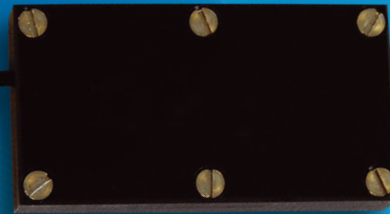


# GEM NGD-100

## Digital Audio Transmission System

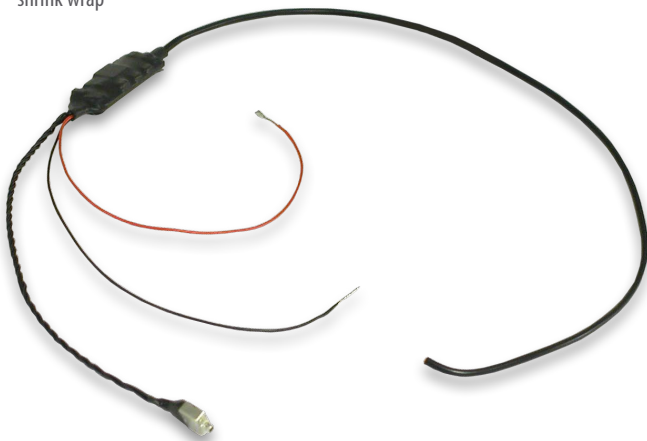
NGD-100 with metal enclosure



### Features

- Stand alone, field-ready system
- Very small size of the transmitter
- Digitally encrypted transmission
- High sensitivity of the microphone
- Shrink wrap or metal enclosure
- Small communications receiver with built-in decoder
- Low current consumption (70mA)
- Automatic gain control (AGC)

NGD-100 with shrink wrap



### Applications

- Designed for hidden installations
- Ideal for body-worn applications
- Close protection monitoring
- Standard indoor surveillance operations
- Homeland security
- Suited for use in SWAT & tactical task forces
- Temporary deployments

Icom IC-R6



The GEM NGD-100 is a digital encrypted miniature audio transmission system. It's designed to transmit acoustic data via radio channel with digital encoding.

Due to its tiny size the transmitter can be concealed in various items. The GEM NGD-100 transmitter is suitable for the most miniature types of camouflage, making it an indispensable intelligence gathering tool for nearly every scenario.

The transmitted signal is received by the high quality communications receiver with built-in decoder. Due to the modulation process interception without a special decoder is very difficult. The Icom IC-R6 is an off-the-shelf commercial communications receiver. Winkelmann's engineers install the small decoder inside the receiver so it is ready for immediate use.

The low power consumption of the transmitter enables excellent long-term audio monitoring operations. The GEM NGD-100 provides excellent transmission quality, making them the ideal choice for body-worn applications, close protection monitoring and temporary deployments.

## Technology

Transmitters of this type use GMSK modulation and digital encoding to guarantee protection of transmitted data. Only special receiver, equipped with relevant decoder, can receive signals from such transmitters. Any other receiver provides "white noise" reception only.

GMSK is a simple yet effective approach to digital modulation for wireless data transmission. GMSK has been adopted by many wireless data communication protocols. Key advantages include spectral efficiency, low phase distortion and coherence of the signal, it also improves noise immunity when demodulating. ■

## Technical Specifications

<b>Transmitter</b>	
<b>Modulation</b>	GMSK
<b>Codec</b>	CVSD with encryption
<b>Frequency control</b>	SAW
<b>Frequency (standard)</b>	303.825, 315.00, 390.00, 418.00, 423.220, 433.420, 433.920MHz
<b>Low frequency range</b>	300 - 5500Hz
<b>Output power</b>	100mW
<b>Power supply</b>	3.5 - 6V DC
<b>Current consumption</b>	< 70mA @3.5V
<b>Dimensions</b>	42 x 17 x 7mm (shrink wrap) 44 x 23.5 x 8.3mm (metal enclosure)
<b>Operating temperature range</b>	0° to +45° C
<b>Receiver (ICOM IC-R6)</b>	
<b>Receive modes</b>	FM, WFM, AM
<b>Antenna connector</b>	SMA (50Ω)
<b>Power supply</b>	2 x AA Battery 4.5 - 6.3V DC with AC adapter
<b>Dimensions (projections not included)</b>	58(W) x 86(H) x 29.8(D)mm 2 <sup>9</sup> / <sub>32</sub> "(W) x 3 <sup>3</sup> / <sub>8</sub> "(H) x 1 <sup>3</sup> / <sub>16</sub> "(D)
<b>Weight (approx.)</b>	200g / 7.1oz (with supplied antenna and batteries)
<b>Operating temperature range</b>	-10° to +60° C (+14° to +140° F)

## Product Codes

### GEM NGD-100 Digital Audio Transmission - Full Systems

- 3-299-527** GEM NGD-100 Digital Audio Transmitter, 100mW with external microphone, external antenna, shrink wrap, plus small special communications receiver Icom IC-R6 with built-in decoder
- 3-299-528** GEM NGD-100 Digital Audio Transmitter, 100mW with external microphone, external antenna, metal housing, plus small special communications receiver Icom IC-R6 with built-in decoder

### GEM NGD-100 Digital Audio Transmission - Components

- 3-299-521** GEM NGD-100 Digital Audio Transmitter, 100mW with ext. mic., shrink wrap
- 3-299-522** GEM NGD-100 Digital Audio Transmitter, 100mW with ext. mic., metal housing
- 3-299-543** Special Communications Receiver Icom IC-R6 with built-in decoder

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