



GENESYS™ DIGITAL RADIO (GDR®)

AIRBORNE VHF/UHF NAVIGATION
AND COMMUNICATION RADIOS

GDR® – MISSION READY VHF & UHF AIRBORNE RADIOS

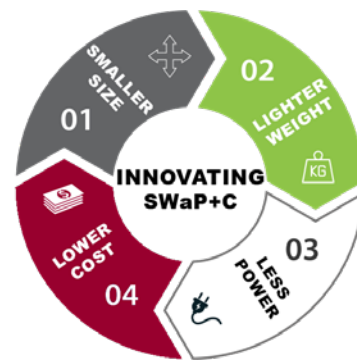
The Genesys Digital Radio (GDR®) is a family of remote-mount, software-definable VHF and UHF radios for fixed-wing and rotary-wing aircraft.

GDR Nav/Comm Radio - The GDR Nav/Comm radio features 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 also provides an option to add UHF communication with a frequency range of 225-400 MHz AM. 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.

GDR UHF Comm Radio - The Genesys UHF radio is ideal for trainers, maritime patrol, NGO & contract military utility operation, and other special mission aircraft. The radio was designed as an easy replacement for the Honeywell/BendixKing KTR-909 UHF radio and controller. The radio covers 225-400 MHz AM for military air-to-air and ATC operations. There are two transmit power options and includes two receivers that deliver full-time main and guard receive monitoring. Radio control is accomplished with Genesys' discrete control displays or via multi-function military communications controllers.

GDR FEATURES

- Non-ITAR
- High SWaP-C savings (Small, light weight, with high reliability)
- MIL-STD-810G and DO-160G environmental qualifications
- TSO-C128, DO-178C: Level A software
- 16 or 25 watts transmit power
- Utilizes 28VDC aircraft power and complies with MIL-STD-704E
- 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 autopilot
- 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 for VHF or UHF transmit selection
- Dual UHF and VHF full time reception
- 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 155.975 MHz
- UHF COMM transceiver operational range of 225.000 to 399.975 MHz
- Tunable VHF and UHF guard receivers
- DME tuning via ARINC 429 output



SPECIFICATIONS (BASED ON MODEL #)

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[A3]3L3]XXAC

RTCA/DO-178C: Level-A

MIL-STD: 704E and 810G

MTBF:

- 10,515 hours

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 UHF/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 or 243 MHz
- 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 or 155.975 MHz & 225 to 400 MHz

TSO:

- TSO-C128: Devices that prevent blocked channels used in two-way radio communication due to unintentional transmissions.

Guard Receiver:

- Fully tunable UHF and VHF on shared antenna port

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 based on model number

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 at 1 KHz AM with 85% AM

Frequency Stability:

- <2PPM

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

Export:

- Non-ITAR, ECCN 7A994

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MODELS & PART NUMBERS

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

Unit	Part Number	VOR/ILS	Marker Beacon	VHF COM, 136 MHz	VHF COM, 156 MHz	UHF COM, 225-400 MHz	TX Power (Watts)
GDR-1636	42-033001-0001	Y	Y	Y			16
GDR-1656	42-033002-0001	Y	Y		Y		16
GDR-1636U	42-033003-0001	Y	Y	Y		Y	16
GDR-1656U	42-033004-0001	Y	Y		Y	Y	16
GDR-1624U	42-033009-0001					Y	16
GDR-2536	42-033005-0001	Y	Y	Y			25
GDR-2556	42-033006-0001	Y	Y		Y		25
GDR-2536U	42-033007-0001	Y	Y	Y		Y	25
GDR-2556U	42-033008-0001	Y	Y		Y	Y	25
GDR-2524U	42-033010-0001					Y	25
GDR-1137N	42-033011-0001	Y	Y				N/A
GDR-1636C	42-033012-0001			Y			16
GDR-1656C	42-033014-0001			Y	Y		16
GDR-1656T	42-033016-0001			Y	Y	Y	16
GDR-2536C	42-033013-0001			Y			25
GDR-2556C	42-033015-0001			Y	Y		25
GDR-2556T	42-033017-0001			Y	Y	Y	25
GDR Install Kit	42-033100-0001						

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.



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



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