Overview of NW 5G Solutions
Pop-up 5G systems and Bespoke Networks

Neutral Wireless
Wireless
spectrum. unleashed.

Neutral Wireless Private 5G

Our multi–award-winning and Emmy®-nominated private 5G solutions have proved themselves in a range of significant high-profile deployments in recent years. While we specialise in the pop-up 5G network space, we also have equipment suited to permanent indoor or outdoor deployment, multi-cell, and enterprise use cases.

We recently refreshed our product line up, bringing to market our latest-generation **NW Etive** radio and a new portable server **NW Nessie,** to make our turnkey solution even easier to deploy. We are also launching three new affordable product tiers (see overleaf). The main building blocks of our P5G systems are high-performance custom-built servers, cutting-edge AMD RFSoC-based Software Defined Radio, and accessories including antennas, tactical fibre reels and transport cases where required. The servers run real-time gNB software stacks, currently aligned with 3GPP Rel18, and are managed using our innovative **nibOS** software.

nibOS Configuration and KPI Dashboards

nibOS is an easy-to-use web interface to configure and monitor the performance of your 5G network. Use it to set basic network parameters such as frequency and transmit power with ease, as well as configure advanced properties including TDD frame structure and bearer options. Where customers chose to purchase our 5G Core and SIM cards, nibOS also enables management of the SIM database.

Our market-leading KPI dashboard shows real-time and historic data for the gNB, 5GC and individual UE performances. This dashboard has been used in the operations centres of large events, including the King's Coronation and the Paris2024 Opening Ceremony.

Pop-Up 5G

Single cell pop-up network
up to 1W / 30 dBm Tx

Base package includes:

- n77/ n78/ n40 Etive radio in pole-mountable case
- Antenna with case
- Accessories kit
- Nessie portable gNB server
- Basic gNB config, via nibOS
- Basic live gNB KPI dashboard

Optional addons include:

- *5GC, SIM cards (5GC addon includes basic 5GC KPI dashboard)*
- *Additional gNB config options*

Pop-Up 5G Pro

Multi-cell pop-up network
(no power limitation)

Base package includes all the features from Pop-Up 5G, plus:

- Full gNB config options via nibOS
- Full gNB KPI dashboard, presenting real-time and historic data
- Option to run two cells from one Nessie, or connect multiple Nessies together to create larger networks

Optional addons include:

- *Additional Etive radio/ antennas/ accessories kits*
- *5GC, SIM cards (5GC addon includes full 5GC KPI dashboard, and realtime and historic UE KPIs*

Enterprise 5G

Bespoke networks. Designed by us.

Our enterprise 5G solutions can be tailored exactly to your use case requirements:

- Portable or pole-mount solutions
- Radios covering various bands
- Greater choice of antennas
- Rack server options
- Range of software licencing options

Optional addons include:

- *5GC, SIM cards (5GC addon includes full 5GC KPI dashboard, and realtime and historic UE KPIs)*
- *Integration with 3rd party core APIs, to enable 5GC and real-time UE KPIs*

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PB1012   Rev 1

NW Etive
Portable 5G Network Ecosystem

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OVERVIEW

The Neutral Wireless Etive is a fully portable 5G network ecosystem, with Release 18 aligned vRAN software stack and integrated mini-5GC for subscriber management and local data breakout. Etive is the perfect solution for lab work and field trials, and also for deploying a pop-up 5G network at events for sports broadcasting, music festivals, and conferences.

The NW Etive is a truly mobile private 5G SA solution, with radio heads, the NW Ness compute platform, antennas and accessories packaged in rugged transport cases ready for rapid deployment. The hardcase containing the radio (pictured right) can be directly pole mounted, and the 5G network can be unpacked and operational in as little as 5 minutes.

SOFTWARE DEFINED RADIO

Our 4TRx software defined radio heads are powered with AMD RFSoC technology, and can be operated in MIMO configurations with bandwidths of up to 100 MHz.

CUSTOMISED FOR YOUR USE CASE

Neutral Wireless is able to offer a range of hardware customisation, depending on your specific use case. While we primarily focus on midband Upper n77 (3800-4100 MHz) and Upper n78 (3600-3800 MHz) radio equipment, other bands are available. We can also supply sector and omni directional antennas (in both single- and multi-band configurations), tripods and transport cases.

KEY FEATURES

► Full 5G network ecosystem with a Rel 18 aligned vRAN software stack

► Contains a mini-5GC for subscriber management and data breakout

► 4TRx radio operates as a single 4x4 MIMO cell or as dual 2x2 MIMO cells, with bandwidths up to 100MHz

► Neutral Wireless nibOS software to configure and manage the network

► Supplied in portable transport cases, perfect for lab work, field trials, and popup 5G networks at events

► Up to four of our radios can connect to a single vRAN server

► Proven track record in high profile deployments

nibOS CONFIGURATION AND KPI SOFTWARE

We have developed an easy-to-use interface to configure and monitor the performance of the 5G network. Simply plug a device into the management port, and connect to the web interface to configure network parameters like ARFCNs and transmit powers. The user interface can also be used to monitor KPIs like cell throughputs and individual UE performances.

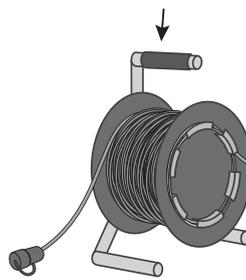Please get in touch at *info@neutralwireless.com* to discuss your 5G needs.

NW nibOS accessed via MGMT device browser
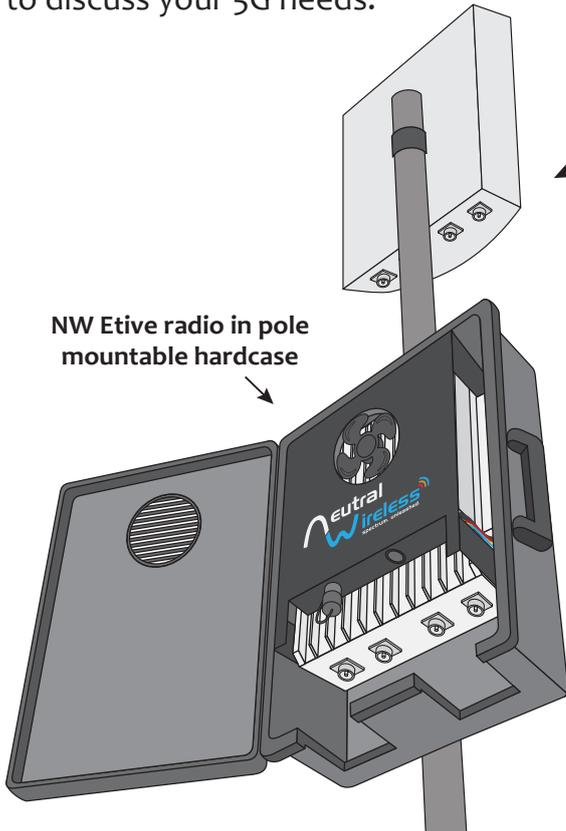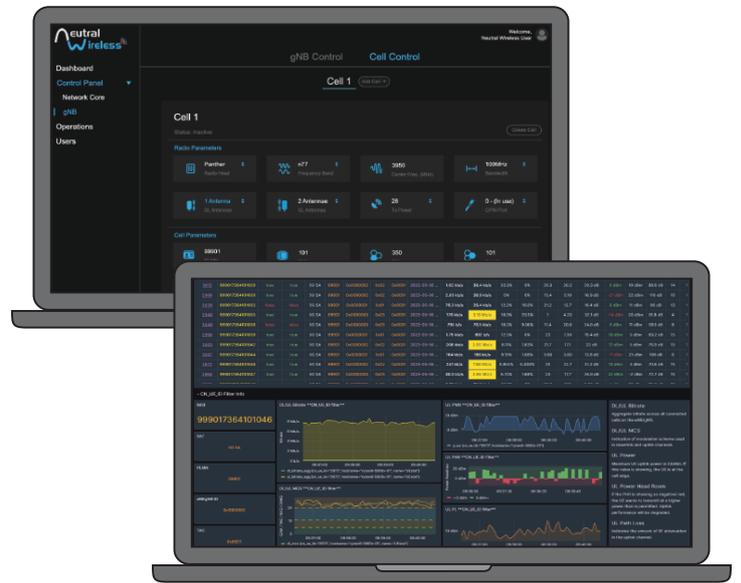
Various antenna and tripod options, all with rapid rig brackets and transport cases

NW Ness compute platform with 5G vRAN, mini-5GC and NW nibOS + KPI

NW Etive radio in pole mountable hardcase

Radio fronthaul tactical grade fibre reel

Radio power cable reel
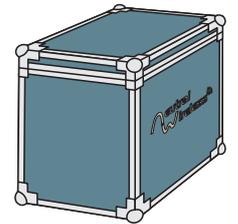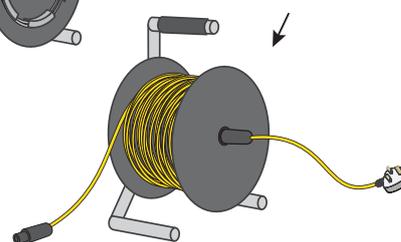
Accessories and Antenna Cases

NW Etive Specifications

NW Ness Compute platform:	High performance server with (4 slot) CPRI card, Linux OS preconfigured with 5G vRAN and 5GC, NW nibOS configuration + KPI software; short depth 1U in foam shockmount touring case, 580 x 620 x 190mm, 22kg
NW Etive Radio platform:	4TRx AMD RFSoC powered radio with 'split 8' CPRI interface; packaged in pole mountable hardcase, 540 x 350 x 135mm, 14.5kg
Antenna (sector example):	4-port 13 dBi, 65°H / 20°V beamwidth; packaged in touring case, 460 x 230 x 350mm, 14.5kg

OVERVIEW

- Portable high performance server in sort depth 1U form factor

- Support for up to 4 radios (see bandwidth limitations below)

- Optional redundant PSU configuration
- Fixed and sliding rail options up to full depth rack standard
- Easy access dust filters

RUNTIME SPECIFICATIONS

- Power consumption   120-160 W (depends on vRAN configuration)
- Max config DL Bias   800 MHz aggregate bandwidth*
- Max config UL Bias   600 MHz aggregate bandwidth*
- Max config Low Latency   600 MHz aggregate bandwidth*

MECHANICAL SPECIFICATIONS

- Dimensions   1U 370 mm - (D)
- Net Weight   12 kg
- Power Connector   C14 110AC/230AC
- CPRI Fibre Connector   single LC simplex directly into BiDi SFP+ modules *4 CPRI ports
- NG Ethernet Connector   RJ45 Cat6 (10Gbps)
- MGMT Ethernet Connector   RJ45 Cat6 (10Gbps)

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OVERVIEW

- Portable high performance custom-chassis server, packaged in a lightweight and rugged connectorised hardcase
- Designed to run our vRAN gNB stack, our nibOS configuration and KPI tool, and our (optional) 5G Core
- Optimised for pop-up deployments, and features industry standard connectors for power, fibre and Ethernet
- Support for up to 2 radios (see bandwidth limitations below)
- Two licencing options:

    Pop-up 5G (vRANlite gNB stack, single 2x2 cell max 30 dBm)

    Pop-up 5G Pro (vRAN multicell gNB stack, 2 cells max, no power or MIMO limitations, with handover support for multi-gNB networks)

RUNTIME SPECIFICATIONS

- Power consumption	120-160 W (depends on vRAN configuration)
- Max config DL Bias	800 MHz aggregate bandwidth*
- Max config UL Bias	600 MHz aggregate bandwidth*
- Max config Low Latency	600 MHz aggregate bandwidth*

* Aggregate bandwidth is a term we use to describe the sum of the RF TRx layers required in a vRAN configuration, for example:
    4x4 50MHz cell = 50+50+50+50 = 200 MHz
    4x4 100MHz cell = 100+100+100+100 = 400 MHz
        ... summing these gives a total aggregate bandwidth of 600 MHz

MECHANICAL SPECIFICATIONS

- Dimensions	330 x 305 x 155 mm - (LxWxD)
- Net Weight	5.1 kg
- Power Connector	powerCON 110AC/230AC
- CPRI Fibre Connector	IP16 singlemode tactical / *opticalCON Duo (optional upgrade)* *2 bonded CPRI ports*
- NG Ethernet Connector	etherCON Cat6 (10Gbps)
- MGMT Ethernet Connector	etherCON Cat6 (10Gbps)
- GNSS Connector	SMA

- The connectorised case can be considered light rain proof (but not fully waterproof as it has holes for fans)

Server Datasheet:
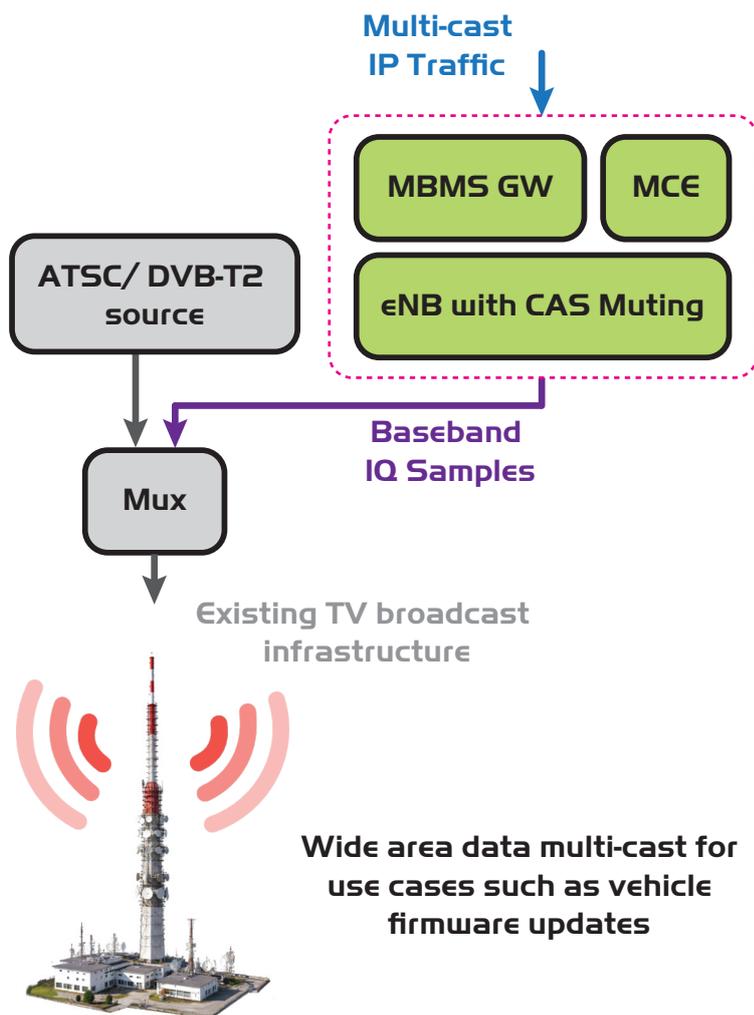## NW-Server-BroadcastModulator

OVERVIEW

- Full 5G Broadcast Modulator including MCE, MBMS Gateway and eNB all in a single 1U server
- MBMS downlink-only dedicated cell
- Supports Rel 19 CAS Muting for time multiplexing of DVB-T2 and ATSC3.0 signals
- Multi-cast IP input and modulated Baseband I/Q output via dedicated interfaces

- Supports all LTE bandwidths (1,4, 3, 5, 10, 15 and 20MHz)
- Supports 15kHz sub-carrier spacing
- Synchronization via NTP, PTP or GNSS
- KPI operations dashboard showing broadcast stream statistics and server health information

- Available Q2 2026

SPECIFICATIONS

- Dimensions	1U 370 mm - (D)
- Net Weight	12 kg
- Power Connector	C14 110AC/230AC
- Multicast IP Ethernet input	RJ45 (10Gbps)
- Baseband I/Q Ethernet output	RJ45 (10Gbps)
- MGMT Ethernet interace	RJ45 (1Gbps)
- Power consumption	140 W

Multi-cast IP Traffic

MBMS GW MCE

eNB with CAS Muting

ATSC/ DVB-T2 source

Baseband IQ Samples

Mux

Existing TV broadcast infrastructure

Real time live video broadcast to 5G broadcast-enabled smartphones and devices

Wide area data multi-cast for use cases such as vehicle firmware updates