

RF Test Report

Report No.: AGC16307240501ER01

PRODUCT DESIGNATION: Two Way Radio

BRAND NAME : VGC

MODEL NAME : VR-N76

APPLICANT: VERO GLOBAL COMMUNICATION CO.LTD

DATE OF ISSUE : May 29, 2024

STANDARD(S) : ETSI EN 301 783 V2.1.1 (2016-01)

REPORT VERSION : V 1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd.



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Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	May 29, 2024	Valid	Initial Release

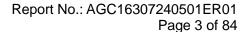




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Applicant	VERO GLOBAL COMMUNICATION CO.LTD	
Address	No.4 Chongmin St, Qingmeng Area, Quanzhou Fujian, P.R.C 362006	
Manufacturer	VERO GLOBAL COMMUNICATION CO.LTD	
Address	No.4 Chongmin St, Qingmeng Area, Quanzhou Fujian, P.R.C 362006	
Factory	VERO GLOBAL COMMUNICATION CO.LTD	
Address	No.4 Chongmin St, Qingmeng Area, Quanzhou Fujian, P.R.C 362006	
Product Designation Two Way Radio		
Brand Name VGC		
Test Model	VR-N76	
Date of receipt of test item May 07, 2024		
Date of Test May 07, 2024~May 29, 2024		
Test Result	Pass	

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. for compliance with the requirements set forth in the European Standard ETSI EN 301 783. The results of testing in this report apply to the product/system which was tested only. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

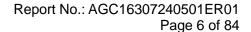
Prepared By	Bibo Zhang	
	Bibo Zhang (Project Engineer)	May 29, 2024
Reviewed By	Calvin Lin	
	Calvin Liu (Reviewer)	May 29, 2024
Approved By	Max Zhang	
	Max Zhang Authorized Officer	May 29, 2024



2.1 EUT DESCRIPTION

Product Designation	Two Way Radio
Brand Name	VGC
Test Model	VR-N76
Hardware Version	Ver: U/V_N76-23128
Software Version	0.6.8
Operation Frequency	VHF (144MHz-146MHz) UHF (430MHz~440MHz)
Modulation	FM
Operation Mode	Push to talk
Channel Separation	12.5KHz/25KHz
Rated Output Power	5W(It was fixed by the manufacturer, any individual can't arbitrarily change it.)
Antenna Designation	External Antenna
Antenna Type	Detachable Antenna
Antenna Gain	2.15dBi
Power Supply	DC 7.4V, 2600mAh by battery, charging with DC 8.4V

Note: For more details, please refer the user's manual





Perform Radio Spectrum tests for CE Marking according to the provisions of article 3.2 of the Radio Equipment Directive (2014/53/EU) for the BT function of the EUT.

2.3 TEST ITEMS AND THE RESULTS

The EUT has been tested according to ETSI EN 301 783 V2.1.1(2016-01).

ETSI EN 301 783	Commercially available amateur radio equipment; Harmonised Standard
V2.2.2 (2019-07)	covering the essential requirements of article 3.2 of the Directive 2014/53/EU

Test items and the results are as bellow:

Nº	Basic Standard	Test Items	Test Mode	Result
1	ETSI EN 301 783 §5.1	Maximum Transmitter Power	TX	Pass
2	ETSI EN 301 783 §5.2	Unwanted Emissions in the Spurious Domain	TX	Pass
3	ETSI EN 301 783 §5.3	Spurious Radiations	TX	Pass
4	ETSI EN 301 783 §6.1	Maximum Usable Sensitivity	RX	Pass
5	ETSI EN 301 783 §6.2	Adjacent Channel Selectivity	RX	Pass
6	ETSI EN 301 783 §6.3	Conducted RF Immunity	RX	Pass

Note:

1. N/A means it's not applicable to this item.



Test Items	Measurement Uncertainty	Notes
Frequency error	18Hz	(1)
Transmitter power conducted	0.63dB	(1)
Transmitter power Radiated	2.38dB	(1)
Adjacent and alternate channel power Conducted	0.98dB	(1)
Conducted spurious emission 9kHz-12.75 GHz	0.63dB	(1)
Radiated Emissions 30~1000MHz	4.80 dB	(1)
Radiated Emissions 1~18GHz	5.16 dB	(1)
Intermodulation attenuation	1.00 dB	(1)
Maximum useable receiver sensitivity	0.86dB	(1)
Co-channel rejection	1.30dB	(1)
Adjacent channel selectivity	1.40dB	(1)
Spurious response rejection	2.27dB	(1)
Intermodulation response rejection	2.39dB	(1)
Blocking or desensitization	2.20dB	(1)

Note:

(1)This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

2.5 DESCRIPTION OF TEST MODES

The EUT has been tested under typical operating condition. No software used to control the EUT for staying in transmitting and receiving mode for testing.

Operation mode	Channel Separation	Operation Frequency Range	Test channel	Test Frequency
		144-146MHz	Bottom	144.025 MHz
Analog	12.5 kHz&25 kHz	144-146MHz	Middle	145.000 MHz
		144-146MHz	High	145.975 MHz
		430-440MHz	Bottom	430.025 MHz
Analog	12.5 kHz&25 kHz	430-440MHz	Middle	435.000 MHz
		430-440MHz	High	439.975 MHz



3.1 ARRANGEMENT FOR ANALOGUE TEST SIGNALS AT THE INPUT OF THE TRANSMITTER

For the purpose of the present document, in the case of analogue equipment, the transmitter audio frequency modulation signal shall be applied to the terminals of the audio input connector with any microphone disconnected, unless otherwise stated.

3.2 ARRANGEMENT FOR TEST SIGNALS AT THE INPUT OF THE RECEIVER

RF test signal sources which are applied to the receiver shall present an impedance of $50~\Omega$ to the receiver input. This requirement shall be met irrespective of whether one or more signals using a combining network are applied to the receiver simultaneously. The levels of the test signals shall be expressed in terms of the emf at the receiver input connector. The effects of any intermodulation products and noise produced in the test signal sources shall be negligible.

3.3 CHARACTERISTICS OF TEST SIGNALS AT THE INPUT OF THE RECEIVER

Wanted RF test signals applied to the receiver shall have the modulation characteristics as specified in table 1.

Table 1: Wanted test signal

Mode	Units	Modulation	
AM	60 % AM (1 kHz)		
FM	60 % of the maximum		
	permissible frequency		
		deviation (1 kHz)	
SSB	1 kHz offset	None	
Other modes	as declared by the manufacturer	as declared by the manufacturer	

Table 2: Unwanted test signal

Mode	Units	Modulation	
AM	60	% AM (400 Hz)	
FM	60 % of the maximum		
	permissible frequency		
		deviation (400 Hz)	
SSB	Offset specified by test	None	
Other modes	as declared by the manufacturer	as declared by the manufacturer	



4.1 TEST FACILITIES

Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao 'an District, Shenzhen, Guangdong, China

4.2 LIST OF EQUIPMENTS USED

Name of Equipment	Manufacturer	Model	Serial Number	Cal. Date	Cal. Due
SIGNAL ANALYZER	AGILENT	N9020A	MY53300860	Jun. 01, 2023	May 31,2024
POWER ATTENUATOR	WEINSCHEL CORP	58-30-33	ML030	Jun. 04, 2023	Jun. 03, 2024
H&T Chamber	EXPERY	TN-400	TN2007SR038	Jun. 04, 2023	Jun. 03, 2024
Signal generator	Aglient	5182A	MY50140530	Jun. 01, 2023	May 31,2024
Signal Generator	R&S	5182B	MY53050474	Jun. 01, 2023	May 31,2024
Amplifier	Milmega	AS0104-55_55	-	Jun. 04, 2023	Jun. 03, 2024
ANTENNA	R&S	VULB9168	D69250	May 11, 2023	May 10, 2025
Horn Antenna	Schwarzbeck	3117	00034609	Mar. 31, 2024	Mar. 30, 2025
EMI Test Receiver	Rohde & Schwarz	ESCI	10096	Feb. 01, 2024	Jan. 31, 2025
RF Communication Test Set	HP	8920B	US35010161	Jun. 02, 2023	Jun. 01, 2024
UHF Filter	Microwave	N25155M2	498705	Jun. 01, 2023	May 31, 2024
VHF Filter	Microwave	N26460M1	498703	Jun. 01, 2023	May 31, 2024

4.3 MEASUREMENT UNCERTAINTY

Radio frequency: 1×10⁻⁷

RF Power(up to 120W): ± 0.5 dB Radiated RF power: ± 4 dB

Conducted spurious emission of transmitter valid up to 12.75 GHz: ± 2.75 dB Conducted spurious emission of receiver, valid up to 12.75 GHz: ± 4.2 dB

Two-signal measurement, valid up to 4 GHz: $\pm 2 dB$

Radiated emission of the transmitter, valid up to 4GHz: ± 3 dB Radiated emission of the receiver, valid up to 4 GHz: ± 3 dB



5.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix I for the actual connections between EUT and support equipment.

5.2 SUPPORT EQUIPMENT

No available support equipment during the testing.

Notes:

- All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- 2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

3.4 SUPPORTED TEST SIGNALS

Analogue signals

For tests on analogue equipment via the audio input socket terminals, the test signal shall consist of two equal amplitude non harmonically related sinusoidal input signals selected to be in the range 500 Hz to 3 kHz with at least 500 Hz separation between them, each of which would independently drive the transmitter into its compression region. The composite signal level shall be 20 dB higher than the level which produces 60 % modulation unless the output power at this drive level is less than the highest Tx output power in which case the signal level shall be set to produce the highest possible Tx output power. For tests via any facilities sockets this test signal shall be of the nature described by the manufacturer for the purpose of the socket, at a level which produces the largest value of output power (PEP) possible with analogue modulation.

Digital signals

For tests on digital equipment (including digital speech), the test signal be as declared by the manufacturer, at the appropriate data rate. If the transmission of a continuous bit stream is not possible, the test signal shall be trains of correctly coded bits or messages. For the purpose of testing PX in clause 5.1 the test signal shall produce the largest value of output power (PEP) possible with digital modulation. If this is not the case then a test signal that does produce the largest possible value of output power (PEP) with digital modulation should be used in the testing in clause 5.1. For digital equipments that support adaptive rates, testing is only required at one bit rate. For transmitter tests in this clause this would normally be the highest bit-rate supported by the equipment.



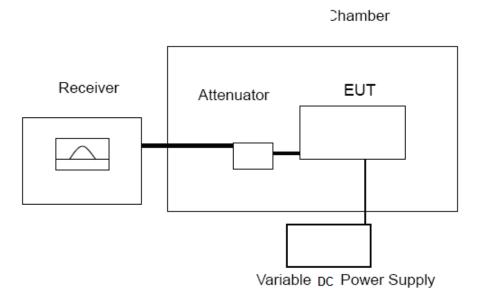
6. EN 301 783 MEASUREMENT REQUIREMENTS

6.1 MAXIMUM TRANSMITTER POWER (CONDUCTED)

TEST LIMIT

The PX of the transmitter is the maximum value of the output PEP for any condition of modulation. The rated maximum power of the transmitter is that declared by the manufacturer.

TEST CONFIGURATION



Note: The impedance of attenuator is 50ohm.

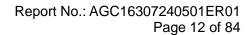
TEST PROCEDURE

- 1. Please refer to ETSI EN 301 783 (V2.1.1) Sub-clause 4.2 for the test conditions.
- 2. Please refer to ETSI EN 301 783 (V2.1.1) Sub-clause 5.1.2 for the measurement method.

TEST RESULT:

Note:

- 1. The EUT have been tested under DC 7.4V.
- 2. Only result the worst case in this part.





modi	ulation	Test Channel	Channel Separation	RF Output power (dBm)
		Low (UHF)	12.5 KHz	36.96
F3E	5W	Middle (UHF)	12.5 KHz	36.79
		High (UHF)	12.5 KHz	36.82

modi	ulation	Channel	Channel Separation	RF Output power (dBm)
		Low (UHF)	25 KHz	36.90
F3E	5W	Middle (UHF)	25 KHz	36.96
		High (UHF)	25 KHz	36.78

modu	ulation	Test Channel	Channel Separation	RF Output power (dBm)
		Low (VHF)	12.5 KHz	36.52
F3E	5W	Middle (VHF)	12.5 KHz	36.79
		High (VHF)	12.5 KHz	36.78

modi	ulation	Channel	Channel Separation	RF Output power (dBm)
		Low (VHF)	25 KHz	36.67
F3E	5W	Middle (VHF)	25 KHz	36.80
		High (VHF)	25 KHz	36.81



TEST LIMIT

The power of any spurious emission, occurring outside the exclusion band centred on the frequency on which the transmitter is intended to operate, shall not exceed the values given in tables 6 and 8 with the transmitter operating and tables 7 and 9 with the transmitter in standby mode.

Table 6: Antenna port limits in transmit mode

Frequency range or operating mode	Test Limits	Remarks	
Mobile SSB equipment	-43 dBc		
Below or equal to 30 MHz	-(43 + 10 x log(PEP)) or -50 dBc whichever is higher		
Above 30 MHz -(43 + 10 x log(PEP)) or -70 dBc (see note) whichever is higher			
NOTE: For measurement at frequencies greater than 40 GHz no test limits are specified.			

Table 3: Reference bandwidths to be used for the measurement of spurious emissions

Frequency range	RBW
9 to 150 kHz	1 kHz
150 kHz to 30 MHz	10 kHz
30 MHz to 1 GHz	100 kHz
Above 1 GHz	1 MHz

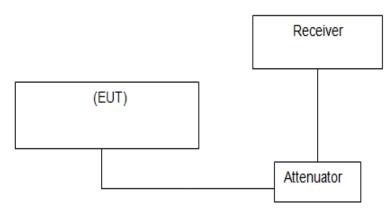
For F3E modulation the rated output power is (VHF/UHF:5W)

-(43+10*log(PEP)) = -49.99dBc (5W) - VHF/UHF

refer to table 6, the limit for F3E modulation should be:

-49.99dBc (-13dBm) below 30MHz, and-49.99dBc (-13dBm) above 30MHz---(5W)-VHF/UHF

TEST CONFIGURATION



Note: The impedance of attenuator is 50ohm.

TEST PROCEDURE

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TEST RESULTS

Note:

- 1. The EUT have been tested under DC 7.4V.
- 2. Only result the worst case in this part.

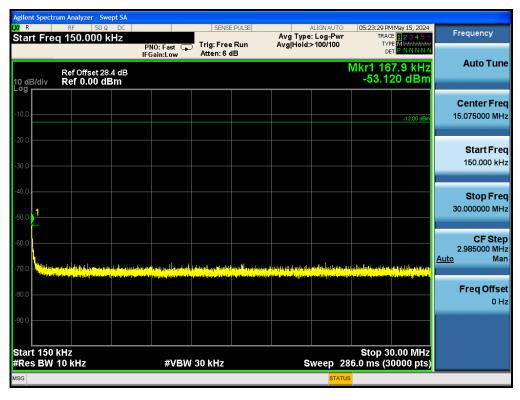


UNWANTED EMISSIONS AT BOTTOM CHANNEL (144.025MHz with 12.5 KHz channel separation)-5W

Low channel, 9KHz-150KHz

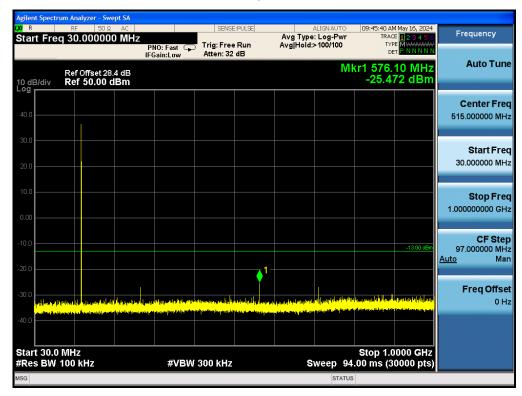


Low channel, 150KHz-30MHz





Low channel, 30MHz-1GHz



Low channel, 1GHz-12.75GHz



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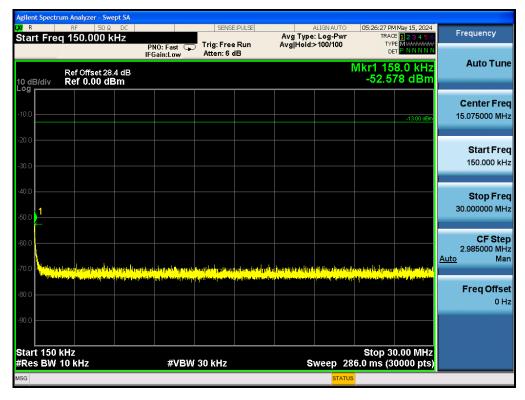


UNWANTED EMISSIONS AT MIDDLE CHANNEL (145.000MHz with 12.5 kHz channel separation)-5W

Middle channel, 9kHz-150kHz

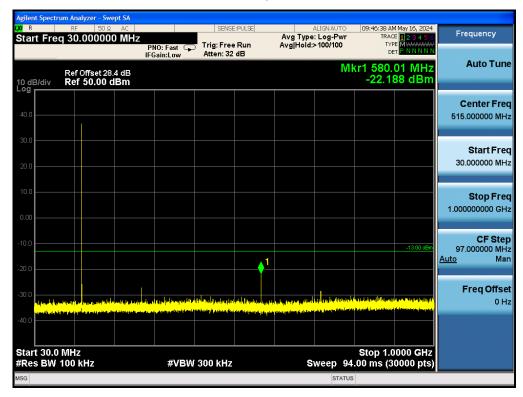


Middle channel, 150kHz-30MHz

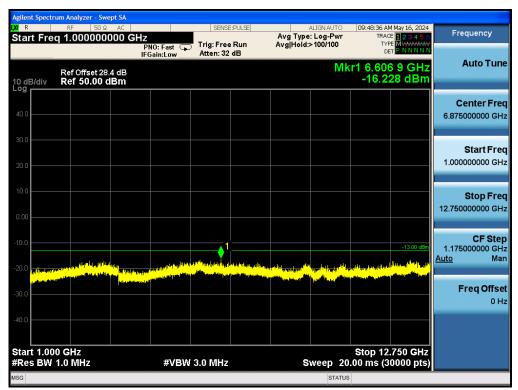




Middle channel, 30MHz-1GHz



Middle channel, 1GHz-12.75GHz



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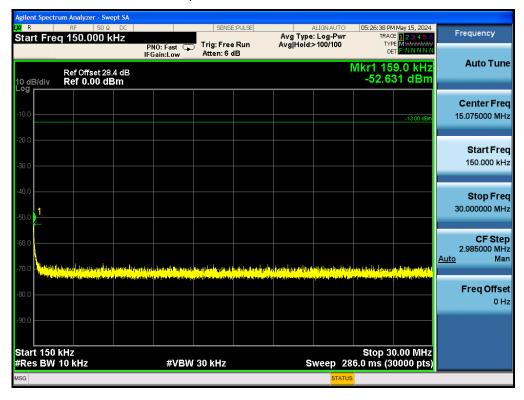
UNWANTED EMISSIONS AT TOP CHANNEL

(145.975MHz with 12.5 kHz channel separation)-5W

Top channel, 9kHz-150kHz



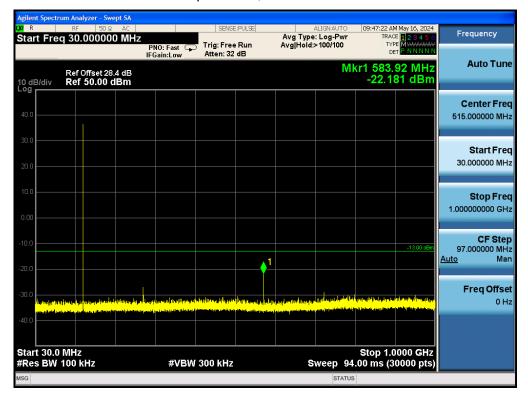
Top channel, 150kHz-30MHz



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Top channel, 30MHz-1GHz



Top channel, 1GHz-12.75GHz



Note: All power was tested, but only data with the highest power were recorded in this section

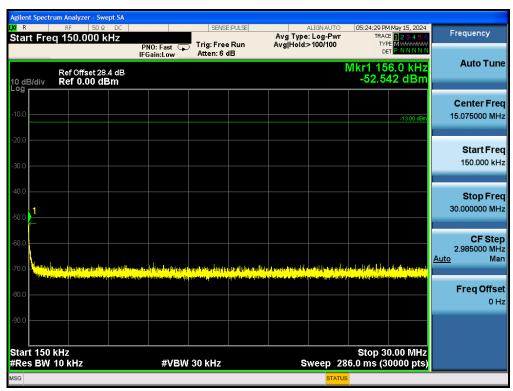


<u>UNWANTED EMISSIONS AT BOTTOM CHANNEL</u> (430.025MHz with 12.5 kHz channel separation)-5W

Bottom channel, 9kHz-150kHz

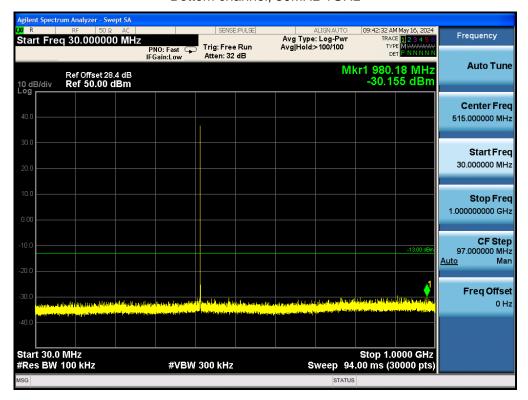


Bottom channel, 150kHz-30MHz





Bottom channel, 30MHz-1GHz



Bottom channel, 1GHz-12.75GHz



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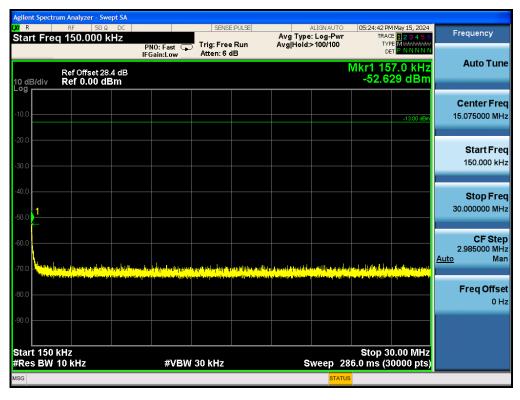


UNWANTED EMISSIONS AT MIDDLE CHANNEL (435.000MHz with 12.5 kHz channel separation)-5W

Middle channel, 9kHz-150kHz



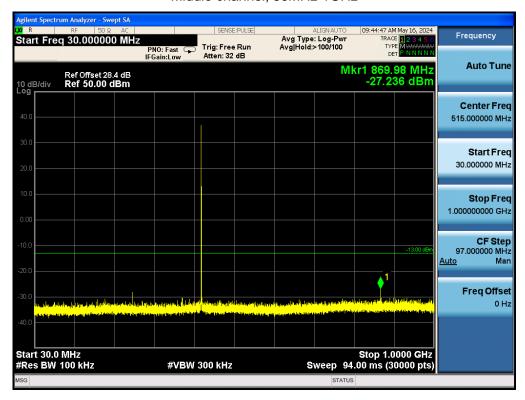
Middle channel, 150kHz-30MHz



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Middle channel, 30MHz-1GHz



Middle channel, 1GHz-12.75GHz



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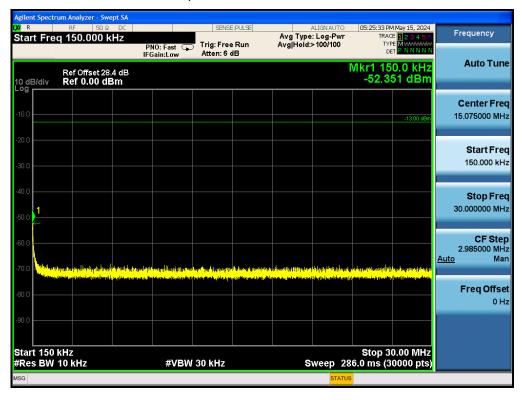


<u>UNWANTED EMISSIONS AT TOP CHANNEL</u> (439.975MHz with 12.5 kHz channel separation)-5W

Top channel, 9kHz-150kHz

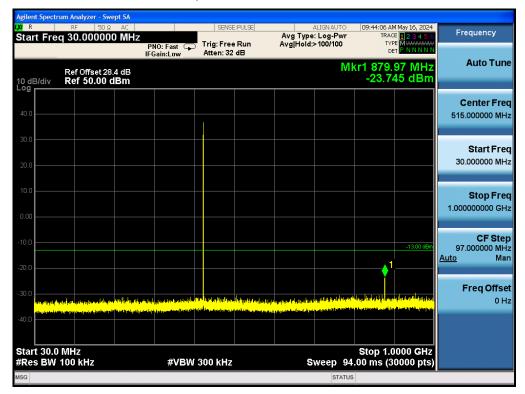


Top channel, 150kHz-30MHz





Top channel, 30MHz-1GHz



Top channel, 1GHz-12.75GHz



Note: All power was tested, but only data with the highest power were recorded in this section

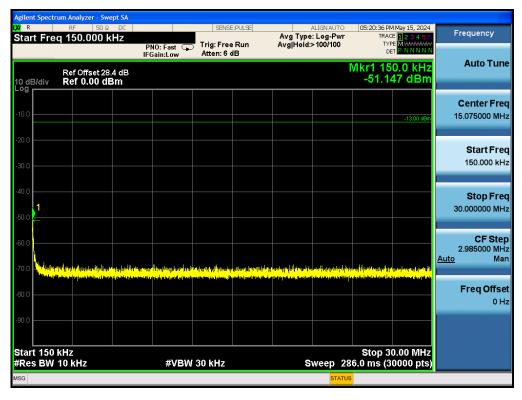


UNWANTED EMISSIONS AT BOTTOM CHANNEL (144.025MHz with 25 KHz channel separation)-5W

Low channel, 9KHz-150KHz

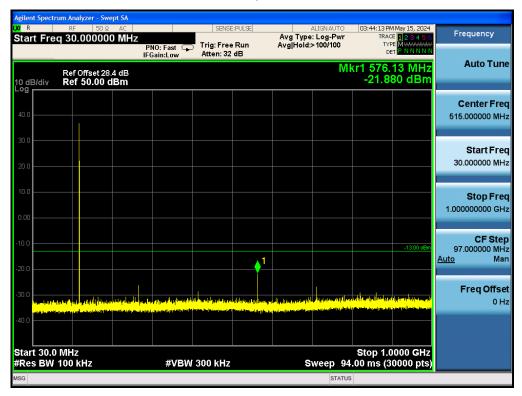


Low channel, 150KHz-30MHz





Low channel, 30MHz-1GHz



Low channel, 1GHz-12.75GHz



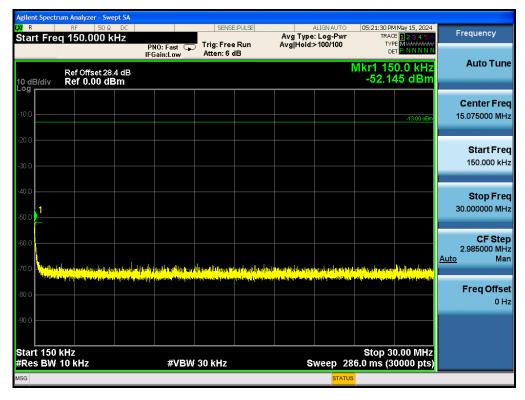


UNWANTED EMISSIONS AT MIDDLE CHANNEL (145.000MHz with 25 kHz channel separation)-5W

Middle channel, 9kHz-150kHz

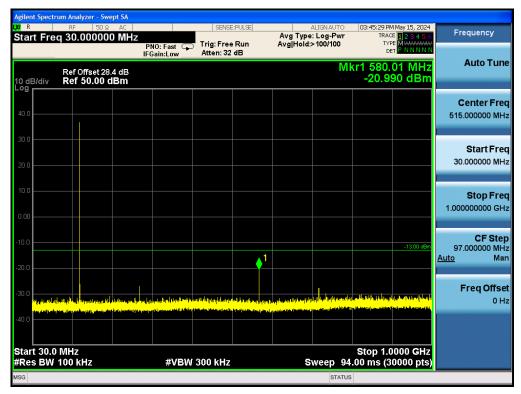


Middle channel, 150kHz-30MHz





Middle channel, 30MHz-1GHz



Middle channel, 1GHz-12.75GHz



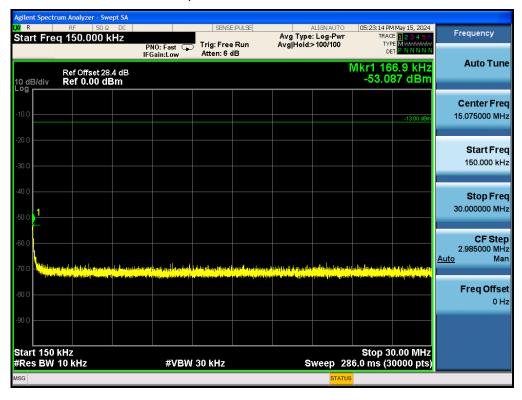


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Top channel, 9kHz-150kHz

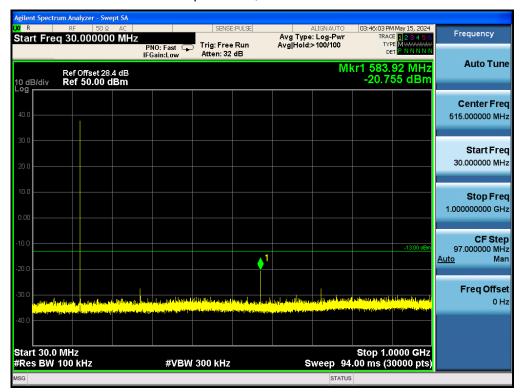


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Top channel, 30MHz-1GHz



Top channel, 1GHz-12.75GHz



Note: All power was tested, but only data with the highest power were recorded in this section

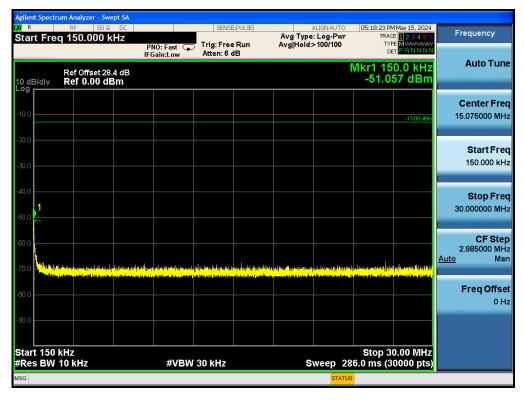


UNWANTED EMISSIONS AT BOTTOM CHANNEL(430.025MHz with 25 kHz channel separation)-5W

Bottom channel, 9kHz-150kHz

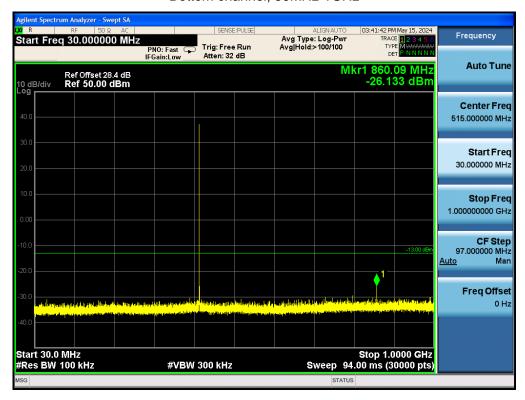


Bottom channel, 150kHz-30MHz





Bottom channel, 30MHz-1GHz



Bottom channel, 1GHz-12.75GHz



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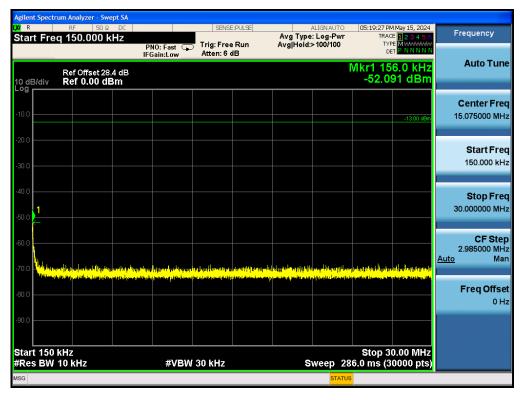


UNWANTED EMISSIONS AT MIDDLE CHANNEL (435.000MHz with 25 kHz channel separation)-5W

Middle channel, 9kHz-150kHz



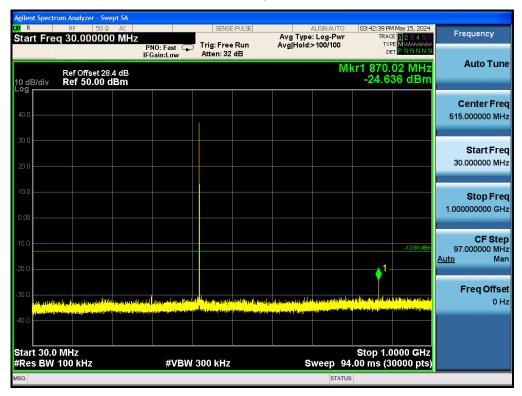
Middle channel, 150kHz-30MHz



Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.



Middle channel, 30MHz-1GHz



Middle channel, 1GHz-12.75GHz



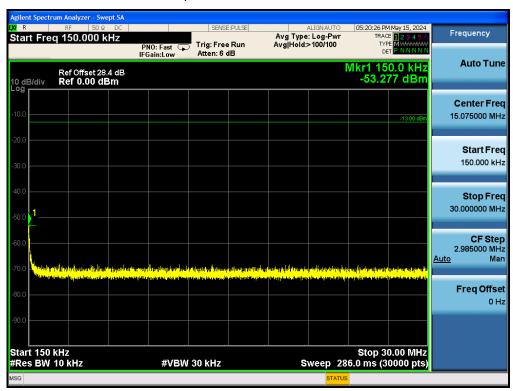


<u>UNWANTED EMISSIONS AT TOP CHANNEL</u> (439.975MHz with 25 kHz channel separation)-5W

Top channel, 9kHz-150kHz

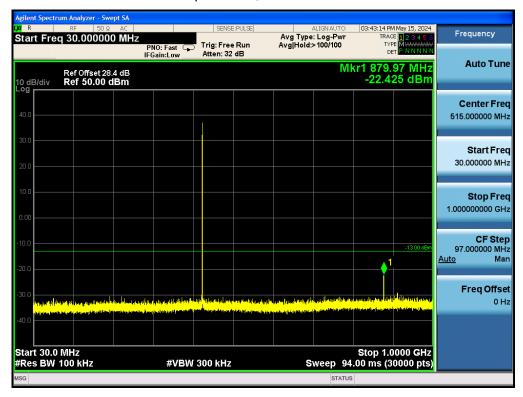


Top channel, 150kHz-30MHz





Top channel, 30MHz-1GHz



Top channel, 1GHz-12.75GHz



Note: All power was tested, but only data with the highest power were recorded in this section



6.3 CONDUCTED SPURIOUS EMISSION IN RECEIVE OR TRANSIMIT STANDBY MODE

TEST LIMIT

The power of any spurious emission, occurring outside the exclusion band centred on the frequency on which the transmitter is intended to operate, shall not exceed the values given in tables 6 and 8 with the transmitter operating and tables 7 and 9 with the transmitter in standby mode.

Table 7: Antenna port limits in transmit standby mode

Frequency Range	Test Limits	Remarks				
0,15 MHz to 1 000 MHz	-57 dBm					
> 1 000 MHz	-47 dBm	(see note)				
NOTE: For measurement at frequencies greater than 40 GHz no test limits are specified.						

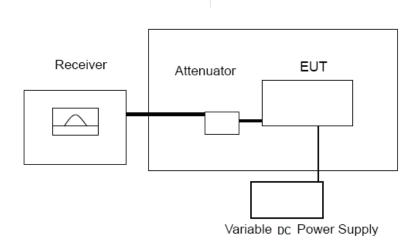
Table 3: Reference bandwidths to be used for the measurement of spurious emissions

Frequency range	RBW
9 to 150 kHz	1 kHz
150 kHz to 30 MHz	10 kHz
30 MHz to 1 GHz	100 kHz
Above 1 GHz	1 MHz

Table 4: Transmit exclusion bands for the measurement of spurious emissions

Operating freq	Bn minimum	Tx exclusion band		
Below 30 MHz	4 kHz	10 kHz		
30 MHz to 1 GHz	25 kHz	62,5 kHz		
1 GHz to 26 GHz	100 kHz	250 kHz		
Above 26 GHz	1 MHz	2,5 MHz		

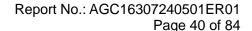
TEST CONFIGURATION



TEST PROCEDURE

- 1. Applease refer to ETSU EN 301-783 (V2-01-11) in clause 4 2 infort test condition, not been stamped by the "Dedicated Testing/Inspection 2. SEPIE as exercise to EVISIOE No 301 x 788 in (V2 in 1). Sub-clause 5 212 19 for the measurement imethodation of AGC. The test results
- 2. Staticase referror in the isolation of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

Tel: +86-755 2523 4088 E-mail: agc@agccert.com Web: http://www.agccert.com/





Note:

- 3. The EUT have been tested under DC 7.4V.
- 4. Only result the worst case in this part.

TEST RESULT-UHF-12.5KHz&25KHz-5W

Frequency (MHz)	Test result (dBm)	Limit (dBm)	Margin (dB)
9KHz - 1 GHz			At least 20 dD decree there the
			At least 20 dB down than the limit
1 GHz - 12.75 GHz			mint

Remark:

- (1) Margin (dBm) = Limit-test result
- (2) Measuring frequencies from 9KHz 12.75 GHz.
- (3) Data of measurement within this frequency range shown " -- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the power is too small to be measured.

TEST RESULT-VHF-12.5KHz&25KHz-5W

Frequency (MHz)	Test result (dBm)	Limit (dBm)	Margin (dB)
9KHz - 1 GHz			At least 20 dD down then the
			At least 20 dB down than the limit
1 GHz - 12.75 GHz			m/mt

Remark:

- (1) Margin (dBm) = Limit-test result
- (2) Measuring frequencies from 9KHz 12.75 GHz.
- (3) Data of measurement within this frequency range shown " -- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the power is too small to be measured.



.4 RADIATED SPURIOUS EMISSION ENCLOSURE PORT IN TRANSMIT MODE

TEST LIMIT

The power of any spurious emission, occurring outside the exclusion band centred on the frequency on which the transmitter is intended to operate, shall not exceed the values given in tables 6 and 8 with the transmitter operating and tables 7 and 9 with the transmitter in standby mode.

Table 8: Enclosure port limits in transmit mode

Frequency range or operating mode	Test Limits	Remarks			
Mobile SSB equipment	-43 dBc				
Below or equal to 30 MHz	-(43 + 10 x log(PEP)) or -50 dBc				
	whichever is higher				
Above 30 MHz	-(43 + 10 x log(PEP)) or -70 dBc	(see note)			
	whichever is higher				
NOTE: For measurement at frequencies greater than 40 GHz no test limits are specified.					

Table 3: Reference bandwidths to be used for the measurement of spurious emissions

Frequency range	RBW
9 to 150 kHz	1 kHz
150 kHz to 30 MHz	10 kHz
30 MHz to 1 GHz	100 kHz
Above 1 GHz	1 MHz

Table 4: Transmit exclusion bands for the measurement of spurious emissions

Operating freq	Bn minimum	Tx exclusion band
Below 30 MHz	4 kHz	10 kHz
30 MHz to 1 GHz	25 kHz	62,5 kHz
1 GHz to 26 GHz	100 kHz	250 kHz
Above 26 GHz	1 MHz	2,5 MHz

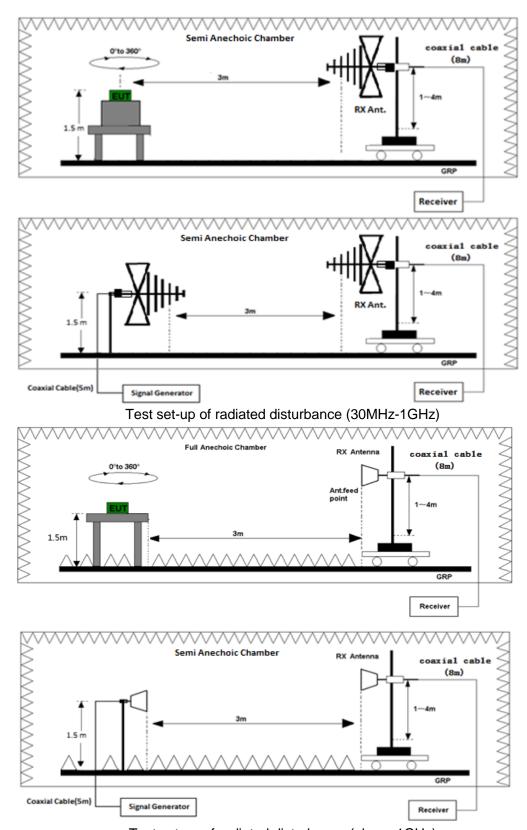
For F3E modulation the rated output power is (VHF/UHF: 5W),

-(43+10*log(PEP)) = -49.99dBc (5W) - VHF/UHF

, refer to table 8, the limit for F3E modulation should be:

-49.99dBc (-13dBm) below 30MHz, and-49.99dBc (-13dBm) above 30MHz---(5W)-VHF/UHF





Test set-up of radiated disturbance (above 1GHz)



- 1. Please refer to ETSI EN 301 783(V2.1.1), clause 4.2 for test condition.
- 2. Please refer to ETSI EN 301 783(V2.1.1) Sub-clause 5.2.2.2 for the measurement method.

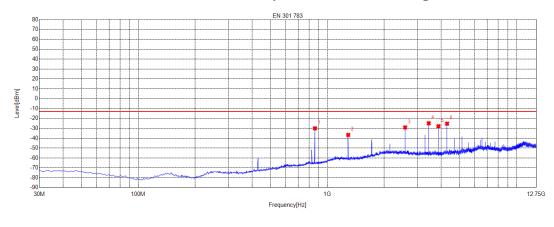
TEST RESULT

Note: 1. The fundamental wave has been filtered by trap filter.

2. The EUT have been tested under DC 7.4V.

UHF:

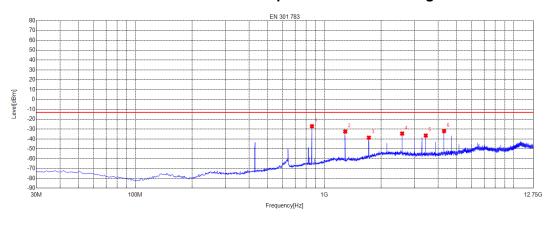
The Bottom channel for 12.5 kHz Channel Separation @Transmitting Mode-Horizontal-5W



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	860.32	-67.24	-30.04	-13.00	17.04	37.20	307	Horizontal
2	1290.254	-32.59	-36.69	-13.00	23.69	-4.10	93	Horizontal
3	2580.5331	-31.49	-29.12	-13.00	16.12	2.37	9	Horizontal
4	3440.7191	-27.07	-24.87	-13.00	11.87	2.20	307	Horizontal
5	3870.8121	-30.41	-27.96	-13.00	14.96	2.45	1	Horizontal
6	4300.9051	-28.94	-25.28	-13.00	12.28	3.66	47	Horizontal



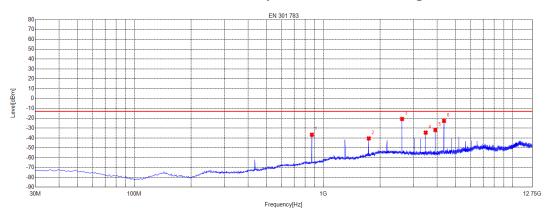
The Bottom channel for 12.5 kHz Channel Separation @Transmitting Mode- Vertical-5W



Limit Freq. Reading Level Margin Factor Angle NO. **Polarity** [MHz] [dBm] [dBm] [dBm] [dB] [dB] [°] 860.32 -64.29 -13.00 37.20 Vertical 1 -27.09 14.09 359 2 1290.254 -28.37 -32.47 -13.00 19.47 -4.10 214 Vertical 3 1720.347 -37.28 -38.70 -13.00 25.70 -1.42297 Vertical 4 -34.51 -13.00 21.51 Vertical 2580.5331 -36.88 2.37 315 5 -38.76 -36.56 -13.00 23.56 2.20 Vertical 3440.7191 261 -35.68 6 4300.9051 -32.02-13.00 19.02 3.66 315 Vertical



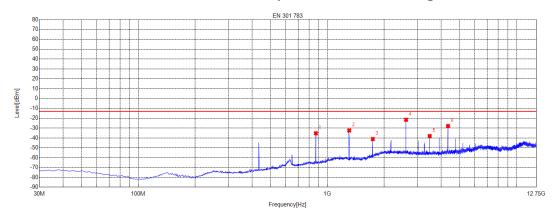
The Middle channel for 12.5 kHz Channel Separation @Transmitting Mode-Horizontal-5W



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	870.02	-74.03	-36.75	-13.00	23.75	37.28	313	Horizontal
2	1740.324	-39.33	-40.50	-13.00	27.50	-1.17	158	Horizontal
3	2609.911	-23.07	-20.76	-13.00	7.76	2.31	358	Horizontal
4	3480.6731	-36.85	-34.59	-13.00	21.59	2.26	54	Horizontal
5	3915.4665	-34.43	-31.97	-13.00	18.97	2.46	92	Horizontal
6	4350.26	-26.56	-22.71	-13.00	9.71	3.85	285	Horizontal



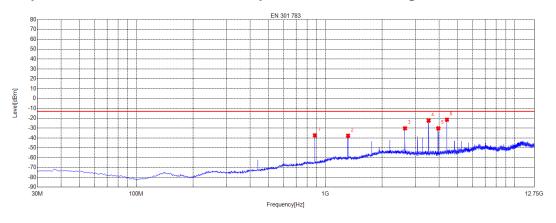
The Middle channel for 12.5 kHz Channel Separation @Transmitting Mode- Vertical-5W



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	870.02	-72.52	-35.24	-13.00	22.24	37.28	359	Vertical
2	1305.5306	-28.34	-32.44	-13.00	19.44	-4.10	173	Vertical
3	1740.324	-39.95	-41.12	-13.00	28.12	-1.17	277	Vertical
4	2609.911	-23.90	-21.59	-13.00	8.59	2.31	285	Vertical
5	3480.6731	-40.37	-38.11	-13.00	25.11	2.26	257	Vertical
6	4350.26	-31.79	-27.94	-13.00	14.94	3.85	303	Vertical



The Top channel for 12.5 kHz Channel Separation @Transmitting Mode-Horizontal-5W



Limit Freq. Reading Level Margin Factor Angle NO. **Polarity** [MHz] [dBm] [dBm] [dBm] [dB] [dB] [°] 880.69 -74.70 -13.00 37.37 1 -37.33 24.33 1 Horizontal 2 1319.632 -33.62 -37.72 -13.00 24.72 -4.10 57 Horizontal 3 2640.464 -32.51 -30.26 -13.00 17.26 2.25 190 Horizontal 4 3519.4519 -24.74 -22.44 -13.00 9.44 2.30 113 Horizontal 17.24 5 -32.72 -30.24 -13.00 2.48 39 3960.121 Horizontal -25.60 330 6 4399.615 -21.56 -13.00 8.56 4.04 Horizontal

--- Horizontal



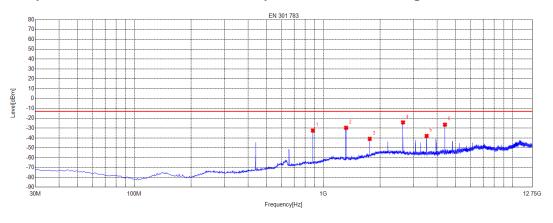
6

4399.615

-30.58

-26.54

The Top channel for 12.5 kHz Channel Separation @Transmitting Mode- Vertical-5W



Limit Freq. Reading Level Margin Factor Angle NO. **Polarity** [MHz] [dBm] [dBm] [dBm] [dB] [dB] [°] 880.69 -69.88 -13.00 37.37 Vertical 1 -32.51 19.51 359 2 1319.632 -25.63 -29.73 -13.00 16.73 -4.10 173 Vertical 3 1760.301 -39.99 -40.92 -13.00 27.92 -0.93 313 Vertical 4 -24.25 -13.00 11.25 2.25 Vertical 2640.464 -26.500 -37.99 5 3520.6271 -40.29 -13.00 2.30 255 24.99 Vertical

-13.00

13.54

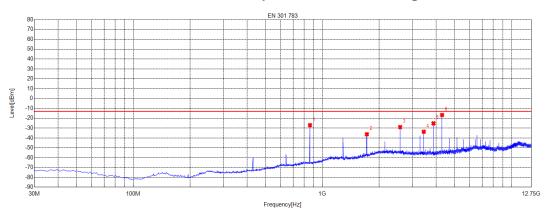
4.04

313

Vertical



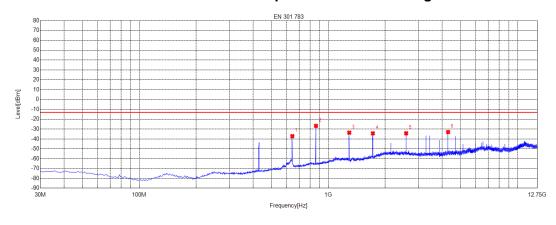
The Bottom channel for 25 kHz Channel Separation @Transmitting Mode-Horizontal-5W



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	860.32	-64.26	-27.06	-13.00	14.06	37.20	303	Horizontal
2	1720.347	-34.82	-36.24	-13.00	23.24	-1.42	311	Horizontal
3	2580.5331	-31.36	-28.99	-13.00	15.99	2.37	360	Horizontal
4	3440.7191	-35.90	-33.70	-13.00	20.70	2.20	104	Horizontal
5	3870.8121	-27.67	-25.22	-13.00	12.22	2.45	243	Horizontal
6	4300.9051	-20.40	-16.74	-13.00	3.74	3.66	28	Horizontal

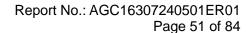


The Bottom channel for 25 kHz Channel Separation @Transmitting Mode- Vertical-5W



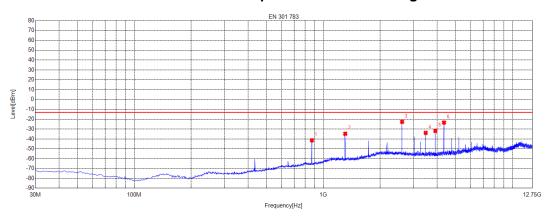
- Limit # Final Test - Vertica

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	644.98	-71.91	-37.18	-13.00	24.18	34.73	302	Vertical
2	860.32	-63.92	-26.72	-13.00	13.72	37.20	359	Vertical
3	1290.254	-29.53	-33.63	-13.00	20.63	-4.10	176	Vertical
4	1720.347	-32.90	-34.32	-13.00	21.32	-1.42	269	Vertical
5	2580.5331	-36.65	-34.28	-13.00	21.28	2.37	285	Vertical
6	4300.9051	-36.66	-33.00	-13.00	20.00	3.66	312	Vertical



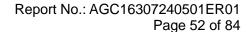


The Middle channel for 25 kHz Channel Separation @Transmitting Mode-Horizontal-5W



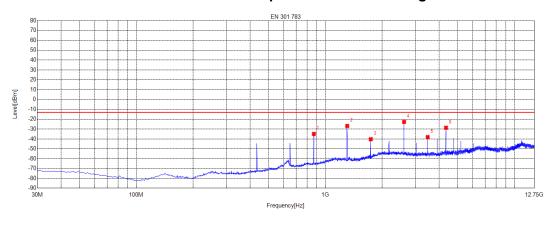
--- Horizontal

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	870.02	-78.63	-41.35	-13.00	28.35	37.28	303	Horizontal
2	1305.5306	-30.63	-34.73	-13.00	21.73	-4.10	249	Horizontal
3	2609.911	-24.95	-22.64	-13.00	9.64	2.31	358	Horizontal
4	3480.6731	-36.10	-33.84	-13.00	20.84	2.26	47	Horizontal
5	3915.4665	-34.29	-31.83	-13.00	18.83	2.46	249	Horizontal
6	4350.26	-27.25	-23.40	-13.00	10.40	3.85	303	Horizontal





The Middle channel for 25 kHz Channel Separation @Transmitting Mode- Vertical-5W

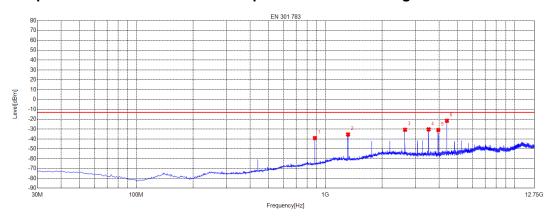


--- Limit # Final Test --- Vertica

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	870.02	-72.17	-34.89	-13.00	21.89	37.28	306	Vertical
2	1305.5306	-22.73	-26.83	-13.00	13.83	-4.10	10	Vertical
3	1740.324	-39.08	-40.25	-13.00	27.25	-1.17	306	Vertical
4	2609.911	-25.02	-22.71	-13.00	9.71	2.31	278	Vertical
5	3480.6731	-40.38	-38.12	-13.00	25.12	2.26	26	Vertical
6	4350.26	-32.53	-28.68	-13.00	15.68	3.85	268	Vertical



The Top channel for 25 kHz Channel Separation @Transmitting Mode-Horizontal-5W



--- Limit # Final Test --- Horizonta

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	880.69	-76.50	-39.13	-13.00	26.13	37.37	1	Horizontal
2	1319.632	-31.34	-35.44	-13.00	22.44	-4.10	360	Horizontal
3	2640.464	-32.93	-30.68	-13.00	17.68	2.25	360	Horizontal
4	3519.4519	-32.60	-30.30	-13.00	17.30	2.30	39	Horizontal
5	3960.121	-33.39	-30.91	-13.00	17.91	2.48	84	Horizontal
6	4399.615	-25.64	-21.60	-13.00	8.60	4.04	313	Horizontal



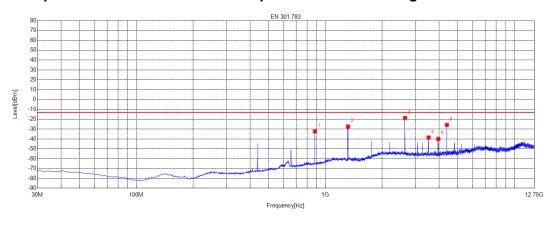
4399.615

6

-29.85

-25.81

The Top channel for 25 kHz Channel Separation @Transmitting Mode- Vertical-5W



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	880.69	-69.77	-32.40	-13.00	19.40	37.37	351	Vertical
2	1319.632	-23.30	-27.40	-13.00	14.40	-4.10	313	Vertical
3	2640.464	-20.97	-18.72	-13.00	5.72	2.25	313	Vertical
4	3519.4519	-40.84	-38.54	-13.00	25.54	2.30	257	Vertical
5	3960.121	-42.50	-40.02	-13.00	27.02	2.48	209	Vertical

-13.00

12.81

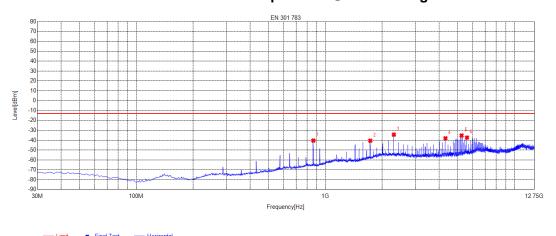
4.04

265

Vertical



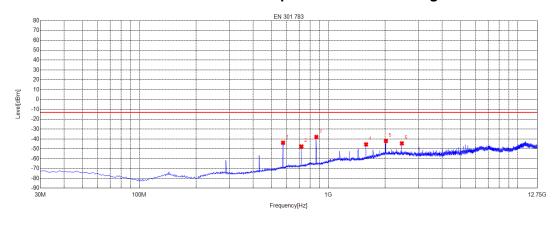
The Bottom channel for 12.5 kHz Channel Separation @Transmitting Mode-Horizontal-5W



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	864.2	-77.60	-40.37	-13.00	27.37	37.23	1	Horizontal
2	1728.5729	-39.22	-40.54	-13.00	27.54	-1.32	30	Horizontal
3	2304.3804	-36.72	-34.39	-13.00	21.39	2.33	9	Horizontal
4	4320.8821	-41.86	-38.12	-13.00	25.12	3.74	40	Horizontal
5	5257.4507	-40.64	-35.24	-13.00	22.24	5.40	56	Horizontal
6	5617.0367	-43.31	-37.31	-13.00	24.31	6.00	40	Horizontal



The Bottom channel for 12.5 kHz Channel Separation @Transmitting Mode- Vertical-5W

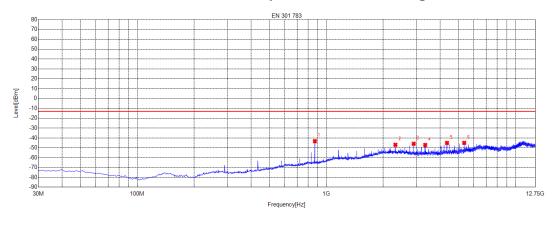


Limit # Final Test Vertice	Limit	*	Final Test	Vertic
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NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	576.11	-77.76	-43.88	-13.00	30.88	33.88	173	Vertical
2	720.64	-82.98	-47.70	-13.00	34.70	35.28	183	Vertical
3	864.2	-75.24	-38.01	-13.00	25.01	37.23	351	Vertical
4	1584.0334	-42.45	-45.55	-13.00	32.55	-3.10	21	Vertical
5	2016.4766	-44.17	-42.13	-13.00	29.13	2.04	351	Vertical
6	2448.9199	-46.96	-44.48	-13.00	31.48	2.48	351	Vertical



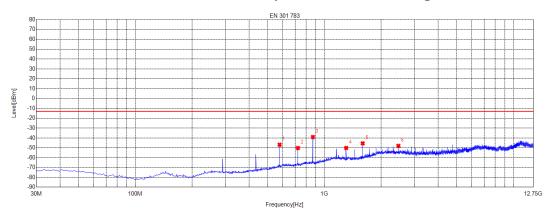
The Middle channel for 12.5 kHz Channel Separation @Transmitting Mode-Horizontal-5W



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	870.02	-80.53	-43.25	-13.00	30.25	37.28	305	Horizontal
2	2319.657	-49.30	-46.95	-13.00	33.95	2.35	343	Horizontal
3	2900.165	-47.67	-45.95	-13.00	32.95	1.72	10	Horizontal
4	3334.9585	-49.16	-47.12	-13.00	34.12	2.04	359	Horizontal
5	4350.26	-48.91	-45.06	-13.00	32.06	3.85	38	Horizontal
6	5365.5616	-50.61	-45.04	-13.00	32.04	5.57	38	Horizontal



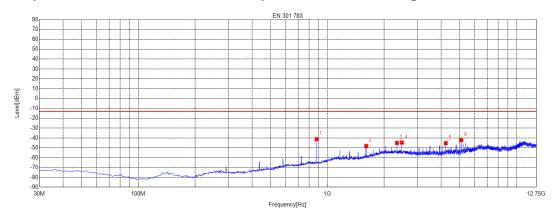
The Middle channel for 12.5 kHz Channel Separation @Transmitting Mode- Vertical-5W



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	579.99	-80.89	-46.86	-13.00	33.86	34.03	209	Vertical
2	725.49	-85.57	-50.23	-13.00	37.23	35.34	209	Vertical
3	870.02	-76.36	-39.08	-13.00	26.08	37.28	0	Vertical
4	1305.5306	-46.09	-50.19	-13.00	37.19	-4.10	7	Vertical
5	1595.7846	-42.57	-45.52	-13.00	32.52	-2.95	7	Vertical
6	2465.3715	-50.55	-48.06	-13.00	35.06	2.49	341	Vertical



The Top channel for 12.5 kHz Channel Separation @Transmitting Mode-Horizontal-5W

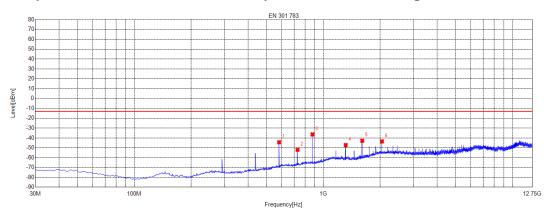


— Limit # Final Test — Horizonta

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	876.81	-78.56	-41.22	-13.00	28.22	37.34	306	Horizontal
2	1606.3606	-45.35	-48.17	-13.00	35.17	-2.82	176	Horizontal
3	2336.1086	-47.42	-45.06	-13.00	32.06	2.36	9	Horizontal
4	2481.8232	-47.22	-44.71	-13.00	31.71	2.51	350	Horizontal
5	4233.9234	-48.71	-45.31	-13.00	32.31	3.40	44	Horizontal
6	5109.3859	-47.37	-42.21	-13.00	29.21	5.16	44	Horizontal



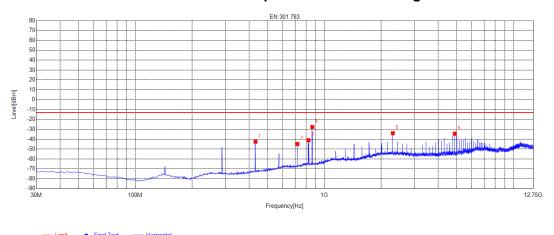
The Top channel for 12.5 kHz Channel Separation @Transmitting Mode- Vertical-5W



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	583.87	-78.58	-44.39	-13.00	31.39	34.19	135	Vertical
2	730.34	-87.41	-52.01	-13.00	39.01	35.40	181	Vertical
3	876.81	-73.77	-36.43	-13.00	23.43	37.34	0	Vertical
4	1313.7564	-43.12	-47.22	-13.00	34.22	-4.10	351	Vertical
5	1606.3606	-40.04	-42.86	-13.00	29.86	-2.82	0	Vertical
6	2043.5044	-45.56	-43.50	-13.00	30.50	2.06	359	Vertical



The Bottom channel for 25 kHz Channel Separation @Transmitting Mode-Horizontal-5W



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	432.55	-73.07	-42.54	-13.00	29.54	30.53	360	Horizontal
2	720.64	-80.18	-44.90	-13.00	31.90	35.28	281	Horizontal
3	825.4	-78.45	-41.04	-13.00	28.04	37.41	84	Horizontal
4	864.2	-64.92	-27.69	-13.00	14.69	37.23	309	Horizontal
5	2304.3804	-36.30	-33.97	-13.00	20.97	2.33	360	Horizontal
6	4896.6897	-39.29	-34.42	-13.00	21.42	4.87	56	Horizontal

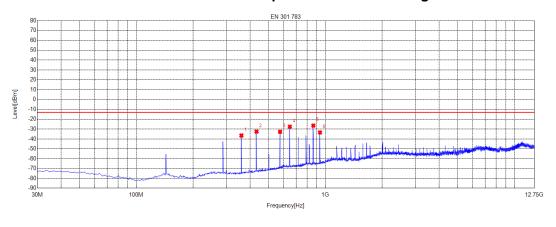


936.95

-71.70

6

The Bottom channel for 25 kHz Channel Separation @Transmitting Mode- Vertical-5W



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	359.8	-65.09	-36.50	-13.00	23.50	28.59	359	Vertical
2	432.55	-63.07	-32.54	-13.00	19.54	30.53	192	Vertical
3	576.11	-66.60	-32.72	-13.00	19.72	33.88	359	Vertical
4	648.86	-62.33	-27.61	-13.00	14.61	34.72	359	Vertical
5	864.2	-63.68	-26.45	-13.00	13.45	37.23	351	Vertical

-13.00

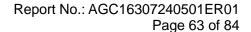
20.44

-33.44

38.26

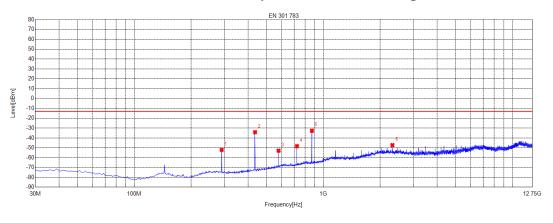
359

Vertical





The Middle channel for 25 kHz Channel Separation @Transmitting Mode-Horizontal-5W

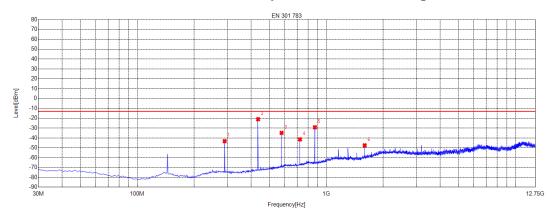


Limit Freq. Reading Level Margin Factor Angle NO. **Polarity** [MHz] [dBm] [dBm] [dBm] [dB] [dB] [°] 289.96 -13.00 28.13 1 -80.21 -52.08 39.08 92 Horizontal 2 435.46 -64.79 -34.18 -13.00 21.18 30.61 158 Horizontal 3 579.99 -86.98 -52.95 -13.00 39.95 34.03 346 Horizontal 4 725.49 -13.00 35.30 35.34 308 -83.64 -48.30 Horizontal 37.28 5 -32.71 -13.00 19.71 308 870.02 -69.99 Horizontal 34.28 -47.28 6 2319.657 -49.63-13.00 2.35 10 Horizontal

--- Horizontal



The Middle channel for 25 kHz Channel Separation @Transmitting Mode- Vertical-5W



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	289.96	-71.38	-43.25	-13.00	30.25	28.13	214	Vertical
2	435.46	-51.62	-21.01	-13.00	8.01	30.61	198	Vertical
3	579.99	-68.92	-34.89	-13.00	21.89	34.03	143	Vertical
4	725.49	-76.77	-41.43	-13.00	28.43	35.34	198	Vertical
5	870.02	-66.49	-29.21	-13.00	16.21	37.28	359	Vertical
6	1595.7846	-44.55	-47.50	-13.00	34.50	-2.95	359	Vertical

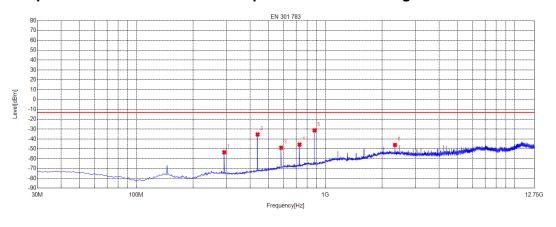


5 6

2336.1086

-48.49

The Top channel for 25 kHz Channel Separation @Transmitting Mode-Horizontal-5W



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	291.9	-81.63	-53.53	-13.00	40.53	28.10	72	Horizontal
2	438.37	-66.17	-35.48	-13.00	22.48	30.69	162	Horizontal
3	583.87	-83.02	-48.83	-13.00	35.83	34.19	343	Horizontal
4	730.34	-81.12	-45.72	-13.00	32.72	35.40	280	Horizontal
5	876.81	-68.66	-31.32	-13.00	18.32	37.34	307	Horizontal

-13.00

33.13

2.36

10

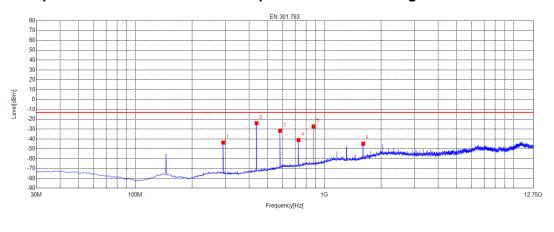
Horizontal

- Horizontal

-46.13



The Top channel for 25 kHz Channel Separation @Transmitting Mode- Vertical-5W



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	291.9	-71.81	-43.71	-13.00	30.71	28.10	207	Vertical
2	438.37	-54.67	-23.98	-13.00	10.98	30.69	227	Vertical
3	583.87	-65.94	-31.75	-13.00	18.75	34.19	141	Vertical
4	730.34	-76.53	-41.13	-13.00	28.13	35.40	189	Vertical
5	876.81	-64.65	-27.31	-13.00	14.31	37.34	2	Vertical
6	1606.3606	-41.93	-44.75	-13.00	31.75	-2.82	351	Vertical

Note

- 1. Factor=Antenna Factor + Cable loss. (Below 1GHz)
- 2. Factor=Antenna Factor+ Cable loss-Pre-amplifier.(Above 1 GHz)
- 3. Margin=Limit- Level



6.5 RADIATED SPURIOUS EMISSION ENCLOSURE PORT IN RECEIVE OR STANDBY MODE

TEST LIMIT

The power of any spurious emission, occurring outside the exclusion band centred on the frequency on which the transmitter is intended to operate, shall not exceed the values given in tables 6 and 8 with the transmitter operating and tables 7 and 9 with the transmitter in standby mode.

Table 9: Enclosure port limits in transmit standby mode

Frequency Range	Test Limits	Remarks							
30 MHz to 1 000 MHz	-57 dBm								
> 1 000 MHz	-47 dBm	(see note)							
NOTE: For measurement at t	For measurement at frequencies greater than 40 GHz no test limits are specified.								

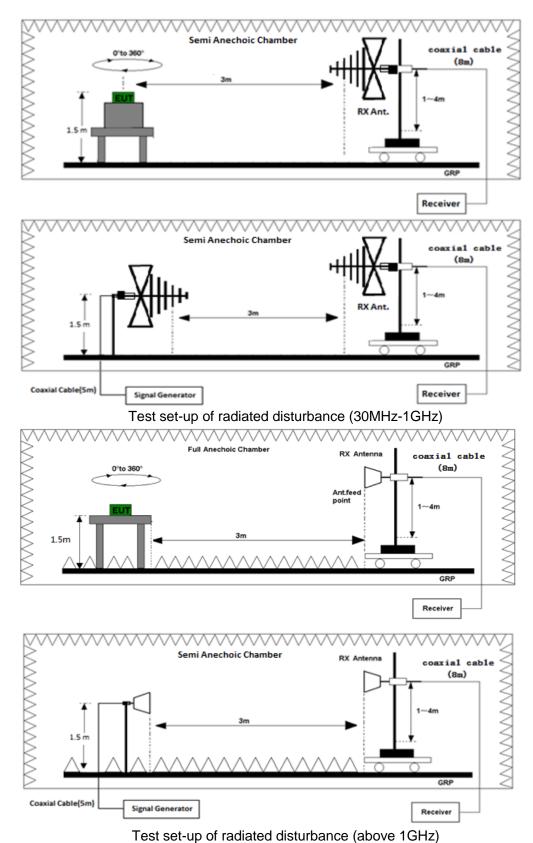
Table 3: Reference bandwidths to be used for the measurement of spurious emissions

Frequency range	RBW
9 to 150 kHz	1 kHz
150 kHz to 30 MHz	10 kHz
30 MHz to 1 GHz	100 kHz
Above 1 GHz	1 MHz

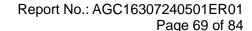
Table 4: Transmit exclusion bands for the measurement of spurious emissions

Operating freq	Bn minimum	Tx exclusion band		
Below 30 MHz	4 kHz	10 kHz		
30 MHz to 1 GHz	25 kHz	62,5 kHz		
1 GHz to 26 GHz	100 kHz	250 kHz		
Above 26 GHz	1 MHz	2,5 MHz		





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TEST PROCEDURE

- 1. Please refer to ETSI EN 301 783(V2.1.1), clause 4.2 for test condition.
- 2. Please refer to ETSI EN 301 783(V2.1.1) Sub-clause 5.2.2.2 for the measurement method.

TEST RESULTS

Note:

- 1. The EUT have been tested under DC 7.4V.
- Only result the worst case in this part

TEST RESULT OF VHF/UHF

Below 1G

Frequency	Reading level	Antenna	S.G.	Cable loss	Ant.Gai n	Emission level	Limit	Margin		
(MHz)	(dBuV)	Polarization	(dBm)	(dB)	(dB)	(dBm)	(dBm)	(dB)		
30MHz - 1 GHz		V		-				At least 20		
								dB down		
30MHz - 1 GHz		Н						than the limit		

Remark:

- (1) Emission Level (dBm) = SG O/P-Cable + Ant Gain
- (2) Measuring frequencies from 1 GHz to the 12.75GHz.
- (3) Data of measurement within this frequency range shown " -- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Above 1G

7.001010									
Frequency	Reading level	Antenna	S.G.	Cable loss	Ant.Gain	Emission level	Limit	Margin	
(MHz)	(dBuV)	Polarization	(dBm)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
Above 1 GHz		V		I		-		At least 20	
								dB down	
Above 1 GHz		Н						than the limit	

Remark:

- (1) Emission Level (dBm) = SG O/P-Cable + Ant Gain
- (2) Measuring frequencies from 1 GHz to the 12.75GHz.



TEST LIMIT

ETSI EN 301 783(V 2.1.1) Sub-clause 6.1.3

The maximum usable sensitivity of the receiver as defined as in ETSI EN 301 783 Sub-clause 6.1.2.3 shall produce a SND/ND ratio of 12 dB, measured at the receiver output through a telephone psophometric weighting network

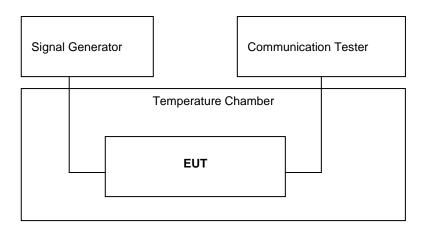
The maximum usable sensitivity shall be equal or greater the values given in below table.

Table 11: Maximum usable sensitivity

Frequency range	AM	SSB	FM	Other
Up to 3 MHz	+16 dBµV	+10 dBµV	n/a	As declared by manufacturer
3 MHz to 30 MHz	+6 dBµV	+0 dBµV	+0 dBµV	As declared by manufacturer
30 MHz to 1 GHz	0 dBµV	-6 dBµV	-6 dBµV	As declared by manufacturer
Above 1 GHz	0 dBµV	-6 dBµV	-6 dBµV	As declared by manufacturer

Wanted signal: 60% of the maximum permissible frequency deviation (1 kHz)

TEST CONFIGURATION



TEST PROCEDURE

- 1. Please refer to ETSI EN 300 086 (V.2.1.2) Sub-clause 5.3 and 5.4 for the test conditions.
- 2. Please refer to ETSI EN 300 086 (V2.1.2) Sub-clause 8.1.2 for the measurement method.



Test Result of 12.5 KHz Channel Separation (144.025MHz)			
Test Condition Result Measured Limit			Limit
Temperature (°C) Voltage (V)		(dBuV)	(dBuV)
T Nor (25°C) DC 7.4V 1.76 At least -6			
Re	esult	Pass	

Test Result of 12.5 KHz Channel Separation (145.000MHz)			
Test Condition Result Measured Limit			
Temperature (°C)	Voltage (V)	(dBuV)	(dBuV)
T Nor (25°C) DC 7.4V 1.80 At least -6			
Result Pass			

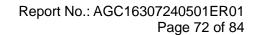
Test Result of 12.5 KHz Channel Separation (145.975MHz)			
Test Condition Result Measured Limit			Limit
Temperature (°C) Voltage (V)		(dBuV)	(dBuV)
T Nor (25°C) DC 7.4V 1.79 At least -6			
Result Pass			

Test Result of 12.5 KHz Channel Separation (430.025MHz)				
Test Condition Result Measured Limit				
Temperature (°C) Voltage (V)		(dBuV)	(dBuV)	
T Nor (25°C) DC 7.4V 1.83 At least -6				
Result Pass				

Test Result of 12.5 KHz Channel Separation (435.000MHz)			
Test Condition Result Measured Limit			Limit
Temperature (°C) Voltage (V)		(dBuV)	(dBuV)
T Nor (25°C) DC 7.4V 1.84 At least -6			
Result Pass			

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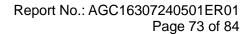
Test Result of 12.5 KHz Channel Separation (439.975MHz)			
Test Condition Result Measured Limit			Limit
Temperature (°C) Voltage (V)		(dBuV)	(dBuV)
T Nor (25 °C) DC 7.4V 1.84 At least -6			
Result Pass			

Test Result of 25 KHz Channel Separation (144.025MHz)					
Test Condition Result Measured Limit					
Temperature (°C) Voltage (V)		(dBuV)	(dBuV)		
T Nor (25℃)	T Nor (25°C) DC 7.4V 1.82 At least -6				
Result Pass					

Test Result of 25 KHz Channel Separation (145.000MHz)			
Test Condition Result Measured Limit			
Temperature (°C) Voltage (V)		(dBuV)	(dBuV)
T Nor (25 °C) DC 7.4V 1.79 At least -6			
Re	esult	Pass	

Test Result of 25 KHz Channel Separation (145.975MHz)			
Test Condition Result Measured Limit			
Temperature (°C) Voltage (V)		(dBuV)	(dBuV)
T Nor (25°C) DC 7.4V 1.80 At least -6			
Result Pass			

Test Result of 25 KHz Channel Separation (430.025MHz)			
Test Condition Result Measured Limit			Limit
Temperature (°C) Voltage (V)		(dBuV)	(dBuV)
T Nor (25°C) DC 7.4V 1.82 At least -6			
Result Pass			





Test Result of 25 KHz Channel Separation (435.000MHz)				
Test Condition Result Measured			Limit	
Temperature (°C)	Voltage (V)	(dBuV)	(dBuV)	
T Nor (25℃)	DC 7.4V	1.82	At least -6	
Result		Pass		

Test Result of 25 KHz Channel Separation (439.975MHz)				
Test C	Condition	Result Measured	Limit	
Temperature (°C)	Voltage (V)	(dBuV)	(dBuV)	
T Nor (25℃)	DC 7.4V	1.81	At least -6	
Result		Pass		



TEST LIMIT

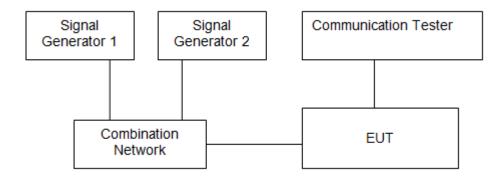
ETSI EN 301 783(V 2.1.1) Sub-clause 8.4.3

The adjacent channel selectivity of the receiver as defined as in ETSI EN 301 783 Sub-clause 6.2,

The adjacent channel selectivity for different channel separations shall not be less than the values given below.

Equipment type	AM	SSB	FM	Other
Base station/Mobile	60 dB	60 db	60 dB	60 dB
Handheld	55 dB	55 dB	55 dB	55 dB

TEST CONFIGURATION



TEST PROCEDURE

- 1. Please refer to ETSI EN 300 086 (V.2.1.2) Sub-clause 5.3 and 6.4 for the test conditions.
- 2. Please refer to ETSI EN 300 086 (V 2.1.2) Sub-clause 8.4.2 for the measurement method.

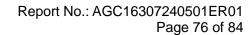


Test Result of 12.5 KHz Channel Separation (144.025MHz)					
	at unwanted signal frequency above wanted signal frequency				
Test Condition		Result Measured	Limit		
Temperature (°C)	Voltage (V)	(dB)	(dB)		
T Nor (25°C) DC 7.4V 76 60					
Result		Pass			

Test Result of 12.5 KHz Channel Separation (144.025MHz)					
	at unwanted signal frequency below wanted signal frequency				
Test Condition		Result Measured	Limit		
Temperature (°C)	Voltage (V)	(dB)	(dB)		
T Nor (25℃)	DC 7.4V	78	60		
Result		Pass			

Test Result of 12.5 KHz Channel Separation (145.000MHz)					
	at unwanted signal frequency above wanted signal frequency				
Test Condition Result Measured Limit			Limit		
Temperature (°C)	Voltage (V)	(dB)	(dB)		
T Nor (25℃)	DC 7.4V	77	60		
Result		Pass			

Test Result of 12.5 KHz Channel Separation (145.000MHz)				
at unwanted signal frequency below wanted signal frequency				
Test Condition		Result Measured	Limit	
Temperature (°C)	Voltage (V)	(dB)	(dB)	
T Nor (25°C)	DC 7.4V	76	60	
Result		Pass		



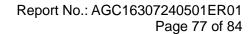


Test Result of 12.5 KHz Channel Separation (145.975MHz)				
at unwanted signal frequency above wanted signal frequency				
Test Condition		Result Measured	Limit	
Temperature (°C)	Voltage (V)	(dB)	(dB)	
T Nor (25°C)	DC 7.4V	75	60	
Result		Pass		

Test Result of 12.5 KHz Channel Separation (145.975MHz)					
	at unwanted signal frequency below wanted signal frequency				
Test C	Condition	Result Measured	Limit		
Temperature (°C)	Voltage (V)	(dB)	(dB)		
T Nor (25℃)	DC 7.4V	78	60		
Result		Pass			

Test Result of 25 KHz Channel Separation (144.025MHz)					
	at unwanted signal frequency above wanted signal frequency				
Test C	Condition	Result Measured	Limit		
Temperature (°C)	Voltage (V)	(dB)	(dB)		
T Nor (25°C)	DC 7.4V	79	60		
Result		Pass			

Test Result of 25 KHz Channel Separation (144.025MHz)					
	at unwanted signal frequency below wanted signal frequency				
Test Condition		Result Measured	Limit		
Temperature (°C)	Voltage (V)	(dB)	(dB)		
T Nor (25°C)	DC 7.4V	74	60		
Result		Pass			



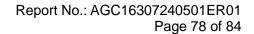


Test Result of 25 KHz Channel Separation (145.000MHz)				
at unwanted signal frequency above wanted signal frequency				
Test Condition		Result Measured	Limit	
Temperature (°C)	Voltage (V)	(dB)	(dB)	
T Nor (25°C)	DC 7.4V	79	60	
Result		Pass		

Test Result of 25 KHz Channel Separation (145.000MHz) at unwanted signal frequency below wanted signal frequency			
Test Condition Result Measured Limit			Limit
Temperature (°C)	Voltage (V)	(dB)	(dB)
T Nor (25°C) DC 7.4V 76 60			
Result		Pass	

Test Result of 25 KHz Channel Separation (145.975MHz) at unwanted signal frequency above wanted signal frequency			
Test Condition Result Measured Limit			
Temperature (°C)	Voltage (V)	(dB)	(dB)
T Nor (25°C) DC 7.4V 77 60			
Result		Pass	

Test Result of 25 KHz Channel Separation (145.975MHz)				
	at unwanted signal frequency below wanted signal frequency			
Test Condition Result Measured Limit			Limit	
Temperature (°C)	Voltage (V)	(dB)	(dB)	
T Nor (25°C) DC 7.4V 76 60				
Result		Pass		





Test Result of 12.5 KHz Channel Separation (430.025MHz)			
at unwanted signal frequency above wanted signal frequency			
Test Condition		Result Measured	Limit
Temperature (°C)	Voltage (V)	(dB)	(dB)
T Nor (25℃) DC 7.4V 78 60			
Result		Pass	

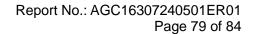
Test Result of 12.5 KHz Channel Separation (430.025MHz)				
	at unwanted signal frequency below wanted signal frequency			
Test Condition Result Measured Limit			Limit	
Temperature (°C)	Voltage (V)	(dB)	(dB)	
T Nor (25°C) DC 7.4V 74 60				
Result		Pass		

Test Result of 12.5 KHz Channel Separation (435.000MHz)				
	at unwanted signal frequency above wanted signal frequency			
Test Condition Result Measured Limit			Limit	
Temperature (°C)	Voltage (V)	(dB)	(dB)	
T Nor (25°C) DC 7.4V 75 60				
Result		Pass		

Test Result of 12.5 KHz Channel Separation (435.000MHz) at unwanted signal frequency below wanted signal frequency			
Test Condition Result Measured Limit			Limit
Temperature (°C)	Voltage (V)	(dB)	(dB)
T Nor (25°C) DC 7.4V 73 60			
Result		Pass	

Test Result of 12.5 KHz Channel Separation (439.975MHz) at unwanted signal frequency above wanted signal frequency			
Test Condition Result Measured Limit			Limit
Temperature (°C)	Voltage (V)	(dB)	(dB)
T Nor (25°C) DC 7.4V 77 60			
Result		Pass	

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Test Result of 12.5 KHz Channel Separation (439.975MHz)			
at unwanted signal frequency below wanted signal frequency			
Test Condition Result Measured			Limit
Temperature (°C)	Voltage (V)	(dB)	(dB)
T Nor (25°C) DC 7.4V 76 60			
Result		Pass	

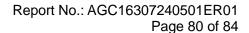
Test Result of 25 KHz Channel Separation (430.025MHz)				
	at unwanted signal frequency above wanted signal frequency			
Test Condition Result Measured Limit			Limit	
Temperature (°C)	Voltage (V)	(dB)	(dB)	
T Nor (25℃) DC 7.4V 77 60			60	
Result		Pass		

Test Result of 25 KHz Channel Separation (430.025MHz)				
	at unwanted signal frequency below wanted signal frequency			
Test Condition Result Measured Limit			Limit	
Temperature (°C)	Voltage (V)	(dB)	(dB)	
T Nor (25°C) DC 7.4V 74 60				
Result		Pass		

Test Result of 25 KHz Channel Separation (435.000MHz)			
	at unwanted signal free	quency above wanted signal frequenc	су
Test Condition Result Measured Limit			Limit
Temperature (°C)	Voltage (V)	(dB)	(dB)
T Nor (25°C) DC 7.4V 73 60			
Result		Pass	

Test Result of 25 KHz Channel Separation (435.000MHz)			
at unwanted signal frequency below wanted signal frequency			
Test Condition		Result Measured	Limit
Temperature (°C)	Voltage (V)	(dB)	(dB)
T Nor (25°C)	DC 7.4V	72	60
Result		Pass	

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Test Result of 25 KHz Channel Separation (439.975MHz) at unwanted signal frequency above wanted signal frequency			
Test Condition		Result Measured	Limit
Temperature (°C)	Voltage (V)	(dB)	(dB)
T Nor (25°C)	DC 7.4V	73	60
Result		Pass	

Test Result of 25 KHz Channel Separation (439.975MHz)			
at unwanted signal frequency below wanted signal frequency			
Test Condition		Result Measured	Limit
Temperature (°C)	Voltage (V)	(dB)	(dB)
T Nor (25°C)	DC 7.4V	75	60
Result		Pass	



TEST LIMIT

Refer to 301 783 Subpart 6.3.3

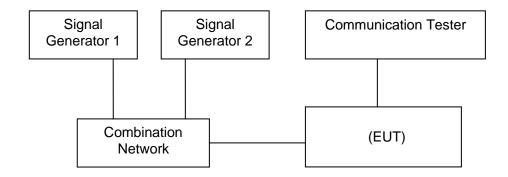
Application of the test signal shall not cause the demodulated receiver output to:

Be reduced to less than 12 db SINAD for analogue speech equipment; or

Be reduced to less than 80 % of the original data throughput for non-speech equipment; or

Be degraded to a level declared by the manufacturer as appropriate for the type of signal conveyed.

TEST CONFIGURATION



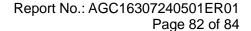
TEST PROCEDURE

- 1. Please refer to ETSI EN 301 783(V2.1.1), clause 4.2 for test condition.
- 2. Please refer to ETSI EN 301 783(V2.1.1) Sub-clause 6.3.2.1 for the measurement method.

TEST RESULTS

Note:

- 1. The EUT have been tested under DC 7.4V.
- 2. Only result the worst case in the part.





VHF TEST RESULT-5W-12.5KHz

Frequency	Modulation	Channel	SINAD(dB)
Below 30MHz(150K~30M)	Low(144.025MHz) 18.52	18.52	
	F3E	Middle(145.000MHz)	18.11
		High(145.975MHz)	18.37
30MHz to 1GHz		Low(144.025MHz)	17.56
	F3E	Middle(145.000MHz)	18.53
		High(145.975MHz)	18.44

VHF TEST RESULT-5W-25KHz

Frequency	Modulation	Channel	SINAD(dB)
Below 30MHz(150K~30M)		Low(144.025MHz) 17.91	17.91
	F3E	Middle(145.000MHz)	18.12
		High(145.975MHz)	18.08
30MHz to 1GHz		Low(144.025MHz)	18.74
	F3E	Middle(145.000MHz)	18.43
		High(145.975MHz)	18.29

UHF TEST RESULT-1W-12.5KHz

Frequency	Modulation	Channel	SINAD(dB)
Below 30MHz(150K~30M)		Low(430.025MHz)	18.11
	F3E	Middle(435.000MHz)	17.64
		High(439.975MHz)	18.34
30MHz to 1GHz		Low(430.025MHz)	18.29
	F3E	Middle(435.000MHz)	18.41
		High(439.975MHz)	18.52

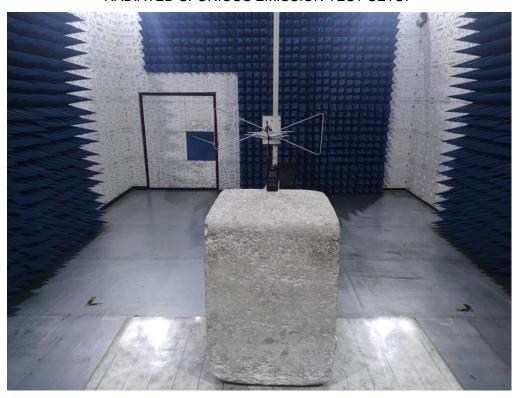
UHF TEST RESULT-1W-25KHz

Frequency	Modulation	Channel	SINAD(dB)
Below 30MHz(150K~30M)		Low(430.025MHz) 18.63	
	F3E	Middle(435.000MHz)	18.59
		High(439.975MHz)	18.37
30MHz to 1GHz		Low(430.025MHz)	18.25
	F3E	Middle(435.000MHz)	18.20
		High(439.975MHz)	18.13



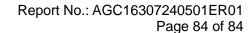
APPENDIX I: PHOTOGRAPHS OF TEST SETUP

RADIATED SPURIOUS EMISSION TEST SETUP



RADIATED SPURIOUS EMISSION ABOVE 1G TEST SETUP







APPENDIX II: PHOTOGRAPHS OF TEST EUT

Refer to the Report No.: AGC16307240501AP01

---END OF REPORT---



Conditions of Issuance of Test Reports

- 1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the "Clients").
- 2. Any report issued by Company as a result of this application for testing services (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.
- 3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
- 4. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
- 5. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
- 6. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
- 7.Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
- 8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.
- 9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.