

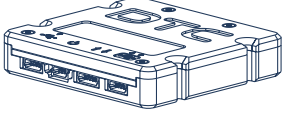
MeshUltra™ IP Mesh Waveform Family

MeshUltra™ is our most advanced Mesh waveform family yet and it is supported by the industry’s widest range of Mesh hardware platforms – from tiny modules, perfect for small drones, to the longest range ruggedised nodes, ideal for maritime or industrial applications. With frequency options spanning 320MHz to 6GHz, plus options for OEM integration, DTC can offer hardware solutions forevery application.

The BluSDR™ Family Hardware Platforms

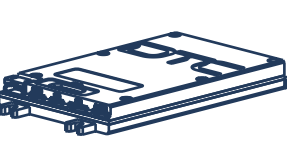
The BluSDR™ family is a streamlined range of wideband IP radio links each chosen to offer class-leading performance in a range of Unmanned systems applications in the air, on the ground and at sea.

BluSDR™ – 6
The BluSDR™– 6 is ideal for size and weight critical UxV applications. Weighing from 0.9oz / 26g, the BluSDR™– 6 is smaller than a standard credit card.



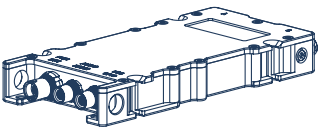
BluSDR™ – 6 | SHORT RANGE
from 26g | 6km | 400mW
3W consumption, Up to 87Mbps throughput, 2 x USB Ports

BluSDR™ – 30
The BluSDR™– 30 has been designed to be the core of a wide range of systems. Weighing only 3oz / 110g, the BluSDR™–30 is the thickness of a pencil and the width of a playing card.



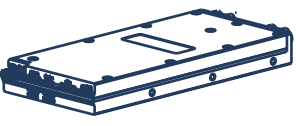
BluSDR™ – 30 | MEDIUM RANGE
from 110g | 30km+ | 2W
6W consumption, Up to 87Mbps throughput, 2x USB Ports, USB PD, Ethernet, Serial, Audio

BluSDR™ – 30-R
The BluSDR™ – 30 Robust is a sealed, IP68-rated 2W MANET radio built to withstand extreme environments. Delivering up to 87Mbps mesh throughput with low 6W typical power consumption, it supports medium-long range missions in a compact, rugged enclosure. Ideal as a ground control station radio within wider UxV networks, it enables lightweight, mobile deployments and discreet antenna panel-mount or external platform mounting.



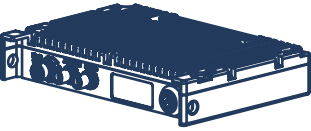
BluSDR™ – 30-R | MEDIUM RANGE
from 430g | 30km+ | 2W
6W consumption, Up to 87Mbps throughput, IP68 Sealed Rugged Enclosure, Gigabit Ethernet Interface, USB host, RS-232, GPIO and analogue audio

BluSDR™ – 90-UL
The BluSDR™–90-UL is a light option designed for Long Range capable UxV platforms. With its small form factor, the BluSDR™– 90-UL is suitable for installation both as a mobile and fixed site system. Weighing only 7.4oz/210g, the BluSDR™– 90-UL fits in the palm of your hand and is the size of a smartphone.



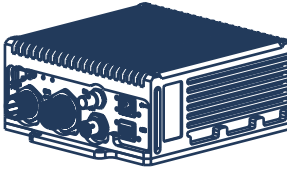
BluSDR™ – 90-UL | LONG RANGE
from 210g | over 90km+ | 10W
Up to 87Mbps throughput, USB Port Ethernet, Serial, Audio

BluSDR™ – 90-R
BluSDR™–90-R is a ruggedised software defined radio transceiver with 10W total RF output power; optimised for long-range communication on drone platforms or as a ground station radio



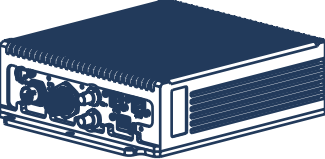
BluSDR™ – 90-R | LONG RANGE
from 1.45kg | over 90km+ | 10W
Up to 87Mbps in 20MHz channel bandwidth SBUS and MAVLink protocols

BluSDR™ – 90
The BluSDR™– 90 is a robust option designed for Long Range capable UxV platforms. With its small form factor and meeting MIL-STD-810 Environmental requirements and MIL-STD-461 EMC requirements the BluSDR™– 90 is suitable for installation both as a mobile and fixed site system.



BluSDR™ – 90 | LONG RANGE
from 2.5kg | 90km+ | 10W
Up to 87Mbps throughput, HD-SDI, USB Port 2 x Ethernet, 2 x Serial, Audio

BluSDR™ – 200
The BluSDR™– 200 is DTC’s highest power Mesh product and provides up to 30W total RF power output for extreme long range applications.

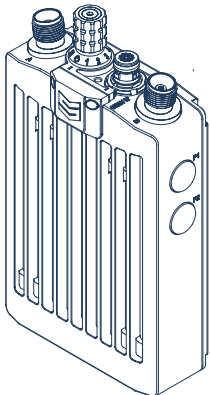


BluSDR™ – 200 | LONG RANGE
from 5kg | 200km++ | 30W
Up to 87Mbps throughput, USB Port, 2 x HD-SDI, 2 x Ethernet, 2 x Serial, Audio

MeshUltra™ SDR

The ultimate in flexibility, the BluSDR™ Software Defined Radio is able to operate as a 2x2 MiMo Mesh radio, hosting the latest MeshUltra™ waveform, or alternatively as a unidirectional COFDM Transmitter or Receiver family.

Sentry Mesh 6161



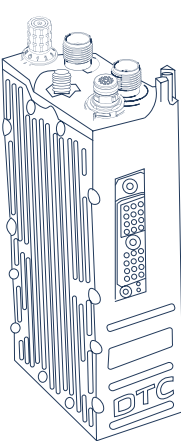
The Sentry Mesh 6161 is a Software Defined Radio based on our highly robust MANET waveforms.

MeshUltra™ optimises the use of available bandwidth through a “Token Passing” technology, which avoids collisions and provides a short, predictable data packet latency.

Key Features

- Up to 144 total nodes
- Up to 2 watts RF
- SWaP optimised
- Predictable IP latency
- 2 x 2 MIMO
- User selectable presets/talkgroup

SOL8SDR-H2



The SOL8SDR-H2 is an enhanced Special Role Radio designed to meet a diverse range of applications.

Key Features

- MeshUltra™, MIMO, and standard IP Mesh capability
- Low latency
- Enhanced GPS performance
- 2 watts total ouput
- Range NLOS →1.5km single hop; >15km air to ground

For more information about the DTC MeshUltra™ family or any of our other solutions, contact your Sales Account Manager, our Regional Sales Office, or email us at info@dtccodan.com

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MeshUltra™ Waveform Family

Redefining Tactical MANET
Performance for Unmanned Systems

MeshUltra™ IP Mesh Waveform Family and Spectrum Overmatch

Modern conflict has made one thing clear: the electromagnetic domain is no longer permissive.

From near peer conflicts to coalition operations and even the congested RF environments of major cities, communications must now operate in contested, contended, and frequently GNSS-denied spectrum.

There is no single technology that guarantees uninterrupted access to RF — resilience is achieved through design, adaptability, and intelligent trade-offs. DTC Spectrum Overmatch represents a ground-up “defence in depth” approach to operating in these environments. Combined with the intrinsically robust MeshUltra™ waveform family, it delivers communications that continue to function — and adapt — where others degrade or fail.

The Next Evolution of DTC Mesh Technology

DTC has long led the development of tactical IP Mesh communications, purpose-built for demanding operational environments rather than adapted from unsuitable commercial standards.

MeshUltra™ represents the next evolution of this capability — combining high-performance MANET waveforms with capabilities that prioritise spectral efficiency, resilience, and operational survivability. The result is a Mesh that performs not only in the lab or on a datasheet, but in real-world Contested and Contended environmnets.

Multi-Waveform, Mission-Optimised Design

No single waveform is optimal for every mission. The MeshUltra™ family provides multiple waveform options, each optimised for different operational priorities — from high mobility platforms to large-scale, bandwidth-constrained networks. Operators can select and adapt waveforms based on mission phase, spectrum conditions and throughput requirements.

This flexibility is a core element of Spectrum Overmatch, enabling systems to adapt as the mission and RF environment evolve, rather than being locked into a single compromise solution.

MeshUltra™-M

MeshUltra™-M has been developed to deliver outstanding throughput and robustness in very dynamic “high mobility” scenarios such as Motor Racing, Unmanned Vehicle control or street level tactical surveillance. It rapidly updates information on network topology and link quality to ensure that every transmission is delivered via the best available route.

Supporting up to 24 nodes and channel bandwidths up to 20MHz and delivering throughputs up to 87Mbps, MeshUltra™-M delivers rock solid connectivity in the most demanding of environments.

MeshUltra™-X

MeshUltra™-X was designed to support very large Mesh Networks such as those often required for Dismounted Soldier communications or networked Unattended Ground Sensors (UGS) whilst delivering industry leading real-world throughput in the narrowest of channels.

It aggressively minimises metadata in order to avoid unnecessarily compromising user payload data capacity and benefits hugely from the “no contention” network delivered by DTC’s proprietary Token-based channel access mechanism. MeshUltra™-X supports up to 144 nodes in channel bandwidths as narrow as 1.25MHz and scales to channel bandwidths up to 5MHz.

MeshUltra™-80

Previously known simply as MeshUltra™, MeshUltra™-80 offers support for up to 80 nodes and throughputs of up to 87Mbps in a 20MHz channel. It offers good overall performance in a wide range of deployment scenarios.

Greater Spectral Efficiency

MeshUltra™ waveforms are engineered to extract maximum usable throughput from limited spectrum. Support for narrow channel bandwidths enables operation where competing Mesh systems cannot fit, while adaptive modulation and advanced channel access mechanisms ensure efficiency as conditions change.

This spectral efficiency is foundational to Spectrum Overmatch — enabling operators to avoid interference, coexist with other users, and exploit fragmented spectrum without sacrificing performance.

Higher Throughput Where It Matters

MeshUltra™ waveforms support wide channel bandwidths and adaptive modulation to deliver high usable data rates when spectrum conditions allow. Importantly, DTC specifies real, usable payload throughput, rather than irrelevant “gross” rates that include protocol overheads. In operational terms, higher effective throughput enables shorter transmission times, and faster data delivery, supporting both performance and survivability in contested environments.

MeshUltra™ Waveform Family Comparison Table

WAVEFORM	MAX NO. OF NODES	CHANNEL BANDWIDTHS	MAX THROUGHPUT	RECOMMENDED NODE COUNT	KEY CHARACTERISTICS	TYPICAL APPLICATIONS
MeshUltra™-M	24	1.25–20MHz	~87Mbps	2–24	Outstanding Mobility Performance	Motor Racing, Broadcasting, Unmanned, Street Level Tactical Surveillance
MeshUltra™-X	144	1.25–5MHz	~22Mbps	25–144	Outstanding Throughput for Large Networks	Dismounted Soldier Systems, Unattended Ground Sensors, Large Drone Swarms, Voice Talkback Systems
MeshUltra™-80	80	1.25–20MHz	~87Mbps	25–80	Balance performance and support for medium/large networks	General wideband Mesh applications

Operating in Contested and Contended Spectrum

In operations against near-peer adversaries, the RF spectrum is always contested. Adversaries actively attempt to deny access through jamming, spoofing, and exploitation — while friendly and coalition forces add further complexity through unavoidable Blue-on-Blue contention.

Even outside conflict zones, spectrum is increasingly congested and unpredictable. Spectrum Overmatch is not about eliminating interference — which is often impossible — but about minimising its impact on mission success and raising the cost and complexity of effective denial. MeshUltra™ is designed to detect, adapt, and continue operating across these conditions rather than relying on static assumptions of spectrum availability.

Channel Access for Congested Networks

Many Mesh networks rely on contention-based channel access (CSMA), which can degrade rapidly due to collisions as traffic and number of nodes increases — leading to retries, poor throughput and unpredictable latency.

MeshUltra™ uses a deterministic, token-based channel access mechanism, ensuring that only one node transmits at a time. This approach enables highly efficient channel utilisation, consistent latency, and stable performance even as network size and traffic load increase.

In contended and contested environments, this predictability is a key enabler of Spectrum Overmatch.

Cognitive and Adaptive Behaviour (IAS)

MeshUltra™ incorporates cognitive radio sensing that allow the network to respond dynamically to its RF environment.Each node contributes awareness of local spectrum conditions, enabling the network to identify interference and adjust operating parameters accordingly. This distributed approach improves resilience, simplifies in-theatre spectrum coordination, and supports continued operation under active jamming or unintentional interference.

The emphasis is on adaptation rather than operator burden, enabling rapid response to active jamming environments beyond what manual reconfiguration would allow.

Low Probability Characteristics (LPI / LPD / LPE)

In contested environments, avoiding attention can be as important as overcoming interference.

MeshUltra™ waveforms are designed with low probability of intercept, detection, and exploitation characteristics, reducing the likelihood of attracting unwanted interest while maintaining usable throughput and robustness.

Rather than optimising solely for stealth at the expense of performance, Spectrum Overmatch focuses on balanced waveform behaviour — ensuring operational effectiveness without unnecessary RF emissions.

GNSS-Denied and Degraded Environments

GNSS denial and spoofing are now commonplace in modern conflict and increasingly observed elsewhere.

MeshUltra™ supports alternative approaches to maintaining position awareness when GNSS cannot be trusted. By leveraging RF-based ranging techniques within the communications network itself, operators can continue to operate without reliance on external navigation signals.

The ranging feature enables real-time distance estimation between all radios within a Mesh network. With updates available every second, these measurements are exported in JSON format and can be fed into geolocation operating independently or contribute to fused navigation solutions – even in GNSS-denied environments. This capability enhances resilience, network planning, and precision tracking without adding system complexity.

Extended Range in Challenging RF Conditions

MeshUltra™ leverages DTC’s noise-optimised RF design, advanced error correction, and adaptive MiMo operation to maximise link robustness and extend usable range. Narrowband channel options further enable reliable communications when spectrum availability is limited or interference levels are high.

Together, these capabilities support communications at ranges that would traditionally be difficult to achieve with IP Mesh systems — particularly in difficult or impossible environments.

Resilience Through Architecture

Resilience is rarely achieved through a single link. MeshUltra™ Interlink capability supports architectures that allow multiple bearers, paths, or operational modes to be combined — increasing the probability of successful communication in degraded environments.

Scalable Networks Without Compromise

The MeshUltra™ family supports large, flat, single-frequency Mesh networks — scaling to high node counts even in narrow channel bandwidths. Combined with DTC’s deterministic channel access, network growth does not inherently lead to increased collisions or instability.

This scalability allows operators to deploy dense networks while maintaining performance and resilience in contested spectrum.

Flexible Communications for Complex Operations

MeshUltra™ builds on DTC’s low-latency Mesh talkback heritage, supporting multiple simultaneous talk groups within a single network. This enables separate conversations, hierarchical command structures, or role-based communications without deploying additional infrastructure.

The result is clearer coordination and reduced operational friction in dynamic, multi-user environments.

Designed for the Spectrum Reality Ahead

The RF environment will only become more complex. MeshUltra™ and DTC Spectrum Overmatch reflect an ongoing investment in adaptability, automation, and intelligent use of the spectrum — ensuring operators can focus on the mission rather than constant reconfiguration. DTC’s Spectrum Overmatch capabilities and Software Defined MeshUltra™ waveforms will continue to evolve to keep pace with future threats.

