



## GENESYS DIGITAL RADIO

UHF & VHF NAV/COMM RADIO FOR  
GENERAL AND BUSINESS AVIATION

Precise Performance.  
Proven Experience.  
Personalized Attention.



# GDR® - LEANER, LIGHTER, LESS EXPENSIVE!

The Genesys Digital Radio (GDR®) is a family of remote-mount, software-definable radios. They feature combined VOR/localizer/glideslope and marker beacon navigation and VHF communication with a frequency range of 118-136 MHz and 25 or 8.33 kHz channelization with transmit power of 16 or 25 watts. The radio is designed to interface to a host controller/display that has the capability to control the navigation and communications functions via RS-232, or ARINC-429 serial interfaces.

Features of the radio include:

- Utilizes 28VDC aircraft power
- Automatic selection of VOR or LOC mode of operation by channel frequency
- Automatic pairing of LOC (Localizer) and GS (Glide Slope)
- Reception and decoding of the VOR or LOC signals
- Reception and decoding of the GS signals
- Reception and decoding of the marker beacon signals
- OBS input via bus for operation of analog CDI in VOR operation
- Drives analog instrument panel CDI & VDI and/or auto pilot
- LOC enabled annunciator output for autopilot gain control
- Internal Glide Slope and ILS/VOR RF diplexer
- Selection of COMM and VOR/ILS channels via RS-232, ARINC 429, or RS-422 bus
- Two PTT inputs transmit selection
- Support for two microphone inputs, two audio outputs, and separate sidetone output
- The COMM subsystem functions as either:
  - Class D Receiver with a Class 3 Transmitter (25 KHz channel spacing)
  - Class E Receiver with a Class 5 Transmitter (8.333 KHz channel spacing).
- VHF COMM transceiver operational range of 118.000 to 136.975 MHz
- DME tuning via ARINC 429 output



## SPECIFICATIONS

### Dimensions:

- Width: 2.22" (56.39mm)
- Height: 7.10" (180.34mm)
- Depth: 11.60" (294.64mm)

### Weight:

- 5.5 lbs (2.49 kg) (w/single tray)

### RTCA/DO-160G:

- [F2]ZXBBB[H,R,U]EWXSFSZZAZ[ZC]YM[A3J3L3]XXAC

### RTCA/DO-178C:Level-A

### MIL-STD: 704E, 810G

### A/C power:

- 5.6 amps typical TX @ 28 VDC
- 10 amps maximum TX @ 18 VDC
- 0.8 amp typical RX @ 28 VDC

### Control Buses:

- 2 each ARINC 429 RX
- 1 ea. ARINC 429 TX
- 2 each RS-232

### Antenna Connectors:

- 1 each 50 Ohm BNC VOR/ILS/GS diplexed
- 1 each 50 Ohm BNC VHF COMM with guard receiver
- 1 each 50 Ohm BNC Marker Receiver

### Discrete Inputs:

- On/off control, on when pulled low
- Emergency tune when low, programmable to 121.5
- TX interlock pad, 10 dB
- 2 PTT, 1 UHF TX, 1 VHF TX or programmable.
- ARINC SDI programming COM1 to COM 3

### Built in test:

- Supplied with PBIT and CBIT

### VOR/ILS Receiver:

- 108 to 117.975 MHz, voice and navigation modulation

### Main COMM Receiver:

- 118 to 136.975 MHz

### Guard Receiver:

- Available Option

### Preset channels:

- Up to 100, dependent on external control head or EFIS

### Channelization:

- 8.33 kHz or 25 kHz as allowed by band

### FM Immunity:

- Compliant to EUROCAE ED-23B

### TX power:

- 16 Watts Standard, 25 Watts Optional

### Audio loads:

- 150 to 600 Ohm loads permitted, factory set for 100 mW into 150 Ohm load

### AM modulation:

- >85% with 0.25 to 3.0 Vrms audio input, ALC

### TX Modulation:

- Audio Flat -3 to +1 dB from 0.3 to 2.5 KHz
- Audio compliant with a Class 5 Transmitter for 8.333 KHz channel spacing

### TX distortion:

- <5% AM

### Audio outputs:

- Main RX audio 10 to 100 mW bench adjustable
- Sidetone audio 10 to 100 mW bench adjustable

### RX Performance:

- Class D Receiver compliant with 25 KHz channel spacing
- Class E Receiver compliant with 8.333 KHz channel spacing

### Rx sensitivity:

- -105 dBm typical, 6dB SINAD

### RX squelch:

- S/N squelch bench adjustable, CLIMAX compatible
- Carrier override squelch bench adjustable

### TX interlock:

- 10 dB attenuation via external discrete

# MODELS & PART NUMBERS

The following GDR product models and part numbers are available to meet your installation needs.

Models	VOR/ILS	Marker Beacon	VHF COMM 136 MHz	VHF COMM 156 MHz	UHF COMM 225-400 MHz	TX Power (Watts)	
GDR-1636	✓	✓	✓			16	VHF Nav/Comm
GDR-1656	✓	✓		✓		16	VHF Nav/Comm

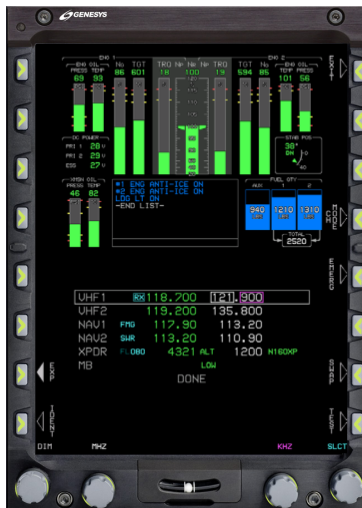
# TSO'S

The GDR radio complies with the following TSO's.

TSO-C34e	ILS GS Rx equipment operating in RF range 329.15 - 335.0 MHz
TSO-C36e	ILS LOC Rx equipment operating in RF range 108 - 112 MHz
TSO-C40c	VOR Rx equipment operating in RF range 108 -117.95 MHz
TSO-C35d	Marker Receiver Equipment Cat A and EUROCAE 1/WG 7/70
TSO-C169	VHF Radio Communications Transceiver Equipment Operating in the RF range 117.975 to 137.000 MHz
TSO-C128	Devices that prevent blocked channels used in two-way radio communications due to unintentional transmissions

# GDR CONTROLLER & DISPLAY

The GDR radio is designed to interface with multiple different radio control and display devices including an EFIS, Genesys Control Panel (GCP), and other 3rd party radio controllers. Inquire for more information concerning your GDR radio control and display needs.



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