



AEROSPACE

Honeywell/Thales SATCOM

Because your
business shouldn't
stop upon takeoff
— MCS-4000/7000
SATCOM

Offering a
full-range of
SATCOM
products from
the leading
provider of
satellite
communications.



You can't afford to be out-of-touch

Your business demands that you can be reached at all times... whether you're at home, in the office... or flying 30,000 feet above the ground. That's why so many aircraft operators have turned to Honeywell/Thales for satellite communications. These two companies have worked together for over a decade, becoming the leading provider of voice, data and fax communications to the aviation industry.

With SATCOM, you'll have direct, digital voice connection with Air Traffic Control (ATC), even in the most remote parts of the world. Digital data will flow automatically from the aircraft reporting time, position, altitude, and a host of other aircraft information. The digital voice link provides "toll quality" communications to the cockpit or passenger cabin, suffering none of the atmospheric variables of high frequency radio communications.

Honeywell/Thales SATCOM provides first-call connect throughout the world, with the clarity and uninterrupted signal of a digital office telephone. In today's airborne operating environment, your crews need to stay in touch during all aspects of a flight.

Honeywell/Thales SATCOM moves your aircraft one step closer to the capabilities needed for the emerging free flight environment – known as CNS/ATM. Honeywell is pioneering the development of products and systems to meet the challenges of CNS/ATM, which includes point-to-point communications, navigation, surveillance and precision approach capabilities.

MCS-7000The first seven-channel solution

In the second quarter of 2001, the Honeywell/Thales team delivered the world's first seven-channel SATCOM, the MCS-7000. The system has growth to support the complimentary satellite systems (CSS) in addition to supporting existing Inmarsat Aero H, H+ and I.

Honeywell/Thales SATCOM systems receive simultaneous, independent telephone calls, faxes or modem transmissions worldwide.

Our Aero-I systems allow you to take advantage of cost savings from "spot beam" transmissions using the Inmarsat-3 satellites. A smaller, lower cost intermediate gain antenna (IGA) is also part of the Aero-I system.

FULL-LINE OF INMARSAT AERONAUTICAL SYSTEMS INCLUDING AERO-H, AERO-H+ AND AERO-I



FAX



Voice

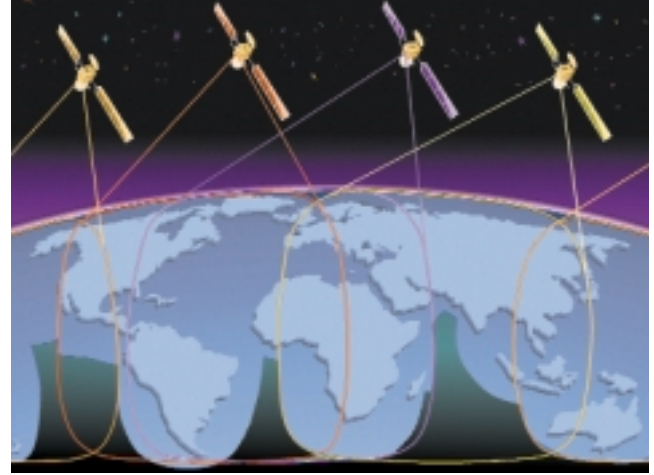


Data

Total systems solutions

The Honeywell/Thales team's proven expertise in the integration of SATCOM-related systems (inertial reference, flight management, global positioning, aircraft communications addressing and reporting system (ACARS)/airborne flight information service (AFIS), communications management, cabin telecommunications, fax) makes Honeywell uniquely qualified to provide the total systems solutions you need today. But it's a system specifically designed to allow for future growth options, too.

Typical Spot Beam Coverage



Worldwide coverage

Your SATCOM-equipped aircraft is assigned its own telephone number, enabling ground-to-air contact. To call the aircraft from the ground, the message (voice, fax or PC data) is sent over traditional telephone lines to a land earth station (LES). The LES transmits the information digitally to the satellite in the Inmarsat constellation that covers the region over which the aircraft is flying.

For air-to-ground communication on your business or government/military aircraft, the process is reversed.

The Honeywell/Thales SATCOM comes with a unique feature called voice pacifiers, which provide connection information as your call is being processed.

Inmarsat is the sole operator of the SATCOM satellite constellation and coordinates the space portion of your call. For ground transmission, you may select the provider(s) of your choice.

Honeywell: Integrated Support Services

Getting the equipment installed on the aircraft and integrated with the corporate network is just the beginning of providing a complete end-to-end solution for your passengers. Honeywell offers these additional support services to connect and keep the data link available and trouble-free.



OneLink™ Communications Service

Honeywell's OneLink communications service lets corporate, VIP and head of state SATCOM customers stay in touch with the world by offering in-flight voice, fax and high-speed data communications.

OneLink helps to complete your flight operation's communications package with a complete line of services that keep your passengers connected no matter where they fly.

OneLink – The simple *SERVICE* solution for all your cabin communications

- Voice and data services with multiple Inmarsat land earth station communication providers
- Cost-effective billing plans to suit your needs
- Easy-to-read monthly billing
- Around-the-clock staff and account management
- Aircraft and corporate network support services
- Toll-free automated or operator-assisted ground-to-air calls
- Global service

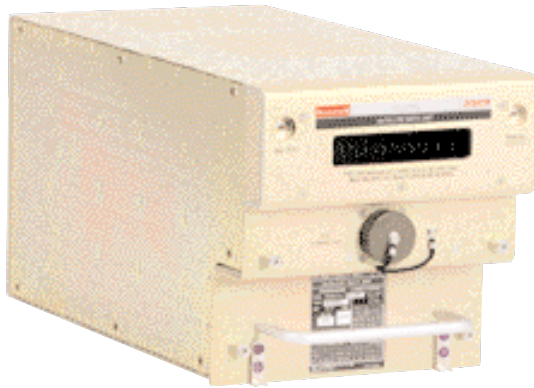
All of these services are included in Honeywell's OneLink™ communications plans that continue to lead the industry in features and integration with all types of airborne communication systems.

As a systems integrator, Honeywell ensures all possible communication links will be incorporated into one seamless solution for your passengers to help them keep in touch anywhere in the world. Honeywell's on-going development continues with wireless 'gatelink' services, and broadband data links now being integrated with our OneView™ airborne satellite TV system and other satellite and ground based systems.

System components

The basic Honeywell/Thales SATCOM system includes a six MCU satellite data unit (SDU) and a four MCU high power amplifier (HPA).

The SDU provides overall system control and monitoring, data modulation and demodulation, data synchronization decoding, voice coding, decoding for the cockpit voice, and data services.



MCS-7000 seven-channel system



CMA-2200 intermediate gain antenna

The high power amplifier is a linear power amplifier which provides the power gain to generate the required output power for broadcast toward the satellite. Honeywell/Thales offers either a four or eight MCU HPA depending on type of service required, Aero-I or Aero-H+, respectively.

The antenna, the CMA-2200 intermediate gain antenna from CMC Electronics (formerly BAe Systems), was the first Aero-I antenna in the satellite communications market to be certified and is available to support both Aero-L and Aero-I service.

It's smaller, lighter, and lower in cost than their CMA-2102 high gain antenna and exceeds the Inmarsat Aero-I performance specifications.



CNS/ATM Environment

SATCOM provides the “communications” element of the emerging CNS/ATM environment being developed and implemented by the world's air traffic authorities.

Many airlines are already taking advantage of optimized routings and altitudes provided for in the future air navigation system (FANS). As automatic dependent surveillance (ADS) and direct controller/pilot data link communication (C/PDLC) are implemented, these benefits will be realized on a global scale.

By safely reducing aircraft separation requirements, trans-oceanic capacity can be increased. Airline routes can be optimized for maximum efficiency-which means fewer delays, greater safety and the potential for tremendous cost savings.

High speed data system

Honeywell is pleased to announce a complete inflight high-speed connectivity solution allowing business jet passengers to access their corporate or private computer networks while flying anywhere in the world.

Honeywell's high-speed data products and services lets your business jet passengers access the Internet and e-mail at speeds of up to 64 kilobytes per second (kbps) while inflight.

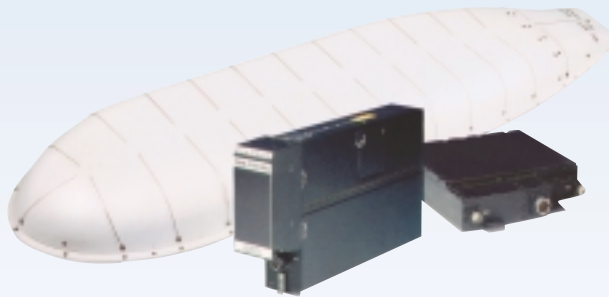
- *E-mail - Use your own laptop and e-mail application without any modifications, giving you full access to private or corporate e-mail*
- *Internet - Get the latest news and information by browsing your favorite web sites at speeds similar to those you would experience in a hotel, on the road or in the comfort of your own home*
- *Corporate network - Transfer files to or from a corporate network using the high-speed satellite data link*
- *Video conference - Conduct a live video conference while flying anywhere in the world*

Following the delivery of over 2000 multi-channel satellite communication systems (SATCOM) to the aviation market, Honeywell and Thales have teamed to bring their long-awaited high-speed data product and services to the business jet operators.

What makes inflight high-speed data possible?

Inmarsat's Swift64 service provides the pipeline for high-speed worldwide coverage for communications through a 64 kbps satellite data link.

However, delivering 64 kbps of data to the airplane is just the beginning of keeping passengers connected in flight. Honeywell offers the right combination of aircraft equipment, proper configuration of aircraft and corporate network interfaces, and a comprehensive set of support services providing a user experience the same or better than at your home or hotel dial-up. Our reputation in the integration of complex avionics systems combined with our breadth of aviation data services, makes Honeywell your ideal choice to bring a total communications solution to your aircraft and corporate operations.



CMA-2102 High Gain Antenna



HS-700 High Speed Data Unit

The airborne office

Voice mail, electronic mail, data transfer, fax and even teleconferencing are all available to the in-flight business traveler with the Honeywell/Thales SATCOM.

Since not every flight is a working trip, Honeywell is leading the effort to integrate in-flight entertainment and value-added services such as news, stock reports and Internet access into SATCOM cabin features using SATCOM Data 3.



Market: Open	Real-Time
DJIA	9810.40
S&P 500	1089.65
S&P GLOBAL 100	1092.20
NYSE COMPOSITE	565.06
NYSE VOLUME	682,303,000

Worldwide customer support

Honeywell has a worldwide support organization that is committed to providing superior services throughout the useful life of our products, and to render customer support as an integral part of all our product offerings. The total mix of Honeywell Customer Support services is tailored to individual customer needs.

Specifications

Components	Size	Weight	Operating Temperature
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AERO-H SYSTEMS

MCS-7000+ (7-channel system - 40 Watt HPA)

SDU	6MCU	21.0 lbs	-55 to + 70°C
HPA	8MCU	29.2 lbs	-55 to + 70°C

MCS-4000+ (4-channel system - 40 Watt HPA)

SDU	6MCU	21.0 lbs	-55 to + 70°C
HPA	8MCU	29.2 lbs	-55 to + 70°C

AERO-I SYSTEMS

MCS-7000i (7-channel system - 20 Watt HPA)

SDU	6MCU	21.0 lbs	-55 to + 70°C
HPA	4MCU	15.8 lbs	-55 to + 70°C

MCS-4000i (4-channel system - 20 Watt HPA)

SDU	6MCU	21.0 lbs	-55 to + 70°C
HPA	4MCU	15.8 lbs	-55 to + 70°C

AERO-I ANTENNA

CMA-2200 Intermediate Gain Antenna (IGA)

Size/weight: 29.9 x 3.2 x 3.8 inches/6.0 lbs

AERO-I D/LNA

CMA-2200 Diplexer/Low Noise Amplifier (DLNA)

Size/weight: 11.6 x 7.8 x 2.0 inches/6.5 lbs

Honeywell

The unlimited
partnership

THALES

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