SDR 2X1W SINGLE BOARD
SDR-U

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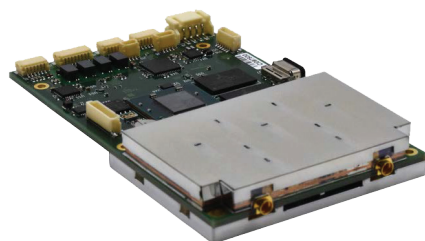
The SDR2x1W-U is a compact single-board Software Defined Radio Transceiver with 2x1W RF output power. Leveraging DTC's industry-leading MeshUltra MANET Mesh waveform and also capable of operating as a unidirectional COFDM Transmitter or Receiver, the SDR2x1W-U is ideally suited for integration into long range UxV applications.

The SDR2x1W-U also includes a rich set of interface options including Ethernet, serial and dual USB as well as an on-board headset audio interface.

The SDR2x1W-U also offers the option of USB-C powering direct from a suitable end user device or USB-C battery (USB PD compliant).

KEY FEATURES

- 2x1W transceivers for use as IP Mesh radio, COFDM transmitter or receiver
- USB-C power option compliant with USB PD
- RNDIS support for Ethernet over USB
- Ethernet and RS-232 data connectivity
- USB support for peripherals such as 3G/4G/Wi-Fi dongles
- Up to 128GB SD card storage
- Compact packaging with EMC screening included (additional heatsinking required)
- Very low power consumption, typically 10W IP Mesh
- Exceptionally small size: 95mm x 60mm
- Weighs only 85g

ACCESSORY OPTIONS (SOLD SEPARATELY)

AP009256	USB A Gigabit Ethernet adapter
AP007377	USB A to micro USB B cable
CA0001 CA2095	RS-232 0B Lemo to 9-way D-sub cable 3-way JST to 0B Lemo cable
CA3740	5-way JST to USB A socket cable
CA3742	5-way JST to USB micro socket cable
CA3752	SMA jack to MMCX plug cable
CA3865	4-way JST to banana plugs power cable
CA3866	6-way JST to audio phono cable
CA3867	8-way JST to RJ45 Ethernet
SOL8SDR-U-CAKIT-A	Cable accessory kit to aid integration. CA kit guide available.

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TECHNICAL SPECIFICATIONS

IO

RF COFDM transceiver 1	MMCX (female 50Ω)
RF COFDM transceiver 2	MMCX (female 50Ω)
GPIO and power out	6-way 1mm JST
Gigabit Ethernet	8-way 1mm JST
USB1 control and download	5-way 1mm JST
USB2 control and download	USB-C
Power input	4-way 2mm JST USB2 with power delivery (USB PD)
Analogue audio	6-way 1mm JST
RS-232	3-way 1mm JST

COFDM TRANSCEIVERS

Application license	SDRAPP-MESH, SDRAPP-TX
Power	1W (+30dBm) max per output, 2W total
Power setup	0.25dB incremental control
Tuning step	125kHz

RECEIVER

Application license	SDRAPP-RX
Sensitivity	Up to -110dBm
Streaming output	Single service (first received)
Tuning range	Frequency variant dependent
Tuning step	125kHz

AUDIO

Application license	SDRAPP-MESH, SDRAPP-TX
Interface	Analogue microphone / headphone with bias

DATA

Data configuration	1k2 to 115k2, 7/8 bit, no/odd/even parity
Data interface	RS-232 or USB peripherals

STORAGE

Medium	Up to 128GB MicroSD (supplied) (>8 hours recording at max DVB-T bitrate) (>29 hours recording at max NB bitrate)

CONTROL

USB	PC application control and SD card mounting
Ethernet	PC application control and file download Web GUI control and file download
Access	User, Super User and Admin accounts

PHYSICAL

Dimensions	95mm x 60mm x 15mm
Weight	85g

POWER

DC input	8V to 17.5V reverse polarity protected
Power consumption	10W typ. IP Mesh 14W typ. COFDM TX single output 24W typ. COFDM TX dual output 6W typ. COFDM RX

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TECHNICAL SPECIFICATIONS

ENVIRONMENT

Temperature range	-20°C to +50°C with additional cooling
Humidity	Less than 85% non-condensing
Cooling	External heat sink or fan required
EMC conformance	None guaranteed, not CE marked

FREQUENCY

114150	1.14-1.50GHz
*167235	1.67-2.35GHz
198270	1.98-2.70GHz
*440500	4.40-5.00GHz

SOFTWARE LICENSE CODE

#SDRAPP-MESH	IP Mesh
#SDRAPP-IAS	Interference Avoidance Scheme for Mesh
#SDRAPP-L2BRIDGE	Transparent Layer 2 Bridging Mode for Mesh
#SDRAPP-TX	COFDM Transmitter
#SDRAPP-RX	COFDM Receiver
SDRAPP-IPX	IP Encapsulation for COFDM
SDRAPP-GOLD	Gold-TX, Gold-RX, MESH, IAS, IPX
SDRAPP-PLATINUM	Platinum-TX, Platinum-RX, MESH, IAS, IPX
AES128TX	AES 128-Bit Encryption
AES256TX	AES 256-Bit and AES 128-Bit Encryption

* Future development

Refer to separate datasheets for SDRAPP requirements

DATASHEET: SDR-U, 12-20390-EN, Issue 1, © 2021

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