



THE SOUND OF SAFETY

## CE MARK AND TECHNICAL SPECIFICATIONS MANUAL

# DANR THP DANR THPC

### INSIDE:

Overview . . . . .	2
Applications . . . . .	2
Standards/Compliance	2
Before Usage . . . . .	3
Materials . . . . .	3
Masses . . . . .	3
Attenuation . . . . .	4 - 5
Microphone and Speakers . . . . .	6
Warnings . . . . .	7
Contact . . . . .	8



# Overview

The Digital Active Noise Reduction (DANR) Triple Hearing Protector (THP) offers superior performance as a double hearing protector with the addition of in-ear digital active noise reduction, for a third layer of protection. The DANR Triple Hearing Protector with Communication (THPC) represents Gentex Corporation's top of the line product for combined communications and hearing protection for excellent performance in extreme noise fields.

## Applications

- Hearing protection functional in noise fields up to and exceeding 140 dB
- A field upgradeable digital noise-canceling microphone (with or without muzzle) is optional for clear radio communications in noise fields up to 140 dB(A)
- Can be used with Gentex's APC-2G Series Flight Deck Cranial for head protection
- Compatible with the HGU-25/P Series Legacy Cranial
- DANR headset meets the requirements for small, medium, and large size range per EN 352-1

## Standards/Compliance

- Compliant with sections of MIL-STD-810F, MIL-STD-461E, MIL-STD-464
- Certified to EMC Directive 2004/108/EC
- DANR THP and DANR THPC compliant with EN352-1:2002 and EN 352-2:2002
- Notified Body:

SAI Global Assurance Services Ltd.  
Partis House, Ground Floor  
Davy Avenue  
Knowlhill  
Milton Keynes MK5 8HJ  
United Kingdom  
Notified Body: 2056

# Before Usage

Care should be taken to avoid dropping of the headset and/or earplugs. If the product is accidentally dropped, the unit should be evaluated prior to continuing with use.

The wearer should ensure that:

- The earmuffs and earplugs are fitted, adjusted, and maintained in accordance with the manufacturer's instructions
- The earmuffs and earplugs have been inspected for serviceability
- The earmuffs and earplugs are worn at all times in noisy surroundings

# Materials

Component	Material
Earseal (covering)	Urethane
Earseal (cushioning material)	Polyether foam
Headband	Chrome over Ni plated C Steel
Headband Padding	PVC/Nitrile Foam

# Masses

Configuration	Mass
DANR THP Headset	604 g
DANR THPC Headset with Muzzle Microphone	932 g

# Attenuation

## ANSI Passive

DANR Earmuff & Earplugs Tested to ANSI 3.19  
(Active noise reduction turned off)

Frequency (Hz)	125	250	500	1000	2000	3150	4000	6300	8000
Mean (dB)	38.4	39.0	42.9	42.0	42.7	49.7	49.6	48.3	48.9
Stand. Dev. (dB)	6.7	5.5	5.8	4.0	4.7	4.5	4.1	4.7	3.4
Mean-2SD (dB)	25.1	28.0	31.3	33.9	33.3	40.6	41.5	38.9	42.0

**Noise Reduction Rating**
32
DECIBELS

(WHEN USED AS DIRECTED)

---

THE RANGE OF NOISE REDUCTION RATINGS FOR EXISTING HEARING PROTECTORS IS APPROXIMATELY 0 TO 30 (HIGHER NUMBERS DENOTE GREATER EFFECTIVENESS).


---

Gentex Corporation  
Manchester, New Hampshire

DANR THP and THPC  
Passive Protection Only

---

Federal law prohibits removal of this label prior to purchase



Label Required by U.S. EPA regulation 40 CFR part 211, subpart B

## ANSI Active and Passive (See Note below)

DANR Earmuff & Earplugs Tested to ANSI S12.6 and ANSI S12.42 at 140 dB(A)  
(Active noise reduction turned on)

Frequency (Hz)	125	250	500	1000	2000	4000	8000
Mean (dB)	38.3	48.5	56.8	54.7	45.0	50.0	39.5
Stand. Dev. (dB)	4.2	4.9	5.2	4.7	3.4	4.3	2.6
Mean-2SD (dB)	29.8	38.7	46.4	45.3	38.2	41.4	34.3

Equivalent NRR=37

**NOTE:** The Active and Passive performance reported above has been measured according to ANSI S12.6 and ANSI S12.42 testing methodologies. Active Noise Reduction measured at 140 dB(A) in accordance with ANSI S12.42 was combined with the ANSI S12.6 passive attenuation data.

# Attenuation (Continued)

## CE Passive

DANR Earmuff & Earplugs Tested to EN 352-1:2002, 352-2:2002

Attenuation values to EN 24869-1

(Active noise reduction turned off)

Frequency (Hz)	125	250	500	1000	2000	4000	8000
Mean (dB)	33.1	35.1	41.3	44.1	40.6	49.6	46.7
Stand. Dev. (dB)	3.5	3.8	4.4	3.0	3.5	4.6	3.8
APV (dB)	29.6	31.3	36.9	41.1	37.1	45.0	42.9

SNR=40 dB H=40 dB M=38 dB L= 34 dB

## CE Active and Passive (See Note Below)

DANR Earmuff & Earplugs Tested to EN 24869-1 and ANSI S12.42 at 120 dB(A)

(Active Noise Reduction Turned On)

Frequency (Hz)	125	250	500	1000	2000	4000	8000
Mean (dB)	31.5	43.1	54.0	56.3	44.6	50.4	39.9
Stand. Dev. (dB)	3.6	4.1	4.8	3.4	4.1	4.7	4.0
APV (dB)	27.9	39.0	49.2	52.9	40.5	45.7	35.9

SNR=42 dB H=40 dB M=44 dB L=37 dB

**NOTE:** The Active and Passive performance reported above has been measured according to EN 24869-1 and ANSI S12.42 testing methodologies. Active noise reduction measured at 120 dB(A) in accordance with ANSI S12.42 was combined with the EN 24869-1 passive attenuation data, following the EN 352-5 calculation approach.

# Microphone and Speakers

**Sound Output Level** – The measured mean sound output levels, in dB, as a function of input voltage for eight sample combinations of the worst case earplug and headset configuration (i.e. highest dB output per given input voltage) are as follows:

Input Voltage (Vrms)	0.001	0.002	0.004	0.006	0.011	0.020	0.035
Mean	57.4	61.3	66.0	70.9	75.9	81.0	86.0
Standard Deviation	0.4	0.1	0.1	0.1	0.1	0.1	0.1

The input level for the mean plus one standard deviation A-weighted diffuse-field related sound pressure level is equal to 82dB(A) was calculated to be 22.7 mV rms.

**Microphone Impedance** – The electrical output of the microphone for the worst case headset configuration (i.e. highest voltage/current/power) is 1.17 VRMS (3.3 Vpeak) with a 30 mA current limit and 35 mW power limit.

# Warning



This hearing protector is provided with active noise reduction. The wearer should check correct operation before use. If distortion or failure is detected, the wearer should refer to the manufacturer's advice for maintenance and replacement of the battery.



Performance may deteriorate with battery usage. The typical period of continuous use that can be expected from the hearing protector is 12 hours.



The hearing protector is provided with electrical audio input and output to allow for two-way communications. The wearer should check correct operation before use. If distortion or failure is detected, the wearer should refer to the manufacturer's advice.



The performance of the active noise reduction may be adversely affected when sustained oscillation (whistling or instability) is perceived. If refitting the hearing protector or replacement of the batteries does not overcome this malfunction, the wearer should contact the supplier or manufacturer.



The output of the electrical audio circuit of this hearing protector may exceed the daily limit sound level and/or upper action level.



The audibility of ambient warning signals at a specific workplace transmitted by sound generated outside the hearing protector may be impaired.



The protection afforded by the DANR system will be severely impaired if:

- The earmuffs and earplugs are not fitted, adjusted, and maintained in accordance with the manufacturer's instructions
- The earmuffs and earplugs are not regularly inspected for serviceability
- The earmuffs and earplugs are not worn at all times in noisy surroundings



Earmuffs, and in particular cushions, may deteriorate with use and should be examined at frequent intervals for cracking and leakage, for example.



The fitting of hygiene covers to the cushions may affect the acoustic performance of the earmuffs.



See supplemental component manuals for additional warnings and cautionary statements.



Gentex Corporation  
645 Harvey Road, Suite 102  
Manchester, NH 03103 USA

(603) 657-1200  
sales@gentexcorp.com

