

# Appendix -

## Test Data and Result for report

### GZCR230600056704

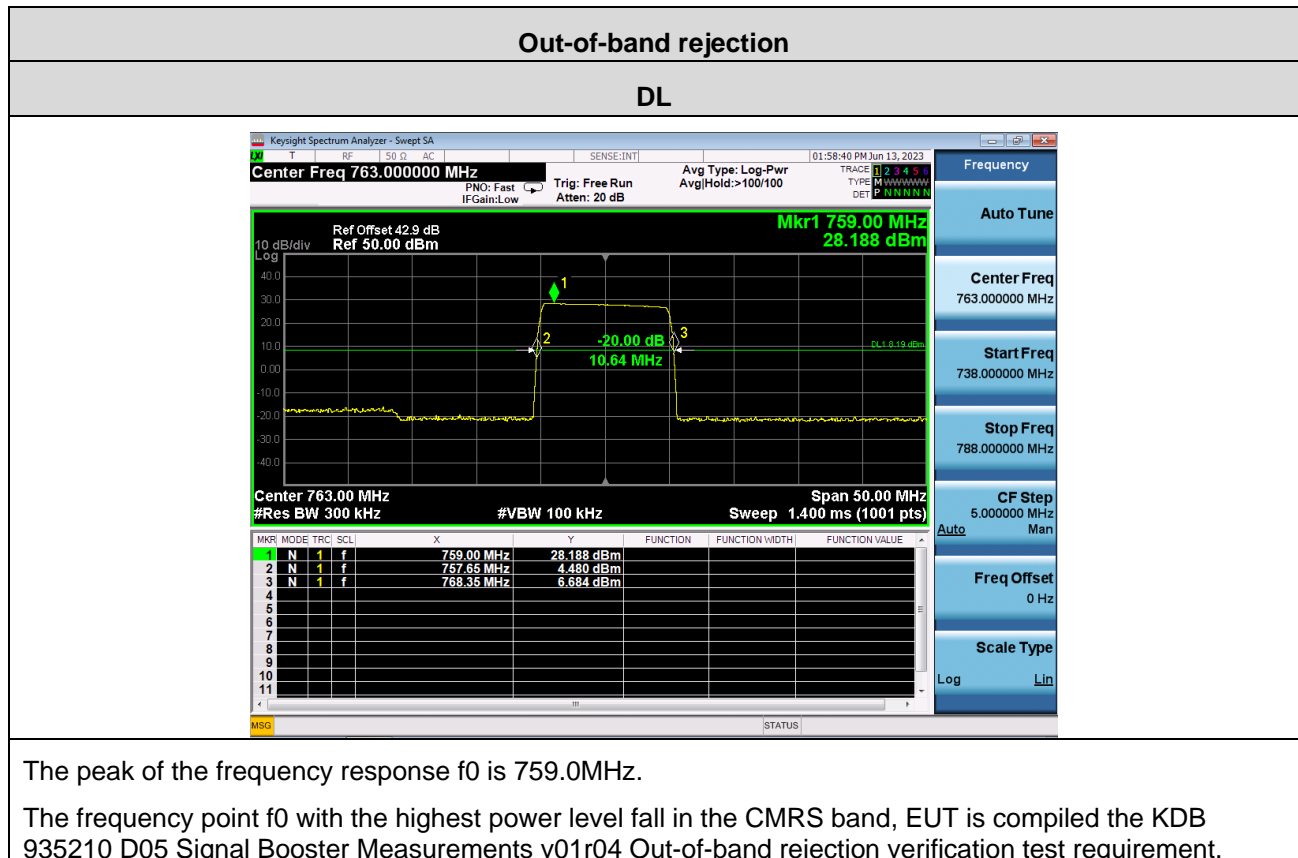
(For FirstNet Band DL)



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

### 1 Out-of-band rejection



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Standards Technical Services Co., Ltd.  
Guangzhou Branch, EMC Laboratory

No.196 Kezhu Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 [www.sgsgroup.com.cn](http://www.sgsgroup.com.cn)  
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

## 2 Input versus Output comparison

Occupied Bandwidth				
Test Path	Test Signal	Test Channel	Signal Level	Verdict
DL	4.1MHz AWGN	MCH	Pre-AGC	PASS
			3dB above AGC	PASS
	100MHz AWGN	MCH	Pre-AGC	PASS*
			3dB above AGC	PASS*
Remark: 1. * The band supports maximum channel BW is 10MHz for NR, so the output signal OBW was less than the input when 100MHz AWGN was as stimulus signal. 2. Compare the spectral plot of the input signal to the output signal affirm that they are similar (in passband and roll off characteristic features and relative spectral locations). The test result complies with the requirement.				

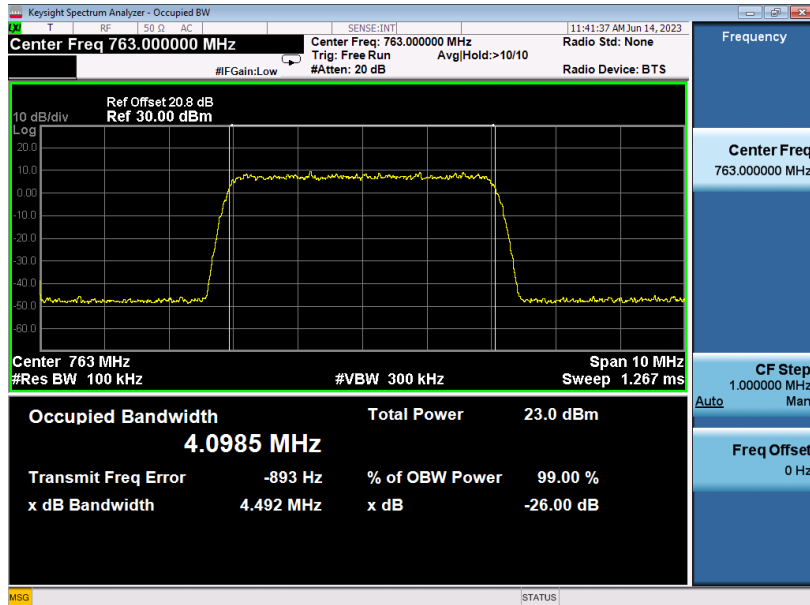


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

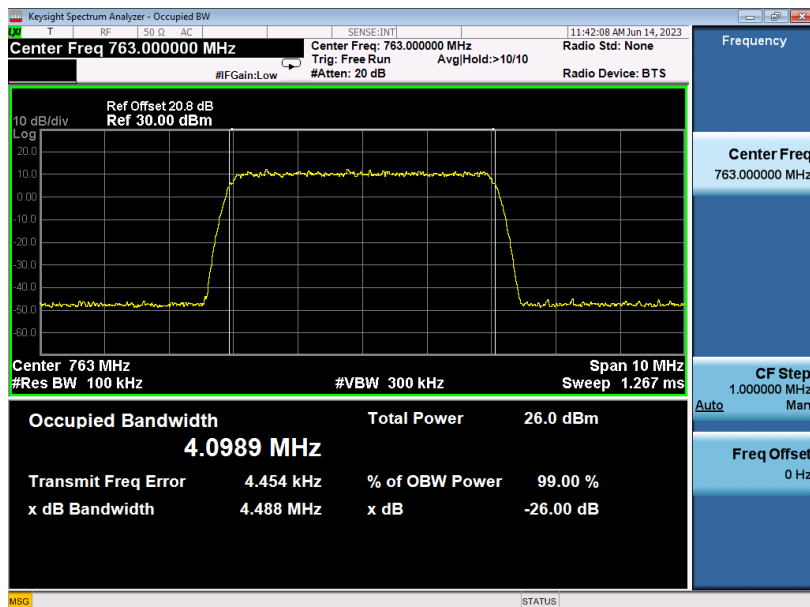
Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

### 99% OBW

#### DL\_4.1MHz AWGN\_MCH\_Input\_Pre-AGC



#### DL\_4.1MHz AWGN\_MCH\_Input\_3dB above AGC

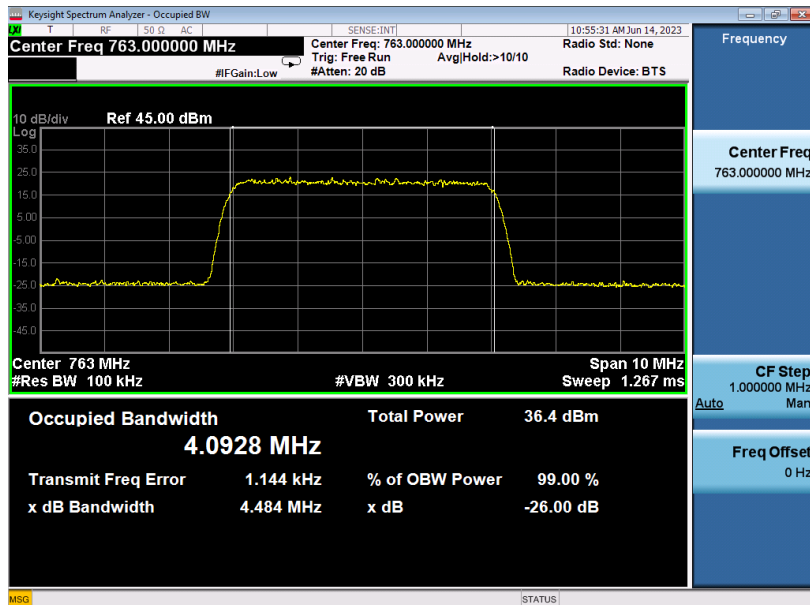


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

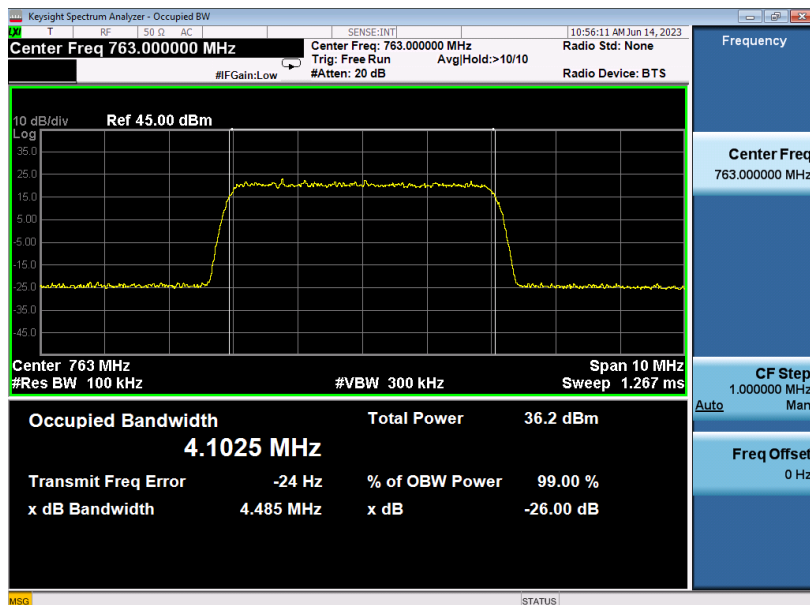
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

### 99% OBW

#### DL\_4.1MHz AWGN\_MCH\_Output\_Pre-AGC



#### DL\_4.1MHz AWGN\_MCH\_Output\_3dB above AGC



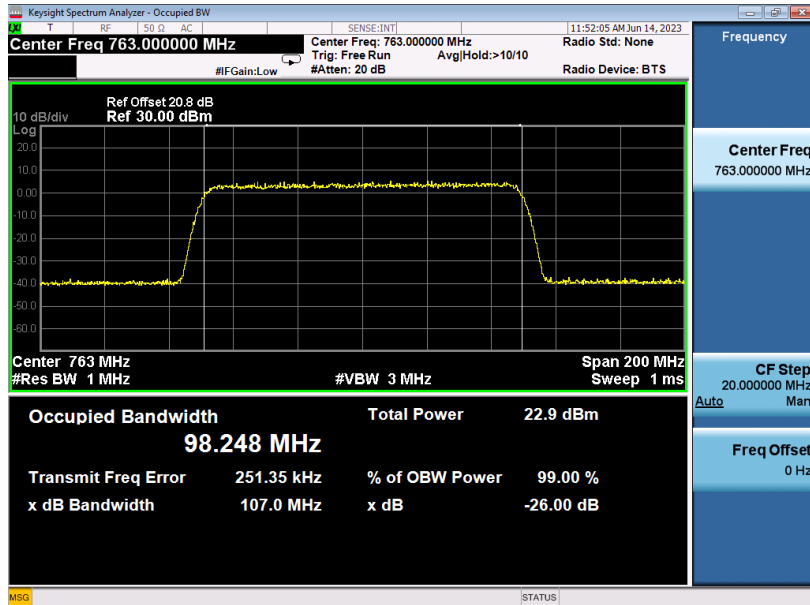
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

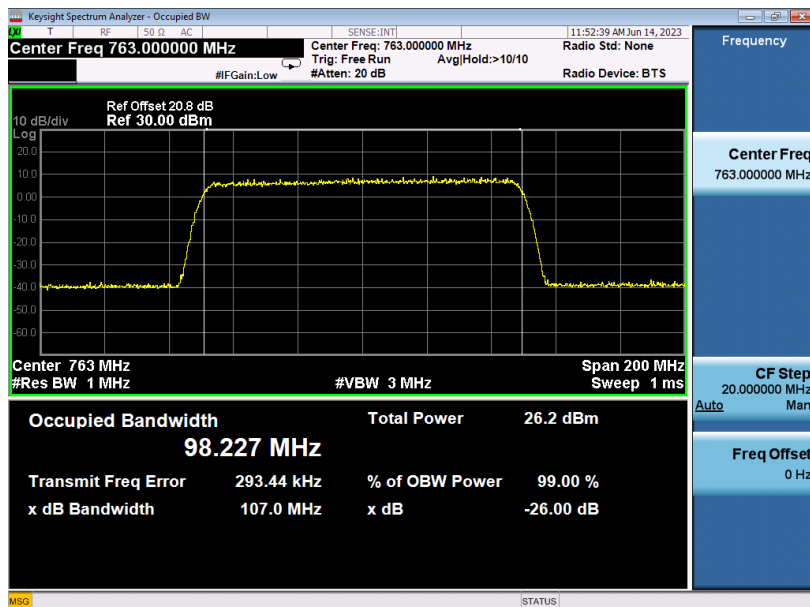


### 99% OBW

#### DL\_100MHz AWGN\_MCH\_Input\_Pre-AGC



#### DL\_100MHz AWGN\_MCH\_Input\_3dB above AGC

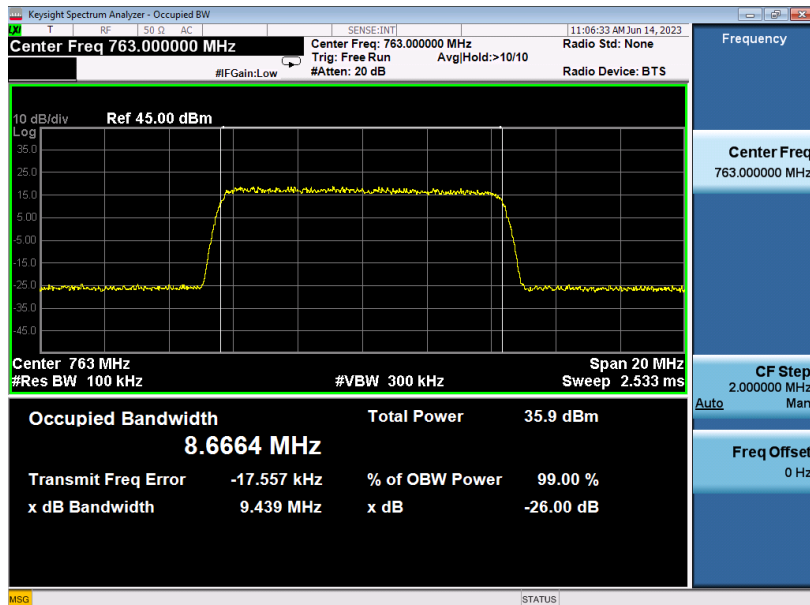


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

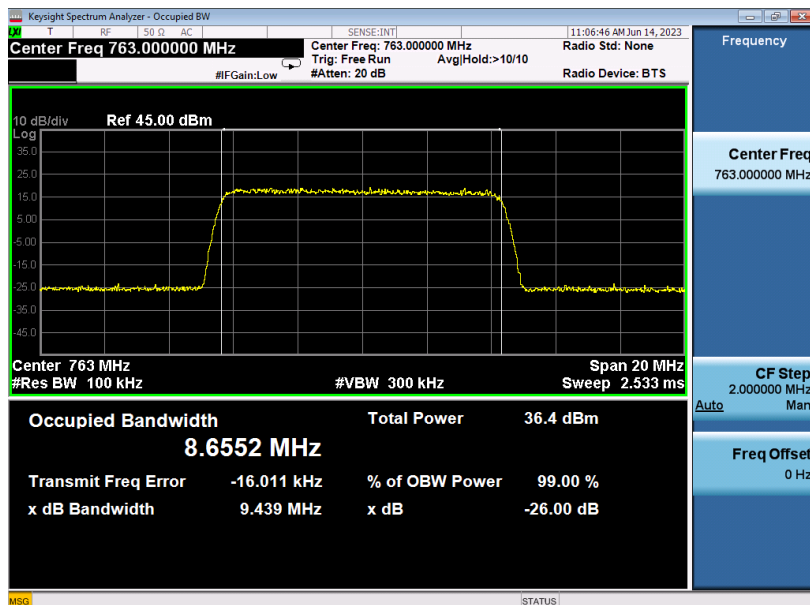
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

### 99% OBW

#### DL\_100MHz AWGN\_MCH\_Output\_Pre-AGC



#### DL\_100MHz AWGN\_MCH\_Output\_3dB above AGC



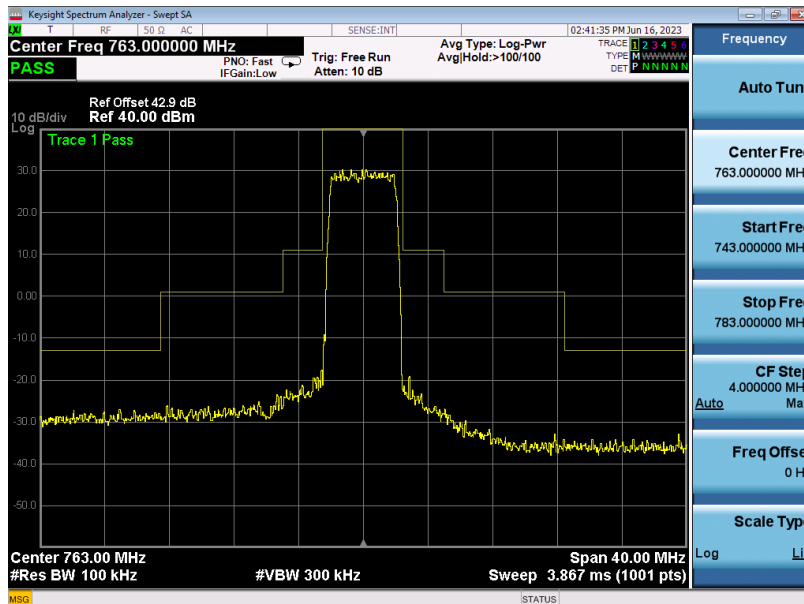
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

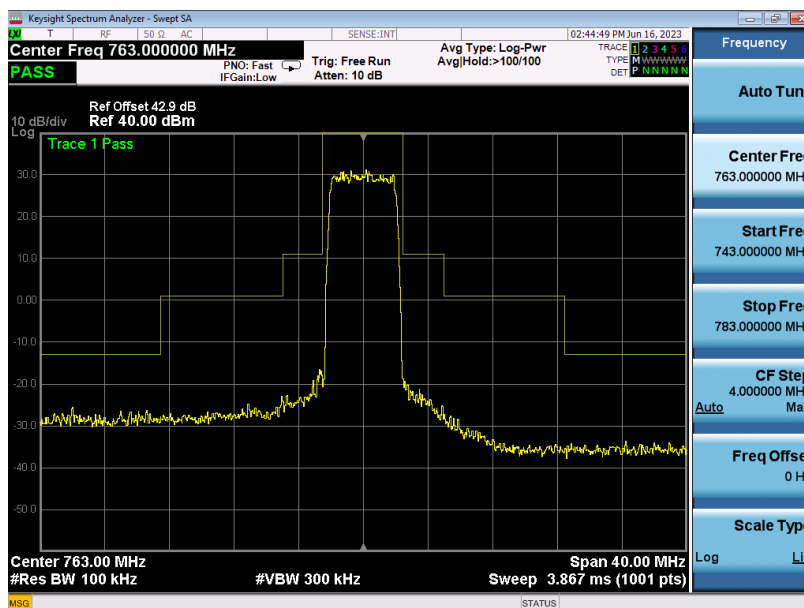
### 3 Emission Mask

#### Emission Mask B

##### DL\_4.1MHz AWGN\_MCH\_Output\_Pre-AGC



##### DL\_4.1MHz AWGN\_MCH\_Output\_3dB above AGC



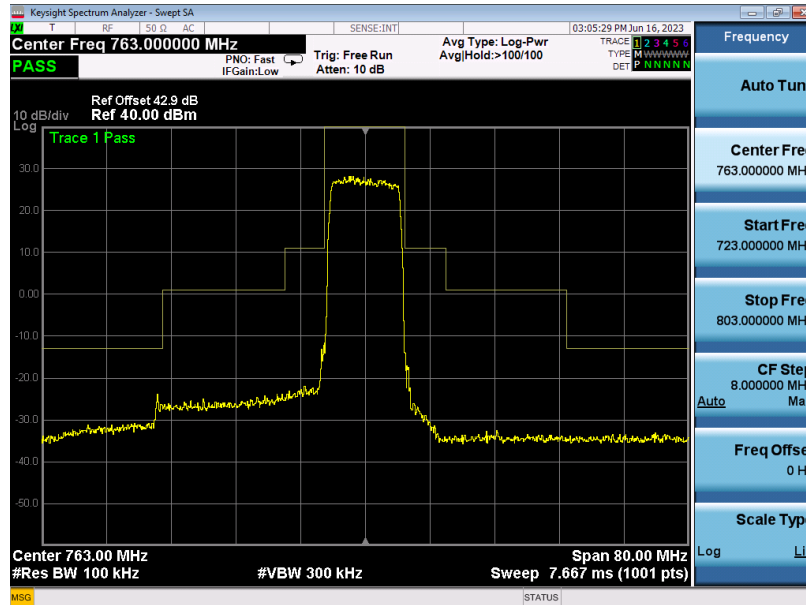
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

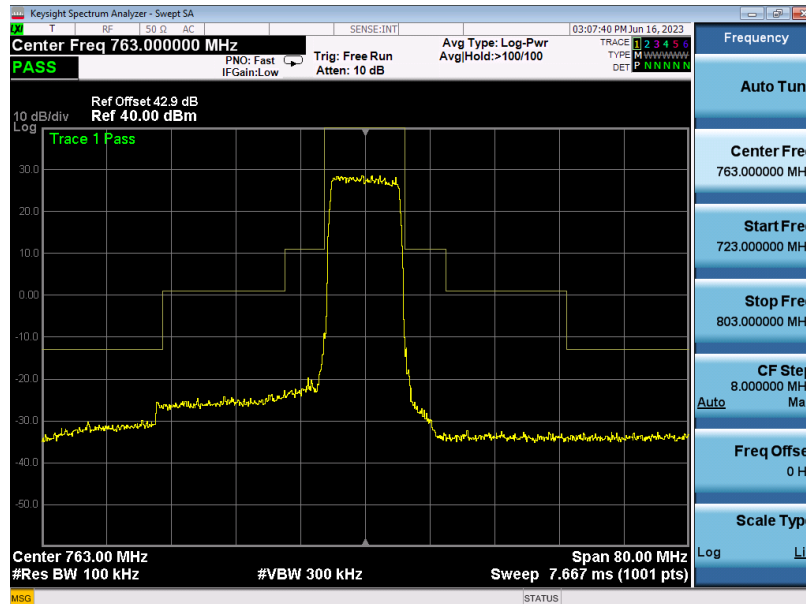


### Emission Mask B

#### DL\_100MHz AWGN\_MCH\_Output\_Pre-AGC



#### DL\_100MHz AWGN\_MCH\_Output\_3dB above AGC



#### Remark:

The band supports maximum channel BW is 10MHz for NR, so the output signal OBW was less than the input when 100MHz AWGN was as stimulus signal.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Standards Technical Services Co., Ltd.  
Guangzhou Branch, EEC Laboratory

No.196 Kezhu Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 [www.sgs.com](http://www.sgs.com)  
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

## 4 Input/output power and amplifier/booster gain

Mean output power and gain								
Test Path	Test Freq. f0 (MHz)	Test Signal	Signal Level	Input power (dBm)	Output Power (dBm)	SISO ERP (W)	Total ERP (W)	Gain (dB)
DL	759.0	4.1MHz AWGN	Pre-AGC	23.00	36.88	29.72	118.86	13.88
			3dB above AGC	26.00	36.34	26.25	104.96	/
		100MHz AWGN	Pre-AGC	20.00	32.56	11.00	43.96	12.56
			3dB above AGC	23.00	32.22	10.17	40.65	/
Remark: 1. f0 is from Out-of-band Rejection test in the report. 2. ERP= output power (dBm)+ antenna gain (dBi)-2.15, the antenna gain is 10dBi declared by the manufacturer, the directional gain = G <sub>ANT</sub> + 10 log (N <sub>ANT</sub> ) dBi = 13dBi. 3. The conducted test performed at ANT 1 port only due to the two MIMO ports with identical design(Hardware & software) and radio output.								

Mean output power							
Test Path	Test Freq. f0 (MHz)	Test Signal	Signal Level	Output Power (dBm/MHz)	SISO ERP (W/MHz)	Total ERP (W/MHz)	Verdict
DL	759.0	4.1MHz AWGN	Pre-AGC	32.42	10.65	42.57	PASS
			3dB above AGC	32.18	10.07	40.28	PASS
		100MHz AWGN	Pre-AGC	18.45	0.43	1.71	PASS
			3dB above AGC	18.23	0.41	1.63	PASS
Remark: 1. f0 is from Out-of-band Rejection test in the report. 2. ERP= output power (dBm)+ antenna gain (dBi)- 2.15, the antenna gain is 10dBi declared by the manufacturer, the directional gain = G <sub>ANT</sub> + 10 log (N <sub>ANT</sub> ) dBi = 13dBi. 3. The output power is limited to an EIRP of 1000W/MHz. 4. The conducted test performed at ANT 1 port only due to the two MIMO ports with identical design(Hardware & software) and radio output.							
According to 935210 D02 Signal Boosters Certification v04r02 clause V.J for device support output power higher than the 5 W ERP limit of Section 90.219, the specific station authorizations are required the conditions.							



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)



## SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

EMC-ARF-05 Rev 1.1

Page: 11 of 25

### 5 Noise Figure

Noise Figure				
Test Path	Test Channel	Maximum Noise Figure (dB)	Limit (dB)	Verdict
DL	LCH	8.17	≤9	PASS
	MCH	8.43	≤9	PASS
	HCH	7.89	≤9	PASS



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Standards Technical Services Co., Ltd.  
Guangzhou Branch EMC Laboratory

No.198 Kezhu Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgs.com.cn  
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

Member of the SGS Group (SGS SA)

## 6 Intermodulation emissions

Intermodulation emissions					
Test Path	Test Freq. f0 (MHz)	CW signals spacing (kHz)	Signal Level	Worst conducted test level (dBm)	
				/300Hz	/10kHz
DL	759.0	6.25	Pre-AGC	-20.99	-5.76
			3dB above AGC	-18.81	-3.58
		12.5	Pre-AGC	-17.70	-2.47
			3dB above AGC	-16.83	-1.60
		25	Pre-AGC	-18.84	-3.61
			3dB above AGC	-17.61	-2.38

### Remark:

1. f0 is from Out-of-band Rejection test in the report.
2. The level in 10kHz measurement bandwidth= the level in 300Hz measurement bandwidth+ 10lg(10000/300).
3. ERP= output power (dBm)+ antenna gain (dBi)- 2.15, the antenna gain is 10dBi declared by the manufacturer, the directional gain =  $G_{ANT} + 10 \log(N_{ANT})$  dBi = 13dBi.
4. The maximum ERP of intermodulation product for 2x2 MIMO is -1.60dBm/10kHz+ 10lg(2)+ 13- 2.15= 12.25dBm/10kHz, which exceeded the limit -30dBm/10kHz, the applicant must use good engineering practice to eliminate the intermodulation products interference.

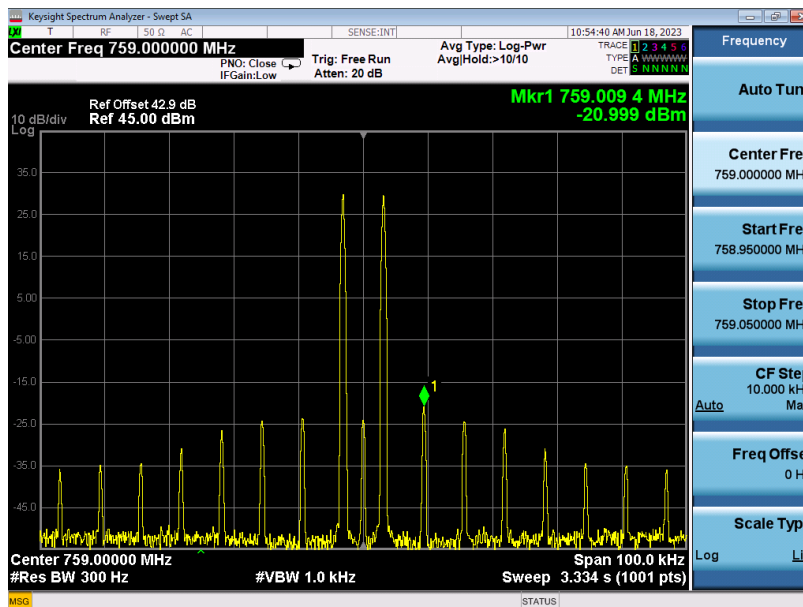


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

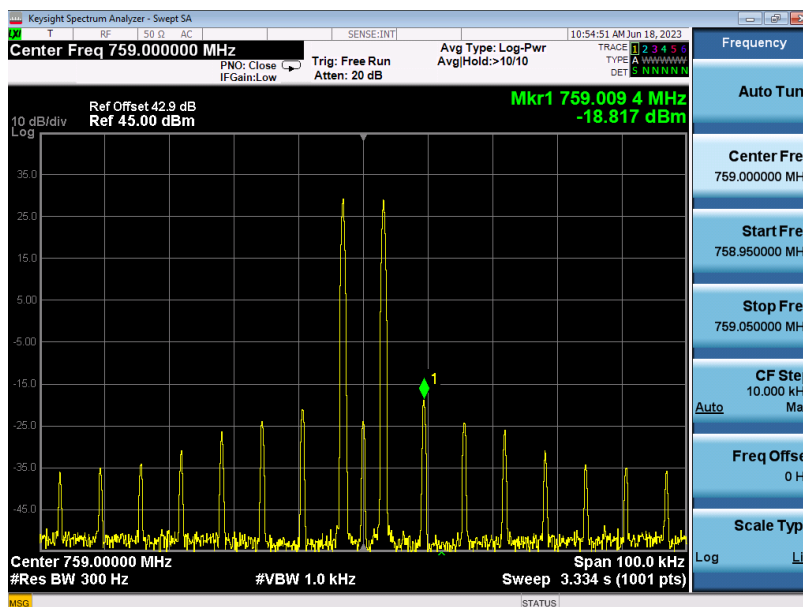
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

### Intermodulation emissions

#### DL\_6.25kHz spacing\_Pre-AGC



#### DL\_6.25kHz spacing\_3dB above AGC



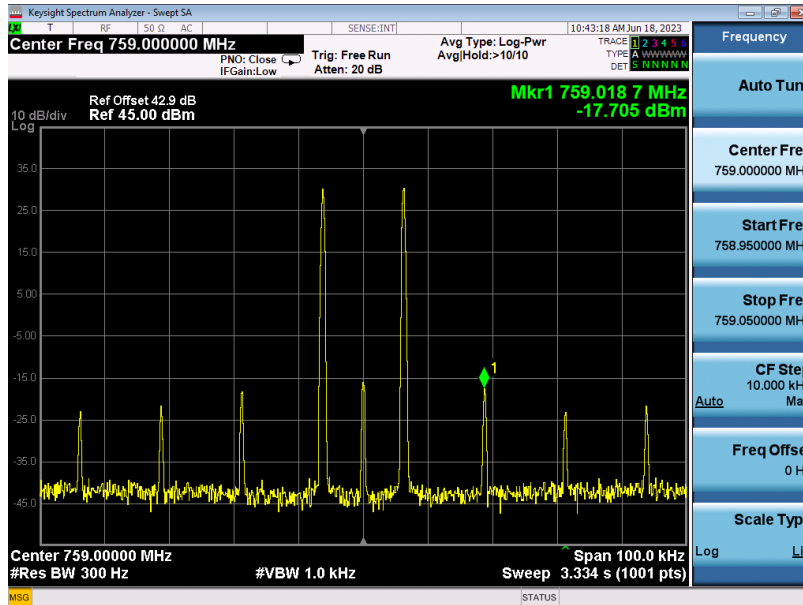
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

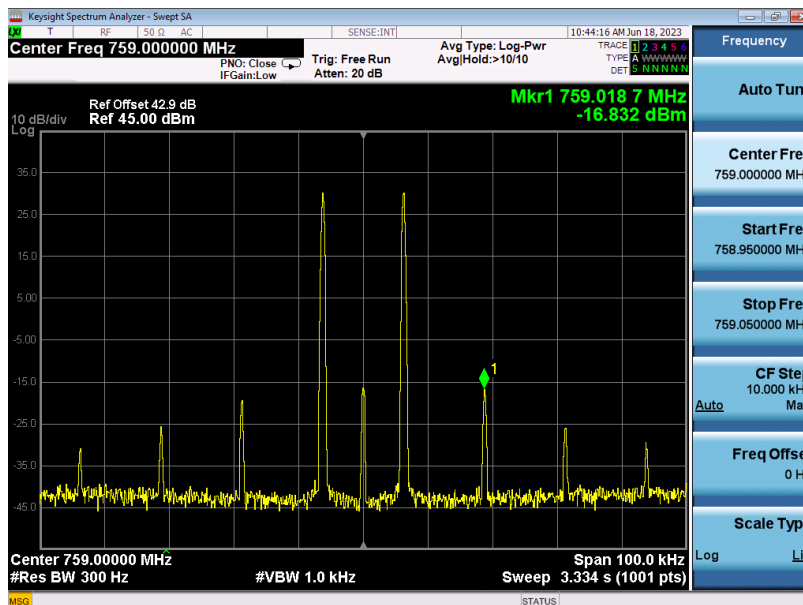


### Intermodulation emissions

#### DL\_12.5kHz spacing\_Pre-AGC



#### DL\_12.5kHz spacing\_3dB above AGC

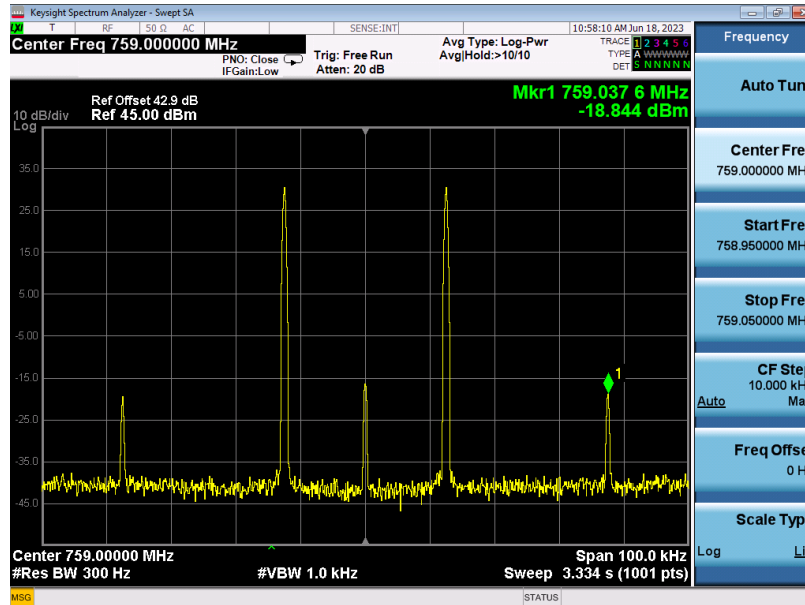


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

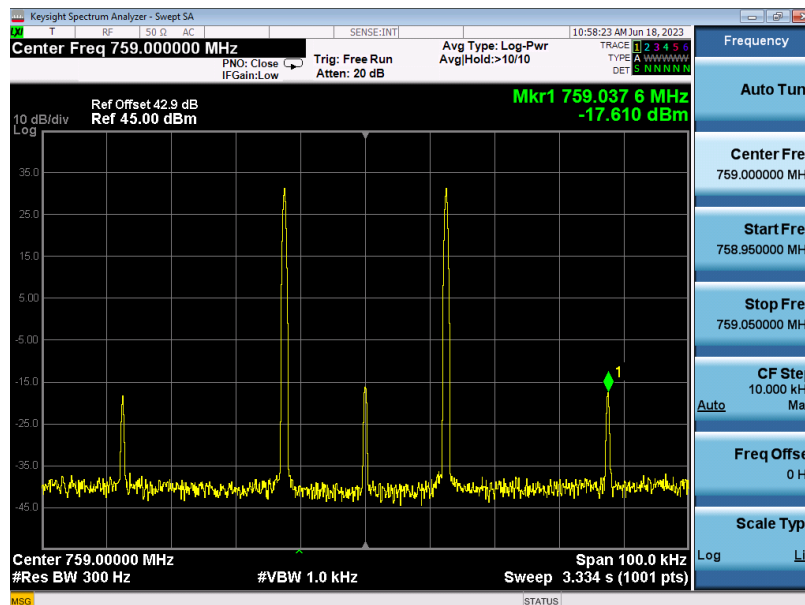
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

### Intermodulation emissions

#### DL\_25kHz spacing\_Pre-AGC



#### DL\_25kHz spacing\_3dB above AGC



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

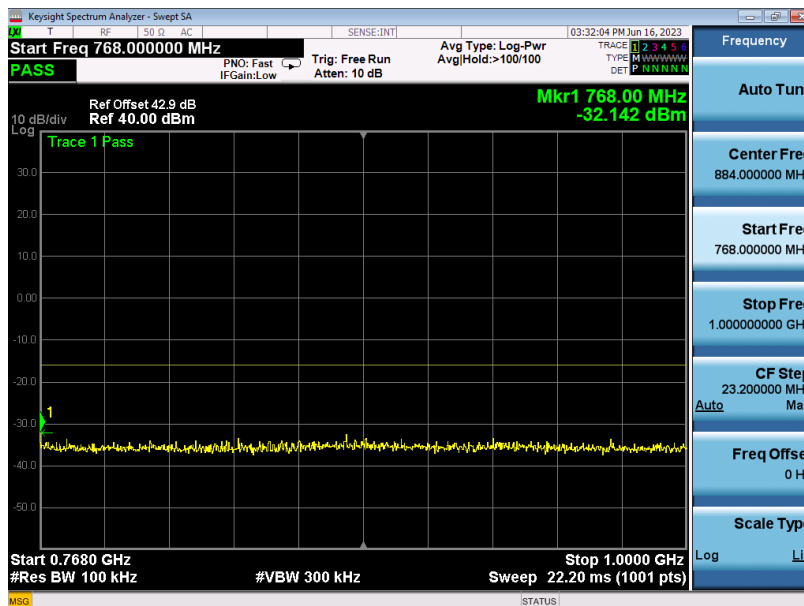
### 7 Conducted Spurious emissions

#### Conducted spurious emissions

##### DL\_4.1MHz AWGN\_LCH\_Pre-AGC



##### DL\_4.1MHz AWGN\_HCH\_Pre-AGC



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

### Conducted spurious emissions

#### DL\_4.1MHz AWGN\_HCH\_Pre-AGC



#### Remark:

1. Spurious emissions from a signal booster must not exceed -13 dBm within any 100 kHz measurement bandwidth.
2. On any frequency between 775–788 MHz, above 805 MHz, and below 758 MHz, by at least  $43 + 10\log(P)$  dB, here,  
 $P = 36\text{dBm} = 3.98\text{W}$   
the limit =  $36\text{dBm} - [43 + 10\log_{10}(3.98\text{W})] \text{ dB} = -13\text{dBm}$
3. For 2x2 MIMO, ANT1 port was measured and the limit was showed  $-13\text{dBm} - 10\lg(2) = -16\text{dBm}$  to determine the test result conveniently.
4. The spurious emissions 9kHz to 30MHz were very low and not displayed in this report.
5. All modes (LCH/MCH/HCH, with 4.1MHz AWGN signal/ with 100MHz AWGN signal) had been tested, only show the worst-case in this report.



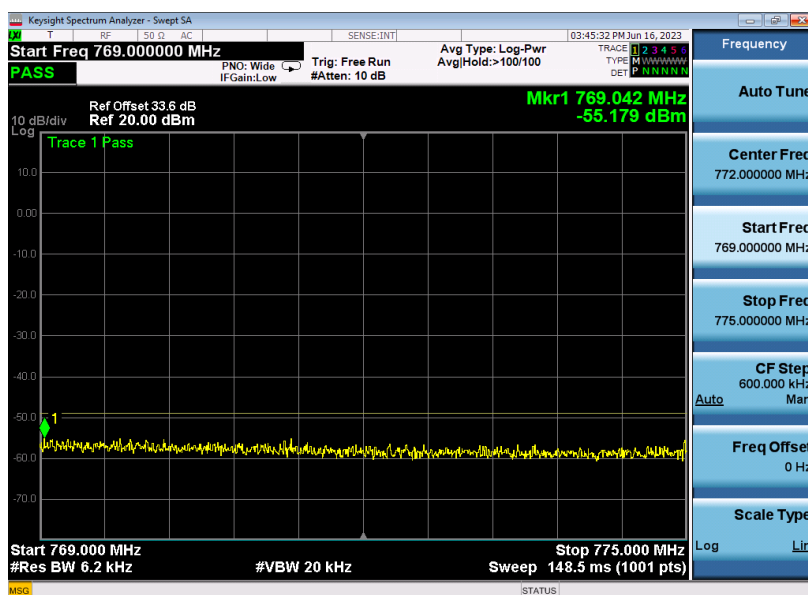
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

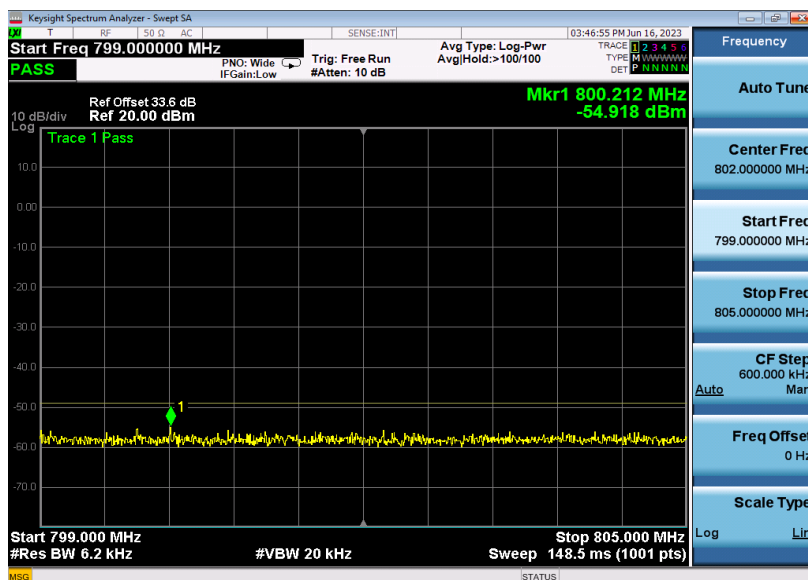


### Conducted spurious emissions

#### DL\_4.1MHz AWGN\_HCH\_Pre-AGC



#### DL\_4.1MHz AWGN\_HCH\_Pre-AGC



#### Remark:

- On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than  $76 + 10 \log(P)$  dB in a 6.25 kHz band segment, for base and fixed stations, here,  
 $P = 36\text{dBm} = 3.98\text{W}$ ,  
the limit =  $36\text{dBm} - [76 + 10 \log_{10}(3.98\text{W})] \text{ dB} = -46\text{dBm}$
- For 2x2 MIMO, ANT1 port was measured and the limit was showed  $-46\text{dBm} - 10\lg(2) = -49\text{dBm}$  to determine the test result conveniently.
- All modes (LCH/MCH/HCH, with 4.1MHz AWGN signal/ with 100MHz AWGN signal) had been tested, only show the worst-case in this report.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Standards Technical Services Co., Ltd.  
Guangzhou Branch, EEC Laboratory

No.196 Kezhu Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 [www.sgs.com](http://www.sgs.com)  
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 [sgs.china@sgs.com](mailto:sgs.china@sgs.com)



## 8 Noise

Noise			
Test Path	Frequency Range (MHz)	Worst conducted test level (dBm)	Note
DL	758-768	-53.91	Within the passband
	0.009-757	-51.50	Outside of the passband
	769-1000	-65.17	
	1000-8000	-65.87	

### Remark:

1. ERP= output power (dBm)+ antenna gain (dBi)- 2.15, the antenna gain is 10dBi declared by the manufacturer, the directional gain = GANT + 10 log (NANT) dBi = 13dBi.
2. The ERP of worst noise within the passband is -53.91/10kHz+ 10lg(2)+ 13dBi- 2.15dB= -40.06dBm, the applicant must use good engineering practice to make sure that the ERP of noise within the passband should not exceed the limit -43dBm in 10kHz measurement bandwidth.
3. The ERP of worst noise outside of the passband is -51.50/10kHz+ 10lg(2)+ 13dBi- 2.15dB= -37.65dBm, the applicant must use good engineering practice to make sure that the ERP of noise outside the passband should not exceed -70dBm in 10kHz measurement bandwidth.

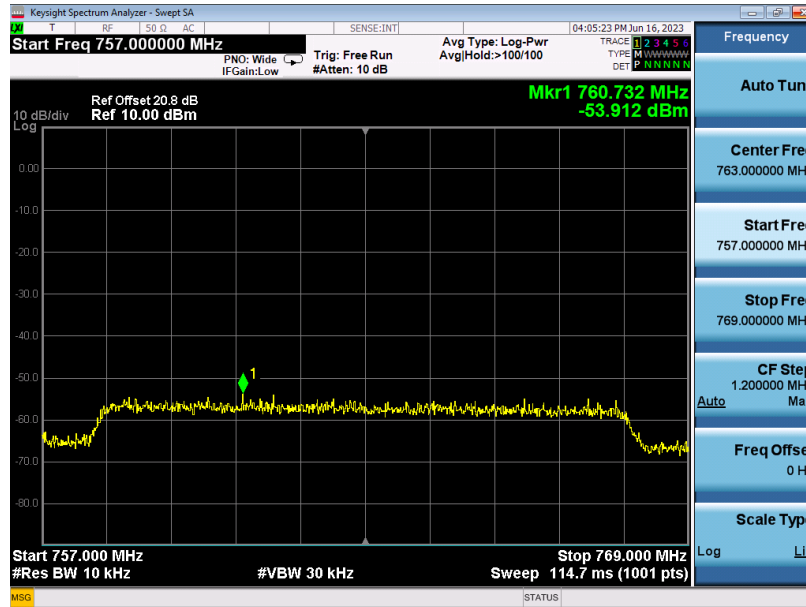


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

### Noise

#### DL\_Within the passband

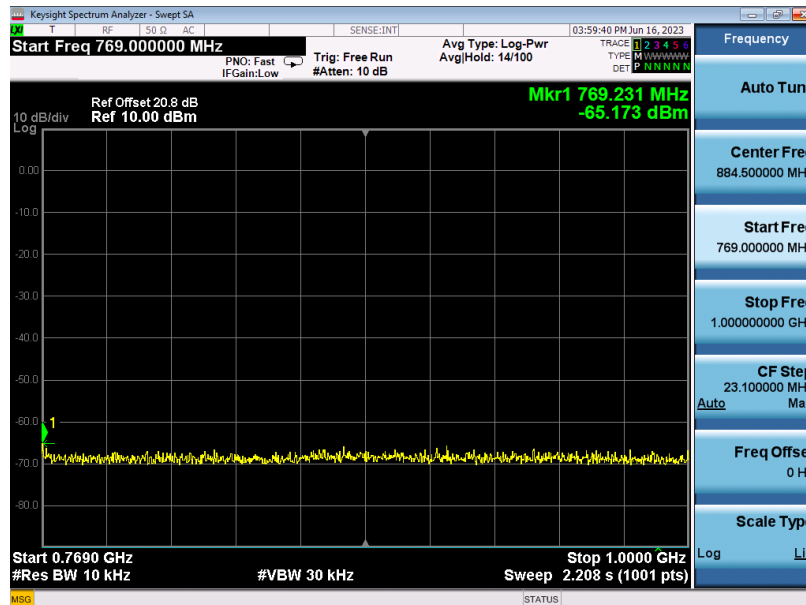


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

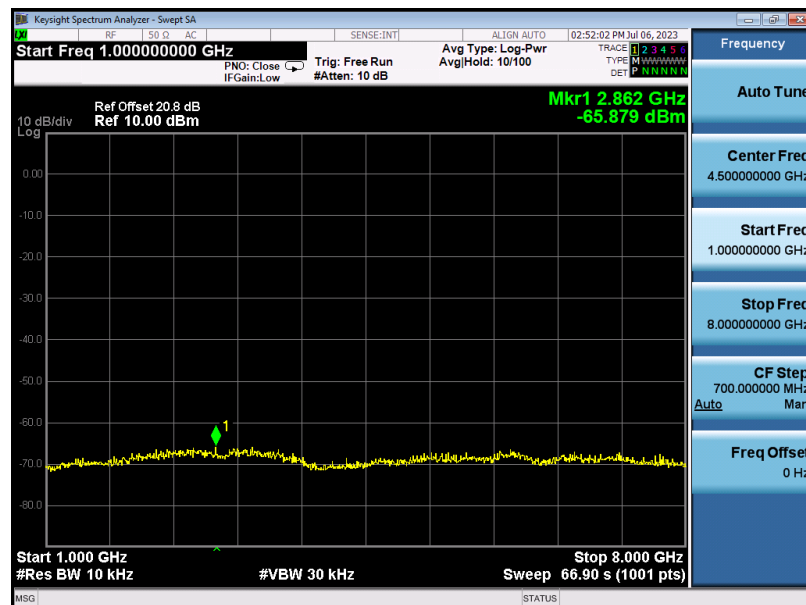
Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

### Noise

#### DL\_Out of the passband



#### DL\_Out of the passband



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

## 9 Frequency Stability

Frequency stability vs voltage							
Test path	Test Freq. (MHz)	Test Signal	Temperature	Voltage	Freq. error (Hz)	Tolerance (ppm)	Verdict
DL	763	4.1MHz AWGN	TN	VL	19	0.0249	PASS
			TN	VH	12	0.0157	PASS
		100MHz AWGN	TN	VL	21	0.0275	PASS
			TN	VH	13	0.0170	PASS

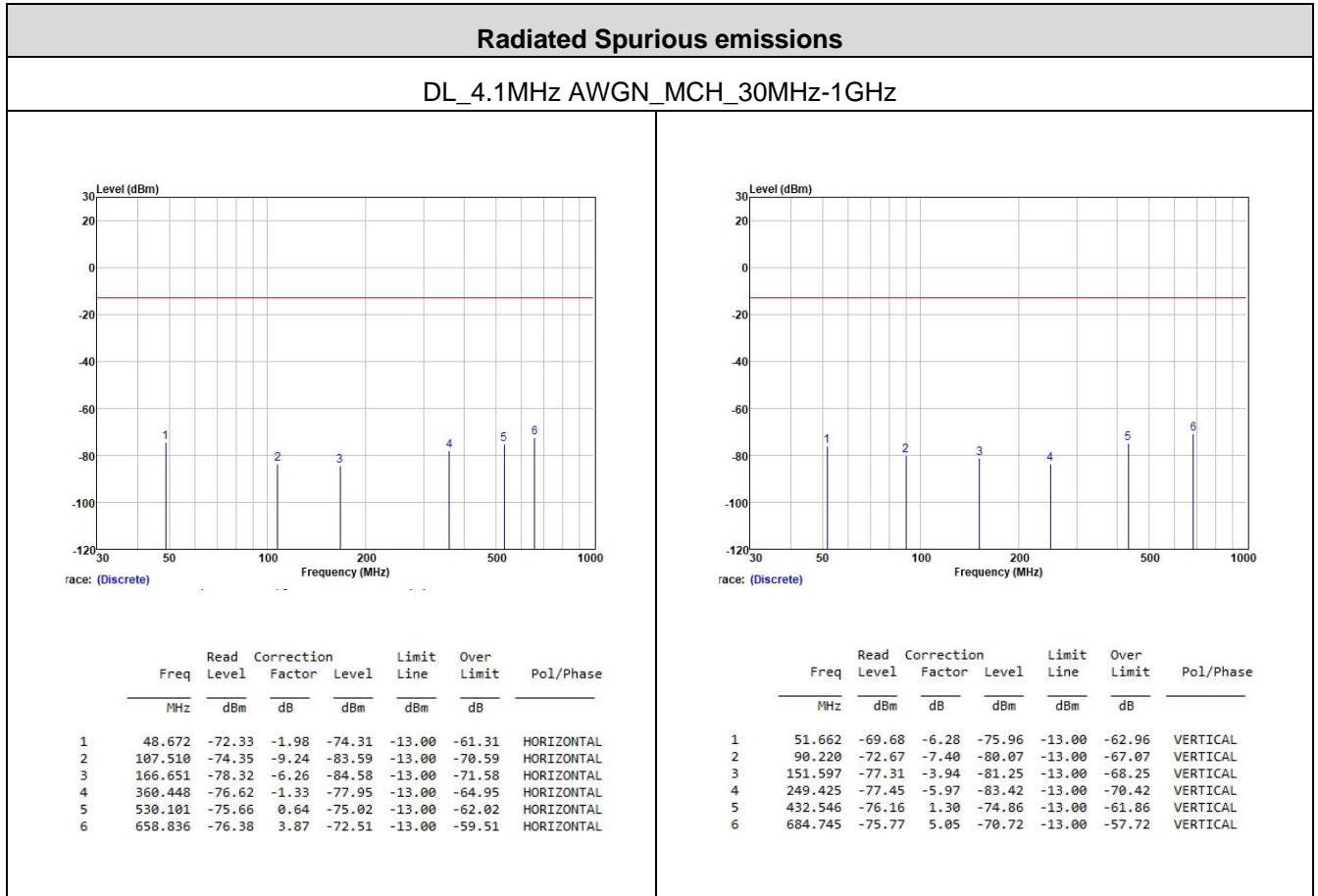
Frequency stability vs temperature							
Test Path	Test Freq. (MHz)	Test Signal	Voltage	Temperature (°C)	Freq. error (Hz)	Tolerance (ppm)	Verdict
DL	763	4.1MHz AWGN	VN	+50	12	0.0157	PASS
			VN	+40	14	0.0183	PASS
			VN	+30	13	0.0170	PASS
			VN	+20	23	0.0301	PASS
			VN	+10	16	0.0210	PASS
			VN	0	15	0.0197	PASS
			VN	-10	22	0.0288	PASS
			VN	-20	11	0.0144	PASS
			VN	-30	24	0.0315	PASS
	763	100MHz AWGN	VN	+50	23	0.0301	PASS
			VN	+40	19	0.0249	PASS
			VN	+30	10	0.0131	PASS
			VN	+20	16	0.0210	PASS
			VN	+10	9	0.0118	PASS
			VN	0	23	0.0301	PASS
			VN	-10	19	0.0249	PASS
			VN	-20	24	0.0315	PASS
			VN	-30	19	0.0249	PASS



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

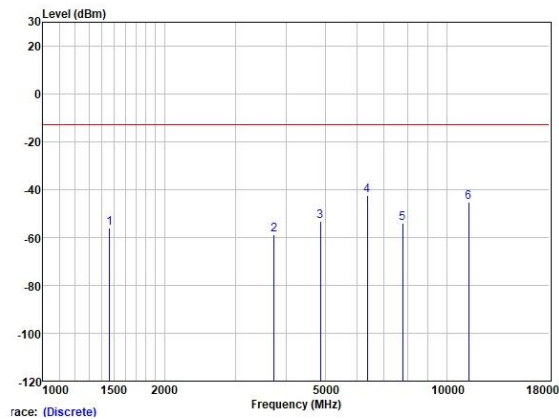
### 10 Radiated Spurious emissions



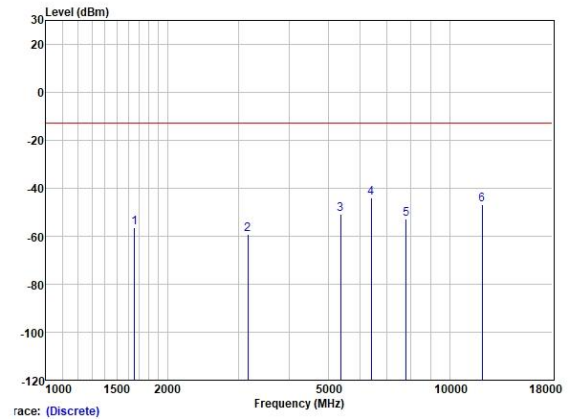


### Radiated Spurious emissions

#### DL\_4.1MHz AWGN\_MCH\_above 1GHz



	Freq	Read Level	Correction Factor	Level	Limit Line	Over Limit	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	1464.522	-60.76	4.69	-56.07	-13.00	-43.07	HORIZONTAL
2	3735.978	-62.24	3.54	-58.70	-13.00	-45.70	HORIZONTAL
3	4874.043	-62.52	9.25	-53.27	-13.00	-40.27	HORIZONTAL
4	6358.789	-61.94	19.36	-42.58	-13.00	-29.58	HORIZONTAL
5	7784.729	-68.33	14.33	-54.00	-13.00	-41.00	HORIZONTAL
6	11335.190	-67.17	21.83	-45.34	-13.00	-32.34	HORIZONTAL

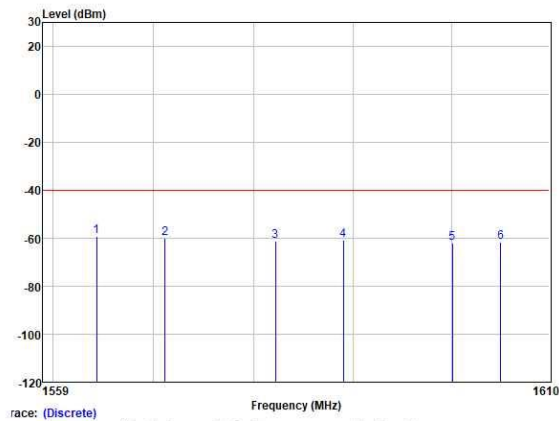


	Freq	Read Level	Correction Factor	Level	Limit Line	Over Limit	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	1658.337	-61.83	5.29	-56.54	-13.00	-43.54	VERTICAL
2	3168.500	-61.87	2.64	-59.23	-13.00	-46.23	VERTICAL
3	5377.354	-63.87	13.23	-50.64	-13.00	-37.64	VERTICAL
4	6395.654	-63.43	19.45	-43.98	-13.00	-30.98	VERTICAL
5	7807.262	-69.33	16.66	-52.67	-13.00	-39.67	VERTICAL
6	12044.520	-68.68	21.95	-46.73	-13.00	-33.73	VERTICAL

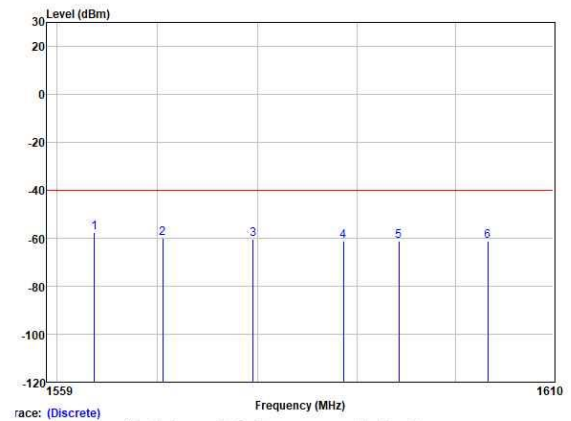


### Radiated Spurious emissions

#### DL\_4.1MHz AWGN\_MCH\_1559-1610MHz



	Freq	Read Level	Correction Factor	Level	Limit Line	Over Limit	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	1564.328	-64.32	5.07	-59.25	-40.00	-19.25	HORIZONTAL
2	1571.141	-65.27	5.10	-60.17	-40.00	-20.17	HORIZONTAL
3	1582.205	-66.30	5.17	-61.13	-40.00	-21.13	HORIZONTAL
4	1589.045	-66.06	5.19	-60.87	-40.00	-20.87	HORIZONTAL
5	1600.080	-67.24	5.24	-62.00	-40.00	-22.00	HORIZONTAL
6	1604.981	-66.93	5.28	-61.65	-40.00	-21.65	HORIZONTAL



	Freq	Read Level	Correction Factor	Level	Limit Line	Over Limit	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	1563.724	-63.06	5.51	-57.55	-40.00	-17.55	VERTICAL
2	1570.535	-65.29	5.41	-59.88	-40.00	-19.88	VERTICAL
3	1579.559	-65.73	5.21	-60.52	-40.00	-20.52	VERTICAL
4	1588.635	-66.18	5.04	-61.14	-40.00	-21.14	VERTICAL
5	1594.271	-66.18	4.97	-61.21	-40.00	-21.21	VERTICAL
6	1603.277	-65.83	4.82	-61.01	-40.00	-21.01	VERTICAL

#### Remark:

Pre-test was performed for all modes (LCH/MCH/HCH, with 4.1MHz AWGN signals/ with 100MHz AWGN signals), the test result always keeps more than 20dB margin, the spurious emissions 9kHz to 30MHz were very low and not displayed in this report. Therefore, only show the worst-case in this report.

Emission in band 1559-1610Mhz tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

--End of Appendix--