Self-Deploying Communications Platform
NEXUS 16

A new concept in rapidly deployable, high-capacity communication platforms

High Capacity

16m, high strength tower

5kW Solar power

8kW diesel generation

50 RU of client rack space

Satellite Capable (Starlink/NBN)

Rapid Deployment

20ft container dimensions

Self-loading and unloading

No crane or tilt truck required

Automatic leveling

Automatic solar deployment

Automatic tower deployment

High Availability with Low Maintenance

Duplicated or Redundant

- Generators
- Fuel tanks,
- Climate control systems
- Hydraulic pumps
- Battery racks

All systems run from ELV (56 VDC) and can be serviced by technicians

24/7 Monitoring

Even when folded and stored, upward facing 2.5kW solar panels provide “always-on” operation

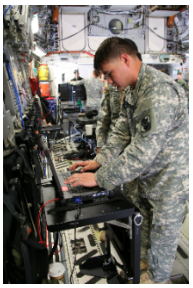
Custom engineered encrypted telemetry on 4/5G or Satellite back-haul communications

Full systems monitoring to Network Operations Centre

Continuous solar power for battery cooling and recharge

The **NEXUS 16** Self-Deploying Platform is a mobile platform that supports high-capacity radio equipment (LTE/VMR) and many other technology payloads. The NEXUS 16 combines a high capacity 16m retractable tower, multiple equipment enclosures, batteries, generators and solar panels on a self-deploying platform that can be moved around on-site or between sites by any truck that can accommodate a 20ft shipping container.

- Safely transported, deployed and operational in under 30 minutes.
- High-capacity tower, payload equipment and power systems.
- Hardened to withstand extreme environments.



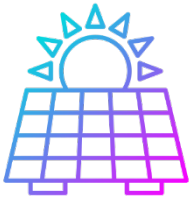
The hydraulic legs are integral to the design and perform three functions:

1. **Lift from truck:**
Using a wireless remote, the operator can command the NEXUS 16 to lift itself up clear of the truck.

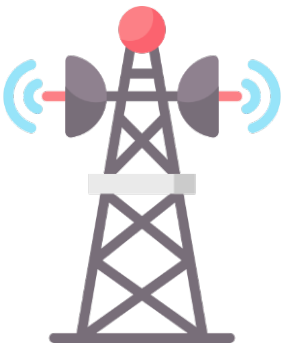
2. **Store on ground:**
Once the truck has departed, a second command will lower the NEXUS 16 onto the ground

3. **Stabilised for deployment:**
Lastly the NEXUS 16 will extend its legs out 2 meters on each side to provide a wide and stable base whilst also compensating for sloping or uneven ground.

3 x 24RU RACKS

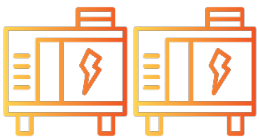


4.8kW SOLAR



16 METERS
250KG PAYLOAD
CYCLONE A4 RATED

130kW LITHIUM BATTERY



DUAL 4.0kW GENSETS

1000L DIESEL

citech

Critical Infrastructure Technologies

Self-Deploying Communications Platform
NEXUS 16

Patented 16m retractable mechanical tower

The NEXUS 16 stands out from all other mobile solutions due to its 16m high-capacity, retractable tower.

- A fully mechanical design, it is driven at the base by a lead screw that lock the tower into position. No stored pneumatic, electrical or hydraulic energy.
- Capable of supporting microwave links in winds up to 28m/s (100km/h) and can remain operational and transmitting at 35m/s (136km/h) wind velocity.
- In sustained cyclonic conditions, the NEXUS 16 will monitor the wind velocity and automatically retract the tower to protect itself in emergencies. (If allowed)
- When fully deployed, the tower can support antennas / RRU's up to 250kg and 1m^2 of sail area

16M Retractable Tower

Fully mechanical design. No reliance on pneumatics or hydraulics to keep the load suspended.

13kW Power Systems

Twin 4kW DC generators supply backup power to the 5kW PV array.

2700Ah @-48VDC lithium battery split into multiple battery banks

Redundant 12, 24, -48VDC feeds to client equipment racks

50RU Equipment Space

Twin 24RU equipment cabinets fitted with power distribution and filtered temperature-controlled air.

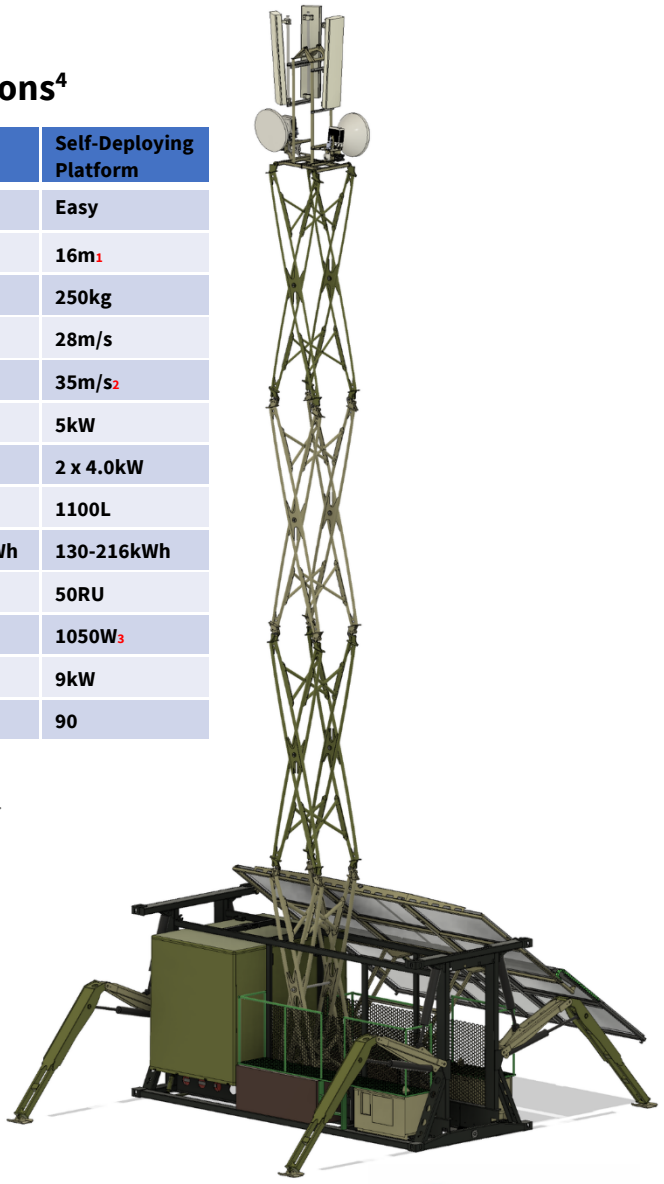
Third 24RU rack available for mixed equipment.

Sliding rails and mil-spec shock absorption provides protection and access.

Specifications and comparisons[4]

Critical Performance Attribute	Small Trailer	Cell On Wheels	Self-Deploying Platform
Deployment Effort	Easy	Moderate	Easy
Antenna Height	8m	12m	16m[1]
Antenna Capacity	35kg	150kg	250kg
Wind limits	18m/s	20m/s	28m/s
Max wind Limits	23m/s	28m/s	35m/s[2]
Solar Power	1.6kW	2.2kW	5kW
Generator Power	0	3kW	2 x 4.0kW
Generator fuel	0	140L	1100L
Battery Capacity	24kWh	24 to 50kWh	130-216kWh
Rack Capacity	13RU	42RU	50RU
Sustained DC load	320W	500W	1050W[3]
Air Conditioner	0	3kW	9kW
Redundancy %	0	20	90

1. First release 16m. R2 to 18m.
2. Maximum wind velocity before auto retraction occurs.
3. Up to 12 months between generator refueling cycles
4. Subject to change as development continues



Critical Infrastructure Technologies
176 Marine Tce. South Fremantle
Western Australia
+61(0)8 6388 2832

citech
Critical Infrastructure Technologies