

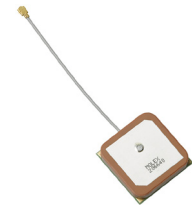
GNSS Antennas >

GNSS Active Patch and Flexible antennas complement ceramic and LDS-MID chip selections for superior signal processing and ground-independence over a wide range of navigation and tracking applications

FEATURES AND ADVANTAGES



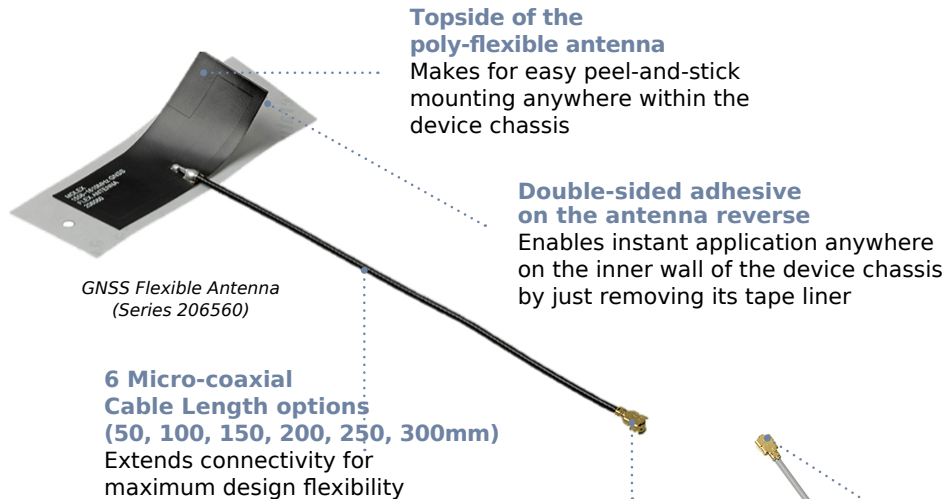
GNSS Flexible Antenna (Series 206560)



GNSS Active Patch Antenna with Low-Noise Amplifier* (Series 206640)



Linear GNSS LTCC Chip Antenna (Series 215634)



Topside of the poly-flexible antenna
Makes for easy peel-and-stick mounting anywhere within the device chassis

Double-sided adhesive on the antenna reverse
Enables instant application anywhere on the inner wall of the device chassis by just removing its tape liner

GNSS Flexible Antenna (Series 206560)

6 Micro-coaxial Cable Length options (50, 100, 150, 200, 250, 300mm)
Extends connectivity for maximum design flexibility

Low-profile design
Provides space savings

UFL-type connector
Secures to the application's device radio

IPEX-1 connector
Secures to the application's device radio



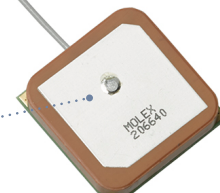
Low axial ratio
Good signal reception from all angles

Excellent re stripping characteristics
Allows product re-use within 48 hours

Ceramic Patch Antenna
Delivers high gain, high radiation efficiency performance for the most demanding GPS applications

GPS Ceramic Antenna (Series 208890)

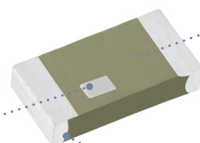
Silver Pin
Positions and fixes the antenna to the PCB (via soldering); provides electrical contact between antenna and board



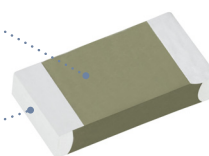
GNSS Active Patch Antenna with Low-Noise Amplifier (Series 206640)

PCB with integrated Low-Noise Amplifier (LNA) and Surface Acoustic Wave (SAW) Filter
Ensures filtered, amplified signals are transmitted by the ceramic antenna on it

LTCC substrate
Enables design flexibility and overall cost-savings and durability of the final product



TOP VIEW



BOTTOM VIEW

Linear GNSS LTCC Chip Antenna (Series 215634)

Marker
Marks the direction for correct antenna placement

Feeding pad
Connects to the GNSS receiver via a 50-Ohms transmission line on the PCB. Electrical signals from the transmission line are fed through this pad on the PCB

*The series 206640 antenna is an active patch antenna with ceramic patch, ground plane (PCB), 2-stage LNA and SAW (Surface Acoustic Wave) filter - all integrated within a compact 25 by 25 by 6.5mm module complete with a 60mm cabled (IPEX-1 connector) extension.

GNSS Antennas >

SPECIFICATIONS

Reference Information

Packaging: Tape-and-Reel
 (146216, 146235, 215634)
 Tray (146168, 204286, 206640, 208890)
 PET Film (206560)
 Designed In: mm
 RoHS: Yes
 Halogen Free: Yes

Electrical

RF Power (Watt): 2
 Average Total Radiation Efficiency: Refer to Product Specifications
 Peak Gain: Refer to Product Specifications
 Input Impedance (ohms): 50

Mechanical

Refer to Product Specifications

Physical

Housing: Ceramic (215634, 206640, 208890, 211624, 213602, 212203, 204286, 146168) Flex (206560)
 LDS-MID (146216, 146235)
 Plating: Refer to Sales Drawings
 Operating Temperature:
 -30 to +85°C (208890)
 -40 to +85°C (206560, 206640, 211624, 213602, 212203, 215634)
 -40 to +125°C (146168, 146216, 146235, 204286)

APPLICATIONS

Automotive

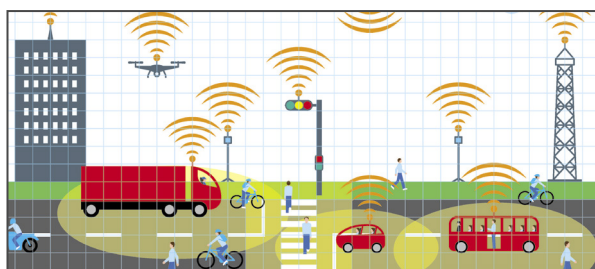
Navigation devices

Commercial Vehicles

High-speed rail

Industrial

Drones
 Maritime Port Technology Systems
 Surveying and Mapping Systems
 Emergency Response Systems



Connected Vehicles and Drones







Surveying and Satellite Mapping Systems

GNSS ANTENNA FAMILY

Antennas	GPS L1/L2 Stacked Patch Single Feed (213602)	GPS L1/L5 & Glonass Stacked Patch Single Feed (211624)	GPS L1/L5 25mm Stacked Patch Antenna (212203)	GNSS Active Patch Antenna With Low-Noise Amplifier (206640)	GPS Ceramic Antenna (208890)	RHCP Ceramic GPS Antenna (146168)	GPS/Beidou/Glonass Ceramic Antenna (204286)
Dimension	36.00 by 36.00 by 7.70mm	36.00 by 36.00 by 7.70mm	25.00 by 25.00 by 8.00mm	25.00 by 25.00 by 6.50mm	18.00 by 18.00 by 2.00 mm	25.00 by 25.00 by 4.00mm	25.00 by 25.00 by 4.00mm
PCB Clearance	No clearance	No clearance	No clearance	No clearance	No clearance	No clearance	No clearance
Material	Ceramic	Ceramic	Ceramic	Ceramic + PCB + Tin Plate	Ceramic	Ceramic	Ceramic
Antenna Type	Patch	Patch	Patch	Active Patch	Patch	Patch	Patch
Frequency Range	1227 & 1575MHz	1176&1575&1602MHz	1176 & 1575MHz	1561 – 1602 MHz	1575 MHz	1575 MHz	1561 – 1602 MHz
Return Loss	<-15dB	<-10dB	<-20dB & <-15dB	- 8 dB (VSWR 2.5)	<-15 dB	<-15 dB	<-10 dB
Peak Gain	2.1 & 5.3dBi	2.1 & 4.5 & 4.2dBi	3.1 & 4.9dBi	LNA 28 dBi	2.6dBi	5.5 dBi	5.5 dBi
Total Efficiency	NA	NA	NA	NA	>45%	>75%	>70%
Polarization	RHCP	RHCP	RHCP	RHCP	RHCP	RHCP	Elliptic
Axial Ratio	<5dB & <3dB	N.A.	N.A.	N.A.	< 2.5dB	<3.0	<13.0

GNSS Antennas >

GNSS ANTENNA FAMILY

Antennas	GNSS Flexible Antenna (206560)	Linear GNSS LTCC Chip Antenna (215634)	Helix GPS Antenna (146235)	RHCP Lds-Mid GPS Antenna (146216)
Dimension	40.40 by 15.40mm	3.20 by 1.60 by 0.65mm	3.00 by 5.00 by 4.00mm	11.80 by 11.55 by 6.00mm
PCB Clearance	No clearance	5.00mm x 5.80mm	4.00mm x 6.00mm	No clearance
Material	Flex	LTCC	LDS	LDS
Antenna Type	Dipole	PIFA	Monopole	PIFA
Frequency Range	1561 – 1602 MHz	1561 – 1602 MHz	1561 – 1602 MHz	1575 MHz
Return Loss	< -8 dB	< -9 dB	<-8 dB	<-10 dB
Peak Gain	1.5 dBi	1.4/1.8dBi	1.1 dBi	1 dBi
Total Efficiency	> 74% (50mm)	> 55%	>50%	>55%
Polarization	Linear	Linear	Elliptic	RHCP
Axial Ratio	N.A.	N.A	<6.0	<3.0
				

ORDERING INFORMATION

Series No.	Description	Mounting Style
215634	Linear GNSS LTCC Chip Antenna	SMT
146235	Helix LDS-MID GPS Antenna	
146216	RHCP LDS-MID GPS Antenna	
206640	GNSS Active Patch Antenna with Low-Noise Amplifier	Cabled
206560	GNSS Flexible Antenna	
208890	RHCP GPS Ceramic Patch Antenna (18x18mm)	Peel-and-stick
211624	RHCP GPS L1/L5 Ceramic Patch Antenna (36x36mm)	
213602	RHCP GPS L1/L2 Ceramic Patch Antenna (36x36mm)	
212203	RHCP GPS L1/L5 Ceramic Patch Antenna (25x25mm)	
204286	GPS/BEIDOU/ GLONASS Ceramic Antenna	
146168	RHCP Ceramic GPS Antenna	

www.molex.com/link/gnss-gps.html