rocoto

# MD11

MEDICAL WIRELESS 4K 30HZ VIDEO SYSTEM

MD11 Wireless Video transmitter and receiver devices enable the connection of live video to secondary monitors, eliminating cable clutter while expanding mobility and flexibility during surgical procedures. The MD11 delivers high-fidelity 4K 30Hz video over a secure, robust link, achieving zero latency (~1ms) for real-time surgical precision. This solution is ideal for C-arms, Surgical Cameras, Endoscopy Systems, Robotic Surgery, and other medical video applications. A single transmitter is capable of simultaneously sending the same video to four separate receiver destinations. Quick and easy installation saves time and costs while maximizing OR availability.

**Part Number**

MD11 Transmitter: MDWL1_C1N1TX

MD11 Receiver: MDWL1_B1N1RX

| | TRANSMITTER | RECEIVER |
|---|---|---|
| **VIDEO** | | |
| **Video Inputs** | 1x HDMI 1.4 Type-A | N/A |
| **Video Outputs** | 1x HDMI 1.4 Type-A | 1x HDMI 1.4 Type-A |
| **Color Sampling** | RGB: 8/10-bit<br>YCbCr: 4:4:4; 8/10-bit<br>YCbCr: 4:4:2 | RGB: 8/10-bit<br>YCbCr: 4:4:4; 8/10-bit<br>YCbCr: 4:4:2 |
| **Delay** | ~1msec | ~1msec |
| **Supported Resolutions** | *4Kp30/29.97/25/24/23.98 1080p60/59.94/50/30/29.97/25/24/23.98<br>1080i60/59.94/50<br>720p60/59.94/50 | *4Kp30/29.97/25/24/23.98 1080p60/59.94/50/30/29.97/25/24/23.98<br>1080i60/59.94/50<br>720p60/59.94/50 |
| | NOTE: Resolutions higher than 1080p60Hz are supported in 40MHz bandwidth only. | |

| | TRANSMITTER | RECEIVER |
|---|---|---|
| **AUDIO** | | |
| **Audio Format** | 48kHz 24-bit PCM | 48kHz 24-bit PCM |
| **Audio Input** | Embedded HDMI Audio Input (2 channel) | N/A |
| **Audio Output** | Embedded HDMI Audio in Loopback (2 channels) | Embedded HDMI Audio Output (2 channels) |
| **PHYSICAL ATTRIBUTES** | | |
| **Dimensions** | 6" x 3.1" x 1" (151.4 x 79 x 25mm) | 6" x 3.1" x 1" (151.4 x 79 x 25mm) |
| **Weight** | 10.4oz (296g) | 11.2oz (317g) |
| **Construction** | Milled aluminum (chassis), regulation-compliant PCB | Milled aluminum (chassis), regulation-compliant PCB |
| **Mountability** | Compatible with the VESA mounting kits AMN_VESA_KIT01 and AMN_VESA_KIT02 | |
| **INTERFACES** | | |
| **Navigation Button** | Control and configuration | Control and configuration |
| **OLED** | Status and Configuration Display | Status and Configuration Display |
| **BLE and NFC** | Control and configuration (for future use) | Control and configuration (for future use) |
| **Switches** | On/Off Switch | On/Off Switch |
| **USB-C** | Update and API | Update and API |
| **RS-232** | Device Control (for future use) | Device Control (for future use) |
| **WIRELESS VIDEO NETWORK** | | |
| **Wireless Video Bands** | DFS Frequencies:<br>5.250 ~ 5.350 GHz, 5.470 ~ 5.725 GHz<br>Non-DFS Frequencies:<br>5.150 ~ 5.250 GHz, 5.725 ~ 5.850 GHz | DFS Frequencies:<br>5.250 ~ 5.350 GHz, 5.470 ~ 5.725 GHz<br>Non-DFS Frequencies:<br>5.150 ~ 5.250 GHz, 5.725 ~ 5.850 GHz |
| | NOTE: Frequencies and channels are dependent on regional approvals. | |
| **Encryption** | AES-256, RSA-1024 key exchange | AES-256, RSA-1024 key exchange |
| **Bandwidth** | 20MHz/40MHz | 20MHz/40MHz |
| **Modulations** | OFDM | OFDM |
| **RF Power** | 15dBm EIRP | 14dBm EIRP |
| **Antennas** | 2x Internal 0dBi antennas | 5x Internal 2dBi antennas |
| **Range** | Up to 100ft (30m) | Up to 100ft (30m) |

| | TRANSMITTER | RECEIVER |
|---|---|---|
| **Multicast** | Transmitter can stream simultaneously to up to 4 receivers | Receiver can switch between 4 transmitters |
| **Noise Rejection** | Can coexist with WiFi and other devices working on the 5GHz band. Up to 6 sets at the same location | Can coexist with WiFi and other devices working on the 5GHz band. Up to 6 sets at the same location |

## BLUETOOTH AND NFC

| | | |
|---|---|---|
| **BT Band** | 2402 - 2480MHz | 2402 - 2480MHz |
| **Bandwidth** | 1MHz | 1MHz |
| **BT RF Power** | 7dBm EIRP | 7dBm EIRP |
| **NFC** | 13.56MHz | 13.56MHz |
| **NFC Antenna Inductance** | 2.1uH | 2.1uH |

## POWER

| | | |
|---|---|---|
| **Power Input** | 2.1mm barrel connector 12 VDC | 2.1mm barrel connector 12 VDC |
| **Nominal Power Consumption** | 6 Watts | 7 Watts |
| **Operating Temperature** | 0-40°C (32-104°F), Relative humidity range: 25-75% | °C (32-104°F), Relative humidity range: 25-75% |

## CERTIFICATION AND APPROVALS

| | |
|---|---|
| **General** | ISO 13485:2016<br>MDR 2017/745 Class I<br>FDA Manufacturer Registration 3014730563 FDA Listing Class I, 510K exempt.<br>CFR 21 Parts 801, 807, 820, 880<br>UK MDR 2002 |
| **Medical Electrical Equipment** | IEC 60601-1:2005 + A1:2012 + A2:2020, EN 60601-1:2006 + A1:2013 + A2:2021, ANSI/AAMI ES60601-1:2005+ A1:2012 + A2:2021, CAN/CSA-C22.2 No. 60601-1:14 + A2:2022<br>IEC 60601-1-6:2010+A2:2021, EN 60601-1:2010 + A1:2015 + A2:2021<br>IEC 60601-1-2:2014 + A1:2020, EN 60601-1-2:2015 + A1(21) Edition 4.1, CISPR 11:2015 + A1(16) + A2(19) group 1 class B limits |
| **Materials** | Regulation (EC) No 1907/2006, Directive 2011/65/EU & 2015/863/EU |
| **Radio** | FCC CFR 47 Part 15, Radio FCC CFR 47 Part 2<br>RE-Directive 2014/53/EU: EN 301 893 V2.1.1, EN 300 328 V2.2.2, EN 50665:2018<br>Electromagnetic Compatibility - EN 301 489-1 V2.2.3, EN 301 489-17 V3.2.4, Class B |