



ARC-140/E

HF Airborne Software Defined Radio Communication System

ARC-140/E is a SDR (Software Defined Radio) system designed and manufactured to establish analogue voice, encrypted digital voice, SMS, and data communication in the HF frequency band for airborne operations according to the MIL-STD-141B standard. This radio meets the airborne communication standards and is capable to define 100 preset channels. Output power of transmitter can be selected in three levels as 50W, 100W, and 200W to manage supply consumption and propagation. In addition, various modulation types in HF frequency band are considered for this radio set.

ARC-140/E can be installed on both plane site and ground station as a stationary system to establish reliable/secure communication link using the ALE-3G capability. Another capability of the system is frequency hopping for reaching reliability against Electronic Warfare.

General specifications

Frequency range.....	1.6 ~ 29.9999 MHz
Number of preset channels.....	100 channels
Input supply.....	24-30 VDC
Modulation types.....	PSK-FSK-AME-USB-LSB-CW
Audio bandwidth.....	300Hz ~ 3KHz 6dB
Communication type.....	Simplex/Half-duplex
Data/control interface.....	ISDN, RS-232, LAN port
Digital voice.....	in 600 and 1200 statuses
ALE-3G.....	comply
FH (Frequency Hopping).....	comply
GPS.....	Internal, connect to external GPS
SMS sending/receiving.....	comply
Data transmission with internal modem.....	Fixed frequency: 9600bps (BW=3 KHz) – 19200bps (BW=6KHz) Frequency hopping: 2400bps
Audio output.....	Line (balanced): 0dB 600Ω Local (unbalanced): 250mW (150Ω)
Antenna.....	Wire, Whip

Transmitting Specifications

Output power.....	LP: 50W (±1dB), MP: 100W (±1dB), HP: 200W (±1dB)
Harmonic rejection.....	better than -40dB
Frequency stability.....	±1PPM
Antenna matching.....	automatic with memory
SWR.....	less than 2.5

Receiving Specifications

Receiving sensitivity.....	SSB: better than 10dB for -111dBm AME: better than 15dB for -90.7dBm
Audio output.....	10mW with 300Ω resistance
Spurious signal rejection.....	better than -40dB
Carrier wave rejection in SSB mode.....	-65dB
IF frequency rejection.....	better than -70dB
Image frequency rejection.....	better than -70dB

Physical/Environmental Specifications

Weight.....	Control unit: 500gr Radio unit: 16.5kg Antenna matching unit: 10kg
Dimension (H×W×D).....	Control unit: 60×66×145.5 mm Radio unit: 215×206×380 mm Antenna matching unit: 224×290×385 mm
Operating temperature.....	-25°C ~ +65°C
Storage temperature.....	-40°C ~ +70°C
Environmental standard.....	MIL-STD-810F
EMC/EMI standard.....	MIL-STD-461E