Introduction

Welcome to the Cobham Tactical Communications and Surveillance Quick Guide product catalogue.

Cobham Tactical Communications and Surveillance has been at the forefront of innovation for over 50 years, developing leading edge surveillance and communication technologies for successful operations in demanding environments, from cities to the digital battlefield. Cobham’s mission critical solutions secure, share and communicate real-time situational awareness on land, in the water and in the air.

With a commitment to innovation and technological excellence, Cobham has a strong heritage of R&D which allows it to deliver high quality solutions as well as to work in partnership with its customers on bespoke projects.
As a leading designer of wireless communication technologies, Cobham works with military, law enforcement, counter-terror units, governments, corporations and system integrators on key surveillance and communication challenges. It supplies products and solutions across many markets including military platform communications, law enforcement and public safety, counter-terrorism and intelligence, situational awareness and critical infrastructure protection. Cobham also offers broadcast solutions for electronic news gathering, portable field monitoring and video-assist applications working with broadcast customers worldwide.

Cobham’s award-winning technologies include Command and Control Software, Video Surveillance, IP Mesh Solutions, Wireless Broadcast Solutions, Cameras and Sensors, Tagging, Tracking, Locate and Intercept, Tactical Communications and Integrated Surveillance Solutions as well as 24/7 Client Services.

Cobham’s team of dedicated engineers is continually developing new solutions directed by demanding customer requirements. The company’s strength is in developing complex technologies into simple-to-operate, robust solutions. System components have been designed for ease of integration into robotic and airborne platforms, as well as more conventional personnel and ground vehicle based applications.
1 Cameras and Sensors
<table>
<thead>
<tr>
<th>Cameras</th>
<th>Packaged Camera Surveillance Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Miniature Cameras – Close Range</strong></td>
<td><strong>SOLO4 – ClearCam</strong> 10</td>
</tr>
<tr>
<td>CAMuFCPT – Micro Size Forward Centre Pan Tilt</td>
<td><strong>COFDM Drop Camera Transmitter</strong> 10</td>
</tr>
<tr>
<td>CCAMXTX– Cylinder Camera</td>
<td><strong>COFDM Drop Camera Transmitter 3G</strong> 10</td>
</tr>
<tr>
<td>CAMDVHD - DualView HD to Twin SD Camera Kit</td>
<td><strong>Drop Camera Infrared Camera Head Option</strong> 10</td>
</tr>
<tr>
<td>CAMHDP - High Definition HDSDI Pinhole Camera</td>
<td><strong>NETNode Tactical Camera System</strong> 11</td>
</tr>
<tr>
<td><strong>Miniature Cameras – Medium Range</strong></td>
<td><strong>Electro-Optical Cameras – Second Generation</strong></td>
</tr>
<tr>
<td>CAMuSZPT – Switched Zoom Camera</td>
<td><strong>SEE Pan Tilt Zoom</strong> 11</td>
</tr>
<tr>
<td><strong>Miniature Cameras – Long Range</strong></td>
<td><strong>F50Z Thermal Pan Tilt Zoom</strong> 11</td>
</tr>
<tr>
<td>CAMPTZ – SD Pan Tilt Zoom</td>
<td><strong>SEE Thermal fV</strong> 11</td>
</tr>
<tr>
<td>CAMHDPTZ – HD Pan Tilt Zoom</td>
<td><strong>SEE fV Fixed Position w/zoom</strong> 11</td>
</tr>
<tr>
<td>CAMFCPTZ – Forward Centre Pan Tilt Zoom</td>
<td><strong>Mini HP Pan Tilt Zoom</strong> 12</td>
</tr>
<tr>
<td><strong>Miniature Cameras – Toolkits</strong></td>
<td><strong>Electro-Optical Cameras – Third Generation</strong></td>
</tr>
<tr>
<td>CAMuP – Micro Pinhole Camera</td>
<td><strong>Dual HP</strong> 12</td>
</tr>
<tr>
<td>CAMPKit – 15-70mm Pinhole Camera kit</td>
<td><strong>Dual HP vs Pan Tilt Zoom Thermal/Colour</strong> 12</td>
</tr>
<tr>
<td><strong>Miniature Camera Controllers</strong></td>
<td><strong>Electro-Optical Cameras – Carbide</strong></td>
</tr>
<tr>
<td>CAMHCPTZ – Hand Controller</td>
<td>Carbide C16 13</td>
</tr>
<tr>
<td>CAMTELRX – Telemetry Receiver for Camera Control</td>
<td>Carbide C16-C 13</td>
</tr>
<tr>
<td></td>
<td>Carbide C16-CM 13</td>
</tr>
<tr>
<td></td>
<td>C16 Aurora 13</td>
</tr>
<tr>
<td></td>
<td>Raven 13</td>
</tr>
<tr>
<td></td>
<td>Carbide C50-26XT 13</td>
</tr>
<tr>
<td></td>
<td>Carbide C50-TEC 13</td>
</tr>
<tr>
<td></td>
<td>Carbide C75 13</td>
</tr>
<tr>
<td></td>
<td>Carbide C150 14</td>
</tr>
<tr>
<td>Section</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td><strong>Electro-Optical Cameras – Marine</strong></td>
<td>Carbide HP Marine</td>
</tr>
<tr>
<td></td>
<td>Dual HP Marine</td>
</tr>
<tr>
<td></td>
<td>Mini HP Marine</td>
</tr>
<tr>
<td></td>
<td>SEE Marine CCTV</td>
</tr>
<tr>
<td><strong>Electro-Optical Mobile Camera Systems</strong></td>
<td>Mark – Mobile Acquisition</td>
</tr>
<tr>
<td></td>
<td>Reconnaissance Kits</td>
</tr>
<tr>
<td></td>
<td>Patrol CCTV</td>
</tr>
<tr>
<td></td>
<td>C16 Mobile Acquisition</td>
</tr>
<tr>
<td></td>
<td>Reconnaissance Kit (MARK)</td>
</tr>
<tr>
<td><strong>Electro-Optical Cameras – Accessories</strong></td>
<td>MAESTRO Stabilisation Module</td>
</tr>
<tr>
<td></td>
<td>LOOK Controller</td>
</tr>
<tr>
<td><strong>Sensors</strong></td>
<td>Nugget Sensor Range</td>
</tr>
<tr>
<td></td>
<td>Nugget Wireless Sensor Network Node</td>
</tr>
<tr>
<td></td>
<td>3G Nugget Interface</td>
</tr>
<tr>
<td></td>
<td>Nugget – Remote Ground Sensor Interface</td>
</tr>
<tr>
<td></td>
<td>Nugget – External Switched Output Interface</td>
</tr>
<tr>
<td><strong>Remote Ground Sensor (RGS) Range</strong></td>
<td>M8022 RGS System</td>
</tr>
<tr>
<td></td>
<td>M7209 RGS Transmitter</td>
</tr>
<tr>
<td></td>
<td>M7232 Magnetic Sensor</td>
</tr>
<tr>
<td></td>
<td>M7311 Handheld Receiver</td>
</tr>
<tr>
<td></td>
<td>M7618 Field Programmer</td>
</tr>
<tr>
<td><strong>Accessories</strong></td>
<td>M7433 5W RGS Relay</td>
</tr>
<tr>
<td></td>
<td>M7432 Merlin GSM Relay</td>
</tr>
<tr>
<td></td>
<td>M8008 Geophone</td>
</tr>
<tr>
<td></td>
<td>M8007 Break Wire</td>
</tr>
<tr>
<td></td>
<td>M8040 Passive Infra Red Sensor</td>
</tr>
<tr>
<td></td>
<td>M11405 Compact Camera Interface</td>
</tr>
</tbody>
</table>
Miniature Cameras – Medium Range

CAMuSZPT – Switched Zoom Camera

- Four separate lenses for switched zoom
- Effective 10x zoom
- Continuous pan, 270° tilt
- 0.004 Lux low light performance
- Rugged but lightweight sealed Delrin construction for IP66 rating

CCAMXTX – Cylinder Camera

- Effective 10x zoom
- Continuous pan, 270° tilt
- 0.004 Lux low light performance
- Rugged but lightweight sealed Delrin construction for IP66 rating

CAMDVHD – DualView HD to Twin SD Camera Kit

- Enables Pan, Tilt, Zoom through miniature HD pin hole camera
- Field of view: 3.3mm = 60 deg, 10mm = 20 deg
- Achieve wide and narrow angle views from a single HD camera
- 1 Lux sensitivity

CAMHDP – High Definition HDSDI Pinhole Camera

- Miniature 2 megapixel HD remote head camera
- Head just 17 x 17 x 16.5mm, including lens
- Consumes 1.3W of power
- Field of view: 3mm = 90 deg

Miniature Cameras – Close Range

CAMuFCPPT – Micro Size Forward Centre Pan Tilt

- Pan, tilt and zoom operation around a 1mm pinhole
- +/- 30° pan and tilt
- Excellent low light performance 0.002 Lux
- Virtually silent operation
- No zoom

CCAMTX – High Definition HDSDI Pinhole Camera

- Effective pixels - EIA - 768 (H) x 494 (V), CCIR - 752 (H) x 582 (V), resolution - 550TV lines
- Operating current - 200mA w/regulated 12VC in, video output - 1.0Vp-p composite, 75 Ohms
- SN ratio more than 48dB (AGC off)

CAMDVHD – DualView HD to Twin SD Camera Kit

- Enables Pan, Tilt, Zoom through miniature HD pin hole camera
- Field of view: 3.3mm = 60 deg, 10mm = 20 deg
- Achieve wide and narrow angle views from a single HD camera
- 1 Lux sensitivity

CAMHDP – High Definition HDSDI Pinhole Camera

- Miniature 2 megapixel HD remote head camera
- Head just 17 x 17 x 16.5mm, including lens
- Consumes 1.3W of power
- Field of view: 3mm = 90 deg

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
### Miniature Cameras – Long Range

<table>
<thead>
<tr>
<th>Product</th>
<th>Features</th>
</tr>
</thead>
</table>
| CAMPTZ – SD Pan Tilt Zoom | • Full pan tilt zoom functionality  
• 360º slip ring horizontal rotation and 250º vertical rotation  
• 26x zoom – 3.5 to 91mm  
• Low light capability – 0.5 Lux |
| CAMHDPTZ – HD Pan Tilt Zoom     | • HD-SDI output  
• Continuous pan and 270º tilt  
• Preset control  
• Rugged but lightweight sealed Delrin construction for IP66 rating  
• Virtually silent |
| CAMFCPTZ – Forward Centre Pan Tilt Zoom | • +/- 30º pan, 25º tilt  
• Requires a 45mm (2 inch) aperture  
• High spec camera with 28x zoom  
• 0.025 Lux low light performance, 0.0025 slow shutter speed  
• Rugged, lightweight sealed Delrin construction for IP66 rating  

### Miniature Cameras – Toolkits

<table>
<thead>
<tr>
<th>Product</th>
<th>Features</th>
</tr>
</thead>
</table>
| CAMuP – Micro Pinhole Camera | • Resolution of 520 TVL  
• Excellent low light performance at 0.008 Lux  
• Aperture size – f2  
• Field of view – 62º  
• Size 21 x 12 x 12mm, plus lens |
| CAMPKit – 15-70mm Pinhole Camera kit | • 15mm, 30mm, 45mm, and 70mm pre-focussed pinhole cameras  
• All also available individually  
• Ideal for quick deployment in room surveillance  
• Excellent low light performance 0.002 Lux |

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
Miniature Camera Controllers

CAMHCPTZ – Hand Controller
- Pan tilt zoom and preset controls
- Can be connected direct to Cobham cameras
- Outputs Visca (other camera languages available)
- Free software controller available as download

CAMTELRX – Telemetry Receiver for Camera Control
- Can be used to control pan tilt zoom cameras
- Acts as receiver half of solutions such as Nanovue or MicroVue II
- Temperature range of -10°C to +50°C
- Free software application available for controlling Cobham cameras

Packaged Camera Surveillance Solutions

SOLO4 – ClearCam
- External DC input for long duration deployments
- External sensor trigger inputs to wake camera from sleep mode
- 36x optical zoom, low light colour camera
- 400° pan, -20° to +40° tilt

COFDM Drop Camera Transmitter
- Robust chassis with COFDM digital video transmitter, battery, camera and microphone
- Mounting camera 3.6mm lens
- Replacement 9 and 16mm lens
- AES 128/256 encryption

COFDM Drop Camera Transmitter 3G
- Robust chassis with COFDM digital video transmitter, 3G modem, battery and camera
- Housed in rugged IP66 housing suitable for outdoor deployment
- Replacement 9 and 16mm lens

Drop Camera Infrared Camera Head Option
- Infrared LED provides illumination to 5m and some gain to 10m
- Microphone incorporated in the camera head
- Field of view = 62°

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
Packaged Camera Surveillance Solutions

**NETNode Tactical Camera System**

- Robust weatherproof package
- Typically operates at a range of up to 1km in the 2W mode
- Supplied in a kit with a tripod for rapid deployment
- PTZ camera, encoder, IP Mesh and battery all in one
- Multiple camera mounting options

**Electro-Optical Cameras – Second Generation**

<table>
<thead>
<tr>
<th>SEE Pan Tilt Zoom</th>
<th>F50Z Thermal Pan Tilt Zoom</th>
<th>SEE Thermal fV</th>
<th>SEE fV Fixed Position w/zoom</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="SEE Pan Tilt Zoom" /></td>
<td><img src="image" alt="F50Z Thermal Pan Tilt Zoom" /></td>
<td><img src="image" alt="SEE Thermal fV" /></td>
<td><img src="image" alt="SEE fV Fixed Position w/zoom" /></td>
</tr>
<tr>
<td>- Colour camera</td>
<td>- 50mm thermal imager with 36x zoom colour camera</td>
<td>- Multiple lens options available</td>
<td>- Colour camera</td>
</tr>
<tr>
<td>- 36x optical, 12x digital</td>
<td>- Uncooled 320 x 240 VOx Microbolometer</td>
<td>- 320 x 240 option</td>
<td>- 36x optical, 12x digital zoom with image stabilisation</td>
</tr>
<tr>
<td>- Image stabilisation</td>
<td>- 23° x 7° field of view</td>
<td>- 640 x 480 option</td>
<td>- Auto focus</td>
</tr>
<tr>
<td>- Auto focus</td>
<td>- 7.5 to 13.5µm</td>
<td>- NTSC or PAL options</td>
<td>- Nitrogen pressurised</td>
</tr>
<tr>
<td>- Enhanced Visca or Pelco D</td>
<td>- RS232 or RS422</td>
<td>- 35mm, 50mm and 60mm lenses standard</td>
<td>- Articulating mount option</td>
</tr>
<tr>
<td>- Cast aluminium</td>
<td>- Enhanced Visca or Pelco D</td>
<td></td>
<td>- .05 Lux NIR mode</td>
</tr>
<tr>
<td>- Nitrogen pressurised</td>
<td>- 120° per second</td>
<td></td>
<td>- Cast aluminium</td>
</tr>
<tr>
<td>- 140° per second</td>
<td>- Cast aluminium</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Electro-Optical Cameras – Third Generation**

<table>
<thead>
<tr>
<th>Dual HP</th>
<th>Dual HP vs Pan Tilt Zoom Thermal/Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 36x optical, 12x digital zoom colour camera</td>
<td>• 36x colour camera</td>
</tr>
<tr>
<td>• Image stabilisation</td>
<td>• Thermal camera</td>
</tr>
<tr>
<td>• Auto focus</td>
<td>• Uncooled 320 x 240 VOx Microbolometer</td>
</tr>
<tr>
<td>• Nitrogen pressurised</td>
<td>• 23° x 7° field of view</td>
</tr>
<tr>
<td>• .05 Lux NIR mode</td>
<td>• 7.5–13.5µm</td>
</tr>
<tr>
<td>• RS232 or RS422</td>
<td>• Internal video switch</td>
</tr>
<tr>
<td>• Visca, Pelco D/P</td>
<td>• RS232 or RS422</td>
</tr>
<tr>
<td>• Continuous stealth rotation</td>
<td>• Enhanced Visca or Pelco D</td>
</tr>
<tr>
<td>• 170° per second</td>
<td>• 170° per second</td>
</tr>
</tbody>
</table>

**Mini HP Pan Tilt Zoom**

- 36x colour camera
- Thermal camera
- Uncooled 320 x 240 VOx Microbolometer
- 23° x 7° field of view
- 7.5–13.5µm
- Internal video switch
- RS232 or RS422
- Enhanced Visca or Pelco D
- Continuous stealth rotation

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
### Electro-Optical Cameras – Carbide

<table>
<thead>
<tr>
<th>Carbide C16</th>
<th>Carbide C16-C</th>
<th>Carbide C16-CM</th>
<th>C16 Aurora</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
<tr>
<td>• 640 x 480 uncooled thermal with continuous zoom choices up to 150mm</td>
<td>• Fixed view 100mm lens or 15 - 100mm continuous or 25 - 150mm continuous</td>
<td>• Continuous zoom 17 - 217mm, f/3.25</td>
<td>• Removable lamp moves to Aurora Battery Stick</td>
</tr>
<tr>
<td>• Doubler available on 36x optical zoom day camera</td>
<td>• Uncooled 640 x 480 vanadium oxide FPA</td>
<td>• Cooled 640 x 480, ITAR restricted</td>
<td>• Military proven high intensity white light</td>
</tr>
<tr>
<td>• Silent operation</td>
<td>• 17µm pitch</td>
<td>• MCT microbolometer</td>
<td>• Optional NIR filter</td>
</tr>
<tr>
<td>• Main body weighs 4.8kg, fully loaded weight of less than 10kg</td>
<td>• Dual streaming video, with video switch being optional</td>
<td>• 25° x 2° field of view</td>
<td>• 360° continuous pan rotation</td>
</tr>
</tbody>
</table>

### Electro-Optical Cameras – Raven

<table>
<thead>
<tr>
<th>Raven</th>
<th>Carbide C50-26XT</th>
<th>Carbide C50-TEC</th>
<th>Carbide C75</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
<td><img src="image7.png" alt="Image" /></td>
<td><img src="image8.png" alt="Image" /></td>
</tr>
<tr>
<td>• Flexible folding solar panel</td>
<td>• 36x optical zoom colour camera</td>
<td>• Thermoelectric cooler</td>
<td>• 365° pan angle range</td>
</tr>
<tr>
<td>• Optional integrated battery system</td>
<td>• Various thermal options available</td>
<td>• Slip ring for 360° continuous rotation</td>
<td>• 90° tilt angle range</td>
</tr>
<tr>
<td>• Frequency adjustable COFDM mesh radio</td>
<td>• 360° rotation</td>
<td>• Maximum tilt and pan speeds of 25°/s</td>
<td>• Maximum tilt and pan speeds of 25°/s</td>
</tr>
<tr>
<td>• Non-line of sight transmission possible</td>
<td>• 40° per second</td>
<td>• Cast aluminium housing</td>
<td>• Cast aluminium housing</td>
</tr>
<tr>
<td>• Low-latency MPEG4 video</td>
<td></td>
<td>• Operating temperature = -40°C to +75°C</td>
<td>• Operating temperature = -40°C to +75°C</td>
</tr>
<tr>
<td>• Weatherproof radio enclosure</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For further information please call: +44 (0) 1489 566 750 or email: tcs.whiteley.sales@cobham.com
### Electro-Optical Cameras – Marine

<table>
<thead>
<tr>
<th>Carbide HP Marine</th>
<th>Dual HP Marine</th>
<th>Mini HP Marine</th>
<th>SEE Marine CCTV</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Dual streaming video (internal video switch optional)</td>
<td>• Simultaneous colour and thermal video streams</td>
<td>• 36x optical day camera</td>
<td>• Hardened pan/tilt/zoom colour camera</td>
</tr>
<tr>
<td>• Multiple thermal lens offerings</td>
<td>• 14º horizontal field of view</td>
<td>• Image stabilisation optional</td>
<td>• Auto focus</td>
</tr>
<tr>
<td>• RS232 or RS422</td>
<td>• 180º per second</td>
<td>• Auto focus</td>
<td>• 36x optical zoom</td>
</tr>
<tr>
<td>• 120º per second</td>
<td>• RS232 or RS422</td>
<td>• Long life performance in harsh environments</td>
<td>• 120º per second</td>
</tr>
<tr>
<td>• Uncooled 640 x 480 vanadium oxide FPA</td>
<td>• Long life in harsh environments such as continuous salt water spray</td>
<td>• 180º per second</td>
<td>• RS232 or RS422</td>
</tr>
<tr>
<td>Carbide C150</td>
<td></td>
<td>• Multiple thermal lens offerings</td>
<td></td>
</tr>
<tr>
<td>• Carries a total payload of 68kg</td>
<td></td>
<td>• 36x optical day camera</td>
<td></td>
</tr>
<tr>
<td>• Bore-sight adjustment mechanisms are optional for highly accurate alignment of all sensors</td>
<td></td>
<td>• Image stabilisation optional</td>
<td></td>
</tr>
<tr>
<td>• Temperature range = -40ºC to +75ºC</td>
<td></td>
<td>• Auto focus</td>
<td></td>
</tr>
<tr>
<td>• 0.0045º resolution</td>
<td></td>
<td>• Long life performance in harsh environments</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 180º per second</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Also available with thermal options</td>
<td></td>
</tr>
</tbody>
</table>
Electro-Optical Mobile Camera Systems

MARK – Mobile Acquisition Reconnaissance Kits

- SEE, Mini HP or Dual HP
- 762mm X 508mm x 280mm case part (430010)
- Tripod - aluminium part (400020)
- Look Controller 6.5” TFT display
- Interconnect cable Quickconnect or BigFoot

Patrol CCTV

- SEE, Mini HP or Dual HP camera option
- Look Controller 6.5” TFT display
- Interconnect cable Quickconnect or BigFoot
- 1.83m cable (700025) cigarette adapter
- Thule clamp (500030)

C16 Mobile Acquisition Reconnaissance Kit (MARK)

- Look Controller
- Carbide 16 with 640 x 480 thermal, 100mm 26x optical colour camera (other options available)
- Articulated windshield mount
- Magnetic camera mount
- BigFoot mounting base

Electro-Optical Cameras – Accessories

MAESTRO Stabilisation Module

- 3 axis inertial measurement unit
- Up to 6.17 mrad image stabilisation
- 93.5% input disturbance rejection
- Compatible with all Cobham HP camera systems
- Utilises Pelco D input
- Control aluminium enclosure

LOOK Controller

- 6.5” TFT display
- 960 x 234 format
- 9-36 VDC input
- 3 axis joystick twist to zoom
- Proportional pan/tilt
- 2.5mm power input
- 2 RCA outputs for audio/video
- 15 pin hi def input

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
## Nugget Sensor Range

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
</tbody>
</table>

- Multihop mesh capability
- Re-configurable transceiver frequency within the band
- Sensors – internal PIR, internal tamper/seismic, ambient light, break (trip)
- GPS location receiver
- Ability to monitor a deployed Nugget sensor network anywhere in the world that has a 2G/3G link
- 3G/2G interface to the Cobham range of Nugget sensors
- Can be deployed alongside Nugget sensors on long duration missions
- Simple connection to Nugget via single cable
- Enables use of existing Remote Ground Sensors within the Nugget mesh system
- Compact and rugged
- Weatherproof housing compliant to IP67
- 4 I/O channels configurable to either an input or an output
- Compact and rugged, with weatherproof housing compliant to IP67
- Automatic switching of equipment on trigger input
- Remote switching of equipment

## Remote Ground Sensor Range

<table>
<thead>
<tr>
<th>M8022 RGS System</th>
<th>M7209 RGS Transmitter</th>
<th>M7232 Magnetic Sensor</th>
<th>M7311 Handheld Receiver</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
<td><img src="image7.png" alt="Image" /></td>
<td><img src="image8.png" alt="Image" /></td>
</tr>
</tbody>
</table>

- Portable area/perimeter surveillance system
- Covert, rugged and designed for quick deployment
- Supports a wide range of sensors
- Trigger output for video systems and alarm event logging
- Low power device, typically deployed for up to 25 days
- Configured by RS232
- Lightweight – just 0.25kg
- Rugged, coping with temperatures between -10°C to +55°C
- Detects movement of metal objects within range (e.g. doors, field gates)
- Interfaces with alarm transmitter and other ‘make to alarm’ systems
- Adjustable sensitivity
- Rugged compact unit with integral battery
- Up to 64 transmitters monitored with one receiver
- Compatible with ground sensor equipment
- Alarm event logging
- Exceptionally low error rate
- Can be linked to GSM or satellite comms network

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
### Remote Ground Sensor Range

**M7618 Field Programmer**
- Field configuration for Cobham Remote Ground Sensor (RGS)
- Allows RGS unit settings to be downloaded/confirmed
- Simple to use menu-driven interface
- Auto power-on and power-off to conserve battery power

### Accessories

<table>
<thead>
<tr>
<th>Product</th>
<th>Features</th>
</tr>
</thead>
</table>
| M7433 5W RGS Relay | - Integral Cobham Remote Ground Sensor alarm receiver and dual band GSM modem  
| M7432 Merlin GSM Relay | - Sends RGS alarms via SMS and/or GSM data call  
| M8008 Geophone | - Remote configuration  
| M8007 Break Wire | - Logging of alarm events and trigger outputs for other assets (e.g. video recording)  
|               | - Typical range of 10 to 20m  
|               | - No signal emitted, helping reduce likelihood of detection  
|               | - Very low current – powered from M7209 processor  
|               | - Interfaces with Cobham Remote Ground Sensor transmitter  

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
<table>
<thead>
<tr>
<th>M8040 Passive Infra Red Sensor</th>
<th>M11405 Compact Camera Interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Choice of passive sensor units</td>
<td>• Integrated trigger and telemetry receiver with video transmitter</td>
</tr>
<tr>
<td>• Low probability of detection</td>
<td>• Extended deployed battery life</td>
</tr>
<tr>
<td>• Very low current</td>
<td>• The transmit power is 100mW and a range of 500 metres in the urban environment is normally achieved</td>
</tr>
<tr>
<td>• Interface with Cobham Remote Ground Sensor transmitter/processor</td>
<td></td>
</tr>
</tbody>
</table>

Accessories

M8040 Passive Infra Red Sensor

- Choice of passive sensor units
- Low probability of detection
- Very low current
- Interface with Cobham Remote Ground Sensor transmitter/processor

M11405 Compact Camera Interface

- Integrated trigger and telemetry receiver with video transmitter
- Extended deployed battery life
- The transmit power is 100mW and a range of 500 metres in the urban environment is normally achieved
2 Command and Control Software
Command and Control Software

<table>
<thead>
<tr>
<th>Tracking Management Solutions</th>
<th>21</th>
</tr>
</thead>
<tbody>
<tr>
<td>UniTrac</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Network Control Software</th>
<th>21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission Commander – Tactical</td>
<td></td>
</tr>
<tr>
<td>Mission Commander – Strategic</td>
<td></td>
</tr>
</tbody>
</table>
UniTrac is a unified tracking management system that allows seamless integration using satellite and terrestrial communications and an extensive variety of tracking devices.

It allows two-way communication between multiple satellite, cellular and radio frequency providers and has over forty different types of tracking communications links, allowing customers the ability to utilise multiple tracking devices, all integrated under a single UniTrac architecture.

UniTrac mines tracking and sensor data, delivering a visual and strategic picture onto any stationary or mobile computer, with automated, simultaneous and immediate notifications of alerts via email, pager, and voice dialler. UniTrac allows any number of links to feed multiple displays simultaneously. Return communications such as GPS locations, alerts, and boundary violations that reach UniTrac are instantly distributed to the computers, mobile phones, or other hand held devices that the user designates.

Network Control Software

Mission Commander - Tactical

- Intelligent management of COFDM video and IP transmission systems
- Tactical deployment
- Works with both online and offline maps
- Advanced sensor event handling
- Integrates with public and private networks
- Automated video management
- Frequency and channel mapping
- Integrates with third-party network tools such as IP cameras and web apps

Mission Commander - Strategic

- Full multi-server replication and failover
- Supports multiple client workstations
- Works with both online and offline maps
- Advanced sensor event handling
- Integrates with public & private networks
- Frequency and channel mapping
- Integrates with third-party network tools such as IP cameras and web apps

For further information please call: +44 (0)1489 566 750
or email: tcs.whiteley.sales@cobham.com
3 IP Mesh
### IP Mesh Systems
- NETNode IP Mesh Phase 3 – Plain 25
- NETNode IP Mesh Phase 3 – Robust 25
- NETNode IP Mesh Phase 3 – Quad Robust 25
- Infrastructure Node 25
- NETNode IP Mesh – Mini Plain 25
- NETNode IP Mesh – Mini Plain Amp Enabled 25
- NETNode IP Mesh – Mini Robust 25
- NETNodeIS – Intrinsically Safe 25
- Duo Phase 2 IP and Video Radio 26
- NETNode IP Mesh Phase 2 – Plain 26
- NETNode IP Mesh Phase 2 – Robust 26

### IP Backhaul Products
- NETWorker 3G 26

### Accessories
- NETBAT – Mesh Battery Pack 27
- NETNodeAMP Mini Robust 27
- 1W/2W Amplifier 27
- IP Hardware Decoder 27
- IP Encoder 27
- Mesh Activation Unit 27

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
### IP Mesh Systems

#### NETNode IP Mesh Phase 3 – Plain
- 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 9.0Mbps of IP data (depending on mode, number of nodes and range between nodes)

#### NETNode IP Mesh Phase 3 – Robust
- 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 9.0Mbps of IP data (depending on mode, number of nodes and range between nodes)
- Four individual diversity receive antennas and a dedicated single transmit antenna
- Improved sensitivity by up to 3dB compared to dual diversity
- Further RX sensitivity from deploying with four sector antennas for 360 degree coverage

#### NETNode IP Mesh Phase 3 – Quad Robust
- 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 9.0Mbps of IP data (Phase 3 Mesh only)
- Not frequency specific, can be used with remote antennae

#### Infrastructure Node

#### NETNode IS
- 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 7.0Mbps of IP data (depending on mode, number of nodes and range between nodes)

### IP Mesh Systems

#### NETNode IP Mesh – Mini Plain
- 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 9.0Mbps of IP data (depending on mode, number of nodes and range between nodes)

#### NETNode IP Mesh – Mini Plain Amp Enabled
- 2 SMA connections to enable link to amplifier and range extension of up to 2W
- 100mW – 500m non line-of-sight urban, 1km+ line of sight
- Output frequency – 2.17 to 2.5GHz, 4.4 to 5.0GHz
- AES128 or AES256 encryption options

#### NETNode IP Mesh – Mini Robust
- Weighs just 615 grams
- Output power of 100mW
- Suits body worn applications for real time IP connectivity
- Designed to meet IP67 standards
- Mesh capacity of up to 8.8Mbps

#### NETNode IS – Intrinsically Safe
- 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 5.0 MHz also available)
- Provides up to 7.0Mbps of IP data (depending on mode, number of nodes and range between nodes)

---

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
### IP Mesh Systems

<table>
<thead>
<tr>
<th>Duo Phase 2 IP and Video Radio</th>
<th>NETNode IP Mesh Phase 2 – Plain</th>
<th>NETNode IP Mesh Phase 2 – Robust</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Occupies from just 2.5MHz of bandwidth</td>
<td>- Up to 16 IP Mesh radios can be combined into a mobile network</td>
<td>- Up to 16 IP Mesh radios can be combined into a mobile network</td>
</tr>
<tr>
<td>- Provides up to 4.8Mb/s of IP and video data in the point to point duo link</td>
<td>- Occupies from just 2.5MHz of bandwidth (3.0, 3.5, and 5.0MHz also available)</td>
<td>- Occupies from just 2.5MHz of bandwidth (3.0, 3.5, and 5.0MHz also available)</td>
</tr>
<tr>
<td>- Frequencies from 340MHz to 6GHz are available in discrete bands</td>
<td>- Provides up to 7.0Mb/s of IP data (depending on mode, number of nodes and range between nodes)</td>
<td>- Provides up to 7.0Mb/s of IP data (depending on mode, number of nodes and range between nodes)</td>
</tr>
<tr>
<td>- Available in plain and robust enclosures</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### IP Backhaul Products

<table>
<thead>
<tr>
<th>NETWorker 3G</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Next generation wireless IP interface module</td>
</tr>
<tr>
<td>- Receives video through Ethernet, USB OTG and Cobham proprietary inputs</td>
</tr>
<tr>
<td>- Retransmits data over 3G and WLAN</td>
</tr>
<tr>
<td>- Equipped with Penta-band HSPA+ model and automatic Dual SIM capability</td>
</tr>
</tbody>
</table>

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
**Accessories**

**NETBAT – Mesh Battery Pack**
- Dimensions – 160mm (L) x 80mm (W) x 33mm (H)
- 5.2Ah capacity
- 14.8v with Gas Gauge
- LED Bar Charge Indicator
- Lemo output connector

**NETNodeAMP Mini Robust 1W/2W Amplifier**
- Bolt-on amplifier, increasing power output of NETNode Mini Robust from 100mW up to 2W
- Gives a rugged non line-of-sight link of around 1km
- Line-of-sight operation to several kilometres
- Large variety of frequency bands

**IP Hardware Decoder**
- Ethernet control via web browser or Mission Commander
- RS232 interface to set up Ethernet parameters
- Internal AES128 or 256 decryption
- Automatically selected MPEG2, MPEG4 or mixed mode (where applicable)

**IP Encoder**
- 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

**IP Mesh Systems**

**Mesh Activation Unit**
- Remote power switching for NETNode Phase 3 unit
- Re-configurable transceiver frequency within the band
- Internal tamper/seismic sensor
- External sensor interface capable of adding a further sensor as required

---

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
4 Tactical Communications
# Tactical Communications

<table>
<thead>
<tr>
<th>TacG2 (AN/VIC-5)</th>
<th>Soldier Communications</th>
</tr>
</thead>
<tbody>
<tr>
<td>TacG2 – Vehicle Intercom System (VIS)</td>
<td>Eagle Radio</td>
</tr>
<tr>
<td>Tactical Gateway Station</td>
<td>Eagle Radio – Mounted</td>
</tr>
<tr>
<td>Advanced and Enhanced Crew Stations</td>
<td>Eagle Radio – Battery Charger</td>
</tr>
<tr>
<td>Infantry Crew Station</td>
<td>Eagle Radio – Rechargeable Battery Pack</td>
</tr>
<tr>
<td>Expander Dismounted Interface</td>
<td></td>
</tr>
<tr>
<td>M200E Router</td>
<td></td>
</tr>
<tr>
<td><strong>ROVIS (AN/VIC-3)</strong></td>
<td></td>
</tr>
<tr>
<td>ROVIS (AN/VIC-3)</td>
<td></td>
</tr>
<tr>
<td>Vehicle Intercom System (VIS)</td>
<td></td>
</tr>
<tr>
<td>Master Control Station</td>
<td></td>
</tr>
<tr>
<td>Full Function Crew Station</td>
<td></td>
</tr>
</tbody>
</table>

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
TacG2 (AN/VIC-5)

TacG2 Vehicle Intercom System (VIS)

- Backwards compatibility with AN/VIC-3
- Increased functionality through module insertion
- Configurable to meet the requirements of different users and vehicle types
- Superior reliability
- Ease-of-use a key design feature

Tactical Gateway Station

- Intercom in 1 box – 2 crew & 3 Combat Network Radios (CNR)
- Programming of all system parameters
- Two Advanced Crew Stations embedded within unit
- Three radio ports with RS232 data for radio remote control
- IP gateway
- Ethernet connection

Advanced and Enhanced Crew Stations

- Ethernet/RS232 connection for data transfer and SIP phone
- Custom Expansion Unit
- Displays (Advanced Crew Station only)
- Selective calling
- Live/Vox/Push-To-Talk (PTT) selection
- Noise-tracking Vox

Infantry Crew Station

- Provides one headset port (supporting both binaural and monaural headset types)
- 10/100Mbps Ethernet Port (for connection to the Expander Dismounted Interface unit)

TacG2 (AN/VIC-5)

Expander Dismounted Interface

- Incorporates a single LED
- Pushbutton switch
- A tone generator can be distributed, using the Expander Dismounted Interface (EDI), throughout the intercom when an external operator requests connection

M200E Router

- Point-to-point private calls to other users in the network
- Conference calls between users in the network
- Users able to share a common intercom between the networked vehicles
- Radio assets can be shared between the networked vehicles

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
**ROVIS (AN/VIC-3)**

**Vehicle Intercom System (VIS)**

- Provides high quality external communications over Combat Net Radio (CNR)
- Full control of internal and external communications via the FFCS
- Up to six radios and users per system
- Ring cable connection for alternative routing of signal data and power

**Master Control Station**

- Separate protected power for both system modules and Active Noise Reduction (ANR) headsets
- Alarm inputs
- Two wire field telephone connection
- Loudspeaker connection with volume control
- Three programmable modes for different operational scenarios

**Full Function Crew Station**

- Designed for simplicity of use under all environmental conditions
- Provides the user with selection of working and monitor radios
- Push-To-Talk operation
- Live microphone
- Noise following dynamic Vox
- Emergency override

---

**Soldier Communications**

**Eagle Radio**

- Full duplex, 2.4GHz Squad Radio
- MANET operation with flexible network capability
- Range – 800m (point to point) to 3km (rebroadcast)
- Simultaneous voice and data communications
- Automatic rebroadcast and retransmission, group splitting and reforming

**Eagle Radio – Mounted**

- Powered by the vehicle intercom
- Connects to a spare headset port on any crew station position
- Access to intercom may be either by using the Eagle’s Vox or by using the primary Push-To-Talk (PTT)
- The second Eagle PTT can be used to transmit over any one vehicle mounted Combat Net Radio

**Eagle Radio – Battery Charger**

- Provides a multi-colour LED charge indicator
- Capable of sequentially charging up to eight batteries, one at a time, completely unattended

**Eagle Radio – Rechargeable Battery Pack**

- Lithium Ion rechargeable battery
- Achieves 90% of the battery’s capacity even after 500 cycles
- Provides a minimum of 12 hours operation in typical operating conditions
- Includes “State of Charge” gauge with 5 LED segments displaying available energy at the actual battery temperature, in increments of 20%

---

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
Tagging, Tracking, Locating and Intercept
Tagging, Tracking, Locating and Intercept

<table>
<thead>
<tr>
<th>GPS Tracking</th>
<th>35</th>
</tr>
</thead>
<tbody>
<tr>
<td>GrizzlyM+</td>
<td></td>
</tr>
<tr>
<td>GL200</td>
<td></td>
</tr>
<tr>
<td>9602 Iridium</td>
<td></td>
</tr>
<tr>
<td>SHOUT Nano</td>
<td></td>
</tr>
<tr>
<td>UniTrac BOBCAT</td>
<td></td>
</tr>
</tbody>
</table>
### GPS Tracking

<table>
<thead>
<tr>
<th>GrizzlyM+</th>
<th>GL200</th>
<th>9602 Iridium</th>
<th>SHOUT Nano</th>
</tr>
</thead>
</table>
| - Programmable start and stop motion sense with adjustable sensitivity  
  - Variable position reporting frequency based on motion  
  - Sleep mode with motion wakeup  
  - Outstanding low power capabilities  
  - Included antennas – Globalstar patch and GPS patch  
  - Detachable antennas | - Water resistant  
  - Embedded full-featured @Track protocol  
  - Built in uBlox GPS chipset with -162dBm tracking sensitivity-  
  - 148dBm autonomous sensitivity for fast Time-To-First-Fix (TTFF) and high accuracy  
  - Built in GSM/GPS antennas  
  - MMCX type RF connector for external GPS antenna | - Single board transceiver  
  - Small form factor  
  - No SIM card  
  - Designed to be incorporated into an OEM solution  
  - Restriction of Hazardous Substance (RoHS) compliant | - Supports SBD data  
  - AES 256-bit encryption  
  - 50-Channel GPS receiver  
  - Motion sensor  
  - Audio alert  
  - Battery operated (2.2A-Hr)  
  - USB Interface (used to charge battery) |

### UniTrac BOBCAT

- Motion sensing – programmable start and stop motion sense with adjustable sensitivity.  
  - Variable position reporting frequency based on motion  
  - Sleep mode with motion wakeup for outstanding low power capabilities  
  - AES 256-bit encryption  
  - Size: 79.0mm x 38.0mm x 10.8mm

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
Receivers
SOLOS – Receiver 40
Messenger VETA Receiver Decoder* 40
Palladium Digital Receiver* 40
SOLO4 – Receiver 40
Messenger 2 Decoder* 40
Messenger Smart Receiver* 40
VETA Receiver* 40

Robust Receivers
SOLO4 – Miniature Robust Receiver 41
SOLO Central Receiver – Robust 41

Infrastructure Receivers
PRORX – Receiver Decoder 41
SOLO Central Receiver* 41
SOLO Central Receiver – Robust 41
Messenger 2 Decoder HD/SD AVC/H264* 41
Messenger Portable Decoder* 42
Messenger Smart Receiver* 42
Messenger VETA Receiver Decoder* 42

Tactical Receivers
SOLO4 – NanoVue Plus 42
SOLO4 – NanoVue – Robust 42
SOLO4 – MicroVue 2 42
SOLO4 – MultiVue Commander Receiver 42
Messenger VETA Monitor Receiver 43
VETA Monitor Receiver* 43

Transmitters
SOLO5 – Transmitter 43
SOLO6 – Dual Band Transmitter 43
SOLO7 – Nano Transmitter 43
SOLO7 – HD Nano Transmitter 43
Video Microwave Digital Transmitter* 44
SOLO4 – Micro Transmitter* 44
Messenger 2 Encoder Module 44
Messenger 2 Enhanced High Power Transmitter 44
Messenger 2 Transmitter* 44
SOLO H.264 SD/HD COFDM Transmitter 44
Palladium II Digital Video Transmitter* 44
Handheld Video Transmitter II 44
COFDM Drop Camera Transmitter 3G 45
VETA Compact High Power Transmitter* 45
VETA Miniature Transmitter* 45
COFDM Drop Camera Transmitter 45

Robust Transmitters
SOLO4 – Miniature Robust Transmitter 45

Telemetry
SOLO4 – Audio and Telemetry Receiver 46
SOLO4 – Audio and Telemetry Transmitter 46

FM Receivers
Medium Receiver 46
Xtra Small Receiver 46

FM Transmitters
Nano Transmitter 47
Small Transmitter 47

The items marked with * are legacy products and are not recommended for new applications

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
Airborne
- Messenger 2 Transmitter Enhanced 47
- VETA Compact High Power Transmitter 47
- Messenger 2 Enhanced
- Compact High-Power Transmitter 47
- VETA High Power Transmitter 47
- High Power Transmitter 48
- Messenger 2 Compact
- High Power Transmitter 48
- PRORX – Receiver Decoder 48
- Messenger Smart Receiver* 48
- Messenger 2 Decoder HD/SD AVC/H264* 48
- Messenger VETA Receiver Decoder* 48
- Messenger Portable Decoder* 48

Accessories
- FCON – Field Controller 49
- Down-converters 49
- Bias-T Coaxial Power Inserter 49
- Antenna Switch Unit – ASU 49

Accessories – Amplifiers
- SOLO – 1W Booster Amplifier 49
- SOLO – 1W Vehicle Amplifier 49
- SOLAMP 500mW Booster 49
- Very Efficient Power Amplifier (VEPA-2W) 49
- Very Efficient Power Amplifier (VEPA-10W) 50
- SOLAMP Robust SW Amplifier 50

Accessories – Antennas
- 12dBi Compact Sector Antenna 50
- 16.5dBi High Gain Sector Antenna 50
- 2dBi Flexible Omni Antenna 50
- 2dBi Omni SMA Antenna 51
- 4.5dBi Omni Antenna 51
- 4dBi Flexible Omni Antenna 51
- Blade Antenna – Body Worn 51
- Helicopter Antenna Actuator System 51

Transmitter and Receiver Kits
- Palladium II Digital Video
- Transmission and Receiver Kit* 52
- SOLO5 – Transmission and Receiver Kit 52
- SOLO7 – Transmission Kit 52

The items marked with *“ are legacy products and are not recommended for new applications

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
<table>
<thead>
<tr>
<th>Receivers</th>
<th>SOLOS – Receiver</th>
<th>Messenger VETA Receiver Decoder*</th>
<th>Palladium Digital Receiver*</th>
<th>SOLO4 – Receiver</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receivers</td>
<td>Messenger 2 Decoder*</td>
<td>Messenger Smart Receiver*</td>
<td>VETA Receiver*</td>
<td>Receivers</td>
</tr>
</tbody>
</table>

**SOLOS – Receiver**

- MPEG2 and MPEG4 ASP video decoding
- Optional H264 Video Decoding Licence
- IP video streaming (RTSP and UDP)
- Battery pack provides more than 5 hours of continuous use
- Maximum ratio combining antenna diversity
- Internal recording to 32GB SD card
- Selectable AES128/256 encryption (optional)

**Messenger VETA Receiver Decoder***

- Supports DVB-T and optional narrowband modes down to 1.25MHz BW
- HD/SD AVC H.264 and SD MPEG2 decoding
- COFDM demodulation
- Range of bandwidths
- Dual diversity inputs and internal RF Block Down-converters (BDCs)

**Palladium Digital Receiver***

- Selectable bandwidths
- MPEG2 or MPEG4 compression
- MPEG2 and MPEG4 Analogue Signal Processing (ASP) video decoding
- 16 channels
- Optional video streaming over IP
- Built-in ABS and AES 128 bit encryption (AES 256 optional)
- MPEG2 and MPEG4 ASP video decoding

**SOLO4 – Receiver**

- MPEG2 and MPEG4 Analogue Signal Processing (ASP) video decoding
- Comprehensive on-screen display diagnostics for link analysis, including spectrum analyser
- Maximum ratio combining antenna diversity for fade and multipath elimination
- Internal AES128/256 bit encryption (optional)
- Very low delay video operation for real-time applications

---

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
**Robust Receivers**

<table>
<thead>
<tr>
<th><strong>SOLO4 – Miniature Robust Receiver</strong></th>
<th><strong>SOLO Central Receiver – Robust</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Supports DVB-T and optional narrowband modes down to 625kHz bandwidth</td>
<td>• Four independent COFDM Receivers and Video Decoders in one box.</td>
</tr>
<tr>
<td>• MPEG2 and MPEG4 Analogue Signal Processing (ASP) video decoding</td>
<td>• Supports DVB-T and optional narrowband modes down to 625kHz bandwidth, MPEG2 and MPEG4 ASP video decoding IP control and streaming video</td>
</tr>
<tr>
<td>• Optional H264 Video Decoding Licence</td>
<td>• Quad COFDM diversity</td>
</tr>
<tr>
<td>• Maximum ratio combining antenna diversity</td>
<td>• Very low delay video operation for real time applications</td>
</tr>
<tr>
<td>• Internal recording to SD card</td>
<td></td>
</tr>
<tr>
<td>• Compact weatherproof housing to IP67</td>
<td></td>
</tr>
</tbody>
</table>

**Infrastrucutre Receivers**

<table>
<thead>
<tr>
<th><strong>PRORX – Receiver Decoder</strong></th>
<th><strong>SOLO Central Receiver</strong></th>
<th><strong>SOLO Central Receiver – Robust</strong></th>
<th><strong>Messenger 2 Decoder HD/SD AVC/H264</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Supports DVB-T and optional narrowband modes down to 625kHz bandwidth</td>
<td>• Supports DVB-T and optional narrowband modes down to 625kHz bandwidth</td>
<td>• Supports DVB-T and optional narrowband modes down to 625kHz bandwidth</td>
<td>• Supports up to 60 megabits per second H.264 stream processing</td>
</tr>
<tr>
<td>• MPEG2 and MPEG4 Analogue Signal Processing (ASP) video decoding</td>
<td>• Four independent COFDM receivers and video decoders in one box.</td>
<td>• Four independent COFDM receivers and video decoders in one box.</td>
<td>• Frame rates to 60 frames per second</td>
</tr>
<tr>
<td>• Optional H264 Video Decoding Licence</td>
<td>• MPEG2 and MPEG4 Analogue Signal Processing (ASP) video decoding</td>
<td>• MPEG2 and MPEG4 Analogue Signal Processing (ASP) video decoding</td>
<td>• Built-in HD to SD Down-Conversion</td>
</tr>
<tr>
<td>• One or optionally two fully independent COFDM receivers and video decoders</td>
<td>• Four simultaneous video reception and viewing</td>
<td>• IP control and streaming video</td>
<td>• Compact design with local control and monitoring</td>
</tr>
<tr>
<td>• 2, 4, 6 or 8 way COFDM diversity</td>
<td>• Built-in options for rebroadcast or IP network distribution (optional)</td>
<td>• Quad COFDM diversity</td>
<td>• HD-SDI, DVI, Component &amp; Composite video outputs</td>
</tr>
</tbody>
</table>

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
### Infrastructure Receivers

**Messenger Portable Decoder**
- Supports DVB-T and optional narrowband modes down to 1.25MHz BW
- HD/SD AVC H.264 and SD MPEG2 decoding
- COFDM demodulation
- Range of bandwidths
- Dual diversity inputs and internal RF Block Down-converters (BDCs)

**Messenger Smart Receiver**
- Robust link performance with COFDM provides superior coverage
- Enhanced Doppler performance for tracking moving vehicles
- 49MHz to 6.00GHz (in-bands) with optional internal or external down-converters
- Multi-input diversity maximal-ratio combining
- Optional local control panel

**Messenger VETA Receiver Decoder**
- Broadcast quality 4:2:2 MPEG2 video decoding
- Low delay
- Compact design
- Operating temperature = 0°C to 50°C
- Runs on 12V DC

### Tactical Receivers

**SOLO4 – NanoVue Plus**
- MPEG2 and MPEG4 Analogue Signal Processing (ASP) video decoding
- Optional H264 Video Decoding Licence
- Supports DVB-T and optional narrowband modes down to 625kHz bandwidth
- High resolution 4.3” display
- Easy to use touch screen
- Internal recording to SD card
- Faster streaming

**SOLO4 – NanoVue Robust**
- MPEG2 and MPEG4 Analogue Signal Processing (ASP) video decoding
- Optional H264 Video Decoding Licence
- Supports DVB-T and optional narrowband modes down to 625kHz bandwidth
- High resolution 4.3” display
- Interchangeable battery pack
- Robust shock- and water-proof housing
- Supplied with antennas

**SOLO4 – MicroVue 2 Commander Receiver**
- MPEG2 and MPEG4 Analogue Signal Processing (ASP) video decoding
- Optional H264 Video Decoding Licence
- 8.4” colour monitor in lid
- 5.5” touch screen base in base for device configuration
- Now available in Commander option with recording
- Supports DVB-T and optional narrowband modes down to 625kHz bandwidth
- MPEG2 and MPEG4 Analogue Signal Processing (ASP) video decoding
- Colour monitor in lid with quad or individual viewing
- User touch screen control interface
- Optional IP streaming and microwave relay

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
### Tactical Receivers

#### Messenger VETA Monitor Receiver*
- COFDM demodulation (400 [optional] or 2K Carriers)
- Bandwidths from 1.25MHz (optional) to 8.00MHz
- Input frequency: 0.174 to 8.50GHz (in-bands)
- Ethernet port connectivity for streaming and control/monitoring
- Supports ISO 13818 transport stream demuxing

#### VETA Monitor Receiver*
- 8” integrated sunlight readable LCD monitor
- Input frequency: 0.174 to 8.50GHz (in-bands)
- COFDM demodulation (*400 or 2K carriers)
- Bandwidths from *1.25MHz to 8.00MHz
- Uses professional batteries
- Internal block Down-converters
- Compact and lightweight

### Transmitters

#### SOLO6 – Dual Band Transmitter
- Supports DVB-T and narrowband bandwidths (625kHz to 8.00MHz)
- Available in a variety of frequency bands from 300MHz to 6.00GHz
- Able to transmit images from 200m to 16km, depending on line-of-sight conditions, frequency, bandwidth and the environment

#### SOLO5 – Transmitter
- Supports DVB-T and narrowband bandwidths (625kHz to 8.00MHz)
- Available in a variety of frequency bands from 300MHz to 5.00GHz
- Able to transmit images up to 1km, non-line of sight, depending on mode and frequency
- Supports MPEG2 and MPEG4 image compression

#### SOLO7 – Nano Transmitter
- Ultra-miniature COFDM digital video transmitter
- Exceptionally small size and low power consumption (typically 3.7W)
- Supports DVB-T modulation and Cobham Narrowband, Ultra Narrowband and Ultra-X bandwidths
- Transmits up to 750m non line-of-sight

#### SOLO7 – HD Nano Transmitter
- Ultra-low power consumption (typically 7.5W)
- Ideal for UAV ‘Octocopter’ installations with true long range HD broadcasting
- Optional lightweight amplifiers
- Cobham UMVL modulation for enhanced high speed operation and improved high frequency performance

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
# Transmitters

**Video Microwave Digital Transmitter**
- Supports DVB-T and narrowband bandwidths (625kHz to 8.00MHz)
- Three COFDM digital video link bandwidths
- Low latency video compressor supports NTSC and PAL formats
- AES 128 encryption (AES 256 optional)
- Ideal for small UAVs and UGVs
- Variety of dual band antennas available

**SOLO4 – Micro Transmitter**
- Supports DVB-T and narrowband bandwidths (625kHz to 8.00MHz)
- MPEG2 encoding (MPEG4 is also available) for excellent image quality retention
- Several user-selectable modes trading off image quality against range
- Includes RF up-conversion and PA circuitry on a complete single board transmitter

**Messenger 2 Encoder Module**
- Supports 6/7/8MHz DVB-T and special 2x DVB-T Mode
- Extremely compact dual-program encoder module
- Ultra-low end to end system latency (down to ~44mS)
- AVC HD/SD encoder (up to 1080p – 60 FPS)
- Dual 3Gbps HD-SDI/SDI and analogue SD video input interfaces option

**Messenger Enhanced High Power Transmitter**
- AVC HD/SD encoder (up to 1080p, 60fps)
- Low system latency (down to ~44mS)
- Supports dual audio/video/data programs - Multi-camera support
- Dual HD or HD/SD combo - 3D support
- COFDM modulation (DVB-T 2 or *4K carriers)
- Output frequency: 1 to 7.00GHz (in bands)
- Up to 15W linearised output power

**Transmitters**

**Messenger 2 Transmitter**
- Frequency bands up to 7.20GHz available
- AVC/H.264 decoding providing 40% lower data rates, and twice the transmission range of traditional MPEG2 systems
- <44mS latency when used with MSR/M2D or MVRD
- HD-SDI and composite video inputs
- ASI output (encoder mode)

**SOLO H.264 SD/HD COFDM Transmitter**
- Low delay H.264 SD & HD encoding
- HD-SDI/SDI with embedded audio input
- Composite video and HDMI1.4 input, ASI input and output
- DVB-T 6/7/8MHz and optional narrowband modulation
- Ultra lightweight 400g with low power consumption

**Palladium II Digital Video Transmitter**
- Supports three bandwidth modes – wideband, narrowband and ultra-narrowband
- Supports DVB-T and narrowband bandwidths (625kHz to 8.00MHz)
- MPEG2 or MPEG4 compression
- Full frame rate standard resolution digital video
- Range of power outputs available
- Two high fidelity audio channels

**Handheld Video Transmitter II**
- Supports DVB-T and narrowband bandwidths (625kHz to 8.00MHz)
- MPEG2 and MPEG4 Analogue Signal Processing (ASP) Encoding
- Unique camera head/laser point combination
- COFDM transmission for non-line of sight digital video transmission
- 16 programmable channels
- High resolution with low light capability

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
## Transmitters

<table>
<thead>
<tr>
<th><strong>COFDM Drop Camera Transmitter 3G</strong></th>
<th><strong>VETA Compact High Power Transmitter</strong></th>
<th><strong>VETA Miniature Transmitter</strong></th>
<th><strong>COFDM Drop Camera Transmitter</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Supports DVB-T and narrowband bandwidths (625kHz to 8.00MHz)</td>
<td>Supports DVB-T and narrowband bandwidths (625kHz to 8.00MHz)</td>
<td>Bandwidths from 1.25 MHz to 8.00MHz</td>
<td>Supports DVB-T and narrowband bandwidths (625kHz to 8.00MHz)</td>
</tr>
<tr>
<td>MPEG2 and MPEG4 ASP Encoding</td>
<td>MPEG2 and MPEG4 Analogue Signal Processing (ASP) Encoding AVC HD/SD encoder (up to 1080p, 60fps)</td>
<td>Supports DVB-T and narrowband bandwidths (625kHz to 8.00MHz)</td>
<td>MPEG2 and MPEG4 ASP Encoding</td>
</tr>
<tr>
<td>Robust chassis with COFDM digital video transmitter, 3G modern, battery and camera</td>
<td>Low system latency (down to ~44mS)</td>
<td>Built-in MPEG2/4 encoder</td>
<td>Supports DVB-T and narrowband bandwidths (625kHz to 8.00MHz)</td>
</tr>
<tr>
<td>Housed in rugged IP66 housing suitable for outdoor deployment</td>
<td>Supports dual audio/video/data programs - Multi-camera support - Dual HD or HD/SD combo - 3D support</td>
<td>Ideal for high security surveillance, helicopter links, UAV/UGV applications and mobile and portable AV applications</td>
<td>Robust chassis with COFDM digital video transmitter, battery, camera and microphone</td>
</tr>
<tr>
<td>Replacement 9 and 16mm lens</td>
<td></td>
<td>ABS security, with optional AES 128/256 encryption</td>
<td>Mounting camera 3.6mm lens</td>
</tr>
</tbody>
</table>

## Robust Transmitters

<table>
<thead>
<tr>
<th><strong>SOLO4 – Miniature Robust Transmitter</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Supports DVB-T and narrowband bandwidths (625kHz to 8.00MHz)</td>
</tr>
<tr>
<td>MPEG2 and MPEG4 ASP Encoding</td>
</tr>
<tr>
<td>Available in microwave and UHF frequencies</td>
</tr>
<tr>
<td>Variety of frequency bands from 300MHz to 6.00GHz</td>
</tr>
<tr>
<td>Can transmit images up to 750m in non-line of sight environment</td>
</tr>
<tr>
<td>IP 67 rated aluminium enclosure</td>
</tr>
</tbody>
</table>

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
## Telemetry

### SOLO4 – Audio and Telemetry Transmitter

- Bandwidths from 25kHz to 125kHz
- Wider bandwidths available on request
- AES128/256 bit encryption, subject to export controls
- Can be connected to Cobham IP solutions to create rugged wireless IP Bridge applications
- Temperature range = -20ºC to +70ºC

### SOLO4 – Audio and Telemetry Receiver

- Range of frequency bands
- User capacity can be shared between audio and user RS232 telemetry data
- Diversity reception
- Unique narrow band COFDM modulation
- AES128/256 encryption

## FM Receivers

### Medium Receiver

- Up to 16 user-defined channels or 1MHz steps across the band
- Frequency bands up to 5.00GHz
- Fully synthesised FM receiver
- 2 sub-carriers for audio and RS232
- 2 analogue video outputs and 1 composite
- 2 balanced audio outputs (mic or line)
- 4 button front panel interface

### Xtra Small Receiver

- 16 user-defined channels
- Frequency bands up to 5.00GHz
- Fully synthesised FM receiver
- 2 sub-carriers for audio or RS232
- 2 analogue video outputs and 1 composite
- 2 balanced audio outputs (mic or line)
- Rotary switch for channel selection
- LED meter for signal strength

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
## FM Transmitters

### Nano Transmitter
- Frequency bands up to 5.00GHz
- SME encryptor
- Fully synthesised FM transmitter
- 16 user-defined channels
- 1 sub-carrier for audio or RS232
- 1 analogue video input
- 1 unbalanced audio input (factory preset mic or line)
- Rotary switches for channel selection, video gain, and audio gain

### Small Transmitter
- Frequency bands up to 5.00GHz
- Up to 16 user-defined channels or 1MHz steps across the band
- Fully synthesised FM transmitter
- 3W or 10W RF power output (model dependent)
- 2 sub-carriers for audio or RS232
- 1 analogue video inputs + 1 composite
- 2 balanced audio inputs

## Airborne

### Messenger 2 Transmitter
- Ideal for entertainment, sports and Electronic Newsgathering (ENG) applications, as well as military operations
- AVC HD/SD encoder (up to 1080p 60FPS)
- COFDM modulation (DVB-T 2K or 4K carriers)
- Dual U/S band capability
- Time correlated Key Length Value (KLV) meta data handling

### VETA Compact High Power Transmitter
- Bandwidths 6/7/8MHz standard, 1.25MHz, 2.50MHz optional
- Built-in MPEG2/4 encoder
- Low system latency (down to ~44mS)
- Up to 15W Linearised Output Power
- Small, rugged enclosure
- No external heat sink required
- Output frequency: 1.7 to 5.00GHz (in-bands)

### Messenger 2 Enhanced Compact High Power Transmitter
- AVC HD/SD encoder (Up to 1080p - 30FPS)
- Low system latency (down to ~44 mS)
- Multi-camera support
- Output frequency: 1 to 7.00GHz (in-bands)
- Up to 15W linearised output power
- Small, rugged enclosure
- User control via LAN WEB GUI or serial interface

### VETA High Power Transmitter
- Bandwidths 6/7/8MHz standard, 1.25MHz and 2.50MHz optional
- Small, rugged enclosure
- Output frequency: 1.7 to 5.00GHz (in-bands)
- Low system latency (down to ~44mS)
- Built-in MPEG2/4 encoder
- User data optional
- 12 VDC or 28 VDC optional

---

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com

47
### Airborne

**High Power Transmitter**
- Frequency bands up to 7.20GHz available
- 7-15W of RF power output (band dependent)
- Compact "brick" style packaging for space-critical installations
- 12V DC, and 28V DC power options available

**Messenger 2 Compact High Power Transmitter**
- Robust link performance with COFDM
- Used in helicopter links, UAV/UGV and high security surveillance applications
- Built-in ACV/H.264 Encoder
- SD/HD SDI formats up to 1080p
- Optional 128/256-bit scrambling option (AES)

**PRORX – Receiver Decoder**
- 2, 4, 6 or 8 way COFDM diversity
- Maximum ratio combining antenna diversity for fade and multipath elimination
- IP control and streaming video
- Comprehensive on-screen display (OSD) diagnostics for link analysis, including spectrum analyser
- Very low delay video operation for realtime applications

**Messenger Smart Receiver**
- Robust link performance with COFDM provides superior coverage
- Enhanced Doppler performance for tracking moving vehicles
- 49MHz to 6.00GHz (in-bands) with optional internal or external down-converters
- Multi-input diversity maximal-ratio combining
- Optional local control panel

### Airborne

**Messenger 2 Decoder HD/SD AVC/H264**
- Broadcast quality 4:2:2 MPEG2 Decoder
- Low delay
- Compact design
- Designed to mate with MSR
- Runs on 12V DC

**Messenger VETA Receiver Decoder**
- Supports DVB-T and optional narrowband modes down to 1.25MHz BW
- HD/SD AVC H.264 and SD MPEG2 decoding
- COFDM demodulation
- Range of bandwidths
- Dual diversity inputs and internal RF Block Down-converters (BDCs)

**Messenger Portable Decoder**
- 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

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
### Accessories

<table>
<thead>
<tr>
<th><strong>FCON – Field Controller</strong></th>
<th><strong>Down-converters</strong></th>
<th><strong>Bias-T Coaxial Power Inserter</strong></th>
<th><strong>Antenna Switch – ASU</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- In line standalone controller</td>
<td>- Supplied in selectable high/low gain or fixed low gain variants</td>
<td>- 1000 to 3000MHz frequency range</td>
<td>- 8 UHF and 16 UHF inputs</td>
</tr>
<tr>
<td>- Or USB to RS232 converter</td>
<td>- Excellent low noise performance</td>
<td>- Up to 20 amps of DC current</td>
<td>- 9V/12V DC ‘off’ power feed to down converters</td>
</tr>
<tr>
<td>- Remote client for CryptoWizard</td>
<td>- Designed for permanent outdoor deployment</td>
<td>- Low insertion loss</td>
<td>- Control over Ethernet using Mission Commander software</td>
</tr>
<tr>
<td></td>
<td>- Variety of mounting kits available</td>
<td>- Low bandpass ripple</td>
<td>- Control over RS232 connections on front and rear of unit</td>
</tr>
</tbody>
</table>

**SOLO – 1W Vehicle Amplifier**

- Frequency bands:  - 300 to 450MHz, 1.00 to 2.50GHz, 3.00 to 3.50GHz and 3.40 to 3.70GHz
- Dimensions: 95mm (L), 70mm (W), 32mm (H)
- Power in - 100mW, power out - 1W
- Accessories supplied - RS232 Cable Lemo-DSUB9 3m, Bodyworn 1W Amp Power/Control Cable and Bodyworn 1W Amp RF Link Cable

**SOLAMP 500mW Booster**

- Available for frequency ranges - 300-450MHz, 1.00 to 1.50GHz, 1.50 to 2.00GHz, 2.00 to 2.50GHz, 3.00 to 3.50GHz and 4.40 to 5.00GHz
- Convenient small size
- Companion product for the SOLMTX

**Very Efficient Power Amplifier (VEPA-2W)**

- Frequency bands: 1.4 to 1.60GHz, 1.70 to 1.85GHz, 1.99 to 2.20GHz, 2.20 to 2.50GHz, 4.40 to 5.00GHz
- 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

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
Very Efficient Power Amplifier (VEPA-10W)

- Frequency bands:
  1.70 to 1.85GHz, 2.20 to 2.40GHz, 1.99 to 2.50GHz, 2.20 to 2.70GHz
- Very efficient
- High linearity
- Adjustable gain
- Local - rotary switch
- Remote control
- 9-32V DC supply voltage
- Compact and lightweight

SOLAMP – Robust 5W Amplifier

- Frequency bands:
  300 to 450MHz, 1.00 to 2.50GHz, 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
- 12-30V DC power supply range

Accessories – Antennas

12dBi Compact Sector Antenna
  Supplied with mounting kit 1/8"A for 2" poles, featuring mounting bracket for Down-Converter.
  Electrical
  Frequencies From 2000-2700MHz to 8100-8600MHz (other frequencies available)
  Feed Power Handling 50W
  Gain (typical) 12dBi
  Azimuth 3dB
  Elevation 3dB
  Beamwidth 112°
  Polarisation Vertical
  Physical
  Width/Diameter 79.4mm
  Height Dependent on product frequency range
  Weight 1.3Kg

16.5dBi High Gain Sector Antenna
  Electrical
  Frequencies From 2000-2400MHz to 8100-8600MHz (other frequencies available)
  Feed Power Handling 50W
  Gain (typical) 16.5dBi
  Azimuth 3dB
  Elevation 3dB
  Beamwidth 64°
  Polarisation Vertical
  Physical
  Width/Diameter 200mm
  Height Dependent on product frequency range
  Weight 4.0Kg

2dBi Flexible Omni Antenna
  Electrical
  Frequencies From 2000-2700MHz to 8100-8600MHz (other frequencies available)
  Feed Power Handling 10W
  Gain (typical) 2dBi
  Azimuth 3dB
  Elevation 65°
  Polarisation Vertical
  Physical
  Width/Diameter 16mm
  Height 290mm
  Weight 1.3Kg

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
### Accessories – Antennas

<table>
<thead>
<tr>
<th>Antenna Type</th>
<th>Electrical Features</th>
<th>Physical Dimensions</th>
<th>Approximate Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>2dBi Omni SMA Antenna</td>
<td><strong>Frequencies</strong>: 2000-2500MHz&lt;br&gt;<strong>Feed Power Handling</strong>: 10W&lt;br&gt;<strong>Gain (typical)</strong>: 2dBi&lt;br&gt;<strong>Elevation</strong>: 3dB&lt;br&gt;<strong>Beamwidth</strong>: 65°&lt;br&gt;<strong>Polarisation</strong>: Vertical</td>
<td><strong>Width/Diameter</strong>: 14mm&lt;br&gt;<strong>Height</strong>: 86.5mm</td>
<td>20g</td>
</tr>
<tr>
<td>4.5dBi Omni Antenna</td>
<td><strong>Frequencies</strong>: From 2000-2400MHz to 8100-8600MHz&lt;br&gt;<strong>Feed Power Handling</strong>: 10W&lt;br&gt;<strong>Gain (typical)</strong>: 4dBi&lt;br&gt;<strong>Azimuth</strong>: 3dB&lt;br&gt;<strong>Beamwidth</strong>: 40°&lt;br&gt;<strong>Polarisation</strong>: Vertical</td>
<td><strong>Width/Diameter</strong>: 25mm&lt;br&gt;<strong>Height</strong>: Dependent on product frequency range</td>
<td>30g</td>
</tr>
<tr>
<td>4dBi Flexible Omni Antenna</td>
<td><strong>Frequencies</strong>: From 2000-2400MHz to 8100-8600MHz&lt;br&gt;<strong>Feed Power Handling</strong>: 10W&lt;br&gt;<strong>Gain (typical)</strong>: 4.5dBi&lt;br&gt;<strong>Azimuth</strong>: 3dB&lt;br&gt;<strong>Beamwidth</strong>: 40°&lt;br&gt;<strong>Polarisation</strong>: Vertical</td>
<td><strong>Width/Diameter</strong>: 16mm&lt;br&gt;<strong>Height</strong>: Dependent on product frequency range</td>
<td>30g</td>
</tr>
</tbody>
</table>

### Accessories – Antennas

<table>
<thead>
<tr>
<th>Antenna Type</th>
<th>Electrical Features</th>
<th>Physical Dimensions</th>
<th>Approximate Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blade Antenna – Body Worn</td>
<td><strong>Frequencies</strong>: 1.26-1.40GHz&lt;br&gt;**1.60-1.70GHz&lt;br&gt;**1.15-1.26GHz&lt;br&gt;<strong>Feed Power Handling</strong>: 10W&lt;br&gt;<strong>Gain (typical)</strong>: 1.3dBi&lt;br&gt;<strong>Azimuth</strong>: 3dB&lt;br&gt;<strong>Beamwidth</strong>: 120°&lt;br&gt;<strong>Elevation</strong>: 3dB&lt;br&gt;<strong>Beamwidth</strong>: 100°&lt;br&gt;<strong>Polarisation</strong>: Vertical</td>
<td><strong>Width/Diameter</strong>: 37.5mm&lt;br&gt;<strong>Height</strong>: 81.5mm</td>
<td>30g</td>
</tr>
<tr>
<td>Helicopter Antenna Actuator System</td>
<td><strong>Electrical</strong>: <strong>Frequencies</strong>: 2000-2500MHz&lt;br&gt;<strong>Feed Power Handling</strong>: 10W&lt;br&gt;<strong>Gain (typical)</strong>: 2dBi&lt;br&gt;<strong>Elevation</strong>: 3dB&lt;br&gt;<strong>Beamwidth</strong>: 65°&lt;br&gt;<strong>Polarisation</strong>: Vertical</td>
<td><strong>Width/Diameter</strong>: 14mm&lt;br&gt;<strong>Height</strong>: 86.6mm</td>
<td>20g</td>
</tr>
</tbody>
</table>

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

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
### Transmitter and Receiver Kits

<table>
<thead>
<tr>
<th>Kit Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palladium II Digital Video Transmission and Receiver Kit*</td>
<td>Includes SOLO7 Nano Transmitter, 2x power supply, camera, charger, cables and compact case  &lt;br&gt;Low power consumption (typically 3.7W)  &lt;br&gt;Weighs 60g  &lt;br&gt;Ultra low latency high profile H.264 encoding</td>
</tr>
<tr>
<td>SOLOS – Transmission and Receiver Kit</td>
<td>Includes SOLO5 100MW Transmitter, SOLO5 Receiver, SOLO 1 Watt Amplifier, 2 x 5 or L Band down-converters, 3 x omni antennas, 2 x directional antennas (packaged separately), 2 x AC supply adaptors, 1 x DC supply cables, 2 x 3m Cables from down-converters to receiver</td>
</tr>
<tr>
<td>SOLO7 – Transmission Kit</td>
<td>16 or 8 channel, user programmable  &lt;br&gt;VMD/Pd2 digital video transmitter, 100mW, 250mW or 1W  &lt;br&gt;Dipole omni antennas  &lt;br&gt;2 surveillance microphones  &lt;br&gt;High quality low light B/W camera  &lt;br&gt;High quality colour camera  &lt;br&gt;SOLOS 100MW Transmitter  &lt;br&gt;SOLO5 Receiver  &lt;br&gt;SOLO 1 Watt Amplifier  &lt;br&gt;2 x 5 or L Band down-converters  &lt;br&gt;3 x omni antennas  &lt;br&gt;2 x directional antennas (packaged separately)  &lt;br&gt;2 x AC supply adaptors  &lt;br&gt;1 x DC supply cables  &lt;br&gt;2 x 3m Cables from down-converters to receiver</td>
</tr>
</tbody>
</table>

Cobham offer a range of antennas and accessories, contact us to discuss your requirements

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
HD/SD Products

SOLO7 – Nano Transmitter 55
SOLO7 – HD Nano Transmitter 55
PRORXB – Broadcast Receiver Decoder 55
SOLO ENG H.264 COFDM Transmitter 55
SOLO ENG H.264 SD/HD 55
COFDM Transmitter 55
Messenger 2 Transmitter Enhanced 55
Messenger 2 Decoder HD/SD AVC/H264* 55

SD Products

SOLBTX – Broadcast Transmitter 56
SOLO – Broadcast Micro Transmitter 56
SOLBRX – Broadcast Receiver Decoder 56
SOLO2 – Broadcast Hand Held Receiver 56
SOLO4 – NanoVue 56
SOLO ASI COFDM Transmitter 56

Broadcast IP Solutions

Broadcast IP Encoder 57
NETNode IP Mesh – Mini Plain 57
NETNode IP Mesh – Mini Robust 57
NETNode IP Mesh Phase 3 – Plain 57
NETNode IP Mesh Phase 3 – Robust 57

Satellite News Gathering

Satellite News Gathering Transmitter 58

Accessories and Amplifiers

SOLAMP 500mW Booster 58
SOLO – 1W Booster Amplifier 58
SOLO – 1W Vehicle Amplifier 58
NETNodeAMP Mini Robust 1W/2W Amplifier 58
Very Efficient Power Amplifier (VEPA-2W) 59
SOLOAMP – Robust SW Amplifier 59
Very Efficient Power Amplifier (VEPA-10W) 59
FCON – Field Controller 59

Antenna and Down-converters

12dBi Compact Sector Antenna 59
16.5dBi High Gain Sector Antenna 59
2dBi Flexible Omni Antenna 60
2dBi Omni SMA Antenna 60
3dBi Flexible Omni Antenna 60
4.5dBi Omni Antenna 60
4dBi Flexible Omni Antenna 60
Blade Antenna – Body Worn 60
Helicopter Antenna Actuator System 60
Broadcast Down-converters 61
SOLO Fibre – Fibre Antenna Extender System 61

The items marked with ‘*’ are legacy products and are not recommended for new applications

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
HD/SD Products

SOLO7 – Nano Transmitter

- Ultra-miniature COFDM digital video transmitter
- Exceptionally small size and low power consumption (typically 3.7W)
- Supports DVB-T modulation and Cobham Narrowband, Ultra Narrowband and Ultra-X bandwidths
- Transmits up to 750m non line-of-sight

SOLO7 – HD Nano Transmitter

- Ultra-low power consumption (typically 7.5W)
- Ideal for UAV ‘Octocopter’ installations with true long range HD broadcasting
- Optional lightweight amplifiers
- Cobham UMVL modulation for enhanced high speed operation and improved high frequency performance

PRORXB – Broadcast Receiver Decoder

- 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
- Genlock input and composite video output (with optional HD down-conversion)
- 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

SOLO ENG H.264 COFDM Transmitter

HD/SD Products

SOLO H.264 SD/HD COFDM Transmitter

- 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

Messenger 2 Transmitter Enhanced

- 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

Messenger 2 Decoder HD/SD AVC/H264*

- 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

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
### SD Products

<table>
<thead>
<tr>
<th>SOLBTX – Broadcast Transmitter</th>
<th>SOLO – Broadcast Micro Transmitter</th>
<th>SOLBRX – Broadcast Receiver Decoder</th>
<th>SOLO2 – Broadcast Hand Held Receiver</th>
</tr>
</thead>
<tbody>
<tr>
<td>• SDI video input (optional)</td>
<td>• SDI video input (optional)</td>
<td>• Fully featured 8/7/6MHz demodulation</td>
<td>• Fully featured 8/7/6MHz demodulation</td>
</tr>
<tr>
<td>• High quality video encoder</td>
<td>• High quality video encoder</td>
<td>• ASI and SDI interfaces</td>
<td>• Interoperable with other manufacturers</td>
</tr>
<tr>
<td>• ASI input and output</td>
<td>• Low delay</td>
<td>• Comprehensive on-screen display (OSD) diagnostics for link analysis, including spectrum analyser</td>
<td>• Maximum ratio combining antenna diversity</td>
</tr>
<tr>
<td>• 100mW output power</td>
<td>• 100mW output power</td>
<td>• Internal AES128/256 bit encryption (option)</td>
<td>• High resolution display</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Very low delay video operation for realtime applications</td>
<td>• Easy use menu display for channel changing</td>
</tr>
</tbody>
</table>

### SD Products

<table>
<thead>
<tr>
<th>SOLO4 – NanoVue</th>
<th>SOLO ASI COFDM Transmitter</th>
</tr>
</thead>
<tbody>
<tr>
<td>• High resolution 4.3” display</td>
<td>• DVB-T 6/7/8MHz and optional narrowband modulation</td>
</tr>
<tr>
<td>• Easy to use touch screen</td>
<td>• ASI input</td>
</tr>
<tr>
<td>• Internal recording to SD card</td>
<td>• Low power consumption 10W</td>
</tr>
<tr>
<td>• 4 hours battery life (via external pack)</td>
<td>• Ultra lightweight 400g</td>
</tr>
<tr>
<td>• Compact weatherproof housing</td>
<td>• Upgrade path to SD and HD video encoding</td>
</tr>
</tbody>
</table>

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
### Broadcast IP Solutions

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Broadcast IP Encoder** | - Up to 16 IP Mesh radios can be combined into a mobile network.  
- Occupies from just 2.50MHz of bandwidth (3.00, 3.50, 5.00 and 6.00MHz 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 6.00GHz are available in discrete bands  
- Weighs just 615 grams  
- Output power of 100mW  
- Suits body worn applications for real time IP connectivity  
- Designed to meet IP67 standards  
- Mesh capacity of up to 8.8Mb/s  
- 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 2.50MHz of bandwidth (3.00, 3.50, 5.00 and 6.00MHz also available)  |
| **NETNode IP Mesh – Mini Plain** | - Very low delay mode (<65ms)  
- Dual SD or single HD video input  
- Down sampling 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  |
| **NETNode IP Mesh – Mini Robust** | - Weighs just 615 grams  
- Output power of 100mW  
- Suits body worn applications for real time IP connectivity  
- Designed to meet IP67 standards  
- Mesh capacity of up to 8.8Mb/s  |
| **NETNode IP Mesh Phase 3 – Plain** | - Very low delay mode (<65ms)  
- Dual SD or single HD video input  
- Down sampling 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  |
| **NETNode IP Mesh Phase 3 – Robust** | - Weighs just 615 grams  
- Output power of 100mW  
- Suits body worn applications for real time IP connectivity  
- Designed to meet IP67 standards  
- Mesh capacity of up to 8.8Mb/s  |

For further information please call: +44 (0)1489 566 750  
or email: tcs.whiteley.sales@cobham.com
Satellite Newsgathering Transmitter

The Satellite Newsgathering 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 H.264 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.

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).

Accessories and Amplifiers

**SOLAMP 500mW Booster**
- Available for frequency ranges - 300-450MHz, 1.00 to 1.50GHz, 1.50 to 2.00GHz, 2.00 to 2.50GHz, 3.00 to 3.50GHz and 4.4 to 5.00GHz
- Convenient small size
- Companion product for the SOLMTX

**SOLO – 1W Booster Amplifier**
- Frequency bands - 300 to 450MHz, 1.00 to 2.5GHz, 3.00 to 3.5GHz and 4.4 to 5.7GHz
- 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

**SOLO – 1W Vehicle Amplifier**
- Frequency bands - 300 to 700MHz, 1.10 to 3.40GHz, 4.40 to 5.00GHz and 5.70 to 5.9GHz
- 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

**NETNodeAMP Mini Robust 1W/2W Amplifier**
- Bolt-on amplifier, increasing power output of NETNode Mini Robust from 100mW up to 2W
- Gives a rugged non-line-of-sight link of around 1km
- Line-of-sight operation to several kilometres
- Large variety of frequency bands

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
**Accessories and Amplifiers**

**Very Efficient Power Amplifier (VEPA-2W)**
- Frequency bands: 1.40 to 1.60GHz, 1.70 to 1.85GHz, 1.70 to 2.40GHz, 1.99 to 2.50GHz, 2.20 to 2.70GHz, 4.40 to 5.00GHz
- Variable Efficiency with local switch or remote logic signal
- High Efficiency Mode – V 2W out for 12W DC in (Linear)
- High Linearity Mode – V 2W with 25dB MER
- 9-32V DC Supply Voltage

**SOLAMP – Robust 5W Amplifier**
- Frequency bands: 300 to 450MHz, 1.00 to 2.50GHz, 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
- 12-30V DC power supply range

**Very Efficient Power Amplifier (VEPA-10W)**
- Frequency bands: 1.70 to 1.85GHz, 2.20 to 2.40GHz, 1.99 to 2.50GHz and 2.20 to 2.70GHz
- Very efficient
- High linearity
- Adjustable gain
- Local - rotary switch
- Remote control
- 9-32V DC supply voltage
- Compact and lightweight

**FCON – Field Controller**
- In line standalone controller
- Or USB to RS232 converter
- Remote client for CryptoWizard

**Antennas and Down-converters**

**12dBi Compact Sector Antenna**
- Supplied with mounting kit 178A for 2” poles, featuring mounting bracket for Down-converter.
- Frequency bands: 1.70 to 1.85GHz, 2.20 to 2.40GHz, 1.99 to 2.50GHz and 2.20 to 2.70GHz
- Very efficient
- High linearity
- Adjustable gain
- Local - rotary switch
- Remote control
- 9-32V DC supply voltage

**16.5dBi High Gain Sector Antenna**
- Frequency bands: 2000-2400MHz to 8100-8600MHz (other frequencies available)
- Feed Power Handling 50W
- Gain (typical) 16.5dBi
- Azimuth 3dB
- Beamwidth 64°
- Elevation 3dB
- Beamwidth 8°
- Polarisation Vertical

**2dBi Flexible Omni Antenna**
- Frequency bands: 2000-2400MHz to 8100-8600MHz (other frequencies available)
- Feed Power Handling 10W
- Gain (typical) 20dB
- Azimuth 3dB
- Beamwidth 65°
- Polarisation Vertical

**Electrical**
- Frequencies From 2000-2700MHz to 8100-8600MHz
- Feed Power Handling 50W
- Gain (typical) 16.5dBi
- Azimuth 3dB
- Beamwidth 64°
- Elevation 3dB
- Beamwidth 8°
- Polarisation Vertical

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

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

**Physical**
- Width/Diameter 16mm
- Height 290mm (320mm – 2.0-2.4GHz model)
- Approximate Weight 160g

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
Antennas and Down-converters

**2dBi Omni SMA Antenna**

Electrical
- Frequencies: From 2000-2700MHz to 6000-7500MHz (other frequencies available)
- Feed Power Handling: 10W
- Gain (typical): 3dBi
- Elevation: 290mm
- Beamwidth: 78°
- Polarisation: Vertical

Physical
- Width/Diameter: 22mm
- Height: 290mm
- Approximate Weight: 160g

**3dBi Flexible Omni Antenna**

Electrical
- Frequencies: From 2000-2500MHz
- Feed Power Handling: 10W
- Gain (typical): 3dBi
- Elevation: 65°
- Beamwidth: 35°
- Polarisation: Vertical

Physical
- Width/Diameter: 14mm
- Height: 86.6mm
- Approximate Weight: 20g

**4.5dBi Omni Antenna**

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

Physical
- Width/Diameter: 25mm
- Height: Dependent on product frequency range
- Approximate Weight: 30g

**4dBi Flexible Omni Antenna**

Electrical
- Frequencies: From 2000-2400MHz to 8100-8600MHz (other frequencies available)
- Feed Power Handling: 10W
- Gain (typical): 1.3dBi
- Elevation: 3dB
- Beamwidth: 120°
- Polarisation: Vertical

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

**Blade Antenna – Body Worn**

Electrical
- Frequencies: 1.26-1.40GHz, 1.60-1.70GHz, 1.15-1.26GHz
- Feed Power Handling: 10W
- Gain (typical): 2dBi
- Azimuth: 35°
- Beamwidth: 78°
- Polarisation: Vertical

Physical
- Width/Diameter: 16mm
- Height: 340mm (450mm – 2.0-2.4GHz model)
- Approximate Weight: 180g

**Helicopter Antenna Actuator System**

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

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
<table>
<thead>
<tr>
<th>Antennas and Down-converters</th>
<th>SOLO Fibre – Fibre Antenna Extender System</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Supplied in selectable high/low gain or fixed high and low gain variants</td>
<td>• 'One cable solution' for radio camera receive and data control</td>
</tr>
<tr>
<td>• Excellent low noise performance</td>
<td>• Location of antenna and Down-converter can be extended</td>
</tr>
<tr>
<td>• Designed for permanent outdoor deployment</td>
<td>• TAC or SMPTE cable formats</td>
</tr>
<tr>
<td>• Variety of mounting kits available</td>
<td>• Fibre connectors can be customised</td>
</tr>
<tr>
<td></td>
<td>• Splash proof head units</td>
</tr>
<tr>
<td></td>
<td>• Rack mountable base units</td>
</tr>
<tr>
<td></td>
<td>• Return camera control data line</td>
</tr>
</tbody>
</table>

Cobham offer a range of antennas and accessories, contact us to discuss your requirements

For further information please call: +44 (0)1489 566 750 or email: tcs.whiteley.sales@cobham.com
Client Services
Critical Support for Critical Equipment

As a leading designer of surveillance technologies, for over 50 years Cobham Tactical Communications and Surveillance has supplied and maintained equipment across the globe.

Having the right technical equipment and support for each job is critical. But how can organisations make the most of their investments? What happens when that equipment is unavailable? Do they have the support in place to ensure they never have to manage without that solution at a crucial time?

Cobham offers a range of services to help customers operate its solutions with maximum efficiency, giving support and advice on any issues that arise. Rental options for short-term usage of special solutions are included in the Cobham portfolio. Solutions can be tailored and customers are able to work with their Account Managers to create bespoke support packages specific to their needs.

The benefits:

- Critical support for critical equipment, when smooth operation can’t be left to chance
- Training ensures users have total familiarity with every device used
- Cost is managed and a more efficient operation enabled, maximising the lifetime value of solutions
- The services of an ‘extra member of technical staff’ which are only paid for when used
- Discreet maintenance of covert and overt solutions, in secure or open areas.
Training
Cobham solutions are hugely versatile and, as many of them are modular, there is a strong degree of commonality between products, making them more intuitive for users. However, the best way customers can ensure they really get the most out of their solutions is to undertake training with Cobham’s fully qualified instructors.

Professionally trained users save their organisations time and money by deploying solutions more effectively and safely in high pressure situations.

By simply selecting the training modules required from the wide range on offer, customers are able to ensure their operators, maintenance staff and managers benefit from a blend of lectures, computer-based and hands-on training. Training courses are customised to meet their needs whether they be product specific, deployment or background training.

Fully qualified and experienced instructors can provide training in any language at Cobham’s regional training centres or at customer facilities.

Rental Solutions
Customers can reduce capital expenditure by hiring solutions as they need them, for individual operations and events. Cobham offers a wide range of covert, mobile and temporary infrastructure systems. Many of its test assets are also available, if required.

Equipment Hire
Complete, unmanned systems can be hired by customers for operation by their staff, whether short term or long term.

Capability Hire
Security-cleared experts can deliver, install and even operate the required systems, especially useful where organisations are renting solutions they haven’t used before.
Support Services
Cobham offers support to its customers at every stage, ensuring they get the most out of their solution:

Feasibility Studies
Cobham is able to assess what’s possible and recommend the best solutions to its customers, based on a thorough understanding of the technologies available in the market place.

Site Surveys
Before deploying any solutions, Cobham works with its customers to ensure that there are no unpleasant surprises. Its recommendations help customers maximise their potential for success.

System Design
In designing and delivering system architecture, Cobham is able to integrate any existing or third party equipment required.

Installations
Skilled installers undertake the deployment of any Cobham solution and, by prior arrangement, third party equipment.

Onsite Technical Integration and Support
Cobham is committed to providing outstanding long-term support to its customers.

Base repair
Should an equipment failure occur, Cobham’s highly skilled technicians will repair or replace it, free of charge (subject to support package selected).

Annual Inspection
Any faults or missing updates that are required will be flagged up during the annual inspection, giving customers absolute confidence that their equipment will be available when it’s most needed.

Software Upgrades
Cobham’s products continue to grow and develop, with new features becoming available through software upgrades. These upgrades also ensure the interoperability of new and existing equipment, easing the training burden and maximising the effectiveness of assets.
Support Packages
A range of support packages are available throughout the life of these solutions, helping to ensure that they stay in optimum condition and that any issues are promptly fixed. For peace of mind, various levels of support are available.

<table>
<thead>
<tr>
<th>Service</th>
<th>Typical Bronze</th>
<th>Typical Silver</th>
<th>Typical Gold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onsite support</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Office hour support</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>24/7 technical support</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Remote system diagnostic (where applicable)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>System module repair</td>
<td>Return to base</td>
<td>Priority return to base</td>
<td>Advanced replacement</td>
</tr>
<tr>
<td>Spares on hand</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Inclusive training days*</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Documentation updates</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Standard annual inspection</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

* Maximum five students
Cobham’s People

The greatest strength of Cobham Tactical Communications and Surveillance is its people.

Dedicated engineers are continually developing new solutions, directed by demanding customer requirements.

Project managers and support engineers work closely with designers to fully understand every aspect of the product range and guide customers on how best to maximise their potential. It’s the reason Cobham’s products are used by professionals in areas such as:

**Counter-Terrorism and Intelligence**  
**Military Platform Communications**  
**Situational Awareness**  
**Law Enforcement and Public Safety**  
**Critical Infrastructure Protection**  
**Broadcast**

Many of Cobham’s key staff are security cleared, to ease integration with our customers’ operational teams and speed their access to restricted areas and equipment that needs to be dealt with in situ.

By utilising leading technologies and engineering support, Cobham’s solutions can be tailored to meet the needs of individual customers. Account Managers are happy to discuss specific requirements.

Customers can contact their Account Managers for further information on Client Services.

**Alternatively, contact:**

Cobham Tactical Communications and Surveillance  
The Cobham Centre - Solent  
Fusion 2, 1100 Parkway, Solent Business Park  
Whiteley, Hampshire  
PO15 7AB  
T: +44 (0)1489 566 770  
E: tcs.whiteley.sales@cobham.com
Accreditations

CTCS - Solent - UK

CTCS - Blackburn - UK

Products are available to security users only in licensed frequency bands. These products are not approved for use by unlicensed users.

Commercial products are available to unlicensed users – contact Cobham Tactical Communications and Surveillance direct for details.

All product specifications are subject to change without notice. Cobham Communications and Surveillance will not be liable for technical or editorial errors or omissions.