

# Combo Antennas >

Combo antennas offer a combination of long-range connectivity, high power efficiency and easy integration advantages for IoT, GPS and M2M applications

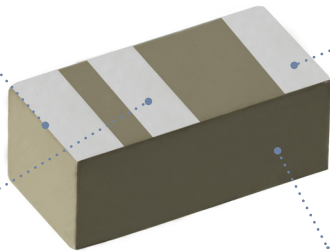
## FEATURES AND ADVANTAGES (SERIES 216942)

### Feeding pad for the 2.4/5GHz (Wi-Fi) band

Feeds electrical signals from the transmission line on the PCB to the Antenna for Wi-Fi band irradiation

### Grounding pad

Provides electrical grounding of Antenna onto the application PCB

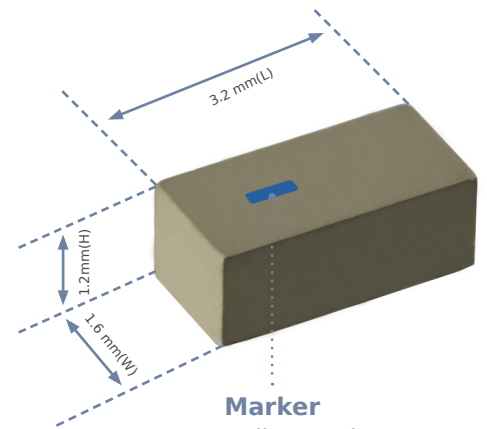


### Feeding pad for GNSS band

Feeds electrical signals from the transmission line on the PCB to the Antenna for GNSS band irradiation

### Ceramic Antenna Housing

Compact, inexpensive and easy to integrate into applications subject to high reflow temperatures



### Marker

Indicates the direction when being mounted on PCB

## FEATURES AND ADVANTAGES (SERIES 201932)

### Pick-and-Place Feature

Facilitates automatic placement during assembly

### Antenna Radiator

Acts as a transducer to convert unguided electromagnetic waves to guided electromagnetic waves and vice versa

### Feeding Pad

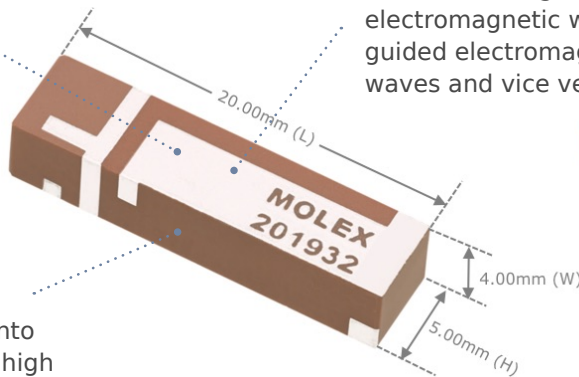
Connects to the radio transceiver via a 50-Ohm transmission line on the PCB. Electrical signals from the transmission line are fed through this pad on the PCB

### Grounding Pad

Provides electrical grounding of antenna onto the application PCB

### Ceramic Antenna Housing

Compact, inexpensive and easy to integrate into applications subject to high reflow temperatures

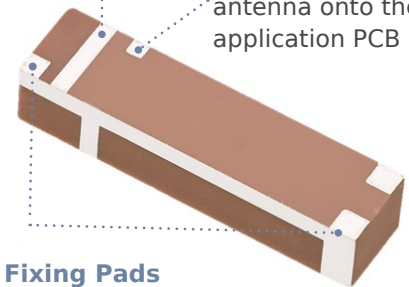


### Balanced Antenna

Offers consistent performance throughout antenna; antenna resonance not affected by cable length

### Fixing Pads

Firmly anchor antenna housing onto the SMT pad of the PCB



2.4/5GHz/900MHz  
Triple-band Ceramic  
Antenna (series 201932)

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## FEATURES AND ADVANTAGES (SERIES 213353)

**Double-sided 3M adhesive**  
Enables easy “peel and stick” mounting

**698 to 8500MHz frequency range in 3 micro coaxial cable lengths with custom options**  
Provides design flexibility



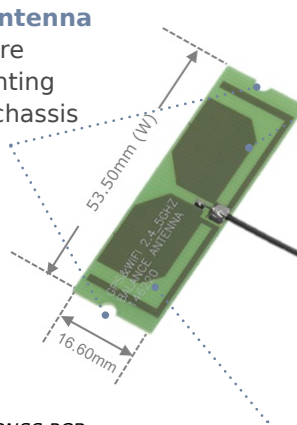
**LTE+GNSS Combo FPC Cabled Antenna (series 213353)**

**UFL-type Connector**  
Secures to the application’s device radio

## FEATURES AND ADVANTAGES (SERIES 146220 [LEFT] AND 146186 [RIGHT])

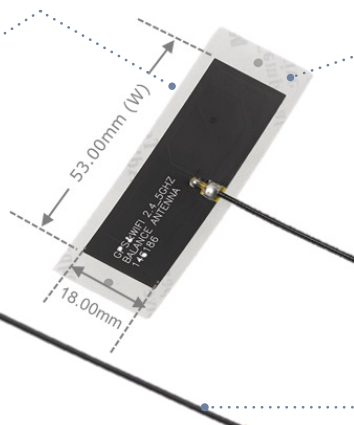
**Balanced Antenna with Wi-Fi 6E support**  
Offers consistent performance throughout 2.4/5/6GHz band;  
Antenna resonance not affected by cable length and routing

**Two holes on the sides of the antenna**  
Facilitates secure screw-nut mounting on application chassis



**Wi-Fi 6E+GNSS PCB Cabled Balanced Antenna (series 146220)**

**Compact PCB Antenna**  
Combines space saving advantages with mechanical robustness for rigid mounting



**Tape Liner**  
Facilitates easy peel-and-stick mounting

**Wi-Fi 6E+GNSS Flex Cabled Balanced Antenna (series 146186)**

**6 Micro Coaxial Cable Length (50, 100, 150, 200, 250, 300mm)**  
Ensures maximum design flexibility in meeting connectivity needs

## SPECIFICATIONS

### REFERENCE INFORMATION

Packaging: PET film (146186, 146220)  
Tape and Reel (201932, 213353)  
Use with: Combo Wireless devices  
Designed In: Millimeters  
RoHS: Yes  
Halogen Free: Yes  
Glow Wire Compliant: No

### ELECTRICAL

Frequency Range: Refer to Product Specifications  
Return Loss: Refer to Product Specifications  
Average Total Radiation Efficiency(%): Refer to Product Specifications  
Peak Gain (dBi): Refer to Product Specifications  
Polarization: Linear  
Input Impedance (ohms): 50

### MECHANICAL

Refer to Product Specifications for relevant antennas

### PHYSICAL

Material: Ceramic (201932, 216942)  
PCB (146220)  
Flexible Material (146186, 213353)  
Plating: Silver (Ag) 11±4microns (201932, 216942)  
Operating Temperature:  
-40 to 125°C (201932)  
-30 to 85°C (146220, 146186, 213353)  
-40 to 85°C (216942)

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## MARKETS AND APPLICATIONS

### Automotive

Connected vehicles  
Dashboard cameras

### Industrial

Tracking devices  
Logistic infrastructure  
Machine to machine devices

### Consumer

Mobile devices

### Navigation devices

Satellite-based positioning systems

### Data/Telecom

Portable Wi-Fi routers



Drones



AR/VR



Consumer



Routers

## ORDERING INFORMATION

Series No.	Substrate	Mounting	Dimensions (mm)	Standard
216942	Ceramic	SMT	3.20(L) by 1.60(W) by 1.20(H)	Wi-Fi 2.4/5 + GNSS
201932	Ceramic	SMT	20.00(L) by 4.00(W) by 5.00(H)	Wi-Fi 4/5/6 + ISM900
146220	PCB	Screw Nut	53.50 by 16.60	Wi-Fi 4/5/6/6E + GNSS
146186	Flexible	Peel-and-Stick	53.00 by 18.00	Wi-Fi 4/5/6/6E + GNSS
213353	Flexible	Peel-and-Stick	119.40 by 19.40	LTE + GNSS

[www.molex.com/link/standard\\_antennas.html](http://www.molex.com/link/standard_antennas.html)