Welcome to the Cobham Broadcast catalogue.

Cobham draws on the company’s cutting edge technologies to develop mission-critical products for the broadcast market which provide real technical and operational benefits to newsgathering, live production and other high profile applications empowering users to broadcast without boundaries.

Backed by more than 50 years’ valuable experience of transmitting and receiving information in difficult electronic environments in the military and surveillance market, Cobham’s Broadcast portfolio benefits from the ultra-high build quality and ruggedness these products require.
Introduction

Why choose Cobham?

Cobham’s technical ability and capacity to develop new products is well ahead of the market. Its total control over encoding and modulation processes and use of FPGAs, rather than fixed ASICs, gives it a unique ability to quickly add new features, improve performance and address customers’ specific requirements.

Cobham’s HD broadcast systems employ next-generation low-delay H.264 encoding. The increased encoding efficiency this gives enables users to transmit at reduced bit-rates with no loss in quality. This means more robust modulation schemes can be used, giving increased range and a reduction in the amount of receive hardware required.

The systems are also extremely compact and consume significantly less power – typically 60% less than equivalent MPEG2 systems. In addition cutting edge communication techniques, already developed for and in use in the surveillance sector – such as bi-directional, single-frequency COFDM systems and MESH networking – are available as part of the Cobham Broadcast range.

Cobham products are designed to be set up quickly, to deliver the level of performance professionals require, and to perform reliably throughout the job. They use the latest communications technologies to achieve the quality and performance standards expected while using the minimum power with the maximum flexibility.
**SOLO H.264 SD/HD COFDM Transmitter**

**Features:**
- Low delay H.264 SD & HD encoding
- HD-SDI/SDI with embedded audio input
- Composite video and HDMI input, ASI input and output
- DVB-T 6/7/8MHz and optional narrowband modulation
- Ultra lightweight 400g with low power consumption

**Benefits:**
The SOLO H.264 Transmitter is a rugged, Standard or High Definition digital video transmitter, ideal for motorsport, airborne, sports and news links applications. It can operate in various transmission bandwidths allowing a trade off between image quality and range. Broadcast quality pictures can be transmitted in only 2.5MHz bandwidth through ultra efficient H.264 encoding.

**SOLO ENG H.264 COFDM Transmitter**

**Features:**
- 40% lower bit-rates than conventional MPEG2 systems
- Transmits images in a non-line of sight environment up to 1km
- True broadcast quality pictures in only 2.5MHz bandwidth, maximising usage of limited RF spectrum
- Analogue audio inputs feature switchable mic/Line level with variable gain and P12 powering
- Range of RF frequency bands available, from 340MHz to 8.2GHz (low-cost upgrade available)
- Available in 100mW and 500mW versions

**Benefits:**
Specifically designed for Electronic News Gathering applications, this is a rugged SD/HD COFDM digital video transmitter, docking neatly onto all types of ENG cameras. For maximum flexibility, the unit has a variety of video input options including composite, SDI, HD-SDI and HDMI. An integrated control panel covers all major functions, with 16 user-defined presets.

**PRORXB – Broadcast Receiver**

**Features:**
- 2, 4, 6 or 8 way COFDM diversity – maximum ratio combining RF outputs for distortion-free video
- H.264 SD & HD decoding, plus fully MPEG2 compliant SD decoding
- HD-SDI/SDI with embedded audio and HDMI output
- ASI input and output
- Analogue audio inputs feature switchable mic/Line level with variable gain and P12 powering
- Range of RF frequency bands available, from 340MHz to 8.2GHz (low-cost upgrade available)
- Available in 100mW and 500mW versions

**Benefits:**
A feature-rich, multi-way diversity COFDM receiver designed to work with the next generation of H.264 wireless camera systems. Created for the broadcast market, it incorporates on-screen display diagnostics, IP control and optional IP streaming video. All DVB-T 6/7/8MHz modes are supported, plus optional Cobham Narrowband.

**Messenger 2 Transmitter Enhanced**

**Features:**
- Ideal for entertainment, sports and ENG applications, as well as military operations
- AVC HD/SD encoder (up to 1080p 60FPS)
- COFDM modulation (DVB-T 2 K or 4 K carriers)
- Dual L/S band capability
- Time correlated KLV meta data handling

**Benefits:**
This second generation AVC HD/SD transmitter features ultra-low system latency, greatly enhancing real-time operating when used in time critical broadcasting situations. Dual video processing enables 3D content collection which provides depth perception and greater control for applications requiring fine spatial operations.
Messenger 2 Decoder
HD/SD AVC/H264

**Features:**
- Supports up to 60 megabits per second H.264 stream processing
- Frame rates to 60 frames per second
- Built-in HD to SD Down-Conversion
- Compact design with local control and monitoring
- HD-SDI, DVI, Component & Composite video outputs

**Benefits:**
The M2D is a companion product to the AVC Encoders and Transmitters, providing the highest video quality with ultra-low latency and fast recovery essential for wireless coverage of real-time events such as sports and surveillance applications. The solution can be controlled either through its front-panel control interface or through its LAN interface.

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Messenger 2 Transmitter
– Camera Mount

**Features:**
- Built in AVC/H264 Encoder
- SD and HD formats up to 1080p
- Local control plus data return link
- Up to 2 audio channels
- Rugged and Compact Portable Design
- Companion COFDM Receiver with Maximal-Ratio Pre Detect Diversity reception

**Benefits:**
Cobham’s Messenger 2 Transmitter – Camera Mount is an award-winning COFDM transmitter designed for professional cameraback applications. The M2T–CR is a rack–mount kit that converts the in–line Messenger 2 Transmitter – Camera Mount (M2T–C) camera transmitter into a rack–mounted COFDM transmitter. Both the M2T–CR’s front and top panels are hinged for easy installation and removal of the M2T–C. This allows the M2T–C to be used both as an on–camera transmitter as well as a rack–mounted transmitter.

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SOLBTX – Broadcast Transmitter

**Features:**
- SDI video input (optional)
- High quality video encoder
- ASI input and output
- 100mW output power

**Benefits:**
This rugged digital video transmitter is small and low powered enough to facilitate easy connection in any broadcast application. It incorporates an MPEG encoder with a compliant DVB–T modulator and 100mW RF up-converter into a single low power consumption package. Ideal for use in stadiums, studios and at sports events. Optional embedded AES128/256 encryption for security.
**SOLO – Broadcast Micro Transmitter**

**Features:**
- SDI video input (optional)
- High quality video encoder
- Low delay
- 100mW output power

**Benefits:**
This fully-featured COFDM digital video transmitter is ideal for high mobility sporting applications due to its compact size and low power consumption – with all modes of DVB-T modulation supported. MPEG encoding delivers excellent image quality retention, with an integral COFDM modulation. Establishes rugged wireless video links in all environments, with a typical range of 750m.

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**SOLBRX – Broadcast Receiver Decoder**

**Features:**
- Fully featured 8/7/6MHz demodulation
- ASI and SDI interfaces
- Comprehensive on-screen display (OSD) diagnostics for link analysis, including spectrum analyser
- Internal AES128/256 bit encryption (option)
- Very low delay video operation for real time applications

**Benefits:**
An economical diversity output digital video receiver, the SOLO Broadcast Receiver Decoder supports interoperability with other manufactures’ DVB-T systems and can receive the Cobham transmitter family. It operates a maximum ratio combining antenna diversity for fade and multipath elimination. Ideal for use in stadiums and studios, or as a film assist receiver.

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**SOLO2 – Broadcast Hand Held Receiver**

**Features:**
- Fully featured 8/7/6MHz demodulation
- Interoperable with other manufacturers
- Maximum ratio combining antenna diversity
- High Resolution Display
- Easy use menu display for channel changing

**Benefits:**
This fully portable receiver incorporates a high resolution, daylight viewable screen, with a diversity digital receiver, antennas and clip-on batteries, into a robust, lightweight housing. Ideal for use as a confidence or monitoring receiver at outside broadcast and sports events, or as a director viewing tool. Comes with two long life batteries for rapid interchange, and a battery charger.

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**SOLO4 – NanoVue**

**Features:**
- High resolution 4.3” display
- Easy to use touch screen
- Internal recording to SD card
- 4 hours battery life (via external pack)
- Compact weatherproof housing

**Benefits:**
A fully portable digital diversity receiver, the NanoVue incorporates a high resolution, daylight-viewable touch screen with receiver. Antenna and Clip on batteries. Ideal for use as a confidence or monitoring receiver at outside broadcast and sports events, or as a director viewing tool. Comes with two long life batteries for rapid interchange, and a battery charger.

For further information please call: +44 (0)1489 566 750 or email: tcsi.broadcast@cobham.com
**MediaMesh**

Features:
- Wireless mesh camera node connects to the base unit via a rugged, bi-directional COFDM link
- Carries all live facilities including presenter’s IFB over Bluetooth
- Wireless connectivity enables easy movement as the story demands
- Pelicase manages connectivity to outside world and around the outside broadcast location
- Simple to operate. Touchscreen interface enables set up by non-technical staff
- Connect to outside worlds/internet via satellite (using dish): 3G/4G, WiFi or Ethernet
- Dish connects to base unit via single cable for both power and signal
- Easy set-up. With base unit calculating position and direction, while beep tone indicates when satellite lock is achieved

Benefits:
Cobham MediaMesh features a unique bi-directional single frequency mesh network, which connects peripheral devices to the base unit – and means that capabilities and coverage areas can be extended by adding extra nodes. Optimum picture quality is assured with Cobham’s H.264 encoding software. And users can select from a variety of output paths according to whether they want to use the least expensive, the fastest or the highest data-rate routes, including:
- A satellite dish, giving access to inexpensive and high bit-rate capacity on domestic Ka-Band satellites;
- The public cellphone network, via two modem slots provided to access 3G/4G, WiFi hotspots, such as an internet cafe or hotel, for free capacity;
- A spare Ethernet socket on an office IT system or a purpose-built Ethernet ring.

**Broadcast IP Encoder**

Features:
- Very low delay mode (<65ms) **
- Dual SD or single HD video input
- Downsampling of SD and HD video input (resolution and/or frame rate)
- Broadcast quality High Profile H.264 video encoder
- Low power consumption
- Digital and analogue input options
- Up to 4 simultaneous unicast/multicast streams
- Built-in recording onto Micro SD card *
- Stereo audio input

Benefits:
The Broadcast IP Encoder is a High Definition digital video encoder, ideal for live video streaming applications. Designed to allow the secure transmission of video data across IP Networks. In addition it is easily connected to existing network infrastructure. The increased compression and efficiency of the MPEG4 H.264 encoder in Cobham’s SD and HD solution offers users additional bit rate savings with the added benefits of small size, low latency and low power consumption. The option of encoding two SD videos with no compromise in quality allows for a wide range of applications.

**NETNode IP Mesh – Mini**

Features:
- Up to 16 IP Mesh radios can be combined into a mobile network.
- Occupies from just 2.5MHz of bandwidth (3.0, 3.5, 5.0 and 6.0MHz also available)
- Provides up to 9.0Mb/s of IP data (depending on mode, number of nodes and range between nodes)
- Frequencies from 340MHz to 6GHz are available in discrete bands
- Mission Commander PC application to configure and monitor mesh

Benefits:
NETNode IP radios can be combined in a fluid, self-forming, self-healing mesh containing up to twelve radios. The Mini Mesh can provide over 6.0Mb/s of IP data (depending on mode, number of nodes and range between nodes). With output power of 100mW, it also suits bodyworn applications, offering real-time IP connectivity.

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**Broadcast IP Solutions**

### NETNode IP Mesh Phase 3
- **Plain**

#### Features:
- Up to 16 IP Mesh radios can be combined into a mobile network.
- Excellent RF penetration and performance in presence of multipath.
- Provides over 5.0 (6.0)Mb/s of IP data (depending on mode, number of nodes and range between nodes).
- Occupies just 2.5MHz of bandwidth (3.0, 3.5, 5.0 and 6.0MHz also available).
- Optional AES128 or AES256 encryption.

#### Benefits:
Cobham NETNode IP Mesh Radios Phase Three Plain can be combined into a fluid, self-forming, self-healing mesh network, for the transmission of video, audio and data across your own private network. Ideal for use in outside broadcast and news applications. Control is achieved using an inbuilt web browser or comprehensive Mission Commander PC application.

### NETNode IP Mesh Phase 3
- **Robust**

#### Features:
- Up to 16 IP Mesh radios can be combined into a mobile network.
- Occupies from just 2.5MHz of bandwidth (3.0, 3.5, 5.0 and 6.0MHz also available).
- Provides up to 9.0Mb/s of IP data (depending on mode, number of nodes and range between nodes).
- Frequencies from 340MHz to 6GHz are available in discrete bands.
- Mission Commander PC application to configure and monitor mesh.

#### Benefits:
NETNode IP Mesh Radios can be combined into a fluid, self-forming, self-healing mesh network. The NETNode IP Mesh Radio Phase Three Robust is a smaller, lighter more power-efficient model with higher bandwidth capability. This enhances its use in mobile and rapid deployments.

### Satellite Newsgathering

#### Satellite News Gathering Transmitter

#### Features:
The Satellite News Gathering Transmitter (SNGTX) is a high performance satellite modulator. The SNGTX is housed in a vented ½ 19'' box. The base model of the SNGTX supports SD MPEG2 encoding 4:2:0 and 4:2:2. The base model can be upgraded with the addition of MPEG4 H264 HD, BISS and DVB-S2 to create a fully specified professional satellite modulator. The SNGTX can provide DVB-S/S2 and DVB-SNG satellite modulation on a professional L-Band output.

#### Benefits:
The SNGTX is fully compliant with all the associated DVB-S/S2 and DVB-SNG specifications and offers a full range of modulation modes and FEC options (note S2 is a software upgrade).
**Camera Control System**

**Features:**
- Control of all major camera functions via standard camera manufacturers’ OCP
- Control of up to 4 cameras via single UHF channel
- External green and red tally outputs (open collector)
- Separate indoor (IDU) and outdoor (ODU) units for flexible TX antenna location via standard twisted-pair audio cable
- Wide frequency range 403–473MHz via IDU front panel (other bands available on request)
- Phantom Power upgrade for easy rigging

**Benefits:**
Next generation features in a rugged, easy to use ‘plug and play’ system architecture. Designed in close consultation with experienced operators, many of the undesirable features present on ‘first generation’ systems have been overcome.

The system interfaces with camera manufacturers’ standard control panels (OCPs), giving the operator complete familiarity with standard cabled systems and eliminating the need to rig separate OCPs when RF cameras are required.

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**SOLO – 1W Vehicle Amplifier**

**Features:**
- Frequency bands – 300 to 700 MHz, 3.10 to 3.40 GHz, 4.40 to 5.00 GHz and 5.70 to 5.90 GHz
- Dimensions – 263mm (L), 100mm (W), 64mm (H)
- Power in – 100mW, power out – 1W
- Specifications may vary depending on frequency
- Accessories supplied – RS232 Cable Lemo–DSUB9 3m, Vehicle Amp Power/Control Cable and 1W/5W Amp 750mm long RF cable

**Benefits:**
Compatible with SOLO video transmitters, with products extending across four frequency bands, the SOLO – 1W Vehicle Amplifier weighs 1 kg and operates in temperatures ranging from –10° to +50°C.
FCON – Field Controller

**Features:**
- In line standalone controller
- Or USB to RS232 converter
- Remote client for CryptoWizard

**Benefits:**
A discrete and comprehensive portable device, the Field Controller removes the need to take a PC into the field. It acts as a secure carriage mechanism for field management of encryption data. The Field Controller can also act as a remote agent for the Cobham CryptoWizard application when pre-loaded with encryption keys.

SOLAMP 500mW Booster

**Features:**
- Available for frequency ranges – 300–450MHz, 1.0–1.5, 1.5–2.0, 2.0–2.5, 3.0–3.5 and 4.4–5.0GHz
- Convenient small size
- Companion product for the SOLMTX

**Benefits:**
A 500mW power amplifier designed specifically to partner the Cobham SOLMTX transmitter. The ideal power amplifier for applications where space is at a premium and when additional range may be required.

Very Efficient Power Amplifier (VEPA-2W)

**Features:**
- Frequency bands: 1.4 to 1.6GHz, 1.7 to 1.85GHz, 1.7 to 2.4GHz, 1.99 to 2.5GHz, 2.2 to 2.7GHz, 4.4–5.0GHz
- Variable Efficiency with local switch or remote logic signal
- High Efficiency Mode – V 2 W out for 12 W DC in (Linear)
- High Linearity Mode – V 2 W with 25 dB MER
- 9–32 VDC Supply Voltage
- Compact and lightweight
- Reversed polarity protected

**Benefits:**
Cobham’s Very Efficient Power Amplifier (VEPA) series is specifically designed for COFDM and other demanding modulation schemes. However, they can also be used for non-linear modulation schemes like FM. This 31 W P1dB power amplifier provides up to 10 watts of COFDM power or 20 watts of FM power in a small economical package. This linear Class A power amplifier provides a maximum of 41dB of gain.

Very Efficient Power Amplifier (VEPA-10W)

**Features:**
- Frequency bands: 1.7 to 1.85GHz, 2.2 to 2.4GHz, 1.99 to 2.5GHz, 2.2 to 2.7GHz
- Very efficient
- High linearity
- Adjustable gain
- Local – rotary switch
- Remote control
- 9–32 VDC supply voltage
- Compact and lightweight

**Benefits:**
Cobham’s Very Efficient Power Amplifier (VEPA) series is specifically designed for COFDM and other demanding modulation schemes. However, they can also be used for non-linear modulation schemes like FM. This 31 W P1dB power amplifier provides up to 10 watts of COFDM power or 20 watts of FM power in a small economical package. This linear Class A power amplifier provides a maximum of 41dB of gain.

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SOLAMP – Robust 5W Amplifier

Features:
- Frequency bands: 300 to 450MHz, 1.00 to 2.5GHz, 3.00 to 3.50GHz and 3.40 to 3.70GHz
- Ultra linear or saturated operation
- RF ports are open and short protected
- Operating gain – 17dB typical
- Short circuit/over-voltage protection and reverse polarity protection
- 12 – 30 VDC power supply range

Benefits:
Bringing performance and reliability to microwave transmission of digitally modulated signals (COFDM, QPSK and BPSK), this amplifier minimises distortion, providing superior signal quality for complex multi-carrier modulation while minimising the DC power consumption. Optional small, fanned heat sink, automatic level control of RF output, water resistant enclosure, type N or TNC RF connectors (DB-9 for DC), and custom feed lines.

SOLO – 1W Booster Amplifier

Features:
- Frequency bands – 300 to 450MHz, 1.00 to 2.5GHz, 3.00 to 3.50GHz and 3.40 to 3.70GHz
- Dimensions – 95mm (L), 70mm (W), 32mm (H)
- Power in – 100mW, power out – 1W
- Specifications may vary depending on frequency
- Accessories supplied – RS232 Cable Lemo-DSUB9 3m, Bodyworn 1W Amp Power/Control Cable and Bodyworn 1W Amp RF Link Cable

Benefits:
Compatible with SOLO video transmitters, with products extending across four frequency bands, the SOLO – 1W Amplifier weighs 350g and operates in temperatures ranging from -20° to +70°C.

12dBi Compact Sector Antenna

Features:
Electrical
- Frequencies From 2000-2700MHz to 8100-8600MHz (other frequencies available)
- Feed Power Handling 50W
- Gain (typical) 12dBi
- Azimuth 3dB
- Beamwidth 112°
- Elevation 3dB
- Beamwidth 17°
- Polarisation Vertical

Physical
- Width/Diameter 79.4mm
- Height Dependent on product frequency range
- Weight 1.3Kg

Specification:
- Supplied with mounting kit 17BA for 2” poles, featuring mounting bracket for Down Converter.
Antennas and Down-converters

16.5dBi High Gain Sector Antenna

Specification:

**Electrical**
- Frequencies: From 2000-2400MHz to 8100-8600MHz (other frequencies available)
- Feed Power Handling: 50W
- Gain (typical): 16.5dBi
- Beamwidth: 64°
- Elevation 3dB Beamwidth: 8°
- Polarisation: Vertical

**Physical**
- Width/Diameter: 200mm
- Height: Dependent on product frequency range
- Weight: 4.0Kg

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2dBi Flexible Omni Antenna

Specification:

**Electrical**
- Frequencies: From 2000-2400MHz to 8100-8600MHz (other frequencies available)
- Feed Power Handling: 10W
- Gain (typical): 2dBi
- Elevation: 3dB
- Beamwidth: 65°
- Polarisation: Vertical

**Physical**
- Width/Diameter: 16mm
- Height: 290mm
- Weight: 160g (approx)

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2dBi Omni SMA Antenna

Specification:

**Electrical**
- Frequencies: 2000-2500MHz
- Feed Power Handling: 10W
- Gain (typical): 2dBi
- Elevation: 3dB
- Beamwidth: 65°
- Polarisation: Vertical

**Physical**
- Width/Diameter: 14mm
- Height: 86.6mm
- Weight: 20g (approx)

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3dBi Flexible Omni Antenna

Specification:

**Electrical**
- Frequencies: From 2000-2700MHz to 6000-7500MHz (other frequencies available)
- Feed Power Handling: 10W
- Gain (typical): 3dBi
- Elevation: 3dB
- Beamwidth: 78°
- Polarisation: Vertical

**Physical**
- Width/Diameter: 22mm
- Height: 290mm
- Weight: 160g (approx)
### 4.5dBi Omni Antenna

**Specification:**

**Electrical**

- **Frequencies:** From 2000-2400MHz to 8100-8600MHz (other frequencies available)
- **Feed Power Handling:** 10W
- **Gain (typical):** 4.5dBi
- **Beamwidth:** 40°
- **Elevation:** 3dB
- **Polarisation:** Vertical

**Physical**

- **Width/Diameter:** 25mm
- **Height:** Frequency-dependent
- **Weight:** 30g (approx)

### Antennas and Down-converters

### 4dBi Flexible Omni Antenna

**Specification:**

**Electrical**

- **Frequencies:** From 2000-2400MHz to 8100-8600MHz (other frequencies available)
- **Feed Power Handling:** 10W
- **Gain (typical):** 4dBi
- **Elevation:** 3dB
- **Beamwidth:** 35°
- **Polarisation:** Vertical

**Physical**

- **Width/Diameter:** 16mm
- **Height:** 340mm
- **Weight:** 180g (approx)

### Blade Antenna – Body Worn

**Specification:**

**Electrical**

- **Frequencies:** 1.26-1.40GHz, 1.60-1.70GHz, 1.15-1.26GHz
- **Feed Power Handling:** 10W
- **Gain (typical):** 1.3dBi
- **Azimuth:** 3dB
- **Elevation:** 3dB
- **Beamwidth:** 120°, 100°
- **Polarisation:** Vertical

**Physical**

- **Width/Diameter:** 37.5mm
- **Height:** 81.5mm
- **Weight:** 30g

### Helicopter Antenna Actuator

**Features:**

- A typical skid mount COFDM helicopter system is comprised of the following components:
  - HPT COFDM transmitter
  - 6dB Omni antenna
  - Actuator mechanism
  - Skidshoe
  - Actuator control box
  - Remote Control Unit (RCU)
  - Interconnecting cables

**Benefits:**

- The Helicopter Antenna Actuator System (HAAM) provides superior airborne transmission by extending the antenna below the airship, away from the body of the Helicopter. With a flip of a switch, the antenna is brought-up and safely stowed for landing. Designed for safety and convenience, this system can be installed in a few minutes and is designed to safely break away if you forget to retract the antenna.
**Broadcast Down-converters**

**Features:**
- Supplied in selectable high/low gain or fixed high and low gain variants
- Excellent low noise performance
- Designed for permanent outdoor deployment
- Variety of mounting kits available

**Benefits:**
The Cobham standard barrel down-converter is designed for permanent outdoor installations on the base of the receive antenna. The down-converter will successfully drive 10m of cable with down-converted UHF signal with no loss of performance.

**SOLO Fibre – Fibre Antenna Extender System**

**Features:**
- 'One cable solution' for radio camera receive and data control
- Location of antenna and down-converter can be extended
- TAC or SMPTE cable formats
- Fibre connectors can be customised
- Splash proof head units
- Rack mountable base units
- Return camera control data line

**Benefits:**
Cobham offers antenna fibre extension solutions, which allow prime location of receive units in outside broadcast areas for maximum monitoring flexibility.

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
Contact your Sales Account Manager or one of our Regional Sales Offices

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