GNSS

Datasheet

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GNSS

Chip Antenna

Features:

This antenna is designed to cover GPS/ GLONASS/QZSS/BDS/Galileo frequency band. High performing and compact size with low profile.

Applications:

- Public Safety, Search and Rescue
- IoT tracker
- GPS Navigator
- Asset tracking
- Navigation devices
- Location based services
- Drones, Robotics and Vehicles



Electrical Specifications									
Antenna Characteristics									
Antenna Type	Radiation Pattern	Polarization		Max. Input Power	Impedance				
Chip Antenna	Omni	Linear		2W	50Ω				
Frequency (GHz)			1.56~1.606						
Return Loss (dB) @Center Frequency			< -10 Тур.						
Peak Gain (dBi)			2.9						
Average Gain (dB)			-1.7						
Efficiency (%)			67						



3.2 imes1.6 imes0.5 mm

Chip Antenna



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Mechanical Specifications

Mechanical				
Dimension (mm)	3.2 imes 1.6 imes 0.5			
Material	Ceramic			
Weight (g)	0.01			

Environmental				
Temperature Range (°C)	-40 to 85			
Humidity	Non-condensing 65°C 95% RH			
RoHS Compliant				

Mechanical Drawing



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Antenna Testing Includes Evaluation Board



ST0543-00-N07-U

Test setup, measurement performed in 3D anechoic chamber.



Blue background represents frequency response.



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Radiation Pattern - Free Space





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Matching Circuit Design



- * To make the antenna have this resonance must be matched with the matching circuit.
- * The matching component may be slightly different than that shown depending on the distance to the ground plane, the dielectric constant of the PCB, and PCB material thickness.

Circuit Matching Components					
Circuit Symbol	Size	Description			
1	0402	1.5 pF Capacitor			
2	0402	0 Ohm Resistance			
3	0402	3.3 pF Capacitor			
4. Fine tuning element	0402	1 pF Capacitor			
5. Fine tuning element	0402	2.7 pF Capacitor			
DC Block	0402	22 pF Capacitor			



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Clearance Area Design



Evaluation Board

Unit : mm



Base Material : FR-4, T=1.0

GNSS



Recommended Reflow Temperature Profile

Recommended solder paste alloy: SAC305 (Sn96.5 /Ag3 /Cu0.5) Lead Free solder paste







Revisions					
Rev.	Description	Date	ECN	Approval	
А	Initial Release	2023-02-15	ST0543-00-N07-U-RA00	ATC	

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