

SOLO8 Software Defined Radio (Robust)

Domo – Video, IP and Sensors

April 2016 Data Sheet



The SOLO8 Software Defined Radio (SOL8SDR) is an ultra-miniature COFDM digital video transceiver, designed specifically for Point-of-View (PoV), body-worn and concealment applications.

Three enclosure variants are available. Robust (-R) provides a passively cooled IP66 rated enclosure ideal for outdoor, or body worn applications. Concealment (-C) is an ultra-miniature package for integration into concealment solutions. Plain (-P) provides a compact higher power solution (2x500mW) for increased range and enhanced connectivity with native RJ45 and USB as standard.

With proven DTC COFDM and H.264 encoder technology at its core, the exceptionally small size and ultra-low power consumption (5 to 10W mode dependant, higher for 2x500mW plain enclosure variant) enables stunning high quality high definition images from the heart of the action, in situations never previously possible due to equipment size and battery run-time constraints.

Built-in motion detection can be used to further expand battery life, or storage capacity, with event triggered transmission and/or recording.

The DTC SOL8SDR is derived from the successful SOLO7 HD Nano Transmitter range. It uses the same high performance video codec on a more flexible yet compact hardware platform. The SOLO8 supports dual High Definition HD-SDI inputs. In addition the SOL8SDR integrates 128GB of internal video storage on Flash memory. An integral battery backed-up real time clock provides a time and date stamp. The SOL8SDR also provides both USB and Ethernet I/O interfaces. The Ethernet interface supports IP streaming of video via both 'RTSP' and multicast streaming compliant to ONVIF Profile S. This one unit can effectively be either an IP encoder, front end recorder, a COFDM TX, or an IP Mesh NETNode in one box.

The small size and ultra-low power consumption make the SOLO8 Software Defined Radio ideal for concealments and hidden point of view applications. Optional lightweight, low power consumption amplifiers are also available for even greater range capability.

The SOLO8 Software Defined Radio employs ultra-low latency High Profile H.264 (MPEG-4 AVC) encoding for excellent image quality retention over the wireless link or contested IP network.

The transmitter integrates an ISM band telemetry modem, which currently supports 433MHz and 915MHz. This telemetry receiver allows return command and control information to be sent to the SOL8SDR unit. The command information can be used to control the inbuilt recording and to power on and off the unit. The return data link has sufficient capacity to support PTZ commands for a connected PTZ camera – VISCA and PELCO-D protocols can be supported.

Software Defined Radio App available options are as a COFDM Transmitter (SDRAPP-TX), an IP Encoder (SDRAPP-ENC) and IP MIMO Mesh (SDRAPP-MESH) supported by software updates.

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Specification:

IO

| | |
|--------------------------|---------------------------------------|
| RF COFDM Output 1 | SMA (female) |
| RF COFDM Output 2 | SMA (female) |
| RF Telemetry Input | SMA (female) |
| Video SD/HD-SDI 1 | DIN 1.0/2.3 (female) |
| Video SD/HD-SDI 2 | DIN 1.0/2.3 (female) |
| USB Control and Download | Fischer UltiMate (to USB 2.0 Micro-B) |
| Power Input | Fischer UltiMate (to 4-way Lemo) |
| Power Output | Fischer UltiMate (to 4-way Lemo) |
| PA Control | Fischer UltiMate (to wire) |
| Microphone 10V | Fischer UltiMate (to wire) |
| Microphone/Line Input | Fischer UltiMate (to male RCAs) |
| Headphone Output | Fischer UltiMate (to 3.5mm socket) |
| PTZ Control, or Data IO | Fischer UltiMate (to 9-way D-Sub) |
| Gigabit Ethernet | Fischer UltiMate (to RJ45 Magnetics) |

COFDM Output

| | |
|--------------|-----------------------------------|
| Power | 100mW, 0.25dB incremental control |
| Tuning Range | Frequency variant dependant |
| Tuning Step | 125kHz |

Telemetry Transceiver

| | |
|----------------------|-----------------------------|
| Tuning Range | Frequency variant dependant |
| Code reference 43 | 433.05-434.79MHz |
| Code reference 91 | 902-928MHz |
| Receiver Sensitivity | -114dBm |

DVB-T Modulation

| | |
|----------------------|-------------------------|
| DVB-T Bandwidth | 8MHz, 7MHz, 6MHz modes |
| DVB-T FEC | 1/2, 2/3, 3/4, 5/6, 7/8 |
| DVB-T Constellation | QPSK, 16QAM, 64QAM |
| DVB-T Guard Interval | 1/4, 1/8, 1/16, 1/32 |
| DVB-T Bitrates | 1.555Mbps to 31.668Mbps |

Narrowband/UMVL Modulation

| | |
|------------------------|----------------------------------|
| NB Bandwidth | 2.5MHz, 1.25MHz and 625kHz modes |
| UMVL Bandwidth | 8MHz, 7MHz and 6MHz modes |
| NB/UMVL FEC | 1/3, 2/3 |
| NB/UMVL Constellation | QPSK, 16QAM, BPSK, 8PSK |
| NB/UMVL Guard Interval | 1/8, 1/16 |
| NB Bitrates | 144kbps to 4.879Mbps |
| UMVL Bitrates | 1.317kbps to 14.869Mbps |

Mesh Modulation

| | |
|--------------------|--|
| Mesh Bandwidth | 10MHz, 8MHz, 7MHz, 6MHz, 5MHz, 3.5MHz, 3.0MHz and 2.5MHz modes |
| Mesh FEC | 1/2, 2/3 (adaptive) |
| Mesh Constellation | BPSK, QPSK, 16QAM (adaptive) |
| Mesh Capacity | Maximum 14.6Mbps (TX/RX) |
| MIMO Mesh Capacity | Maximum 25.0Mbps (TX) Maximum 12.4Mbps (RX) |

Video

| | |
|-------------------|--|
| Video Input | 2 video streams Max total throughput of 1920x1080p30 2 HD inputs at half resolution or frame rate |
| Input Format | 1920x1080i 60/59.94/50Hz 1920x1080p 30/29.97/25/24/23.97Hz 1920x1080psf 30/29.97/25/24/23.97Hz 1280x720p 60/59.94/50Hz 720x576i 50Hz or 720x480i 59.94Hz |
| H.264 Compression | AVC / H.264 / MPEG-4 Part 10 High profile level 4.0 |
| Coding Options | Horizontal scaling of 3/4, 2/3, 1/2, 1/4 Vertical scaling of 1/2, 1/4 Sub-frame rate of 1/2, 1/4, 1/8, 1/24 |
| Encoder Delay | 1s to 10ms (mode dependant) |
| Encoder Bitrates | 0.25Mbps to 32Mbps |

Audio

| | |
|----------------------|---|
| Analogue Audio Input | High gain microphone stereo pair |
| Digital Audio Input | SD/HD-SDI 2 digital stereo pairs |
| Sample Rate | 32kHz 48kHz |
| Coding Modes | 4 channels stereo or mono MPEG Audio Layer 1 64-448kbps MPEG Audio Layer 2 32-384kbps |

Data Interface

| | |
|-------------|--|
| PTZ Control | Formats including VISCA and PELCO-D over Telemetry, or Ethernet |
| Data Input | 1k2 to 115k2, 7/8 bit, no/odd/even parity RS232 (standard), or RS485 (optional cable) |

Encryption

| | |
|------|---|
| Type | ABS 32bit as standard with SDRAPP-TX DES as standard with SDRAPP-MESH AES128/256 (optional) |
|------|---|

Streaming

| | |
|--------|---|
| Format | UDP Multicast/Unicast RTSP Multicast/Unicast ONVIF profile S TCP |
| MJPEG | |

Recording

| | |
|------------|--|
| Medium | Internal microSD 128GB (>8 hours recording at max DVB-T bitrate) (>29 hours recording at max NB bitrate) |
| Encryption | As per transmission |

Control

| | |
|----------|--|
| USB | PC Application control and file download |
| Ethernet | Web GUI control and file download |
| Access | User, Super User and Admin accounts |

Physical

| | |
|------------|--------------------------|
| Dimensions | L 130mm, W 100mm, H 25mm |
| Weight | 314g |

Power

| | |
|---------------------------|--------------------------------------|
| DC Input | 8V to 18V reverse polarity protected |
| DC Output | 1A pass-through (switchable) |
| Camera/Adapter Power | 5V over video input (switchable) |
| Typical Power Consumption | 7.5W (SD), 8.5W (HD), 9.5W (Dual) |

Environment

| | |
|-------------------|------------------------------------|
| Temperature Range | -20°C to +60°C |
| Humidity | Less than 85% Non-Condensing |
| Cooling | Passive, external heat sink or fan |
| Sealing | IP66 |
| EMC Conformance | CE marked |

Product Codes:

Please see configurator table on the following page.

* Future development

Products are available to security users in licensed frequency bands. Encryption licences are subject to export control. These products are not approved for use by unlicensed users. Commercial products are available if used in appropriate licensed frequency bands.

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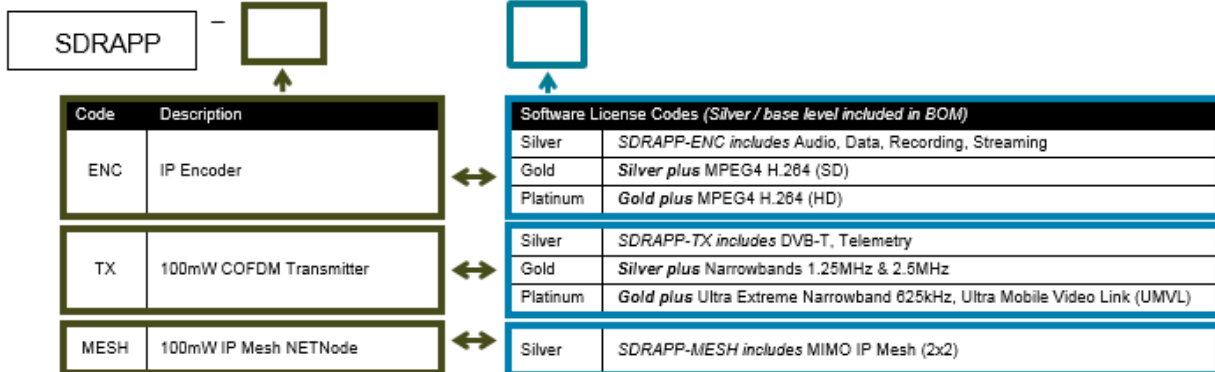
April 2016 Data Sheet

Family: SOLO8 Product: SDR

Export of Encrypted Products is Subject to United Kingdom Regulatory Export Controls

DTC Sales Code

Please enter required codes



| Product Code Includes | |
|-----------------------|---|
| AP007377 | Micro-B USB Cable |
| CA0002 | 12V DC Power lead Lemo-wire 3m |
| CA2519 | UltiMate DC Power / PA Cable |
| CA2520 | UltiMate DC Audio / RS232 Cable |
| CA2521 | UltiMate Ethernet Breakout |
| CA2522 | UltiMate USB Breakout |
| CA2398 | DIN 1.0/2.3 to BNC Female Cable x 2 |
| SA3741 | USB stick containing User Guide, DTC Device Controller and Integration Documentation, including Mission Commander Tactical Base Level |

| Compatible Products (sold separately) | |
|---------------------------------------|----------------------------------|
| SOL5RX | SD Receiver |
| SOL7NNV | Handheld SD Receiver |
| SOL4MIV2 | Tactical SD Receiver |
| PRORXB | HD Receiver |
| PRORXD | Dual HD Receiver |
| SOL7NNVHD | Handheld HD Receiver |
| SOL7MIVHD | Tactical HD Receiver |
| SOL7HDRX | Hd Receiver |
| NETNode2W-3R | Phase 3, 2W Robust IP Mesh Radio |
| NETNode2W-3P | Phase 3, 2W Plain IP Mesh Radio |
| NETNode-MIMOR | MIMO, 2W Robust IP Mesh Radio |

| Related Accessories (sold separately) | |
|---------------------------------------|--|
| SOL8SDR-RSK | SOL8SDR Robust Surveillance Kit, incl CAMuPHDK (HD SDI Pin-hole camera & 3 lenses), Microphone, ANT, Battery, Pelicase, excl SOL8SDR-R |
| SOL8KF-043 | Three button key fob (433.05-434.79MHz) |
| SOL8KF-091 | Three button key fob (902-928MHz) |
| SOL8SDI | HDMI / Composite to SDI converter |
| CAMuPHDK | Pin-hole HD camera kit |
| CA2830 | DIN 1.0/2.3 to MMCX Cable for CAMuPHD |
| AP000908 | 820-960MHz SMA dipole antenna |
| AP002075 | 1.65-1.95GHz SMA 1dBi dipole antenna |
| AP001901 | 2.0-2.5GHz SMA 2dBi dipole antenna |

Wide range of antennas available on request

DTC - Solent
Fusion 2,1100 Parkway
Whiteley, Hampshire
PO15 7AB, UK
T: +44 1489 566 750

DTC - Tampa
3845 Gateway Center Blvd Ste 360
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FL 33782, USA
T: +1 727 471 6900

DTC - Randers
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