ECS
TACTICAL DATA LINKS

Evenlode Lite

EVENLODE
LITE

TCI | ECS

Tactical Data Link Technology

Tactical Data Link (TDL) Evolution

Since **TDLs** were first introduced, customers deploying Coded Orthogonal Frequency Division Multiplexing (**COFDM**)-based systems as the underlying technology, have demanded increased customisation and functionality.

Specifically, air platform users require their equipment to comply with DO-160G, which is an aviation environmental conditions and test procedures certification. In addition, Military customers demand increased link robustness and security protocols such as encryption and very low failure rates.

ECS has adapted its TDL product family to suit the evolution of air-platforms, such as UAS which, require TDLs to be ever smaller and consume less power, whilst increasing their range and capability. ECS has developed diversity reception to maximise performance for demanding ground to ground and air to ground transmission. TDLs also need to integrate with complex wide area networks to deliver the sensor data to multiple points.

COFDM Advantages

ECS has adopted and developed COFDM as its underlying technology for TDLs, as the technology offers extendable range, sufficient bandwidth for Police, Military and Intelligence Security Operations and low operational cost.

COFDM is robust against multipath interference, frequency selective fading, jamming and provides rapid regain after signal loss, making it ideal for the Police, Military and Intelligence Security Operations customers/end-users. ECS's family of Data Links demonstrate how COFDM will develop; namely by extending the capability and performance whilst reducing Size, Weight and Power (SWaP).

During operational use, Sovereign Nations require the ability to control communications networks and to not be beholden to third-party technology and infrastructure providers for their critical communications. ECS's application of COFDM enables users to address this requirement.

Evenlode Lite

Evenlode Lite is the latest offering in the Evenlode Video and Data downlink family. The system offers an entry level end-to-end video downlink solution for aircraft Integrators requiring a video downlink for ISR aircraft upgrades or capability uplifts.

Evenlode Lite

- › Fixed frequency bands
- › COFDM modulation based on DVB-T standards
- › Ultra-low latency
- › 4k UHD resolution***
- › 1 x HD or 1 x SD video stream
- › Audio and data
- › Sub Cipher encryption or 256 AES Encryption**
- › Declaration Design Performance & Interconnecting Diagram
- › System installation and user manuals
- › ITAR free system

An Evenlode Lite System Consists of:

ADT

- › Transceiver/Upconverter stack
- › Power Amp/PSU
- › Video Encoder
- › Filter
- › Encryption Control Unit (ECU)
- › Antenna

GDT

- › Soft case
- › Transceiver
- › Decoder
- › PSU
- › Down Converter
- › Antenna

*Frequency dependant, **Subject to export approval, ***Optional Upgrade

Evenlode Lite retains all of the reliability and performance expected from the Evenlode ISR video downlink family. An Evenlode lite, consists of an Air Data Terminal (ADT) used to downlink a single video, audio, GPS, KVL metadata*** and telemetry data from the air platform to the Ground Data Terminal (GDT).

Evenlode Lite is a series of equipment from the Evenlode Data Link range providing capability for a range of Information Exchange Requirements; equipment may be deployed for police, border guard and search and rescue applications.

Evenlode Lite has a defined upgrade path; from Evenlode Lite to Evenlode I, II and Evenlode III as user requirements develop building on previously installed hardware.

Evenlode Lite operates on several fixed frequency bands, utilising Coded Orthogonal Frequency Division Multiplexing (COFDM) technology with enhanced modulation techniques. COFDM has been chosen for this Digital Video Broadcasting (DVB) system because of its broadcast quality capability and tolerance to multi-signal paths.

Evenlode Lite utilises the latest H.265 ECS video/audio & data encoder and decoder offering multiple video formats and resolutions across an ultra-low latency link securely with sub-cipher or full AES-256** encryption.

The Evenlode Lite ADT equipment is DO-160G certified and may be installed as a fixed stackable unit or as individual modules in the aircraft, employing a single 2dBi transmit antenna.
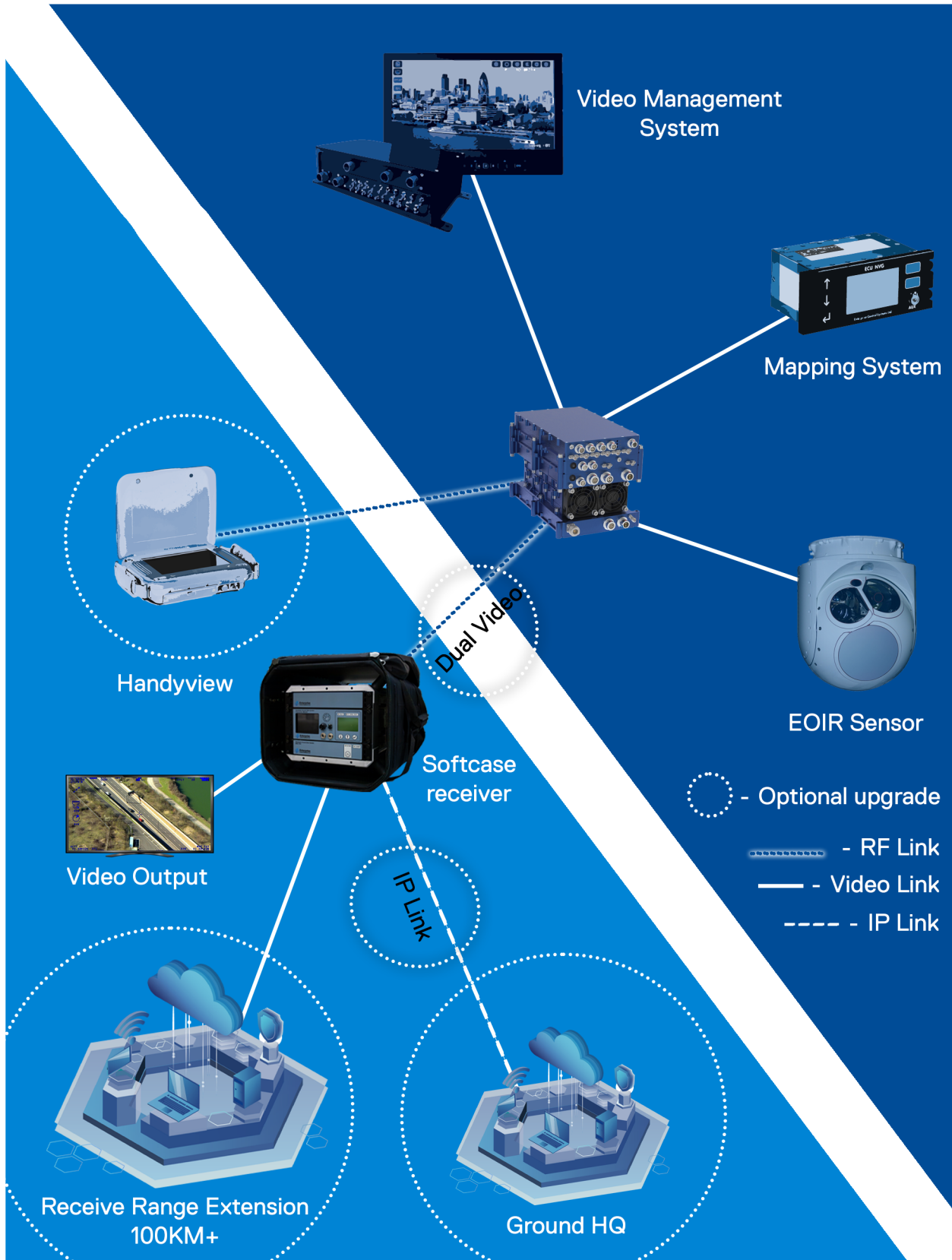
Evenlode Lite Ground Data Equipment is delivered in a single softcase enclosure employing a single 7/8dBi* receive antenna.

Declaration Design Performance and Interconnecting Diagrams along with user and installation manuals are included in the Evenlode Lite solution.
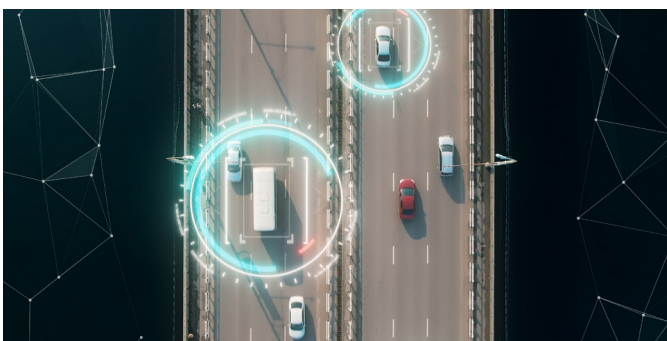
System Variant	Part Number	Frequency (GHz)
Evenlode Lite 1.4 - Sub Cipher	01-102249-EL-0	1.400, 1.410, 1.420
Evenlode Lite 1.4 - AES256**	01-102249-EL-1	1.400, 1.410, 1.420
Evenlode Lite 2.3 - Sub Cipher	01-102250-EL-0	2.300, 2.310, 2.320
Evenlode Lite 2.3 - AES256**	01-102250-EL-1	2.300, 2.310, 2.320
Evenlode Lite 3.3 - Sub Cipher	01-102251-EL-0	3.300, 3.310, 3.320
Evenlode Lite 3.3 - AES256**	01-102251-EL-1	3.300, 3.310, 3.320
Evenlode Lite 3.5 - Sub Cipher	01-102252-EL-0	3.500, 3.510, 3.520
Evenlode Lite 3.5 - AES256**	01-102252-EL-1	3.500, 3.510, 3.520

Upgrade Path

Video Management System

Mapping System

Handyview

Dual Video

EOIR Sensor

Softcase receiver

Video Output

IP Link

⋯ - Optional upgrade

⋯⋯⋯⋯ - RF Link

——— - Video Link

- - - - - IP Link

Receive Range Extension 100KM+

Ground HQ

Evenlode Lite chargeable Upgrades

› **Dual Channel** - Transmit two live video streams simultaneously, over 1 RF channel, including second EO/IR feed or moving map.

› **Frequency channel upgrade** - Move or increase the number of RF channels to suit your frequency plan requirements.

› **Range extension upgrade** - Increase the range of Evenlode Lite system for long range operational requirements. Ranges can be increased by adding the following capabilities:

   › **Diversity mode** - Add an extra antenna system to the ground station for increased range

      › MSA5 + ACU + GPS Antenna - High gain tracking antenna

      › Additional Down Converter & antenna

   › **Aircraft antennas** - Increased gain = Increased range from the aircraft antenna. Mounting and space permitting.

› **Onward video streaming over IP (From Base station)** - Steam video in IP format directly from the base station to third party video management systems. Allowing distribution of the ISR video and data feeds to where they are needed most.

› **AES256 Upgrade** - Increase the video link security by upgrading to AES256 with enhanced features specifically designed for police, military and intelligence security operation domains.

› **Control API** - Do you need to control the Evenlode Lite system from the mission system computer? The API document allows you to integrate the full control of the system independently of the ECU or as a secondary or primary controller in conjunction with the ECU.

About ECS

Innovating within the RF Spectrum

Enterprise Control Systems Ltd (ECS) was founded in 1988. We prioritise growth and development, steadily increasing in size for over 30 years. We combine experienced RF professionals with a graduate training program to excel in defense and security technology.

ECS is a specialist RF systems company that has for over 30 years continued to supply UK and international customers with innovative, leading edge, surveillance and countermeasures solutions. ECS systems are continuously deployed on active security & policing and military operations world-wide. ECS is a proven and trusted British supplier to the UK MoD, the UK Police and to specialist military and government users in over 40 other countries.

Key to our success is designing all products in-house, emphasising long-term reliability and quality control. A third of the workforce focuses on product development, consistently delivering leading designs.

We offer Tactical Data Links and RF Inhibitors. COFDM Data Links transmit video and data over 200 kilometers in military and security domains. Tactical Data Links are secure, optimised for long-range performance in congested RF environments, ensuring sovereignty and data encryption. Leveraging our Data Link expertise, we develop programmable RF Inhibitors (Jammers) to counter C-UAS and RC-IED threats. These inhibitors are widely used in current operations, addressing complex integration needs for optimum user capability.

In 2021 ECS was acquired by SPX Technologies. "We are excited to welcome ECS to the SPX team," said Gene Lowe, President and CEO of SPX. "As our first acquisition in our Communications Technologies platform, ECS expands and strengthens SPX's position in COMINT by adding highly complementary, world-class products and technology. We see significant opportunities to grow our presence in COMINT, and complementary technologies and solutions worldwide. We view ECS's expertise in encrypted data link systems and RF countermeasures as a perfect fit with the high-value RF monitoring, detect and locate technologies and products of our TCI business."

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