

Ultra Narrow Band (UNB) Smart City Network



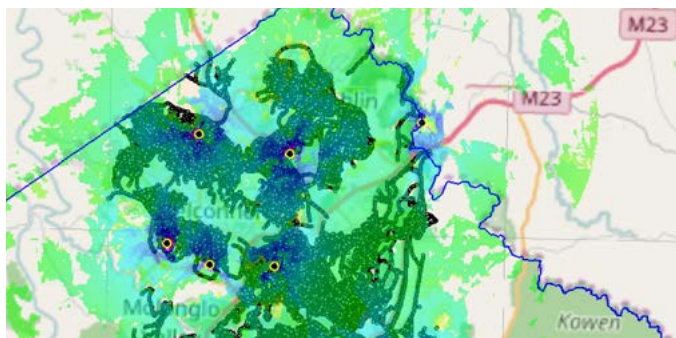
Ultra Narrow Band (UNB) Smart City Network

Base station

Telensa Ultra-Narrow Band (UNB) base stations provide dedicated wireless connectivity for controlling large populations of things across cities and wider areas. Deployed in a matter of days, the network is designed to run for decades at minimal operational cost.

Long range system	up to 10 miles (16 km) range (non-line-of-sight)
High device capacity	each base station can connect up to 5,000 devices
No cell site costs	simple light pole installation can cover a city in a few days
Full coverage	coverage with large overlaps and relay mode means complete coverage
Robust backhaul	multiple cellular and Ethernet modules
Resilient coverage	devices are covered by multiple base stations
Flexible coverage	owner retains control
Low data costs	a fraction of cellular or mesh
Simple deployment	up to 20x fewer UNB base stations required than mesh system gateways
Long life	Industrial, Scientific and Medical (ISM) radio bands have proven longevity
Modular hardware	can be upgraded during product life

Planning system



Telensa's sophisticated planning system designs the network before the first truck rolls, allowing customers to see coverage before rollout and making the deployment simple and rapid for installation teams. Extending coverage or capacity is a simple re-plan function.

- The system combines detailed map topography with streetlight asset data
- If no accurate asset data is available, the system can synthesize lights on the map
- Planning system identifies optimal light poles for installing base stations, enabling the city to choose the precise deployment locations
- The coverage map enables the city to decide the right balance between cost and coverage
- Relay mode provides service into areas without base station coverage



Base station

Regulatory	Standards available	FCC/ETSI/international ISM standards
	Country approvals	Contact Telensa for details
Radio	Protocol	UNB
	Supported bands	International: 910 – 925MHz EU: 868.0 – 869.6MHz
	Receiver sensitivity (minimum)	-139 dBm conducted
	Transmit power (maximum)	US 4 W EIRP, EU 500mW ERP Other: Contact Telensa for details
	Rating	IP66
Environmental	Operating temperature (°C /°F)	-40 to +60 / -40 to +140
	Consumption	15W*
Power	Surge protection	Tested to EN 301 489-1/3
	Max number of supported telecells	5000**
Capacity	Connections	Ethernet, power
	Dimensions (WxHxD)	339 x 326 x 111mm / 13.3 x 12.8 x 6.8” (incl. solar shield, excluding antennas)
	UNB antenna	Length 1280mm / 50.4” Glass fibre shroud
	Weight	7.1kg/15.6lb (incl. solar shield, antennas and backplate)
	Mounting	Direct pole mount or sign strapping options
Physical	GNSS	GPS as standard, contact Telensa for more GNSS options
	Position accuracy	1.5m (CEP50)
Connectivity	Backhaul	2x 4G/3G/2G cellular and Ethernet
	Bands	Contact Telensa for details
Environmental protection	Heater	As standard
	Solar shield	As standard
	Marine resistance	Salt spray EN60950-22
Time monitoring	GNSS	GPS as standard, contact Telensa for more details
	NTP	NTP
	Integral light sensor	Integral light sensor

* 30W max with heater on

** Base station M is licence limited to 1000 Telecells but upgradeable after deployment

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