Navtech Systems Video Links

Capabilities and experience in provision of ship to shore, ship to ship video downlink systems

Overview

Navtech Systems Limited has been designing, manufacturing, supplying and installing video link equipment for more than 15 years. The company has acquired considerable experience in this specialist field, particularly with surveillance operators involved in security provision. We have an established customer base of Police and paramilitary organisations covering the USA, Europe and the Middle East.

In the UK, Navtech has successfully provided and supported airborne equipment to Police Force aircraft to enable long range analogue links with automatically tracking antennas designed and supplied by Navtech. In recognition of its achievements, Navtech was awarded a UK Government DTI 'Foresight' award in 2001 to endorse the previous 'Smart' awards for our down link technology.

Technology - Digital Video Links

With the development and evolution of digital transmission systems and their increasing adoption in video link applications both for airborne and marine applications, Navtech has invested heavily in this technology. Using private and customer's aircraft and marine craft, we have completed a development and testing regime that has resulted in a competitively priced, high performance COFDM product that is available now.

We have worked closely with partner companies to assess and evaluate a variety of technologies, with the emphasis on developing a system optimised for our security surveillance operators. Navtech's principle technology partner for COFDM digital video links is BMS, a multi-million $ turnover, world-class US/European company at the forefront of video compression, digital modulation and digital delivery techniques, backed up by a particularly strong RF engineering capability. Navtech and BMS have worked closely over the past few years to develop high performance, reliable digital link systems for airborne, marine and terrestrial surveillance.

The equipment offered by Navtech is field-proven by security and broadcast users in both airborne and ground–based applications. Our airborne transmission equipment is already fully aircraft-approved (certified) to Eurocopter standards for the latest generation of aircraft and is in current use by European Police Air Support Units. These same high specification manufacturing

Navtech Systems *Limited*

Sulby, Nr. Welford, Northamptonshire. NN6 6EZ. UK.
Telephone: +44 (0)1858 880 857 Fax: +44 (0)1858 880 859
E-mail: sales@navtechsystems.co.uk Web: www.navtechsystems.co.uk

and performance standards apply to our marine systems such that reliability and performance are not compromised. From an integration perspective, the transmission equipment is a very compact solution configured with the RF power amplifier located directly with the antenna to minimise RF cable losses of the transmitted power. The transmitter/modulator has a comprehensive control panel giving operational status information and warning of loss of output power, antenna faults or video loss.

Reception Equipment – fixed receive sites and portable systems

The systems offered by Navtech include the latest generation **MRC (maximal ratio combining) diversity technology** to provide optimum reception capability. Central receive sites use diversity tracking antenna arrays. This technique provides the ability to receive images at one site from multiple transmitters (ships and/or aircraft) simultaneously. Using a diversity array, one set of antennas and down-converters can supply two or more receivers without any control system being required. Navtech offers this flexibility in equipment choice to its customers. In addition to central receive solutions, Navtech provides a range of very competitively priced equipment for portable applications and mobile command posts, again making use of MRC diversity (this is of particular importance in urban environments and with mobile equipment).

Ship to shore links.

By utilising the 6 channel MRC diversity receiver on shore with strategically placed antennas looking out to sea, optimum performance can be achieved by the use of polarised antennas. These have high multipath rejection from the microwave signals reflecting in a hap-hazard manner from the surface of the sea and causing interfering signals. Due to the very short wavelengths of the link frequency, an array of antennas deployed at various heights and spacing will optimise the signal collection and realise maximum data processing of the received signals.

Ship to ship links

The same diversity equipment that is utilised for portable ground receivers can also be used for attendant fast response patrol craft to return images to the main ship. A compact dual antenna diversity receiver is offered that can feed ship to ship camera images to the ship's on-board video management system. This in turn can be combined with a Sea Flir video and relayed by the main link to shore.

'Turn-key' System provision and support

Designing and supplying complete system level microwave link solutions for airborne surveillance operators on a 'turn-key' basis has been at the core of Navtech's activities for several years. We are a specialist company in this field, employing highly experienced staff, dedicated to providing optimal solutions to our customer's needs. We have the proven capability to support and service the equipment anywhere in the World. Whilst being a relatively small company (which allows flexibility in our services) we are backed and supported by the technological and financial capabilities of our carefully selected partners, who are all World leaders in their respective technological fields.

The attached graphical presentation of the Ship to Shore system highlights the simplicity and comprehensive nature of the long range ship to shore video data link.

Navtech Systems *Limited*
Sulby, Nr. Welford, Northamptonshire. NN6 6EZ. UK.
Telephone: +44 (0)1858 880 857 Fax: +44 (0)1858 880 859
E-mail: sales@navtechsystems.co.uk Web: www.navtechsystems.co.uk