



RAAF C130

# GX INSTALLATION

CASE STUDY



**INMARSAT GLOBAL GOVERNMENT**  
**COMMUNICATIONS MADE CERTAIN**

Whilst the specific hardware mentioned may have been superseded with more advanced models, it proves the longevity and capability of Inmarsat's L-band services. With proven technology and global coverage, you can rely on our services for [#communicationsmadecertain](#)

# GLOBAL XPRESS 'EXCEEDS EXPECTATIONS' IN ROYAL AUSTRALIAN AIR FORCE TRIALS



**In December 2017, The Royal Australian Air Force (RAAF) completed a successful trial of the Inmarsat Global Xpress (GX) service as part of their ongoing mission to develop new ways for air mobility aircraft to support their embarked forces.**

During the six-month trial the RAAF utilised GX via a Honeywell JetWave™ Ka-band satellite communication system on board a C-130J Hercules transport aircraft. The trial culminated with an in-air VIP demonstration where the service was demonstrated using a number of applications including secure, live video streaming and encrypted file transfer

## **'PERFORMED FLAWLESSLY'**

Following the demonstration, Air Vice Marshal Warren McDonald, Australian Defence Force Chief of Joint Capabilities, commented on GX performance: "This exceeds expectations, is future and customer-focused, and performed flawlessly."

The RAAF is transforming itself for the information age, working with the Australian Army and Navy to ensure they deliver a networked future joint force across the spectrum of air, space, electromagnetic and cyber. Under the RAAF's Plan Jericho, opportunities are being pursued to bring integrated and networked systems to the defence workforce.

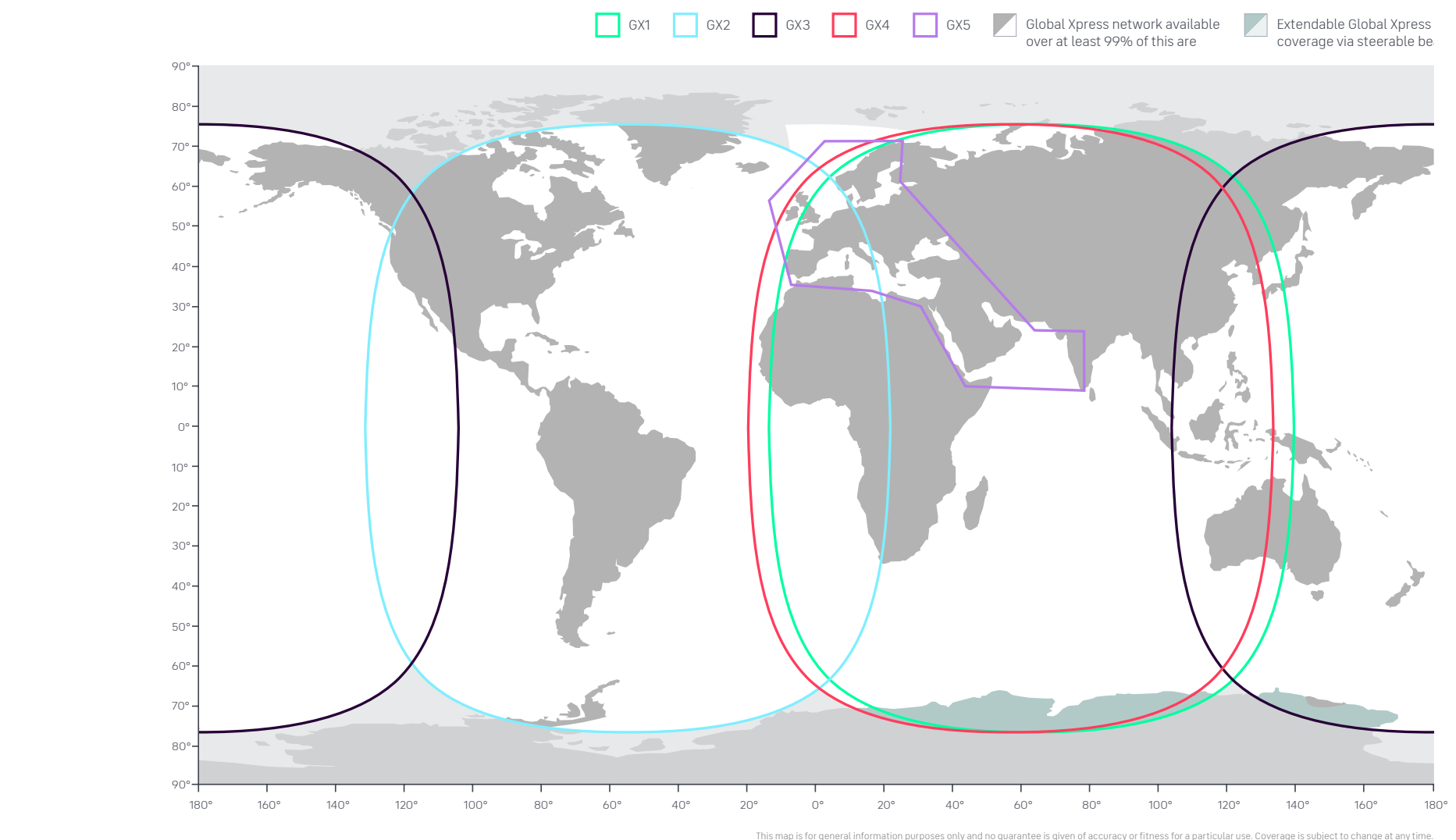
Todd McDonnell, President of Inmarsat Global Government, said: "This project has been in the works for a long time and is testament to the power of industry and defence working together to ensure that communications are an effective tool for delivering greater operational capability."

## **TRANSFORMATIVE TECHNOLOGY**

Global Xpress was designed with government users in mind and is the first and only end-to-end high-throughput commercial wideband network delivering worldwide service. It is gratifying to hear that we have delivered upon the expectations of the RAAF. Inmarsat are proud to be able to play an important role in helping the RAAF in their goal of establishing a Fifth Generation Air Force.

The trial was conducted with support from industry partners Airbus Group Australia Pacific, Honeywell, and L3 Communications, as well as the Australian Government Defence Department's Capability Acquisition and Sustainment Group.

# GX COVERAGE MAP AND EQUIPMENT



**KRFU**  
Up & Down Converter HPA



**KANDU**  
Antenna Control  
Network Data Unit



**MODMAN**  
Modem Manager with iDirect  
Modem Connectivity Interface



# GOVERNMENT INTENT: A MORE CAPABLE, AGILE AND POTENT FUTURE FORCE



There will be more emphasis placed on the joint force – bringing together different land, air, sea, intelligence, electronic warfare, cyber and space capabilities so the ADF can apply more force more rapidly and more effectively when called on to do so.

*Defence White Paper 2016*

# ROLLOUT SUCCESS

**Royal Australian Air Force (RAAF) becomes the first C-130J Hercules operator in the world to install Inmarsat GX system across fleet with 6 aircraft already installed.**

Historically, crew and passengers on a Hercules had been limited to using HF radio for long-range communication while in flight. In 2015, Air Force began a fleet upgrade, equipping its fleet of C-130J Hercules with Inmarsat L-band services which provided global voice and data connectivity. In December 2017, the RAAF completed a successful trial of the Inmarsat Global Xpress (GX) service as part of their ongoing mission to develop new ways for air mobility aircraft to support their embarked forces. During the six-month trial the RAAF utilised GX via a Honeywell JetWave™ GX satellite communication system on board a C-130J Hercules transport aircraft. The trial culminated with an in-air VIP demonstration where the service was demonstrated using a number of applications including secure, live video streaming and encrypted file transfer. Following the demonstration, Air Vice Marshal Warren McDonald, Australian Defence Force Chief of Joint Capabilities, commented on GX performance: "This exceeds expectations, is future and customer-focused, and performed flawlessly."

Following on from this successful trial, the Global Xpress system was found to be the perfect mission enabler for this tactical workhorse aircraft. Commander Air Mobility Group

Air Commodore Carl Newman said the high-speed SATCOM capability would allow aircrew and passengers to better respond during dynamic scenarios.

"Deploying a Hercules might require a flight of up to 10 hours and, in that time, the operating environment for both the crew and embarked joint capabilities could vary significantly. We often deploy the C-130J Hercules as a first responder for missions such as disaster relief, sending them to remote locations where communications infrastructure is often damaged or non-existent," Air Commodore Newman said.

Six aircraft have currently been fitted out with the GX system and as the fleet gets replaced with new aircraft, they will enter service with Inmarsat GX onboard as a line fit item. The success of this trial and the capability of the GX system as a force enabler has been reinforced by the New Zealand Air Force who have committed to five Global Xpress enabled C-130's in 2022.

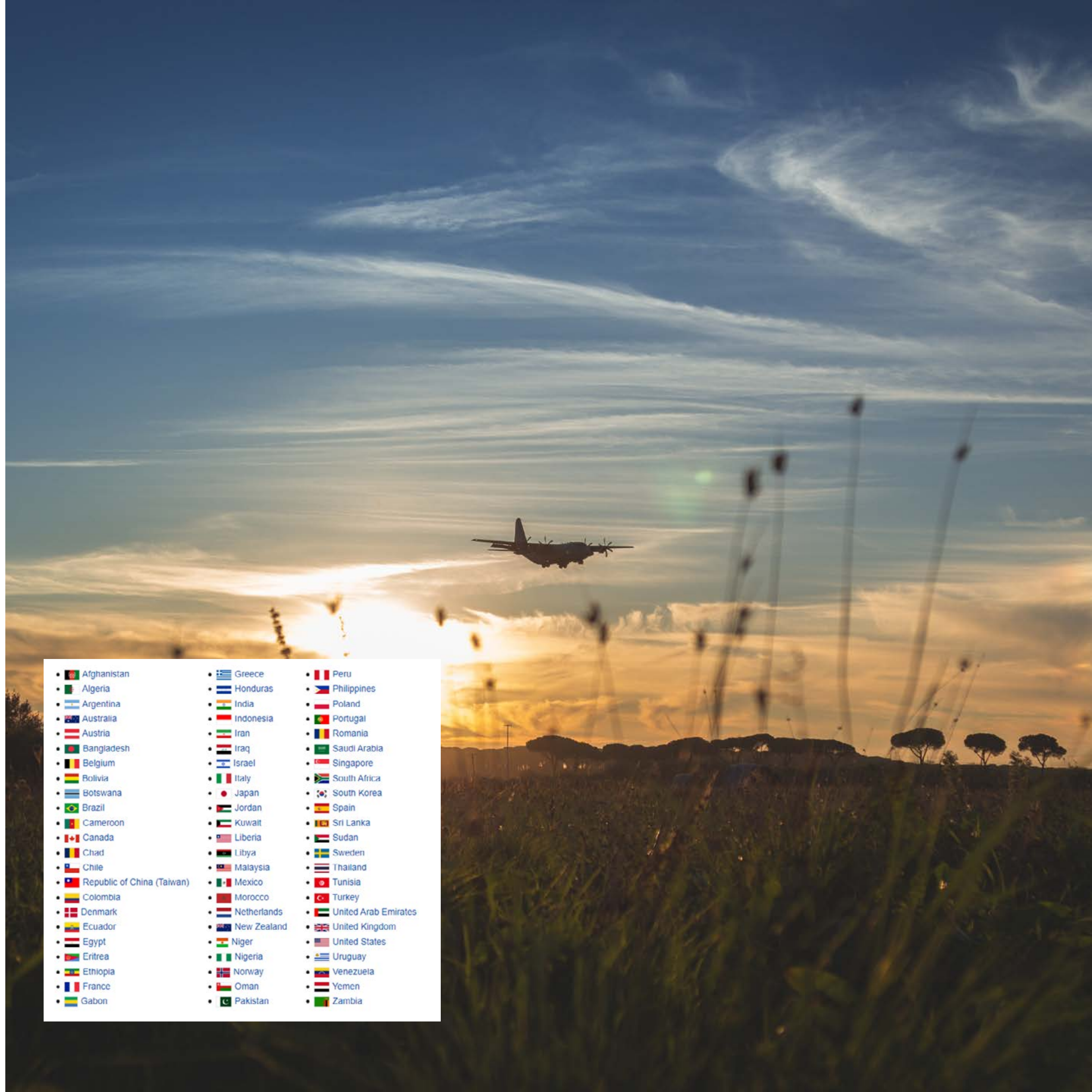
## **A HERCULEAN EFFORT: THE C-130 STILL BEST FOR THE JOB, MORE THAN 60 YEARS AFTER INTRODUCTION.**

The Lockheed C-130 Hercules is

a four-engine turboprop military transport aircraft which remains one of the longest-running aerospace manufacturing programs of all time. Originally designed as a troop, medevac and cargo transport aircraft, the Hercules has evolved over 40 models and variants and served over 60 nations since it first entered service in the U.S. in 1956, followed by Australia. It has embarked on missions ranging from airborne assault through to search and rescue, aerial refueling, scientific research support, maritime patrol and tactical airlifting. In 2007, the C-130 became the fifth aircraft to mark 50 years of continuous service with its original primary customer, the United States Air Force and is the longest continuously produced military aircraft, at over 60 years.

## **ENABLING MISSION SUCCESS FOR C-130 OPERATORS ACROSS THE WORLD.**

Operators across the world, the C-130 is the most prominent, flexible military transport aircraft in the world. The opportunities for mission success that are enabled by the successful adoption of the Inmarsat Global Xpress communication system are endless.



# JETWAVE MCS-8200

## Category 1 – Aero – Auto Tracking

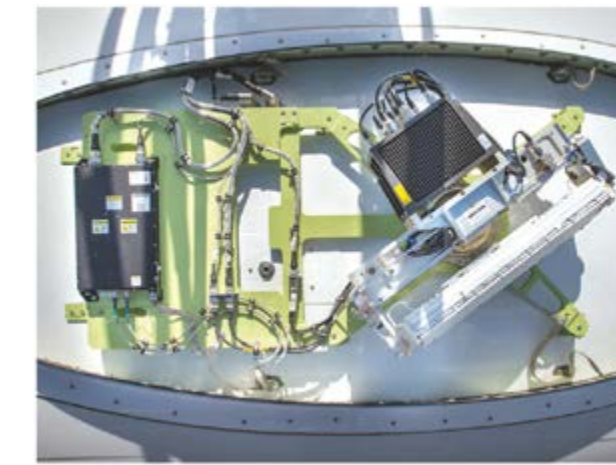


**Honeywell's JetWave™ MCS-8200 aeronautical satellite communication terminal enables Global Xpress connectivity for large aircraft**

The MCS-8000 is designed to provide broadband-class data connectivity and the hardware and network are optimised for mobility to provide a consistently outstanding passenger experience all over the world.

### STANDARD RF AND ANTENNA CONTROLLER

Both variants of the MCS terminals share the same RF and antenna controller, modem and router hardware, with this Fuselage-mounted antenna (MCS-8200) optimised for larger air transport sized aircraft.



### RADOME HARDWARE OVERVIEW

- |                                       |  |
|---------------------------------------|--|
| MCS 8200 AIM Kit                      | LAIM Kit                                 |
| - Platform agnostic skirt and fitting | - Aircraft specific skirt and fitting    |
| - Reduced part type count             | - Standard RF kit and associated bracket |
| - Improved accessibility for install  | - Lighter weight                         |
|                                       | - Lower cost                             |

<b>TERMINAL EFFICIENCY GROUP</b>	1A
<b>TYPE APPROVAL</b>	Yes
<b>MODEM TYPE</b>	iDirect CX780 Core Module; ARINC enclosures
<b>APERTURE</b>	58.4cm x 91.4cm x 24.1cm (23 x 36 x 9.5inches)
<b>BLOCK UPCONVERTER (BUC)</b>	17W SSPA
<b>RF BOND</b>	Commercial Ka (Rx 19.2-20.2GHz, Tx 29-30GHz)
<b>TERMINAL POINTING</b>	Automatic
<b>POWER SOURCE</b>	AC Power
<b>MANAGEMENT USER INTERFACE</b>	PC based web user interface
<b>EQUIPMENT INTERFACE</b>	Multi Ethernet data; ARINC 429 from aircraft navigation bus
<b>WEIGHT</b>	Antenna: 37.5kg (82.6 lbs); MODMAN: 6.4kg (14.1 lbs); KRFU: 5.1kg (11.3lbs); KANDU: 4kg (8.7 lbs)



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