

HIGH FREQUENCY AVIATION INTERFACE BACKPLANE (AIB)

Aggressively Adaptable Aviation Solution for AN/PRC-160

The L3Harris High Frequency Manpack (HFMP) Aviation Interface Backplane (AIB) is the recommended solution for seamless integration of the AN/PRC-160 into most aviation environments.

The AIB features a seamless interface for the AN/PRC-160 radio to be mounted into a variety of aviation applications. The AIB conditions military aircraft power and enables control of the external RF power amplifiers and couplers. The AIB supports communication with airborne tunable device systems, various data communication protocols and intercom interfaces. The AIB includes a shock mount and Radio Interface Assembly (RIA). Additional accessories such as the, RF-5823 Power Amplifier, RF-5382 Coupler and antenna can be added in by the user.

The radio enables the following:

- > Automatic detection of the AIB mount from the radio
- > Radio reporting of various faults originating from the AIB mount
- > Reading and monitoring the AIB temperature sensor device
- > Remote access for command and control anywhere in the aircraft



AN/PRC-160 Manpack Installed into
HF AIB Adapter Front ISO View
(12299-0100)



HF AIB Adapter Front
Right ISO View
(12299-1000)



The appearance of U.S. Department of Defense (DoD) visual information does not imply or constitute DOD endorsement.

POWER, CONTROL AND COMMUNICATIONS

KEY BENEFITS

- > Lighter weight, more compact and rugged than alternative options
- > Eliminates lag time for development or conversion of separate airborne radios
- > Supports voice, data protocols
- > Brings the resilience, versatility and capabilities of the Falcon Net Ecosystem™ to the cockpit
- > Designed to integrate and work in a variety of aviation platforms

PHYSICAL	
Dimensions	6 H x 10.5 W x 23 D in (13.67 H x 19.79 W x 36.12 D cm)
Weight	8 lbs (3.6 kg) (without radio or cables)
Color	CARC green (RIA), black (shock mount)

POWER	
Input Voltage	18-34.3 VDC (MIL-STD-704)
Output Power (Radio)	28.0 VDC at 9.51 A max (11.72 A intermittent overload)
Accessory Output Power	Red- 28.0 VDC at 0.5 A Black- 28.0 VDC at 2.0 A

INTERFACES	
Red	Fixed Level Intercom Audio Accessory Power Remote ON/OFF GPS Data/1PPS Red USB (host/device) Red Ethernet Red ASCII Console DS-101 Key-Fill Interface DS-102 Key-Fill Interface
Black	Black USB (host, future use) Black ASCII Black Debug Console (future use) Accessory Power PA/Coupler Control

RECEIVER	
Sensitivity	SSB: -113 dBm (0.5 uV) for 10 dB SINAD
Audio Output	12 mW at 1000 ohm to external handset
Squelch	Front panel adjustable, active squelch selectable
IF Rejection	> 80 dB
Image Rejection	> 80 dB (1 st IF image)
AGC	Mode dependent, automatically selected
Intermodulation Distortion	-80 dB or better for two -30 dBm signals separated 30 kHz or more
Overload Protection	Receiver protected to 32 VRMS

SOFTWARE	
Firmware	HFMP Version 2.7.0 +
Option File	Aviation option file required

ENVIRONMENTAL	
Operating Temperature	-40°F to +160°F (-40°C to +71°C)
Storage Temperature	-40°F to +185°F (-40°C to +85°C)
Operating Altitude	20,000 ft (6,096 m)
Storage Altitude	40,000 ft (12,192 m)
Immersion	MIL-STD-810H (2 meters of salt water)
Shock and Vibration	MIL-STD-810H
Sand/Dust/Salt Fog/Rain	MIL-STD-810H
EMI / RFI	MIL-STD-461G
Explosive Atmosphere	N-Hexane

ELECTROMAGNETIC INTERFERENCE (EMI) / ELECTROMAGNETIC COMPATIBILITY (EMC)	
ESD	CS118: 8 kV contact / 15 kV air (8 kV max contact)
Radiated Emissions	RE102: Electric Field (50 V/m), 10 kHz to 18 GHz
Radiated Susceptibility	RS103: Electric Field (50 V/m and 200 V/m), 2 MHz to 40 GHz
Conducted Emissions	CE101: Audio Frequency Currents, Power Leads, 30 Hz to 10 kHz CE102: Radio Frequency Potentials, Power Leads, 10 kHz to 100 kHz CE106: Antenna Terminal, 10 kHz to 40 GHz
Conducted Susceptibility	CS101: Power Leads, 30 Hz to 150 kHz CS114: Bulk Cable Injection, 10 kHz to 200 MHz CS115: Bulk Cable Injection, Impulse Excitation CS118: Personnel Borne Electrostatic Discharge CVSD ASK/FSK cipher text Wideband up to 16 Mbps, PSK, CPM, GMSK
Electrical Bonding	464C 5.11

ELECTRICAL POWER CHARACTERISTICS (MIL-STD-704)	
Load Measurements	LDC101
Voltage Steady State Limits	LDC102, normal, 704A LDC301, abnormal LDC401, emergency
Voltage Distortion Spectrum	LDC103: Conditions A-D, J (704A) LDC103: Conditions E-I, K (704E)
Total Ripple	LDC104: 704A
Normal Voltage Transients	LDC105, RX mode: compliant up to 30W max load, (704A)
Power/Transfer Interrupt	LDC201, RX mode: compliant up to 30W max load, (704E)
Abnormal Voltage Transients	LDC302: 704A
Starting Voltage Transients	LDC501
Power Failure	LDC601, RX mode: compliant up to 30W max load for test condition "A" only, (704A)
Phase Reversal	LDC602

Aviation Interface Backplane (AIB)

© 2023 L3Harris Technologies, Inc. | 10/2023 DS707

Non-Export Controlled Information

THIS DOCUMENT CONSISTS OF INFORMATION THAT IS NOT DEFINED AS CONTROLLED TECHNICAL DATA UNDER ITAR PART 120.34 OR TECHNOLOGY UNDER EAR PART 772. (EXPID42694)

L3Harris Technologies is the Trusted Disruptor for the global aerospace and defense industry. With customers' mission-critical needs always in mind, our more than 50,000 employees deliver end-to-end technology solutions connecting the space, air, land, sea and cyber domains.



1025 W. NASA Boulevard
Melbourne, FL 32919