

## 12. AUDIO LOW PASS FILTER RESPONSE

### 12.1 PROVISIONS APPLICABLE

§95.1775 GMRS modulation requirements

Audio filter. Each GMRS transmitter type must include audio frequency low pass filtering, unless it complies with the applicable paragraphs of §95.1779 (without filtering).

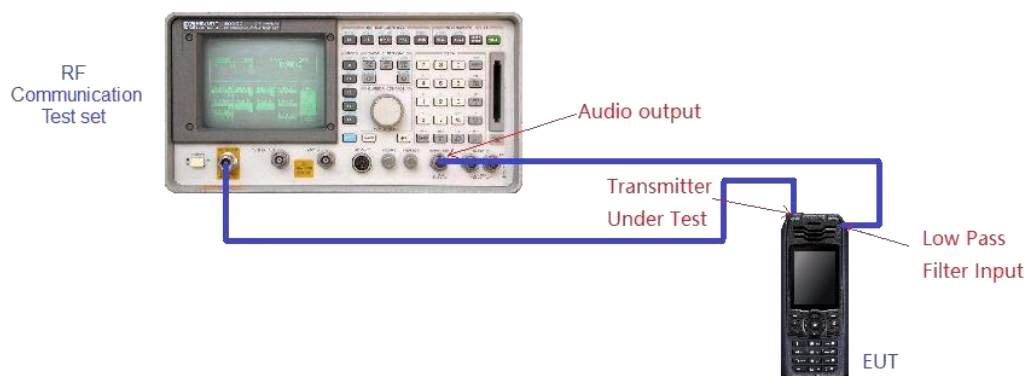
The filter must be between the modulation limiter and the modulated stage of the transmitter.

At any frequency ( $f$  in kHz) between 3 and 20 kHz, the filter must have an attenuation of at least  $60 \log(f/3)$  dB more than the attenuation at 1 kHz. Above 20 kHz, it must have an attenuation of at least 50 dB more than the attenuation at 1 kHz

### 12.2 MEASUREMENT METHOD

- (1) The DUT transmitter output port was connected to Modulation Analyzer.
- (2) Path loss for the measurement included.
- (3) Press 23.1SPCL on modulation analyzer to enable the external LO from SIgen.
- (4) Set the Sigen frequency to  $F_c + 1.5\text{MHz}$ , RF output level to 0dBm without modulation.
- (5) Transmit the radio and set the audio analyzer to 1 kHz audio frequency and 60% of the maximum deviation.
- (6) Up the amplitude by 20dB.
- (7) On DSA, get the reference point to 0dB.
- (8) Vary the frequency on audio analyzer from 3 kHz to 30 kHz, record the audio tone from DSA.

### 12.3 MEASUREMENT SETUP



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](mailto:agc01@agccert.com).

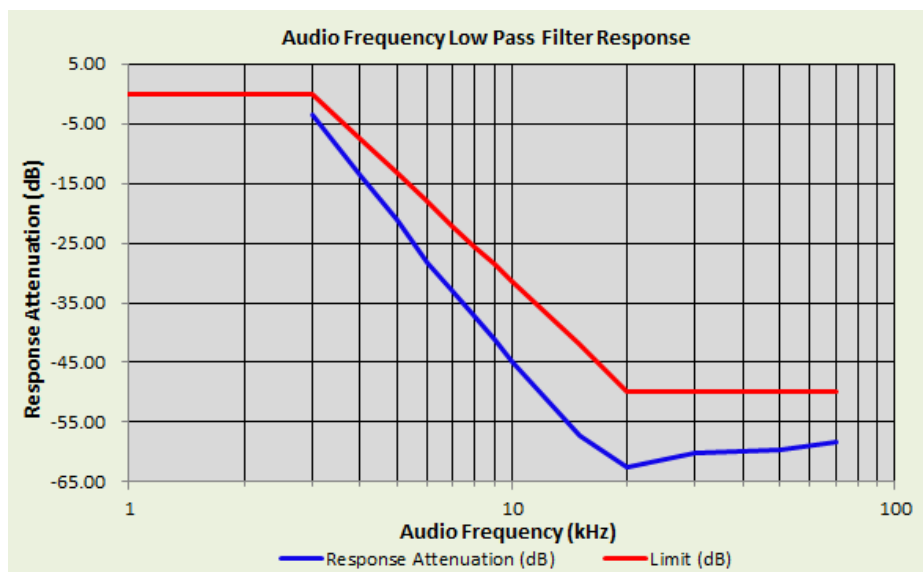
Attestation of Global Compliance(Shenzhen)Co., Ltd

Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd

Tel: +86-755 2523 4088 E-mail: [agc@agccert.com](mailto:agc@agccert.com) Web: <http://www.agccert.com/>

## 12.4 MEASURET RESULTS

| 12.5kHz, FM modulation, Assigned Frequency:462.6500MHz-4W |                           |            |
|-----------------------------------------------------------|---------------------------|------------|
| Audio Frequency (kHz)                                     | Response Attenuation (dB) | Limit (dB) |
| 1                                                         | 0                         | /          |
| 3                                                         | -3.46                     | 0.00       |
| 4                                                         | -13.39                    | -7.50      |
| 5                                                         | -21.25                    | -13.31     |
| 6                                                         | -28.27                    | -18.06     |
| 7                                                         | -33.13                    | -22.08     |
| 8                                                         | -37.33                    | -25.56     |
| 9                                                         | -41.28                    | -28.63     |
| 10                                                        | -44.84                    | -31.37     |
| 15                                                        | -57.18                    | -41.94     |
| 20                                                        | -62.63                    | -50.00     |
| 30                                                        | -60.11                    | -50.00     |
| 50                                                        | -59.63                    | -50.00     |
| 70                                                        | -58.42                    | -50.00     |



Note: All the test frequencies was tested, but only the worst data be recorded in this part.

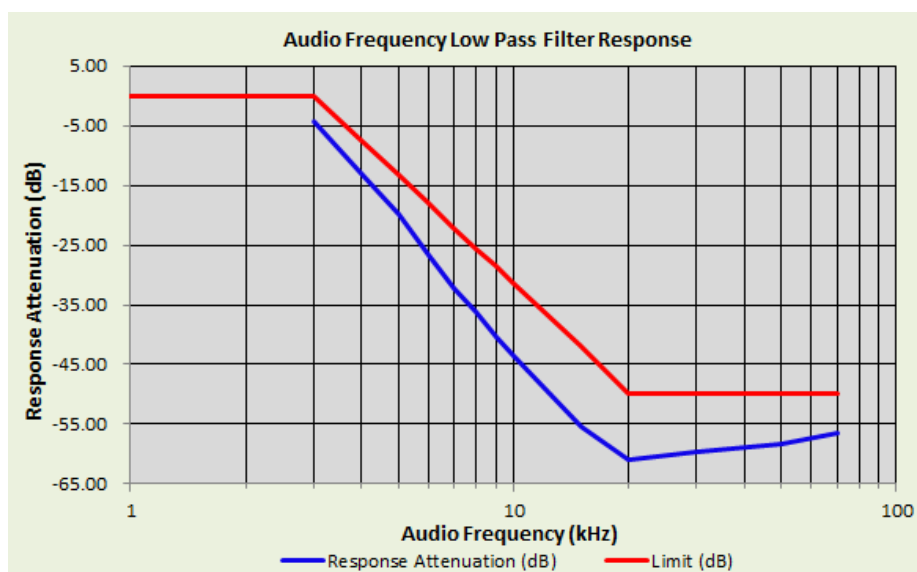
Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the 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.

Attestation of Global Compliance(Shenzhen)Co., Ltd

Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd

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

| 25kHz, FM modulation, Assigned Frequency:462.6500MHz-4W |                           |            |
|---------------------------------------------------------|---------------------------|------------|
| Audio Frequency (kHz)                                   | Response Attenuation (dB) | Limit (dB) |
| 1                                                       | 0                         | /          |
| 3                                                       | -4.22                     | 0.00       |
| 4                                                       | -12.99                    | -7.50      |
| 5                                                       | -19.75                    | -13.31     |
| 6                                                       | -26.62                    | -18.06     |
| 7                                                       | -32.22                    | -22.08     |
| 8                                                       | -36.19                    | -25.56     |
| 9                                                       | -40.32                    | -28.63     |
| 10                                                      | -43.49                    | -31.37     |
| 15                                                      | -55.54                    | -41.94     |
| 20                                                      | -61.02                    | -50.00     |
| 30                                                      | -59.56                    | -50.00     |
| 50                                                      | -58.45                    | -50.00     |
| 70                                                      | -56.36                    | -50.00     |



Note: All the test frequencies was tested, but only the worst data be recorded in this part.

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.

Attestation of Global Compliance(Shenzhen)Co., Ltd  
Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd  
Tel: +86-755 2523 4088 E-mail: agc@agccert.com Web: http://www.agccert.com/

## **APPENDIX I: PHOTOGRAPHS OF TEST SETUP**

Refer to the Report No: AGC02294220802AP01

## **APPENDIX II: PHOTOGRAPHS OF TEST EUT**

Refer to the Report No.: AGC02294220802AP02

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

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.

Attestation of Global Compliance(Shenzhen)Co., Ltd

Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd

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



## 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.

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](mailto:agc01@agccert.com).

Attestation of Global Compliance(Shenzhen)Co., Ltd

Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd

Tel: +86-755 2523 4088 E-mail: [agc@agccert.com](mailto:agc@agccert.com) Web: <http://www.agccert.com/>