

## ANR Technology for HGU-55/P

### Reduced Noise Exposure and Improved Helmet System Performance

The HGU-55/P Helmet System features innovative hearing protection: Active Noise Reduction (ANR) technology. This technology reduces noise exposure for aircrew; reducing fatigue and improving mission effectiveness. The helmet system is pre-installed with ANR technology, which is field-retrofitted to compatible helmets. ANR technology can be deployed in aircraft or battery-powered configurations, and at high and low impedances, to enable use in many airframes. Upgrading to ANR technology improves hearing protection and overall system performance. ANR technology can be programmed to address high noises that may be encountered during aircraft operations and incorporates a fail-safe design to allow continued communications upon system or battery power failure.



*Gentex Corporation's Active Noise Reduction (ANR) technology is designed to reduce noise exposure for aircrew, reducing fatigue and improving mission effectiveness.*

## KEY FEATURES

### Qualified for Aircrew Use

- Reduces cockpit noise exposure enabling longer mission durations
- Fail safe system; ensuring audio warnings and communications are maintained with ANR On or Off
- Improved speech intelligibility under all flight conditions for better mission effectiveness
- Immunity from sound pressure level spikes and explosive decompression
- Pre- and post-flight performance checks can be performed to verify consistent performance\*
- Optional battery pack

### Advanced Feed-Forward Design

The HGU-55/P Helmet System with ANR technology employs an advanced feed-forward design to adapt the noise-cancelling characteristics to the noise encountered in aircraft operations.

- Supports a wide range of current and future airframes
- Programmable to adapt the noise-cancelling characteristics\*
- Optimizable for specific airframes or phases of flight where the noise spectrum of low and high frequencies may be vastly different\*

\* For more information on system upgrades, email [sales@gentexcorp.com](mailto:sales@gentexcorp.com)

## SPECIFICATIONS



### ANR Technology

Designed for use in the Gentex HGU-55/P Helmet System, also compatible with HGU-55GTX, HGU-68/P and HGU-84/P helmets

#### Overall attenuation provided by:

- Passive attenuation is provided by the helmet earcup and earseal
- Active attenuation from the ANR

**Impedance:** Available in 9.5, 150, 600 ohm headsets or 19, 300, 600, 1200 ohm ear cups

**Weight:** 125+/-5 g

**Frequency Range (Hz):** 200 Hz to 5 KHz +/-3 dB

**Storage Temp:** -40°C to +70°C

**Operating Temp:** -3°C to +50°C

**Electrical Power:** Voltage Range 5-32V  
Battery Pack (AA): 6V  
Aircraft Power: 28V

**Current Limitations:** 50+/-2mA @ 28V

**Current Consumption:** 45mA at 5VDC

**Max Input signal voltage (Vmax):** ANR: 8 Vrms

**Sensitivity ANR On:** 86 dB SPL +/- 3dB for 1Vrms drive at 1kHz

**Channel Balance:** signal within each ear capsule shall be within +/-3dB at 1kHz

**Environmentally Compliant with sections of MIL-STD-810E, MIL-STD-810F, BS3G100, DEF-STAN 59-411**

#### Environmental Specs:

**Acceleration-Normal:** BS3G100 part 2 section 3 sub-section 3.6

**Vibration-Random:** MIL-STD-810E method 514.5

**Vibration-Normal and Gunfire:** MIL-STD-810G

**Salt Fog:** MIL-STD-810F, Method 509.4

**Humidity:** BS3G100 part 2 section 3 sub-section 3.2 para 6.2.1 test C

**Magnetic Influence:** BS3G100: Part 2: Section 2

**Shock:** MIL-STD-810F, procedure 1, Table 516-1

**Explosive Atmosphere:** MIL-STD-810F, Method 511.4 Clause 4.5.2

**Procedure 1 Thermal Shock:** MIL-STD-810F, Method 503.4

**Temperature:** MIL-STD-810F, Method 501.4 and 502.4

## ATTENUATION

### Gentex HGU-55/P Helmet System

Frequency (Hz)	125	250	500	1000	2000	4000	8000
APV80	15.9	17.6	22.8	34.5	39.0	49.9	49.4
Passive Attenuation Mean (dB)	17.8	18.9	25.1	37.5	42.2	53.0	52.2
Standard Deviation*	2.3	1.6	2.7	3.6	3.8	3.7	3.3
Active Attenuation Mean (dB)	10.6	14.6	12.9	-0.9	-2.2	-1.1	-0.5
Total Attenuation Mean (dB)	28.4	33.5	38.0	36.6	40.0	51.9	51.7

\* Standard Deviation for Passive Attenuation

Passive Attenuation Measurements ANSI S12.6-2016 Method A  
Active Attenuation Measurements ANSI S12.42-2010 (105dBA Pink Noise)  
Passive and Active data combined to arrive at total attenuation.  
APV80 Assumed Protection Value for 80% protection performance.

### Contact Us

Gentex Corporation is committed to designing and manufacturing advanced performance capabilities for worldwide aircrew personnel and aircraft maintainers. The Gentex 55/P ANR Helmet System is controlled for export by the U.S. Export Administration Regulations (EAR) 15 CFR 730-774. The export of this product and related technical information requires prior authorization from the U.S. Government. For more information on ANR Technology, please contact Gentex Corporation at sales@gentexcorp.com or one of our authorized distributors through www.gentexcorp.com.