

BluSDR-90-UL

BluSDR™ 10W Ultra-Lightweight Radio Module

Overview:

The BluSDR-90-UL is designed to meet the needs of both mobile and fixed-site applications and is optimized for long-range communication on drone platforms, enabling reliable connectivity capable of over ±150km in line of sight applications.

Utilizing DTC's proprietary Software Defined Radio (SDR) architecture and offering a full 10W of output power, the BluSDR-90-UL is delivered with the industry-leading MeshUltra™ waveform that enables up to 144 nodes to operate in a self-healing network through its MANET IP Mesh capability.

Weighing 210g (7.4oz), the BluSDR-90-UL is an ultra-lightweight, low-SWaP radio module with interface options including Ethernet, 2x USB, serial data, audio and GPIO designed for maximum ease of integration, mission flexibility and the ability to support seamless communication, even in the most challenging and contested environments.

The BluDR-90-UL is part of DTC's trusted BluSDR™ product line offering a versatile, software-defined, multi-waveform architecture on single radio module for Uncrewed platforms in all domains.

± Depending on environment



Features and Benefits:

- Powerful 10 Watt RF output
- Ideal for long range applications over ±150km line of sight capability
- Support for SBUS and MAVLink protocols
- Ultra-lightweight variant for weight critical applications
- Wide power supply range up to 32V
- MeshUltra™ MANET waveforms included to support up to 144 nodes in a self forming self healing Mesh network
- Optional AES128/256 encryption (accredited to FIPS140-2 for MeshUltra™ waveforms)
- USB support for peripherals such as 3G/4G/Wi-Fi dongles
- RNDIS support for Ethernet over USB
- Data capacity up to 87Mbps in 20MHz channel bandwidth
- Interlink mode for enhanced capability and large scale systems
- 64GB built-in storage

Product Information:

Product Codes

| | |
|---------------------|-----------------------------------------------|
| BluSDR-90-120170-UL | BluSDR-90 Ultra-Lightweight 10W, 1.20-1.70GHz |
| BluSDR-90-198270-UL | BluSDR-90 Ultra-Lightweight 10W, 1.98-2.70GHz |
| BluSDR-90-420520-UL | BluSDR-90 Ultra-Lightweight 10W, 4.20-5.20GHz |

Product Includes

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|--------|------------------------------------------------|
| CA4385 | 4-way Molex Pico-Lock to bare ends power cable |
| CA3867 | 8-way JST to RJ45 Ethernet |

Accessory Options (sold separately)

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|----------|-----------------------------------------------------|
| CA4386 | 4-way Molex Pico-Lock to 4-way XLR (m) power cable |
| CA4065 | 4-way XLR (f) to 12V 120W PSU IEC (m) |
| CA4430 | 4-way Molex Pico-Lock to 2-way XT60 (m) power cable |
| CA4387 | SMA (m) to SMA (m) cable 0.5m |
| CA4388 | SMA (m) to SMA (m) cable 1m |
| CA2095 | 3-way JST to 3-way Lemo (f) data cable |
| CA0001 | 3-way Lemo (m) to 9-way D-sub (f) data cable |
| CA3740 | 5-way JST to USB-A (f) cable |
| CA3742 | 5-way JST to USB micro (f) cable |
| AP007377 | USB micro (m) to USB-A (m) cable |
| CA3983 | 5-way JST to USB Ethernet adaptor |
| CA3866 | 6-way JST to audio phono cable |
| CA4384 | 6-way JST to GPIO free ends cable |
| SA4972 | Mounting bracket x2 kit |
| SA4973 | Active heatsink assembly kit |

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Technical Specification:

IO

| | |
|--------------------------------|---------------------------|
| COFDM RF transceiver | SMA (f) 50Ω x 2 |
| USB 0 host | 5-way 1mm JST |
| USB 1 host/device configurable | 5-way 1mm JST |
| Power | 4-way 2mm Molex Pico-Lock |
| RS-232 data | 3-way 1mm JST |
| GPIO + 3V3 out | 6-way 1mm JST |
| Gigabit Ethernet | 8-way 1mm JST |
| Analogue audio | 6-way 1mm JST |

COFDM Transceivers

| | |
|---------------------|------------------------------------------------------------------------------------------------------------------------|
| Power | 5W (37dB) per output, 10W total |
| Power step | 0.25dB incremental control |
| Tuning step | 125kHz step |
| Bandwidth | 1.25/1.5/1.75/2.5/3.0/3.5/4.0/5.0MHz (MeshUltra-M/-80/-X) 6.0/7.0/8.0/10.0/12.0/14.0/16.0/20.0MHz (MeshUltra-M/-80) |
| Mesh capacity | Up to 87Mbps |
| Carrier modulation | BPSK/QPSK/16QAM/64QAM (adaptive) |
| FEC rate | 1/2, 2/3 (adaptive) |
| Receive sensitivity | -98dBm (BW 2.5MHz/QPSK 1/2) |

Audio

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|-----------|-----------------------------------------|
| Interface | Analogue microphone/headphone with bias |
|-----------|-----------------------------------------|

Data

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|---------------|-------------------------------------------|
| Configuration | 1k2 to 115k2, 7/8 bit, no/odd/even parity |
| Interface | RS-232 or USB peripheral |

Encryption

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|-----------------|----------------------------------------|
| Standard | DES |
| Licensed option | AES128/256 (subject to export control) |

Storage

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|--------|------------------------|
| Medium | 128GB internal microSD |
|--------|------------------------|

Power

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|-------------------|---------------------------------------------------------------------|
| DC input | 10-32V |
| Power consumption | Peak inrush: 120W 5MHz BW with 25-90% occupancy: 30W to 55W typ. |

Environment

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|-------------------|----------------------------------------|
| Temperature range | -20°C to +55°C with additional cooling |
| Humidity | Less than 85% non-condensing |
| Cooling | External heatsink or fan required |

Physical

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|--------------------------------|------------------------------------|
| Dimensions (module) | 130mm x 60mm x 15mm (not incl SMA) |
| Weight (module) | 210g |
| Dimensions (heatsink assembly) | 132mm x 60mm x 40mm |
| Weight (heatsink assembly) | 300g |

License Options

Includes DTC MeshUltra™ MANET Mesh capability as standard. See MeshUltra family brochure for more details.

| | |
|----------------|----------------------------------------|
| BluSDR-IAS | Interference Avoidance Scheme for Mesh |
| †BLUSDR-P2MP | Point-to-Multipoint System for Mesh |
| BluSDR-RANGING | Ranging Measurements for BluSDR Radios |
| #AES128 | AES128 Cryptography Licence |
| #AES256 | AES256 & AES128 Cryptography Licence |

Accredited to FIPS140-2 for MeshUltra™ waveforms

† Enables split frequency TX/RX operation for special applications. Contact DTC for more information.



Encrypted products are subject to regulatory export controls

For further information contact your Sales Account Manager, one of our Regional Sales Offices, or email solent.info@domotactical.com

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