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System Description, Installation, and Maintenance Manual

JetWave™ MCS-8562 Terminal

Model	Part Number
Modman	90400012-0001 or
	90400012-0002
APM	90401121
FMA	90002609-001
KANDU	90404518
BUC-HPA	90003227-003

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23-15-84

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Publication Number D202009001302, Revision 0

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TRANSMITTAL INFORMATION

THIS IS AN INITIAL RELEASE OF JETWAVE MCS-8562 TERMINAL SDIM ATA NO. 23-15-84 AND IS ISSUED FOR USE IN SUPPORT OF THE FOLLOWING:

Table TI-1 shows the applicable components.

Table TI-1. Applicable Components

Component PN	Nomenclature
90400012-0001 or 90400012-0002	Modman
90401121	АРМ
90002609-001	FMA
90404518	KANDU
90003227-003	BUC-HPA

Revision History

Table TI-2 shows the revision history of this SDIM.

Table TI-2. Revision History

Revision	Revision Date
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For each revision, write the revision number, revision date, date put in the manual, and your initials in the applicable column.

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Revision Number	Revision Date	Date Put in Manual	Ву	Revision Number	Revision Date	Date Put in Manual	Ву

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SYSTEM DESCRIPTION, INSTALLATION, AND MAINTENANCE MANUAL JetWave™ MCS-8562 Terminal

INTRODUCTION

1. How to Use This Manual

A. General

- (1) This manual provides information about the installation of the AES Systems.
- (2) Standard maintenance procedures that technicians must know are not given in this manual.
- (3) This publication is written in agreement with the ATA Specification.
- (4) Warnings, cautions, and notes in this manual give the data that follows:
 - A WARNING gives a condition or tells personnel what part of an operation or maintenance procedure, which if not obeyed, can cause injury or death.
 - CAUTION gives a condition or tells personnel what part of an operation or maintenance procedure, which if not obeyed, can cause damage to the equipment.
 - A NOTE gives data, not commands. The NOTE helps personnel when they do the related instruction.
- (5) Warnings and cautions go before the applicable paragraph or step. Notes follow the applicable paragraph or step.

B. Observance of Manual Instructions

- (1) All personnel must carefully obey all safety, quality, operation, and shop procedures for the unit.
- (2) All personnel who operate equipment and do maintenance specified in this manual must know and obey the safety precautions.

C. Symbols

- (1) The symbols and special characters are in agreement with IEEE Publication 260 and IEC Publication 27. Special characters in text are spelled out.
- (2) The signal mnemonics, unit control designators, and test designators are shown in capital letters.
- (3) The signal names followed by an "*" show an active low signal.
- (4) The symbols in Figure INTRO-1 show non-ionizing radiation hazard, ESDS, and moisture sensitive devices.





ESDS



MOISTURE SENSITIVE ICN-HNYWL-0000233101-001-99

Figure INTRO-1. Symbols

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SYSTEM DESCRIPTION, INSTALLATION, AND MAINTENANCE MANUAL JetWave™ MCS-8562 Terminal

D. Units of Measure

(1) Measurements, weights, temperatures, dimensions, and other values are expressed in the USMS followed by the appropriate SI metric units in parentheses. Some standard tools or parts such as drills, taps, bolts, nuts, etc. do not have an equivalent.

E. Illustration

- (1) Supplemental illustrations use a suffix number to the basic figure number. For example, if Figure 501-5 is used, it signifies that it is an illustration of the item identified by index number 5 in Figure 501.
- (2) Illustrations with no specific designation are applicable to all units.

2. <u>Scope</u>

This manual provides detailed information for avionics technicians about the wiring and installation of every component of the JetWave[™] MCS-8562 Terminal. The radome selected must be approved by Honeywell in order to meet the performance standards. The radome installation will depend on the radome selected by the installer for each aircraft type. The installer is responsible for the approval and certification of system components on the aircraft, and for the installation of wiring in the aircraft.

3. Part Numbers

The following Part Numbers and variants cover the various JetWave™ MCS-8562 Terminal hardware configurations:

- 90400012-0001 or 90400012-0002 Modman
- 90401121 APM
- 90002609-001 FMA
- 90404518 KANDU
- 90003227-003 BUC-HPA

SYSTEM DESCRIPTION, INSTALLATION, AND MAINTENANCE MANUAL JetWave™ MCS-8562 Terminal

4. Organization

This manual includes the following sections:

- INTRODUCTION
- SECTION 1 SYSTEM DESCRIPTION
- SECTION 2 SYSTEM PRE-CONFIGURATION
- SECTION 3 INSTALLATION
- SECTION 4 SOFTWARE CONFIGURATION
- SECTION 5 SYSTEM COMMISSIONING
- SECTION 6 TROUBLESHOOTING
- SECTION 7 MAINTENANCE AND REPAIR
- APPENDIX A
- APPENDIX B
- APPENDIX C
- APPENDIX D

5. <u>Customer Support</u>

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 - Telephone: 602-365-3099 (International).

6. <u>References</u>

A. Honeywell/Vendor Publications

- (1) Related Honeywell publications in this manual are shown in the list that follows:
 - Not Applicable

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SYSTEM DESCRIPTION, INSTALLATION, AND MAINTENANCE MANUAL JetWave™ MCS-8562 Terminal

B. Other Publications

- (1) These publications are standard references. Check for the latest version of the publication.
 - The United States GPO Style Manual (available at http://www.gpo.gov/fdsys/pkg/GPO-STYLEMANUAL-2008/content-detail.html)
 - IEEE Std 260.1, Standard Letter Symbols for Units of Measurement (available from the American National Standards Institute at http://www.ansi.org)
 - ASME Y14.38, Abbreviations for Use on Drawings and Related Documents (available from the American National Standards Institute at http://www.ansi.org)
 - ASME Y14.5, Dimensioning and Tolerancing (available from the American National Standards Institute at http://www.ansi.org)
 - ANSI/IEEE Std 91, Graphic Symbols for Logic Functions (available from the American National Standards Institute at http://www.ansi.org)
 - CAGE codes and manufacturers' addresses are available at https://cage.dla.mil
 - IEEE 315/ANSI Y32.2, Graphic Symbols for Electrical and Electronics Diagrams (available from the American National Standards InstituteInstitute at http://www.ansi.org)
 - ARINC 791P1-3 Mark I Aviation Ku-Band and Ka-Band Satellite Communication System, Part 1, Physical Installation and Aircraft Interfaces.



SYSTEM DESCRIPTION, INSTALLATION, AND MAINTENANCE MANUAL JetWave™ MCS-8562 Terminal

7. <u>Precautions</u>

When working with avionics and satellite communications equipment, be aware of the following warnings and cautions.

- WARNING:TO PREVENT RADIO FREQUENCY OVEREXPOSURE, THE AREAS WHICH
THE RISK EXISTS IS BASED UPON THE LOCATION OF THE ANTENNA AND
THE INSTALLED HARDWARE END STOPS. TECHNICIANS WORKING IN
CLOSE PROXIMITY OF THE ANTENNA MUST BE PROTECTED BY DISABLING
THE TRANSMITTER BEFORE THEY APPROACH THAT AREA OF THE
AIRCRAFT.
- <u>WARNING:</u> SERVICE TECHNICIANS MUST OBEY STANDARD SAFETY PRECAUTIONS, SUCH AS WEARING SAFETY GLASSES, TO PREVENT PERSONAL INJURY WHILE INSTALLING OR PERFORMING SERVICE ON THIS SYSTEM.
- <u>CAUTION:</u> TURN OFF POWER BEFORE DISCONNECTING ANY TERMINAL FROM WIRING. DISCONNECTING THE TERMINAL WITHOUT TURNING POWER OFF MAY CAUSE VOLTAGE TRANSIENTS THAT CAN DAMAGE THE TERMINAL.
- CAUTION: THIS EQUIPMENT INCLUDES ITEMS THAT ARE ELECTROSTATIC DISCHARGE SENSITIVE DEVICES. ELECTROSTATIC DISCHARGE SENSITIVE DEVICES ARE SUBJECT TO DAMAGE BY EXCESSIVE LEVELS OF VOLTAGE AND/OR CURRENT. THE LOW-ENERGY SOURCE THAT MOST COMMONLY DESTROYS ESDS DEVICES IS THE HUMAN BODY, WHICH, IN CONJUNCTION WITH NONCONDUCTIVE GARMENTS AND FLOOR COVERINGS, GENERATES AND RETAINS STATIC ELECTRICITY. TO ADEQUATELY PROTECT ESDS DEVICES, THE DEVICE AND EVERYTHING THAT CONTACTS IT MUST BE BROUGHT TO GROUND POTENTIAL BY PROVIDING A CONDUCTIVE SURFACE AND DISCHARGE PATHS. USE STANDARD INDUSTRY PRECAUTIONS TO KEEP RISK OF DAMAGE TO A MINIMUM WHEN TOUCHING, REMOVING, OR SERVICING THE EQUIPMENT.

8. Acronyms and Abbreviations

A. General

- (1) The abbreviations are used in agreement with ASME Y14.38.
- (2) Acronyms and non-standard abbreviations used in this publication are as follows:

Table INTRO-1. List of Acronyms and Abbreviations

Term	Full Term
AC	alternating current
ACPR	adjacent channel power ratio
AES	aircraft earth station
AISD	aircraft information service domain
AIM	aircraft interface mount
AIT	Avionics Interface Technologies
AMIP	open antenna to modem interface protocol

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SYSTEM DESCRIPTION, INSTALLATION, AND MAINTENANCE MANUAL JetWave™ MCS-8562 Terminal

Table INTRO-1. List of Acronyms and Abbreviations (Cont)

Term	Full Term
ANSI	American National Standards Institute
APM	airplane personality module
ARINC	Aeronautical Radio, Incorporated
ASC	antenna subsystem controller
ASME	American Society of Mechanical Engineers
ATA	Air Transport Association
AWG	American wire gauge
BDC	block down-converter
BIT	built-in test
BITE	built-in test equipment
BOSS	Broadband Off-board Services System
BRS	business and regional aviation segment
BUC	block up-converter
С	Celsius
CAGE	commercial and government entity
CAT	commercial air transport
CBIT	continuous built-in test
CIR	committed information rate
cm	centimeter
CSV	comma separated values
dB	decibel
DER	designated engineering representative
DHCP	dynamic host configuration protocol
DIN	device identifier number
DNS	domain name system
EIRP SD	effectively isotropic radiated power spectral density
ESDS	electrostatic discharge sensitive
EST	Eastern Standard Time
F	Fahrenheit
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FMA	fuselage mount antenna
FTP	file transfer protocol
FXS	foreign exchange subscriber

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SYSTEM DESCRIPTION, INSTALLATION, AND MAINTENANCE MANUAL JetWave™ MCS-8562 Terminal

Table INTRO-1. List of Acronyms and Abbreviations (Cont)

Term	Full Term
GHz	gigahertz
GPO	Government Printing Office
GPS	global positioning system
GNSS	global navigation satellite system
GSC	global signaling channel
GTE	ground transmit enable
GUI	graphic user interface
HPA	high-power amplifier
hPa	hectopascal
HTP	horizontal tail plane
Hz	hertz
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
IF	intermediate frequency
IMU	inertial measurement unit
in-lb	inch-pound
I/O	input and output
IP	Internet protocol
IRS	inertial reference system
IRU	inertial reference unit
ISDN	integrated services digital network
ISP	internet service provider
Ка	part of the radio frequency spectrum: 26.5 thru 40 GHz
KANDU	Ku/Ka band aircraft network data unit
kg	kilogram
Ku	part of the radio frequency spectrum: 12 thru 18 GHz
LAIM	local aircraft interface mount
LAN	local area network
LED	light emitting diode
LNA	low noise amplifier
LRU	line replaceable unit
LSAP	loadable software airplane part
m	meter
mΩ	milliohm

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SYSTEM DESCRIPTION, INSTALLATION, AND MAINTENANCE MANUAL JetWave™ MCS-8562 Terminal

Table INTRO-1. List of Acronyms and Abbreviations (Cont)

Term	Full Term
mA	milliampere
Mbps	megabits per second
MCU	modular concept unit
MHz	megahertz
MIB	management information base
MIR	maximum information rate
mm	millimeter
Modman	modem manager
MOP	maximum operating power
ms	millisecond
NA	not applicable
NEXT	near end cross talk
Nm	Newton meter
NMS	network management system
O&I	outline and installation
OAE	outside antenna equipment
OID	object identifier
OMT	orthogonal mode transducer
OTA	over the air
Ра	pascal
PCU	position control unit
PFD	power flux density
PIESD	passenger information and entertainment services domain
PN	part number
PODD	passenger owned devices domain
POTS	plain old telephone system
POST	power-on self test
PSI	pound per square inch
RF	radio frequency
RFM	radio frequency module
RMA	return material authorization
RSSI	receive signal strength indicator
RX	receive
SAS	satellite access station

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SYSTEM DESCRIPTION, INSTALLATION, AND MAINTENANCE MANUAL JetWave™ MCS-8562 Terminal

Table INTRO-1. List of Acronyms and Abbreviations (Cont)

Term	Full Term
SATCOM	satellite communication
SDIM	system description, and installation manual
SLA	service level agreement
SNMP	simple network management protocol
SSPP	service subscriber plan
SVN	secure virtual network
TNC	threaded Neill-Concelman
ТРК	terminal provisioning key
ТХ	transmit
UNC	unified coarse thread
USB	universal serial bus
USMS	United States Measurement System
VAC	volt alternating current
VDC	volt direct current
VLAN	virtual local area network
VoIP	voice over Internet protocol
VPN	virtual private network
VSAT	very small aperture terminal
VTP	vertical tail plane
WAN	wide area network
WGS	wideband global SATCOM
WOW	weight on wheels



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SYSTEM DESCRIPTION, INSTALLATION, AND MAINTENANCE MANUAL JetWave™ MCS-8562 Terminal

SECTION 1 – SYSTEM DESCRIPTION

1. <u>JetWave™ MCS-8562 Terminal Overview</u>

The JetWave[™] MCS-8562 Terminal SATCOM system supplies a broadband communication link that can be used to supply data, video, and voice communications for passengers communications and entertainment. The AES communicates to the SAS through a satellite as shown in Figure 1-1.



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Figure 1-1. Ka-Band System

A Modman is provided within the AES to enable two-way communications. The forward channel provides a communication path from the SAS to the AES. The return channel provides a communication path from the AES to the SAS. The AES receives in the forward channel in K-band and transmits in the Ka-band. The AES system provides the RF data link between the aircraft and the servicing satellite. An AES system includes an antenna which is steered towards the servicing satellite by mechanical means. The JetWave[™] MCS-8562 Terminal operating frequency range is 29 to 31 GHz (TX, Ka-band) and 19.2 to 21.2 GHz (RX, K-band). The JetWave[™] MCS-8562 Terminal system also supports an external modem to operate in frequency range of 29 to 31 GHz (TX, Ka-band) and 19.2 to 21.2 GHz (RX, K-band).

A. JetWave™ MCS-8562 Terminal LRUs

The JetWave™ MCS-8562 Terminal is made up of the LRUs in Table 1-1.

LRU	PN
Modman	90400012-0001 or 90400012-0002
АРМ	90401121
KANDU	90404518
BUC-HPA	90003227-003
FMA	90002609-001

Table 1-1. JetWave™ MCS-8562 Terminal LRUs



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B. JetWave™ MCS-8562 Terminal LRU Leading Particulars

- (1) Refer to Table 1-2 for the Modman leading particulars.
- (2) Refer to Table 1-3 for the APM leading particulars.
- (3) Refer to Table 1-4 for the KANDU leading particulars.
- (4) Refer to Table 1-5 for the BUC-HPA leading particulars.
- (5) Refer to Table 1-6 for the FMA leading particulars.

Table 1-2. Modman Leading Particulars

Characteristic	Specification
Part Number	90400012-0001 or 90400012-0002
Length	15.32 inches (389.1 mm) maximum
Width	5.02 inches (127.5 mm) maximum
Height	7.88 inches (200.2 mm) maximum
Weight	14.0 pounds (6.35 kg) maximum
Operating voltage	115 VAC, 400 Hz
Power consumption	60 watts maximum NOTE: Honeywell recommends that wiring and cooling is designed for 100 watts in order to allow for seamless upgrades to the Modman with enhanced capability at a later date.
Power dissipation	59 watts maximum
Cooling	48.5 lb/hr (22 kg/hr) at 104°F (40°C)
Operating temperature	-40°F (-40°C) to 158°F (70°C)
Mounting information	4-MCU, forced-air, ARINC 600 series tray
Maintenance	No scheduled maintenance required
Interfaces	J1A - PODD, PIESD, and AISD J1B - APM, Aircraft, PODD, PIESD, AISD, and KANDU J1C - IF to/from BUC-HPA and aircraft power

Table 1-3. APM Leading Particulars

Characteristic	Specification
Part Number	90401121
Length	4.515 inches (114.68 mm) without connector
Width	4.015 inches (101.98 mm) maximum
Height	1.315 inches (33.40 mm) maximum
Weight	12 ounces (0.34 kg) maximum
Operating voltage	5 VDC, 45 mA maximum



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Table 1-3. APM Leading Particulars (Cont)

Characteristic	Specification
Power consumption	Power supplied by Modman
Power dissipation	0.3 watts maximum
Cooling	No forced-air cooling required
Operating temperature	5°F (-15°C) to 158°F (70°C)
Maintenance	No scheduled maintenance required
Interface	J1 - Modman

Table 1-4. KANDU Leading Particulars

Characteristic	Specification		
Part Number	90404518		
Length	11.020 inches (279.91 mm) maximum		
Width	9.075 inches (230.50 mm) maximum		
Height	4.760 inches (120.90 mm) maximum		
Weight	8.8 pounds (4.0 kg) maximum		
Operating voltage	115 VAC, 400 Hz		
Power consumption	200 watts maximum average power when installed with Class A FMA		
Power dissipation	50 watts maximum average power when installed with Class A FMA		
Cooling	See 90405004 Outline and Installation Drawing for the KANDU for cooling clearance requirement		
	No forced-air cooling required		
Operating temperature	-67°F (-55°C) to 158°F (70°C)		
Maintenance	No scheduled maintenance required		
Interfaces	J1 - Aircraft and Modman		
	J2 - Power to OAE and IMU (38.5 and 24 VDC)		
	J3 - BUC-HPA, OAE, and maintenance		
	J4 - Ethernet (quadrax)		

Table 1-5. BUC-HPA Leading Particulars

Characteristic	Specification
Part Number	90003227-003
Length	16.55 inches (420.4 mm) maximum
Width	9.01 inches (228.9 mm) maximum



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Table 1-5. BUC-HPA Leading Particulars (Cont)

Characteristic	Specification
Height	2.08 inches (52.8 mm) maximum
Weight	11.5 pounds (5.2 kg) maximum (including thermal pad)
	BUC-HPA 10.75 pounds (4.9 kg) nominal
	Thermal pad 0.75 pounds (0.34 kg) nominal
Operating voltage	115 VAC, 400 Hz
Power consumption	220 watts maximum at MOP 96-122 VAC
Power dissipation	200 watts maximum at MOP 96-122 VAC
Cooling	 Conductive - cooled through the baseplate with thermal pad. BUC-HPA will mute the transmit RF signal if the hottest point on the aircraft baseplate exceeds 185°F (85°C). BUC-HPA will automatically un-mute once BUC-HPA cools below 167°F (75°C).
Operating temperature	-67°F (-55°C) to 185°F (85°C)
Maintenance	No scheduled maintenance required
Interfaces	J1 - Aircraft power input J2 - Control interface from KANDU J3 - RF TX to OAE J4 - IF RX from OAE J5 - IF TX from Modman

Table 1-6. FMA Leading Particulars

Characteristic	Specification		
Part Number	90002609-001		
Length	23.03 inches (585 mm) maximum		
Width 35.72 inches (907.3 mm), maximum reflector sweep v			
Height	9.39 inches (238.51 mm) maximum		
Weight	88 pounds (39.92 kg) maximum		
	NOTE: The lifting fixture is 5.5 pounds (2.5 kg)		
Operating voltage	38 VDC and 24 VDC for IMU supplied by the KANDU		
Operating temperature	-67°F (-55°C) to 158°F (70°C)		
Power dissipation	160 W @ steady state		
Cooling	Natural convection and radiation only		



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Table 1-6. FMA Leading Particulars (Cont)

Characteristic	Specification
Maintenance	No scheduled maintenance required
Interfaces	P1 - Power from KANDU
	P2 - Control interface from KANDU
	P3 - IMU power and control from KANDU
	J4 - RF RX to BUC-HPA
	J5 - RF TX from BUC-HPA

2. Honeywell JetWave™ MCS-8562 Terminal Architecture

This section describes the AES system that Honeywell has implemented for the following classes of terminal:

- Class A aftermarket satellite terminal: For use on CAT types of aircraft. This uses a FMA assembly. The terminal can also be used in the large aircraft segment of the BRS.

The JetWave[™] MCS-8562 Terminal behaves in the same manner as the JW1.0 system in operation apart from the responding to requests for different TX/RX polarization and/or frequency band switching as commanded by the ACM based on the Inmarsat satellite topology.

The JetWave[™] MCS-8562 Terminal wideband system also supports an optional external modem and is capable of switching between the commercial bands and Non-Commercial bands of operation. The switch between services is controlled by an external Modman discrete, GUI menu option and/or external SNMP branch which will indicate to the terminal dynamically which mode of operation it should be in.

The external modem operates in a standalone mode of operation where modem parameters such as satellite target longitude, beam polarity, frequency band etc are passed to the Modman by user entering the parameters into the GUI.

Refer to Figure 1-2 for the JetWave™ MCS-8562 Terminal block diagram.

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SYSTEM DESCRIPTION, INSTALLATION, AND MAINTENANCE MANUAL JetWave™ MCS-8562 Terminal

The JetWave™ MCS-8562 Terminal LRUs are as follows:

A. FMA

- The FMA includes an aperture.
- The FMA contains an LNA for amplification of signals in the receive path.
- The FMA includes the mechanical pointing system, positioner, motors and sensors, and an IMU to detect movement of the platform.
- The FMA accepts the transmit Ka-band signal from the BUC-HPA.
- The FMA antenna K-band receive path is amplified by the LNA, down-converted and sent to the BUC-HPA.
- The FMA receives power from the KANDU.
- The FMA accepts the control interface from the KANDU and lets the antenna aperture report status, BITE, and IMU position back to the KANDU.

B. BUC-HPA

- Contains a BUC to convert the transmit IF frequencies (950-2000 MHz) to Ka-band frequencies (29-31 GHz)
- Contains an HPA to increase the signal strength for transmission by the antenna
- Contains an RX L-band interface in which passes through from the FMA to the Modman
- Accepts 115 VAC aircraft power.

C. KANDU

- Receives commands from the Modman through an Ethernet interface to configure the antenna/BUC-HPA and reports status over this Ethernet interface.
- Contains the positioning algorithm to allow the pointing of the antenna with inputs from the IRU, information from the RSSI detector in the Modman, and the IMU from the antenna.
- Provides power and control to the antenna.
- Provides control signals to the BUC-HPA through the RS-422 interface.
- Accepts 115 VAC aircraft power.

D. Modman

- Is the overall controller of the system.
- Receives and transmits information to the BUC-HPA along the IF frequency between 950-1950 MHz.
- Supplies the user interfaces to the aircraft and passengers as follows:
 - The PODD interfaces provide service to the passengers through the use of Ethernet (10/100/1000 Base T).
 - The PIESD interfaces provide services to passenger entertainment devices installed on the aircraft (in flight entertainment systems). This system uses Ethernet (10/100/1000 Base T).

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- The AISD interfaces provide services to the aircraft/cockpit, such as the electronic flight bag, data load, etc. This system uses Ethernet (10/100/1000 Base T) interfaces.
- The discrete I/O for aircraft status and for reporting system status.
- Has two LEDs to provide power and fault status on the LRU front panel.
- Accepts 115 VAC from the aircraft.
- Manages the BIT for the complete AES.
- Contains the modem, which transmits and receives to/from the BUC-HPA.
- Controls the BUC-HPA and KANDU (and through it, the OAE) through the Ethernet interface and RS-422 discretes.
- Controls the IF Switch through discretes.

E. APM

- The APM holds the configuration data for the system.
- Is powered by the Modman.

F. External Modem and IF switch (Optional)

- Transmits and receives to/from the BUC-HPA
- Switch Modem signal to/from BUC-HPA.

3. JetWave™ MCS-8562 Terminal Modes of Operation

The JetWave™ MCS-8562 Terminal supports the following modes of operation:

- Power On
- System Initialization
- Normal Operation
- Critical Fault
- Data-Load
- Commanded.

A. Power On Mode

Each LRU enters Power On Mode when power is applied. RF transmission is disabled in this mode.

In this mode, the Modman does POST and other invasive tests. If no failures are detected, the system enters into the system initialization mode.

NOTE: SNMP and continuous BITE are not available at all times during this mode.

B. System Initialization Mode

In the System Initialization Mode, the Modman starts additional POST and BITE, system access, and SNMP services. The Modman attempts to establish communication with KANDU and OAE. The RF transmission is disabled in this mode.

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While in System Initialization Mode, the RS422, discrete signal and the Ethernet interfaces are available and active on all the JetWave[™] MCS-8562 Terminal LRUs which are powered up. In Modman, when powered up, the power supply to APM is available on Modman P23B connector. When power is applied to the KANDU LRU, the Antenna Power and IMU power is available on the KANDU receptacle J2. Refer to the applicable interconnection diagrams for the electrical specifications of these interfaces.

There is no timeout for system initialization since the Modman, the BUC-HPA, and the KANDU LRUs (which power the OAE) are powered independently from the aircraft power supply.

Once the communication with other LRUs is established, the BITE parameters of other LRUs are extracted and more system wide testing is performed. The system wide testing includes the hardware compatibility checks, software part number compatibility check, checking for availability of important input data and configuration files, etc. If there are no critical failures, the system enters into the Normal Operating Mode.

C. Normal Operating Mode

In Normal Operating Mode, the RF transmission is enabled and satellite connection is initiated subject to the system meeting the following conditions – aircraft is in the air, there is no geographic restriction, the antenna has a line of sight to the satellite, and the system has completed Cable Calibration and Antenna Alignment. Ground operation is possible if the GTE is asserted. The user traffic can be started once the antenna is pointed correctly to the satellite and the terminal locks on to the satellite for providing the connectivity. The system enables all the supported services like continuous BITE, SNMP, GUI, user services, etc. in this mode.

AES remains in Normal Operation Mode until either the occurrence of a critical fault, or it is commanded to another mode. Operation with the Modman internal modem vs. the External Modem are sub-modes of Normal Operation Mode. In the external modem mode, satellite information such as frequency band and satellite target is entered into the mission configuration via the GUI, and signal to the BUC-HPA is switched to the external modem with the IF switch. In the internal modem mode, the IF signal path is switch back to Modman with the IF switch.

The system enters the Normal Operating Mode approximately 5 minutes after continuous power is applied to the last LRU.

D. Critical Fault Mode

The system enters into Critical Fault Mode when any LRU reports a critical fault that cannot be recovered and will affect satellite connectivity. The RF transmission is muted and user services are disconnected. The system may support minimal services like SNMP, continuous BITE, GUI, etc. in this mode. The system reboots in an effort to recover from Critical Fault Mode.

E. Data Load Mode

The system enters Data Load Mode when aircraft is on ground and local data load discrete on the Modman is asserted. The SNMP, GUI, and continuous BITE services may not be supported in data load mode. The RF transmission is disabled in data load mode. The Modman provides ARINC 615A Ethernet data loading to itself and other LRUs through its own interface in Data Load Mode. Data Load mode can be entered from "Normal Operating Mode", "System Initialization mode", or "Critical Fault Mode". The system will exit Data Load Mode once the local data load discrete is de-asserted.

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F. Commanded Mode

The system also provides a Commanded Mode of operation which may be initiated through the GUI when the aircraft is on ground. This mode provides access to user initiated tests for system testing, initiating automatic antenna alignment, transmit cable calibration, manual antenna pointing to defined location, etc.

The system will come out of the commanded mode by a System reset.

4. <u>About Inmarsat Services</u>

The JetWave[™] system is made up of a fleet of Ka-band broadband satellite network from Inmarsat. The geostationary satellites have high power Ka-band steerable and fixed spot beams that supply global in-flight connectivity services to business, commercial, and government aviation customers around the world.

The JetWave[™] AES provides Ka-band communication utilizing an airborne VSAT. The AES communicates through a satellite to an SAS. TX and RX interface provided within the AES enables two-way communication. The forward channel provides a communication path from the SAS to the AES. The return channel provides a communication path from the SAS.

The JetWave[™] system may not be available on the ground or in the air in certain geographical areas. Some countries do not allow access to this service in their airspace. The service availability would also depend on the country in which the aircraft is registered with. The aircraft operators may approach the respective Value Added Resellers/Distribution Partners for further details where JetWave[™] services are not available.



SYSTEM DESCRIPTION, INSTALLATION, AND MAINTENANCE MANUAL JetWave™ MCS-8562 Terminal

SECTION 2 – SYSTEM PRE-CONFIGURATION

1. <u>AES Configuration Data</u>

NOTE: Any tools for preparing the config files for the terminal must be licensed from Honeywell.

The AES configuration data is a set of configuration files, stored on the APM. Each configuration file contains a set of airplane-unique parameters. The parameters define the configuration of the AES necessary for the initialization and operation of the Honeywell JetWave[™] MCS-8562 Terminal AES system. The AES configuration data holds information such as:

- Aircraft tail registration number
- Aircraft structural blockage information
- ARINC 429 label definition set for positioning and steering used by the KANDU
- WOW input and polarity, etc
- USER operational preferences
- LAN network configuration data
- Ability to download software and offload log over the air.

A. AES System Configurations

The details of the ARINC 429 labels required for the JetWave™ MCS-8562 Terminal are mentioned in the table below:

Label Set	Required ARINC 429 Labels	Description	Source	Maximum Transmit Delay (msec)	Maximum Transmit Interval (msec)	Approximate Resolution
Label	For best accuracy	Preferred Label Set				
150	Yes	UTC Time		Nil	1000	1s
260	Yes	Date			1000	1 day
254 /110	Yes	Present Position – Latitude / GNSS Latitude	Hybrid /GNSS	160 /1000	100 /20	0.000172°
255 /111	Yes	Present Position – Longitude /GNSS Longitude	Hybrid /GNSS	160 /1000	100 /20	0.000172°
261 /76	Yes	Altitude /GNSS Altitude (MSL)	Hybrid /GNSS	65 /1000	40 /20	0.125 ft
132 /314	Yes /No	True Heading	Hybrid /INS	110	50	0.0055° /0.4°
324	Yes	Pitch Angle	INS	50	20	0.011°
325	Yes	Roll Angle	INS	50	20	0.01°

Table 2-1. ARINC 429 Label List

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Table 2-1. ARINC 429 Label List (Cont)

Label Set	Required ARINC 429 Labels	Description	Source	Maximum Transmit Delay (msec)	Maximum Transmit Interval (msec)	Approximate Resolution
330	Yes	Yaw Rate	INS	50	20	0.015 degrees/sec
326	Yes	Pitch Rate	INS	50	20	0.015 degrees/sec
327	Yes	Roll Rate	INS	50	20	0.015 degrees/sec
175 /112/312	Yes	Ground Speed /GNSS Ground Speed	Hybrid /GNSS/INS	110 /Nil	40	0.125 knots (kn)
Label	Acceptable Replacement to Primary					
125		UTC Time	INS	1200	200	0.1 min.
Label	Optional ARINC 429 labels					
137 /313/103	N/A	True Track	INS	N/A	1 Hz	N/A
270	N/A	IRS Discrete Word #1	INS	N/A	1 Hz	N/A
315	N/A	Horizontal Stabilization	Installation dependent	N/A	1 Hz	N/A

The AES system configuration includes the aircraft installation information.

NOTE: The AES System configuration file update is not a field activity. This is done by the equipment supplier as part of production process. On completion of AES system installation activities, the installer can view and verify the AES configuration settings through the GUI as described in this section.

To view and make sure the AES configuration data is correct, navigate to the "Configuration Files" information pages under the "Other Information & Control" menu. Figure 5-4 shows the typical configuration file Information page.

NOTE: The AES system does not lose its configuration data because of the loss of its primary power. The validity of the AES configuration content is determined by the AES system with a checksum process. The checksum is done at the time of each power-up. An invalid checksum results in the AES system reverting to the default values.

B. Regulatory Log Configuration Parameters

The regulatory log configuration parameters file (APM file - reglog.cfg) contains details of the remote server for transferring the regulatory log data, downloading new software, and offloading Jetwave logs.

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C. Aircraft Service Configuration

There are a number of functions that an Ethernet port can support namely, data traffic, data loading, GUI, AES logs extraction (maintenance function) and status/control (through the SNMP). The terminal can be configured to indicate whether an Ethernet port supports traffic, data loading, SNMP etc, such as AG1 SNMP, and data loading, EG1 traffic, using the aircraft service configuration file.

Once the items have been loaded into the APM the Modman reads the APM once at power-on and passes the appropriate data to the relevant LRU or uses the information locally.

The following airframe specific information is required for creating the JetWave™ MCS-8562 Terminal configuration files:

- Applicable ARINC 429 Label Definition sets from Aircraft IRS/IRU and GNSS
- Discrete input availability and its polarity
- User Ethernet Ports which are to be configured and the type of services to be enabled (such as Data Load, SNMP, GUI and OTA access).
- Aircraft blockage data.
- Enable/Disable ability to download software and offload logs.
- External modem installation parameters.

Refer to APPENDIX D for more details.

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SECTION 3 – INSTALLATION

1. <u>Overview</u>

A. Installation Procedure Overview for the JetWave™ MCS-8562 Terminal

This section includes information about installing the equipment in the core JetWave™ MCS-8562 Terminal. Contact Honeywell about installation kits that include mating connectors and cables.

Honeywell recommends that LRUs be installed in accessible locations that are compatible with the environmental levels that the equipment is certified to handle.

Refer to APPENDIX C for the installation reference checklist.

Complete the Airframe Specific Information sheet in APPENDIX D. Follow the guidelines in APPENDIX D to request a new APM configuration. For new configurations, provide this sheet to Honeywell so an APM file can be generated. Existing APM configuration files are reusable and can typically be used for subsequent installations on aircraft of the same model. Installers are encouraged to ensure an APM file is available before beginning an installation. If unsure, replacement and/or new APM configuration files can be requested from the online form on the ASDS portion of the Honeywell portal. Note that the typical lead time between APM file request and APM file is 20 business days, so installers should work this issue early in the installation process.

- **NOTE:** ARINC 429 labels may be obtained from the aircraft ADIRU or MMR or other suitable equipment, providing they meet the required update rate, latency and accuracy.
- **NOTE:** For FMA located in Non-ARINC791 defined positions, a structural blockage map will have to be defined for the aircraft.

The JetWave™ MCS-8562 Terminal installation procedure includes:

- the Modman, APM, Maintenance Panel and Discrete wiring
- the KANDU
- the AIM or the LAIM
- the BUC-HPA Thermal Pad and the BUC-HPA
- the FMA
- Cabling and drawings.
- Optional installation of external modem and IF switch.

Refer to Table 3-5 for a detailed explanation of the discrete signals required for correct operation of the system.

The overview of the installation procedure for the JetWave™ MCS-8562 Terminal is as follows:

- (1) Install adapter plate for the FMA. For Fuselage Mount Configurations, install either the ARINC 791 style antenna interface mount (AIM) or non ARINC 791 local antenna interface mount (LAIM), depending on the selected installation option. Installation shall be per instructions related to each configuration. The adapter plates required for mounting the OAE are available in installation kits from Honeywell and various other suppliers.
- (2) Install the OAE and JetWave[™] MCS-8562 Terminal components in accordance with the installation drawings provided.

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- (3) Install wiring in accordance with the interconnection diagram. The cables and adapters are available as installation kits from various suppliers.
- (4) Do wiring and RF cable checks to make sure they are installed correctly and meet the installation requirements.
- (5) Apply power to the system.
- (6) Install radome after completion of post installation checks.

2. <u>JetWave™ MCS-8562 Terminal Internal LRU Installation</u>

A. Modman

Install the Modman in a standard 4-MCU tray. The customer is responsible for providing the mounting tray, the mating ARINC 600 connector, contacts, all the cabling for the installation as well as any installation measures necessary to prevent the Modman from being exposed to dripping water.

Refer to Figure 3-6 or Figure 3-7 for outline and installation information, and Figure 3-12 for the applicable interconnect diagram.

There are no special tools, fixtures, and equipment required for the Modman installation.

Minimum clearance for the Modman: 1.0 inch (25.4 mm) clearance from top face, 0.5 inch (12.7 mm) clearance from all the other faces not interfacing with the mounting tray.

(1) The Modman mounting kits are as follows:

The customer is responsible for providing the mounting tray. Carlisle Interconnect Technologies supplies 4-MCU ARINC 600 kits in various configurations, contact Carlisle at www.carlisleit.com.

(2) The Modman connectors are as follows:

Table 3-1. Mating Connector

Mating Connector	Radiall P/N
ARINC 600 Connector	NSXN2B875S00

Table 3-2. Modman ARINC 600 Connector

Connector PN	Description	Qty
PN 620 601 191	ARINC 600 connector shell Size 2 with inserts	1
Insert A:	Arrangement Q11, Shell Size 2:	
PN 620176008	Size 8 quadrax contact for Ethernet connections	11
Insert B:	Arrangement 120Q2, Shell Size 2:	
PN: 620361	Size 22 Socket Contacts	118
PN 620176008	Size 8 quadrax contact for Ethernet connections	2
Insert C:	Arrangement 12F5C2, Shell Size 2:	
PN: 620240	#12 pin contacts	4

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Table 3-2. Modman ARINC 600 Connector (Cont)

Connector PN	Description	Qty
PN: 620230	#16 pin contacts	1
PN: not included	Size 16 optical contacts (not used)	5
PN: 620022	Size 5 coax contact for RF connections	2

NOTE: While engineering the JetWave [™] MCS-8562 Terminal LRU interconnections, make sure the LRU quadrax terminations do not distort natural wire orientations. There are geometric relationships that must be maintained between the quadrax contact and the natural twist of the star-quad wire. Wire bend radii and clamping conditions typical of aircraft installations should not cause deviation from NEXT parameters of the ARINC 664 compliant Star Quad cables for Ethernet interfaces terminating on Quadrax receptacles. Refer to the applicable interconnection diagrams for the indicator that the connector rotation of the wire is in a clockwise direction. Refer to Figure 3-1 for information on Recommended Interconnect Wiring Pin Numbering.

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NOTE:

- Above colors are based on specific cable part number and are example only. If other colors are used, impedance pair integrity must be maintained.
- Use pin locations and numbering identified above; do not use manufacturer-specific quadrax pin numbering.
- The contact key/keyway is not generally visible after quadrax pins are installed.
- The connection may include a bulkhead connector in which case the pin-to-pin continuity between Modman and KANDU must be maintained.
- 5. Quadrax cable impedance pairs appear on opposite and non-adjacent wires as viewed from the end of the cable cross-section. Those impedance pairs on non-adjacent wires must be terminated into the signal pairs on non-adjacent pins in the Quadrax contact.

J4-A CONNECTOR DETAIL

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Figure 3-1. Recommended Interconnect Wiring Diagram

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(3) The Modman bonding is as follows:

The Modman must be electrically bonded to the airframe. Make sure that the mating surfaces are free from contaminants such as paints or other non-conductive elements. A bonding test point is available on the front panel. The bonding resistance must be less than or equal to 2.5 m Ω .

- (4) The TX and RX IF cables between the Modman and BUC-HPA must meet the recommended insertion loss. Refer to Table 3-3. The allowed insertion loss should account for any optional IF switch components.
 - **NOTE:** The VSWR specification is for the cables, and not for the total VSWR of the installation.

Insertion Loss at 50 MHz	Insertion Loss at 950 MHz	Insertion Loss at 1,450 MHz	Insertion I	Loss at 1,950 MHz
Loss in TX path must be less than 3.1 dB	Minimum loss of 11 dB	TX and RX cable loss must be matched within 1 dB Maximum loss of 18 dB	TX and RX be 50 ohm less than 1	coax cables should s with a VSWR of .5:1
			NOTE:	TX and RX cables must have a minimum isolation of 100 dB

Table 3-3. Insertion Loss Between Modman and BUC-HPA

- **NOTE:** The isolation specification may need to be increased if the TX and RX cables are in close proximity to high power RF signals in the 950 MHz to 1,950 MHz band, e.g. cellular base stations.
- (5) If the loss in the chosen cable is too small, an equalizer or attenuator should be inserted in the IF path. The choice of parts is detailed in Table 3-4.
 - **NOTE:** An attenuator cannot be used in the TX path as the TX path also passes the reference to the BUC-HPA and the attenuator will introduce too much loss to that portion of the signal.

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Table 3-4. Modman Insertion Loss Values

	Insertion Loss @ 950 MHz		
	< 6.5 dB	<u>≥</u> 6.5 dB, <11dB	≥ 11dB
Equalizer in TX path	10.5 dB Minicircuits, PN TAT-10R5DC- 1+ (10.5 dB equalizer) or equivalent	4.8 dB Minicircuits, PN TAT-4R8DC-1+ (4.8 dB equalizer) or equivalent	None
Attenuator in RX path	10.5 dB Minicircuits, PN TAT-10R5-1+ (10.5 dB attenuator) or equivalent	4.8 dB Minicircuits, PN TAT-4R8-1+ (4.8 dB attenuator) or equivalent	None

NOTE: Input signal range: -79 to -5 dBm. Output signal range -30 to +5 dBm. Incross talk requirement: -25 dBc. Output cross talk requirement: -40 dBc.

IF Switch В.

(1) The JetWave™ MCS-8562 Terminal system is capable of supporting an external modem. To install the external modem, the IF coaxial cable path requires an IF switch. Honeywell's recommended configuration uses military specification P/N M3928/10-05 for the IF Switches, along with a control relay (P/N LM-1210-E-MADJV from Applied Avionics, Inc.) capable of driving the current required by the switches. If the application differs from the recommended configuration, please consult Honeywell. Refer to Figure 3-12 for the applicable interconnect diagram.

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C. APM

The APM can be installed in any orientation. Refer to Figure 3-8 for outline and installation information and Figure 3-12 for the applicable interconnect diagram.

There are no special tools, fixtures, and equipment required for the APM installation.

There are no clearance requirements for the APM.

Use 0.164-32 UNC-2A corrosion resistant mounting fasteners. Do not exceed 25 in-lb (2.8 Nm) or minimum ultimate tensile strength of 125 KSI (861.845 newton/millimeter²) when you torque the screws.

APM to Modman interconnect cable must use ARINC 664 compliant 2 shielded twisted pair 24 AWG (or aerospace grade shielded Cat 5/Cat 5E minimum) PN ECS 922404 or equivalent, with a maximum length of 9.8 feet (3 m).

The APM must be electrically bonded to the airframe through contact with the base of the unit or through a bonding cable attached to M3 earth stud. Do not exceed 4.1 in-lb plus an allowance for the lock mechanism used. The APM bonding resistance must be less than or equal to 2.5 m Ω .

D. Maintenance Panel

If the JetWave[™] MCS-8562 Terminal is not wired to other systems on the aircraft, the discrete I/O and Ethernet ports must be brought out to a suitable maintenance panel to allow for system checks and routine maintenance, such as system software upgrades. The discrete I/O and Ethernet ports needed are as follows:

- (1) Discrete Outputs:
 - **NOTE:** Discrete outputs are normally open and capable of sinking 20 mA of current with a maximum voltage of 36 VDC as per ARINC 763.
 - Optional: System available (Modman MP13E) open/ ground output connected to a lamp
 - Optional: Data link available (Modman MP13F) open/ ground output connected to a lamp.
- (2) Discrete Inputs:
 - Mandatory: Local data load enable (Modman MP10B) connected to a normally open switch with a GND to enable
 - Mandatory: Ground transmit. Ground transmit enable may be hard-wired for the desired behavior at the Modman connector (Modman MP11D) connected to a normally open switch with a GND to enable.
 - Optional: Public service disable (Modman MP11E) connected to a normally open switch with a GND to enable
 - Optional: Modman reset (Modman MP10C) connected to a normally open switch with a GND to enable
 - Optional: External Modem Enable (Modman MP11C) open/ground to switch between internal and external modem mode
 - Optional: Weight-on-Wheels (Modman MP11A) connected to determine Air/Ground Status, as configured by the AES system configuration data.

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- Mandatory: Tx Control mute (KANDU J1D) connected to a normally open switch with a GND to enable.
- Mandatory: Front Panel Enable Mode (Modman MP10F) connected to a normally open switch with a GND to enable
- Discrete Signal Ground (Modman MP12F), to be used as the ground reference for the other Modman discrete inputs
- Discrete Signal Ground (KANDU J1-B), to be used as the ground reference for the KANDU discrete inputs and ARINC-429 and RS-422. This signal must be grounded, even if no KANDU discrete signals are connected.
- (3) Ethernet Port:
 - AV1 (Modman TP BB1 thru 4) connected to a RJ45 Ethernet connector
 - **NOTE:** The AV1 is the default data loading port, any other Ethernet ports can be selected as long as the APM configuration file is configured to allow that port to data load.

For LRU pin details, refer to the applicable system interconnect diagram, Figure 3-12.

Refer to Table 3-5 for a list of I/O discretes.

Discrete I/O	Pin	Description	Mandatory / Optional
Weight-on-Wheels (WOW)	Modman J1-MP11A	Use and sense of the Weight on Wheels input is to determine Air/Ground Status, as configured by the AES system configuration data. Signal type: Input	Optional
Local Data Load	Modman J1-MP10B	 The discrete shall request the Modman to change mode in the following manner: Open to ground transition: Request for data load mode to be entered Ground to open ground transition: Request for reset of system (if in data load mode) Signal type: Input 	Mandatory

Table 3-5. Discretes Table



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Table 3-5. Discretes Table (Cont)

Discrete I/O	Pin	Description	Mandatory / Optional
TX Control	KANDU J1-D	The discrete shall disable the transmission of signals when grounded, and allow transmission when open. Signal type: Input	Mandatory
Public Services Disable	Modman J1-MP11E	The discrete shall disable the PODD interfaces when grounded, and enable PODD interfaces when open. Signal type: Input	Optional
Ground Transmit Enable	Modman J1-MP11D	The discrete shall request the AES when in normal operation mode to ignore Air/Ground status and provide user service. - Ground = Enable RF transmission on the ground. - Open = Normal.	Mandatory
Modman Reset	Modman J1-MP10C	 Signal type: Input This discrete can be used to reset the Modman (and, in turn the entire AES) Ground = Mod- man/AES reset Open = Mod- man/AES normal operation Signal type: Input 	Optional

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Table 3-5. Discretes Table (Cont)

Discrete I/O	Pin	Description	Mandatory / Optional
Data Link Available	Modman J1-MP13F	The Data Link Available ARINC 791 IO discrete output shall be grounded when user service is available (data connections are available for use), and open when user service is not available.	Optional
		Signal type: Output (closure to ground)	
System Available	Modman J1-MP13E	The System Available ARINC 791 IO discrete output shall be open when the AES system is in critical fault mode, and grounded at all other times (including power on sequence)	Optional
		Signal type: Output (closure to ground)	

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Table 3-5. Discretes Table (Cont)

Discrete I/O	Pin	Description	Mandatory / Optional
Front Panel Enable Mode	Modman J1-B Pin 10F	The front panel enable mode discrete enables the Modman front panel connectors when asserted.	Mandatory
		- Ground = Enable Front Panel Connector	
		 Open = Disable Front Panel Connector. 	
		Signal type: Input.	
		Recommended that this discrete is hardwired to ground or connected to a maintenance panel switch.	
External Modem Enable	Modman J1-B Pin 11C	The modem mode is configured by the AES system configuration data.	Optional
		 Ground State Internal indicates A791 Discrete Ground State Internal modem, Open State = External modem 	
		 Ground State External indicates A791 Discrete Ground State = External modem, Open State = Internal modem 	

NOTE: The following ARINC 791 discretes are not supported:

- Cell Transmit Enable (Modman J1-MP11B)
- Remote Management Enable (Modman J1-MP10A)
- Cooling System Available (Modman J1-MP11F).

3. <u>KANDU</u>

Refer to Figure 3-9 for outline and installation information. Refer to Figure 3-12 for the applicable interconnect diagram.

There are no special tools, fixtures, and equipment required for the installation of the KANDU.

The customer is responsible for the bulkhead connectors.

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- A. KANDU to FMA bulkhead interconnect specification is as follows:
 - (1) Power and control signals required for the JetWave[™] MCS-8562 Terminal LRUs installed outside the aircraft will be routed through the power and control bulkhead interface connectors which will be sealed to maintain cabin pressure (max 14.5 PSI (1,000 hPa)) inside the cabin.
 - (2) Maximum round trip wiring interconnection resistance between KANDU A3J2 and OAE-FMA- A5P1 must not exceed 0.326 ohms (considering the 16 AWG wire cables of length 32.8 feet (10 m)).
 - (3) It is recommended to use hermetically sealed MIL-DTL-38999 series III, insert 19-35, normal keying with 66 contacts as KANDU bulkhead control connector for KANDU interwiring to the OAE-FMA. To be labeled as BI-control.
 - (4) It is recommended to use hermetically sealed MIL-DTL-38999 series III, insert 17-8, normal keying with eight contacts as KANDU bulkhead power connector. To be labeled as BI-power.
 - (5) It is recommended to use TNC/N-Type hermetically sealed bulkhead interface in accordance with MIL-STD-348 for the routing of the TX-IF signals between the Modman and BUC-HPA. The TX-IF interface to be labeled blue.
 - (6) It is recommended to use TNC hermetically sealed bulkhead interface in accordance with MIL-STD-348 for the routing of the RX-IF signals between the Modman and BUC-HPA. The RX-IF interface to be labeled green.
 - (7) KANDU receptacle A3J4 is TVP00RGQF-21-75P (Amphenol) or equivalent. Mates with TV06RQF-21-75S (Amphenol) or equivalent for Ethernet interface.
 - (8) The following bulkhead connector design principles are recommended:
 - (a) The connector shall use a flange integrated into the connector shell with an integrated seal and a washer and jam nut.
 - (b) The jam nut shall be capable of accepting locking wire.
 - (c) The integrated flange shall be mounted on the pressurized side of the aircraft, with the jam nut on the exterior unpressurized side
 - (9) It is recommended that the bulkhead interface be installed such that receptacle pins are on the pressurized area and receptacle sockets are on the unpressurized side of the aircraft.
 - (10) The bulkhead interface connectors must be electrically bonded to the aircraft.
- B. The KANDU must be electrically bonded to the airframe through contact with the base of the unit as follows:
 - At least one of the two provided mechanical attachment points for electrical bonding must be used for bonding the KANDU to the airframe. Make sure that the all mating surfaces in the bonding path are free from contaminants such as paints or other non-conductive elements.
 - One 0.65 inch (16.5 mm) diameter circular and one 0.65 inch (16.5 mm) diameter by 1.02 inch (25.9 mm) diameter elongated conductive area is provided around two of the mounting holes of the equipment base plate.
 - The KANDU includes a 0.59 inch (15 mm) diameter bonding measuring point on one of the attachment tabs, close to the bonding element, but not on the bonding element.

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KANDU bonding to the aircraft must be achieved through the mounting structure (fasteners) and KANDU A3J1-A.

The KANDU bonding resistance measured from the measuring point and the surface the unit is mounted must be less than 2.5 m Ω .

4. <u>BUC-HPA</u>

A. General

- (1) There are no special tools, fixtures, or equipment required for the installation of the BUC-HPA.
- (2) Refer to Figure 3-10 for outline and installation information. Refer Figure 3-12 for the applicable interconnect diagrams.

B. BUC-HPA Thermal Pad Kit

- (1) The thermal pad kit, PN SCD-90402388, is intended to provide a conduction interface between the bottom surface of the BUC-HPA conduction-cooled PN 90003227-003 and airplane cold plate or mounting panel. Before mounting units on the airplane, the thermal pad must be installed on the units.
- (2) Kit Contents
 - (a) The thermal pad kit, PN SCD-90402388, contains the parts identified in Table 3-6.

Table 3-6. The	ermal Pad Kit
----------------	---------------

PN	Description	Quantity
MPW0000118	Thermal pad, conduction, 60 Mil T-Flex Ka airborne, Part 1	1
MPW0000122	Thermal pad, conduction, 60 Mil T-Flex Ka airborne, Part 2	1

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- (3) To install the thermal pad, refer to document Thermal Pad K, BUC-HPA Conduction SCD-90402388. It can be found at Jetwave Customer Support.
 - **NOTE:** The configuration of the mounting feet and connectors shown in Figure 3-2 is representative only and may not be the exact configuration for all BUC-HPAs.



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Figure 3-2. BUC-HPA Thermal Pads

- CAUTION: THE THERMAL PAD OPAQUE PROTECTIVE BACKING MUST BE REMOVED FROM BOTH THERMAL PADS BEFORE USE IN THE FINAL APPLICATION. FAILURE TO DO SO CAN RESULT IN PREMATURE SHUTDOWN OF THE BUC-HPA DUE TO OVERHEATING.
 - (a) Immediately before installing the BUC-HPA into the aircraft, remove white opaque protective backing on both pads to expose the non-tacky side of the thermal pad.
 - **NOTE:** If the BUC-HPA unit is to be shipped or stored before installation, do NOT remove the white opaque backing on the thermal pads.
 - **NOTE:** Honeywell does not recommend applying the thermal pad to the BUC-HPA if the BUC-HPA is to be shipped or stored. BUC-HPA thermal pad installation should be done shortly before actual BUC-HPA installation.

C. BUC-HPA - Waveguide/coax RF Losses

A waveguide is used for the BUC-HPA to OAE RF TX connection. The waveguide run should include a short length of seamless flexible waveguide along the routing to accommodate tolerances. The waveguide must have mounting points to interface to the attachment points provided.

NOTE: Make sure the waveguide is connected before powering the BUC-HPA. Always connect J1 last and disconnect J1 first (J1 carries the A/C power).

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The TX path interconnect loss between the BUC-HPA and the FMA must not exceed 1.5 dB in the frequency range of 29 to 31 GHz. The loss is from BUC-HPA flange to antenna flange.

The RX path interconnect between the BUC-HPA and the FMA must not exceed 2.0 dB in the frequency range of 950 to 1950 MHz.

D. BUC-HPA - Thermal Conduction Path

The transmit operation of the AES is muted if the conduction-cooled BUC-HPA exceeds the temperature indicated in Table 1-5.

The conduction-cooled BUC-HPA relies on heat conduction through its base to a thermally conductive path in order to minimize the BUC-HPA temperature. Conduction to the aircraft mounting plate is dependent on proper installation of the BUC-HPA thermal pad. The outline and installation drawings in Figure 3-10 provide thermal pad installation instructions.

If the shutdown temperature is exceeded, a low-power mode (non-RF communicating) is entered until the temperature reduces to approximately 10° below the shutdown temperature. The temperature measurement on BUC-HPA is done internal to the unit with 5° offset to the baseplate that is calibrated to compensate for the temperature difference. However with different heating pattern the real temperature can deviate from the reading.

NOTE: When the aircraft is on the ground and the AES is transmitting, and the ambient outside temperature is very hot, then the mounting plate temperature can be exceeded. The exact outside air temperature and operating conditions are installation dependent. Consult with your hardware supplier for further details.

The BUC-HPA must be electrically bonded to the airframe through contact with the base of the unit as follows:

- At least one of the four mechanical attachment points must be used for electrical bonding.
- Make sure that the mating surfaces are free from contaminants such as paints or other non-conductive elements.
- A circular or elongated conductive areas are provided around two or more of the mounting holes of the equipment base plate.
- The BUC-HPA includes bonding measuring points on the chassis bosses which are not used for mounting feet.

The BUC-HPA bonding resistance measured from the measuring point and the surface upon which the unit is mounted, must be less than 2.5 m Ω .

The BUC-HPA bonding and BUC-HPA interconnection details from and to the FMA are detailed along with the FMA installation instructions in subsequent sections.

E. BUC-HPA/Waveguide Installation

- (1) BUC-HPA Installation Location with the FMA (if applicable)
 - (a) The BUC-HPA install location is airframe specific.

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- (b) The BUC-HPA can be installed inside the aircraft or external to the aircraft under the radome. Honeywell recommends that the BUC-HPA is installed external to the aircraft, under the radome to keep the loss below the value specified in Paragraph 3.4.C.
- (c) The BUC-HPA must be installed close to fuselage mount antenna assembly so as to minimize the waveguide/coax RF losses on the RF interconnect. Refer to Paragraph 3.4.C.

5. Fuselage Mount Antenna

A. Introduction

The OAE FMA assembly will be installed on the top of the fuselage of the aircraft. For the JetWave™ MCS-8562 Terminal to correctly point the antenna, the installation offsets should not exceed more than 1° off heading, pitch or roll with respect to principle axis of aircraft. Depending on the airframe, as part of the OAE FMA, the LRUs and assemblies that follow will be installed outside aircraft:

- FMA LRU
- BUC-HPA LRU (if installed outside aircraft)

The exact install location of the ARINC 791 based AIM or LAIM and BUC-HPA is airframe specific.

The BUC-HPA can be installed on the inside or outside the fuselage of the aircraft. Honeywell recommends to install the BUC-HPA on the ARINC 791 based AIM or LAIM outside the fuselage of the aircraft.

The radome, skirt fairing, and FMA/BUC-HPA to aircraft interface brackets are airframe specific and said details are not covered by this manual.

NOTE: The ARINC 791 AIM is intended to be a common design solution across multiple aircraft platforms. The only variable is the skirt and seal that change with the aircraft specific fuselage contour.

or

The non ARINC 791 design has a common LAIM plate that is intended to be used across all platforms. The variables in this design solution are the ring fairing that the radome attaches to and the LAIM to fuselage interface brackets. The ring fairing is a design and shape specific to the fuselage contour at the aircrafts installation location, as are the LAIM to fuselage interface brackets.

Refer to the FMA outline and installation drawing in Figure 3-11, the BUC-HPA outline and installation drawings in Figure 3-10. Refer to the interconnect diagrams in Figure 3-12.

Refer to Table 3-7 for special tools, fixtures, and equipment for the FMA installation.

Number	Description	Source
NA	Hoist system	Commercially available
NA	Torque wrench	Commercially available
066101	5/16" crowsfoot	Mountz (CAGE: 0HL78)
	spanner/wrench	

Table 3-7. Special Tools for FMA Installation

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B. The FMA Installation General

Before installing any components or cabling, read all notes on drawings and read all installation procedures.

C. Advisories

The JetWave[™] MCS-8562 Terminal FMA and the BUC-HPA subsystems include components that radiate RF and microwave emissions in the band between 29.0 and 31.0 GHz.

All service technicians and operators must be informed of the potential hazards of RF and microwave radiation. When installing and servicing equipment, exercise the safety precautions that follow.

<u>WARNING:</u>	THIS EQUIPMENT RADIATES HIGH FREQUENCY RADIATION AND POSES A RADIATION HAZARD. CONSIDERING THE WORST CASE CONDITION OF 100 PERCENT REFLECTION FOR THE FUSELAGE MOUNT ANTENNA, HONEYWELL DEEMS IT NECESSARY TO ASSURE OEM FUSELAGE ATTENUATION EXCEEDS 21.03 DB FOR FUSELAGE MOUNTED ANTENNAS SYSTEM INSTALLATION. THIS IS THE MINIMUM ATTENUATION REQUIRED FROM THE AIRCRAFT FUSELAGE TO ATTENUATE THE KA-BAND RADIATION TO MEET A SAFE HUMAN EXPOSURE OF 1 MW/CM2 INSIDE THE AIRCRAFT.
<u>WARNING:</u>	SERVICE TECHNICIANS AND OPERATORS MUST EXERCISE CARE TO KEEP CLEAR OF THE ANTENNA'S BEAM WHILE PERFORMING OPERATIONAL TESTS OR INSTALLATION VERIFICATION PROCEDURES. DO NOT APPROACH WITHIN 66.6 FEET (20.3 METERS) OF THE FUSELAGE MOUNTED ANTENNA ASSEMBLY DURING RADIO FREQUENCY TRANSMISSION.
WARNING:	DURING ANTENNA OPERATION (TRANSMISSION), MAKE SURE THAT MINIMIZE THE EXPOSURE OF ALL PERSONNEL TO ANY REFLECTED, SCATTERED, OR DIRECT BEAMS.
WARNING:	SERVICE TECHNICIANS MUST OBEY STANDARD SAFETY PRECAUTIONS, SUCH AS WEARING SAFETY GLASSES, TO PREVENT PERSONAL INJURY WHILE INSTALLING OR PERFORMING SERVICE ON THIS UNIT.
CAUTION:	THE FUSELAGE MOUNT OAE ASSEMBLY IS ELECTROSTATIC-SENSITIVE. STANDARD ELECTROSTATIC-SENSITIVE HANDLING PROCEDURES MUST BE OBSERVED.

D. Unpacking and Inspection

This section describes how to make sure that the equipment is in good condition after shipping. To unpack and inspect the equipment do as follows:

- (1) Unpack the equipment components from the shipping container.
- (2) Make sure that all components of the fuselage mount OAE subsystem as indicated on the parts list/bill of materials are included.
- (3) Visually examine the units for any shipping damage.

NOTE: Refer to Paragraph 3.6. Inspection of Waveguide.

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E. OAE Installation

Installation hardware is available in ARINC 791 Style configurations and non ARINC 791 style configurations. Equivalent acceptable hardware may be designed by the customer or procured from other sources.

For the ARINC 791 configuration; the seven aircraft side fittings, internal structural modifications, internal wiring, radome and bulkhead connectors are the responsibility of the installer.

For the non ARINC 791 configuration; the LAIM to fuselage interface brackets, skirt fairing attach points, internal structural modifications, internal wiring, radome and external OAE power and control and IF coax interconnects and routing hardware, are the responsibility of the installer.

F. Airframe Structural Modifications

For the installation of OAE-FMA, structural modifications to the airframe may be required in the region where the OAE-FMA is to be mounted to accommodate the additional mass of the antenna assembly and resulting aerodynamic loads.

The aerodynamic loads are dependent on the aircraft type as well as the installation location of the OAE-FMA on the aircraft, and are therefore installation specific.

Bird strike and rapid decompression need to be considered for analysis and structural substantiation.

The appropriately qualified personnel should derive the loads and do a structural analysis to make sure of the suitability of the modifications.

The installer is responsible for all structural modifications to the aircraft.

G. Mounting Guidelines

This section describes the mounting guidelines for fuselage mount OAE.

Physical Placement:

The aircraft fuselage mount OAE is installed on top of the fuselage for clear satellite communications per ARINC791 P1.

The FMA maybe installed anywhere on top of the aircraft, with due consideration for aerodynamic loading and potential for interference with adjacent systems.

The FMA may be installed anywhere on the top of the aircraft, Honeywell recommends not installing the FMA at the mid fuselage station near the wing or slightly aft of the wing due to higher aero loads.

The fuselage antenna assembly and BUC-HPA (if installed outside the aircraft) will be mounted on the antenna interface mount and it supplies a means to secure all equipment and wiring mounted on it.

Depending on the airframe, the AIM/LAIM is installed to provide a firm flat base for installation of the FMA and BUC-HPA. These are detailed in the next sections. For customers who want to build their own AIM, please reference the third-party OAE specification, SP-90405087.

H. FMA Bonding

The bonding straps are installed before proceeding with installation of FMA assembly on the A791 based AIM or LAIM.

The FMA assembly and BUC-HPA must be bonded to the airframe.

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Consult the airframe manufacturer for the correct torque values.

I. FMA Installation Procedure

Following installation activities are detailed in subsequent sections:

- Installation of the FMA.
- Connecting the waveguide, RF coax interface to the FMA.
- Installation of BUC-HPA and bonding straps.
- Installation of waveguide and coax between FMA and BUC-HPA.
- Connecting Bulkhead Interface, BUC-HPA power and control interfaces.
- (1) Installation of the FMA Assembly
 - (a) Align the FMA assembly above adapter plate with an aircraft service hoist. Attach hoist to the FMA lifting fixture at two locations on each side of fixture. Refer to Figure 3-3.



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Figure 3-3. FMA Assembly

- (b) Put the FMA onto the FMA mounting holes with alignment pins and make sure that the waveguide flange is pointed to the rear of the AIM or LAIM. Make sure that the pigtails do not interfere to avoid damage.
- (c) Remove the FMA lifting fixture by removing the mounting hardware. Store the lifting fixture and mounting hardware for future use if the FMA should need to be removed from the Aircraft. Refer to Figure 3-4.
 - **NOTE:** Honeywell cannot accept the FMA lifting fixture for reuse.

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Figure 3-4. FMA Assembly Lifting Fixture Removal

- (d) The orientation of the FMA assembly is defined with respect to the principal axes of the aircraft.
- (e) Attach the FMA to the AIM with screws and flat washers. The AIM is provisioned with captive nuts. Refer to the airframe specific kits and assembly for fastener specifications and required torque. Mounting holes in base are accessed from the top between the antenna and turntable by rotating the assembly in azimuth.
- (f) Remove protective cap from disconnect plug on harness.
 - <u>1</u> Visually inspect connector and make sure that there are no debris in cavities.
 - 2 Visually inspect the center conductor and verify that it is still straight and the finish is intact.
- (2) FMA Bonding Requirements
 - (a) Install one end of bonding straps to AIM at labeled bonding points with screw and washers.
 - (b) Install the other end of bonding straps to bonding points on the FMA base. Refer to the airframe specific kits and assembly for fastener specifications and required torque.
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- (3) Tx Waveguide and Rx Coax Interconnection between the FMA and the BUC-HPA. These interconnections can either be customer designed and furnished, or purchased from Honeywell. For Honeywell interconnections, installation details are as follows:
 - (a) For installation design requirements and instructions associated with the waveguide and coax cable in between the FMA and the BUC-HPA (RF Kit P/N 90409025-02), refer to the following documents:
 - <u>1</u> Tx Waveguide options available from Honeywell
 - <u>a</u> For the 90404802 Pass 4.0 Tx Waveguide (included in RF Kit P/N 90409025-02), refer to Honeywell drawings 90404969 (Pass 4.0 Waveguide Outline and Installation) and 90410128 (WR34 to WR28 JetWave waveguide kit).
 - 2 Rx Coax
 - For the 90410125-02 RX Coax Cable Assy (included in RF Kit P/N 90409025-02), refer to Honeywell drawing 90410125 (JetWave 2.0 BUC-HPA to FMA IF RX cable assy).
 - When attaching the Rx coax cable to the FMA 2.92mm coax connector, torque the connector nut to between 7.0 in·lb and 10.0 in·lb (0.8 Nm to 1.1 Nm) using a calibrated torque wrench.
 - When attaching the Rx coax cable to the BUC-HPA TNC connector, torque the connector nut to between 12.5 in·lb and 14.5 in·lb (1.4 Nm to 1.6 Nm) using a calibrated torque wrench.
- (4) Connecting the FMA Interface, BUC-HPA Power, and Control Interfaces

The control signals for the BUC-HPA are supplied from the KANDU and are connected to BUC-HPA J2 receptacle.

FMA signal ground is the reference ground for communication between FMA and KANDU, refer to Figure 3-12 for installation details.

The 115 VAC power supply for the BUC-HPA is supplied from the aircraft power and is connected to BUC-HPA J1 receptacle.

The IF TX and IF RX signals to BUC-HPA are supplied from the Modman. These signals are routed through the bulkhead interface. Refer to the FMA interconnection diagram Figure 3-12 for details.

- (a) Remove the protective covers from the FMA P2 and KANDU J2 receptacles. Visually examine the connectors and make sure that the pins are straight and undamaged.
 - Clean the connectors with the contact cleaner and connect the cable assembly for fuselage mount from the KANDU J2 receptacle to the FMA P1, P2, and P3 receptacles.
 - 2 Make sure that the over braid of the cable assembly is terminated to connectors at both the FMA and KANDU ends.

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- (b) Remove the protective covers from the BUC-HPA J2 and KANDU J3 receptacles. Visually examine the connectors and make sure that the pins are straight and undamaged.
 - <u>1</u> Clean the connectors with the contact cleaner and connect the cable assembly for fuselage mount from the KANDU J3 receptacle to the BUC-HPA J2 receptacle.
 - 2 Make sure that the over braid of the cable assembly is terminated to connectors at both the BUC-HPA and KANDU ends.
- (c) Remove the protective covers from the BUC-HPA J5 and BUC-HPA J6 receptacles. Visually examine the connector ends and ensure there is no debris in central connector cavity.
 - <u>1</u> Clean the connectors with the contact cleaner before connecting.
 - 2 Make sure that the TX-IF coax cable is banded blue and RX-IF coax cable is banded green at connector ends.
 - <u>3</u> Make sure that the over braid of the cable assembly is terminated to connectors at both the BUC-HPA and bulkhead interface feed through ends.
 - <u>4</u> The over braid can be terminated to the connector shield/housing or directly to the housing.
- (d) Make sure that all the cable assembly routing are firmly held with wire clamps in accordance with the airframe specific wiring diagram and there are no obstruction to the free movement of the FMA.

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FUSELAGE ANTENNA MOUNT

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Figure 3-5. LAIM Assembly with FMA and BUC-HPA Placement on Aircraft (Typical Installation)

(e) On completion of the LRU interconnection and applying power to the FMA, the FMA will stay in its current position until it is told to move by the KANDU.

6. Inspection of Waveguide

A. FMA Human Exposure to RF EM Fields

WARNING: THE JetWave[™] MCS-8562 Terminal IS A SOURCE OF NON-IONIZING RADIATION.

- (1) The Minimum Safe Distance:
 - FMA = 66.6 feet (20.3 m).
 - **NOTE:** The minimum safe distance for occupational/controlled exposure is determined based on the computational method specified in FCC Office of Engineering and Technology; Bulletin Number 65, Edition 97-01: *Evaluating compliance with FCC Guidelines for human exposure to Radio Frequency Electromagnetic fields.*
- (2) The areas which the risk exists are based upon the location of the antenna. This means personnel operating on the apron, transient personnel, and the general population in the controlled exposure category will not be exposed to levels in excess of the limits. Maintenance personnel working close to the tail must be protected by disabling the transmitter before they approach that area of the aircraft.

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- (3) The JetWave[™] MCS-8562 Terminal incorporates three fail-safe features to limit the potential for human exposure to non-ionizing radiation:
 - (a) The system will not transmit unless the receiver is receiving a valid signal, therefore if the received signal were to become blocked the transmitter would be disabled.
 - (b) The antenna subsystem includes a hardware end-stop that prevents the antenna from pointing more than 2° below its mounting plane.
 - (c) An input into the JetWave[™] MCS-8562 Terminal wired on the aircraft to a switch in the aircraft, to disable the RF transmission. This switch would be used to prevent any radiation from the antenna in the event of aircraft operations in the vicinity of the antenna, for instance when de-icing the aircraft. This would be achieved by a defined procedure on the aircraft.

Any waveguide received that contains more than one dent is unacceptable and must be returned to the vendor. Dents must not exhibit obvious signs of mechanical rework such as file marks or rough edges, where it is obvious that small tools have damaged what should be a precisely machined waveguide.

The very outer edge of the waveguide does not generally contain critical portions of the waveguide structure that affect performance. Therefore the outer edge of the waveguide may include small dents, marks, machine tool marks, etc so long as the damage does not structurally impair the waveguide. The outer surface may contain bending, tool marks or handling damage. A new waveguide that contains large numbers of dents or marks such that it appears not to be a new article shall be rejected and returned to the vendor. If more than 25% of the waveguide surface is marred in any way, the component must be rejected and returned to the vendor for rework.

Any evidence of nicks, surface pits, surface etching or scratches on the waveguide are acceptable as long as the flaw has been caused by the manufacturing process, i.e. brazing, cleaning, honing, a tool and no larger than 0.030 inch etc. The number or shape of the nicks, pits or scratches are not limited unless greater than 25% of the waveguide appears to have sustained overall damage of one or more types. Any waveguide having more than 25% of the surface damaged in this way is not acceptable and must be returned to the vendor.

The surface finish of the waveguide must not exceed 125 micro inch finish. All measurements will be made in an area free of braze material. The surface finish will not pertain to any area where excess braze material has flowed on the back of the waveguide.

7. <u>Cabling and Drawings</u>

Refer to Table 3-8 for the cabling requirements.

Cable	Conductor Type	Single Point	Multiple Point	Minimum Conductor Coverage by Shield
Power Lines	Twisted pair	NA	NA	NA
Ethernet Data	Quadrax, twisted pair	-	Yes	100%
RF	Coaxial, waveguide	-	Yes	100%

Table 3-8. Cabling Requirements

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Table 3-8. Cabling Requirements (Cont)

Cable	Conductor Type	Single Point	Multiple Point	Minimum Conductor Coverage by Shield
A429	Twisted pair, stranded	-	Yes	95%
RS-422	Twisted pair, shielded	-	Yes	100%
Discrete	Twisted pair, shielded, KANDU	-	Yes	100%
	Single conductor, shielded, grounds			

When installing the JetWave™ MCS-8562 Terminal, follow the cabling requirements listed below:

- Ethernet LAN/WAN cables must meet flammability and TIA/EIA568-A CAT 5E requirements.
- When routing JetWave[™] MCS-8562 Terminal signals, avoid long wiring runs adjacent with other signals that could increase the risk of Electro-Magnetic Coupling.
- Carlisle IT (ECS) 422404 or NF24Q100-01 is recommended for Quadrax connections.
- Twisted shielded pairs must meet ARINC 791 wiring requirements or equivalent.

Refer to Figure 3-12 for wire size recommendations.

Refer to Figure 3-6 for the Modman (PN 90400012-0001) outline and installation drawing.

Refer to Figure 3-7 for the Modman (PN 90400012-0002) outline and installation drawing.

Refer to Figure 3-8 for the APM (PN 90401121) outline and installation drawing.

Refer to Figure 3-9 for the KANDU (PN 90404518) outline and installation drawing.

Refer to Figure 3-10 for the BUC-HPA (PN 90003227-003), conduction-cooled 1 (maximum operating temperature of 185°F (85°C)), outline and installation drawing.

Refer to Figure 3-11 for the FMA (PN 90002609-001) outline and installation drawing.

Refer to Figure 3-12 for the JetWave™ MCS-8562 Terminal - FMA (90410870) system interconnect diagram.

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JetWave™ MCS-8562 Terminal

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HET DOTTINE INCOMENDARY OF A TOPOLITUME AND AN AND AND						
TABLE 1. JETWAVE MOONAN PART NUMBER						
PART NUMBER DESCRIPTION 99400012-0001 ASSY, JETNAVE MODWAN	4					A.
25. PICTORIAL LABELS SHOWN HERIN ARE USED	FOR CRIENTATION AND LOCATION PURPOSES.		TABLE 2.	JETWAVE MOOMAN C	ONNECTOR IDENTIFICAT	TICN A3
24. UNIT EXPORT CONTROL CLASSIFICATION NU	MBER 15 54002.0.2.0.		RÉF. DES	PART NUMBER	MATING CONNECTOR	REMARKS
23. SPATIAL MODEL DEFINED BY 90400059-000	IT_REVH_STP					J1-A TOP INSERT ARRANGEWENT Q11 (11X SIZE & QUADRAX)
A CAUTION LABEL: CAUTION 115 VAC.					CHANNENSSC	ARRANGEMENT 12002 (118K J22
TAMPER PROOF LABEL.				RADIALL 62060119	RADIALL NSXN28875500	CONTACTS, 2X SIZE & QUADRAX)
AD CAUTION LABELI ESD DUST COVER.					1012-10020-000	ARRANGEMENT 12/5C2 14x #12 CONTACTS, 1X #16 CONTACTS, 5X
A CAUTION LABEL: ESD SENSITIVE.			· · · · ·			SIZE 16 OPT CAL, 2X SIZE 5 COAX)
AR DELETED.						
A WOD DOT LABEL.			TABLE 3.	JETRAVE MODWAN E	NVTRONMENTAL QUALIE	CATION REQUIREMENTS
AB, HONEYWELL IDENTIFICATION LABEL INCLUD	/ES:		ENV	ERONMENTAL 2ND1 TIONS	HTCA/DO-160G SPECIFICATION	REQUIREMENTS
MANUFACTURER'S NAME: HONEYWELL MANUFACTURER'S LEGAL NAME (FROM RE	V L ONWARD): EWS TECHNOLOGIES CANADA LT	(D	OPERATI)	C LOW SI	ECTION 4.0, CAT. A1	-15*C
HARDWARE P/N: 90400012-0001	ben en ser sense en		OPERAT IN	G HIGH SI	ECTION 4.0. CAT. A1	+55°C
REV: (CURRENT REVISION) SZN: (SERIAL_NUMBER)			ALT TUDS	SI SI	ECTION 4.0, CAT, A1	15000 FT
WEIGHT (CURRENT DATE) WEIGHT (WEIGHT IN kg AND Ib	0		OVERPRES	ISURE SE	ECTION 4.0, CAT, AT	170 KPa (-15000 FT)
CAGE CODE: 38473 MADE IN: CANADA			DECOMPRE	SSION 5	ECTION 4.0, CAT. A1	KFT) WITHIN 15 SECONDS
TCCA WFG: 325-92	3		TEMPERAT	URE VARIATION SE	ECTION 5.0, CAT. B	S*C MIN, PER MINUTE NON-OPERATING, 10 CYCLES
15. ENVIRONMENTAL CONDITIONS: SEE TABLE 3			HUMIDITY	51	ECTION 6.0, CAT. B	85x RH # 38*C 95* RH # 85*C
14, COOLING: BLOW-THROUGH/DRAW-THROUGH PE STANDARD: AIR FLOW AT 22 KG/HR AT 40*	R ARINC 6D0 LEVEL 1		OPERATIO	WAL SHOCK ST	ECTION 7.0, CAT, B	3 SHOCKS OF 6G, 11MS, 6 0)RECTIONS
WITH PRESSURE DROP OF 50130Pe (513W	WATERJ		CRASH SA	VEETY SUSTAINED SI	ECTION 7.0, CAT. B	AFT 1.5G SIDE 4.5G, 3 SECS
SEE TABLE 2 FOR CONNECTOR IDENTIFICAT	ION.		CRASH SA	VEETY IMPULSE SI NN SI	ECTION 7.0, CAT. B	1 SHOCK OF 20G, 11 MS, 6 DIRECTIONS PERFORMANCE LEVEL CURVE 82
ARING #00 INDEX CODE 52 (6,3,1) BLACK	INDICATES RAISED PORTION.		EXPLOSIV	RE ATMOSPHERE SI	ECTION 9.0, CAT, X	NOT APPLICABLE
NOTE THAT AGTICC. FFI/LGTIEE. JJJ/PGTED	D.GGI USE TWO CONNECTORS PER CONNECTION	4.	WATERPRO	OFNESS SE SUSCEPTIBILITY SE	ECTION 10.0, CAT, Y ECTION 11.0, CAT, X	NOT APPEICABLE
BASE OF UNIT, BONDING TEST POINT AVA	LABLE ON FRONT PANEL.		SAND AND	DUST SI	ECTION 12.0, CAT, X	NOT APPLICABLE
DC BONDING RESISTANCE SHALL BE 2.5 MI	LLIDHWS OR LESS.		FUNGUS F	ESISTANCE SI	ECTION 13.0, CAT, F ECTION 14.0, CAT, X	BY ANALYSIS NCT APPLICABLE
INPUT POWER: 115 VAC. 320-800 Hz.			ICIND	SI	ECTION 24.8, CAT, X	NOT APPLICABLE
POWER FACTOR: 0.813 MINIMUM LEADIN POWER CONSUMPTION: 60W MAXIMUM AT	G: 0.679 MINIMOW LAGGING #0.1 KVA LOAD. 115 VAC (320-800Hz).)	FS0 FLAMMAE	LITY SI	ECTION 25.0, CAT, A ECTION 25.0, CAT, C	BY ANALYSIS
POWER DISSIPATION: 59W MAXIMUM AT	115 VAC (320-800Hz).			1		
10. THIS UNIT SHALL BE MOUNTED ONLY IN AN	ARING 600 TRAY WITH A MATCHING				NAME OF A DESCRIPTION	
A INDICATED AREAS ARE FREE FROM PAINT A	IND PRIMER.		TABLE 4.	MODIFICATION STA	TUS TABLE	
6. FINISH:			MOD N	JMBER INPLEME	NTED BY REMA	EFFECTIVITY EFFECTI
METAL TREATMENT: CHEMICAL CONVERSI- TYPE II. CLASS 3	ON COATED PER MIL-DTL-5541,		1	58 ATA 90400012-	23-0001 VODULE 0S	CAL CORE UP TO AND UP TO AND CALLATOR UP TO AND
EXTERIOR FINISH: PRISM POWDER COAT SANOTEX BLACK LAPPLIED AND CURED PE	PB-134-LT (POLYESTER POWDER, R MANUFACTURER'S INSTRUCTIONS.			00100012	REPLACEMEN	The strike ended and the strike b
7. WATERIAL:	STRUCTURE STRUCTURE OF LAND					
CHASSIS - ALUMINUM ALLOY 5052-H32, .0	63 THE PER AMS4016.					
6. ELECTROSTATIC DISCHARCE SENSITIVE (ES	D), HANDLE PER IPC-A-610 AND ANSI/ESD S	120,20,				
23 S DENOTES CENTRE OF GRAVITY - LOCATI	ON IS APPROXIMATE.					
4. WEIGHT: 14.0 LBS (6.35 KG) MAXIMUM,	A AT AD ADMIT AND					
/3\ DENOTES DIMENSION FROM FROM FROMT PANEL TO	PROTRUSIONS AND CONNECTOR.					
DIMENSION DOES NOT INCLUDE SCREW HEAD						
 DIMENSION DOES NOT INCLUDE SCREW HEAD THIS UNIT WEETS THE DIMENSIONAL REQUI ARING SPECIFICATION 791. 	REMENTS OF A 4MCU PER					
 DIMENSION DOES NOT INCLUDE SCREW HEAD THIS UNIT MEETS THE DIMENSIONAL REQUI ARING SPECIFICATION 791, DIMENSIONS AND TOLERANCES TAW Y14, SM- 	REMENTS OF A 4MCU PER					

Figure 3-6. (Sheet 1 of 4) Modman Outline and Installation Drawing (90400012-0001)

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Figure 3-6. (Sheet 2 of 4) Modman Outline and Installation Drawing (90400012-0001)

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Figure 3-6. (Sheet 3 of 4) Modman Outline and Installation Drawing (90400012-0001)

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Figure 3-6. (Sheet 4 of 4) Modman Outline and Installation Drawing (90400012-0001)

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14-3 IRCARD IRC INCLUSION INCLUSION OF ADDRESS OF	TODATAGE LADORATION WARDS TO TO DAT TODARGARIES THIS LADOR COPIES IN MACLINE IN MART, WITH THE TROADSECTS MALERIES, W.L. HOWYS MINISTRAL,	eperation and Africa and with the cards, and for average metricals	- 11 - 20	1		20		0		in Ex
25,	ENVIRONMENTAL QUA ENVIRONMENTAL QUA	LIFICATION CHARACTERIST	ICS PER TS-90405204 JETWA	WE NODWAN AND APM						
24.	UNIT EXPORT CONTR	OL CLASSIFICATION NUMBER	R (S 54002.0.1.0.							
23,	SPATIAL MODEL DEP	INED BY 90400059-0002_R	EVC.STP							
2A	CAUTION LABEL: CA	UTION 115 WAC,								
21	TAMPER PROOF LABE	ι.								
20	CAUTION LABEL: ES	0 DUST COVER.					TABLE 1	JETWAVE WODWAN PA	RT NUMBER	
12	CAUTION LABEL: ES	O SENSITIVE.					PART	NUVBER DESC	RIPTION	
18	DELETED.						904000	12-0002 JETWAVE N	COWAN VAR 2	
AV.	MOD DOT LABEL.									
(16)	HONEYWELL IDENTIF	CATION LABEL INCLUDES:								
	DESCRIPTION: HARDWARE P/N	JETWAVE VODMAN VAR 2 90400012-0002					TABLE 2	. JETWAVE MODMAN CO	WNECTOR IDENTIFICATION	N AR
	REV: S/N:	(CURRENT REVISION) (SERIAL NUMBER)					85.	PART NUMBER	WATING CONNECTOR	REMARKS
	DATE: WEIGHT:	(CURRENT DATE) (WEICHT IN kg AND (b)								J1-A TOP INSERT ARRANGEMENT
	MADE IN:	S8473 CANADA							PADIALL NSYNOBB75500	J1-B MIDDLE INSERT
	2D BARCODE PARAVE	TERS AS DEFINED IN ATA	2000 AND W/LL CONTAIN:				21	RADIALL 620601191	WITH EMI BACKSHELL GLENAIR	CONTACTS, 2X SIZE & QUADRAX
	SERIAL NUMBER								527-212MA686C4S-1	ARRANGEMENT 12F5C2 (4X 112 CONTACTS 1X 118 CONTACTS
	DATE OF MANUFA	CTURE								SIZE 16 OPTICAL. 2X SIZE 5
15,	INSTALLATION CLEA	RANCE: ARINC 600 STANDA	RD 4 MCU LRU,							
14.	COOLING: BLOW-THR STANDARD: AFR FLO WITH PRESSURE DRO FAN FILTRATION RE	OUGH/DRAW-THROUGH. # AT 22 KC/HR AT 40°C P OF 50±30Pc (5±3MM WAT QUIREMENTS: NONE	ER)							
<u>A</u>	CONNECTOR JI SEE TABLE 2 FOR C SEE SHEET 4 FOR C ARINC 600 INDEX C NOTE THAT AGI[CC.	ONNECTOR IDENTIFICATION ONNECTOR PIN OUTS. ODE 52 (6.3.1) BLACK IN FFI/EGI[EE,1]/PGI[DD.G	DICATES RAISED PORTION, 01 DEE TWO CONNECTORS PER	CONNECTION.						
12	ELECTRICAL BONDIN BONDING TEST POIN DC BONDING RESIST	G SHALL BE THROUGH CONT. T AVAILABLE ON FRONT PA ANCE SHALL BE 2.5 VILLI	ACT WITH THE BASE OF UNIT NEL OHMS OR LESS.	1997 - 1997 -						
11.	ELECTRICAL: INPUT POWER: N POWER FACTOR: POWER CONSUMPT CURRENT: 0.52A POWER DISSIPAT NOTE: HONEYWEL DESIGNED FOR 100 ENHANCED CAPABILI	15 VAC, 360-600 Hz 0 98 MINIMUM LEADING, 0 10N: 80W MAXIMUM AT 15 MAXIMUM AT 115 VAC, 40 10N: 59W MAXIMUM AT 15 1 RECOMPOS THAT WIRIN MATTS IN GROER TO ALLOW TY AT A LATER DATE.	.8 MINIVUM LACCING +0.1 K VAC (360-800Hz). 0 Hz. VAC (360-800Hz). G AND CDOLING 15 FOR SEAMLESS UPDRADE TO	THE WODMAN WITH						
10.	THIS UNIT SHALL B	E MOUNTED ONLY IN AN AR	INC BOD TRAY WITH A MATCH	ING CONNECTOR SCHEME,						
	INDICATED AREAS A	RE FREE FROM POWDER COA	T FINISH.							
8.	FINISH:									
	TYPE II, CLASS	3	1341 T /POLYESTER DOWNER							
1	SATIN SANTEX B	LACK) APPLIED AND CURED	PER MANUFACTURER'S INSTAL	CTIONS.						
7.	MATERIAL: CHASSIS - ALUMINU	M ALLOY 5052-H32. 063	THK PER AMS-00-A-250/6 OF	AV5 4016.						
1 8	ELECTROSTATIC DIS	CHARGE SENSITIVE (ESD).	HANDLE PER IPC-A-610.							
6.	DENOTES CENTRE	OF GRAVITY - LOCATION	IS APPROXIMATE.							
1		(6.35 KC) WAXIMUM.								
6. 3. 4.	WEIGHT: 14.0 LBS									
6. 4.	WEIGHT: 14.0 LBS DENOTES_DIMENSION	FROM FRONT PANEL TO RE	AR PANEL WALL.							
6. 4. 3.	WEIGHT: 14.0 LBS DENOTES DIMENSION DIMENSION DOES NO	FROM FRONT PANEL TO RE T INCLUDE SCREW HEAD PR	AR PANEL WALL. DTRUSIONS AND CONNECTOR,							
6. 4. 3. 2.	WEIGHT: 14.0 LBS DENOTES DIMENSION DIMENSION DOES NO THIS UNIT MEETS T ARING SPECIFICATI	FROM FRONT PANEL TO RE T INCLUDE SCREW HEAD PR HE DIMENSIONAL REQUIREM ON 791.	AR PANEL WALL OTRUSIONS AND CONNECTOR, ENTS OF A 4 MCU PER							
6. 4. 2. 1.	WEIGHT: 14.0 LBS DENOTES DIMENSION DIMENSION DOES NO THIS UNIT MEETS T ARING SPECIFICATI DIMENSIONS AND TO	FROM FRONT PANEL TO RE T INCLUDE SCREW HEAD PR HE DIMENSIONAL REQUIREM ON 791. LERANCES IAW Y14.5W-199	AR PANEL WALL CONNECTOR. OTRUSIONS AND CONNECTOR. ENTS OF A 4 MCU PER 6.							

Figure 3-7. (Sheet 1 of 4) Modman Outline and Installation Drawing (90400012-0002)

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Figure 3-7. (Sheet 2 of 4) Modman Outline and Installation Drawing (90400012-0002)

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Figure 3-7. (Sheet 3 of 4) Modman Outline and Installation Drawing (90400012-0002)

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Figure 3-7. (Sheet 4 of 4) Modman Outline and Installation Drawing (90400012-0002)

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Figure 3-8. (Sheet 1 of 2) APM Outline and Installation Drawing (90401121)

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Figure 3-8. (Sheet 2 of 2) APM Outline and Installation Drawing (90401121)

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Figure 3-9. (Sheet 1 of 4) KANDU Outline and Installation Drawing (90404518)

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- 8	1 1		6		5		3	2	
					TABLE 3: J1 AIRCRAFT INT	erface connector pin assignments 2	CARE 6. N	ETHERNET INTERFACE CONNECTOR QUADRAX INSE	ERT ASSIGN
					PIN MINGED	Film(7104	CONTAC	FUNCTION	
					ISSAND A	5 (2014)	A-1	DA TX+	
					B Stowal	GROLIND	A-3	ENG TX-	
					C TX MUT	TE ARING	A-2	EN3 RX+	
					0 TX CON	VTROL	A-L	EN3 RX-	
		and and the second	A		E FILTER	SELECT HI	A-5	EN3 SHIELD	
ABLE 2: J	ETWAY: Ka KANDU EXTERNAL LUNNE	CIDRS IN(NT)	FICATION 29		F 115 VAC	E RETURN	8-5	EN1 TX+ (SPARE)	
000 00	re I not worth I write w	Sec. 1	Date Time Attender	τ.	5 115 VA0	C POWER	8-3	EN1 TX- (SPARE)	
RD-1 DC	D36000 (20ED1004 D35000 (24E	P 40KN	FUN- TION REPARKS	ŧ	H / RESE	110	8-2	EN1 RX+ (SPARE)	
11	(AMPLENCL) (AMPLEN	OL) AIRCR	AFT INTERFACE 15 PIN		J IRS A4	29 HI	8.4	EMT RX- (SPARE)	
12	038999/20FC4SN 038999/29	FELPN DOW	FR OUTPUT & SOLVET	1	K IRS A4	29.10	8-5	(SPARE)	
-4	(AMPHENCE) (AMPHEN	OL) PUA	a success		1 SPARE		1.0	EN2 (A+	
11	038999/20F635PN 038999/26F	CONTRACTOR	INTERFACE 79 PIN		M FILTER	SEECT LU	6-3	END DY.	
1010	TVP00RG0F-21-75P TV0690F-2	1-755		1	N 1X MU	C 10	<u> </u>	FN2 FX-	
.34	(AMPHENCL) LAMPHEN	OLI ETHER	NET INTERFACE & PIN QUADRAX		0 Ally AL	20 HI	2-3	EN2 SHIFLD	
					S MIX AL	29.10	0-1	EN4 TX+	
					T / DESE	T.HI	0-3	EN4 TX-	
					U SPAR		0-2	EN6 RX+	
143	F L IS DOWED DUTDUT FOMELY/D	DETERTACIE D			Y SPARE		D-4	EN4 RX-	
1000	CE 4 IN FORCE OUTFOIL EDINEE TO	ALL PUMLE	a strend VAT		140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140 - 140		0-5	EN/ SHIELD	
	D INU POWER RE	YUC) TURN				ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TEMPERATURE DPERATING LOW TEMPERATURE GROUND SURVIVAL HOEN TEMPERATURE	LINITS 1921 - 55°C 1957 - 55°C 1957 - 55°C 1957 - 55°C	CALIFICATION CHARACLERISTICS RECA700-1606 SPECIFICATION SECTION 4.5.1, CAT 02 SECTION 4.5.2, CAT 02 SECTION 4.5.2, CAT 02	
	D INU POWER RE	TURN				ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TEMPERATURE DEPERATING LOW TEMPERATURE BROUND SURVIVAL HUSH TEMPERATURE	LINITS -55°C -55°C -70°C -70°C	CALIFICATION CHARACLERISTICS RECA700-1606 SPECIFICATION SECTION 4.5.1, CAT 02 SECTION 4.5.2, CAT 02 SECTION 4.5.4, CAT 02	
5.3(D INU POWER (2)	EPTALLE PIN A	SSIGNMENTS A			INDER ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TEMPERAT DPERATING LOW TEMPERATURE BROUND SURVIVAL HUBH TEMPERATURE IN-FLIGHT LOSS OF COOLING	LINITS -55°C -55°C -70°C -70°C NOT APPLICABLE	EVEN PERMIT EVEN PERMIT	
5.80	D INU POWER RE	EPTALLE PIN A			· · · · · · · · · · · · · · · · · · ·	I ABLE ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TEMPERAT DEERATING LOW TEMPERATURE SROUND SURVIVAL HIGH TEMPERATURE IN-FLIGHT LOSS OF COOLING ALTITUDE IN-FLIGHT LOSS OF COOLING ALTITUDE	LINITS URE -55°C -55°C -55°C -70°C NOT APPLICABLE -5500 FT -5000 FT	CONTRACTOR CALLERISTICS RTCAVED-160G_SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.5, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2	000 F1 Fi
5 B C	D INU POWER RE	EPTALLE PIN A		CONTACT	FUNCTION	ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TEMPERAT DEEXATING LOW TEMPERATURE BROUND SURVIVAL HIGH TEMPERATURE INFELTSHT LOSS OF COOLING ALTITUDE DECOMPRESSION	LINITS URE -55°C -55°C -55°C -75°C -75°C -70°C -	DALIFIEATION CHARACLERISTICS PTCA/DD-1906 SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.5, CAT D2 SECTION 4.5.1, CAT D2 SECTION 4.5.5, CAT Z SECTION 4.5.1, CAT D2 EXTENDED TO 550 SECTION 4.5.2, CAT A2 EXTENDED TO 550 SECTION 4.5.2, CAT A2 EXTENDED TO 550	000 F1 Fi F1 T0 %
5 3 C	D INU POWER (2) D INU POWER RE ONTROL INTERFACE CONNECTOR RECE PUNCTION IPS-622: KANOU TO SCM HI	EPTALLE PIN A		CONTACT 55	PUNCTION	ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TEMPERAT DEEATING IOW TEMPERATURI BROUND SURVIVAL HIGH TEMPERATURI INFELIGHT LOSS OF COOLING ALTITUDE DECOMPRESSION DVCR PRESSURE	LINITS URE 55°C -55°C -75°C -70°C NOT APPLICABLE 55000 FT 5000 FT 5000 FT 10 15000 FT 199 KPA 1-20000 FT	DALIFICATION CHARACLERISTICS RTCA/DD-1606 SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.6.3, CAT D2 SECTION 4.6.3, CAT D2 SECTION 4.6.3, CAT A2 EXTENDED TO 550 SECTION 4.6.3, CAT A2 EXTENDED TO 195 SECTION 4.6.3, CAT A2 EXTENDED TO 195 SECTION 4.6.3, CAT A2 EXTENDED TO 195	000 F1 F6 F1 T0 Y5 F5 KPA 1-2
5 3 C CONTACT 2 3	C INU POWER (2) D INU POWER RE ONTRO, INTERFACE CONNECTOR RECO PUNCTION R5-622: KANDU TO SCM HI R5-622: KANDU TO SCM HI R5-622: KANDU TO SCM HI R5-622: KANDU TO SCM HI	4 YUC) TURN EPTALLE PIN A CONTACT 28 29 30		CONTACT 55 56 57	Public Tion	I AGLE ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TEMPERATURE DEBATING LOW TEMPERATURE ERCOND SURVIVAL HOR TEMPERATURE IN-REGHT LOSS OF COOLING ALTITUDE DEECMPRESSION DVCR PRESSURE TEMPERATURE VARIATION	LINITS URE 55°C -55°C -55°C -70°E NOT APPLICABLE 55000 FT 5000 FT 50000 FT 5000 FT	UNLIFICATION CHARACLERISTICS RTCA/DD-1606 SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.6.2, CAT D2 SECTION 4.6.2, CAT D2 SECTION 4.6.2, CAT D2 SECTION 4.6.2, CAT D2 SECTION 4.6.3, CAT D2 SECTION 5, CAT A	5000 FT F8 FT T0 55 F5 KPA 1-2
5 B C ONTACT 1 2 3	C IND POWER (2) D INU POWER RE PUNCTION R5-422: KANOU TO SCM HI R5-422: KANOU TO SCM HI R5-422: KANOU TO SCM LO R5-422: KRPU TO KANOU HI R5-422: KRPU TO KANOU HI R5-422: KRPU TO KANOU HI	4 VUC) TURN EPTALLE PIN A CONTACT 26 29 30 31	SSIGNMENTS A	CONTACT 55 56 57 58	PUNCTION 25-422: NAMOU TO IMU HI	I AGEC ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TEMPERATURE DERATING LOW TEMPERATURE ERGUND SURVIVAL HUGH TEMPERATURE IN-REISHT LOSS OF COOLING ALTITUDE DECOMPRESSION DVER PRESSURE TEMPERATURE VARIATION	LINITS URE -55°C -55°C -70°E NOT APPLICABLE 55000 FT 5000 FT	UNLIFICATION CHARACLERISTICS RTCA/DD-160E SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.6.1, CAT D2 EXTENDED T0 550 SECTION 4.6.2, CAT A2 EXTENDED T0 590 SECTION 4.6.3, CAT A2 EXTENDED T0 590 FROM 170 KPA 1-5000 FT) SECTION 4. CAT A	000 F1 F8 FT T0 950 95 KPA 1-2
5 3 C CNTACT 1 2 3 4 5	C THU POWER (2) D INU POWER RE PUNCTION R5-422 KANDU TO SCM HI R5-422 KANDU TO SCM HI R5-422 KANDU TO SCM LO R5-422 KANDU TO SCM LO R5-422 KANDU TO KANDU HI R5-422 KANDU TO KANDU HI R5-422 KANDU TO KANDU HI	4 VUC) TURN EPTACLE PIN A CONTACT 28 29 30 31 31 32		CONTACT 55 56 57 58 59	PUNCTION R5-422: KANDU TO IMU HI R5-422: KANDU TO IMU HI R5-422: KANDU TO IMU LO	I ROCE ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TEMPERATURE DERATING LOW TEMPERATURE ERGUND SURVIVAL HUGH TEMPERATURE IN-REISHT LOSS OF COOLING ALTITUDE DECOMPRESSION DVER PRESSURE TEMPERATURE VARIATION HUMIDITY	LINITS URE -55°C -55°C -55°C -75°C -70°C WOT APPLICABLE S5000 FT 6000 FT 10 55000 FT 109 KPA (-20000 FT) +10°C/MIN -55°C 95°S RH 045°C	DALIFICATION CHARACLERISTICS RTCA/DD-160E SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.2, CAT Z SECTION 4.6.3, CAT A2 EXTENDED TO 550 SECTION 4.6.3, CAT A2 EXTENDED TO 550 SECTION 4.6.2, CAT A2 EXTENDED TO 590 SECTION 4.6.2, CAT A2 EXTENDED TO 590 SECTION 5, CAT A SECTION 5, CAT A SECTION 6, CAT B	000 FT F8 FT T0 55 F5 KPA 1-2
5 3 C ONTACT 1 2 3 6 3 6	C IND POWER (2) D INU POWER RE PUNCTION R5-422: KANOU TO SCM HI R5-422: KANOU TO SCM HI R5-422: KANOU TO SCM LO R5-422: KANOU TO KANOU HI R5-422: KANOU TO KANOU HI R5-422: KANOU TO KANOU HI R5-422: KANOU TO KANOU HI R5-422: KANOU TO KANOU HI	EPTACLE PIN A: CONTACT 26 29 30 31 32 33	FUNCTION RS-422: KANDU TO CAE HI RS-422: KANDU TO CAE III	CONTACT 55 56 57 58 59 60	FUNCTION RS-422: KANDU TO IMU HI RS-422: KANDU TO IMU HI	ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TEMPERAT DEBARTING LOW TEMPERATURE SROUND SURVIVAL HIGH TEMPERATURE IN-FLISHT LOSS OF COOLING ALTITUDE DECOMPRESSION DVCR PRESSURE TEMPERATURE VARIATION HUMIDITY DERATIONAL SHOCK	LINITS URE -55°C -55°C -55°C -70°E -70°	DALIFICATION CHARACLERISTICS RTCA/DD-190G SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.5, CAT D2 SECTION 4.5.6, CAT A2 SECTION 4.5.7, CAT A2 EXTEMDED TO 550 SECTION 4.6.7, CAT A2 EXTENDED TO 550 SECTION 4.6.7, CAT A2 EXTENDED TO 1951 SECTION 4.6.7, CAT A2 EXTENDED TO 1951 SECTION 5, CAT A SECTION 6, CAT B OPS SECTION 5, CAT A	5000 FT FH FT TO 55 55 KPA 1-2
5 B C ONTACT 1 2 3 4 3 4 3 6 7	C THU POWER (2) D INU POWER RE PUNCTION PS-622: KANOU TO SCM HI RS-622: KANOU TO SCM HI RS-622: KANOU TO SCM UD RS-622: KRNU TO KANOU HI RS-622: KRNU TO KANOU HI RS-622: KRNU TO KANOU LO RS-622: KRNU TO KANOU LO RS-622: KRNU TO KRNU HI RS-622: KNOU TO KRVI LO KRPU FILTER SELECT HI	4 VUC) TURN EPTALLE PIN A CONTACT 28 29 30 31 32 33 33 34	FUNCTION FUNCTION RS-422: KANDU TO GAE HI RS-422: KANDU TO GAE LO	CONTACT 55 56 57 58 59 60 81	PUNCTION RS-422: KANDU TO IMU HI RS-422: KANDU TO IMU LO	I AGEL I AGEL I AGEL I AGENTIAL CONDITIONS I AGENTIAL CONDITIONS I AGENTIAL CONTINUES I AGENTIAL CONTINUES I AGENTIAL CONTINUES I ALTITUDE I DECOMPRESSION DVER PRESSURE I EMPERATURE VARIATION HUMIDITY DPERATURE SHDEX I AGENTIAL SHDEX I AGENTIAL AGENTIAL	LINITS URE -55°C -55°C -55°C -70°E NOT APPLICABLE 55000 FT 5000 FT 5000 FT 199 KPA 1-20000 FT +10°C//MIN 55% RH #38°E 55% FH #38°E 55% CH #45°C 3 SHOCK OF 6 C, 11 MS, 6 DIRECT 3 SHOCK OF 6 C, 11 MS, 6 DIRECT	DALIFICATION CHARACLERISTICS RTCA/DD-1606 SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.7, CAT D3 SECTION 5, CAT A SECTION 6, CAT B CMS SECTION 7, CAT B & E	5000 FT F6 FT TO 550 F5 KPA 1-2
5 13 C CNTACT 1 2 3 4 5 6 7 8	C INU POWER (2) D INU POWER RE ONTROL INTERFACE CONNECTOR RECO PUNCTION 255-622: KANOU TO SCM HI RS-622: KANOU TO SCM HI RS-622: KANOU TO SCM UO RS-622: KANOU TO SCM UO RS-622: KANOU TO KANOU HI RS-622: KANOU TO KAPU	4 VUC) TURN EPTALLE PIN A 28 29 30 31 32 33 34 33 34 35	FUNCTION FUNCTION RS-422: KANDU TO CAE HI RS-422: KANDU TO CAE U	CONTACT 55 56 57 58 59 60 81 62	PUNCTION RS-422: KANDU TO IMU HI RS-422: KANDU TO IMU LO SPARE	I ROCE ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TEMPERATURE DEERATING LOW TEMPERATURE ERCOND SURVIVAL HIGH TEMPERATURE IN-FLIGHT LOSS OF COOLING ALTITUDE DEECOMPRESSION DVER PRESSURE TEMPERATURE VARIATION HUMIDITY DEERATIONAL SHOCK ERASH SAFETY IMPLISE	LINITS URE 55°C -55°C -55°C -55°C -70°E NOT APPLICABLE 55000 FT 55000 FT 5000 FT 109 KPA 1-20000 FT 109 KPA 1-20000 FT +10°C/MIN 55% RH \$18°C 95% RH \$10°C 95% RH \$18°C 95% RH \$18°C 95% RH \$18°C 95% RH \$18°C 95% RH \$18°C 95% RH \$18°C 95% RH \$10°C 95% RH \$10°C	DALIFICATION CHARACLERISTICS RTCA/DD-160E SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.2, CAT A1 D2 SECTION 4.6.2, CAT A2 EXTENDED TO 550 SECTION 4.6.3, CAT A2 EXTENDED TO 198 FROM 170 KPA I-55000 FT0 SECTION 5, CAT A SECTION 6, CAT B ONS SECTION 7, CAT B & E IONS SECTION 7, CAT B & E	000 FT FI FT TO 55 55 KPA 1-2
5 13 C CNTACT 1 2 3 4 5 6 7 8 9	C IND POWER (2) D INU POWER RE ONTROL INTERFACE CONNECTOR RECE FUNCTION R5-422 KANDU TO SCM HI R5-422 KANDU TO SCM UD R5-422 KANDU TO KANDU HI R5-422 KANDU TO KANDU HI R5-422 KANDU TO KANDU HI R5-422 KANDU TO KANDU LO R5-422 KANDU TO KANDU LO R5-421 KANDU TO KANDU LO R5-422 KANDU TO KANDU LO	EPTALLE PIN A CONTACT 26 29 30 31 32 33 34 35 36 36	FUNCTION RS-422: KANDU TO CAE HI RS-422: KANDU TO CAE LO RS-422: CAE TO KANDU HI	CONTACT 55 56 57 58 59 60 61 62 63	PUNCTION RS-422: KANDU TO IMU HI RS-422: KANDU TO IMU LO SPARE	I RECE ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TEMPERATURE BROUND SURVIVAL LOW TEMPERATURE BROUND SURVIVAL HIGH TEMPERATURE IN-REISHT LOSS OF COOLING ATTITUDE DECOMPRESSION DVER PRESSURE TEMPERATURE VARIATION HUMIDITY DEFEATIONAL SHOEK CRASH SAFETY IMPULSE CRASH SAFETY SUSTAINED	LINITS LINITS URE -55°C -55°C -55°C URE -85°C -70°E	UNLEFTER TON CHARACLERISTICS RTCA/DD-160E SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.2, CAT A SECTION 4.5.3, CAT D2 SECTION 4.6.3, CAT D2 EXTENDED TO 550 SECTION 4.6.3, CAT A2 EXTENDED TO 550 SECTION 4.6.3, CAT A2 EXTENDED TO 199 FROM 170 KPA 1-5000 FT) SECTION 5, CAT A SECTION 6, CAT B SECTION 6, CAT B SECTION 7, CAT B & E IONS SECTION 7, CAT B	2000 FT F3 FT T0 55 55 KPA 1-2
5 13 C CNTACT 1 2 3 4 5 5 6 7 7 8 9 9	C THU POWER (2) D INU POWER RE FUNCTION R5-422: KANDU TO SCM HI R5-422: KANDU TO SCM HI R5-422: KANDU TO SCM HI R5-422: KANDU TO KANDU HI R5-422: KANDU TO KANDU HI R5-422: KANDU TO KANDU LO R5-422: KANDU TO KANDU LO R5-422: KANDU TO KANDU LO R5-422: KANDU TO KANDU LO R5-421: KANDU TO KRFU LO R5-421: TX MUTE HI R5-421: TX MUTE LO	EPTACLE PIN A CONTACT 26 29 30 31 31 32 33 34 36 36 37	SSIGNMENTS FUNCTION RS-422: KANDU TO GAE HI RS-422: KANDU TO GAE LO RS-422: CAE TO KANDU HI RS-422: CAE TO KANDU HI RS-422: CAE TO KANDU LO	CONTACT 55 56 57 58 59 60 81 62 63 64 64	PUNCTION RS-422: KANDU TO IMU HI RS-422: KANDU TO IMU LO SPARE	ENVIRONMENTAL CONDITIONS GROUND SURVIVAL CON TEMPERATURE DEEALTING LOW TEMPERATURE BROUND SURVIVAL HIGH TEMPERATURE INFELTSOFT LOSS OF COOLING ALTITUDE DEECOMPRESSION DVER PRESSURE TEMPERATURE VARIATION HUMIDITY DEERATURE VARIATION HUMIDITY DEERATIONAL SHOCK ERASH SAFETY IMPELSE ERASH SAFETY SUSTAINED VIERATURE	LINITS URE -55°C -55°C -55°C -70°	DALIFICATION CHARACLERISTICS PTCA/DD-1906 SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.5, CAT D2 SECTION 4.5.6, CAT A2 SECTION 4.5.6, CAT A2 EXTENDED TO 550 SECTION 4.6.7, CAT A SECTION 5, CAT A SECTION 5, CAT A SECTION 6, CAT B ONS SECTION 7, CAT B & E SECTION 7, CAT B & E SECTION 7, CAT B SECTION 7, CAT B	000 FT F6 FT T0 55 19 KPA 1-2
5 3 C ONTACT 1 2 3 4 5 6 7 7 8 9 9 10 11	C IND POWER (2) D INU POWER RE FUNCTION R5-422: KANOU TO SCM HI R5-422: KANOU TO SCM HI R5-422: KANOU TO SCM UO R5-422: KANOU TO KANOU HI R5-422: KANOU TO KANU HI R5-422: KANOU TO KANU HI R5-422: KANOU TO KANU HI R5-421: K	EPTACLE PIN A CONTACT 28 29 30 31 31 32 33 33 34 34 35 36 27 36 27 36	SSIGNMENTS A FUNCTION RS-422: KANDU TO CAE HI RS-422: KANDU TO CAE LO RS-422: CAE TO KANDU HI RS-422: OAE TO KANDU LO	CONTACT 55 56 57 59 60 61 62 63 64 63 64 65 24	PUNETION RS-422: NANDU TO IMU HI RS-422: NANDU TO IMU LO SPARE	I RECE ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TEMPERAT DEBAATING LOW TEMPERATURI SROUND SURVIVAL HIGH TEMPERATURI INFELSION LOSS OF COOLING ALTITUDE DECOMPRESSION DVER PRESSURE TEMPERATURE VARIATION HUMIDITY DEFRATURE VARIATION HUMIDITY DEFRATIONAL SHOCK CRASH SAFETY IMPULSE CRASH SAFETY SUSTAINED VIBAATION	LINITS URE -55°C -55°C -55°C -70°E NOT APPLICABLE 55000 FT 5000 FT 5000 FT 5000 FT 199 xPA 1-20000 FT +10°E/2MIN 575 RH 436°E 5500 FT 3 SHOCK OF 6 C, 11 MS, 6 DIRECT 3 SHOCK OF 6 C, 11 MS, 6 DIRECT 1 SHOCK OF 6 C, 11 MS, 6 DIRECT 1 SHOCK OF 20 E, 20 MS, 6 DIRECT 1 SHOCK OF 20 E, 20 MS, 6 DIRECT 1 SHOCK OF 20 E, 10 MS, 6 DIRECT 1 SHOCK OF 20 E, 10 MS, 6 DIRECT 1 SHOCK OF 20 E, 10 MS, 6 DIRECT 1 SHOCK OF 20 E, 20 MS, 6 DIRECT 1 SHOCK OF 20 E, 10 MS, 6 DIRECT 1 SHOCK OF 20 E, 20 MS, 6 DIRECT 1 SHOCK OF 20 M	DALIFICATION CHARACLERISTICS RTCA/DD-1606 SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.6.7, CAT A2 EXTENDED TO 550 SECTION 4.6.3, CAT A2 EXTENDED TO 70 KPA (-5000 FT) SECTION 5, CAT A SECTION 6, CAT B DMS SECTION 7, CAT B & E SECTION 8, CAT R SECTION 9, CAT E	5000 F1 F4 FT T0 554 F5 KPA 1-2
5 13 C CONTACT 1 2 3 4 5 6 7 7 8 9 9 9 10 11 11 12 13	C IND POWER (2) D INU POWER RE PUNCTION PS-422: KANOU TO SCM HI RS-422: KANOU TO SCM HI RS-422: KANOU TO SCM LO RS-422: KANOU TO KANOU HI RS-422: KANOU TO KANOU LO RS-422: KANOU TO KANOU LO RS-421: KANOU TO KANU LO RS-421: KANU TO LO RS-421: KANU TO LO RS-421: KAUTE LO	EPTALLE PIN A CONTACT 28 29 30 31 12 33 34 34 35 36 36 37 36 36 39 36	FUNCTION FUNCTION RS-422: KANDU TD CAE HI RS-422: KANDU TD CAE HI RS-422: CAE TO KANDU HI RS-422: CAE TO KANDU HI RS-422: CAE TO KANDU LO	CONTACT 55 56 57 58 59 60 61 62 63 64 63 64 65 65 65	PUNCTION RS-422: KANDU TO IMU HI RS-422: KANDU TO IMU LO SPARE RS-422: IMI TO RANDU IO	I ROCE ENVIRONMENTAL CONDITIONS INFOLID SURVIVAL LOW TEMPERATURE ENCOND SURVIVAL HIGH TEMPERATURE ENCOND SURVIVAL HIGH TEMPERATURE IN-FLIGHT LOSS OF COOLING ALTITUDE DECOMPRESSION DVER PRESSURE TEMPERATURE VARIATION HUMIDITY DEERATIONAL SHOCK CRASH SAFETY SUSTAINED VIBRATION EXPLOSIVE ATMOSPHERE WATER PRODPIESS	LINITS URE -55°C -55°C -55°C -70°E NOT APPLICABLE 55000 FT 5000 FT 5000 FT 10 15000 FT 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10	DALIFICATION CHARACLERISTICS RTCA/DD-1606 SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.6.2, CAT D2 SECTION 4.6.2, CAT D2 SECTION 4.6.3, CAT D2 EXTENDED T0 550 SECTION 4.6.3, CAT A2 EXTENDED T0 591 SECTION 4.6.3, CAT A2 EXTENDED T0 199 FROM 70 KPA L-5000 FD SECTION 5, CAT A SECTION 6, CAT B SECTION 7, CAT B & E IONS SECTION 7, CAT B & E SECTION 7, CAT B SECTION 7, CAT B SECTION 7, CAT B SECTION 9, CAT R SECTION 9, CAT E SECTION 9, CAT E SECTION 9, CAT F SECTION 9, CAT F	1000 F1 FR FT TO 550 95 6PA 1-21
5 J3 (CNTACT 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 15 15 15 15 15 15 15 15 15	C INU POWER (2) D INU POWER RE PUNCTION 25-422: KANOU TO SCH HI RS-422: KANOU TO SCH HI RS-422: KRPU TO KANOU HI RS-422: KANOU TO KRPU HI RS-422: KANOU TO KANOU HI RS-422: KANOU TO KRPU HI RS-422: KANOU TO KANOU HI RS-422: KANOU TO KRPU HI RS-422	4 VUC) TURN EPTALLE PIN A 28 29 30 31 32 33 34 35 36 36 36 36 36 36 36 36 36 36 36 36 36	FUNCTION FUNCTION RS-422: KANDU TO GAE HI RS-422: KANDU TO GAE U RS-422: GAE TO KANDU HI RS-422: GAE TO KANDU U FMA TX MUTE FMA TX MUTE	CONTACT 55 56 57 58 59 60 81 62 63 64 65 66 65 66 67 68	PUNCTION RS-422: KANDU TO IMU HI RS-422: KANDU TO IMU LO SPARE RS-422: IMU TO KANDU LO RS-422: MAINTENANCE RX HI	I ROCE ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TOMPORAT DEBATING LOW TEMPERATURE ERCOND SURVIVAL HUBH TEMPERATURE IN-REIGHT LOSS OF COOLING ALTITUDE DEECOMPRESSION DVCR PRESSURE TEMPERATURE VARIATION HUMIDITY DEERATIONAL SHOCK CRASH SAFETY IMPULSE CRASH SAFETY SUSTAINED VIBRATION	LINITS URE 55°C -55°C -55°C -55°C -70°C NOT APPLICABLE 55000 FT 5000 FT 5000 FT 109 KPA 1-20000 FT 109 KPA 1-20000 FT 110°C/MIN 55% RH \$18°C 95% RH \$10°C 95% RH \$10°C 9	DALIFICATION CHARACLERISTICS RTCA/DD-160E SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.2, CAT A1 D2 SECTION 4.5.2, CAT A2 EXTENDED TO 550 SECTION 4.6.2, CAT A2 EXTENDED TO 198 FROM 170 KPA I-75000 FT0 SECTION 5, CAT A SECTION 6, CAT B SECTION 7, CAT B & E IONS SECTION 7, CAT B & E SECTION 8, CAT R SECTION 7, CAT B & E SECTION 7, CAT B & E SECTION 8, CAT R SECTION 9, CAT Y & R SECTION 10, CAT Y & R SECTION 110, CAT F	1900 FT FK FT TO 550 95 KPA 1-2
5 3 CONTACT 1 2 3 4 5 6 7 7 8 9 9 10 11 12 13 15	C THU POWER (2) D INU POWER RE FUNCTION R5-422: KANDU TO SCM HI R5-422: KANDU TO SCM HI R5-422: KANDU TO SCM HI R5-422: KANDU TO KANDU HI R5-422: KANDU TO KANDU HI R5-422: KANDU TO KANDU LO R5-422: KANDU TO KANDU LO R5-421: KANDU TO KAPU LO R5-422: KANDU TO SCH LO R5-421: KANDU TO KAPU LO R5-421: KANDU TO KANDU LO R5-422: KANDU TO KANDU HI R5-421: KANDU TO KANDU HI R5-422: KANDU TO KANDU HI R5-422: KANDU TO KANDU HI R5-421: KANDU HI R5-421: KANDU HI R5-421: KANDU HI R5-421: KANDU HI R5-421: KAN	EPTACLE PIN A CONTACT 26 29 30 31 31 34 35 36 36 37 37 38 36 39 40 41 42	SSIGNMENTS FUNCTION RS-422: KANDU TO GAE HI RS-422: KANDU TO GAE LO RS-422: GAE TO KANDU HI RS-422: GAE TO KANDU HI RS-422: GAE TO KANDU LO FMA TX MUTE FMA TX MUTE SIGNAL RETURN	CONTACT 55 56 57 58 59 60 81 62 63 62 63 64 65 65 66 65 66 69 69	PUNCTION RS-422: KANDU TO IMU HI RS-422: KANDU TO IMU LO SPARE RS-422: IMU TO KANDU LO RS-422: IMU TO KANDU LO RS-422: MAINTENANCE RX HI RS-422: MAINTENANCE RX LO	ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TEMPERATURE DEEATING LOW TEMPERATURE DEEATING LOW TEMPERATURE INFELTSTILLOSS OF COOLING ALTITLUE DEECOMPRESSION DVER PRESSURE TEMPERATURE VARIATION HUMIDITY DEEATIONAL SHOCK CRASH SAFETY IMPLISE ERASH SAFETY IMPLISE ERASH SAFETY SUSTAINED VIBRATION EXPLOSIVE AMOSPHERE MATER PROPRESS	LINITS URE -55°C -55°C -55°C -70°	DALIFICATION CHARACLERISTICS PTCA/DD-1906 SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.5, CAT Z SECTION 4.5.6, CAT A2 EXTENDED TO 550 SECTION 4.6.7, CAT A2 EXTENDED TO 550 SECTION 5, CAT A SECTION 4.6.7, CAT B SECTION 5, CAT A SECTION 7, CAT B & E SECTION 7, CAT B & E SECTION 7, CAT B SECTION 8, CAT R SECTION 8, CAT R SECTION 9, CAT E SECTION 9, CAT F SECTION 10, CAT F	1000 FT FK FT T0 SS 195 KPA 1-2
5 13 C CONTACT t 2 3 6 7 8 6 7 8 9 9 10 11 12 13 15 16	C THU POWER (2) D INU POWER RE FUNCTION R5-422: KANOU TO SCM HI R5-422: KANOU TO SCM HI R5-422: KANOU TO SCM UD R5-422: KANOU TO KANOU HI R5-422: KANOU TO KANU HI R5-422: KANOU TO SCM HI R5-422: KANOU TO SCM HI R5-422: KANOU TO SCM HI R5-422: KANOU TO KANU HI R5-422: KANOU TO KANU HI R5-422: KANOU TO KANU HI R5-422: KANU TO KANU HI R5-425: KANU HI R5-45: KANU HI R5-45: KANU HI R5-45: KANU HI R5-45: KANU HI R5-45: KANU HI R5-45: KANU HI R5	EPTACLE PIN A CONTACT 28 29 30 31 31 32 33 33 34 34 35 36 37 36 37 37 38 36 37 37 38 36 37 37 38 36 37 37 38 36 37 37 38 36 37 37 38 36 36 36 36 36 36 36 36 36 36 36 36 36	SSIGNMENTS A FUNCTION RS-422: KANDU TO CAE HI RS-422: KANDU TO CAE LO RS-422: CAE TO KANDU HI RS-422: OAE TO KANDU HI RS-422: OAE TO KANDU LO FMA TX MUTE FMA TX MUTE SIGNAL RETURN	CONTACT 55 56 57 58 60 61 62 63 64 65 65 66 67 66 67 69 70	PUNCTION RS-422: NANDU TO IMU HI RS-422: NANDU TO IMU LO SPARE RS-422: IMU TO KANDU LO RS-422: IMU TO KANDU LO RS-422: MAINTENANCE RX HI RS-422: MAINTENANCE RX LO	ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TOMPORAT DEBAATING LOW TEMPERATURE SROUND SURVIVAL HIGH TEMPERATURE INFELSION DIGHT TEMPERATURE INFELSION DIGHT TEMPERATURE INFELSION DVCR PRESSURE TEMPERATURE VARIATION HUMIDITY DEFEATIONAL SHOEX CRASH SAFETY IMPULSE CRASH SAFETY SUSTAINED VIBRATION EXPLOSIVE ATMOSPHERE W ATER PRODUCTS HUMIDS SUSCEPTIBLIETY SAMD AND DUST	LINITS URE -55°C -55°C -55°C -70°E NOT APPLICABLE 55000 FT 5000 FT	UNLIFICATION CHARACLERISTICS RTCA/DD-1606 SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.6.1, CAT D2 EXTEMDED T0 550 SECTION 5, CAT A SECTION 6, CAT B OPS SECTION 7, CAT B SECTION 7, CAT F SECTION 7, CAT C	5000 F1 F4 FT T0 555 55 KPA 1-2
E 5 J3 (CONTACT 1 2 3 6 7 8 9 9 10 11 12 13 16 17 16 17 16 17 16 17 16 17 16 17 16 17 17 17 17 17 17 17 17 17 17	C IND POWER (2) D INU POWER RE PUNCTION PS-622: KANOU TO SCM HI RS-622: KANOU TO SCM HI RS-622: KANOU TO SCM HI RS-622: KANOU TO KANOU HI RS-422: KANOU TO KANOU HI RS-422: KANOU TO KANOU LO RS-422: KANOU TO KANOU HI RS-422: KA	EPTALLE PIN A CONTACT 28 29 30 31 32 33 34 35 36 37 36 37 36 37 36 37 36 37 38 36 37 38 34 34 35 36 37 38 34 34 34 35 36 37 38 36 37 38 36 39 39 30 31 31 34 34 35 36 36 36 36 36 36 36 36 36 36 36 36 36	SSIGNMENTS FUNCTION RS-422: KANDU TO GAE HI RS-422: KANDU TO GAE HI RS-422: GAE TO KANDU HI RS-422: OAE TO KANDU HI RS-422: OAE TO KANDU LO FMA TX MUTE FMA TX MUTE SIGNAL RETURN	CONTACT 55 56 57 58 59 60 51 62 63 64 63 64 63 64 65 66 67 66 66 67 70 71	PUNCTION RS-422: KANDU TO IMU HI RS-422: KANDU TO IMU LO SPARE RS-422: IMU TO KANDU LO RS-422: MAINTENANCE RX HI RS-422: MAINTENANCE RX LO	ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TOMPORAT DEBAATING LOW TEMPERATURE ERCUND SURVIVAL HIGH TEMPERATURE IN-FLIGHT LOSS OF COOLING ALTITUDE DECOMPRESSION DVER PRESSURE TEMPERATURE VARIATION HUMIDITY DPERATIONAL SHOCK CRASH SAFETY IMPLISE LRASH SAFETY SUSTAINED VIBORITON EXPLOSIVE ATMOSPHERE W ATER PRODPRESS FLUIDS SUSCEPTIBILITY SAMD AND DUST FUNGUS RESISTANCE	LINITS URE -55°C -55°C -55°C -55°C -70°E NOT APPLICABLE 55000 FT 5000 FT 5000 FT 199 RPA 1-20000 FT +10°C//MIN 5756 RH 0.0°C 3 SHOCK OF 6 C, 11 MS, 6 DIRECT 3 SHOCK OF 6 C, 11 MS, 6 DIRECT 3 SHOCK OF 6 C, 11 MS, 6 DIRECT 1 SHOCK OF 20 C, 11 MS, 6 DIRECT 1 SHOCK	DALIFICATION CHARACLERISTICS RTCA/DD-1606 SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.6.3, CAT D2 EXTENDED 10 550 SECTION 4.6.3, CAT D2 EXTENDED 10 550 SECTION 4.6.3, CAT D2 EXTENDED 10 590 SECTION 4.6.3, CAT D3 EXTENDED 10 10 591 SECTION 5, CAT A SECTION 6, CAT B CMS SECTION 7, CAT B & E IONS SECTION 7, CAT B & E SECTION 9, CAT F SECTION 9, CAT F SECTION 12, CAT D SECTION 12, CAT D SECTION 12, CAT D SECTION 12, CAT D	1990 F1 FR FT 10 550 95 KPA (-2)
E 5 J3 (CONTACT 1 2 3 4 5 5 6 7 7 8 9 10 11 12 13 14 15 16 17 18	C THU POWER (2) D IMU POWER RE PUNCTION 25-422: KANOU TO 5CM HI RS-422: KANOU TO 5CM HI RS-422: KANOU TO 5CM UO RS-422: KANOU TO KANOU HI RS-422: KANOU TO KANOU HI RS-422: KANOU TO KAYU HI RS-422:	EPTALLE PIN A CONTACT 28 29 30 31 32 33 34 35 36 36 37 38 39 39 40 40 41 42 43 44 44	FUNCTION FUNCTION RS-422: KANOU TO CAE HI RS-422: KANOU TO CAE HI RS-422: CAE TO KANOU HI RS-422: CAE TO KANOU HI RS-422: CAE TO KANOU LO FMA TX MUTE FMA TX MUTE SISNAL RETURN	CONTACT 55 56 57 58 59 60 51 62 63 64 65 64 65 66 67 66 69 70 71 72	PUNCTION R5-422: KANDU TO IMU HI R5-422: KANDU TO IMU LO SPARE R5-422: IMU TO KANDU LO R5-422: MAINTENANCE RX HI R5-422: MAINTENANCE RX LO	ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TEMPERATURE DEERATING LOW TEMPERATURE GROUND SURVIVAL HUB TEMPERATURE IN-REISHT LOSS OF COOLING ALTITUDE DECOMPRESSION DVER PRESSURE TEMPERATURE VARIATION HUMIDITY DEERATIONAL SHOCK CRASH SAFETY SUSTAINED VER SAFETY SUSTAINED VER ATCR PRODINCSS HUBIDS SUSCEPTIBILITY SAMD AND DUST TUNGUS RESISTANCE SALT FOR MATER PRODINCES	LINITS URE 55°C -55°C -55°C -55°C -70°C NOT APPLICABLE 55000 FT 5000 FT 5000 FT 109 KPA 1-20000 FT 109 KPA 1-20000 FT +10°C/MIN 55% RH 9.85°C 95% RH 9.85°C 95% RH 9.85°C 13 SHOCK 0F 6 C. 11 MS, 6 DIRECT 1 SHOCK 0F 26 C. 20 MS, 6 DIRECT 1 SHOCK 0F 26 C. 11 MS, 6 DIRECT 1 SHOCK 0F 26 C. 10 MS, 6 DIRECT 1 SHOCK 0F 20 C. 20 MS,	DALIFICATION CHARACLERISTICS RTCA/DD-160E SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.6.2, CAT A2 EXTENDED T0 55 SECTION 4.6.3, CAT A2 EXTENDED T0 595 SECTION 4.6.4, CAT D2 SECTION 4.6.4, CAT A2 EXTENDED T0 595 SECTION 4.6.3, CAT A2 EXTENDED T0 198 FROM 170 KPA 1-55000 FT0 SECTION 5, CAT A SECTION 7, CAT B & E IONS SECTION 7, CAT B & E IONS SECTION 7, CAT B & E IONS SECTION 7, CAT B & E SECTION 7, CAT B & E IONS SECTION 7, CAT B SECTION 7, CAT C SECTION 7, CAT B SECTION 7, CAT F SECTION 12, CAT D SECTION 13, CAT F SECTION 14, CAT S SECTION 14, CAT S	1000 F1 FK FT 10 550 F5 624 1-20
E 5 3 C CONTACT 1 2 3 4 5 6 7 7 8 6 7 7 8 8 9 10 11 12 13 14 15 16 17 10 11 11 12 13 14 10 11 11 12 13 14 11 12 13 14 11 14 14 14 14 14 14 14 14 14 14 14	C THU POWER (2) D INU POWER RE PUNCTION R5-422: KANDU TO SCM HI R5-422: KANDU TO SCM HI R5-422: KANDU TO SCM HI R5-422: KANDU TO KANDU HI R5-422: KANDU TO KANDU HI R5-422: KANDU TO KANDU LO R5-422: KANDU TO KANDU LO R5-422: KANDU TO KANDU LO R5-422: KANDU TO KANDU LO R5-422: KANDU TO KANDU LO R5-421: KANDU TO KAPU LO R5-422: KANDU TO KAPU LO R5-422: KANDU TO SCH LO R5-422: KANDU TO KAPU LO R5-422: KANDU TO KANDU HI R5-422: KANDU TO KANDU HI R5-422: KANDU TO KANDU HI R5-422: KANDU TO KANDU HI R5-422: KAPU TO KANDU HI R5-420: KAPU TO KANDU HI R5-420: KAPU TO KANDU HI R5-420: KAPU TO KANDU HI R5-420: KAPU TO KANDU HI	EPTACLE PIN A CONTACT 26 29 30 31 31 34 35 36 36 37 37 38 36 39 40 40 41 41 41 43 44 45 65	SSIGNMENTS FUNCTION RS-422: KANDU TO GAE HI RS-422: KANDU TO GAE HI RS-422: GAE TO KANDU HI RS-422: GAE TO KANDU HI RS-422: GAE TO KANDU HI PMA TX MUTE SIGNAL RETURN	CONTACT 55 56 57 58 59 60 81 62 63 64 65 65 66 65 66 67 70 71 72 73	FUNCTION RS-422: KANDU TO IMU HI RS-422: KANDU TO IMU LO SPARE RS-422: IMU TO KANDU LO RS-422: IMU TO KANDU LO RS-422: MAINTENANCE RX HI RS-422: MAINTENANCE RX LO	ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TEMPERATURE DEEALTING LOW TEMPERATURE DEEALTING LOW TEMPERATURE INFELTSET LOSS OF COOLING ALTITUDE DEECOMPRESSION DVER PRESSURE TEMPERATURE VARIATION HUMIDITY DEERATIONAL SHOCK CRASH SAFETY IMPLISE LERASH SAFETY IMPLISE LERASH SAFETY SUSTAINED VIBRATION EXPLOSIVE ATMOSPHERE MATER PRODRESS HURDS SUSCEPTIBLITY SAMD AND DUST TRUBUS RESISTANCE SALT FOB LICING	LINITS LINITS LINITS URE -55°C -55°C -55°C -70°C -7	DALIFICATION CHARACLERISTICS PTCA/DD-1606 SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.5, CAT Z SECTION 4.5.6, CAT A2 EXTENDED TO 550 SECTION 4.6.7, CAT A2 EXTENDED TO 550 SECTION 4.6.7, CAT A2 EXTENDED TO 1950 SECTION 5, CAT A SECTION 4.6.7, CAT B SECTION 7, CAT B SECTION 7, CAT B & E SECTION 7, CAT B SECTION 7, CAT F SECTION 12, CAT D SECTION 12, CAT D SECTION 12, CAT F	1000 FT FK FT T0 SS 195 KPA 1-2
E 5 13 C CONTACT 1 2 3 4 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 16 17 16 17 16 17 18 19 20 10 11 11 12 13 14 15 15 15 15 15 15 15 15 15 15	C THU POWER (2) D INU POWER RE PUNCTION R5-422: KANOU TO SCM HI R5-422: KANOU TO SCM HI R5-422: KANOU TO SCM HI R5-422: KANOU TO KANOU HI R5-422: KANOU TO KANU LO R6F-17 KANTE HI R6F-18 ESST HI R6F-19 ESST HI R6F-19 ESST LO SPARE	EPTACLE PIN A CONTACT 26 29 30 31 32 33 34 34 35 36 36 37 36 37 38 36 36 37 37 38 40 41 42 42 42 43 44 45 66	SSIGNMENTS A	CONTACT 55 56 57 58 60 61 62 63 64 65 66 65 66 67 68 69 70 71 71 72 73 74	FUNCTION RS-422: KANDU TO IMU HI RS-422: KANDU TO IMU LO SPARE RS-422: IMU TO KANDU LO RS-422: MAINTENANCE RX HI RS-422: MAINTENANCE RX LO SPARE	ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TEMPERATURE DEBATTINS LOW TEMPERATURE BROWND SURVIVAL HIGH TEMPERATURE IN-RESET LIDSS OF COOLING ALTITUDE DECOMPRESSION DVCR PRESSURE TEMPERATURE VARIATION HUMIDITY DEFEATIONAL SHOEK CRASH SAFETY IMPULSE CRASH SAFETY IMPULSE CRASH SAFETY IMPULSE CRASH SAFETY SUSTAINED VIBRATION EXPLOSIVE ATMOSPHERE W ATER PROOFNESS HUMIDS SUSCEPTIBLITY SAMD AND DUST FUNGUS RESISTANCE SAMT FOR ICING	LINITS URE -55°C -55°C -55°C -70°E -70°	DALIFICATION CHARACLERISTICS RTCA/DD-1906 SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.6.7, CAT A2 EXTENDED T0 550 SECTION 5, CAT A SECTION 6, CAT B ONS SECTION 7, CAT B & E IONS SECTION 7, CAT B & E SECTION 7, CAT B SECTION 7, CAT F SECTION 7, CAT F SECTION 72, CAT D SECTION 72, CAT S SECTION 74, CAT S SECTION 74, CAT S SECTION 74, CAT S	5000 F1 F4 FT T0 555 55 KPA 1-2
E 5 J3 C CONTACT 1 2 3 4 5 6 7 8 9 9 9 9 9 9 10 11 12 13 14 15 15 15 10 17 18 19 10 20 21	C IND POWER (2) D INU POWER RE FUNCTION R5-422: KANDU TO SCM HI R5-422: KANDU TO SCM HI R5-422: KANDU TO SCM HI R5-422: KANDU TO KANDU HI R5-420 KANDU HI R5	EPTALLE PIN A CONTACT 28 29 30 31 32 33 34 35 36 37 36 37 38 36 37 38 36 37 38 36 37 38 36 37 38 36 37 38 36 37 38 36 37 38 36 37 36 36 37 36 36 37 36 36 36 36 36 36 36 36 36 36 36 36 36	SSIGNMENTS A FUNCTION RS-422: KANDU TO GAE HI RS-422: KANDU TO GAE LO RS-422: GAE TO KANDU HI RS-422: GAE TO KANDU HI RS-422: GAE TO KANDU LO FMA TX MUTE SIGNAL RETURN	CONTACT 55 56 57 58 59 60 61 62 63 64 65 66 67 66 66 67 70 71 72 73 74 75	PUBETION RS-422: NANDU TO IMU HI RS-422: NANDU TO IMU LO SPARE RS-422: IMU TO KANDU LO RS-422: MAINTENANCE RX HI RS-422: MAINTENANCE RX LO SPARE SPARE	ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TOMPORAT DEBAATING LOW TEMPERATURE BROUND SURVIVAL HIGH TEMPERATURE IN-FLIGHT LOSS OF COOLING ALTITUDE DECOMPRESSION DVER PRESSURE TEMPERATURE VARIATION HUMIDITY DEFRATIONAL SHOCK CRASH SAFETY IMPLISE CRASH SAFETY SUSTAINED VIBORT ON EXPLOSIVE ATMOSPHERE W ATCH PRODPIESS HUMIDS SUSCEPTIBLITY SAND AND DUST FUNGUS RESISTANCE SALT FOR ECING	LINITS URE -55°C -55°C -55°C -70°E NOT APPLICABLE 55000 FT 5000 FT 5000 FT 5000 FT 5000 FT 10 55000 FT 5000 FT 10 55000 FT 10 5000 FT 1	DALIFICATION CHARACLERISTICS RTCA/DD-1606 SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.6.3, CAT D2 EXTENDED T0 550 SECTION 4.6.3, CAT D2 EXTENDED T0 590 SECTION 5, CAT A SECTION 6, CAT B ONS SECTION 7, CAT B & E IONS SECTION 7, CAT B & E SECTION 7, CAT B SECTION 7, CAT F	000 F1 F6 FT T0 550 95 KPA 1-2
5 J3 (CONTACT 1 2 3 6 7 8 9 9 10 11 12 3 6 7 8 9 10 11 12 3 16 17 17 17 17 17 17 17 17 17 17	C IND POWER (2) D INU POWER RE PUNCTION PS-422: KANOU TO SCM HI RS-422: KANOU TO SCM HI RS-422: KANOU TO SCM LO RS-422: KANOU TO KANOU HI RS-422: KANOU TO KANU LO RSPUT TI TO KANOU TO KANU HI RS-422: KANOU TO KANU LO RSPUT HI TO KANOU TO KANU HI RS-422: KANOU TO KANU LO RSPUT HI TO KANU TO KANU HI RS-422: KANOU TO KANU HI RS-422: KANU TO KANU TO KANU HI RS-422: KANU TO KANU TO KANU HI RS-422: KANU TO KANU TO KANU HI RS-422: KANU TO KANU HI RS-422: KANU TO KANU HI RS-422: KANU TO KANU TO KANU HI RS-422: KANU TO KANU TO KANU HI RS-422: KANU HI RS-422: KANU HI RS-422: KANU HI RS-422: KANU HI RS-422: KANU HI RS-422: KANU HI RS-420: KANU HI RS-420: KANU HI RS-420: KANU HI RS-420: KANU HI RS-420:	EPTALLE PIN A EPTALLE PIN A CONTACT 28 29 30 31 12 32 33 34 35 36 37 36 37 36 39 40 41 42 43 44 45 65 49 49 40 41 42 43 45 45 46 47 46 47 46 47 46 47 46 47 47 47 47 47 47 47 47 47 47	SSIGNMENTS FUNCTION RS-422: KANDU TO CAE HI RS-422: KANDU TO CAE HI RS-422: CAE TO KANDU HI RS-422: OAE TO KANDU HI RS-422: OAE TO KANDU LO FMA TX MUTE FMA TX MUTE SIGNAL RETURN DE 122. CEN TO SUBJIC DU	CONTACT 55 56 57 58 59 60 51 62 63 64 65 65 66 67 66 66 67 70 71 72 73 73 74 75 76	PUNCTION RS-422: KANDU TO IMU HI RS-422: KANDU TO IMU LO SPARE RS-422: IMU TO KANDU LO RS-422: MAINTENANCE RX HI RS-422: MAINTENANCE RX LO SPARE RS-422: IMU TO KANDU HI	I ROCE ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TEMPERATURE DEEGATING IOW TEMPERATURE IRCOND SURVIVAL HIGH TEMPERATURE IN-FLIGHT LOSS OF COOLING ALTITUDE DECOMPRESSION DVER PRESSURE TEMPERATURE VARIATION HUMIDITY DEERATIONAL SHOCK CRASH SAFETY SUSTAINED VIBARTION EXPLOSIVE ATMOSPHERE MATER PROOFNESS HUMIDS SUSCEPTIBLITY SAMD AND DUST FUNGUS RESISTANCE SALT FOB LCING	LINHTS URE -55°C -55°C -55°C -70°C NOT APPLICABLE 55000 FT 5000 FT 5000 FT 199 KPA 1-20000 FT +10°C(/MIN 55% RH 438°C 55% RH 55% 55% RH 55% 55% RH 55% 1000 FT 15% RH 55% 15% RH 55% 10% RH 55% 15% RH 55% RH 55% 15% RH 55% 15% RH 55% 15% RH 55% 15%	DALIFICATION CHARACLERISTICS RTCA/DD-1606 SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.6.2, CAT A2 EXTENDED T0 55 SECTION 4.6.3, CAT A2 EXTENDED T0 595 SECTION 4.6.3, CAT A2 EXTENDED T0 199 SECTION 4.6.3, CAT A2 EXTENDED T0 199 SECTION 4.6.3, CAT A3 SECTION 5, CAT A SECTION 7, CAT B SECTION 7, CAT B & E IONS SECTION 7, CAT B SECTION 7, CAT B SECTION 7, CAT B SECTION 9, CAT F SECTION 9, CAT F SECTION 12, CAT D SECTION 12, CAT D SECTION 12, CAT F SECTION 12, CAT F SECTION 124, CAT A	2000 FT FK FT TO 550 F5 674 T-2
5 13 C CINTACT 1 2 3 4 5 6 7 7 8 9 9 10 11 12 13 15 16 9 10 11 12 13 15 16 9 10 11 12 2 2 2 3 1 1 1 2 2 3 1 1 1 1 1 1 1 1 1 1 1 1 1	C THU POWER (2) D INU POWER RE PUNCTION R5-422 KANDU TO SCM HI R5-422 KANDU TO SCM HI R5-422 KANDU TO SCM HI R5-422 KANDU TO SCM HI R5-422 KANDU TO KANDU HI R5-422 KANDU TO KANDU HI R5-422 KANDU TO KANDU HI R5-422 KANDU TO KANDU LO KRFU FULTR SELECT HI KRFU FULTR SELECT HI KRFU RESET HI KRFU RESET HI SPARE SPARE	EPTACLE PIN A CONTACT 28 29 30 31 31 34 35 36 36 37 37 38 36 36 37 37 38 36 36 37 40 41 41 42 43 44 44 45 66 47 45 65 49 50 50 50 50 50 50 50 50 50 50 50 50 50	SSIGNMENTS FUNCTION RS-422: KANDU TO GAE HI RS-422: KANDU TO GAE HI RS-422: GAE TO KANDU HI RS-422: GAE TO KANDU HI RS-422: GAE TO KANDU HI RS-422: SCM TO KANDU	CONTACT 55 56 57 58 59 60 61 62 63 64 65 66 65 66 67 70 71 72 73 74 75 76 77 78	PUNCTION RS-422: KANDU TO IMU HI RS-422: KANDU TO IMU HI RS-422: IMU TO KANDU LO SPARE RS-422: IMU TO KANDU LO RS-422: IMU TO KANDU HI SPARE RS-422: IMU TO KANDU HI	ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TEMPERATURE DEEALTING LOW TEMPERATURE DEEALTING LOW TEMPERATURE INFLIGHT LOSS OF COOLING ALTITUDE DECOMPRESSION DVER PRESSURE TEMPERATURE VARIATION HUMIDITY DEEALTINAL SHOCK CRASH SAFETY IMPLISE CRASH SAFETY SUSTAINED VIBRATION EXPLOSIVE ATMOSPHERE WATER PRODINESS HUIDS SUSCEPTIBILITY SAND AND DUST FUNGASE DUST FUNGASE ECING	LINITS LINITS LINITS URE -55°C -55°C -55°C -70°E -7	DALIFICATION CHARACLERISTICS RTCA/DD-160E SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D2 SECTION 4.5.5, CAT Z SECTION 4.5.4, CAT D2 SECTION 4.5.2, CAT A2 SECTION 4.6.2, CAT A2 EXTENDED TO 550 SECTION 4.6.3, CAT A2 EXTENDED TO 198 FROM 170 KPA 1-55000 FT0 SECTION 5, CAT A SECTION 6, CAT B SECTION 7, CAT B & E IONS SECTION 7, CAT B & E IONS SECTION 7, CAT B & E SECTION 7, CAT B & E IONS SECTION 7, CAT B & E SECTION 7, CAT F SECTION 7, CAT F SECTION 72, CAT F SECTION 74, CAT F SECTION 75, CAT F SECTION 74, CAT S SECTION 74, CAT A	000 F1 F5 FT 10 55 55 694 1-2
5 J3 C ONTACT 1 2 3 4 5 6 7 7 8 9 9 10 11 12 13 14 15 16 17 16 17 16 17 16 17 16 17 16 17 18 19 10 11 12 23 15 16 17 17 18 19 10 10 10 10 10 10 10 10 10 10	C IND POWER (2) D INU POWER RE PURCTION R5-422: KANOU TO SCM HI R5-422: KANOU TO SCM HI R5-422: KANOU TO SCM HI R5-422: KANOU TO KANOU HI R5-422: KANOU TO KANU HI R5-420: KANOU TO KANU HI R5-420: KANOU TO KANU HI R5-420: KANOU TO KANU HI R5-420: KANU HI R5-420: KANU HI R5-40:	EPTACLE PIN A CONTACT 26 29 30 31 32 33 34 34 35 36 37 37 38 39 97 40 40 41 42 42 42 44 45 66 47 47 68 49 50 51 51	SSIGNMENTS FUNCTION RS-422: KANDU TO CAE HI RS-422: KANDU TO CAE HI RS-422: CAE TO KANDU HI RS-422: OAE TO KANDU HI RS-422: OAE TO KANDU HI RS-422: SEM TO KANDU	CONTACT 55 56 57 58 60 61 62 63 64 65 66 65 66 67 70 71 72 73 74 75 76 77 78 79	FUNCTION RS-422: KANDU TO IMU HI RS-422: KANDU TO IMU LO SPARE RS-422: IMU TO KANDU LO RS-422: IMU TO KANDU LO RS-422: MAINTENANCE RX HI RS-422: MAINTENANCE RX LO SPARE RS-422: IMU TO KANDU HI	ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TEMPERATURE DEBATTING LOW TEMPERATURE BROUND SURVIVAL HIGH TEMPERATURE INFECTINGS OF COOLING ALTITUDE DECOMPRESSION DVCR PRESSURE TEMPERATURE VARIATION HUMIDITY DEFEATURE VARIATION HUMIDITY DEFEATIONAL SHOLK CRASH SAFETY IMPULSE CRASH SAFETY SUSTAINED VIBRATION EXPLOSIVE ATMOSPHERE W ATER PROOFNESS HUMIDS SUSCEPTIBILITY SAMD AND DUST FUNGS RESISTANCE SALT FOG ECING	LINITS URE -55°C -55°C -55°C -70°	DALIFICATION CHARACLERISTICS PTCA/DD-1906 SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT A2 EXTENDED TO 550 SECTION 4.6.3, CAT A2 EXTENDED TO 70 KPA FROM 70 KPA (-5000 FT) SECTION 5, CAT A SECTION 7, CAT B SECTION 7, CAT F SECTION 7, CAT F SECTION 72, CAT D SECTION 72, CAT S SECTION 74, CAT S SECTION 74, CAT S SECTION 74, CAT S	1000 F1 F5 FT T0 959 95 K2A 1-2
5 13 C CINTACT 1 2 3 4 5 6 7 8 9 9 10 11 12 13 16 17 16 17 16 17 16 17 16 17 16 17 16 20 21 21 20 21 21 21 21 21 21 21 21 21 21	C IND POWER (2) D INU POWER RE FUNCTION R5-C22: KANOU TO SCM HI R5-C22: KANOU TO SCM HI R5-C22: KANOU TO SCM LO R5-C22: KANOU TO KANOU HI R5-C22: KANOU HI R5-C22: KANOU HI R5-C22: KANOU HI R5-C22: KANOU HI R5-C22: KANOU HI R5-C20: KANOU HI R5-C20	4 YUC) TURN EPTALLE PIN A CONTACT 28 29 30 31 31 32 33 34 35 36 27 36 37 36 37 36 36 37 36 36 37 36 36 37 36 36 37 36 36 36 37 36 36 36 36 36 36 36 36 36 36 36 36 36	SSIGNMENTS FUNCTION RS-422: KANDU TO CAE HI RS-422: KANDU TO CAE HI RS-422: CAE TO KANDU HI RS-422: OAE TO KANDU HI RS-422: OAE TO KANDU LO FMA TX MUTE FMA TX MUTE FMA TX MUTE FMA TX MUTE SIGNAL RETURN RS-422: SCM TO KANDU HI RS-422: SCM TO KANDU HI	CONTACT 55 56 57 58 60 61 62 63 64 65 66 67 66 66 67 70 71 72 73 74 75 76 77 78 79	PUNETION RS-422: NANDU TO IMU HI RS-422: KANDU TO IMU LO SPARE RS-422: IMU TO KANDU LO RS-422: MAINTENANCE RX HI RS-422: MAINTENANCE RX LO SPARE RS-422: IMU TO KANDU HI	ENVIRONMENTAL CONDITIONS GROUND SURVIVAL LOW TOMPORAT DEBAATING LOW TEMPERATURE BROUND SURVIVAL HIGH TEMPERATURE IN-FLIGHT LOSS OF COOLING ALTITUDE DECOMPRESSION DVER PRESSURE TEMPERATURE VARIATION HUMIDITY DEFRATIONAL SHOCK CRASH SAFETY HUPLLSE CRASH SAFETY SUSTAINED VIBBATION EXPLOSIVE ATMOSPHERE W ATCH PRODUCES FLUIDS SUSCEPTIBLITY SAND AND DUST FUNGUS RESISTANCE SALT FOR ICING	LINITS URE -55°C -55°C -55°C -70°E NOT APPLICABLE 55000 FT 5000 FT	DALIFICATION CHARACLERISTICS RTCA/DD-1606 SPECIFICATION SECTION 4.5.1, CAT D2 SECTION 4.5.2, CAT D2 SECTION 4.5.3, CAT D2 SECTION 4.5.4, CAT D3 SECTION 5, CAT A SECTION 6, CAT B ONS SECTION 7, CAT B & E IONS SECTION 7, CAT B & E SECTION 7, CAT B & E SECTION 7, CAT B & E SECTION 7, CAT B SECTION 7, CAT CAT C SECTION 7, CAT F SECTION 7, CAT CAT C SECTION	5000 F1 FR FT T0 550 55 KPA 1-21

Figure 3-9. (Sheet 2 of 4) KANDU Outline and Installation Drawing (90404518)

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SYSTEM DESCRIPTION, INSTALLATION, AND MAINTENANCE MANUAL

JetWave™ MCS-8562 Terminal



Figure 3-9. (Sheet 3 of 4) KANDU Outline and Installation Drawing (90404518)

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Figure 3-9. (Sheet 4 of 4) KANDU Outline and Installation Drawing (90404518)

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SYSTEM DESCRIPTION, INSTALLATION, AND MAINTENANCE MANUAL

JetWave™ MCS-8562 Terminal

NOTES: UNLESS OTHERWISE SPECIFIED:

- 1. DIMENSIONING AND TOLERANCING PER ASME Y14.5-2009. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON XX ± .01
- XXX ±.005 - 2
- 2. DIMENSIONS SHOWN ARE FOR INSTALLATION PURPOSES ONLY
- 3. WEIGHT: 11.5 LB [5.2 KG] MAX
- 4. ASSOCIATED CAD DATA HAS BEEN MODELED TO NOMINAL DIMENSIONS.
- 5 WAVESTREAM IDENTIFICATION LABEL
- 6. POWER DISSIPATION AT 96-122VAC (320-800Hz): 200 W MAX. POWER CONSUMPTION AT 96-122VAC (320-800Hz): 220 W MAX. CURRENT DRAW IN AMPERES: 2.3A AT MAXIMUM NOMINAL SYSTEM TRANSMIT POWER POWER FACTOR: 0.97 MINIMUM AT MAXIMUM LOAD.
- HONEYWELL IDENTIFICATION LABEL INCLUDES. HONEYWELL NAME - DESCRIPTION JW-2 BUC-HPA-VX
- HARDWARE PART NUMBER AND REVISION SERIAL NUMBER - DATE OF MANUFACTURE - WEIGHT - CAGE CODE - HARDWARE MOD STRIKE ARRAY - COUNTRY OF ORIGIN
- TCCA MFG CODE
- BARCODE INCLUDES: - CAGE CODE - SERIAL NUMBER - HARDWARE P/N - DATE OF MANUFACTURE
- 8 COOLING:
- CODUCTION THROUGH THE BASEPLATE WITH THERMAL PADS. AIRCRAFT ADAPTER PLATE SURFACE THAT MAKES CONTACT WITH THE BUC-HPA MUST HAVE SURFACE FLATNESS OF .010 INCH MAX. THERMAL PAD MATERIAL. T-FLEX 580, .050 IN THICK, TOTAL. SURFACE AREA. 107.0 IN*2. DURING INSTALLATION, THE THERMAL PAD IS COMPRESS BY 25%, CORRESPONDING TO 30 PSI OF PRESSURE, TO FILL .045 IN GAP. INSTALL. COMPRESSED THERMAL PAD KIT, SHIPPED WITH THE UNIT, IN ACCORDANCE WITH INSTALLATION INSTRUCTIONS SCD-90402388
- 9 BUC/PA EXTERNAL CONNECTORS IDENTIFICATION PER TABLE 2. J1 AND J2 CONNECTORS CONTACTS ASSIGNMENT PER TABLE 3 AND 4 ACCORDINGLY.
- 10 CATES CENTER OF GRAVITY.
- 11 ELECTROSTATIC DISCHARGE (ESD) SENSITIVE, HANDLE PER IPC-A-610
- 12. CONNECTORS FITTED WITH PROTECTIVE SHIPPING COVERS, REMOVE PRIOR TO TEST OR FINAL INSTALLATION
- 13 MATERIAL AND FINISH FOR CHASSIS AND MOUNTING FEET. AL ALLOY 6061-T6 OR T651 PER SAE-AMS4027, SAE-AMS4117, AMS-QQ-A-250/11 OR AMS-QQ-A-2008 EXTERNAL SURFACES: PRISM POWDER COATINGS LTD. PB-134-LT BLACK SANDTEX POWDER
- COAT OVER CHEM-FILM PER MIL-DTL-5541 TYPE II CLASS 3.
- 14 CAUTION LABEL SHOCK HAZARD HIGH VOLTAGE INSIDE.
- 15 CAUTION LABEL HOT SURFACE DO NOT TOUCH.
- 16 WARNING LABEL HAZARDOUS REENERGY DO NOT TURN ON WITHOUT PROPER OUTPUT TERMINATION DO NOT LOOK INTO OR TOUCH OUTPUT OPENING
- 17 CAUTION LABEL: ELECTROSTATIC DISCHARGE
- 18 REGULATORY INFORMATION FOR CE, FAA, FCC, ETC.
- 19 INDICATED SURFACES ARE INTENDED FOR ELECTRICAL BONDING TESTS. BONDING RESISTANCE FROM THE MEASUREMENT AREAS TO SURFACE ON AIRCRAFT TO WHICH THE UNIT IS MOUNTED SHOULD BE LESS THAN 2.5 MILLIOHMS.

TABLE 1: BUC-HPA CONDUCTION COOLED, PART NUMBERS

PART NUMBER	DESCRIPTION
90003227-001	BUC-HPA-V1
90003227-002	BUC-HPA-V2
90003227-003	BUC-HPA-V3

TABLE 2: BUC-PA EXTERNAL CONNECTORS IDENTIFICATION

REF DES	PART NUMBER	MATES WITH	FUNCTION	REMARKS
J1	D38999/20FC4PN	D38999/26FC4SN	POWER INPUT	4 PIN
.J2	D38999/20FC35PN	D38999/26FC35SN	CONTROL INTERFACE	22 PIN
J3	M3922/54-003	M3922/59-005 (THRU HOLE FLANGE)	RF TX INTERFACE	WR-28 WAVEGUIDE FLANGE PER MIL-DTL-3922/54 (UG599/U) (.112-40 UNC-28)
34	TNC FEMALE PER MIL-C-87104/2	TNC MALE PER MIL-C-87104/2	IF INPUT RX INTERFACE	LABELED ORANGE
J5	TNC FEMALE PER MIL-C-87104/2	TNC MALE PER MIL-C-87104/2	IF TX INTERFACE	LABELED BLUE
JS	TNC FEMALE PER MIL-C-87104/2	TNC MALE PER MIL-C-87104/2	IF OUTPUT RX INTERFACE	LABELED GREEN

TABLE 3 J1 POWER CONNECTOR CONTACT ASSIGNMENTS

PIN NUMBER	SIGNAL NAME
A	115 VAC POWER
8	115 VAC RETURN
C	CHASSIS GROUND
D	SPARE

20. UNIT EXPORT CLASSIFICATION NUMBER IS 7A994.

- 21 SURFACE FINISH IS CHEM-FILM PER MIL-DTL-5541 TYPE II, CLASS 3 WITH NO POWDER COAT
- 22 MATERIAL AND FINISH FOR J3 WAVEGUIDE FLANGE
- AL ALLOY 6061-16 IN COOORDANCE WITH AMS-QQ-A-250/11. NI PLATE PER QQ-N-290, CLASS 1, SEMI-BRIGHT, CORROSION PROTECTION GRADE F THRU G (0002 THICK MIN) OVER NI PLATE PER AMS-C-26074. CLASS 4 (0005 THICK MINIMUM)
- 23 UNIT SHALL BE INSTALLED USING ALL FOUR MOUNTING HOLES AND MAY BE INSTALLED IN ANY ORIENTATION. RECOMMENDED FASTENERS ARE 190-32 UNUF-3A CRES-A286, 160KSI MINIMUM ULTIMATE TENSILE STRENGTH. EACH OF THE FOUR MOUNTING FEET MUST BE IN FULL CONTACT WITH THE MOUNTING SURFACE AND MUST REMAIN SO FOR THE BUC-HPA TO SUFFICIENTLY DISSIPATE HEAT. TO ENSURE FULL CONTACT OCCURS, IT IS RECOMMENDED THAT EACH FASTENER BE TORQUED TO 10 IN-LBF GREATER THAN THE RUNNING TORQUE MEASURED WHEN THE MOUNTING FOOT FULLY CONTACTS THE MOUNTING SURFACE.

24 WARNING HAZARDOUS RF ENERGY. DO NOT TURN ON WITHOUT PROPER OUTPUT TERMINATION. DO NOT LOOK INTO OR TOUCH OUTPUT OPENING.

TABLE 4: J2 CONTROL CONNECTOR CONTACT ASSIGNMENTS

CONTACT NUMBER	SIGNAL NAME
1	EN1: TX LOW
2	TX MUTE 2 HI
3	TP13-1 (SPARE)
4	TP13-2 (SPARE)
5	TX MUTE 1 HI
6	TX MUTE 1 LO
7	RESET HI
8	RESET LO
9	KEYLINE/MUTE HI
10	KEYLINE/MUTE LO
11	RS-422 BUC-PA TO KANDU HI
12	RS-422 BUC-PA TO KANDU LO
13	TP19-1 (SPARE)
14	EN1: RX HIGH
15	EN1: RX LOW
16	TX MUTE 2 LO
17	RS-422 KANDU TO BUC-PA HI
18	RS-422 KANDU TO BUC-PA LO
19	TP17-1 (SPARE)
20	TP19-2 (SPARE)
21	EN1 TX HIGH
22	TX MUTE 2/KEYLINE CONFIG

Figure 3-10. (Sheet 1 of 3) BUC-HPA Outline and Installation Drawing (90003227-003)

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JetWave™ MCS-8562 Terminal



Figure 3-10. (Sheet 2 of 3) BUC-HPA Outline and Installation Drawing (90003227-003)

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Figure 3-10. (Sheet 3 of 3) BUC-HPA Outline and Installation Drawing (90003227-003)

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DETAIL F (SHT2, B7) SCALE 2/1

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JetWave™ MCS-8562 Terminal

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		10 N				DATUM XX				LAST XX	6	AS WANTAINED	CHANCES SHALL BE	INCORPORATED BY TH	E CURRENT DESIGN ACTIV	MIY
						LOCATION XX-XX				ALSO USED XX	20NE REV	REV	SION HISTORY - AL	LISHEETS ARE THE TION	BAME REVISION	14
						-					116	TIAL RELEASE I	OVECN-8057688	1999 A	HEE POM	
											6 De	COMPORATED E	DN-6082376		SEE POM	1
	NOTES, UNLESS OTHERWISE S	PECIFIED		NOTES, CONTINUATION	ł.						C 196	DRPORATED E	08-4083343		SEE FOM	1.5
	 DIMENSIONS AND TOLERAM UNLESS OTHERWISE SPECIF 	CES IN ACCORDANCE WITH ASME Y14.5M-1994. FIED DIMENSIONS ARE IN INCHES.		18. EXPORT CONTROL	CLASSIFICATION NU	MBER 7E004.										
	TOLERANCES ON XX ± .00			20 INDICATED SURFAC	CE AREA INTENDED F	OR ELECTRICAL BON	DING MEASURE	MENT								
	XXX ± 010			RESISTANCE FRO	M FMA BASE MOUNTI TE GROUNDING POIN	ING RING BONDING M T MUST BE NO CREAT	EASUREMENT P	OINT (SHEET	6 ZONE A6)							
	2. DIMENSIONS SHOWN ARE FO	OR INSTALLATION PURPOSES ONLY.		21. TESTING ACCEPTA	NCE TEST PER ATPO	90003295										
	3. WEIGHT			22 TO ENSURE THE FI	A CONNECTORS AR	E FULLY MATED AT A	RCRAFT INSTAL	LATION HAN	D							
	3.1 FUSELAGE MOUNT ANTENN 3.2 LIFTING FIXTURE, PART NU	NA. PART NUMBER 90002509-001 88.0 LBS MAX. IMBER 90000528-1: 5.50 LBS MAX. (SHEET 9)		TIGHTEN THE PLU RECEPTACLE COM	G CONNECTORS P1, INECTOR (AIRCRAFT	P3, AND P3 (FMA) UN 15 NOT VISIBLE.	IL THE RED BA	ND ON THE								
	4. ASSOCIATED CAD DATA HAS	S BEEN MODELED TO NOMINAL DIMENSIONS		23 BONDING HOLES L	OCATIONS WILL ACO	OMMODATE A 0 59 M	X DIAMETER F	AT								
	SINDICATED SURFACES ARE	INTENDED FOR ELECTRICAL BONDING MEASUREM	IENT.	WASHERS AND SO BONDING CABLE M	CKET HEAD CAP SCR IOUNTING POINT, RE	REWS. COMMENDED THREAD	ENGAGEMENT	R. I								
	RESISTANCE FROM TURNT/ TO BASE MOUNTING RING B	ABLE BONDING MEASUREMENT POINT (SHEET 3 Z) SONDING MEASUREMENT POINT (SHEET 6 ZONE A)	DNE 84) 8)	0.250 MIN. 0.340 M MAX ALLOWABLE 1	AX INCHES RECOMM TORQUE 150 IN-LB. (6	VENDED TORQUE 55- 1.22-7.35 N-M. MAX AL	5 IN-LB. LOWABLE TORO	UE 10.95 N-M	1							
	SHALL BE 15.0 MILLIOHMS N	MX.		ONLY ONE BONDIN	IG POINT IS REQUIRE	D. EITHER BONDING	POINT MAY BE U	SED, OR BO	н							
	 POWER CONSUMPTION FMA REQUIREMENTS 			24 MARK OUT ALL MO	DIFICATION STRIKE N	IUMBERS LISTED IN T	ABLE A.									
	6A PEAK, 160W STEADY-1 IMU REDUIREMENTS	STATE (@S8VDC)		ANTE TABLE & CONFI	GURATION TABLE FO	R REVISION RELATIO	NSHIPS BETWE	EN EMA DOC	MENTS							
	25W PEAK BELOW -20° C. INOTE APPROXIMATE IN	11W BETWEEN -20° C AND +10° C, 2.5W ABOVE +10 ITERNAL IMU TEMPERATURES ARE REFERENCED	fc.	/ March 1 and 2 and												
		LABEL INCLUDES														
3	HONEYWELL NAME															
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Figure 3-11. (Sheet 1 of 14) FMA Outline and Installation Drawing (90002609-001)

EFFECTIVITY-

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SYSTEM DESCRIPTION, INSTALLATION, AND MAINTENANCE MANUAL

JetWave™ MCS-8562 Terminal



Figure 3-11. (Sheet 2 of 14) FMA Outline and Installation Drawing (90002609-001)

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SYSTEM DESCRIPTION, INSTALLATION, AND MAINTENANCE MANUAL

JetWave™ MCS-8562 Terminal



Figure 3-11. (Sheet 3 of 14) FMA Outline and Installation Drawing (90002609-001)

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SYSTEM DESCRIPTION, INSTALLATION, AND MAINTENANCE MANUAL

JetWave™ MCS-8562 Terminal



Figure 3-11. (Sheet 4 of 14) FMA Outline and Installation Drawing (90002609-001)

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