| Specification | AXPLO2600 | Rev.: 1 | Date: 2018-10-29 |
|---|---|---|---|

## Oscillator type: UHF Ultra-Low Noise Phase-Locked OCXO (PLOCXO)

| Parameter | min. | typ. | max. | Unit | Condition |
|---|---|---|---|---|---|
| **Reference frequency (input) $f_{REF}$** | 10 | | 150 | MHz | |
| **Output frequency $f_{OUT}$** | 500 | | 3000 | MHz | Multiplication (Note 2) |
| **Frequency stability (free running)** | | | | | |
| frequency tolerance | | | ±500 | ppb | |
| vs. operating temperature range | | | ±100 | ppb | steady state |
| vs. supply voltage variation (pushing) | | | ±10 | ppb | $V_S$ ±5% |
| vs. load change (pulling) | | | ±10 | ppb | $R_L$ ±5% |
| Long term (aging) per day | | | ±2 | ppb | after 30 days operation |
| Long term (aging) per year | | | ±200 | ppb | after 30 days operation |
| **Reference input** (Note 3) | | | | | |
| Frequency accuracy | | | ±500 | ppb | |
| Signal waveform | | Sine wave | | | |
| Input level | +3 | | +13 | dBm | |
| Input impedance | | 50 | | Ω | |
| **RF output** | | | | | |
| Signal waveform | | Sine wave | | | |
| Load $R_L$ | | 50 | | Ω | ±5% |
| Output level | +11 | +13 | +15 | dBm | |
| Harmonics | | | -30 | dBc | |
| Sub-harmonics | | -50 | -40 | dBc | |
| PLL Products | | | -60 | dBc | |
| Spurious | | | -80 | dBc | |
| Phase noise @ 1000 MHz (Note 4, 5) | | -115<br>-140<br>-150<br>-155<br>-160 | -110<br>-135<br>-145<br>-150<br>-150 | dBc/Hz<br>dBc/Hz<br>dBc/Hz<br>dBc/Hz<br>dBc/Hz | @ 100 Hz<br>@ 1 kHz<br>@ 10 kHz<br>@ 100 kHz<br>@ ≥1 MHz |
| **Lock detect (LD) output** | <br>2.3 | 0<br>3.3 | 1.0 | V<br>V | Out of lock<br>Locked |
| **Supply voltage $V_S$** (Note 6) | 11.4 | 12.0 | 12.6 | V | |
| **Current consumption** (warm-up) | | | 600 | mA | |
| **Current consumption** (steady state) | | | 300 | mA | @ +25°C |
| **Operating temperature range** | -10 | | +60 | °C | |
| **Enclosure (see drawing) (LxWxH)** | | 60x60x30 max. | | mm | |
| **DC connectors** | | Feedthrough<br>Micro-D | | | Option 1 = "FT"<br>Option 1 = "MD" |
| **Weight** | | | 200 | g | |
| **Packing** | | Palette | | | |

**Notes:**

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. Frequency multiplication factor N depends on output frequency $f_{OUT}$
3. Programmable version available on request
4. Phase noise for other frequencies please consult factory
5. Phase noise performance for <100 Hz in locked state depends on reference oscillator
6. For other supply voltage please consult factory

## Absolute Maximum Ratings

| Parameter | min. | max. | Unit | Condition |
|---|---|---|---|---|
| Supply Voltage $V_S$ | -0.5 | $V_S$ + 10% | V | $V_S$ to GND |
| Reference Input Level | - | +15 | dBm | |
| Storage Temperature | -55 | +105 | °C | |

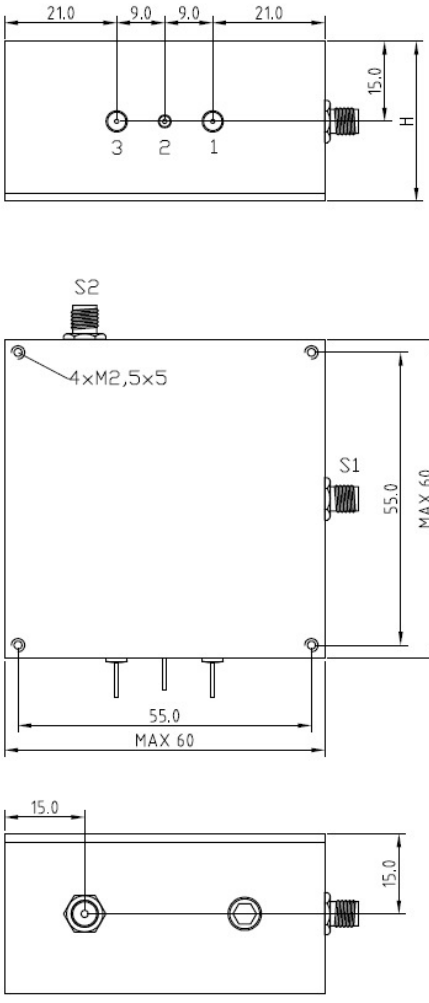
## Ordering Code

| Model | Option 1 [Package] | Input Frequency [MHz] | Output Frequency [MHz] | Revision |
|---|---|---|---|---|
| AXPLO2600 | "FT" or "MD" | 10 | 1000 | Rev.1 |

**Example: AXPLO2600-FT-10-1000_Rev.1 – 1000.000 MHz**

## Enclosure drawing

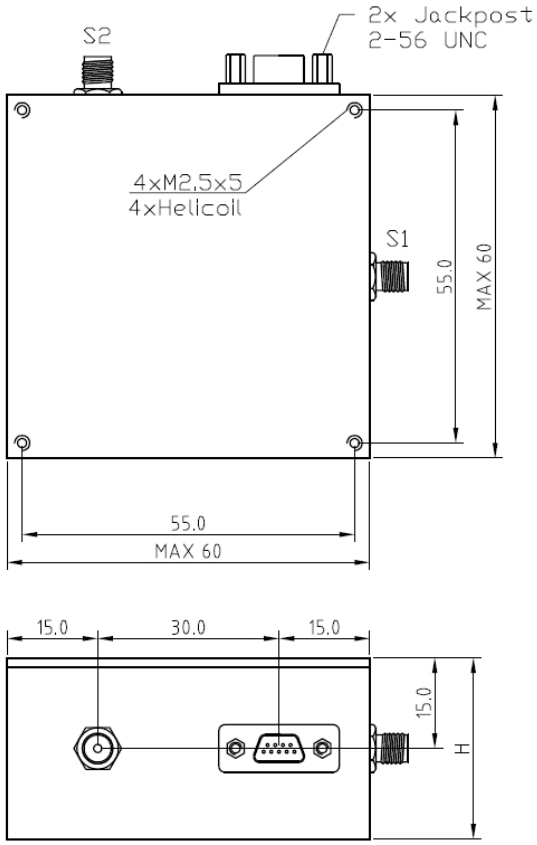
## Package Option FT "Feedthrough connectors"




### Pin connections:

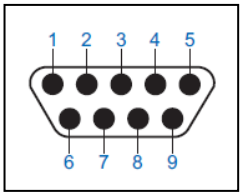
| Pin # | Symbol | Function |
|---|---|---|
| **1** | $V_S$ | Supply Voltage |
| **2** | GND | Ground |
| **3** | LD | Lock Detect |
| **SMA1** | RF IN | RF Input FREF |
| **SMA2** | RF OUT | RF Output |

## Package Option MD "Micro-D connector"




### Pin connections:

| Pin # | Symbol | Function |
|---|---|---|
| **1** | $V_S$ | Supply Voltage |
| **2** | GND | Ground |
| **3** | LD | Lock Detect |
| **SMA1** | RF IN | RF Input FREF |
| **SMA2** | RF OUT | RF Output |



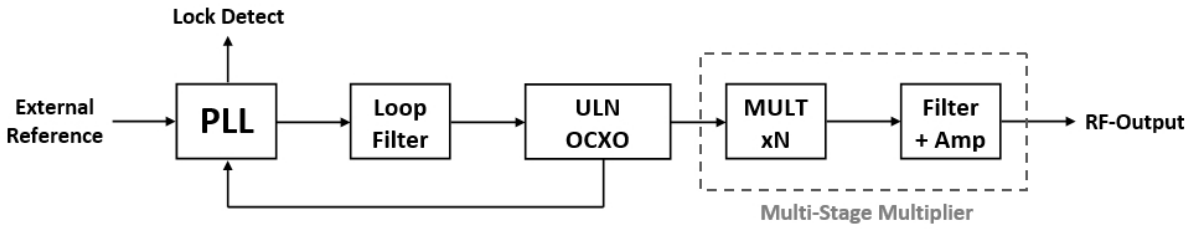

**Front View Micro-D connector**

### Pin connections Micro-D connector:

| Pin # | Symbol | Function |
|---|---|---|
| **1** | $V_S$ | Supply voltage |
| **2** | $V_S$ | Supply voltage |
| **3** | GND | Ground |
| **4** | GND | Ground |
| **5** | D.N.C. | Do Not Connect |
| **6** | LD | Lock Detect |
| **7** | D.N.C. | Do Not Connect |
| **8** | D.N.C. | Do Not Connect |
| **9** | D.N.C. | Do Not Connect |

**Micro-D Connector:** M83513/03 with jack posts M83513/05-07 (2-56 UNC)

## Block diagram



## Handling and Testing

| Parameter | Procedure | Source |
|---|---|---|
| Handling and Testing | Application Note AXAN-011 | www.axtal.com |
| Processing | Application Note AXAN-012 | www.axtal.com |

| Parameter | Procedure | | Condition |
|---|---|---|---|
| Electrostatic discharge (ESD) | | | |
| THD devices | IEC60749-26 | HBM | 2000 V |
| SMD devices | IEC60749-27 | MM | 200 V |
| Washable | ✖ Yes ☐ No | | |
| RoHS- Compliant | ✖ Yes ☐ No | | |

## Environmental conditions

| Test | IEC 60068 Part … | IEC 60679-1 Clause | MIL-STD-202G Method | MIL-STD-810F Method | MIL-PRF-55310D Clause | Test conditions (IEC) |
|---|---|---|---|---|---|---|
| Sealing tests (if applicable) | 2-17 | 5.6.2 | 112E | | 3.6.1.2 | Gross leak: Test Qc,<br>Fine leak: Test Qk |
| Solderability<br>Resistance to soldering heat | 2-20<br>2-58 | 5.6.3 | 208H<br>210F | | 3.6.52<br>3.6.48 | Test Ta Method 1<br>Test $Td_1$ Method 2<br>Test $Td_2$ Method 2 |
| Shock* | 2-27 | 5.6.8 | 213B | 516.4 | 3.6.40 | Test Ea, 3 x per axes 100g,<br>6 ms half-sine pulse |
| Vibration, sinusoidal* | 2-6 | 5.6.7.1 | 201A<br>204D | 516.4-4 | 3.6.38.1<br>3.6.38.2 | Test Fc, 30 min per axes,<br>10 Hz - 55 Hz 0,75mm; 55 Hz - 2 kHz, 10g |
| Vibration, random* | 2-64 | 5.6.7.3 | 214A | 514.5 | 3.6.38.3<br>3.6.38.4 | Test Fdb |
| Endurance tests<br>- ageing<br>- extended aging | | <br>5.7.1<br>5.7.2 | 108A | | <br>4.8.35 | <br>30 days @ 85°C, OCXO @25°C<br>1000h, 2000h, 8000h @85°C |

Other environmental conditions on request

Data sheet is for information purposes only and may be subject to modifications or may be discontinued without notice.

## Revision History

| Rev. | Drawing | Date [dd.mm.yyyy] | Remarks | Author | Checked |
|---|---|---|---|---|---|
| 1 | D0 | 29.10.2018 | First issue | HH | ME |