

UG22 RF over IP - channelised -001



This VHF/UHF device supports channelized or bandpass RF over IP, and is our 4th generation, since 2015 of this method.

Over routable IT IP infrastructure, dark data fibre, or single copper pair up to 1km, this device can propagate 8 RF channels of any modulation

Traditional analog RF over fibre systems are sensitive to fibre loss, fibre condition and cannot be routed through existing IT switched infrastructure, and generally requires skilled personnel to diagnose and align systems. This wideband RF over IP method can be both IP routed or used device direct for absolute minimum latency.

RF channels are digitized to IQ baseband, enabling any RF waveform to be transported, mode changed or frequency translated – F-in does not have to equal F-out.

Point to Point or Multipoint systems are possible with smart mixing of multiple feeds to mitigate issues of varying noise floors across inputs, for example. Up to 16 units may be assembled in a master-slave voting network complete with facilities for prerecorded audio insertion messages and channel broadcasting functions.

Network utilization for 8 x 12.5 kHz channels is approx 2.7 Mbps.

Real time spectral analysis is available for diagnostics, Web-browser control and configuration, as well as SNMP management and a built in self test is provided for. Boot time is 3 seconds. A presentation time stamp -TS is optional for precise timing if part of a simulcast system, reducing latency requirements

A single extra clear carrier is available (9th channel) for pilot generation.

Built in analog / P25 / DMR repeaters, mode translation is available

This is not a standardized chipset SDR - base station grade ADC and DACs are used to provide signal fidelity and flexibility. The dual lockstep processor system meets functional safety requirements of ISO 26262:2018 and ISO 61508:2010 permitting high availability. Secure operation and a multitude of tamperproof hardware based encryption facilities are supported to meet cyber-security requirements.

These radios are designed and build in Australia at our facility. Both electronics and metalwork are fabricated locally providing complete control over software and hardware, and a high Australian content. All parts used are sourced from official licensed distributors.

Specifications UG22-001 channelized RFoIP

External :

RF Interface : SMA (Full Duplex)
 Power requirement : 11 to 60 V input
 Power consumption : Typical 10 Watts
 Dimensions : Extrusion : 220 x 160 x 50, Rack : 1RU or Milled Slab.
 Weight : approx 750 g with slab coldplate
 Normal operating ambient temperature : -20 to +55 C

Startup boot time : Less than 3 seconds.

RF performance, typical deployed configuration :

Radio frequency range – all configurations : 110 to 960 MHz
 Bandwidth : 24 MHz TX or RX
 Dynamic Range , 12.5kHz communications grade, > 105dB .
 Maximum RX Input : +10dBm (limiter)
 TX output power : +23dBm standard, +33dBm -HPA
 Number of discrete RF inputs : 1
 Number of discrete RF outputs : 1
 Spare Pilot channel : yes

Clocking and Synchronisation :

Standard : TCXO
 Option : GPS.
 Minimum Latency :
 analog mode with full regeneration and robust buffers : 10mS
 TDMA mode : 200uS min, end to end , gigabit ethernet.
 Reduced latency possible with some compromises.

Interaction interfaces :

Ethernet (fibre / copper), SPE.

Options : -HPA, -TS, -GPS

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Designed and Manufactured in Australia