

INTELLIGENT SENSOR NETWORKS ULTRAMESH+ TCS

COVERT, LOW POWER, WIRELESS, TRIGGER AND CUEING SYSTEM

UltraMesh+ TCS is a remote trigger and cueing surveillance system for power optimisation of devices and more efficient utilisation of specialist operatives.

Each TCS system can automatically cue recording devices in response to activation of a remote sensor. TCS is fully integrated with Digital Barriers' EdgeVis surveillance system for remote monitoring and control of the TCS system.

The ultimate persistent surveillance platform

UltraMesh+ is a next-generation, rapid deployment, wireless sensor platform for covert surveillance applications. It is based on a series of ultra low-power wireless nodes that support a range of sensor types. The system automatically cues more power-intensive devices, as well as providing an exception-based alerting system for surveillance operatives if required. Devices connected to remote nodes can be manually cued.

The UltraMesh+ TCS system is a simple and flexible way to extend the operational life of battery-powered remote surveillance devices. TCS nodes can be triggered by up to two inputs, such as a PIR, vibration switch, pressure pad or proximity switch. The TCS system can be monitored and controlled remotely using an EdgeVis surveillance hub to backhaul alerts on cellular, satellite or IP radio. TCS and RDC seismic sensor nodes can be combined into a single system to provide full indoor/outdoor surveillance.

Practical operational benefits

UltraMesh+ TCS nodes are designed for reliable, simple and low-power operation in mission-critical situations. The TCS nodes are compact and simple to deploy, with units just 60mm x 50mm x 8mm and weighing around 25g (without batteries). Nodes feature basic connectors for the external inputs and outputs and an external wireless antenna. Each node can be powered from a very wide range of rechargeable and non-rechargeable power sources. Users also have the option to define a low battery remote alert.

TCS nodes provide covert surveillance teams with the flexibility to plan operations and prepare devices to suit a range of deployment scenarios. Nodes can be used for remote activation of video and audio recording devices, or as a means of alerting a surveillance team or remote ops rooms. With its wireless networking, UltraMesh+ allows multiple nodes to transmit alerts back to a lay-up monitoring point. Node locations can be marked on a map for tracking purposes.

*Dependent upon external NVR integration

Product codes

UM-TCS-N	UltraMesh TCS Node
UM-TCS-GN	UltraMesh TCS Gateway

Key features

- Automated cueing of externally connected devices, using multiple types of remotely deployed sensors
- Pre-defined cue duration. i.e. device is switched on for defined period of time and then switched off to save power
- Ultra low-power trigger nodes (typ 15mW)
- Low power cueing/gateway devices (typ 100mW)
- Intelligent wireless UltraMesh+ networking for auto configuration of multiple nodes on a single network
- Minimal training requirements – a 'plug-and-play' trigger system (no specialist training is required)
- Low-power DSSS mesh radio network for resistance to jamming and lower probability of detection
- Full integration with Digital Barriers' EdgeVis surveillance hubs and RDC seismic sensors
- Manual cueing of devices connected to remote nodes

Operational domains

UltraMesh+ has been deployed for covert, mission-critical surveillance applications in environments where power and comms are typically limited. It is used by specialist defence, border security and law enforcement agencies to monitor vulnerable locations and secure sites. UltraMesh+ TCS is suitable for a range of operational applications:

- Power optimisation of battery-intensive devices
- Configurable duration activation of video and audio recording devices
- Remote monitoring of a range of sensor inputs
- More efficient deployment of covert operatives



UltraMesh TCS Node for remote triggering and cueing capability

TECHNICAL SPECIFICATIONS ULTRAMESH TCS

UK.D.044
V111017
UltraMesh TCS

UltraMesh+ TCS

Key functions: Automatic and manual activation of external surveillance devices and remote alarm monitoring
Key components: TCS Node: basic PCB format for connection of up to two triggers and one remote manually activated output
TCS Gateway: communications device for backhaul of alarms and/or automatic cueing of devices in response to trigger inputs on TCS Nodes

UltraMesh+ TCS Node and UltraMesh+ TCS Gateway

Environmental: -20°C to 54°C (relative humidity of 5-95%)
Dimensions: 60mm x 50mm x 8mm
Weight: Approx. 25g (excluding batteries)
Power source: 2.3-28V
Power consumption (typ): 15 mW (Node), 100mW (Gateway)
Node battery life: Dependent on battery type (e.g. approx. 20 days with 2 x 2.2Ah AA alkaline cells)
Node sensor inputs: 2 x trigger inputs (dry contact or open collector)
Node output: Manual operation: 1 x cueing output (relay output up to 2 amps max)
Gateway device output: Automatic operation: 1 x cueing output (relay output up to 2 amps max)
Gateway interface: Serial interface (RS232)

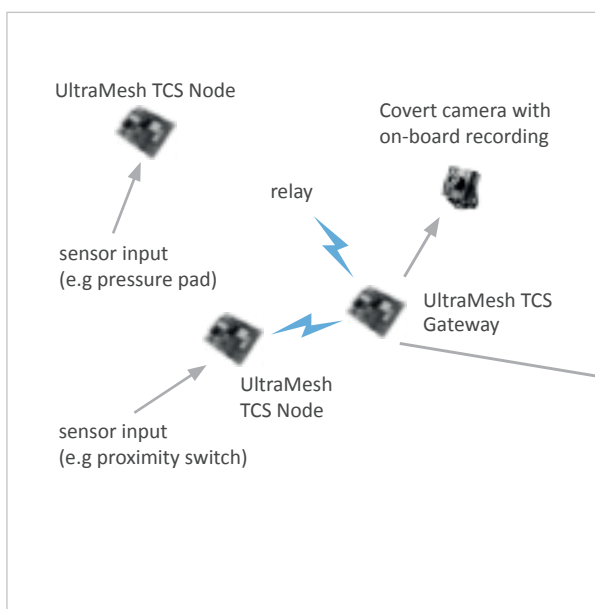
UltraMesh+ Network Communications

Radio frequency: Europe: 863 - 870MHz
North America: 902 - 928MHz
Standards compliance: ETSI: EN300 220 and EN 301 489
FCC: 47CFR part 15
Network characteristics: Self-configuring, self-healing

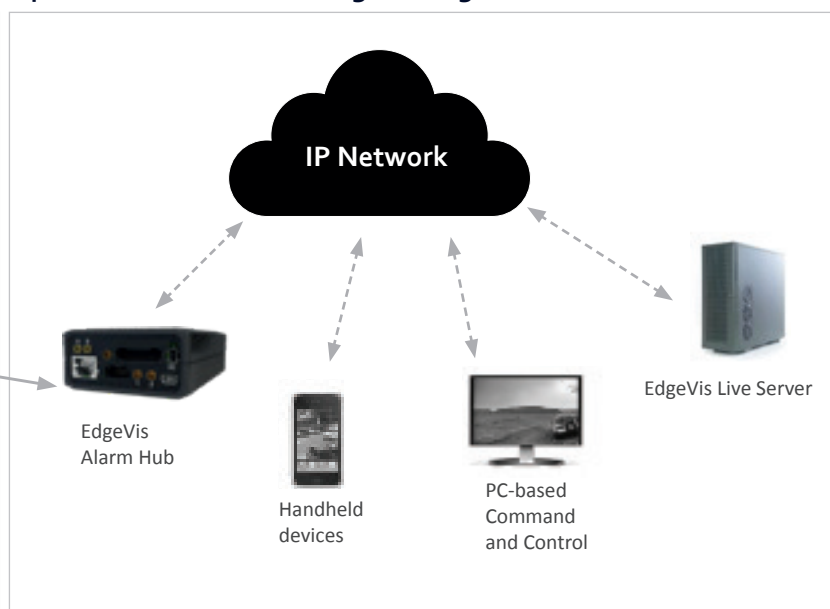
System Illustration

UltraMesh TCS Gateway can be used to cue an external device, such as a camera with on-board recording when the input of a remote sensor node is triggered. The Gateway can also notify remote operatives of each event via Digital Barriers' EdgeVis surveillance system.

Standalone TCS System



Optional remote monitoring (via EdgeVis)



Other Digital Barriers products for use with UltraMesh TCS in covert surveillance:

EdgeVis integration hubs – power-optimised comms backhaul of alarms and video

EdgeVis Server and static/mobile viewing apps for distributed access to alarms and video

Contact Digital Barriers or your local reseller for further details on our solutions

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