

## SOLO7 – HD Nano Transmitter

COFDM – Video, Audio Telemetry and IP Products

May 2016 Data Sheet



The SOLO7 HD Nano Transmitter is an ultra-miniature COFDM digital video transmitter from Domo Tactical Communications, designed specifically for Point-of-View (PoV) and body-worn applications.

With proven DTC COFDM and H.264 encoder technology at its core, the exceptionally small size and ultra-low power consumption (typically 7.5W) HD Nano Transmitter enables viewers high definition images ideal for establishing rugged wireless video links in all environments including mobile and urban environments.

The small size and ultra-low power consumption make the HD Nano TX ideal for UAV installations, enabling true long range HD quality transmission from these increasingly popular devices for the first time. Optional lightweight, low power consumption amplifiers are also available for even greater range capability.

The HD Nano Transmitter employs ultra-low latency High Profile H.264 (MPEG-4 AVC) encoding for excellent image quality retention over the wireless link and supports composite, SDI, HD-SDI and HDMI video input formats. Broadcast quality 4:2:2 encoder mode available as an option.

The HD Nano Transmitter offers numerous modulation options to suit various deployment scenarios:

- Industry standard DVB-T modulation for full HD quality and compatibility with existing systems
- DTC UMVL modulation for enhanced high speed operation (motorsports) and improved performance at high frequencies (6 & 7GHz)
- DTC Narrowband (2.5 MHz), Ultra Narrowband (1.25 MHz) and Ultra-X (625 kHz) bandwidths. The narrowband modes allow users to share scarce spectrum allocation extremely efficiently.

The HD Nano Transmitter is supplied in a simple aluminium lightweight case and features an industry standard SMA RF connector. Composite video, audio, control and power interfaces use two latching Omnetics connectors. A latching DIN 1.0/2.3 co-axial connector is used for the SDI / HD-SDI input and a micro HDMI (with optional cable clamp) for the HDMI input.

The HD Nano Transmitter can be controlled via either USB or via RS232. The versatile and intuitive DTC Field Controller can also be used.

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## Specification:

### IO

|                    |                                       |
|--------------------|---------------------------------------|
| HDMI               | Micro HDMI Type D                     |
| SD/HD/3G-SDI / ASI | DIN 1.0/2.3 (or BNC via CA2396)       |
| Composite Video    | 9-way Tri-Lobe (CA2254 Yellow RCA)    |
| Stereo Audio       | 9-way Tri-Lobe (CA2254 White/Red RCA) |
| RS232 Data         | 9-way Tri-Lobe (CA2254 4-pin OB Lemo) |
| Camera Power       | 9-way Tri-Lobe (requires CA2298)      |
| S-Video            | 9-way Tri-Lobe (requires CA2298)      |
| Power              | 6-way Circular (CA2253 4-pin OB Lemo) |
| RS232 Control      | 6-way Circular (CA2253 3-pin OB Lemo) |
| USB Control        | Micro-B USB                           |
| RF Output          | SMA (100mW/50mW/10mW modes)           |

### DVB-T Modulation

|                      |                           |
|----------------------|---------------------------|
| DVB-T Bandwidth      | 8MHz, 7MHz and 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       | 3.732Mbps 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          |

### Video

|                   |   |
|-------------------|---|
| SD Input Format   | PAL, NTSC (with or without pedestal)  |
| HD Input Format   | 1920x1080i 60/59.94/50Hz<br>1920x1080p 30/29.97/25/24/23.97Hz<br>1920x1080psf 30/29.97/25/24/23.97Hz<br>1280x720p 60/59.94/50Hz |
| 3G Input Format   | 1920x1080p 60/59.94/50Hz*<br>(via 3G-SDI Level A or Level B Dual Link)  |
| H.264 Compression | AVC / H.264 / MPEG-4 Part 10<br>High profile level 4.0<br>4:2:0 or 4:2:2 (optional)   |
| ASP Compression   | ASP / MPEG-4 Part 2<br>with NB modulation and SD only   |
| Coding Options    | Horizontal scaling of 3/4, 2/3, 1/2, 1/4<br>Vertical scaling of 1/2, 1/4<br>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  |
| Latency           | 15ms to 100ms (setting dependant)   |

### Audio

|                      |   |
|----------------------|---|
| Analogue Audio Input | Analogue stereo pair or Differential mono<br>+4dBu Max input level (up to 63dB gain)        |
| Digital Audio Input  | SD/HD/3G-SDI 2 digital stereo pairs   |
| Sample Rate          | 32kHz, 48kHz  |
| Coding Modes         | 4 channels stereo or mono<br>MPEG Audio Layer 1 64-448kbps<br>MPEG Audio Layer 2 32-384kbps |

### Other

|                  |   |
|------------------|---|
| RS232 Data Input | 1k2 to 115k2, 7/8 bit, no/odd/even parity                   |
| Remote Control   | RS232 & USB Control from PC GUI Application or other device |
| Front Panel      | None, use FCON field controller                             |

### Encryption

|      |  |
|------|--|
| Type | ABS 32bit as standard<br>AES128/256 (optional) |
|------|--|

### Physical

|            |  |
|------------|--|
| Dimensions | L 67mm, W 68mm, H 22mm<br>H 27mm for > 6.0GHz* |
| Weight     | 135g for < 6.0GHz<br>TBC for > 6.0GHz*         |

### Power

|                   |   |
|-------------------|---|
| DC Input          | 5.9V to 17.8V reverse polarity protected  |
| Power Consumption | Typically 4.5W to 7.5W @ 100mW RF power<br>with additional 2.0W for >6.0GHz<br>Consumption varies depending on RF power,<br>temperature and frequency variant |

### Environment

|                   |                              |
|-------------------|------------------------------|
| Temperature Range | -10 to +50 °C                |
| Humidity          | Less than 85% Non-Condensing |

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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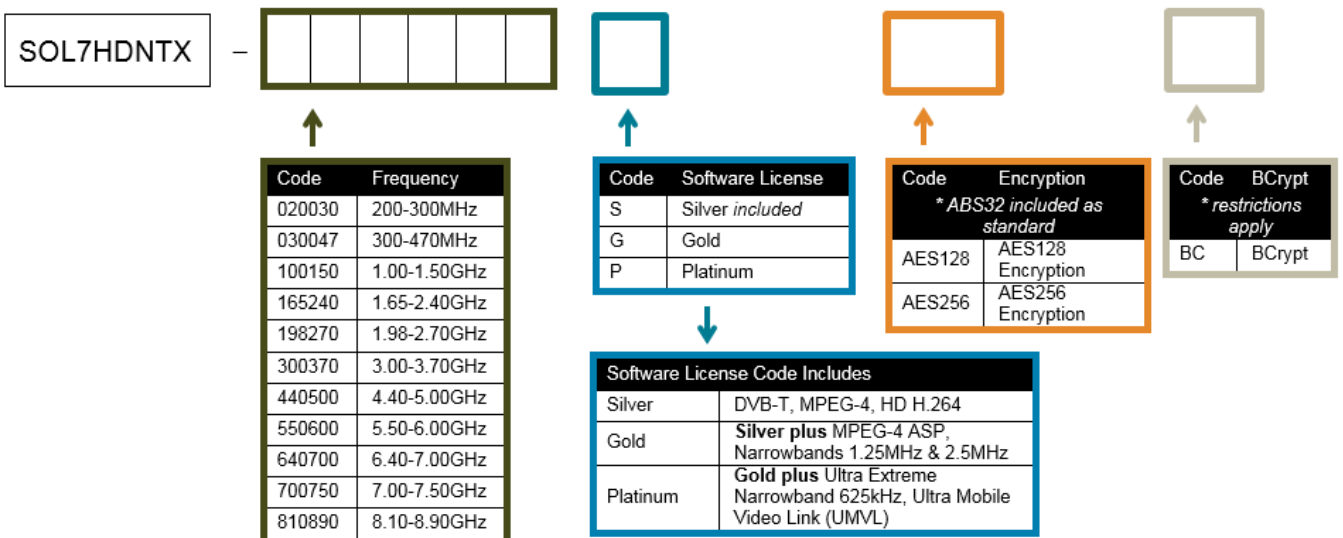
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Family: Transmitter Product: SOLO7

**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       |
| CA2253                | NTX DC Power / Control Cable         |
| CA2254                | NTX Audio / Video / Data Cable       |
| CA2396                | DIN 1.0/2.3 to BNC Female Cable      |
| AP008574              | Cobham Device Controller (USB stick) |
| AP007587              | Quick Start Guide (QSG)              |
| AP008399              | Type D Micro HDMI Male 30cm Cable    |

| Compatible Products (sold separately) |                      |
|---------------------------------------|----------------------|
| SOL5RX                                | SD Receiver          |
| SOL5RXIF                              | SD Receiver          |
| SOL4NNV                               | Handheld SD Receiver |
| SOL4MIV2                              | Tactical SD Receiver |
| PRORXB                                | HD Receiver          |
| PRORXD                                | Dual HD Receiver     |
| SOL7NNV                               | Handheld HD Receiver |
| SOL7MIVHD                             | Tactical HD Receiver |

| Related Accessories (sold separately) |  |
|---------------------------------------|--|
| CA0001                                | RS232 Cable-LemoDsub9                  |
| CA2250                                | NTX DC Power Cable                     |
| CA2370                                | NTX DC Power / FCON Cable              |
| CA2298                                | NTX 9-way Breakout Cable               |
| CA2485                                | NTX 6-way Breakout Cable               |
| NTXBAT                                | NTX 7.4V Battery Pack (2250mAh)        |
| NTXBATC                               | NTX Battery Charger (multi-region)     |
| SOLAMP500mW                           | 500mW Booster PA, 4W Power Consumption |
| SOL7NAMP1W                            | 1W Nano PA, 3-5W Power Consumption     |
| Antennas                              | Various frequencies available          |

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