

## Description

Topcon's UR-1 is a robust UHF/FH915 external radio designed for machine control applications.

## Features

- Bolt-on, rugged aluminium enclosure (IP69K)
- UHF/FH915 radio compatibility
- Deutsch connector (DT04-6P) with connection for machine power, CAN 2.0, and RS232 serial connection
- RP-TNC RF connector for optional whip antenna
- LED indicators for Power, Radio Signal, and CAN status

## Specifications

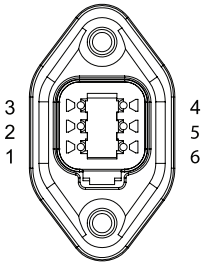
Electrical	
<b>Supply Voltage</b>	9-32V
<b>Supply Current</b>	Typical current: 0.1A typical operating current @ 24V Standby current: 0.8W Maximum current: 0.2A @ 24V
<b>Electromagnetic Compatibility</b>	<b>Applicable Standards</b>  Emissions: Applicable regulation: EN 13309:2010; ISO13766:2006; EN 55032:2012 Immunity: Applicable regulation: EN 13309:2010; ISO 13766:2006; EN 301 489-1
<b>Ports</b>	CAN 2.0 up to 1MB RS-232

Radio Antenna	
<b>Radio Performance</b>	Dual UHF and FH915 (selectable); Receiver Mode Only
<b>Frequency Range</b>	UHF: 403-470 MHz; FH915: 902.2...927.8 MHz
<b>Co-Channel Rejection</b>	UHF (dB): -8 (12.5 kHz channel spacing) -12 (25 kHz channel spacing)  FH915 (dB): Not specified
<b>Sensitivity</b>	UHF: BER < 10 <sup>-5</sup> ; in dBm: GMSK, 12.5 kHz chnl spacing: -115 GMSK, 25 kHz chnl spacing: -115 4 level FSK, 12.5 kHz chnl spacing: -106 4 level FSK, 25 kHz chnl spacing: -106 FH915: BER < 10 <sup>-5</sup> ; in dBm: 2 level FSK, 200KHz chnl spacing: -105
<b>Dynamic Range</b>	UHF: -110 to -10 dBm FH915: 90 dB
<b>Adjacent Channel Selectivity (FEC ON)</b>	UHF: > 63 dB FH915: Not Specified
<b>Data Rate</b>	UHF: User Selectable (bps) <i>Depending on Modulation Protocol (see below):</i> 4800 9600 19200
<b>Modulation Protocol Type (User Selectable)</b>	UHF: PDL, TPS, Trimble, Satel 3AS FH915: TPS Frequency-Hopping

Environmental	
Operating Temperature	-40°C (-40°F) to +70°C (158°F)
Storage Temperature*	-40°C (-40°F) to +85°C (185°F) *Short term storage that can be tolerated without damage to operation of the unit.
Humidity Test	240 hours, 65°C (149°F) at 95%RH
Ingress Protection	IP69K
Shock Test	25G 11 ms ½ sine wave 6X each axis
Salt Fog Test	ASTM B117-03
Vibration Test	10-2000Hz Random, 1.5 GRMS

Physical	
Housing	Aluminium
Housing Dimensions	176 mm x 104 mm x 42 mm (6.8 in x 4.1 in x 1.65 in )
Connectors	Deutsch DT04-6P-CL09 TNC, Female
Weight	550 gm (1.2 lb)

## Connector Pinouts



Conn A - 6-pin Deutsch DT04-6P-CL09	
1	Power
2	—
3	—
4	TX D
5	RX D
6	Ground

## LED Status Key

LED Pattern	Solid - Lit	Blinking	Off - No Light

## LED Status

### Power LED

Icon	Color	Status
	Solid Red	UR-1 is powered On
	Blinking Yellow	UR-1 Bootloader running
	No Light	UR-1 is powered Off

### Radio LED

Icon	Color	Status
	Blinking Green	Radio activity
	Blinking Red	R2C is upgrading
	Blinking Yellow	UR-1 Bootloader running
	No Light	No radio activity

### CAN BUS LED (Future Support)

Icon	Color	Status
	Blinking Yellow	UR-1 Bootloader running
	No Light	No CAN BUS activity

## Envelope Dimensions

