

ACTIVE GNSS HELICAL

AQUILA CORE

Active Quadrifilar Helical GNSS Antenna Module

SZA-N-6G59

BANDS
L1 / L2 / L5

LNA GAIN
35 dB typical

CONNECTOR
MHF1, 90 mm cable

WEIGHT
< 10 g

L2 / L5	1164 to 1278 MHz	Covers GPS L5, L2; BeiDou B2; GLONASS G2
L1	1525 to 1615 MHz	Covers GPS L1; BeiDou B1; GLONASS G1

Key Features

- GPS, BeiDou, GLONASS: L1 L2 L5
- Built-in mounting, no radome
- 35 dB LNA, 3 to 15 V
- 90 mm cable, MHF1 connector
- Below 10 g

1 Introduction

AQUILA CORE is a compact active quadrifilar helical GNSS antenna module built for OEM integration into RTK and other precision positioning equipment. It uses the same helix element as AQUILA LITE without the outer radome, so it can be built directly into the host enclosure, and connects through a 90 mm, 1.13 mm coaxial cable with an MHF1 (U.FL compatible) plug. Dual-band reception covers GPS L1 L2 L5, BeiDou B1 B2 and GLONASS G1 G2, providing the multi-frequency coverage needed for reliable RTK corrections and carrier-phase tracking. An integrated low noise amplifier with 35 dB typical gain runs from a wide 3 to 15 V supply, and the complete module weighs less than 10 g.

— Features

- ◆ Dual-band reception: 1164 to 1278 MHz and 1525 to 1615 MHz
- ◆ GPS L1 L2 L5, BeiDou B1 B2, GLONASS G1 G2 for RTK
- ◆ Integrated LNA with 35 dB typical gain
- ◆ DC input range from 3 to 15 V (3.3 V or 5.0 V recommended)
- ◆ Compact helix element: Ø34.2 mm, 28.5 mm long
- ◆ No radome: designed to fit inside the host enclosure
- ◆ 90 mm, 1.13 mm black coaxial cable (custom lengths available)
- ◆ MHF1 (U.FL compatible) connector
- ◆ Weight below 10 g
- ◆ Operating temperature from -40°C to +85°C

— Applications

- | | |
|---|--|
| ◆ RTK precision surveying and mapping | ◆ Drone and UAV precision navigation |
| ◆ Precision agriculture and autonomous machinery guidance | ◆ High-accuracy fleet and asset tracking |
| ◆ Robotics and autonomous vehicle positioning | ◆ Construction and machine control systems |

2 Mechanical Specifications

Part Number	SZA-N-6G59
Name	AQUILA CORE
Dimensions (mm)	28.5 × Ø 39.8 (helix Ø 34.2)
Weight	< 10 g
Antenna Type	Active Quadrifilar Helical GNSS Antenna Module
Housing	None
Cable*	1.13 mm black coaxial, 90 ±2 mm
Connector*	MHF1 (U.FL compatible)

*Alternate cable length and connectors available on request

3 Electrical / RF Specifications

Band	Frequency Range (MHz)	Peak Gain (dBic)	Out of Band Rejection (dB)	Axial Ratio	VSWR	Impedance
L5, L2, B2, G2	1164 to 1278	>2.00	>40	≤1.5	<2.0	50 Ω
L1, B1, G1	1525 to 1615		>35			

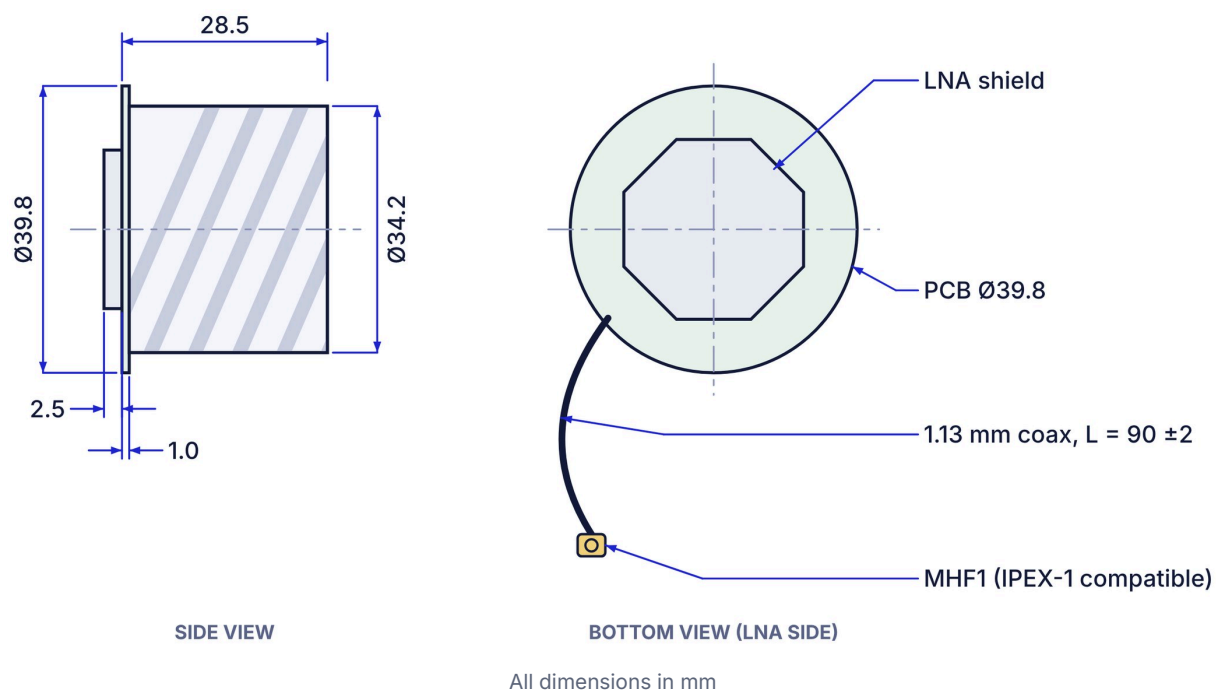
4 LNA Specifications

DC Voltage (V)	Current (mA) Typical	Gain (dB) Typical	VSWR	Noise Figure (dB)
3 to 15	25	35	<2.0	<2.0

5 Environmental

Operational Temperature	-40 to +85°C
Storage Temperature	-40 to +85°C
Relative Humidity (Storage)	65 ±20% RH
RoHS and REACH compliant	Yes

6 Mechanical Drawing



7 Product Photos



8 Packaging

- ◆ Antennas packed in trays of 50 pcs
- ◆ 5 trays per vacuum bag, 4 vacuum bags per carton
- ◆ Standard carton quantity: 1000 pcs

9 Compliance

ROHS

Compliant

Conforms to EU RoHS Directive 2011/65/EU as amended by Delegated Directive (EU) 2015/863.

REACH

Compliant

Conforms to EU REACH Regulation (EC) No 1907/2006.

CERTIFICATE

On request

A certificate of conformance is available upon request from sales@synzen.com.tw.

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