Throughout the world, there is an immediate need to increase bandwidth and mobile SATCOM access for operational forces. The Harris RF-7800B Broadband Global Area Network (BGAN) product line is a high-performance satellite solution that provides reliable voice and wideband data connectivity for beyond line-of-sight SATCOM-on-the-move and SATCOM-at-the-quick-halt applications.

The commercially available BGAN SATCOM spectrum (L-Band) utilizes the Inmarsat-4 constellation, providing wideband data throughput (up to 492 kbps.) As a standalone device integrated into an existing infrastructure, the Harris RF-7800B Land Mobile and Land Portable BGAN terminals provide a rugged, mobile SATCOM solution for wideband, BLOS communications suiting numerous applications.

The RF-7800B terminals are the only integrated MIL rugged system capable of seamlessly maintaining net connectivity of mobile tactical users across extended battlespace. With a fully integrated RF-7800B & Harris Falcon III Multiband Radio turnkey system, the RF-7800B BGAN terminals enhance an already highly integrated tactical radio networking capability.

When used with the AN/PRC-117G or the RF-7800M manpack radios, the RF-7800B terminals provide BLOS range extension of data networking capabilities through simultaneous operation with Harris’ ANW2 waveform. When the Harris Falcon III Multiband Radio changes to a BGAN enabled net, a connection is automatically created by the RF-7800B to the Inmarsat network, providing an encrypted IP data transfer capability that is automatically routed through either the LOS or BGAN satellite network. The Falcon III integrated system manages Inmarsat subscriber costs through the automated routing between ANW2 LOS and BLOS nodes. When used with the Falcon III manpack radios, the Harris BGAN terminals can provide an increased effective throughput of up to 2 Mbps over the Inmarsat network due to TCP/IP acceleration and compression algorithms within the ANW2 waveform. The Harris Falcon III solution is a fully integrated end-to-end IP data network for assured and secured communications.

The RF-7800B systems fulfill the critical need for higher bandwidth communications than are available today, providing high data throughput links to interconnect warfighter tactical networks to Tactical Operation Centers (TOC) and well as beyond line of sight vehicles or regional headquarters.
RF-7800B-DU024 Land Portable BGAN Terminal

The RF-7800B-DU024 is a land portable, Class 2 BGAN terminal. Small in size, it is meant for SATCOM-on-the-Quick-Halt (SOQH) at the dismount level, or fixed site applications. The antenna is manually pointed towards the satellite to establish connection with the Inmarsat network. The user can use either an audible setting that provides steering tones that indicate signal strength, or the embedded web-based Man-Machine Interface (MMI) to view signal strength. Once active, Inmarsat provides data rates of up to 432 kbps. The RF-7800B-DU024 is designed and tested to meet the MIL-STD-810F military standard for rugged environmental requirements and is intended for use in harsh environments. The RF-7800B-DU024 provides a web based interface for configuration and control of the terminal for standalone operation.

RF-7800B-VU104 Land Mobile SOTM BGAN Terminal

The RF-7800B-VU104 is a land mobile, Class 10 SOTM BGAN terminal. Meant for vehicular SOTM applications, the RF-7800B-VU104 provides continuous satellite tracking and connectivity as it moves at data rates up to 492 kbps. The RF-7800B-VU104 is designed and tested to meet the MIL-STD-810F military standard for rugged environmental requirements and is intended for use in harsh environments. The SOTM antenna is permanently mounted on a vehicle, providing uninterrupted network connectivity while traveling at speeds of up to 70 Mph, vehicular velocity of motion up to 100 degrees per second in both azimuth and elevation, with simultaneous random pitch and roll. The RF-7800B-VU104 provides a web based interface for configuration and control of the terminal for standalone operation.

Web MMI

The RF-7800B BGAN terminals can be both configured and actively controlled via the embedded web-based MMI. The web MMI allows the user to configure the terminal in order to meet system architecture requirements, including all IP networking properties, automatic network connections, inactivity timers, ISDN properties, etc. BGAN satellite connections can be initiated and monitored through the web MMI. Active connection status is provided on every page. Network traffic usage is tracked in the amount of Mbytes (Background Mode) and minutes (Streaming Mode) both on a mission basis as well as through the terminal’s lifetime. Finally, overall terminal status and version information may be viewed through the web MMI.

SecNet 54® Ethernet Module (EMOD)

SecNet 54® is Harris Corporation’s new family of Internet Protocol (IP) communications encryption products designed to keep data, voice, and video communications secure. The SecNet 54 EMOD is a highly portable, modular, standards based Type 1 Encryptor that provides in-line HAIP encryption in a small, tactical device. The SecNet 54 EMOD product is comprised of a modular architecture with two components: a Cryptographic Module (CMOD) that provides all security-critical functions, and an Ethernet Module (EMOD) that handles the transport of encrypted data. The RF-7800B BGAN terminal provides a direct connection to the SecNet 54 EMOD to transfer HAIP encrypted IP data BLOS over the Inmarsat network.

AN/PRC-117G Multiband Manpack Radio

The AN/PRC-117G is a JTRS approved Software Defined Radio (SDR) that provides Type 1 HAIP wideband networking to achieve the DoD communications architecture, while maintaining full interoperability with fielded DoD tactical radios. When combined with the AN/PRC-117G, the RF-7800B BGAN terminals operate simultaneously with the ANW2 waveform, providing BLOS range extension of ANW2 networked data. Using the embedded Sierra II programmable crypto, HAIP-encrypted IP networked data is transferred from the Black side Ethernet port of the radio to the RF-7800B BGAN terminal, and over the Inmarsat network. Another AN/PRC-117G, SecNet 54, or INE needs to be at the other end to receive and decrypt the data offering end-to-end security.

RF-7800M-MP Multiband Manpack Radio

The RF-7800M-MP is an SCA compliant, secure wideband networking Software Defined Radio (SDR). When combined with the RF-7800M-MP, the RF-7800B BGAN terminal operates simultaneously with the ANW2 waveform, providing BLOS range extension of ANW2 networked data. Using the embedded Acropolis II™ programmable crypto, AES-encrypted IP networked data is transferred from the Black side Ethernet port of the radio to the RF-7800B BGAN terminal, and over the Inmarsat network. Another AN/PRC-117G, SecNet 54, or INE is required at the other end to receive and decrypt the data offering end-to-end security.
Inmarsat BGAN Service: Enabling truly mobile broadband C4

Inmarsat’s Broadband Global Area Network service (BGAN) is the world’s first mobile communications service to provide both voice and broadband data simultaneously through a single, highly compact device on a global basis. It is also the first to offer guaranteed data rates on demand.

Inmarsat owns and operates one of the largest satellite communications networks in the world. It comprises a fleet of ten satellites in geostationary orbit around 36,000 kilometers from earth and includes their two latest generation Inmarsat-4 (I-4) satellites, which were launched in 2005. The third I-4 satellite was launched in 2008, with repositioning complete in February 2009. The I-4 fleet is expected to have a commercial life until around 2020. The I-4s have set a new benchmark for mobile satellite communications in terms of their power, capacity and flexibility.

Global Coverage

BGAN is accessible worldwide. It delivers voice and broadband data connectivity to users wherever they are on the planet.

Interoperable

BGAN, FleetBroadband and SwiftBroadband support the latest IP-based services, as well as traditional circuit-switched voice and data, integrating seamlessly with your existing networks. With the increasing emphasis on IP-based communications by the major military forces around the globe, Inmarsat offers an unparalleled degree of interoperability for land, sea and air forces.

Simultaneous Voice and Broadband Data

Through a single terminal you can access data applications and make a voice call at the same time. You can also select guaranteed data rates on-demand, to support, for example, a range of video-based applications. And to ensure bandwidth availability, network capacity can be re-directed to areas of heavy demand.

Secure

For many years, Inmarsat has enabled secure communications for defense customers by ensuring compatibility between the satellite network and cryptographic devices. BGAN is compatible with a range of legacy and current devices.

Easy to Use

BGAN has been designed for simplicity and easy integration. No specialist technical expertise is required to set up and connect to the network. All terminals can be used worldwide and the user interface is standard. There are never any compatibility issues with local telecoms networks, because you connect directly to the satellite.

Trademark Reliability

Inmarsat’s name is synonymous with reliable communications, given their responsibility for providing maritime safety services. They provide the toughest communications links in the business with an average network availability exceeding 99.99 per cent. All terminals are put through rigorous testing and the whole system is backed 24/7 by an extensive customer service support organization.
Communications solutions for today and beyond.

Harris is an international communications and information technology company serving government and commercial markets in more than 150 countries. Headquartered in Melbourne, Florida, the company has annual revenue of more than $5.3 billion and 16,500 employees — including nearly 7,000 engineers and scientists. Harris is dedicated to developing best-in-class assured communications®, products, systems, and services. Additional information about Harris Corporation is available at www.harris.com.