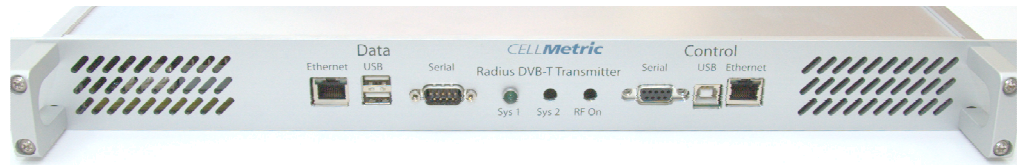


# Radius 5 DVB-T/H Transmitter/Repeater

## IP ProMPEG COP3 & RTP Input

### DVB-T Input

### ASI Input



Integrated



Rugged



Air cooled



Low Power

The CellMetric Radius 5 DVB-T/H Transmitter is designed to provide cost effective, easy to install and easy to operate DVB-T/H digital transmission for broadcasters and cellular network operators.

The Radius 5 base station is designed for:

- Rural coverage
- Infill coverage
- Local coverage in public buildings, tube stations, sports events and emergency transmission scenarios.
- Trials systems for low power stand-alone base

Inputs include

- IP ProMPEG COP3 & RTP Ethernet to RF transcoding
- ASI & Optical ASI transport stream interfaces

Radius 5 supports generation of signals at RF in the UHF TV and L bands.

Live transport stream ASI feeds can be modulated to the DVB-T/H standard, EN 300 744.

Output level can be controlled in the range +36dBm to 0dBm using the inbuilt attenuator in steps of 1dB.

Radius 5 utilises a dedicated system controller for remote web based monitoring of:

- Supply power and sequencing
- Temperature
- IP Performance

#### Features & Benefits

- Software Defined Radio (SDR) architecture allows multi-standard operation and simple upgrade
- Application Specific I/Q™ channel coder options for DVB-T & DVB-H
- Pro MPEG COP3 & RTP IP transcoder for IP feeds
- Regenerative repeating for DVB-T
- ASI Transport Stream Input option
- Supports hierarchical modulation
- Compact and portable for emergency deployment, field trials and demonstrations
- Rugged, 1U Rack mount with forced air cooling
- Cost effective for multiple unit deployment
- Completely self-contained, inbuilt :
  - EN 300 744 modulator
  - RF Receiver (Option)
  - CoP3 IP Transcoder
  - +36dBm Power Amplifier
- Internal PRBS generator for BER measurement
- Industry standard Ethernet and RS232 interface options

CellMetric designs and manufactures innovative digital broadcast equipment.

Its products focus on reliability, ruggedness, modularity, intelligence and flexibility using leading edge digital technology.

CellMetric is based close to the centre of the historic university city of Cambridge, UK.

www.cellmetric.co.uk



- Rugged
- Easy to Install
- Easy to commission
- Easy to maintain

# IP ProMPEG COP3 & RTP Input DVB-S/S2 Input DVB-T Input



Integrated



Rugged



Air cooled

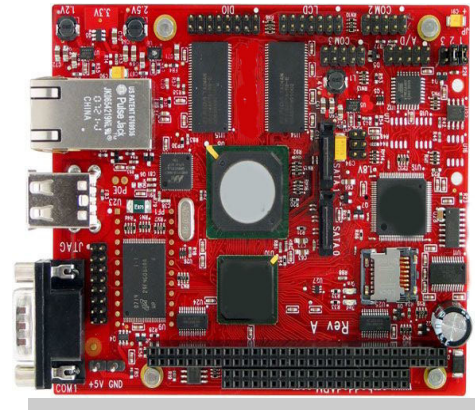
## IP ProMPEG COP3 Input

Radius 5 can accept a IP feed from its 10/100/1000 BaseT interface. IP streams are transcoded to DVB transport streams and then modulated to DVB-T or DVB-H standards.

IP feeds provide flexibility and can be very cost effective. Radius 5 implements a RTP protocol stack with the ProMPEG spatial forward error correction algorithm which provides high levels of error protection.

Uniquely Radius 5 provides up to a 5 second transport stream buffer to allow for severely jittered IP feeds.

This buffering capability allows the use of directed radio feed links like directional IEEE802.11 which provide good range at a and is very cost effective. Alternatively DSL type links can be used to provide IP feeds to the base station.



## IP Standards

- RTP
- ProMPEG COP3

Interface      Waterproof locking RJ45

Max data      30MBit/s

Max IP Jitter   5 Seconds



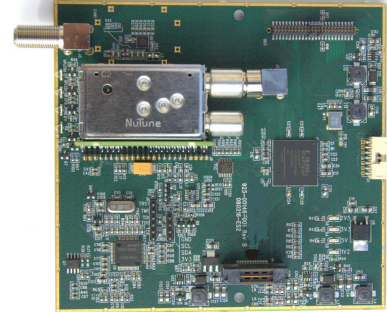
# Radius 5 DVB-T/H Transmitter

## DVB-T Regenerative Receiver

Radius 5 can operate as a DVB-T regenerative repeater receiving a DVB-T RF signal off air on one channel, demodulating to transport stream and then re-modulating to a different RF channel.

As a regenerative repeater the Radius 5 can enhance the repeated RF signal quality by using the forward error correction gain from the demodulated received signal.

When used in a multi frequency network Radius 5 will provide localised coverage for areas not able to see the main network transmissions.



Integrated

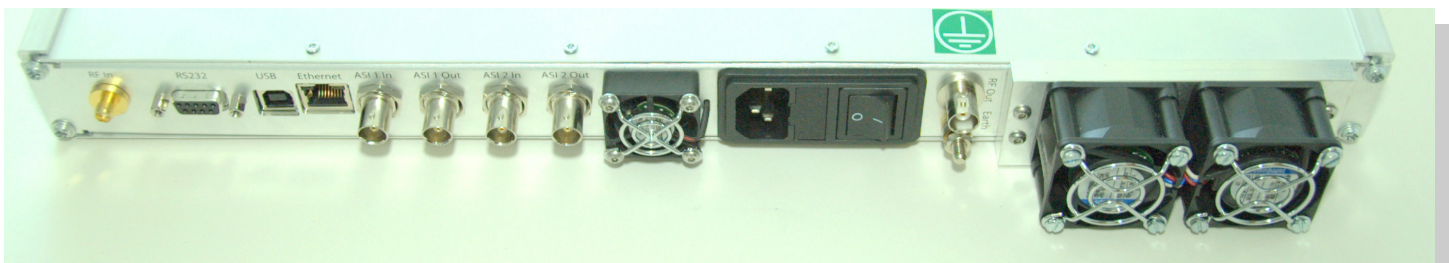


Rugged



Air cooled

|                 |   |
|-----------------|---|
| Standards       | DVB-T EN300 744                                 |
| RF Input        | VHF 170MHz to 240 MHz<br>UHF 470 MHz to 860 MHz |
| Input Impedance | 75Ω   |
| FFT Mode        | 2k 8k   |
| Modulation      | QPSK,<br>16 QAM,<br>64 QAM                      |
| Guard Interval  | 1/4, 1/8, 1/16, 1/32                            |
| FEC             | 1/2, 2/3, 3/4, 5/6, 7/8                         |
| Bandwidth       | 5, 6, 7, 8 MHz                                  |



CELLMetric

Intelligent infrastructure

# Radius 5 DVB-T/H Transmitter

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## Hierarchical Modulation support

Hierarchical modulation is supported with  $\alpha$  of 1, 2 or 4 in QAM mode. High priority and low priority streams are input via ASI transport stream inputs.

## Robust, reliable, air cooled

Radius 5 is designed for ease of installation and operation. Its rugged extruded aluminium housing

## Technical Specification

### Operating Conditions:

Power Supply voltage 100 to 260V 47-400 Hz AC

Operating Temperature range -20 to +40°C ambient

### Outputs:

Output channels UHF 470 to 862 MHz

Output Offset 62.5kHz minimum (with +/- 166.66 kHz offset capability)

Output frequency accuracy better than +/- 3ppm over temperature range

Output Band III & L Band 174 to 240 MHz 1452 to 1492MHz and 1675 MHz (Option)

Signal output level +36dBm typ.

Output Impedance 50  $\Omega$

Output RLR Better than 10dB typ.

Spectral flatness Better than +/- 0.5dB typ. across any 8MHz channel

Gain Taper Better than +/- 2dB typ. across the UHF band

Intermodulation products Better than -45dBc typ. in channel, -60dBc typ. out of channel

### Modulation:

DVB-T/H EN 300 744

FFT Mode 2k 4k 8k

Modulation QPSK,  
16 QAM,  
64 QAM

Guard Interval 1/4, 1/8, 1/16, 1/32

FEC 1/2, 2/3, 3/4, 5/6, 7/8

Bandwidth 5, 6, 7, 8 MHz

Hierarchical Code support Hierarchy 1, 2, 4 16 QAM 64 QAM

Spectral Polarity Normal or inverted

### Interfaces:

External Frequency Ref. GPS Antenna input (Option)

RF Out BNC Connector 50 $\Omega$

LAN 10/100/1000 BaseT waterproof connector

Serial RS232 Serial connector

Transport Stream In Dual DVB ASI BNC connectors supporting Hierarchical modulation

Optical ASI Optical ASI input option

### Installation:

1 U 19" rack mount enclosure

Weight 8 Kg Max

### Ordering Information

DVB-T/H Base Station Radius 5

### Options

ProMPEG COP3 IP Transcoder COP3

DVB-T Receiver Module DVB-T

