

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).

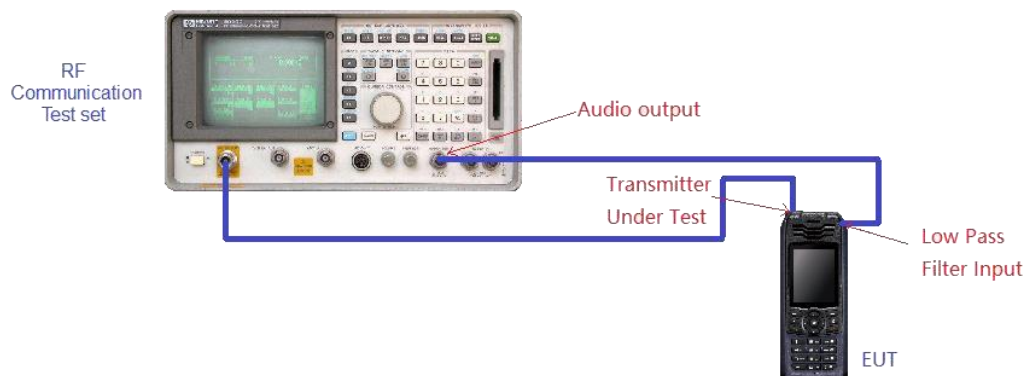
The filter must be between the modulation limiter and the modulated stage of the transmitter.

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 Procedure

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 Siggen.
4. Set the Siggen 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.

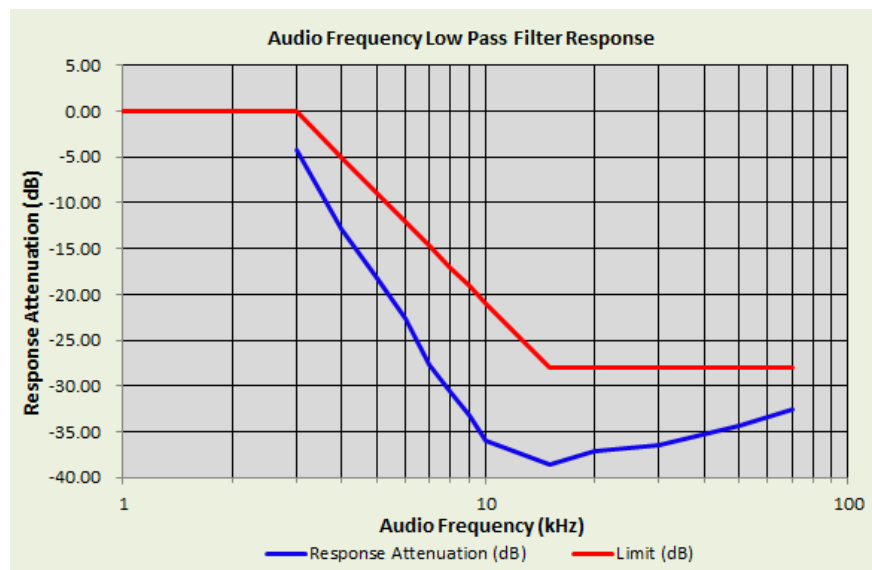
12.3 Measurement Setup



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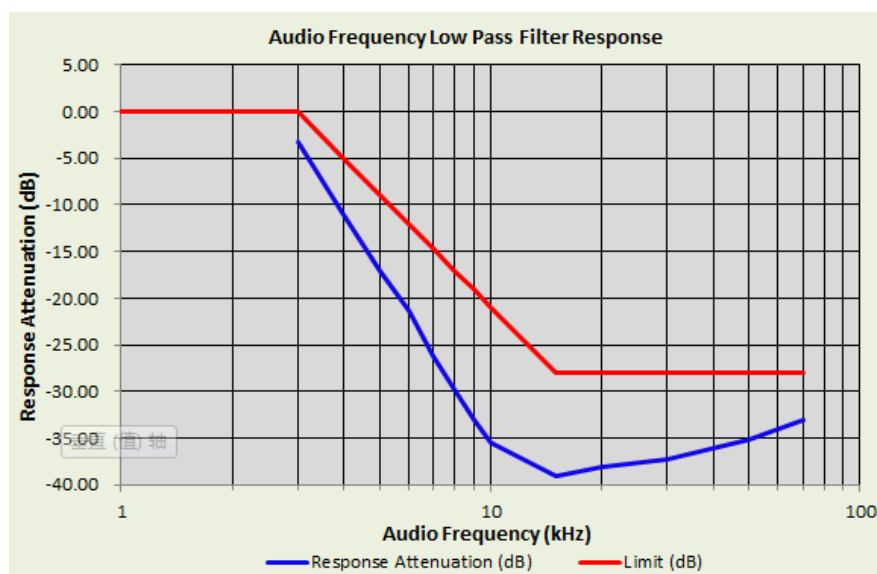
12.4 Measurement Result

12.5kHz, FM modulation, Assigned Frequency:462.6500MHz-5W		
Audio Frequency (kHz)	Response Attenuation (dB)	Limit (dB)
1	0	/
3	-4.23	0.00
4	-12.82	-5.00
5	-18.23	-8.87
6	-22.59	-12.04
7	-27.68	-14.72
8	-30.59	-17.04
9	-33.27	-19.08
10	-35.95	-20.92
15	-38.58	-28.00
20	-37.13	-28.00
30	-36.52	-28.00
50	-34.33	-28.00
70	-32.61	-28.00



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12.5kHz, FM modulation, Assigned Frequency:467.6375 MHz-0.5W		
Audio Frequency (kHz)	Response Attenuation (dB)	Limit (dB)
1	0	/
3	-3.23	0.00
4	-11.12	-5.00
5	-17.09	-8.87
6	-21.40	-12.04
7	-26.24	-14.72
8	-29.78	-17.04
9	-33.04	-19.08
10	-35.45	-20.92
15	-39.15	-28.00
20	-38.15	-28.00
30	-37.33	-28.00
50	-35.15	-28.00
70	-33.03	-28.00



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

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Appendix I: Photographs of Test Setup

Refer to the Report No.: AGC02931250703AP01

Appendix II: Photographs of Test EUT

Refer to the Report No.: AGC02931250703AP02

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-----End of Report-----

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