

Test Report

Report No. : MTi250107021-0201E3
Date of issue : 2025-05-23
Applicant : Heltec Automation Technology Co., Ltd
Product : MeshPocket
Model(s) : HT-298A, HT-298B, HT-298C, HT-298D, HT-298G,
HT-298P, HT-298S, HT-298T, HT-298Z

Shenzhen Microtest Co., Ltd.

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Test Result Certification		
Applicant	Heltec Automation Technology Co., Ltd	
Applicant Address	1f, No.54, 56, 58, Zirui North Street, Gaoxin District, Chengdu	
Manufacturer	Heltec Automation Technology Co., Ltd	
Manufacturer Address	1f, No.54, 56, 58, Zirui North Street, Gaoxin District, Chengdu	
Product description		
Product name	MeshPocket	
Trademark		
Model name	HT-298A	
Series Model(s)	HT-298B, HT-298C, HT-298D, HT-298G, HT-298P, HT-298S, HT-298T, HT-298Z	
Standards	ETSI EN 300 220-1 V3.1.1 (2017-02) ETSI EN 300 220-2 V3.2.1 (2018-06)	
Testing Information		
Date of test	2025-05-06 to 2025-05-19	
Test result	Pass	
Prepared by:	James Qin	
Reviewed by:	David Lee	
Approved by:	Lewis Lian	

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1 General Description

1.1 Description of the EUT

Product name:	MeshPocket
Model name:	HT-298A
Series Model(s):	HT-298B, HT-298C, HT-298D, HT-298G, HT-298P, HT-298S, HT-298T, HT-298Z
Model difference:	All the models are the same circuit and module, except the model name.
Electrical rating:	Type-C Input: DC 5V/3A, 9V/2.22A Type-C Output: DC 5V/3A, 9V/2.22A Battery: DC 3.87V 5000mAh 19.35Wh Wireless Output: 5W/7.5W/10W/15W
Accessories:	Cable: 1. USB-A Magnetic charging cable(60cm)*1 2. Type-C to Type-C cable(25cm) *1
Hardware version:	V1.0.0
Software version:	V1.0.0
Test sample(s) number:	MTi250107021-02-R001
RF specification	
Operating frequency range:	863.1-869.9MHz
Channel number:	32
Modulation type:	LoRa
Antenna(s) type:	Ceramic
Antenna(s) gain:	-0.01dBi

1.2 Description of test modes

No.	Emission test modes
Mode1	TX-LoRa
Mode2	RX-LoRa

1.2.1 Operation channel list

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	863.1	1	863.3	2	863.5	3	863.7
4	863.9	5	864.1	6	864.3	7	864.5
8	864.7	9	864.9	10	865.1	11	865.3
12	865.5	13	865.7	14	865.9	15	866.1
16	866.3	17	866.5	18	866.7	19	866.9

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20	867.1	21	867.3	22	867.5	23	867.7
24	867.9	25	868.1	26	868.3	27	868.5
28	868.9	29	869.1	30	869.5	31	869.9

Test Channel List

Lowest Channel (LCH) (MHz)	Middle Channel (MCH) (MHz)	Highest Channel (HCH) (MHz)
863.1	866.3	869.9

Note: The test software provided by manufacturer is used to control EUT for working in engineering mode, that enables selectable channel, and capable of continuous transmitting mode.

Test Software: sketch_may6a | Arduino IDE 2.3.6

For power setting, refer to below table.

Mode	863.1MHz	866.3MHz	869.9MHz
LoRa	4	4	4

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1.3 Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15°C ~ 35°C
Humidity:	20% RH ~ 75% RH
Atmospheric pressure:	98 kPa ~ 101 kPa

ENV	Temperature (°C)	Voltage (V)
HTNV	45	9.9
LTNV	-10	8.1
NTNV	25	9

1.4 Description of support units

Support equipment list

Description	Model	Serial No.	Manufacturer
/	/	/	/

Support cable list

Description	Length (m)	From	To
/	/	/	/

1.5 Measurement uncertainty

Measurement	Uncertainty
RF output power, conducted	±1 dB
Power Spectral Density, conducted	±1 dB
Occupied channel bandwidth	±3 %
Unwanted Emissions, conducted	±1 dB
Radiated spurious emissions (30MHz~1GHz)	±4.7dB
Radiated spurious emissions (above 1GHz)	±5.3dB
Temperature	±1 °C
Humidity	± 5 %

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

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2 Summary of Test Result

No.	Item	Standard	Requirement	Result
1	Operating Frequency	ETSI EN 300 220-2 V3.2.1 (2018-06)	Clause 4.2.1.0	Pass
2	Effective Radiated Power	ETSI EN 300 220-2 V3.2.1 (2018-06)	Clause 4.3.1.0	Pass
3	Maximum Effective Radiated Power spectral density	ETSI EN 300 220-2 V3.2.1 (2018-06)	Clause 4.3.2.0	Pass
4	Duty Cycle	ETSI EN 300 220-2 V3.2.1 (2018-06)	Clause 4.3.3.0	Pass
5	Occupied Bandwidth	ETSI EN 300 220-2 V3.2.1 (2018-06)	Clause 4.3.4.0	Pass
6	Transient power	ETSI EN 300 220-2 V3.2.1 (2018-06)	Clause 4.3.6.0	Pass
7	Adjacent Channel Power	ETSI EN 300 220-2 V3.2.1 (2018-06)	Clause 4.3.7.0	N/A
8	Blocking	ETSI EN 300 220-2 V3.2.1 (2018-06)	Clause 4.4.2.0	Pass
9	Transmitter unwanted emissions in the spurious domain (25MHz to 1GHz)	ETSI EN 300 220-2 V3.2.1 (2018-06)	Clause 4.2.2.0	Pass
10	Transmitter unwanted emissions in the spurious domain (above 1GHz)	ETSI EN 300 220-2 V3.2.1 (2018-06)	Clause 4.2.2.0	Pass
11	Receiver unwanted emissions in the spurious domain (25MHz to 1GHz)	ETSI EN 300 220-2 V3.2.1 (2018-06)	Clause 4.2.2.0	Pass
12	Receiver unwanted emissions in the spurious domain (above 1GHz)	ETSI EN 300 220-2 V3.2.1 (2018-06)	Clause 4.2.2.0	Pass

Notes:

1.N/A is not applicable

2.Adjacent channel power applies to all transmitters with OCW $\leq$ 25 kHz.

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3 Test Facilities and accreditations

3.1 Test laboratory

Test laboratory:	Shenzhen Microtest Co., Ltd.
Test site location:	101, No.7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Telephone:	(86-755)88850135
Fax:	(86-755)88850136
CNAS Registration No.:	CNAS L5868
FCC Registration No.:	448573
IC Registration No.:	21760
CABID:	CN0093

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4 List of test equipment

No.	Equipment	Manufacturer	Model	Serial No.	Cal. date	Cal. Due
Operating Frequency Duty Cycle Occupied Bandwidth Transient power Adjacent Channel Power Blocking						
1	Wideband Radio Communication Tester	Rohde&schwarz	CMW500	149155	2025-03-18	2026-03-17
2	ESG Series Analog Ssignal Generator	Agilent	E4421B	GB40051240	2025-03-14	2026-03-13
3	PXA Signal Analyzer	Agilent	N9030A	MY51350296	2025-03-14	2026-03-13
4	Synthesized Sweeper	Agilent	83752A	3610A01957	2025-03-14	2026-03-13
5	MXA Signal Analyzer	Agilent	N9020A	MY50143483	2025-03-14	2026-03-13
6	RF Control Unit	Tonscend	JS0806-1	19D8060152	2025-03-18	2026-03-17
7	Band Reject Filter Group	Tonscend	JS0806-F	19D8060160	2025-03-14	2026-03-13
8	ESG Vector Signal Generator	Agilent	N5182A	MY50143762	2025-03-14	2026-03-13
9	DC Power Supply	Agilent	E3632A	MY40027695	2025-03-18	2026-03-17
Effective Radiated Power Transmitter unwanted emissions in the spurious domain (25MHz to 1GHz) Receiver unwanted emissions in the spurious domain (25MHz to 1GHz)						
1	EMI Test Receiver	Rohde&schwarz	ESCI7	101166	2025-03-14	2026-03-13
2	TRILOG Broadband Antenna	schwarabeck	VULB 9163	9163-1338	2023-06-11	2025-06-10
3	Active Loop Antenna	Schwarzbeck	FMZB 1519 B	00066	2024-03-23	2026-03-22
4	Amplifier	Hewlett-Packard	8447F	3113A06184	2025-03-18	2026-03-17
Transmitter unwanted emissions in the spurious domain (above 1GHz) Receiver unwanted emissions in the spurious domain (above 1GHz)						
1	EMI Test Receiver	Rohde&schwarz	ESCI7	101166	2025-03-14	2026-03-13
2	Double Ridged Broadband Horn Antenna	schwarabeck	BBHA 9120 D	2278	2023-06-17	2025-06-16
3	Amplifier	Agilent	8449B	3008A01120	2025-03-18	2026-03-17
4	MXA signal analyzer	Agilent	N9020A	MY54440859	2025-03-14	2026-03-13
5	PXA Signal Analyzer	Agilent	N9030A	MY51350296	2025-03-14	2026-03-13
6	Horn antenna	Schwarzbeck	BBHA 9170	00987	2023-06-17	2025-06-16
7	Pre-amplifier	Space-Dtronics	EWLAN1840 G	210405001	2025-03-19	2026-03-18

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5 Radio Spectrum Matter Test Results (RF)

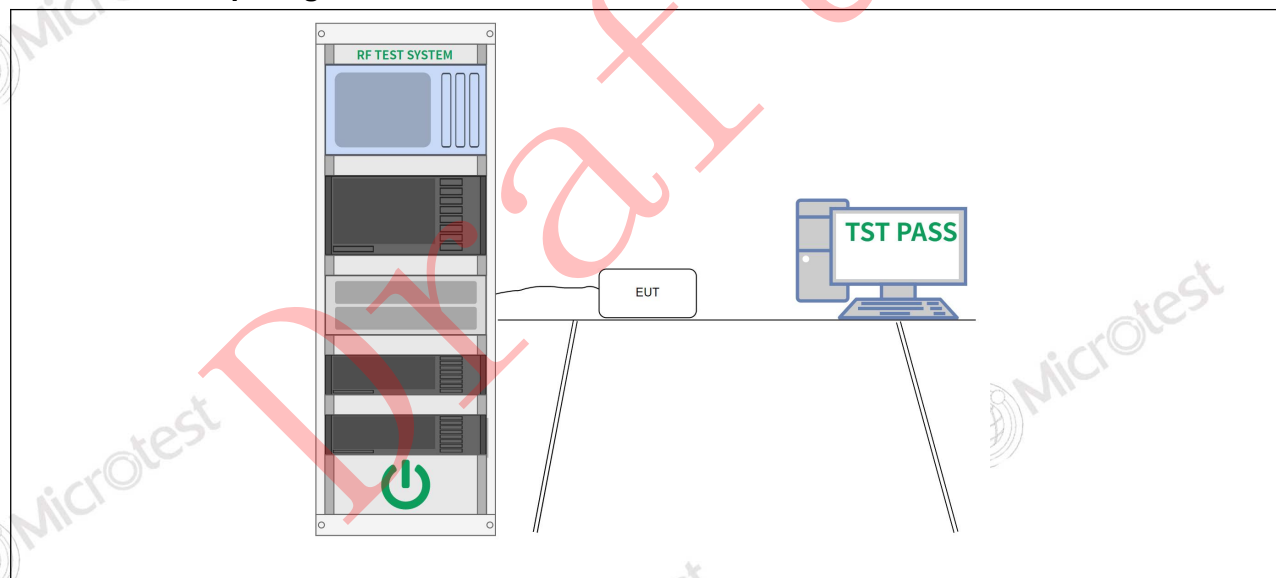
5.1 Operating Frequency

Test Requirement:	Clause 4.2.1.0
Test Limit:	The manufacturer may declare either one or more operating frequencies and operating channels. Operating channel(s) shall be entirely within operational frequency bands allowed by annex B or any NRI.
Test Method:	EN 300 220-1 V3.1.1 Clause 5.1.2

5.1.1 E.U.T. Operation:

Operating Environment:					
Temperature :	22.8 °C	Humidity :	55 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1				
Final test mode:	Mode1				

5.1.2 Test Setup Diagram:



5.1.3 Test Data:

Table 6: Information Recorded in the Test Report for Operating Frequency test

Value	Notes		
Operational Frequency band or bands	863.1MHz	866.3MHz	869.9MHz
Nominal Operating Frequency or Frequencies	863.1MHz	866.3MHz	869.9MHz
Operating Channel width(s) - OCW	127.72kHz	127.24 kHz	127.03 kHz

Note: OCW is claimed by the manufacturer.

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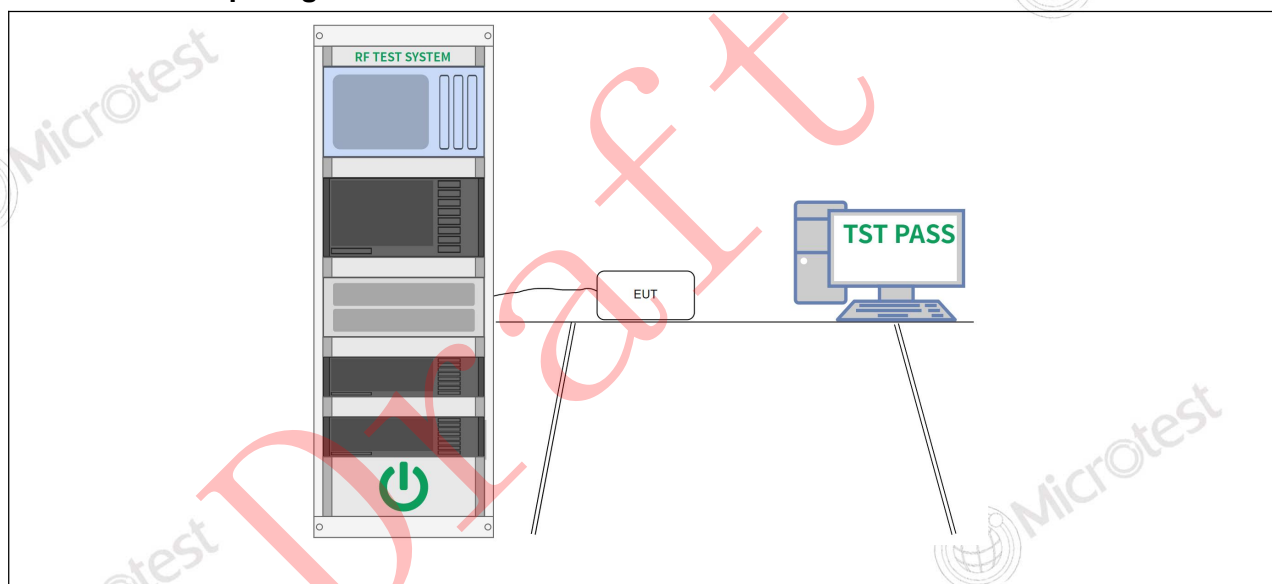
5.2 Effective Radiated Power

Test Requirement:	Clause 4.3.1.0
Test Limit:	25 mW e.r.p.
Test Method:	EN 300 220-1 V3.1.1 Clause 5.2.2.1
Procedure:	EN 300 220-1 V3.1.1 Clause 5.2.2.1.2

5.2.1 E.U.T. Operation:

Operating Environment:					
Temperature	22.8 °C	Humidity	40 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1				
Final test mode:	Mode1				

5.2.2 Test Setup Diagram:



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5.2.3 Test Data:

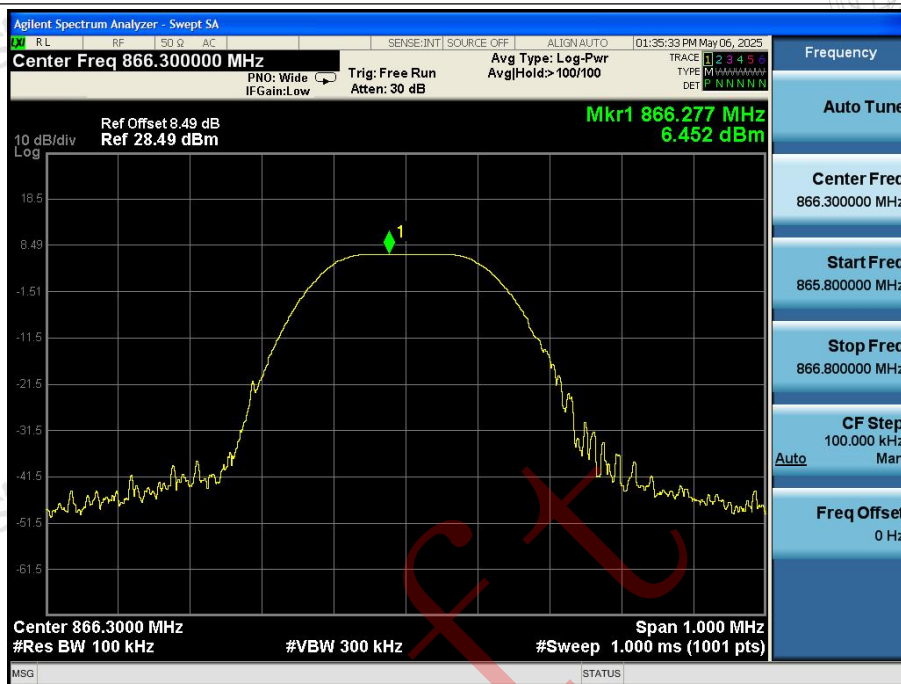
Frequency (MHz)	EIRP (dBm)	Correction (dB)	ERP (dBm)	ERP (mW)	Limits (mW)	Result
863.1	6.553	2.15	4.403	2.756	25	Pass
866.3	6.442	2.15	4.292	2.686	25	Pass
866.9	6.409	2.15	4.259	2.676	25	Pass



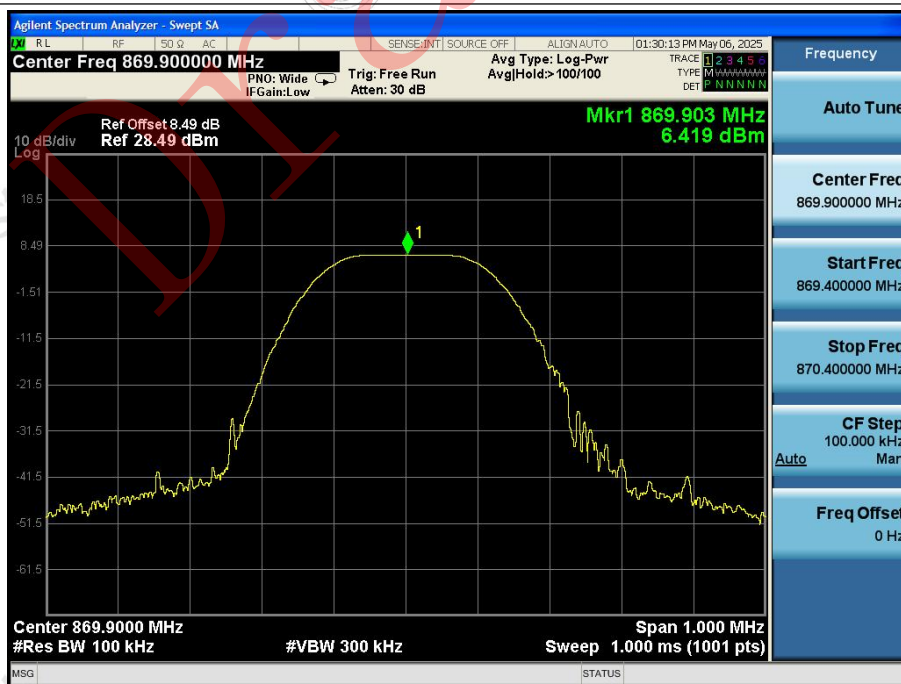
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866.3



866.9



Note:

EIRP (dBm)= Conducted power+ Antenna Gain

ERP (dBm)=EIRP- Correction

Ref Offset include antenna gain.

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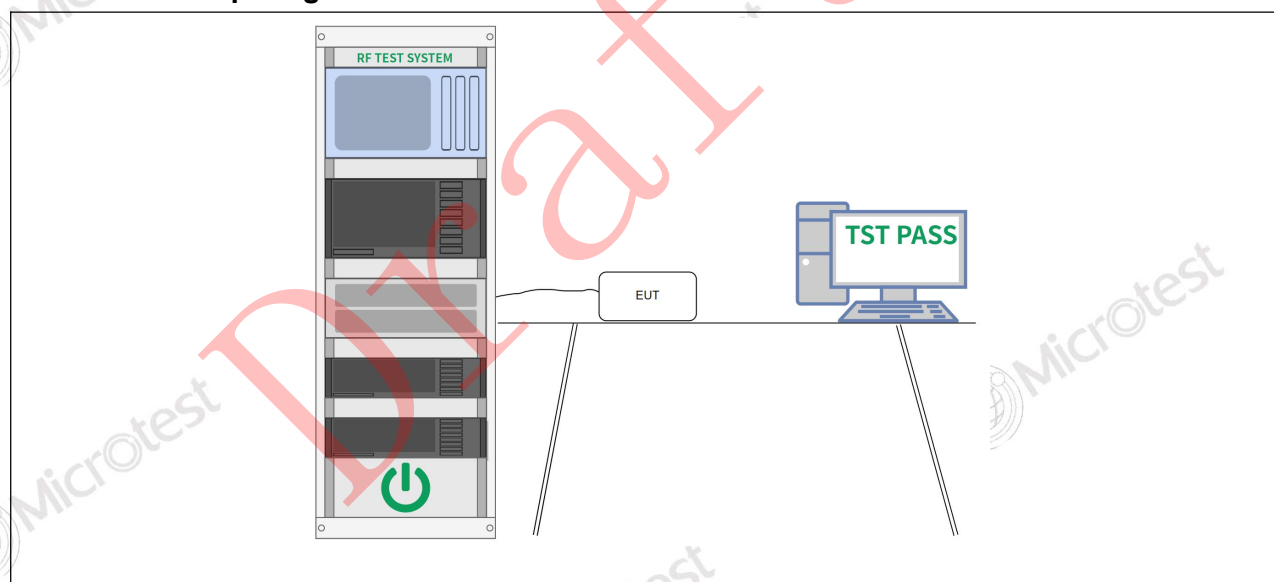
5.3 Maximum Effective Radiated Power spectral density

Test Requirement:	Maximum e.r.p. power spectral density applies to transmitters using annex B bands I. Maximum e.r.p. power spectral density applies to transmitters using DSSS or wideband techniques other than FHSS modulation, in annex C band W, AA or AC.
Test Limit:	- 0,8 dBm/100 kHz
Test Method:	EN 300 220-1 V3.1.1 Clause 5.3.2
Procedure:	EN 300 220-1 V3.1.1 Clause 5.3.2.1.2

5.3.1 E.U.T. Operation:

Operating Environment:					
Temperature :	22.8 °C	Humidity :	56 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1				
Final test mode:	Mode1				

5.3.2 Test Setup Diagram:

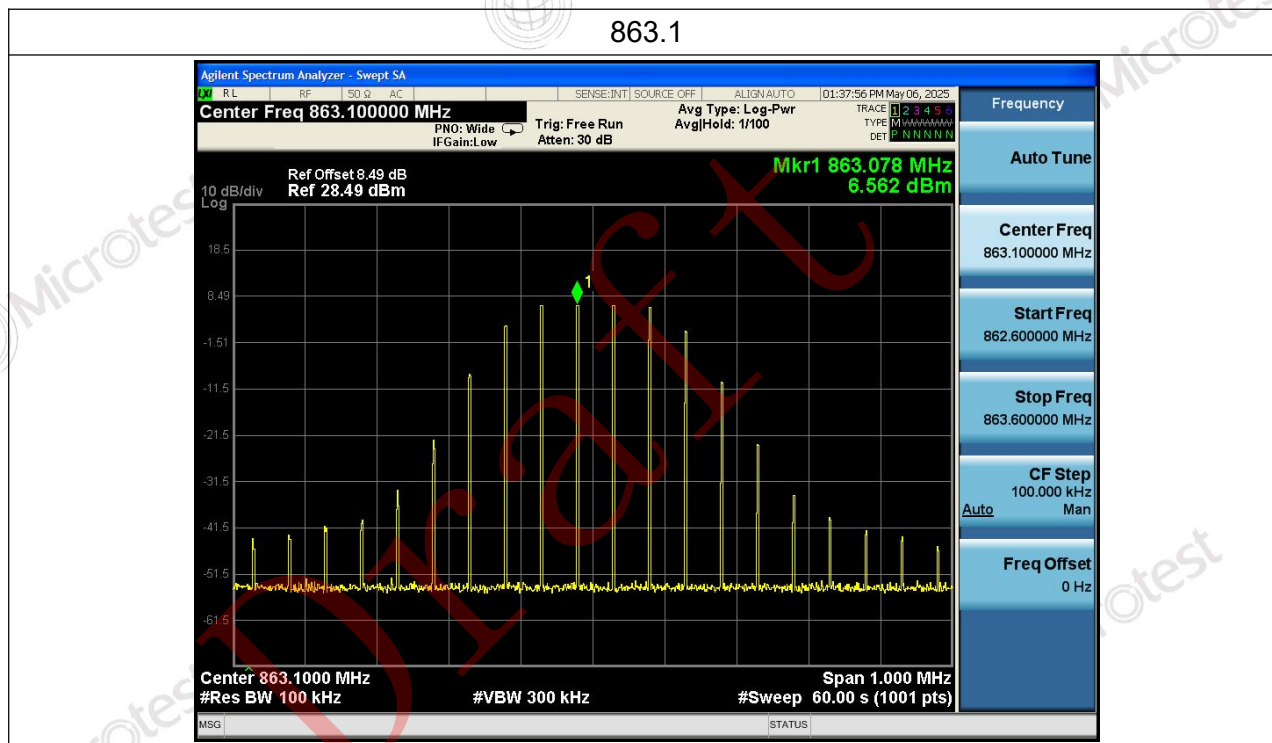


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5.3.3 Test Data:

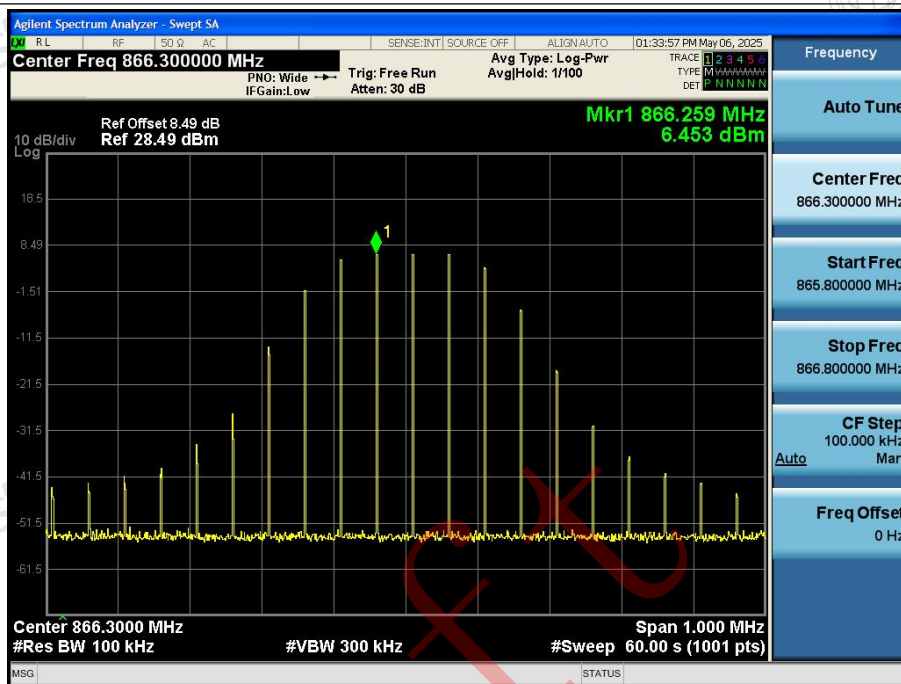
Frequency (MHz)	MPSD (dBm/100 kHz)	Limits (dBm/100 kHz)	Result
863.1	6.562	- 0,8 dBm/100 kHz	Pass
866.3	6.453	- 0,8 dBm/100 kHz	Pass
869.9	6.415	- 0,8 dBm/100 kHz	Pass



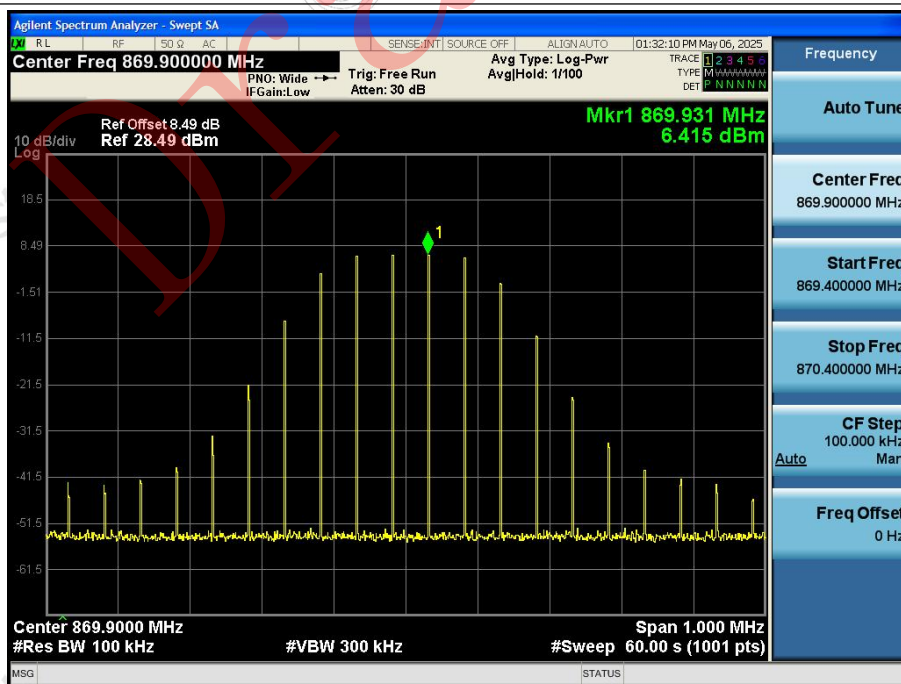
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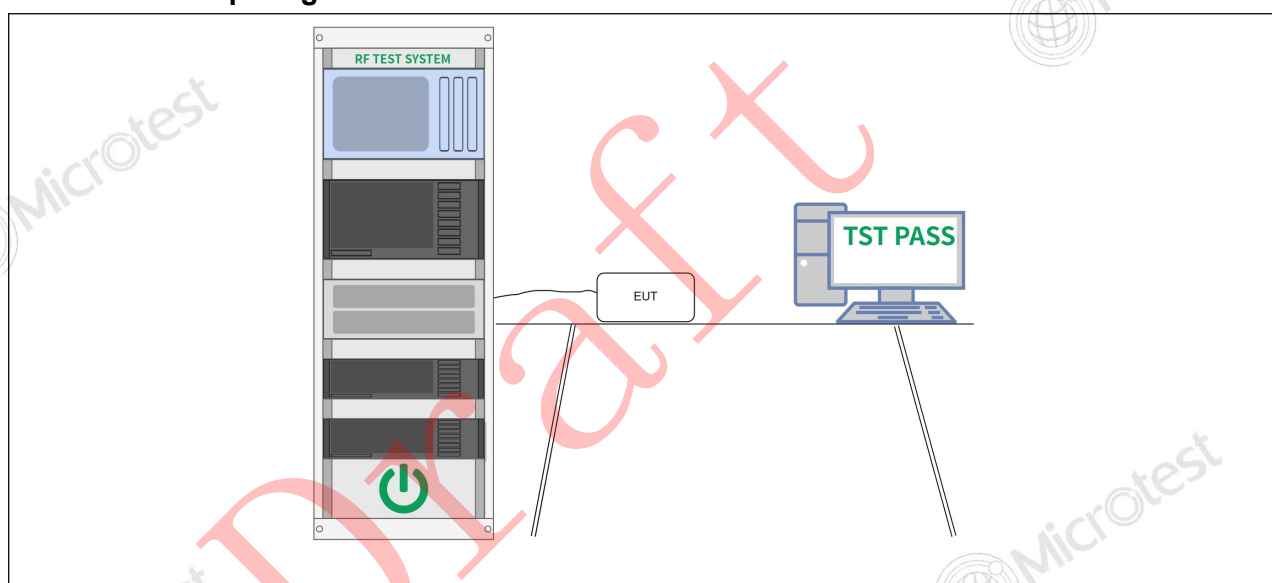
5.4 Duty Cycle

Test Requirement:	Clause 4.3.3.0
Test Limit:	$\leq 0.1 \%$
Test Method:	EN 300 220-1 V3.1.1 Clause 5.4.2

5.4.1 E.U.T. Operation:

Operating Environment:					
Temperature :	22.8 °C	Humidity :	40 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1				
Final test mode:	Mode1				

5.4.2 Test Setup Diagram:



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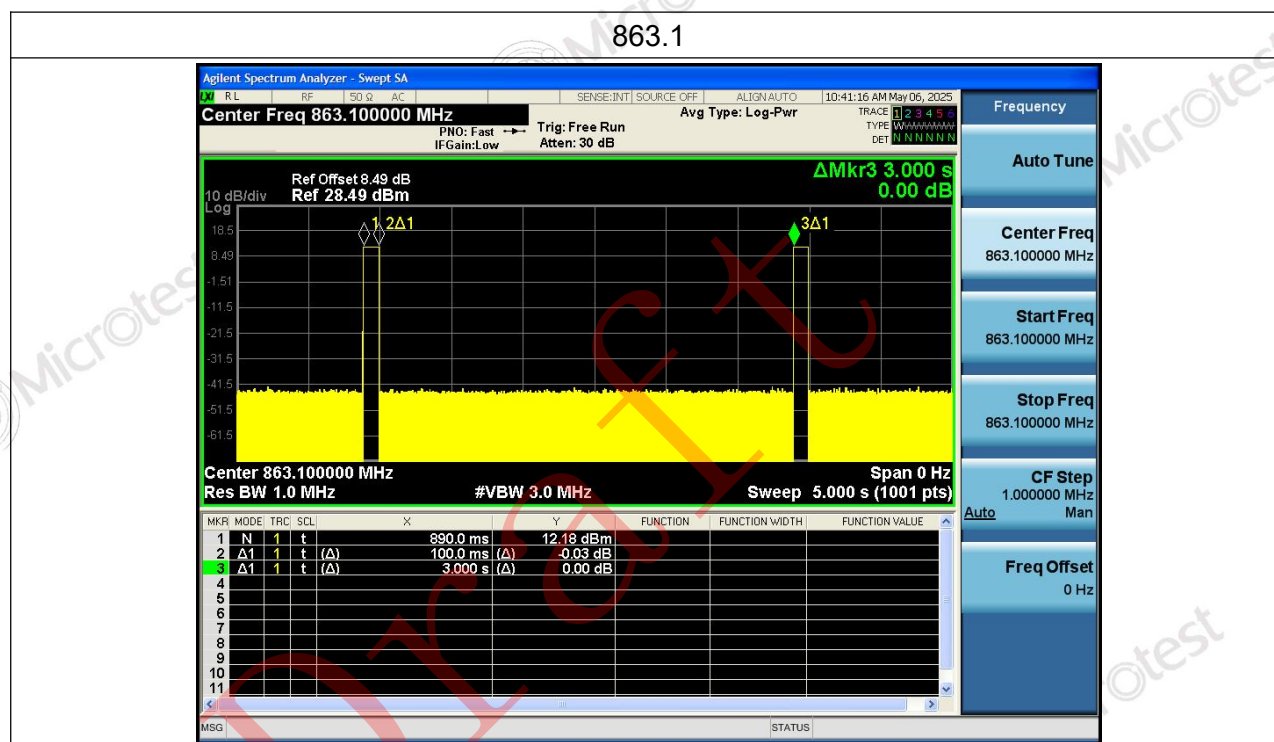
5.4.3 Test Data:

$T_{on}=100\text{ms}$

$DC=(T_{on}/N)/1\text{hour}$

$DC=(100/35)/3600000=0.00097222=0.0997\%<0.1\%$

Note: N represents the number of times the EUT is transmitter within 1 hour, The customer claims that the maximum number of launches in the 1 hour is 35.



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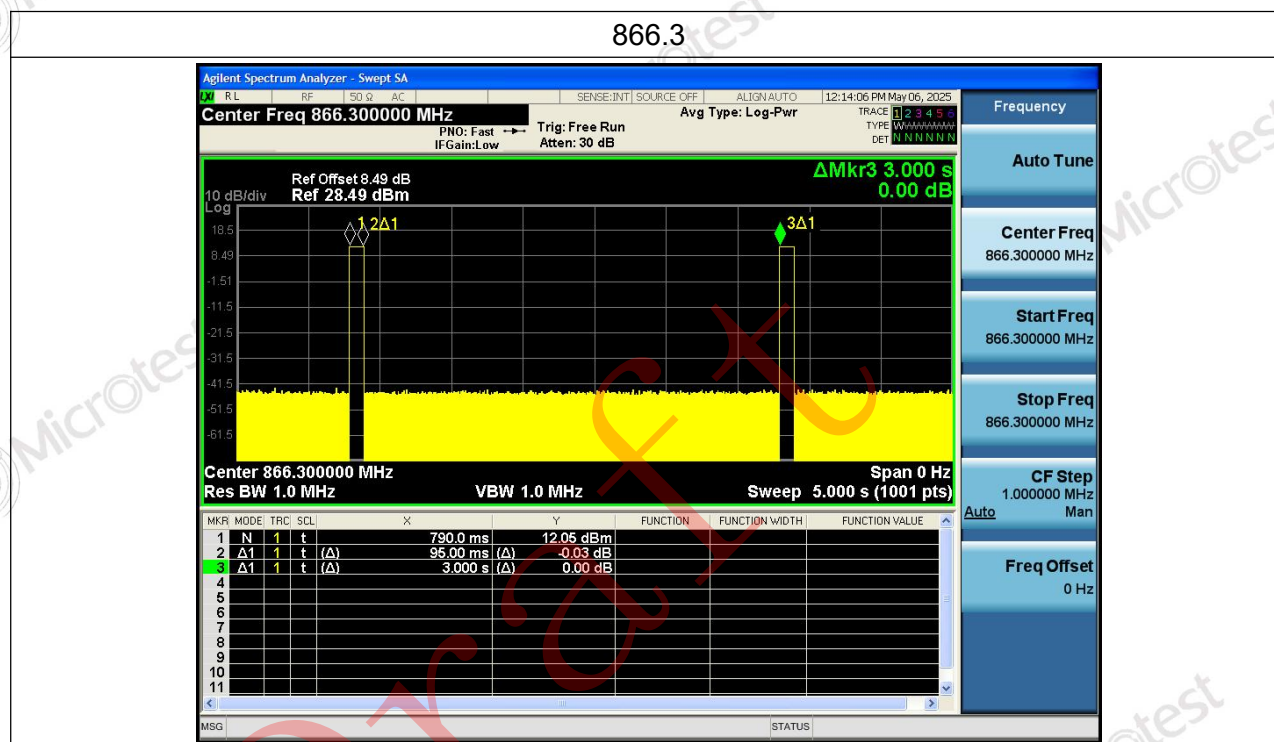
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$T_{on}=95ms$

$DC=(T_{on}/N)/1hour$

$DC= (95/35) /3600000= 0.00092361=0.0923\%<0.1\%$

Note: N represents the number of times the EUT is transmitter within 1 hour, The customer claims that the maximum number of launches in the 1 hour is 35.



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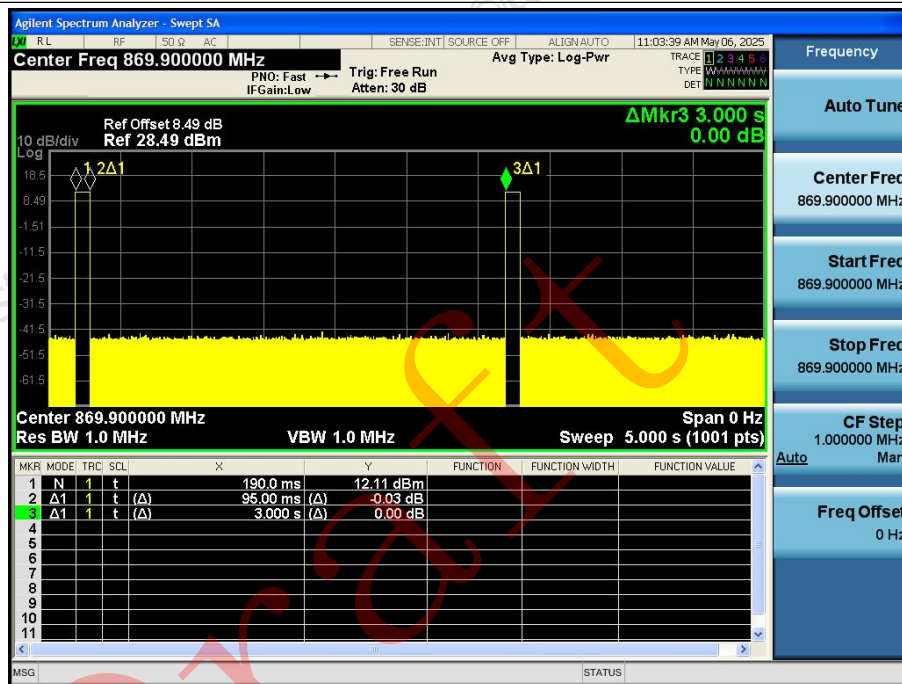
$T_{on}=95ms$

$DC=(T_{on}/N)/1hour$

$DC= (95/35) /3600000= 0.00092361=0.0923\%<0.1\%$

Note: N represents the number of times the EUT is transmitter within 1 hour, The customer claims that the maximum number of launches in the 1 hour is 35.

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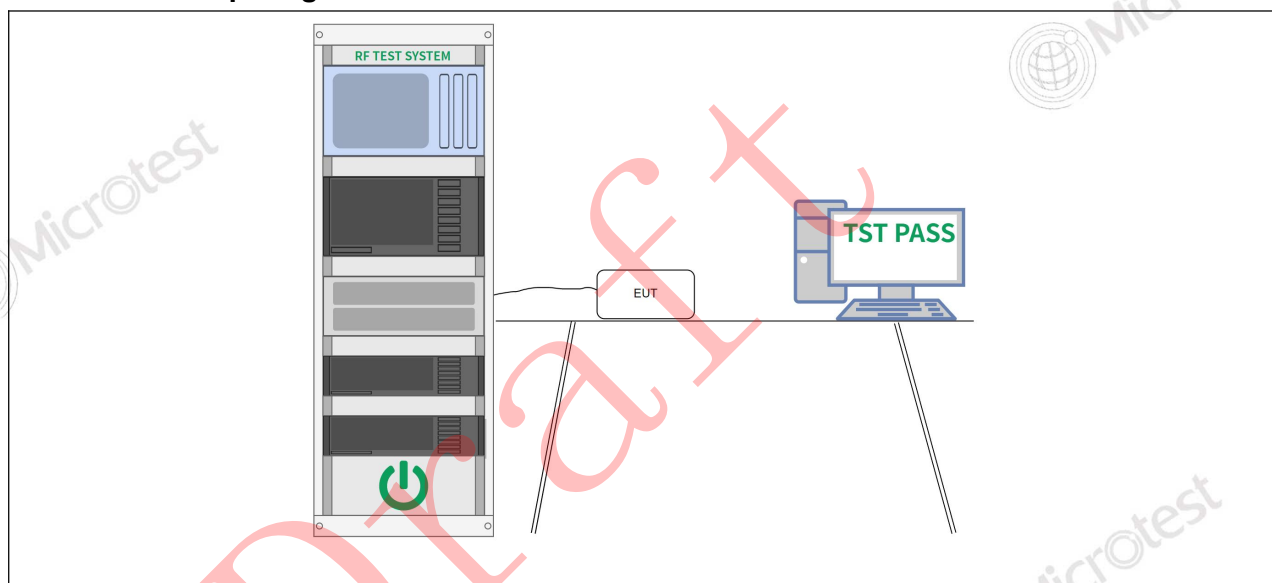
5.5 Occupied Bandwidth

Test Requirement:	Clause 4.3.4.0
Test Limit:	The whole band

5.5.1 E.U.T. Operation:

Operating Environment:					
Temperature :	22.8 °C	Humidity :	40 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1				
Final test mode:	Mode1				

5.5.2 Test Setup Diagram:

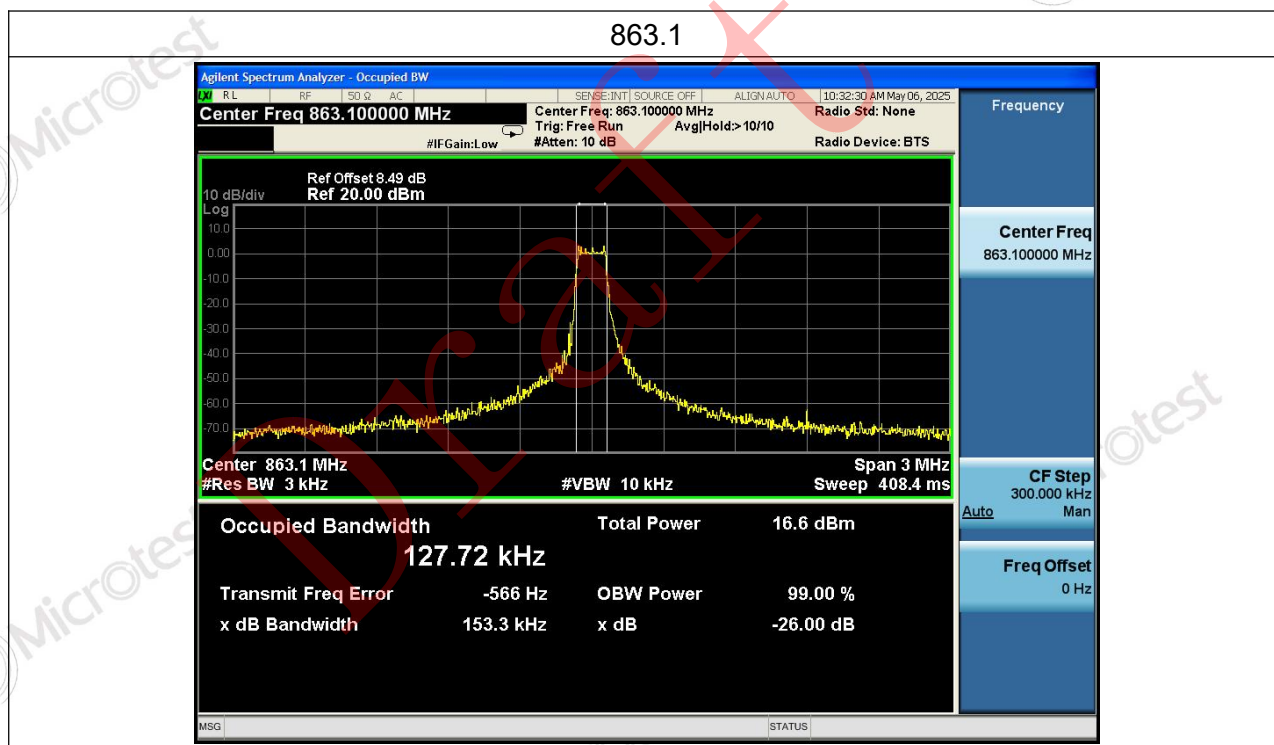


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5.5.3 Test Data:

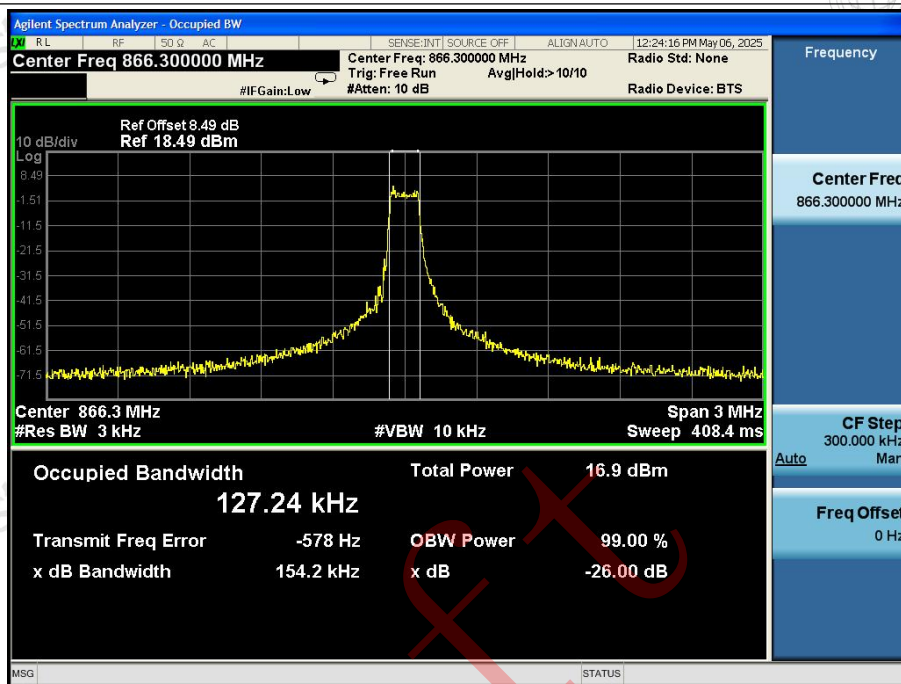
Frequency (MHz)	99% Occupied Bandwidth(kHz)	Limit	Result
863.1	127.72	The whole band	PASS
866.3	127.24	The whole band	PASS
869.9	127.03	The whole band	PASS



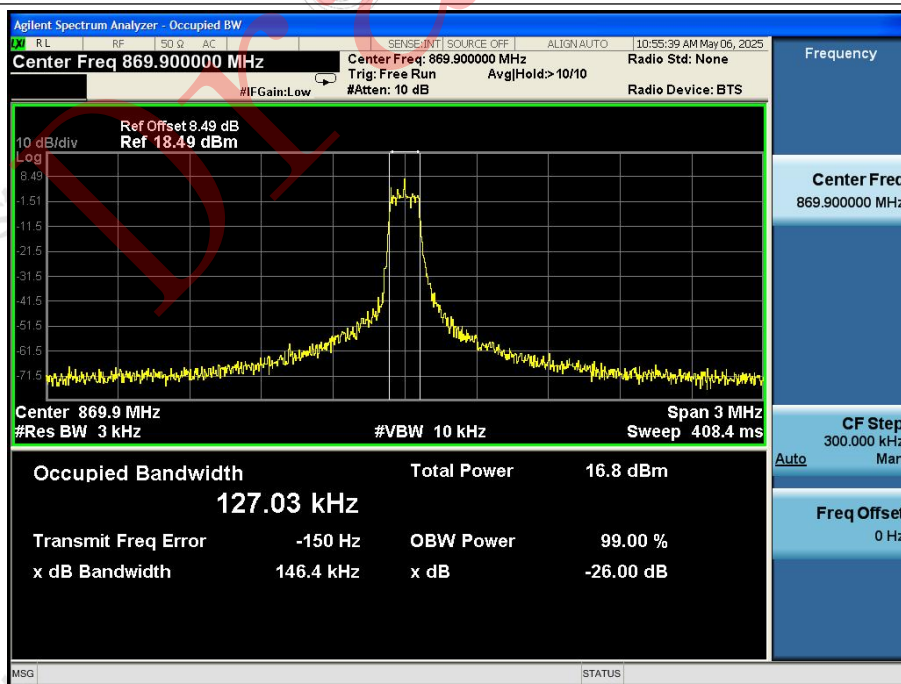
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866.3



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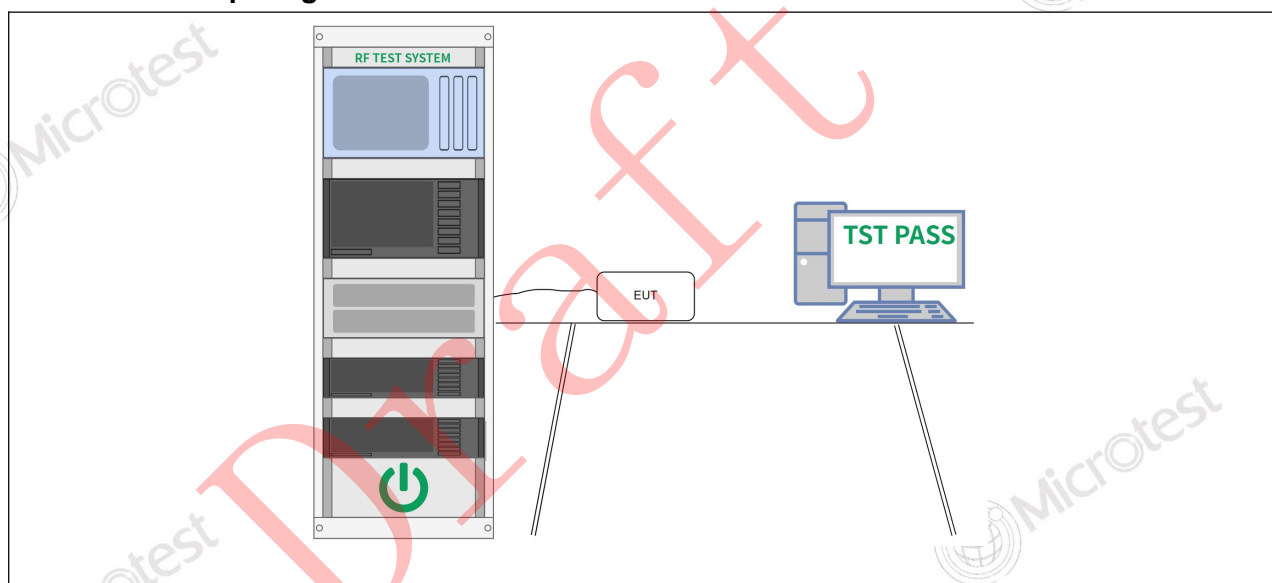
5.6 Tx Out of Band Emissions

Test Requirement:	Clause 4.3.5.0
Test Limit:	EN 300 220-1 V3.1.1 Clause 5.8.2
Test Method:	EN 300 220-1 V3.1.1 Clause 5.8.3
Procedure:	EN 300 220-1 V3.1.1 Clause 5.8.3.4

5.6.1 E.U.T. Operation:

Operating Environment:					
Temperature :	22.8 °C	Humidity :	33.3 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1				
Final test mode:	Mode1				

5.6.2 Test Setup Diagram:

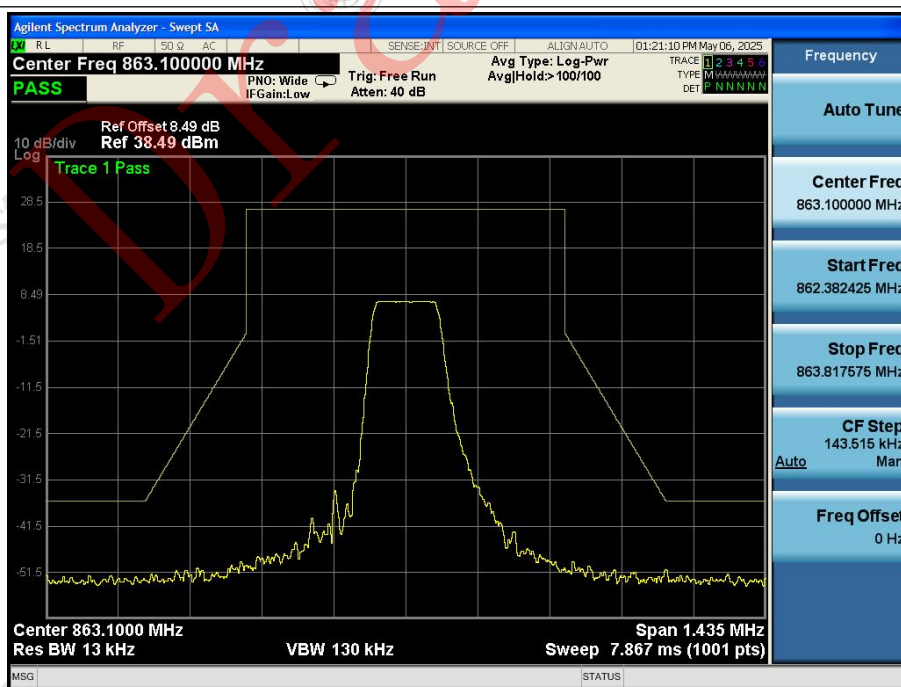


5.6.3 Test Data:

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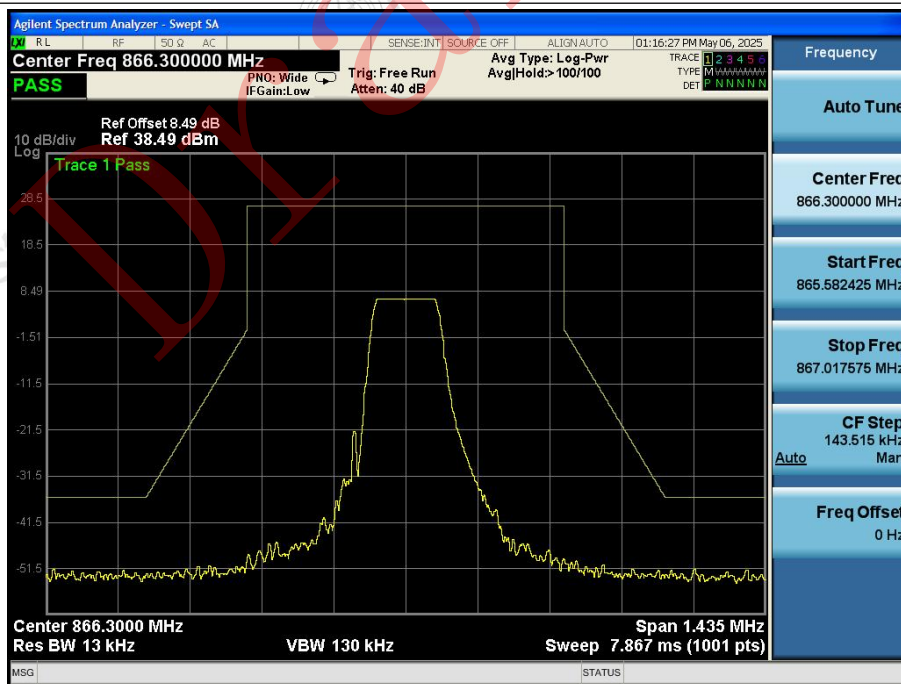
863.1



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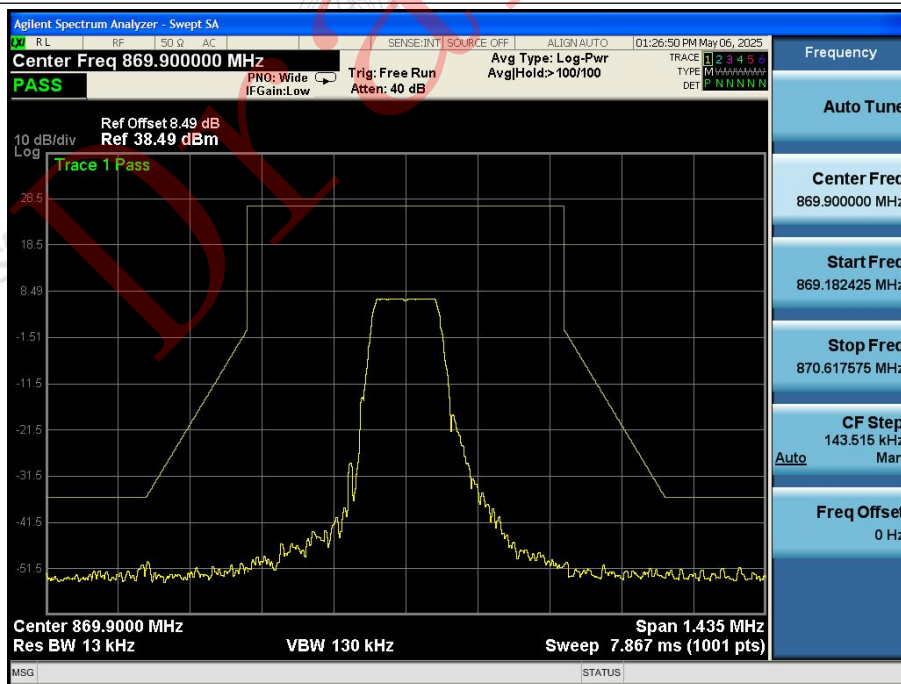
866.3



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869.9



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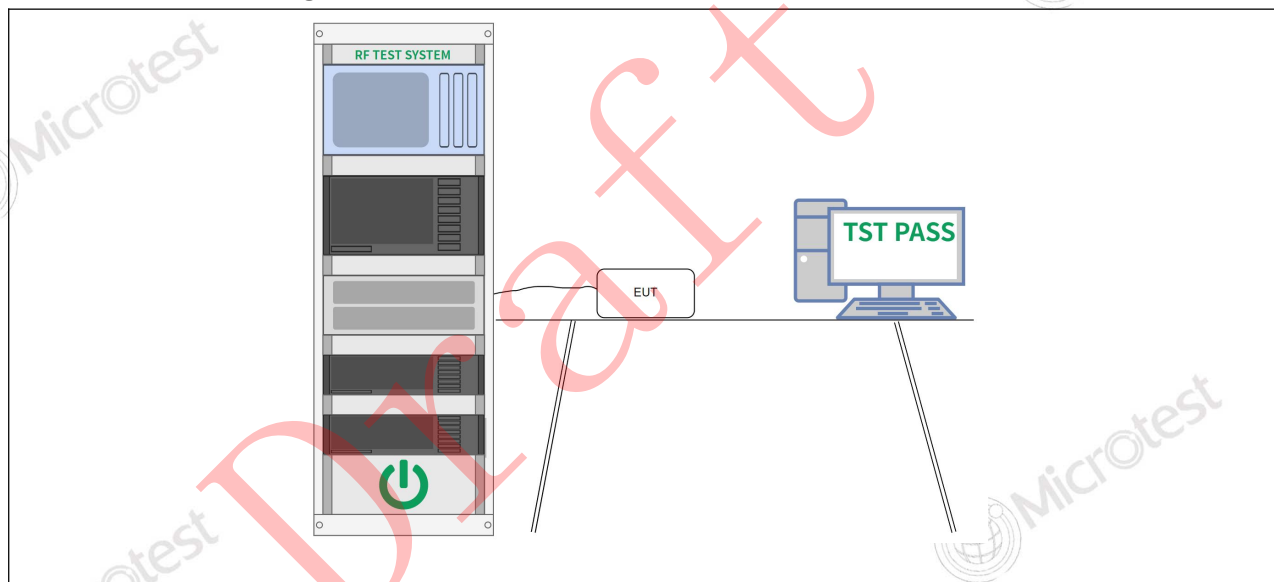
5.7 Transient power

Test Requirement:	Clause 4.3.6.0
Test Limit:	EN 300 220-1 V3.1.1 Clause 5.10.2
Test Method:	EN 300 220-1 V3.1.1 Clause 5.10.3
Procedure:	EN 300 220-1 V3.1.1 Clause 5.10.3.2

5.7.1 E.U.T. Operation:

Operating Environment:					
Temperature :	22.8 °C	Humidity :	55 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1				
Final test mode:	Mode1				

5.7.2 Test Setup Diagram:



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5.7.3 Test Data:

863.1MHz

OCW=127.72kHz

Offset Frequency kHz	Center Frequency MHz	RBW (kHz)	Max Vaule (dBm)	Limit (dBm)	Results (P/F)
-0,5 x OCW - 3 kHz	863.033	1kHz	-36.06	0 dBm	PASS
0,5 x OCW + 3 kHz	863.167	1kHz	-36.17	0 dBm	PASS
-OCW	862.972	10kHz	-34.03	0 dBm	PASS
+OCW	863.228	10kHz	-33.96	0 dBm	PASS
-0,5 x OCW - 400 kHz	862.636	100kHz	-44.99	-27 dBm	PASS
0,5 x OCW + 400 kHz	863.564	100kHz	-45.09	-27 dBm	PASS
-0,5 x OCW -1 200 kHz	861.836	300kHz	-55.95	-27 dBm	PASS
0,5 x OCW +1 200 kHz	864.364	300kHz	-56.00	-27 dBm	PASS

866.3MHz

OCW=127.24kHz

Offset Frequency kHz	Center Frequency MHz	RBW (kHz)	Max Vaule (dBm)	Limit (dBm)	Results (P/F)
-0,5 x OCW - 3 kHz	866.233	1kHz	-36.02	0 dBm	PASS
0,5 x OCW + 3 kHz	866.367	1kHz	-36.18	0 dBm	PASS
-OCW	866.173	10kHz	-34.00	0 dBm	PASS
+OCW	866.427	10kHz	-33.95	0 dBm	PASS
-0,5 x OCW - 400 kHz	865.836	100kHz	-44.99	-27 dBm	PASS
0,5 x OCW + 400 kHz	866.764	100kHz	-45.08	-27 dBm	PASS
-0,5 x OCW -1 200 kHz	865.036	300kHz	-55.94	-27 dBm	PASS
0,5 x OCW +1 200 kHz	867.564	300kHz	-56.11	-27 dBm	PASS

869.9MHz

OCW=127.03kHz

Offset Frequency kHz	Center Frequency MHz	RBW (kHz)	Max Vaule (dBm)	Limit (dBm)	Results (P/F)
-0,5 x OCW - 3 kHz	869.833	1kHz	-36.11	0 dBm	PASS
0,5 x OCW + 3 kHz	869.967	1kHz	-36.21	0 dBm	PASS
-OCW	869.773	10kHz	-34.04	0 dBm	PASS
+OCW	870.027	10kHz	-33.94	0 dBm	PASS
-0,5 x OCW - 400 kHz	869.436	100kHz	-44.97	-27 dBm	PASS
0,5 x OCW + 400 kHz	870.364	100kHz	-45.09	-27 dBm	PASS
-0,5 x OCW -1 200 kHz	868.636	300kHz	-55.93	-27 dBm	PASS
0,5 x OCW +1 200 kHz	871.164	300kHz	-56.21	-27 dBm	PASS

TEST REPORT

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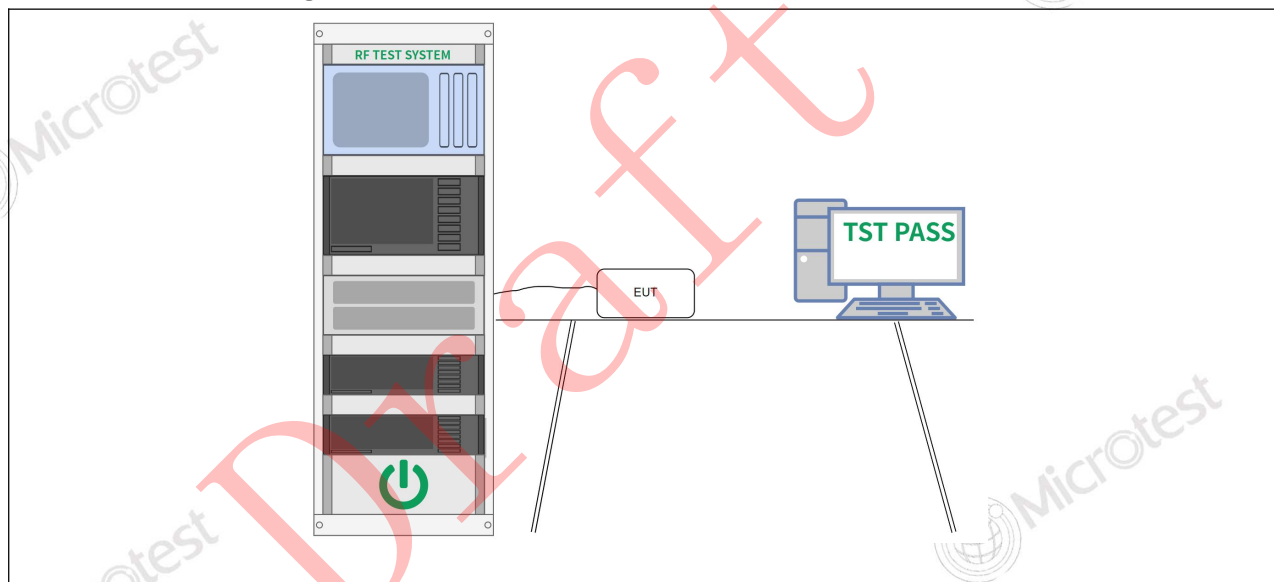
5.8 Blocking

Test Requirement:	Clause 4.4.2.0
Test Limit:	EN 300 220-1 V3.1.1 Clause 5.18.3
Test Method:	EN 300 220-1 V3.1.1 Clause 5.18.6
Procedure:	EN 300 220-1 V3.1.1 Clause 5.18.6.4

5.8.1 E.U.T. Operation:

Operating Environment:					
Temperature :	22.8 °C	Humidity :	40 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode2				
Final test mode:	Mode2				

5.8.2 Test Setup Diagram:



5.8.3 Test Data:

TEST REPORT

Report No.: MTi250107021-0201E3

863.1MHz

 $F_{low} = f_c - 2.5 \times OCW$
 $F_{high} = f_c + 2.5 \times OCW$
 $F_{low} = 862.781 \text{ MHz}; F_{high} = 863.419 \text{ MHz}$

Receiver category	Frequency offset	Test Frequency (MHz)	Receiver BW(kHz)	Measurement Vause(dB)	$\geq$ Limit(dB)
2	+2 MHz of F_{low}	864.781	127.72	-56	-69
	-2 MHz of F_{low}	860.781	127.72	-50	-69
	+2 MHz of F_{high}	861.419	127.72	-58	-69
	-2 MHz of F_{high}	865.419	127.72	-50	-69
	+10 MHz of F_{low}	872.781	127.72	-31	-44
	-10 MHz of F_{low}	852.781	127.72	-23	-44
	+10 MHz of F_{high}	873.419	127.72	-32	-44
	-10 MHz of F_{high}	853.419	127.72	-23	-44
2	+5 % of Centre Frequency	906.255	127.72	-12	-44
	-5 % of Centre Frequency	819.945	127.72	-13	-44

866.3MHz

 $F_{low} = f_c - 2.5 \times OCW$
 $F_{high} = f_c + 2.5 \times OCW$
 $F_{low} = 865.982 \text{ MHz}; F_{high} = 866.618 \text{ MHz}$

Receiver category	Frequency offset	Test Frequency (MHz)	Receiver BW(kHz)	Measurement Vause(dB)	$\geq$ Limit(dB)
2	+2 MHz of F_{low}	867.982	127.24	-56	-69
	-2 MHz of F_{low}	863.982	127.24	-50	-69
	+2 MHz of F_{high}	864.618	127.24	-58	-69
	-2 MHz of F_{high}	868.618	127.24	-50	-69
	+10 MHz of F_{low}	875.982	127.24	-31	-44
	-10 MHz of F_{low}	855.982	127.24	-23	-44
	+10 MHz of F_{high}	876.618	127.24	-32	-44
	-10 MHz of F_{high}	856.618	127.24	-23	-44
2	+5 % of Centre Frequency	909.615	127.24	-12	-44
	-5 % of Centre Frequency	822.985	127.24	-13	-44

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869.9MHz

 $F_{low} = f_c - 2.5 \times OCW$
 $F_{high} = f_c + 2.5 \times OCW$
 $F_{low} = 869.582 \text{ MHz}; F_{high} = 870.218 \text{ MHz}$

Receiver category	Frequency offset	Test Frequency (MHz)	Receiver BW(kHz)	Measurement Vause(dB)	$\geq$ Limit(dB)
2	+2 MHz of F_{low}	871.582	127.03	-56	-69
	-2 MHz of F_{low}	867.582	127.03	-50	-69
	+2 MHz of F_{high}	868.218	127.03	-58	-69
	-2 MHz of F_{high}	872.218	127.03	-50	-69
	+10 MHz of F_{low}	879.582	127.03	-31	-44
	-10 MHz of F_{low}	859.582	127.03	-23	-44
	+10 MHz of F_{high}	880.218	127.03	-32	-44
	-10 MHz of F_{high}	860.218	127.03	-23	-44
2	+5 % of Centre Frequency	913.395	127.03	-12	-44
	-5 % of Centre Frequency	826.405	127.03	-13	-44

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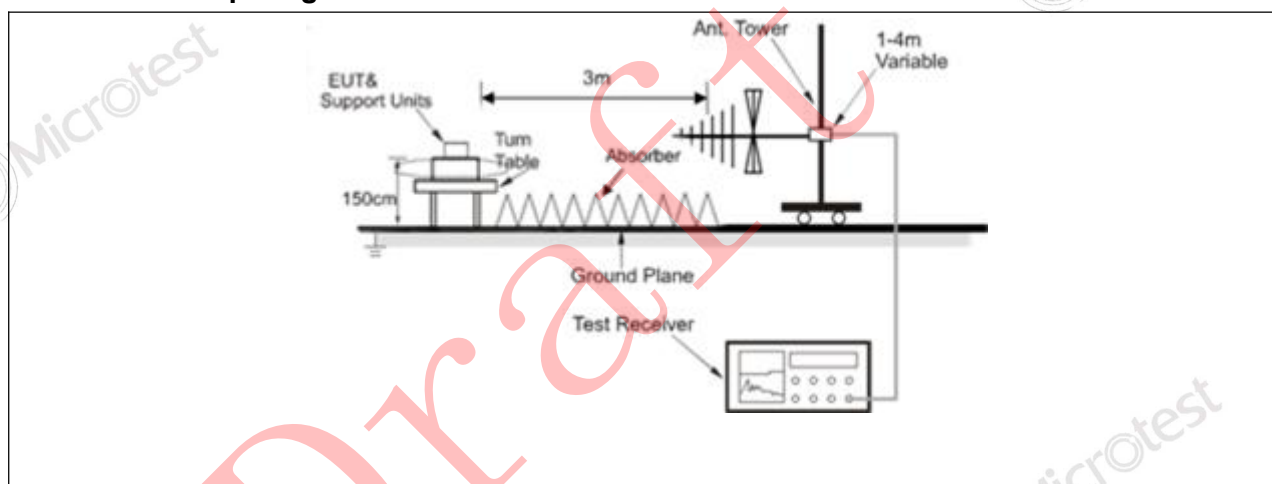
5.9 Transmitter unwanted emissions in the spurious domain (below 1GHz)

Test Requirement:	Clause 4.2.2.0
Test Limit:	EN 300 220-1 V3.1.1 Clause 5.9.2
Test Method:	EN 300 220-1 V3.1.1 Clause 5.9.3.1
Procedure:	EN 300 220-1 V3.1.1 Clause 5.9.3.3.1

5.9.1 E.U.T. Operation:

Operating Environment:					
Temperature :	24 °C	Humidity :	54 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1				
Final test mode:	Mode1				

5.9.2 Test Setup Diagram:

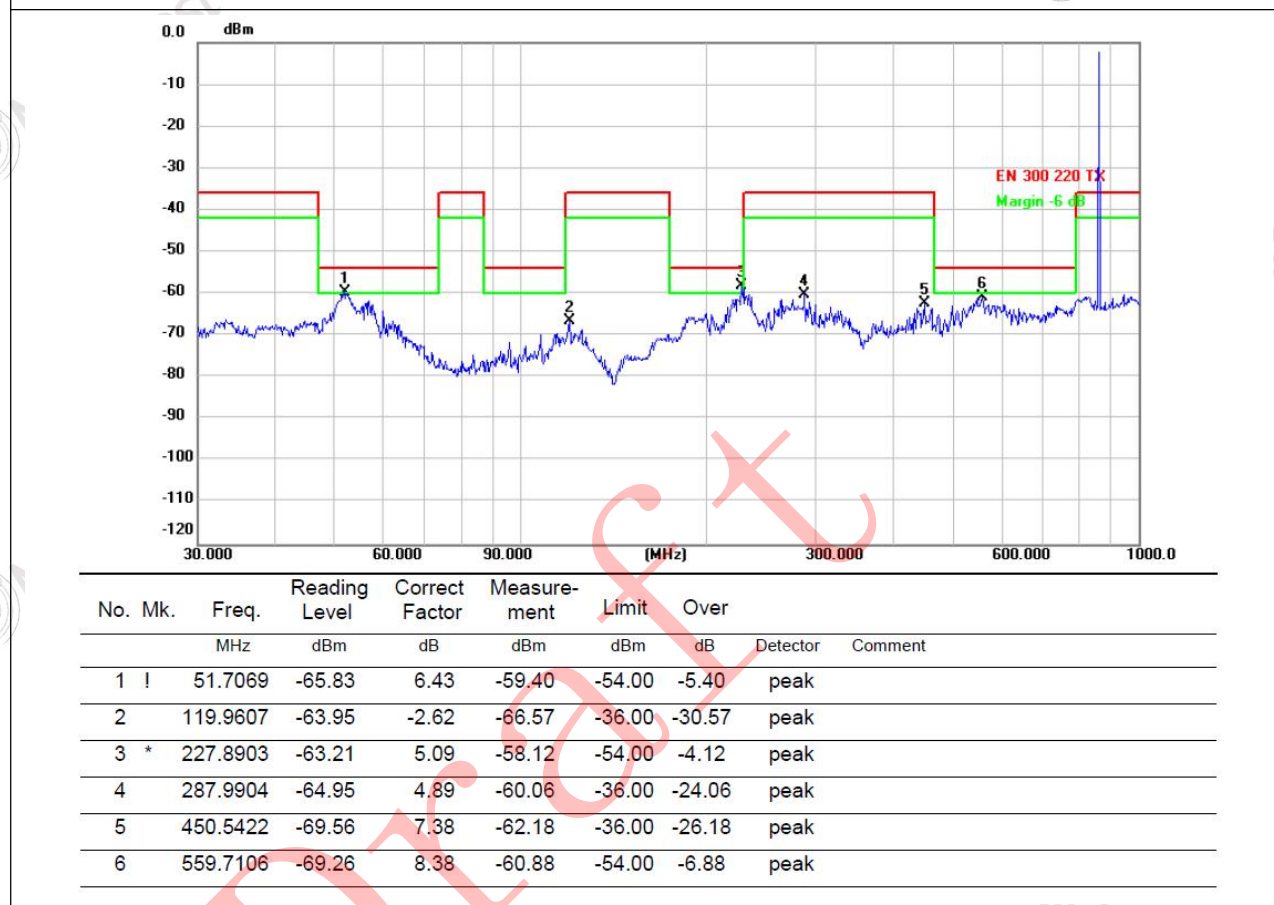


TEST REPORT

Report No.: MTi250107021-0201E3

5.9.3 Test Data:

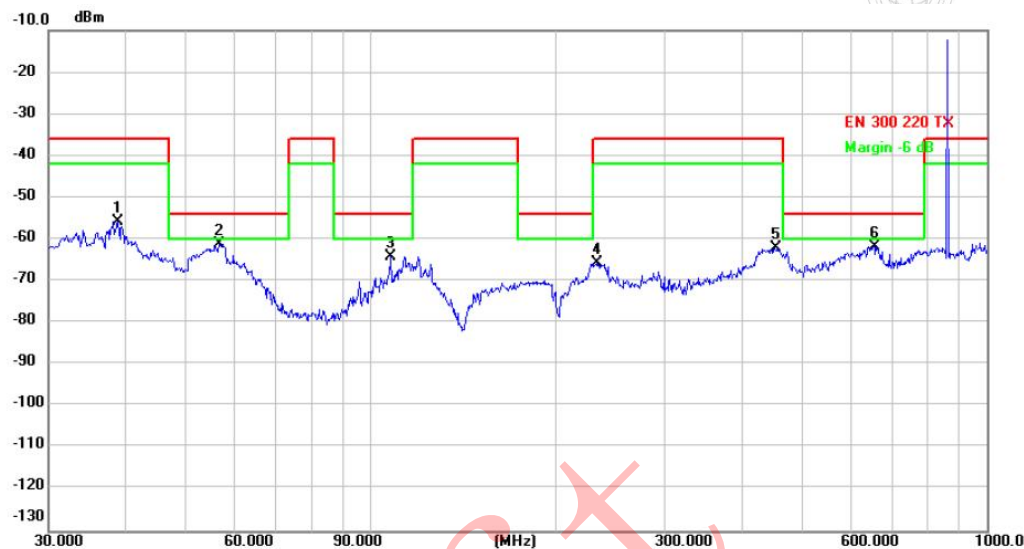
Mode1 / Polarization: Horizontal / CH: L



TEST REPORT

Report No.: MTi250107021-0201E3

Mode1 / Polarization: Vertical / CH: L

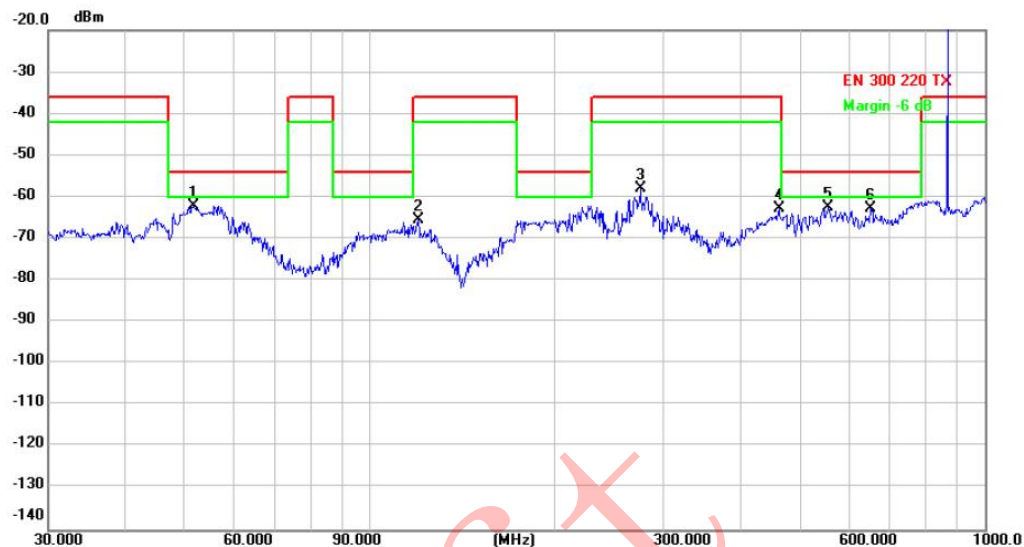


No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1		38.8878	-52.92	-2.79	-55.71	-36.00	-19.71	peak	
2	*	56.9163	-61.88	0.76	-61.12	-54.00	-7.12	peak	
3		108.0770	-67.87	3.86	-64.01	-54.00	-10.01	peak	
4		232.6338	-66.69	1.05	-65.64	-36.00	-29.64	peak	
5		453.1168	-69.27	7.34	-61.93	-36.00	-25.93	peak	
6		657.1058	-73.13	11.46	-61.67	-54.00	-7.67	peak	

TEST REPORT

Report No.: MTi250107021-0201E3

Mode1 / Polarization: Horizontal / CH: H

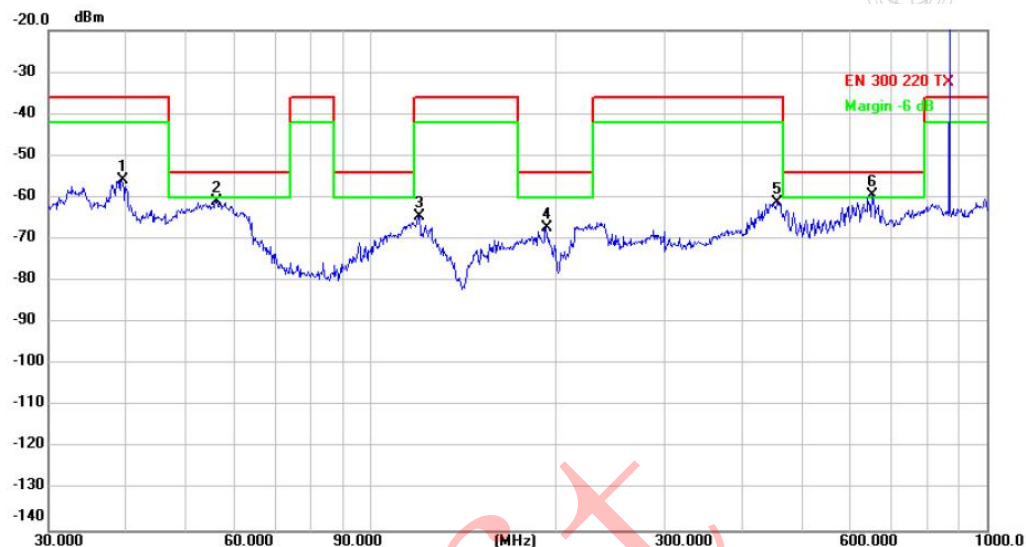


No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	*	51.6842	-68.61	6.43	-62.18	-54.00	-8.18	peak	
2		119.9607	-62.96	-2.62	-65.58	-36.00	-29.58	peak	
3		275.6399	-62.64	4.60	-58.04	-36.00	-22.04	peak	
4		463.3599	-70.21	7.41	-62.80	-36.00	-26.80	peak	
5		557.5070	-70.64	8.33	-62.31	-54.00	-8.31	peak	
6		653.9451	-74.09	11.36	-62.73	-54.00	-8.73	peak	

TEST REPORT

Report No.: MTi250107021-0201E3

Mode1 / Polarization: Vertical / CH: H



No. Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	39.5410	-53.19	-2.53	-55.72	-36.00	-19.72	peak	
2	56.0252	-61.49	0.49	-61.00	-54.00	-7.00	peak	
3	119.8030	-70.48	6.03	-64.45	-36.00	-28.45	peak	
4	192.4185	-69.50	2.14	-67.36	-54.00	-13.36	peak	
5	455.9058	-68.62	7.41	-61.21	-36.00	-25.21	peak	
6 *	653.9451	-70.70	11.16	-59.54	-54.00	-5.54	peak	

TEST REPORT

Report No.: MTi250107021-0201E3

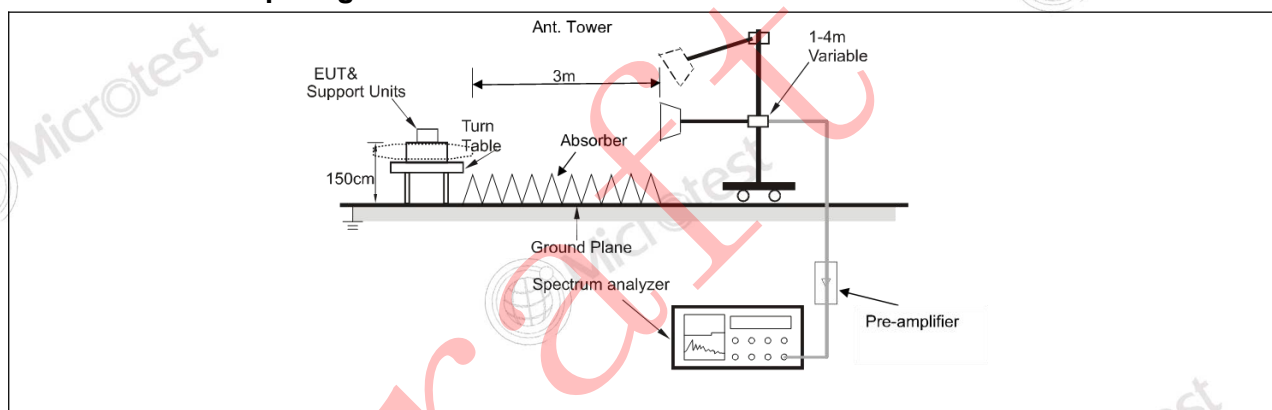
5.10 Transmitter unwanted emissions in the spurious domain (above 1GHz)

Test Requirement:	Clause 4.2.2.0
Test Limit:	EN 300 220-1 V3.1.1 Clause 5.9.2
Test Method:	EN 300 220-1 V3.1.1 Clause 5.9.3.1
Procedure:	EN 300 220-1 V3.1.1 Clause 5.9.3.3.1

5.10.1 E.U.T. Operation:

Operating Environment:					
Temperature :	24 °C	Humidity :	54 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1				
Final test mode:	Mode1				

5.10.2 Test Setup Diagram:



TEST REPORT

Report No.: MTi250107021-0201E3

5.10.3 Test Data:

Mode1 / Polarization: Horizontal / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBm	dB	dBm	dBm	dB	Detector
1	*	1726.200	-47.63	4.40	-43.23	-30.00	-13.23	peak
2		2589.300	-59.73	8.37	-51.36	-30.00	-21.36	peak
3		3452.400	-62.96	10.45	-52.51	-30.00	-22.51	peak

Mode1 / Polarization: Vertical / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBm	dB	dBm	dBm	dB	Detector
1		1726.200	-66.86	4.40	-62.46	-30.00	-32.46	peak
2	*	2589.300	-59.00	8.37	-50.63	-30.00	-20.63	peak
3		3452.400	-70.21	10.45	-59.76	-30.00	-29.76	peak

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Mode1 / Polarization: Horizontal / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBm	dB	dBm	dBm	dB	Detector
1	*	1739.800	-48.03	4.46	-43.57	-30.00	-13.57	peak
2		2609.700	-63.98	8.55	-55.43	-30.00	-25.43	peak
3		3479.600	-63.52	10.16	-53.36	-30.00	-23.36	peak

Mode1 / Polarization: Vertical / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBm	dB	dBm	dBm	dB	Detector
1		1739.800	-68.50	4.46	-64.04	-30.00	-34.04	peak
2	*	2609.700	-58.81	8.55	-50.26	-30.00	-20.26	peak
3		3479.600	-64.55	10.16	-54.39	-30.00	-24.39	peak

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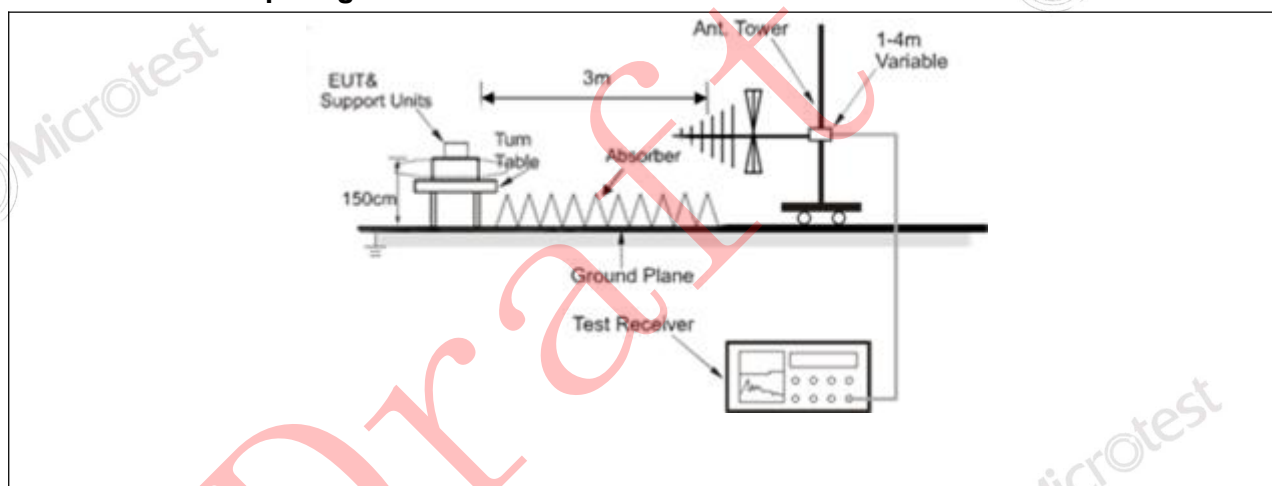
5.11 Receiver unwanted emissions in the spurious domain (25MHz to 1GHz)

Test Requirement:	Clause 4.2.2.0
Test Limit:	EN 300 220-1 V3.1.1 Clause 5.9.2
Test Method:	EN 300 220-1 V3.1.1 Clause 5.9.3.2
Procedure:	EN 300 220-1 V3.1.1 Clause 5.9.3.3.2

5.11.1 E.U.T. Operation:

Operating Environment:					
Temperature :	24 °C	Humidity :	54 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode2				
Final test mode:	Mode2				

5.11.2 Test Setup Diagram:



TEST REPORT

Report No.: MTi250107021-0201E3

5.11.3 Test Data:

Mode2 / Polarization: Horizontal / CH: L

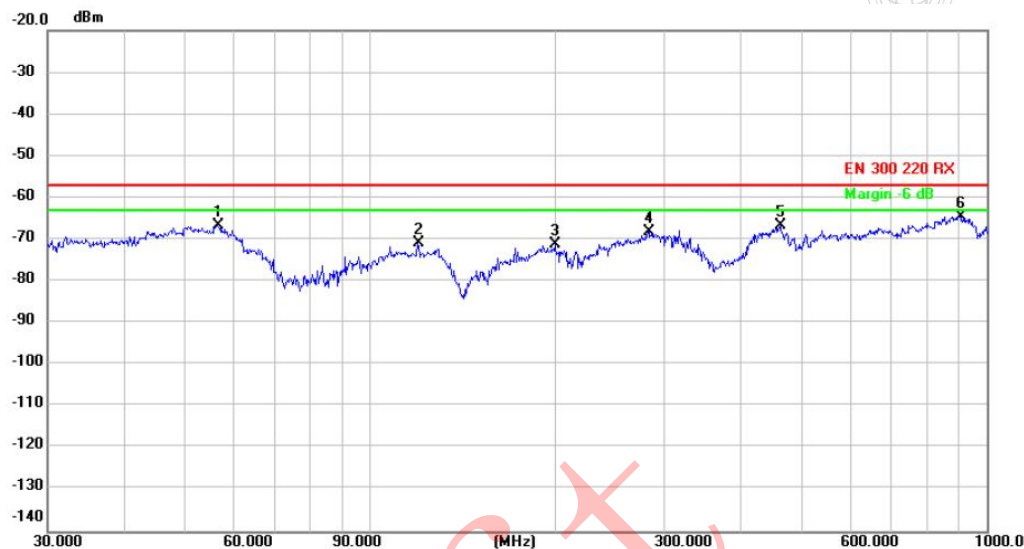


No. Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	56.6426	-70.10	6.00	-64.10	-57.00	-7.10	peak	
2	119.8031	-64.73	-2.71	-67.44	-57.00	-10.44	peak	
3	199.6352	-66.74	-1.48	-68.22	-57.00	-11.22	peak	
4	283.1092	-69.36	4.83	-64.53	-57.00	-7.53	peak	
5	462.5482	-72.12	7.40	-64.72	-57.00	-7.72	peak	
6 *	903.7054	-78.11	14.68	-63.43	-57.00	-6.43	peak	

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Mode2 / Polarization: Vertical / CH: L



No. Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	56.6426	-72.60	6.00	-66.60	-57.00	-9.60	peak	
2	119.8031	-68.23	-2.71	-70.94	-57.00	-13.94	peak	
3	199.6352	-69.74	-1.48	-71.22	-57.00	-14.22	peak	
4	283.1092	-72.86	4.83	-68.03	-57.00	-11.03	peak	
5	462.5482	-74.12	7.40	-66.72	-57.00	-9.72	peak	
6 *	903.7054	-79.11	14.68	-64.43	-57.00	-7.43	peak	

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Mode2 / Polarization: Horizontal / CH: H

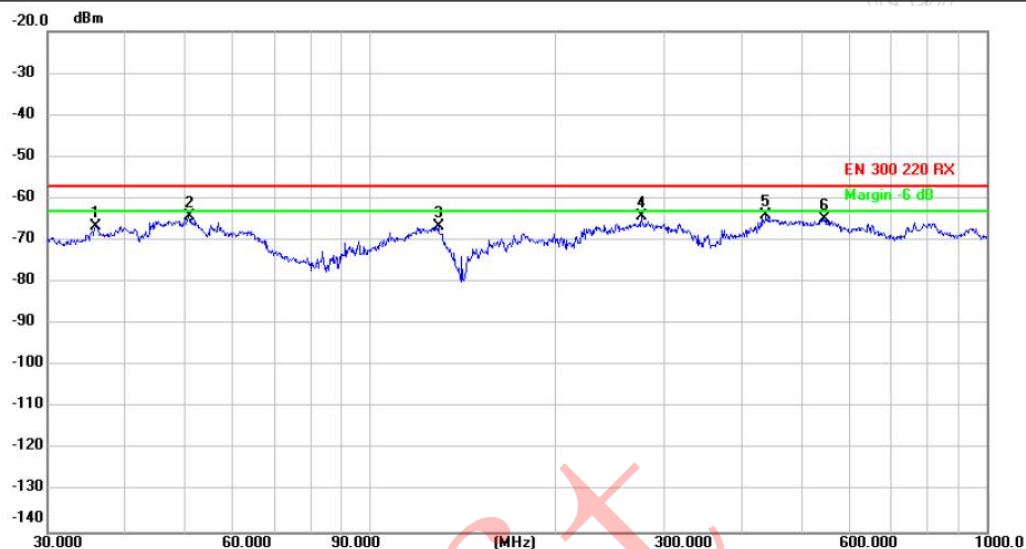


No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1		35.9849	-66.59	-2.51	-69.10	-57.00	-12.10	peak	
2	*	50.8305	-67.09	-0.12	-67.21	-57.00	-10.21	peak	
3		126.4394	-77.10	6.28	-70.82	-57.00	-13.82	peak	
4		275.8816	-73.49	4.81	-68.68	-57.00	-11.68	peak	
5		439.2326	-74.47	7.05	-67.42	-57.00	-10.42	peak	
6		763.7103	-80.90	12.52	-68.38	-57.00	-11.38	peak	

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Mode2 / Polarization: Vertical / CH: H



No. Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	35.9849	-64.09	-2.51	-66.60	-57.00	-9.60	peak	
2	50.8305	-64.09	-0.12	-64.21	-57.00	-7.21	peak	
3	129.3543	-72.95	6.15	-66.80	-57.00	-9.80	peak	
4	275.8816	-68.99	4.81	-64.18	-57.00	-7.18	peak	
5 *	439.2326	-70.97	7.05	-63.92	-57.00	-6.92	peak	
6	544.9437	-73.42	8.51	-64.91	-57.00	-7.91	peak	

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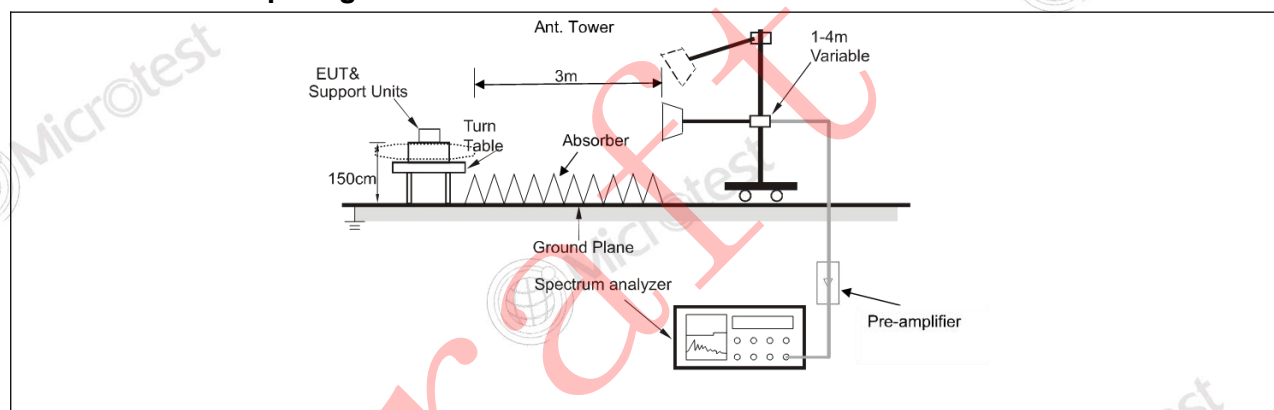
5.12 Receiver unwanted emissions in the spurious domain (above 1GHz)

Test Requirement:	Clause 4.2.2.0
Test Limit:	EN 300 220-1 V3.1.1 Clause 5.9.2
Test Method:	EN 300 220-1 V3.1.1 Clause 5.9.3.2
Procedure:	EN 300 220-1 V3.1.1 Clause 5.9.3.3.2

5.12.1 E.U.T. Operation:

Operating Environment:					
Temperature :	24 °C	Humidity :	54 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode2				
Final test mode:	Mode2				

5.12.2 Test Setup Diagram:



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5.12.3 Test Data:

Mode2 / Polarization: Horizontal / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz	dBm	dB	dBm	dBm	dB	
1		1112.500	-78.61	4.13	-74.48	-47.00	-27.48	peak
2	*	1415.625	-79.55	6.49	-73.06	-47.00	-26.06	peak
3		2011.250	-80.11	6.70	-73.41	-47.00	-26.41	peak

Mode2 / Polarization: Vertical / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz	dBm	dB	dBm	dBm	dB	
1		1198.750	-78.92	4.45	-74.47	-47.00	-27.47	peak
2		1421.875	-80.21	6.53	-73.68	-47.00	-26.68	peak
3	*	1740.000	-77.37	4.46	-72.91	-47.00	-25.91	peak

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Mode2 / Polarization: Horizontal / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz	dBm	dB	dBm	dBm	dB	
1	*	1080.000	-75.50	3.81	-71.69	-47.00	-24.69	peak
2		1426.875	-79.26	6.56	-72.70	-47.00	-25.70	peak
3		1931.250	-79.91	6.49	-73.42	-47.00	-26.42	peak

Mode2 / Polarization: Vertical / CH: H

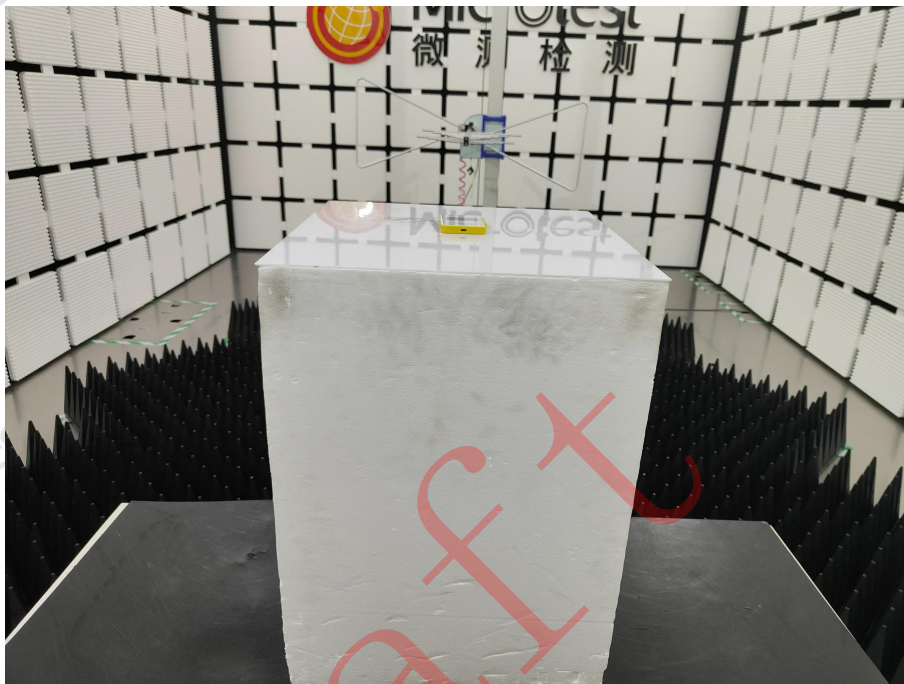
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz	dBm	dB	dBm	dBm	dB	
1		1100.000	-77.64	4.24	-73.40	-47.00	-26.40	peak
2		1484.375	-79.59	6.07	-73.52	-47.00	-26.52	peak
3	*	1740.000	-76.89	4.46	-72.43	-47.00	-25.43	peak

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Photographs of the test setup

Radiated Emission (below 1GHz)



Radiated Emission (above 1GHz)



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Photographs of the EUT

Refer to Appendix - EUT Photos

Draft

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Statement

1. This report is invalid without the seal and signature of the laboratory.
2. The test results of this report are only responsible for the samples submitted. Client shall be responsible for representativeness of the sample and authenticity of the material.
3. The report shall not be partially reproduced without the written consent of the Laboratory.
4. This report is invalid if transferred, altered or tampered with in any form without authorization.
5. The observations or tests with special mark fall outside the scope of accreditation, and are only used for purpose of commission, research, training, internal quality control etc.
6. Any objection to this report shall be submitted to the laboratory within 15 days from the date of receipt of the report.

***** END OF REPORT *****