Product Brief

# UMD002A - Preliminary

## Band 2 UMD Series Duplexer

Available as direct-solder to PCB or with various connector options.

ESTIMATE Part Dimensions: 64 × 29 × 13 mm • <90 g (excl. connectors)
Materials: Ag plated ceramic block with tin plated brass shield

### Features

- Low Loss with High Rejection
- Superior power handling and reliability
- Universal footprint across all UMD Series frequency bands
- Available for either PCB mounting or with various connectors including SMA, SMP-Max, and other options.

### Applications

- Wireless Infrastructure applications
- High-performance carrier-grade active antennas and small-cells for 4-10W at the antenna port.
- Wide-band DAS, Repeaters, or small-cells requiring multi-channel or carrier aggregation

### Description

Ceramic duplexer supports a universal footprint across all FDD frequency bands enabling the use of a common system PCB. Provides superior rejection, insertion loss, reliability, as well as both peak and average power handling compared to other duplexer technologies.

### Electrical Specifications

| Parameter | Frequency (MHz) | Typical at 25°C | Spec. at 25°C | Spec. over -40°C to +85°C |
|---|---|---|---|---|
| Nominal Impedance | - | 50 ohms | - | - |
| Average Input Power | - | - | - | 20.0 Watt max |
| Peak Input Power | - | - | - | 200 Watt max |
| Passive Intermodulation (2x 5W) | - | - | - | -106 dBm TBC |
| **Antenna to UL Response** | | | | |
| Passband Insertion Loss (5 MHz avg) | 1850 - 1910 | 2.4 dB | 2.6 dB max | 2.6 dB max |
| Passband Return Loss | 1850 - 1910 | 15 dB | 14 dB min | 14 dB min |
| Attenuation: | 1930 - 1990 | 74 dB | 72 dB min | 72 dB min |
| **DL to Antenna Response** | | | | |
| Passband Insertion Loss (5 MHz avg) | 1930 - 1990 | 2.4 dB | 2.6 dB max | 2.6 dB max |
| Passband Return Loss | 1930 - 1990 | 15 dB | 14 dB min | 14 dB min |
| Attenuation: | 1850 - 1910 | 80 dB | 78 dB min | 78 dB min |
| **DL to UL Response** | | | | |
| Attenuation for UL band (5MHz avg) | 1850 - 1910 | 82 dB | 80 dB min | 80 dB min |
| Attenuation for DL band (5MHz avg) | 1930 - 1990 | 76 dB | 74 dB min | 74 dB min |

Note: CTS tests each unit to the critical specifications above. Subsequent audits may deviate due to repeatability among different test systems which shall not exceed these allowances.

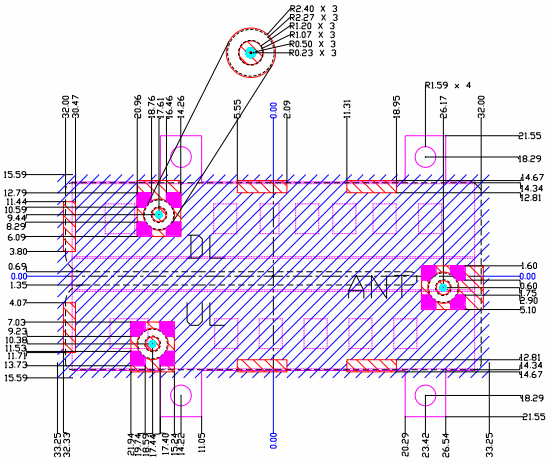
| Specification Allowance | |
|---|---|
| Insertion Loss | 0.1 dB |
| Return Loss | 1.0 dB |
| Attenuation | 1.0 dB |

TBC = To be confirmed

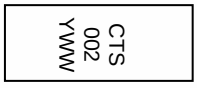
## Mechanical Drawing

| Dim. | Nominal (mm) | Tolerance (±mm or Max) |
|---|---|---|
| A | 64.00 | Max |
| B | 29.00 | Max |
| C | | |
| D | | |
| E | | |
| F | | |
| G | | |
| H | | |
| I | | |
| J | | |
| K | | |

## PCB Layout (Top-Down View)



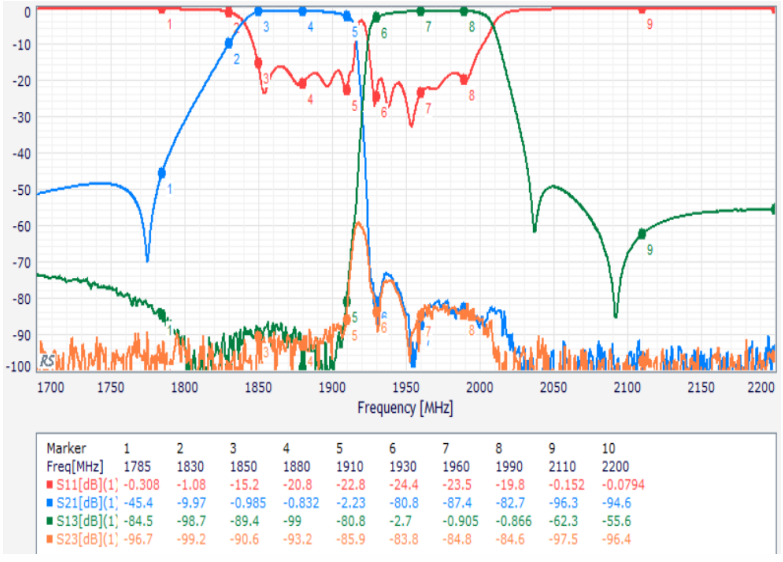

## Packaging and Marking




Product is shipped in Pre-formed foam trays

The trays have xx slots each with one filter per slot. Boxes are packed with 12 Trays per box for a total of xx filters per box.

## Electrical Response




| Marker | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Freq[MHz] | 1785 | 1830 | 1850 | 1880 | 1910 | 1930 | 1960 | 1990 | 2110 | 2200 |
| S11[dB](1 | -0.308 | -1.08 | -15.2 | -20.8 | -22.8 | -24.4 | -23.5 | -19.8 | -0.152 | -0.0794 |
| S21[dB](1 | -45.4 | -9.97 | -0.985 | -0.832 | -2.23 | -80.8 | -87.4 | -82.7 | -96.3 | -94.6 |
| S13[dB](1 | -84.5 | -98.7 | -89.4 | -99 | -80.8 | -2.7 | -0.905 | -0.866 | -62.3 | -55.6 |
| S23[dB](1 | -96.7 | -99.2 | -90.6 | -93.2 | -85.9 | -83.8 | -84.8 | -84.6 | -97.5 | -96.4 |

## Electrical Specifications – Supplemental Spectrum Specifications

| Parameter | Frequency (MHz) | Typical at 25°C | Spec. at 25°C | Spec. over -40°C to +85°C |
|---|---|---|---|---|
| **Antenna to UL Response** | | | | |
| Attenuation: | 1 - 1684 | | | 50 dB min |
| | 1685 - 1785 | | | 35 dB min |
| | 1830 | | | 5 dB min |
| | | | | |
| | 1991 - 2483 | | | 52 dB min |
| | 2484 - 2690 | | | 52 dB min |
| **DL to Antenna Response** | | | | |
| Attenuation: | 1 - 1850 | | | 52 dB min |
| | | | | |
| | 2110-2200 | | | 35 dB min |
| | 2200 - 2483 | | | 52 dB min |
| | 2484 - 2690 | | | 52 dB min |

## Ordering Options

| Part Number | Code | Connector Option Description |
|---|---|---|
| UMD002A | [blank] | No pins or connectors |
| | -C3 | 3 SMP-Com Male with limited detent |
| | -CF2 | SMP-Com Male with limited detent antenna port + 2 SMP female cables |
| | -M3 | 3 SMP-Max Slide-type Male |
| | -P3 | 3 thru-hole pins for soldering to PCB |
| | -S3 | 3 SMA Female |