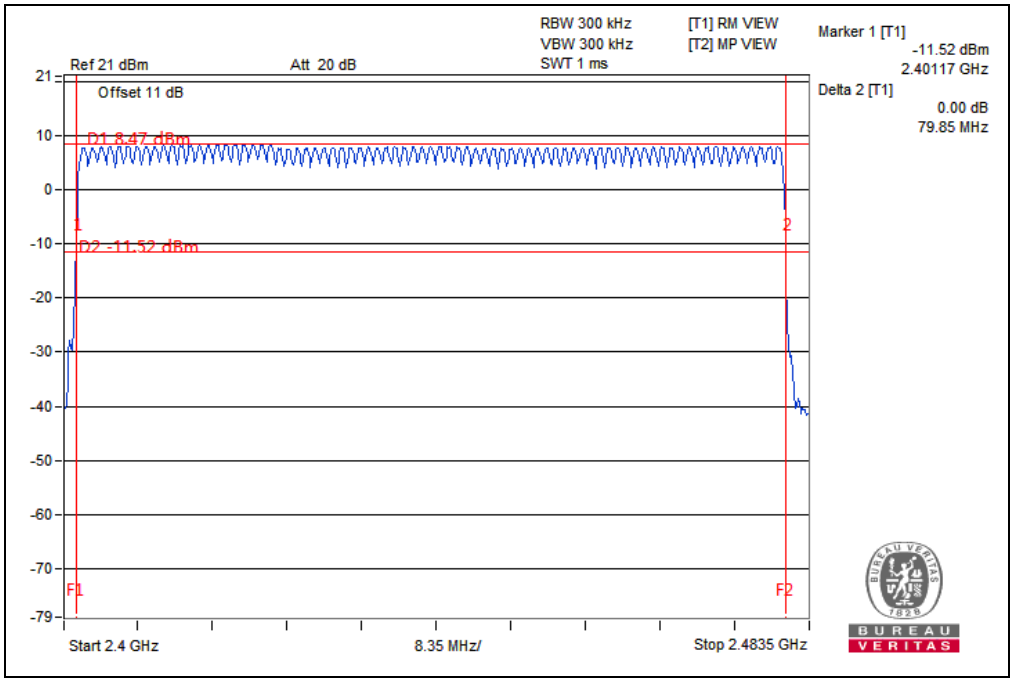
GFSK:

hopping sequence(s)		
Amount of Hopping frequency	**Limit**	**Pass/Fail**
79	≥15 hopping frequencies	Pass
Operating hopping Bandwidth (MHz)	**Limit**	**Pass/Fail**
79.44	≥58.45MHz	Pass



8DPSK:

hopping sequence(s)		
Amount of Hopping frequency	**Limit**	**Pass/Fail**
79	≥15 hopping frequencies	Pass
Operating hopping Bandwidth (MHz)	**Limit**	**Pass/Fail**
79.85	≥58.45MHz	Pass



3.4 HOPPING FREQUENCY SEPARATION

3.4.1 LIMITS OF HOPPING FREQUENCY SEPARATION

Condition	Limit
☐Non-adaptive frequency hopping systems	The minimum Hopping Frequency Separation shall be equal to Occupied Channel Bandwidth of a single hop, with a minimum separation of 100 kHz.
☒Adaptive frequency hopping systems	The minimum Hopping Frequency Separation shall be 100 kHz.

3.4.2 TEST PROCEDURE

Refer to chapter 5.4.5.2 of EN 300 328 V2.2.2.

Measurement	
☒Conducted measurement	☐ Radiated measurement

3.4.3 DEVIATION FROM TEST STANDARD

No deviation

3.4.4 TEST SETUP

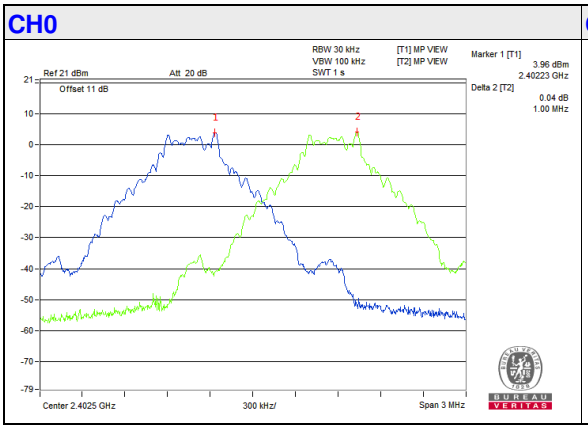
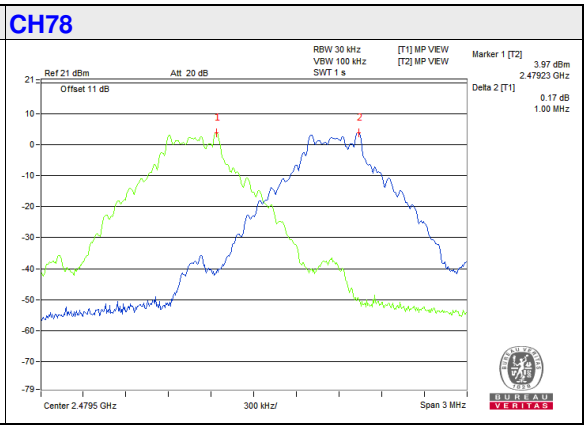
The measurement was performed at normal environmental conditions only. The measurement was performed on 2 adjacent hopping frequencies. The equipment was configured to operate under its worst case situation with respect to output power. (In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator.)

3.4.5 TEST RESULTS

GFSK:

Channel Number	Frequency (MHz)	Channel Separation (MHz)	Minimum Limit (MHz)	Pass /Fail
0	2402	1.00	0.1	Pass
78	2480	1.00	0.1	Pass

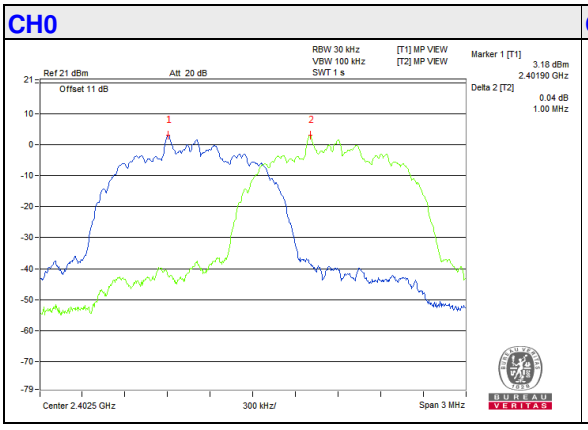
Note: The limitation is from OCB of a single hop and this value must greater and equal to 100kHz.

CH0	CH78
	

8DPSK:

Channel Number	Frequency (MHz)	Channel Separation (MHz)	Minimum Limit (MHz)	Pass /Fail
0	2402	1.00	0.1	Pass
78	2480	1.00	0.1	Pass

Note: The limitation is from OCB of a single hop and this value must greater and equal to 100kHz.

CH0	CH78
	

3.5 OCCUPIED CHANNEL BANDWIDTH

3.5.1 LIMIT OF OCCUPIED CHANNEL BANDWIDTH

Condition		Limit
All types of equipment		Shall fall completely within the band 2400 to 2483.5 MHz.
Additional requirement	For non-adaptive using wide band modulations other than FHSS system and e.i.r.p >10dBm.	Less than 20MHz
	For non-adaptive Frequency Hopping system and e.i.r.p >10dBm.	Less than 5MHz

3.5.2 TEST PROCEDURE

Refer to chapter 5.4.7.2 of EN 300 328 V2.2.2.

Measurement	
☒Conducted measurement	☐ Radiated measurement

3.5.3 DEVIATION FROM TEST STANDARD

No deviation.

3.5.4 TEST SETUP

The measurement was performed at normal environmental conditions only. This measurement was performed at the lowest and the highest channel. Using software to force the EUT to hop or transmit on a single Hopping Frequency. The equipment was configured to operate under its worst case situation with respect to output power. (In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator.) Controlling software has been activated to set the EUT on specific status.

3.5.5 TEST RESULTS

GFSK:

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	Measured Frequencies		Limit	Pass/Fail
			F_L (MHz)	F_H (MHz)		
0	2402	0.88	2401.62	2402.5	F_L > 2.4 GHz and F_H < 2.4835 GHz	PASS
78	2480	0.89	2479.62	2480.51		PASS

Note: F_L is the lowest frequency of the 99% occupied bandwidth of power envelope.
F_H is the highest frequency of the 99% occupied bandwidth of power envelope.

8DPSK:

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	Measured Frequencies		Limit	Pass/Fail
			F_L (MHz)	F_H (MHz)		
0	2402	1.2	2401.46	2402.66	F_L > 2.4 GHz and F_H < 2.4835 GHz	PASS
78	2480	1.2	2479.46	2480.66		PASS

Note: F_L is the lowest frequency of the 99% occupied bandwidth of power envelope.
F_H is the highest frequency of the 99% occupied bandwidth of power envelope.

BT-LE (1Mbps)

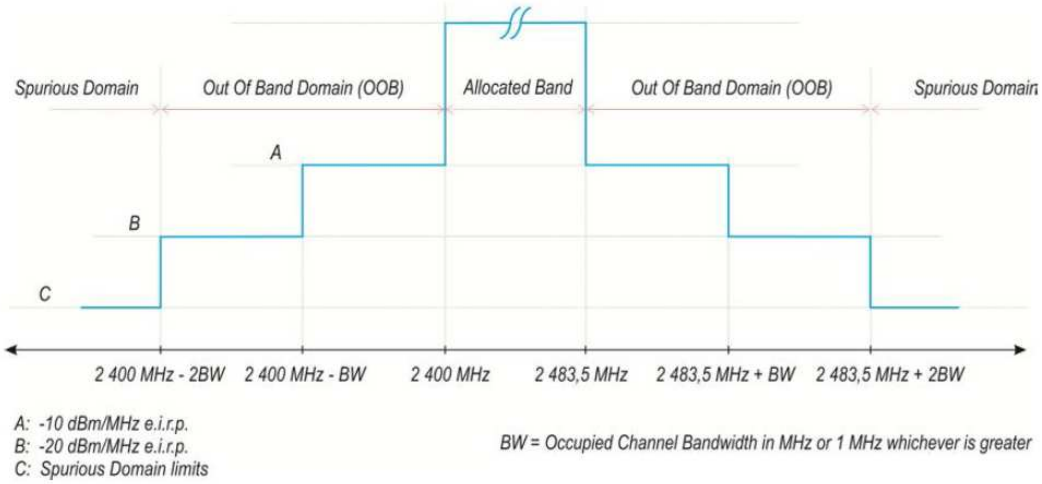
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	Measured Frequencies		Limit	Pass/Fail
			F_L (MHz)	F_H (MHz)		
0	2402	1.05	2401.55	2402.6	F_L > 2.4 GHz and F_H < 2.4835 GHz	PASS
39	2480	1.06	2479.54	2480.6		PASS

Note: F_L is the lowest frequency of the 99% occupied bandwidth of power envelope.
F_H is the highest frequency of the 99% occupied bandwidth of power envelope.

3.6 TRANSMITTER UNWANTED EMISSIONS IN THE OUT-OF-BAND DOMAIN

3.6.1 LIMITS OF TRANSMITTER UNWANTED EMISSION IN THE OUT-OF-BAND DOMAIN

Condition	Limit
Under normal conditions	The transmitter unwanted emissions in the out-of-band domain but outside the allocated band, shall not exceed the values provided by the mask in below figure.



3.6.2 TEST PROCEDURE

Refer to chapter 5.4.8.2 of EN 300 328 V2.2.2.

Measurement	
☒ Conducted measurement	☐ Radiated measurement

3.6.3 DEVIATION FROM TEST STANDARD

No deviation

3.6.4 TEST SETUP

The measurement was performed at normal environmental conditions only. The equipment was performed normal operation (hopping) during test. The equipment was configured to operate under its worst case situation with respect to output power. (In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator.) The frequency has to be recorded for the right and left end above threshold of highest and lowest channel respectively.

3.6.5 TEST RESULTS

GFSK:

Channel Frequency		2402MHz				2480MHz			
Test Condition		OOB Emission (MHz)				OOB Emission (MHz)			
		2399 ~ 2400		2398 ~ 2399		2483.5 ~ 2484.5		2484.5 ~ 2485.5	
		Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)
Tnom 25℃	Vnom(v)	2399.50	-57.02	2398.50	-57.81	2484.00	-55.74	2485.00	-56.29
Power Limit (dBm/MHz)		-10.00		-20.00		-10.00		-20.00	
Pass/Fail		Pass		Pass		Pass		Pass	

8DPSK:

Channel Frequency		2402MHz				2480MHz			
Test Condition		OOB Emission (MHz)				OOB Emission (MHz)			
		2398.8 ~ 2400		2397.6 ~ 2398.8		2483.5 ~ 2484.7		2484.7 ~ 2485.9	
		Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)
Tnom 25℃	Vnom(v)	2399.50	-57.05	2398.30	-58.37	2484.00	-56.29	2485.20	-56.82
Power Limit (dBm/MHz)		-10.00		-20.00		-10.00		-20.00	
Pass/Fail		Pass		Pass		Pass		Pass	

BT-LE (1Mbps)

Channel Frequency		2402MHz				2480MHz			
Test Condition		OOB Emission (MHz)				OOB Emission (MHz)			
		2398.95 ~ 2400		2397.9 ~ 2398.95		2483.5 ~ 2484.56		2484.56 ~ 2485.62	
		Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)	Freq. (MHz)	Power (dBm/ MHz)
Tnom 25℃	Vnom(v)	2399.50	-47.64	2398.45	-57.31	2484.00	-56.90	2485.05	-57.67
Power Limit (dBm/MHz)		-10.00		-20.00		-10.00		-20.00	
Pass/Fail		Pass		Pass		Pass		Pass	

3.7 TRANSMITTER SPURIOUS EMISSIONS

3.7.1 LIMITS OF TRANSMITTER SPURIOUS EMISSIONS

Frequency Range	Maximum Power Limit (e.r.p. (≤ 1 GHz) e.i.r.p. (> 1 GHz))	Bandwidth
30 MHz to 47 MHz	-36dBm	100kHz
47 MHz to 74 MHz	-54dBm	100kHz
74 MHz to 87,5 MHz	-36dBm	100kHz
87,5 MHz to 118 MHz	-54dBm	100kHz
118 MHz to 174 MHz	-36dBm	100kHz
174 MHz to 230 MHz	-54dBm	100kHz
230 MHz to 470 MHz	-36dBm	100kHz
470 MHz to 694 MHz	-54dBm	100kHz
694 MHz to 1 GHz	-36dBm	100kHz
1GHz ~ 12.75GHz	-30dBm	1MHz

Note: These limits are e.r.p. for emissions below 1 GHz and as e.i.r.p. for emissions above 1 GHz.

3.7.2 TEST PROCEDURE

Refer to chapter 5.4.9.2 of EN 300 328 V2.2.2.

Measurement Method	
☐ Conducted measurement	☒ Radiated measurement
For Conducted measurement: The level of unwanted emissions shall be measured as their power in a specified load (conducted spurious emissions) and their effective radiated power when radiated by the cabinet or structure of the equipment with the antenna connector(s) terminated by a specified load (cabinet radiation).	
Conducted measurement (For equipment with multiple transmit chains): ☐ Option 1: The results for each of the transmit chains for the corresponding 1MHz segments shall be added and compared with the limits. ☐ Option 2: The results for each of the transmit chains shall be individually compared with the limits after these limits have been reduced by 10 x log (N) (number of active transmit chains)	

3.7.3 DEVIATION FROM TEST STANDARD

No deviation.

3.7.4 TEST SETUP

1. For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration).
2. The measurements were performed when normal hopping was disabled. In this case measurements were performed when operating at the lowest and the highest hopping frequency.
3. The equipment was configured to operate under its worst case situation with respect to output power.
4. The measurement was performed at normal environmental conditions only. Controlling software has been activated to set the EUT on specific status.

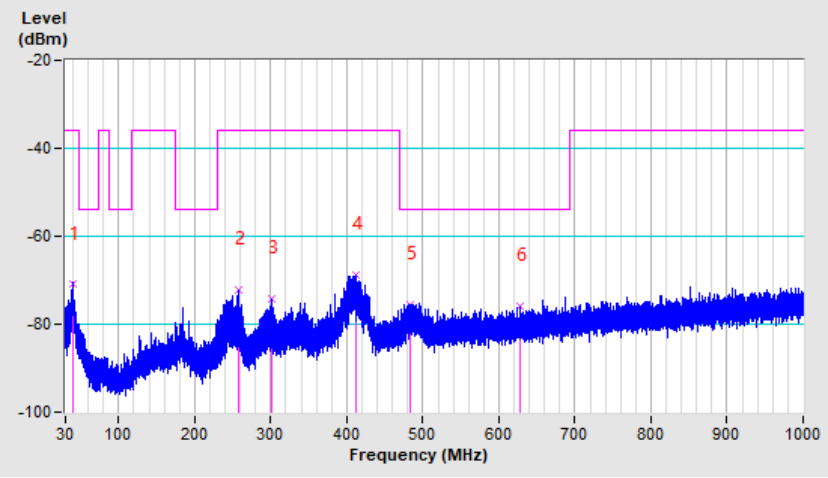
3.7.5 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

BT_GFSK

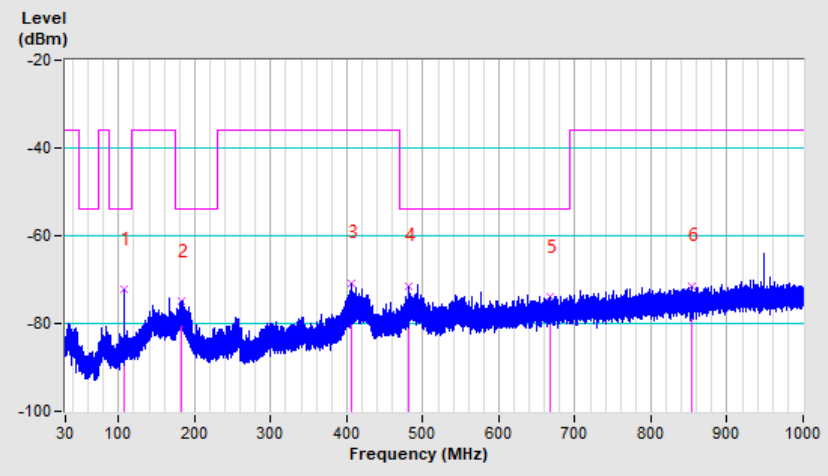
FREQUENCY RANGE	30MHz ~ 1GHz	OPERATING CHANNEL	78

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
39.28	H	-71.01	-36.00	-35.01
258.60	H	-72.19	-36.00	-36.19
300.37	H	-74.10	-36.00	-38.10
412.66	H	-68.87	-36.00	-32.87
483.31	H	-75.59	-54.00	-21.59
628.23	H	-75.84	-54.00	-21.84



FREQUENCY RANGE	30MHz ~ 1GHz	OPERATING CHANNEL	78

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
107.47	V	-72.33	-54.00	-18.33
182.94	V	-75.07	-54.00	-21.07
406.97	V	-70.69	-36.00	-34.69
481.60	V	-71.50	-54.00	-17.50
666.68	V	-74.05	-54.00	-20.05
853.92	V	-71.52	-36.00	-35.52



ABOVE 1GHz DATA

BT_GFSK

FREQUENCY RANGE	1GHz ~ 12.75GHz	OPERATING CHANNEL	0, 78

SPURIOUS EMISSION LEVEL					
Channel	Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
0	4804.00	H	-51.02	-30.00	-21.02
	4804.00	V	-50.38	-30.00	-20.38
	7206.00	H	-48.97	-30.00	-18.97
	7206.00	V	-48.99	-30.00	-18.99
78	4960.00	H	-51.28	-30.00	-21.28
	4960.00	V	-51.33	-30.00	-21.33
	7440.00	H	-49.68	-30.00	-19.68
	7440.00	V	-49.65	-30.00	-19.65

BT_8DPSK

FREQUENCY RANGE	1GHz ~ 12.75GHz	OPERATING CHANNEL	0, 78

SPURIOUS EMISSION LEVEL					
Channel	Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
0	4804.00	H	-51.38	-30.00	-21.38
	4804.00	V	-51.40	-30.00	-21.40
	7206.00	H	-49.29	-30.00	-19.29
	7206.00	V	-49.11	-30.00	-19.11
78	4960.00	H	-51.06	-30.00	-21.06
	4960.00	V	-51.47	-30.00	-21.47
	7440.00	H	-49.85	-30.00	-19.85
	7440.00	V	-50.07	-30.00	-20.07

BT-LE (1Mbps)

FREQUENCY RANGE	1GHz ~ 12.75GHz	OPERATING CHANNEL	0, 39

SPURIOUS EMISSION LEVEL					
Channel	Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
0	4804.00	H	-51.98	-30.00	-21.98
	4804.00	V	-51.08	-30.00	-21.08
	7206.00	H	-52.57	-30.00	-22.57
	7206.00	V	-52.79	-30.00	-22.79
39	4960.00	H	-50.58	-30.00	-20.58
	4960.00	V	-51.00	-30.00	-21.00
	7440.00	H	-52.41	-30.00	-22.41
	7440.00	V	-50.00	-30.00	-20.00

RECEIVER PARAMETERS

3.8 RECEIVER SPURIOUS RADIATION

3.8.1 LIMIT OF RECEIVER SPURIOUS RADIATION

Frequency Range	Maximum Power Limit (e.r.p. (≤ 1 GHz) e.i.r.p. (> 1 GHz))
30MHz ~ 1GHz	-57dBm
1GHz ~ 12.75GHz	-47dBm

Note: These limits are e.r.p. for emissions below 1 GHz and as e.i.r.p. for emissions above 1 GHz.

3.8.2 TEST PROCEDURE

Refer to chapter 5.4.10.2 of EN 300 328 V2.2.2.

Measurement Method	
☐ Conducted measurement	☒ Radiated measurement
For Conducted measurement: The level of unwanted emissions shall be measured as their power in a specified load (conducted spurious emissions) and their effective radiated power when radiated by the cabinet or structure of the equipment with the antenna connector(s) terminated by a specified load (cabinet radiation).	
Conducted measurement (For equipment with multiple transmit chains): ☐ Option 1: The results for each of the transmit chains for the corresponding 1MHz segments shall be added and compared with the limits. ☐ Option 2: The results for each of the transmit chains shall be individually compared with the limits after these limits have been reduced by 10 x log (N) (number of active transmit chains)	

3.8.3 DEVIATION FROM TEST STANDARD

No deviation.

3.8.4 TEST SETUP

1. For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration).
2. Testing was performed when the equipment was in a receive-only mode.
3. The measurements were performed when normal hopping was disabled. In this case measurements were performed when operating at the lowest and the highest hopping frequency.
4. The measurement was performed at normal environmental conditions only. Controlling software has been activated to set the EUT on specific status.

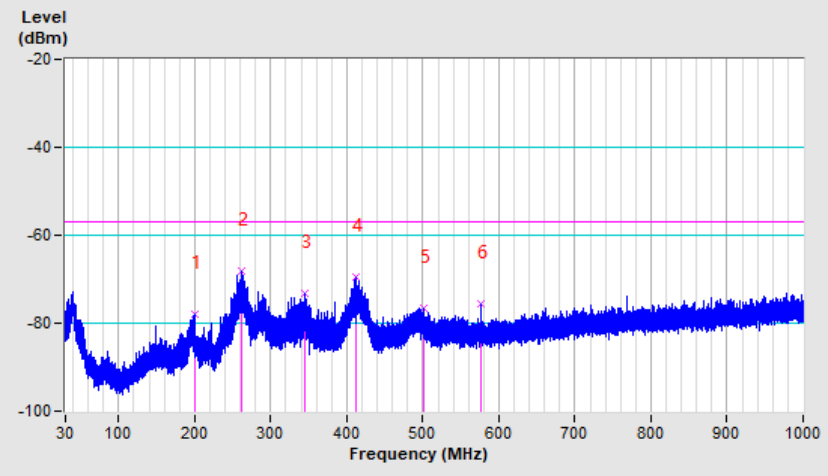
3.8.5 TEST RESULTS

RX BELOW 1GHz WORST-CASE DATA

GFSK

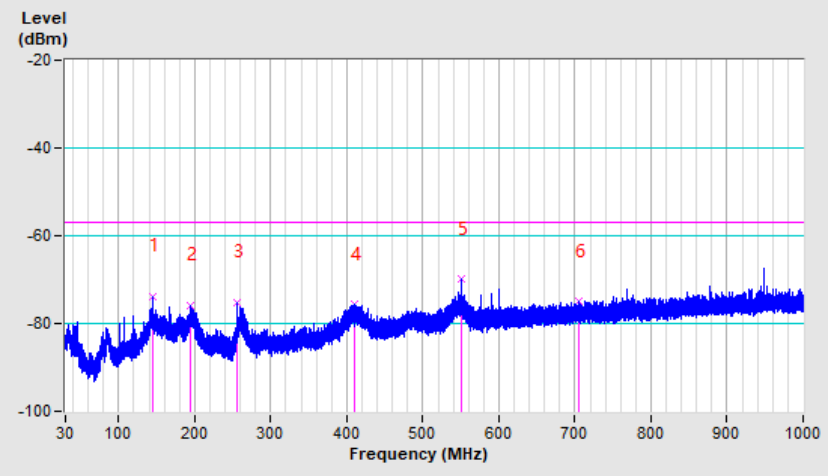
FREQUENCY RANGE	30MHz ~ 1GHz	OPERATING CHANNEL	78

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	**Antenna Polarization**	**Level (dBm)**	**Limit (dBm)**	**Margin (dB)**
199.78	H	-77.95	-57.00	-20.95
261.35	**H**	**-68.21**	**-57.00**	**-11.21**
345.06	H	-73.19	-57.00	-16.19
411.60	H	-69.53	-57.00	-12.53
502.10	H	-76.50	-57.00	-19.50
575.98	H	-75.54	-57.00	-18.54



FREQUENCY RANGE	30MHz ~ 1GHz	OPERATING CHANNEL	78

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
143.94	V	-73.92	-57.00	-16.92
194.09	V	-75.80	-57.00	-18.80
256.59	V	-75.09	-57.00	-18.09
409.95	V	-75.73	-57.00	-18.73
550.05	V	-69.92	-57.00	-12.92
704.44	V	-75.05	-57.00	-18.05



RX ABOVE 1GHz WORST-CASE DATA

GFSK

FREQUENCY RANGE	1GHz ~ 12.75GHz	OPERATING CHANNEL	0, 78

SPURIOUS EMISSION LEVEL					
Channel	Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
0	4804.00	H	-52.89	-47.00	-5.89
	4804.00	V	-52.69	-47.00	-5.69
	7206.00	H	-52.77	-47.00	-5.77
	7206.00	V	-52.64	-47.00	-5.64
78	4960.00	H	-52.45	-47.00	-5.45
	4960.00	V	-53.00	-47.00	-6.00
	7440.00	H	-52.64	-47.00	-5.64
	7440.00	**V**	**-52.18**	**-47.00**	**-5.18**

BT-LE (1Mbps)

SPURIOUS EMISSION FREQUENCY RANGE	1GHz ~ 12.75GHz	OPERATING CHANNEL	0, 39

SPURIOUS EMISSION LEVEL					
Channel	Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
0	4804.00	H	-52.64	-47.00	-5.64
	4804.00	V	-52.54	-47.00	-5.54
	7206.00	H	-52.45	-47.00	-5.45
	7206.00	V	-52.88	-47.00	-5.88
39	4960.00	H	-53.28	-47.00	-6.28
	4960.00	V	-53.12	-47.00	-6.12
	7440.00	H	-52.33	-47.00	-5.33
	7440.00	V	-52.47	-47.00	-5.47

3.9 RECEIVER BLOCKING

3.9.1 LIMIT OF RECEIVER BLOCKING

This requirement applies to all receiver categories.

Receiver Category		
☐Category 1(EIRP>10dBm)	☒Category 2(EIRP≦10dBm)	☐Category 3(EIRP≦0dBm)
Minimum performance criterion	☒PER ≦10%	
	☐Alternative performance criteria (See note)	
Note: The manufacturer was declared the minimum performance criterion shall be no loss of the wireless transmission function needed for the intended use of the equipment.		

Receiver Category 1 Equipment			
Wanted signal mean power from companion device (dBm)(See note 1 and 4)	**Blocking Signal Frequency (MHz)**	**Blocking Signal Power (dBm) (See note 4)**	**Type of blocking signal**
(-133dBm+10xlog$_{10}$(OCBW) Or -68dBm whichever is less (See note 2)	2 380 2 504	-34	CW
(-139dBm+10xlog$_{10}$(OCBW) Or -74dBm whichever is less (See note 3)	2 300 2 330 2 360 2 524 2 584 2 674		

NOTE 1: OCBW is in Hz.

NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to P_{min} + 26 dB where P_{min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 3: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to P_{min} + 20 dB where P_{min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 4: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

Receiver Category 2 Equipment			
Wanted signal mean power from companion device (dBm)(See note 1 and 3)	**Blocking Signal Frequency (MHz)**	**Blocking Signal Power (dBm) (See note 3)**	**Type of blocking signal**
(-139dBm+10xlog$_{10}$(OCBW)+10dB) Or -74dBm+10dB) whichever is less(See note 2)	2 380 2 504 2 300 2 584	-34	CW
NOTE 1: OCBW is in Hz. NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to P_{min} + 26 dB where P_{min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal. NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.			

Receiver Category 3 Equipment			
Wanted signal mean power from companion device (dBm) (See note 1 and 3)	**Blocking Signal Frequency (MHz)**	**Blocking Signal Power (dBm) (See note 3)**	**Type of blocking signal**
(-139dBm+10xlog$_{10}$(OCBW)+20dB) Or -74dBm+20dB) whichever is less(See note 2)	2 380 2 504 2 300 2 584	-34	CW
NOTE 1: OCBW is in Hz. NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative the test may be performed using a wanted signal up to P_{min} + 30 dB where P_{min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal. NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.			

3.9.2 TEST PROCEDURE

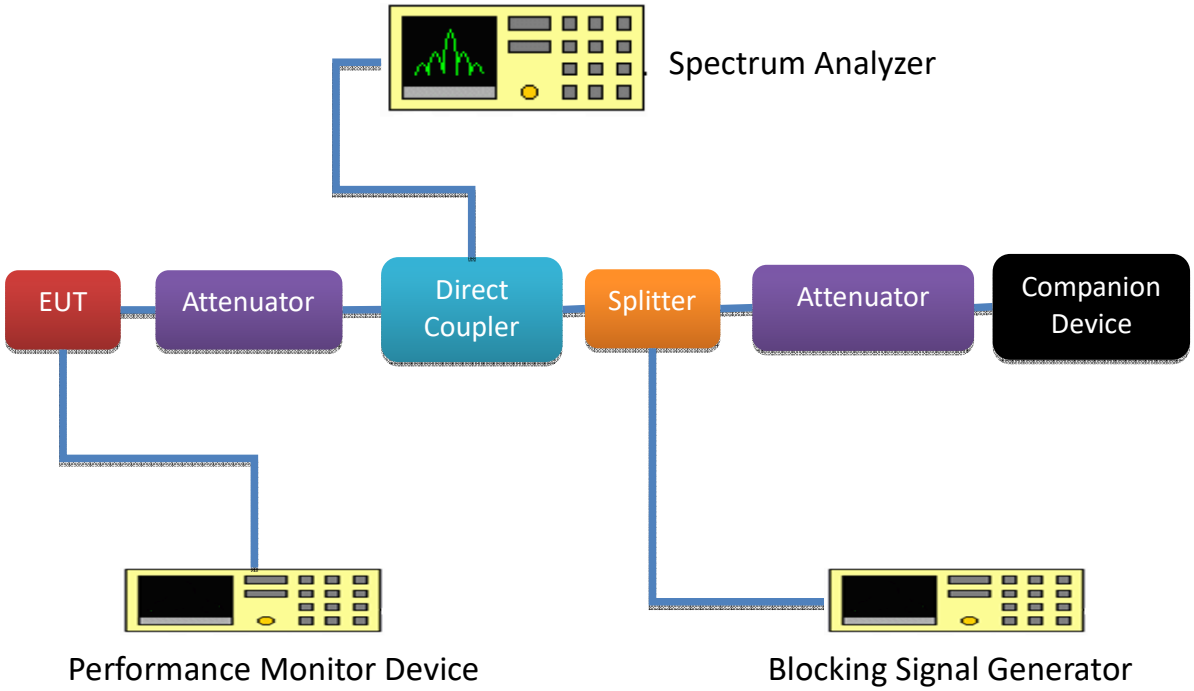
Refer to chapter 5.4.11.2 of EN 300 328 V2.2.2.

Measurement Method	
☒ Conducted measurement	☐ Radiated measurement

3.9.3 DEVIATION FROM TEST STANDARD

No deviation.

3.9.4 TEST SETUP CONFIGURATION



3.9.5 TEST RESULTS

FHSS:

Receiver Category 2 Equipment

Receiver blocking performance when operating at Hopping mode				
$OCBW_{min}$: 0.88MHz			antenna gain(G) : -2.16dBi	
The actual blocking signal power(Note1)			☒ at the antenna connector ☐ in front of the antenna	
Note1: For the conducted measurements , the level shall be corrected as follows: the actual blocking signal power = blocking signal power + antenna gain				
Wanted signal mean power from companion device (dBm)	**Blocking signal frequency (MHz)**	**The actual blocking signal power (dBm)**	**PER(%)**	**Pass/Fail**
-71.71	2380.0	-36.16	1.5	PASS
	2504.0		0.9	PASS
	2300.0		1.3	PASS
	2584.0		1.1	PASS

BT-LE: (1Mbps）

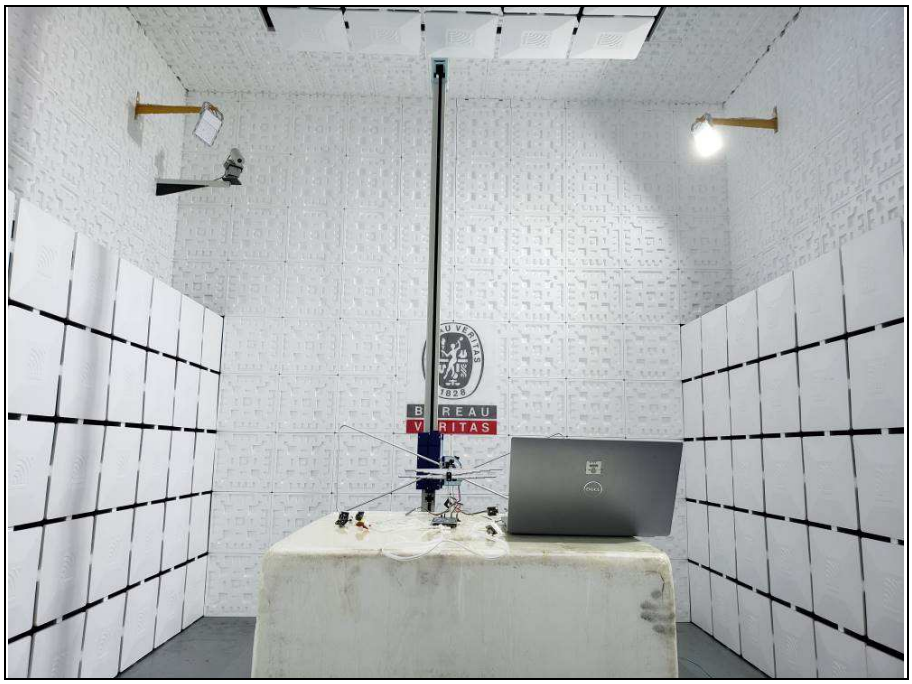
Receiver Catergory 2 Equipment

Receiver blocking performance when operating at the lowest operating channel(CH0)				
$OCBW_{min}$: 1.05MHz			antenna gain(G) : -2.16dBi	
The actual blocking signal power(Note1)			☒ at the antenna connector ☐ in front of the antenna	
Note1: For the conducted measurements , the level shall be corrected as follows: the actual blocking signal power = blocking signal power + antenna gain				
Wanted signal mean power from companion device (dBm)	**Blocking signal frequency (MHz)**	**The actual blocking signal power (dBm)**	**PER(%)**	**Pass/Fail**
-70.99	2300.0	-36.16	0.9	PASS
	2380.0		1.1	PASS

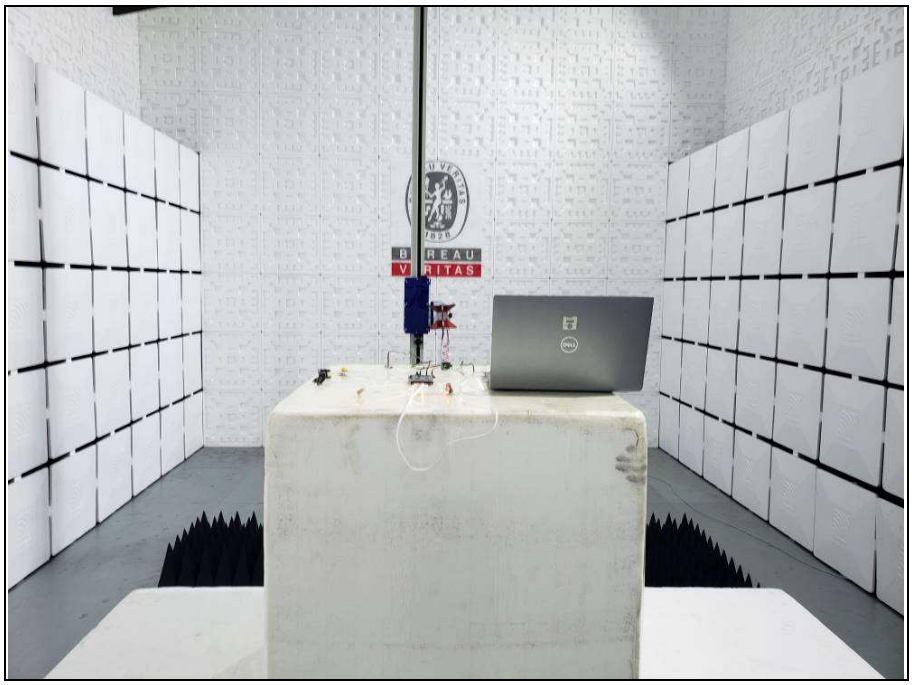
Receiver blocking performance when operating at the Highest operating channel(CH39)				
$OCBW_{min}$: 1.06MHz			antenna gain(G) : -2.16dBi	
The actual blocking signal power(Note1)			☒ at the antenna connector ☐ in front of the antenna	
Note1: For the conducted measurements , the level shall be corrected as follows: the actual blocking signal power = blocking signal power + antenna gain				
Wanted signal mean power from companion device (dBm)	**Blocking signal frequency (MHz)**	**The actual blocking signal power (dBm)**	**PER(%)**	**Pass/Fail**
-70.95	2504.0	-36.16	2.3	PASS
	2584.0		0.9	PASS

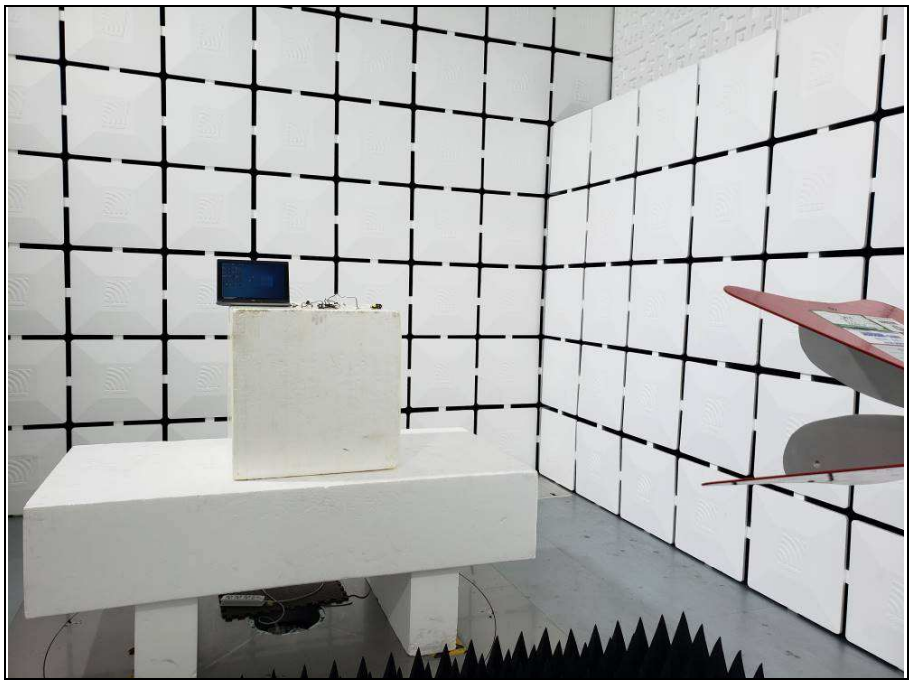
4 PHOTOGRAPHS OF THE TEST CONFIGURATION

SPURIOUS EMISSION TEST BELOW 1GHz

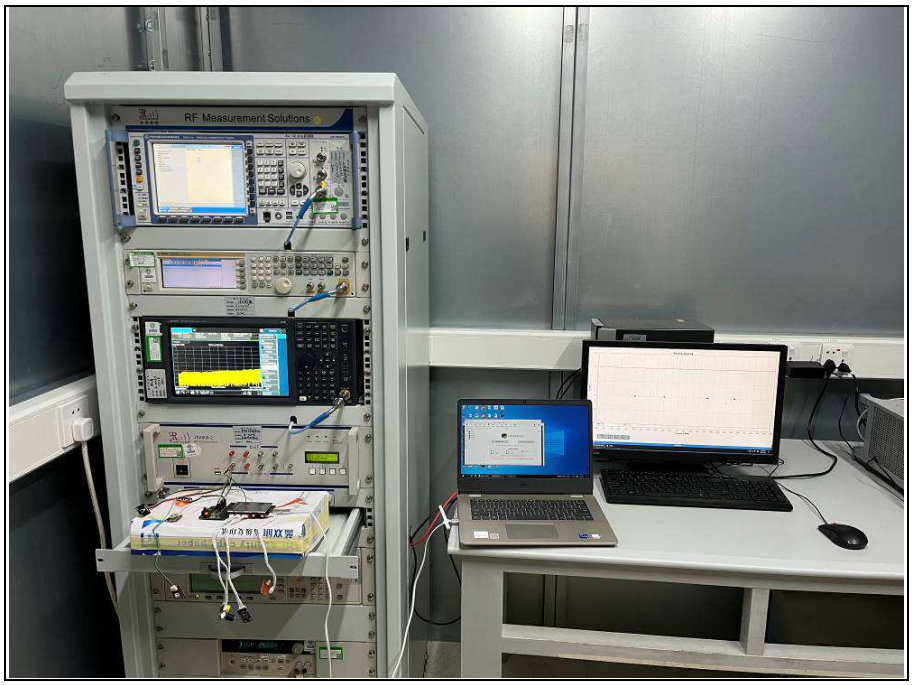


SPURIOUS EMISSION TEST ABOVE 1GHZ





RECEIVING BLOCKING



5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications were made to the EUT by the lab during the test.

--- END ---