

Ogier Electronics

Mobile-T

Broadcast quality digital video

The Mobile-T is the latest generation of digital video transmission system that provides broadcast quality video under non line of sight conditions.

It uses the same sophisticated modulation technology as that used by broadcast TV to achieve superb picture quality, even in complex environments. It can operate on reflections at distances up to 5 km as well as on direct signals over ranges of 50 km.

Applications

The application of the Mobile-T is in transportable systems, which can be either vehicle mounted or man pack. The system can be used whilst on the move or at temporary sites that have been set up to cover incidents.

The use of the Mobile-T together with our Multichannel links enable us to offer systems with city wide coverage, using either automatic or manual video switching.

Broadcast digital TV quality

MPEG2 compression

Less than 50 mS latency

Non line of sight

DVB-T (OFDM NLOS)

Space diversity for added robustness

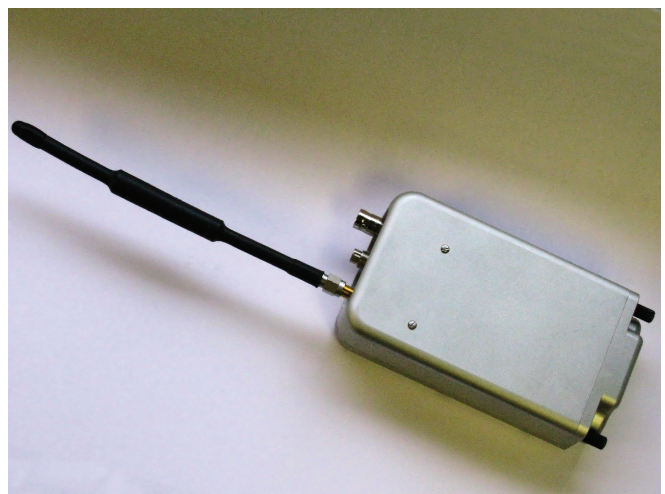
Omni or sector antennas

City wide coverage with multichannels

Benefits

The benefit of the Mobile-T over earlier generation spread spectrum equipment is that robust transmission can be achieved under non line of sight conditions to produce consistently sharp, high resolution, pictures. The system uses the latest form of orthogonal frequency division multiplexing in which the video is transmitted on 2,000 carriers. Just a few are needed by the space diversity receiver for high quality pictures to be displayed without artefacts.

The combination of the DVB-T modulation with low latency MPEG2 video compression and higher data rates means that the pictures are displayed without any visible blockiness or colour variation. It also means that full camera control is possible, even when tracking fast moving targets.



Options

There are several equipment options to suit many diverse applications. The options include different antenna patterns, transmit powers and frequencies.

In general if transmission is required from static sites, or from vehicles that follow a fixed path e.g. a train, then directional antennas with gains of up to 20 dB can be used. Here, it is generally better to use higher transmission frequencies because there is less chance of interference.

Against this, if the transmission is required under truly mobile situations, such as continuously from moving cars or from a man pack, then an omni directional transmit antenna will probably be required. In these circumstances the gain will be reduced and a lower operating frequency is recommended. This is because the reflection loss is less at lower frequencies, which generally compensates for the smaller antenna gain.

Typical Ranges

The range under non line of sight conditions differs from urban to rural environments. It depends on the nature and size of the obstructions and the location of the equipment. To illustrate this, the range of a typical 1.4 GHz system with 50 km coverage under line of sight conditions, will be reduced to 1 to 2 km in an urban environment when it is used in mobile situations. If however the same equipment were installed on an 8 metre mast in static deployments, the range would be increased to 4 to 5 km.

City Systems

The Mobile-T can transmit directly to control centres or to local collecting points from where the signals can be relayed on to the control centre.

The Ogier ML3100 Multichannel link is the ideal solution for re-transmission because it can accommodate the videos from 19 Mobile-T's, all transmitting simultaneously.

Ogier Electronics equipment is CE approved and is a supplier to major security and telecoms companies, local authorities, police, military and railway network operators world wide

Specifications

Video channels	1 in one direction
Data or audio channels	1 in both directions
Frequency band	1 to 24 GHz
Space diversity	Standard
Frequency stability	30 ppm
LOS range - all weathers	Typically 20 to 50 km in 1 to 12 GHz band
NLOS range - all weathers	Typically 1 to 5 km in 1 to 5 GHz band
Availability	99.95% (UK conditions)
Antenna type	Planar sector antennas or omni dipoles
Antenna size (both ends)	Up to 30 cm
Antenna gain (both ends)	2 to 20 dBi
Transmit power	0 to +25 dBm
Transmit EIRP	2 to 45 dBm
Polarisation	Vertical or horizontal
Receiver Sensitivity	-84 dBm typical
Modulation	OFDM with 2,000 QPSK or QAM modulated carriers
Tuner bandwidth	8 MHz
Video inputs/outputs	PAL or NTSC 5.6 MHz 1Volt 75 ohm
Video compression	MPEG2
Video quality	DVB-T
Data inputs/outputs	Either, RS 485, 422 or 232 at 19.2 kbps Simplex, half duplex or full duplex. Other options available
Audio option (instead of data)	0 dBm in 600 Ohms balanced or unbalanced
Audio frequency response	50 to 10,000 Hz +/-3dB
Audio Signal to Noise	50 dB
Audio harmonic distortion	5% at 1 kHz and 0 dBm
Input voltage	12 Volts DC
Input power	35 Watts each end
Temperature Range	-20 to +60 C
Wind	Up to 200 kph
Life	15 Years
Routine maintenance	None required



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