HUB
an indara company

SUPPORTING THE DEPLOYMENT OF

TELECOMMUNICATION INFRASTRUCTURE

ABOUT

Welcome to HUB's telecommunications infrastructure design capability, where leading design meets unparalleled functionality. In an era where connectivity is the backbone of our economy, our design capability in telecommunications structures and supporting infrastructure stand at the forefront of innovation, providing robust and reliable solutions for mobile network infrastructure providers.

Our commitment to excellence ensures that every structure we design not only meets but exceeds industry standards, delivering performance and reliability that you can rely on.

With a team of experienced engineers and designers, HUB is dedicated to delivering solutions that enhance connectivity and support the ever-growing demand for high-speed communication.

Explore our range of telecommunications structures and supporting elements and discover how our 20+ years of industrial design capability can accelerate your asset productivity.

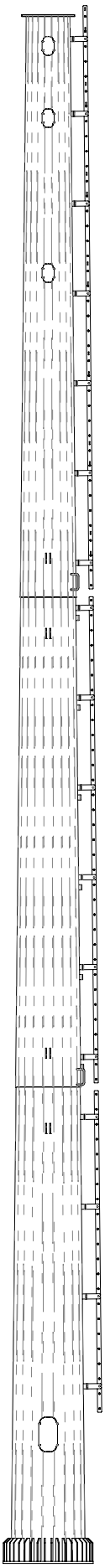
MONOPOLE

AN AESTHETICALLY SIMPLE STRUCTURE THAT SUPPORTS VARIOUS TELECOMMUNICATION EQUIPMENT.

In the rapidly evolving telecommunications industry, infrastructure plays a crucial role in ensuring high-quality, reliable connectivity. HUB's Monopole, a simple and efficient solution for supporting Macro equipment, stands out as a vital component in modern networks.

Unlike traditional lattice towers, monopoles offer a more streamlined appearance and can be installed in a variety of environments, including urban areas, suburban regions, and remote locations.

HUB offers Monopoles ranging in height from 20m to 40m, with a variety of compatible headframes. The Monopole is engineered to various applicable Australian and New Zealand standards.



SPECIFICATIONS

COMPONENT	MATERIAL	COATINGS, FINISHES
Modular Tapered Pole	Steel Grade Q355B	Hot Dipped Galvanized Powder-coat
Access Ladder	Steel Grade Q355B	Hot Dipped Galvanized Powder-coat
Base Plate	Steel Grade Q355B, 40mm thick	Hot Dipped Galvanized Powder-coat
Brackets and Fasteners	All Ladder and bracket fasteners: Galvanized steel grade 8.8	

WIND

Terrian Category: 2

Design Life: 50 years

Importance Level: 2

Maximum Tip Rotation (28m/s SLS wind to AS3995): 1°

Wind region (AS1170.2): See below table

MONOPOLE TYPE	MONOPOLE WEIGHT (KG) CORES ONLY*	HDB SIZE ** (MM)	PCD (MM)	20 ESA			36 ESA		
				REGION A	REGION B	REGION C	REGION A	REGION B	REGION C
30m TYPE 1 A8_B10_C10	9777	M36	Ø1600	x	x	x			
30m TYPE 2 A8_B10_C12	10485	M36		x	x	x	x		
30m TYPE 3 A8_B12_C14	11791	M42		x	x	x	x	x	
30m TYPE 4 A8_B12_C16	12475	M42							x
35m TYPE 1 A8_B10_C10_D12	12856	M46	Ø1684	x	x				
35m TYPE 2 A8_B10_C12_D14	14050	M42		x	x	x	x		
35m TYPE 3 A8_B12_C14_D16	15814	M42		x	x	x	x	x	
35m TYPE 5 B10_C12_D14_E16	19183	M48	Ø1900						x

*WEIGHT DOES NOT INCLUDE LADDERS AND LADDER BRACKETS.
**40-OFF BOLT CONFIGURATION, U.N.O.

STANDARDS

Complies with the following standards:

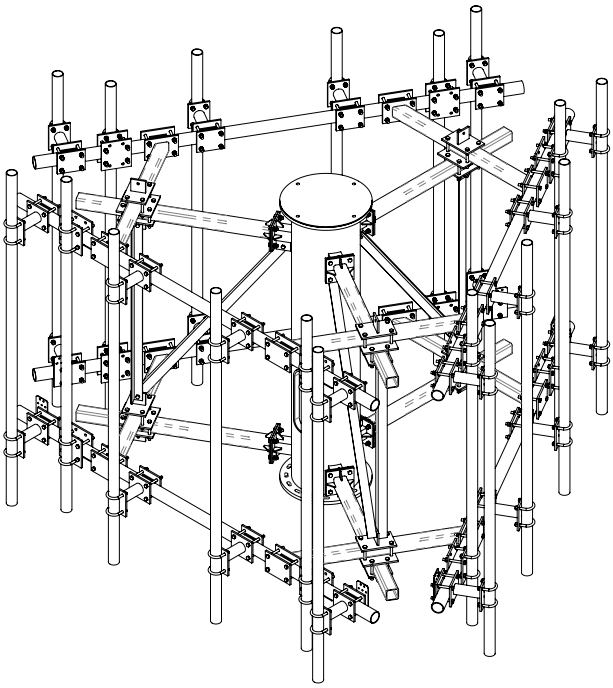
Manufacturing
- AS/NZS163:2016
- AS/NZS 3679.1:2016
- AS/NZS 1252.2:2016
- AS/NZS 1252.1:2016
- AS/NZS 1554:2014
- AS/NZS 1214:2016
- AS/NZS 3678:2016
- AS 1559:2018
- AS/NZS 4680:2006

Design
- AS/NZS 1170.0 - 2002 General principles
- AS/NZS 1170.1 - 2002 Permanent, imposed and other actions
- AS/NZS 1170.2 - 2021 Wind actions
- AS 4100 - 2020 Steel structures
- AS 3995 Design of Steel Lattice Towers and Masts

Manufacturing quality confirms to ISO 9001:2001 Standard

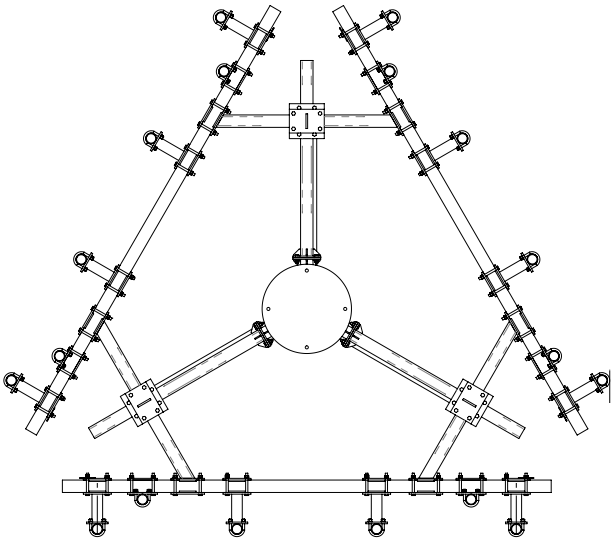
HEADFRAME

A LIGHTWEIGHT HEADFRAME SOLUTION TO SIMPLIFY INSTALLATION, OPERATION AND MAINTENANCE.



Our focus was to create a standardised product that is inherently versatile to maximise usability across a wider range of sites, supporting various carrier requirements.

HUB's suite of standardised headframes delivers exceptional cost efficiency, streamlined operations, and robust engineering, tailored for carrier's needs. Our design approach and strategic partnership ensure that carriers benefit from reduced supply and installation costs, faster deployment, and enhanced reliability, making HUB the ideal supplier for headframes.



KEY FEATURES

- Robust Design: Optimised for varying site conditions and carrier antenna arrangements, supporting the majority of single and multi-carrier 4G and 5G RF solutions.
- Compatibility: Suitable for an estimated 90% of carrier 3-sector installations.
- Operational Efficiency: Simplifies the SAED process, reducing design and supply lead times.
- Ease of Build: Notably lighter design than industry equivalents and modular for single-sector installation
- Design and Supply: Certified and manufactured by HUB, ensuring quality and accountability.

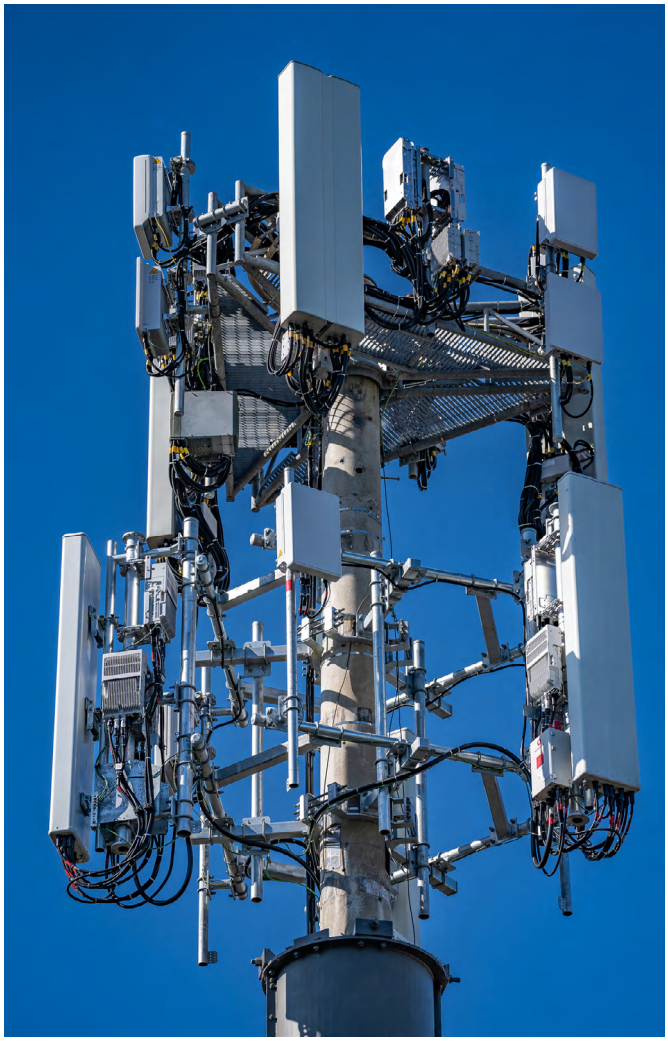
PRODUCT CONFIGURATIONS

We understand that standardisation creates significant product efficiencies, leading to notable cost and operational benefits. This results in an overall enhanced carrier deployment speed. Our primary intention was to maximise the usability of our headframes, supporting installations for more carriers on a wider variety of structures. Our product range reflects our commitment to this:

- 4m: Best suited for multi-carrier joint venture installations; the headframe supports 2 passive antennas and up to 5 active antennas per sector, along with all associated antennae ancillaries.
- 3m: Suited for single or multi-carrier installations, supporting 2 passive antennas and up to 3 active antennas per sector.
- 2.5m: Supports a single carrier, with one passive antenna and up to 3 active antennas along with associated ancillaries per sector.
- T + 1m solution: Centre column and adaptor to support headframe installations installed above the pole tip.

SPECIFICATIONS

COMPONENT	MATERIAL	COATINGS, FINISHES & COLOURS
Headframe • Plates, merchant bar and tubular & pipe sections.	Mild steel grade Q355B	Hot dipped galvanized (per below requirements) Powder-coat (Optional – as required to meet DA requirements)
Centre Column & Adaptor • Plates, merchant bar and tubular sections.	Mild steel grade Q355B	Hot dipped galvanized (per below requirements) Powder-coat (Optional – as required to meet DA requirements)
Fasteners	Structural fasteners: Steel grade 8.8/S.	Brackets: Hot dipped galvanize Fasteners: Hot dipped galvanize (steel fasteners)



WIND

Region	:	B2
Design Working Life	:	50 Years
Regional Wind Speed	:	57 m/s (V_{500})
Serviceability Wind Speed	:	27m/s (V_s)
Topographic Multiplier	:	1.2 at aperture level
Wind Direction Multiplier	:	0.95
Terrain Category	:	2.0
Climate Change Factor	:	1.05
Structure Classification	:	Importance Level 2

STANDARDS

Complies with the following standards:

Design

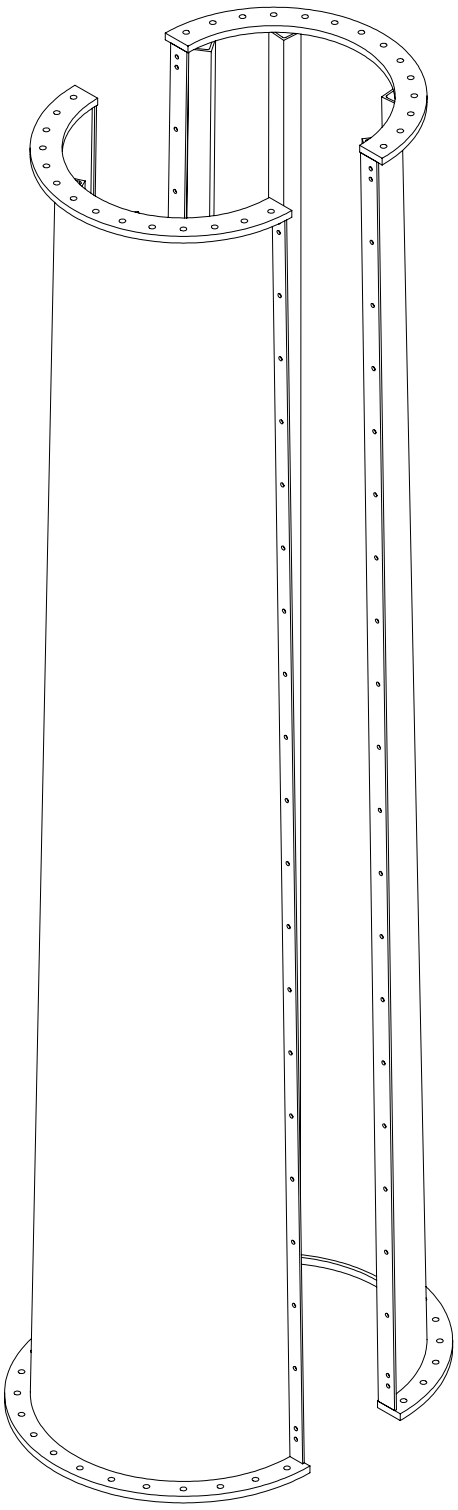
- AS/NZS 1170.0 - 2002 General principles
- AS/NZS 1170.1 - 2002 Permanent, imposed and other actions
- AS/NZS 1170.2 - 2021 Wind actions
- AS 4100 - 2020 Steel structures

Fabrication

- AS/NZS 1163:2016
- AS/NZS 3679.1:2016
- AS/NZS 1252.2:2016
- AS/NZS 1252.1:2016
- AS/NZS 1554:2014
- AS/NZS 1214:2016
- AS/NZS 3678:2016
- AS 1559:2018
- AS/NZS 4680:2006

STEEL JACKET

AN INNOVATIVE SOLUTION TO STRENGTHEN MONOPOLES AND INCREASE MONOPOLE CAPACITY.



Made from high strength hot dipped galvanised rolled steel (Grade 300+), HUB's steel jacket product is fabricated in modular sections that are 3m x 6m high, extending to a total height of 18m. The sections come in three (3) configurations depending on the strengthening application required.

These interlocking jackets are exclusively designed to strengthen existing concrete monopoles and are installed on site without dismantling the pole, helping minimise disruption to the asset.

HUB's steel jackets are a practical solution for strengthening existing telecommunications monopoles, providing an adaptable and durable means to increase structural capacity and future-proof the asset.

SPECIFICATIONS

COMPONENT	MATERIAL	COATINGS, FINISHES & COLOURS
Rolled Steel	Grade 300+	Hot Dipped Galvanized
Steel Plate	Grade 250	Hot Dipped Galvanized
Brackets and Fasteners	Galvanized steel grade 8.8	

STANDARDS

Complies with the following standards:

- AS 4100
- AS/NZS 1554
- AS 4680
- Indara Patent No. 2011201492

TOWER.NODE

SMART SPORTS FIELD LIGHTING TOWER, REIMAGINED.

The TOWER.NODE is our reimagining of the sports field lighting tower. Discreetly delivering macro level coverage, the TOWER.NODE fully enables better place out comes by integrating a range of Digital Services and IoT.

This is why the TOWER.NODE was the winner of two Good Design Awards in 2024 for 'Engineering Design' and 'Product Design'.

Sporting fields are crucial infrastructure for many land authorities, the potential of which can be truly harnessed with the TOWER.NODE. Capable of discreetly housing 4G and 5G infrastructure, this vital piece of infrastructure provides macro-level cell phone coverage with customisable applications for communications, safety, energy and more.

PRODUCT CONFIGURATIONS

The TOWER.NODE can be supplied in three options:

- Floodlights
- Floodlights and Telco Antenna Array
- Floodlights and Telco Antenna Array concealed with Tensile Membrane Shroud

The TOWER.NODE is supplied with three Multi-Technology Modules (MTMs). This being a modular component, the quantity of MTMs can be increased depending on the number of accommodated Digital Services and the required mounting height.

There are also three height versions of the TOWER.NODE:

- 25m
- 30m
- 35m

The TOWER.NODE is available in a select range of colours supplied by Interpon Powder Coatings. The standard powder-coat colours offered are:

- Textura Silver (textured) GY35LA
- Textura Monument Black (textured) GN305A
- Textura Woodland Grey (texture) GL333A

SPECIFICATIONS

COMPONENT	MATERIAL	COATINGS, FINISHES & COLOURS
Head Frame	Mild steel grade Q355B	Hot dipped galvanize Powder-coat (see colour options above)
Equipment Shroud	Hiraoka Sundream tensile membrane fabric	PVC coating Colour options: White, Charcoal, Blue, Bronze
Lighting Arm	Mild steel grade Q355B	Hot dipped galvanize Powder-coat (see colour options above)
Pole Upper	Mild steel grade Q355B	Hot dipped galvanize Powder-coat (see colour options above)
MTM & Transition Rim Assembly	Aluminium A356	Powder-coat (see colour options above)
Pole Base	Mild steel grade Q355B	Hot dipped galvanize Powder-coat (see colour options above)
Base Plate	Mild steel grade Q355B	Hot dipped galvanize Powder-coat (see colour options above)
Base Plate Shroud	Mild steel grade Q355B	Powder-coat (see colour options above)
Brackets and Fasteners	Brackets: Mild steel grade Q355B Fasteners: Stainless steel grade 316 Structural fasteners: Steel grade 8.8/TB Gal typical Hold down bolts: Steel grade 4.6/S Gal	Brackets: Hot dipped galvanize Fasteners: Hot dipped galvanize (steel fasteners)

WIND

24m, 30m & 35m Height Version

VALUE	NOTE	REFERENCE
Design Life	50 years	25m, 30m & 35m
Nominal Pole Height	32.3m overall 37.3 overall 42.3m overall	(25m to height of floodlights) (30m to height of floodlights) (35m to height of floodlights)

LOADING - 25m, 30m, 35m

VALUE	NOTE	NOTE 2	REFERENCE
Importance Level	2		AS/NZS 1170.0:2002
ARI - Wind	500 years		AS/NZS 1170.0:2002
Wind Region	A0 to A5	B1	AS/NZS 1170.0:2021
Terrain Category	2.0	2.5	AS/NZS 1170.0:2021
Climate Change Multiplier	1.0		AS/NZS 1170.0:2021
Wind Direction Multipllier	1.0		AS/NZS 1170.0:2021
Shielding Multiplier	1.0		AS/NZS 1170.0:2021
Topographic Multiplier	1.0		AS/NZS 1170.0:2021
Allowable deflection	Maximum 2-degree rotation of antennas	At base serviceability wind speed of 28m/s	Deflection as advised by HUB. Wind speed for serviceability is in line with AS/NZS 4676:2000

STANDARDS

Complies with the following standards:

- AS/NZS 1170.0 - 2002 General principles
- AS/NZS 1170.1 - 2002 Permanent, imposed and other actions
- AS/NZS 1170.2 2021 Wind actions
- AS 3600 - 2018 Concrete structures
- AS 4100 - 2020 Steel structures

DESIGN INNOVATE ENABLE

HUB is a wholly owned subsidiary of Indara, Australia's leading owner and operator of digital infastructure and majority owned by AustralianSuper.

HUB Australasia reserves the right to change any specification without prior notification.

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