



The communications network you can take anywhere

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Portable satellite systems are used the world over for many different applications such as military and government, disaster recovery, satellite newsgathering and transportation to name a few. Portable satellite antennas keep on getting smaller – so small that they may be checked in at airports and transported by courier. The ease of use is especially important. No longer is an in-depth training course necessary to make use of the equipment. Users of equipment may have a short training course to acquaint them with the equipment and then confidently use it in the field. The issue of aligning the antenna with the satellite is also no longer a problem as it is done automatically. All of these points open up a huge market for the use of portable satellite solutions. Now, wherever you are, you can gain access to the exact range of communications you need and at any time.

The beauty of BGAN

In military situations, communications must be available on-the-move and also must be able to be deployed anywhere, quickly and easily. Satellite solutions can provide voice and data communications that are essential in the dissemination of information in the theatre of war. The Inmarsat BGAN (Broadband Global Area Network) is a portable device widely used by the military, by journalists and also by aid workers. It provides simultaneous voice and broadband data



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through a highly portable device and the service is fully global. A broadband office may be set up in minutes anywhere in the world.

BGAN terminals may be carried like a laptop. The smallest terminals weigh less than 1kg which makes them extremely easy to travel with. They offer seamless global coverage and allow the user to access data applications at up to ½ a megabit and make a telephone call at the same time. Where bandwidth is heavily used, the BGAN can be re-directed to find network capacity so there is no struggle for bandwidth. It supports the latest IP services and the terminals may be used individually or for small teams and may be connected via a laptop computer.

No specialist expertise is required to use the BGAN and it is cost efficient as you may track usage. There are no problems regarding compatibility as the user interface is standard across all terminals and connecting to a local telecom network is also no issue as the BGAN connects directly to the satellite.

The BGAN's ability to provide data, video streaming, phone and text suits it perfectly to those who are working in a fluid and fast-paced environment such as the battlefield or the disaster situation where the ability to keep connected and co-ordinated is paramount. In terms of journalism, for a broadcast quality production a high degree of training is necessary to produce top quality results and the specialist knowledge required means that journalists do not operate this type of equipment but the rise in popularity of smaller terminals such as the BGAN has meant that, with minimal training, they are



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journalist-operable. BGAN has come into its own providing coverage in Afghanistan, Darfur and for the recent kidnap of British Embassy officials in Ethiopia. The ability to report in this way has transformed newsgathering over the last year. It is now possible with BGANs and the right streaming software to achieve good quality results and has prompted a move away from the videophone.

The inflatable antenna

In 2006, US-based company GATR (Ground Antenna Transmit Receive) won the Product Innovation of the Year Award with their easily deployable inflatable satellite communication antenna system. The innovative design allows the antenna to be deployed all over the world quickly, and easily in the remotest, harshest environments on earth. In addition, the design also allows for a wider aperture without the added bulk and weight associated with a rigid deployable system. When deflated, the first system antenna, with a 2.4 metre aperture is incredibly small, weighing in at just 11 pounds. When packed away, the entire system weighs less than 75 pounds.

GATR were contracted to the United States Department of Defense to develop the system and deployed the only Internet connection in Biloxi, Mississippi, after Hurricane Katrina and assisted the multi-agency response there.

GATR Technologies supported in the Missile Defense Agency test of its Terminal High Altitude Area Defense (THAAD) missile at the Pacific Missile Range Facility (PMRF) off the island of Kauai, Hawaii on April 6 2007. After a successful test of the THAAD Missile GATR Technologies up-linked unclassified video of the test on-site utilizing GATR's inflatable satellite antenna system broadcasting via the Galaxy 10R spacecraft. While at the facility, GATR also evaluated new 30-watt, small package amplifier for remote broadcasting.

The system provided high-bandwidth, broadcast and receive capability (large aperture dish), and low-power consumption for broadcasting in areas where satellite trucks cannot be deployed. The inflatable design allowed the system to be carried into a location and set-up in less than 30 minutes.

This was GATR's third broadcast of a successful intercept; the first was at White Sands Missile Range, New Mexico in September 2006, the second January 27, 2007 at the Pacific Missile Range Facility off the island of Kauai, Hawaii. This is one such application for the GATR satellite antenna, it recently has been used for a test deployment via parachute and immediate set-up once on the ground, in an urban disaster recovery test (Strong Angel III in San Diego).

The antenna is not only useful in disaster situations but has great use for military deployment, broadcast and recreational situations.

Flyaway antenna systems

Flyaway satellite systems are deployable in all kinds of areas, no matter how remote or inhospitable. They are noted for their reliability and durability. The antenna will break up into several pieces that may be packed away into fly cases ready for transportation. Once at their destination, they may be re-constructed quickly and easily. Antennas may also be vehicle-mounted making them ideal for use in outside broadcasting. UK-based company, GigaSat specialise in portable satellite systems and IP-Uplinks, a Singapore-Perth based SNG (satellite newsgathering) company has recently acquired two new GigaSat vehicle mounted satellite dishes as part of their major expansion programme.

IP-Uplinks is buying one GigaSat DA-150 roof mounted dish and a DA-100 fly-drive unit to enhance its current Ku services in Australia. The DA-150 is to be mounted on GigaSat's new Mercedes Sprinter based vehicle for Ku SNG services in Western Australia while the DA-100 will primarily have a role operating from SUVs in varying locations both in Australia and overseas.

The SUV project was primarily aimed at providing greater flexibility for deployment in regional areas and was aimed at the news delivery market. GigaSat tend to work at the higher end of the broadcast news and sport sector but they have recently felt the need to incorporate small dish technology to improve their fast deployment capability. In Australia, SNG vehicles by definition operate from capital cities which in such a large country means long travelling times to the more remote areas which by road can mean 24-36 hours. GigaSat has traditionally used larger flyaways to resolve this problem but the fly-drive concept now provides other possibilities. New technologies have also enabled significant weight savings for the entire fleet.

A communications system...on your back!

A great example of the portability that satellite systems have achieved is an antenna that packs away into a rucksack. Patriot Antenna Systems have recently launched a 1.0 metre backpack flyaway TX/RX antenna. It is designed for worldwide transmit and receive in Ku- and Ka frequency bands and is lightweight and portable with rigidity and high performance even under wind loading conditions. The rucksack is airline checkable and weighs less than 65 pounds. Set-up is simple and the antenna comes in six pieces. A sturdy feed boom enables the system to accommodate many different BUC/LNB options. A motorised version of this highly portable system is expected to be on sale soon. A similar idea is available with BGAN technology.

VIASAT has developed a BGAN AN/PSC-14 Manpack Terminal with integrated type 1 encryption. This ruggedised terminal combines security and broadband with simple deployment. Once again, the suitability of this type of portable satellite solution to military applications is evident.

Anytime, anywhere

Portable satellite solutions offer users a flexible, simple, efficient and rugged means of communication that may be deployed anywhere in the world. Their compact nature makes them easy to transport and therefore reduce costs. For applications such as remote communications, disaster recovery, defence and satellite newsgathering portable communications are of great importance and make the lives of those deployed in certain situations much more manageable. Where required, they can provide a lifeline or may be used to establish vital links to the outside world. In a nutshell, they mean that you are never isolated. Solutions such as these can enable communications to anyone, anywhere.