

### Product Highlights

- U4 to 42 GHz frequency bands
- 3.5 to 56 MHz RF channel bandwidths
- Supports QPSK and 16 to 1024QAM modulations
- Standard and high power options
- Greater than 75 years MTBF
- Designed to meet FCC, ETSI and CE safety and emission standards

### Product Features

- Cost effective outdoor architecture
- Supports all common ITU-R standards and frequency recommendations
- Software configurable microcontroller for ODU monitor and control settings
- Low noise figure, low phase noise and high linearity
- Compact and lightweight design
- Very high frequency stability
- Wide operating temperature range

### Series Overview

Application	Advantage ODU		
	P	SP	SP+
PDH	✓	✓	✓
SDH		✓	✓
IP/Ethernet	✓	✓	✓
Narrow channels	✓	✓	✓
Wide channels	✓	✓	✓
High power			✓

## Advantage ODU Series

The **Advantage ODU Series** is a family of high performance, competitively priced Out Door Units (ODUs) for wireless microwave communications and broadband networks. The **Advantage ODU Series** has been developed for OEM microwave radio vendors to integrate with their own or off-the-shelf indoor units (IDUs), or for system integrators to quickly and easily enter the digital microwave radio market.



The **Advantage ODU Series** is available in three different models to meet various ODU requirements.

#### ADVANTAGE P

The Advantage P model is optimized as the most cost effective ODU solution. This product is ideal for PDH applications utilizing QPSK and 16 to 32 QAM modulation schemes. ODUs are available in the full U4 to 42 GHz frequency bands, with RF channel bandwidths from 3.5 to 30 MHz. High transmit power levels up to +27 dBm are available for certain frequency bands.

#### ADVANTAGE SP

The Advantage SP model is designed for PDH, SDH and both hybrid and native IP/Ethernet applications, utilizing modulation schemes from QPSK up to 1024 QAM. Frequencies are available from U4 to 42 GHz, supporting RF channel bandwidths up to 56 MHz. High transmit power levels with up to +27 dBm are available for certain frequency bands.

#### ADVANTAGE SP+

The Advantage SP+ model uses the same highly advanced ODU technology as the Advantage SP, with an extended performance capability. Transmit power levels up to +30 dBm are available for certain frequency bands.

## Advantage ODU Series Specifications



FREQUENCY BAND (GHz)	U4	L6/U6	7	8	10	10.5	11	13	15	18	23	26	28	32	38	42
Frequency Range (GHz)	4.4 - 5	5.925 - 7.11	7.125 - 7.725	7.725 - 8.5	10.15 - 10.65	10.5 - 10.68	10.7 - 11.7	12.75 - 13.25	14.4 - 15.4	17.7 - 19.7	21.2 - 23.6	24.2 - 26.5	27.5 - 29.5	31.8 - 33.4	37.0 - 40.1	40.5 - 43.5
TR Spacings (MHz)	300, 312	160, 170, 252.04, 300, 340, 350	150, 154, 160, 161, 168, 196, 245	119, 126, 266, 311.12	350	91	490, 500, 530	225, 266	315, 420, 490, 644, 728	1092.5, 1008, 1010	1008, 1200, 1232	1008	1008	812	700, 1260	1500
<b>TRANSMIT</b>																
Max. Power—QPSK(dBm) <sup>1</sup>	30	30	30	30	26.5	24	27	26	26	25.5	25	25	25	23	23	21
Max. Power—256 QAM (dBm) <sup>1,2</sup>	23	23	23	23	18.5	16	20	18	18	17	17	17	17	15	15	14
TX Power Change Step Size (dB)	0.5															
<b>RECEIVE</b>																
RF Input Power Range (dBm)	-90 to -20															
Max Overload Level (dBm)	> -10															
Channel Bandwidth (MHz)	3.5 to 56 MHz standard. 3.5 to 30 MHz standard option. 3.5 to 80 MHz premium option.															
Synthesizer Step Size (KHz)	250 (except for 6 GHz TR=252.04 MHz and 8 GHz TR=311.32 MHz). 125 KHz optional.															
Receiver Noise Figure (dB)	6.0	6.0	6.0	6.0	6.0	8.0	6.0	6.5	6.5	6.5	7.0	7.0	7.0	7.5	7.5	9
<b>IF SPECIFICATIONS</b>																
IF Center Frequency (MHz)	350 transmit, 140 receive, Custom frequencies available.															
TX IF Power (dBm)	+5 to -22															
RX IF Output Power (dBm)	-10 ±2															
Telemetry	ASK full-duplex at 5.5 MHz and 10 MHz															
<b>PRIMARY POWER</b>																
Voltage Range (VDC)	-24 to -72															
Max. Power Dissipation (Watts)	25 (P and SP), 35 (SP+)															
<b>TEMPERATURE</b>																
Operating Range (To Spec)	-33°C to +55°C															
Operating Range	-40°C to +65°C															
Humidity	100%															
<b>PHYSICAL PARAMETERS</b>																
Weight (lbs)	≤ 9.5															
Dimensions (inches)	10.9 x 9.4 x 3.6															
Antenna Interface	N-Type or Direct Mount								Direct Mount							

<sup>1</sup> Advantage SP+ ODU only. Advantage P and SP ODUs typically 3 dB lower

<sup>2</sup> Advantage P ODU QPSK to 32 QAM only

Specifications typical unless stated.  
Specifications subject to change without notice.