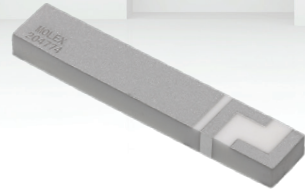
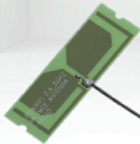
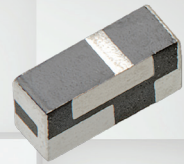
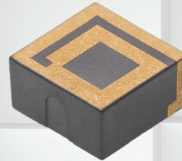
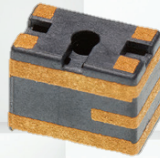


Ready to Use Internal Antennas



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Ready to Use Internal Antennas

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Bluetooth/Wi-Fi Flexible and PCB Antennas

146153 - Wi-Fi 6E Flex Cabled Balanced Antenna
146187 - Wi-Fi 6E PCB Cabled Balanced Antenna
204281 - Wi-Fi 6E Flex Cabled Side-fed Balanced Antenna
208482 - Wi-Fi 6E Flex Cabled 2x2 MIMO Antenna
212330 - Wi-Fi 6E Flex Cabled 4x4 MIMO Antenna
206994 - Wi-Fi 6E Flex Cabled Side-fed Antenna
212498 - 2.4GHz Cabled On-metal Antenna
214061 - 2.4/5GHz Cabled On-metal Antenna

Bluetooth/Wi-Fi Ceramic and MID Chip Antennas

47948 - 2.4 GHz SMT MID Chip Antenna
146175 - 2.4/5 GHz SMT MID Chip Antenna
206513 - 2.4 GHz Ceramic Antenna
206514 - 2.4/5 GHz Ceramic Antenna
211964 - 2.4/5 GHz LTCC Antenna, edge mounting
206774 - 2.4/5GHz LTCC Antenna, corner mounting

Cellular Flexible Antennas

105263 - Multi(6)-band Cellular Flexible Antenna
146185 - Cellular Quad-band Flexible Antenna
146234 - 698 MHz - 6 GHz Flexible Antenna
207235 - 824~2170 MHz Flexible Antenna
207901 - 600~6000 MHz Flexible Antenna
209142 - 698~4000 MHz Flexible Antenna
212570 - 824 MHz Flexible Antenna side-fed cable

Cellular Ceramic Antennas

146200 - 698 MHz to 2.7 GHz SMT Antenna
204774 - 790 to 2700 MHz Ceramic Antenna
206649 - 700~960 MHz Ceramic Antenna
206760 - 698 MHz to 2.7 GHz Antenna Low profile 3mm
208485 - 600~4000 MHz ceramic SMT Antenna

GNSS Antennas – MID/LDS, Ceramic, Flexible

146235 - Helix LDS-MID GPS Antenna
146216 - RHCP LDS-MID SMT GPS Antenna
146168 - RHCP GPS Ceramic Antenna
215634 - Linear LTCC GNSS Antenna
204286 - GNSS Ceramic Antenna 25x25x4mm
206640 - Active Antenna (Ant + RF LNA) 25 by 25mm
206560 - GNSS Flexible Antenna
208890 - GPS Ceramic Antenna 18x18x2mm
211624 - GPS L1/L5 and Glonass 36mm Stacked Antenna
212203 - GPS L1/L5 25mm Stacked Antenna
213602 - GPS L1/L2 36mm Stacked Antenna

Combo Antennas (Wi-Fi, GPS, ISM, Cellular)

146186 - Wi-Fi 6E+GNSS Flex Cabled Balanced Antenna
146220 - Wi-Fi 6E+GNSS PCB Cabled Balanced Antenna
201932 - 2.4/5 GHz and 900 MHz Triple-band Ceramic Antenna
213353 - LTE/GNSS combo cabled FPC Antenna
216942 - WiFi 4/5/6 + GNSS LTCC combo Antenna

Ultra Wide Band (UWB) Antennas

146184 - Ultra Wide Band (UWB) PCB Antenna
211996 - UWB 6-8.5 GHz Flexible Antenna

Industrial, Scientific and Medical (ISM) Antennas

105262 - 868/915 MHz ISM Flexible Antenna
204287 - 433 MHz ISM Flexible Antenna
206764 - 868/915 MHz Dipole ISM Flexible Antenna
208142 - 868/915 MHz Ceramic SMT Antenna
211140 - 868/915 MHz Flexible Antenna

Near Field Communications (NFC) Antennas

146236 - NFC Rectangular Antenna

Bluetooth/Wi-Fi Flexible Internal Antennas (1 of 2)




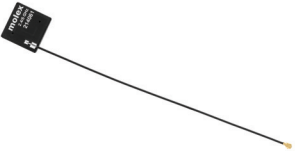
2.4, 5, 6 GHZ WI-FI 6E FLEXIBLE AND PCB ANTENNAS

Series	146153	146187	204281	208482	212330	206994
Key Features	Balanced RF transmission, multiple cable lengths, center-fed/side-fed cables			2x2, 4x4 MIMO		Smallest Form Factor
Size (mm)	34.90 by 9.00	40.95 by 9.00	35.00 by 11.00	40.40 by 15.40 by 0.10	70.00 by 20.00	15.00 by 6.00
Material	Flexible	PCB	Flexible	Flexible	Flexible	Flexible
Frequency Range (GHz)	2.4 to 2.5 / 5.15 to 5.85 / 6 to 7.125					
Return Loss (dB)	<-10 / <-10 / <-10	<-10 / <-10 / <-7	<-10 / <-10 / <-4	Port1, 2: <-8 / <-13 / <-5	Port1: <-10 / <-10 / <-5 Port2: <-10 / <-9 / <-5 Port3: <-10 / <-10 / <-5 Port4: <-10 / <-10 / <-5	<-10 / <-5 / <-4
Peak Gain (dBi)	3.0 / 4.0 / 5.5	3.2 / 4.5 / 4.5	2.0 / 3.3 / 4.5	Port1: 2.9 / 5.0 / 4.5 Port2: 3.4 / 5.9 / 4.0	Port1: 2.4 / 3.3 / 6.5 Port2: 2.6 / 2.3 / 2.3 Port3: 3.0 / 3.4 / 5.5 Port4: 3.5 / 3.9 / 5.5	4.0 / 3.6 / 2.7
Total Radiation Efficiency	>75% / >75% / >80%	>80% / >75% / >75%	>65% / >68% / >55%	Port1: >65% / >75% / >75% Port2: >75% / >70% / >80%	Port1: 55% / 70% / 75% Port2: 55% / 65% / 65% Port3: 50% / 70% / 75% Port4: 55% / 65% / 75%	>55% / >70% / >40%
Product Image						

Bluetooth/Wi-Fi Flexible Internal Antennas (2 of 2)






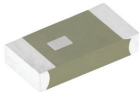


2.4 AND 2.4, 5 GHZ WI-FI ON-METAL ANTENNAS

Series	212498	214061
Key Features	Direct mounting on metallic surfaces	
Size (mm)	20.2 by 20.2 by 3.5	
Material	Plastic	
Frequency Range (GHz)	2.4 to 2.485	2.4 to 2.485/ 5.15 to 5.85
Return Loss (dB)	-6	-9
Peak Gain (dBi)	3.7	3.6 / 6.2
Total Radiation Efficiency	>60%	>60% / > 65%
Product Image		

Bluetooth/Wi-Fi Ceramic and MID Chip Internal Antennas



2.4 AND 2.4, 5 GHz CERAMIC AND MID CHIP ANTENNAS						
Series	146175	47948	206513	206514	211964	206774
Key Features	Highest performance in the market		Lower cost than LDS plastic		Low profile	Low profile
Size (mm)	3.00 by 5.00 by 4.00	3.00 by 3.00 by 4.00	3.00 by 3.00 by 4.00	3.00 by 4.00 by 4.00	3.20 by 1.60 by 1.20	3.20 by 1.60 by 0.65
Material	LDS-MID	LDS-MID	Ceramic	Ceramic	Ceramic	Ceramic
PCB Mounting Recommendation	Corner mounting	Corner mounting	Corner mounting	Corner mounting	Center-edge mounting	Corner mounting
Frequency Range (GHz)	2.4 to 2.5 5.15 to 5.85	2.4 to 2.5	2.4 to 2.5	2.4 to 2.5 5.15 to 5.85	2.4 to 2.5 5.15 to 5.85	2.4 to 2.5 5.15 to 5.85
Return Loss (dB)	<-6	<-7	<-6	<-8 / <-5	Config.1 (2.4 GHz): <-6 Config.2 (2.4/5 GHz): <-5	Config.1 (2.4GHz): <-10 dB Config. 2 (2.4/5GHz): <-7 dB
Peak Gain (dBi)	3.0 / 4.2	3	3.6	3.5 / 6.2	Config.1: 2.7 Config.2: 2.1 / 2.2	Config.1: 2.7 Config.2: 1.9 / 1.7
Total Radiation Efficiency	>70%	>70%	>55%	>75%	Config.1: >80% Config.2: >70% / >65%	> 60%
Product Image						

Cellular Flexible Internal Antennas



CELLULAR FLEXIBLE ANTENNAS

Series	212570	207235	146185	105263	209142	146234	207901
Key Features	Small size, side-fed cable	Small size	Balanced antenna with high performance		Small size, side-fed cable	Balanced antenna with high performance	
Size (mm)	40.40 by 15.40	40.40 by 15.40 by 0.10	84.00 by 15.00	106.6 by 13.00	85.00 by 14.50 by 0.10	140.00 by 20.00	147.00 by 25.00 by 0.16
Material	Flexible	Flexible	Flexible	Flexible	Flexible	Flexible	Flexible
Frequency Range	824 to 960 MHz / 1.7 to 2.17 GHz	824 to 960 MHz / 1.7 to 2.17 GHz	824 to 960 MHz / 1.71 to 2.7 GHz	824 to 960 MHz / 1.71 to 2.7 GHz	698 to 960 MHz / 1.71 to 2.7 GHz / 3.3 to 3.8 GHz	698 to 960 MHz / 1.5 to 2.7 GHz / 2.7 to 6 GHz	600 to 960 MHz / 1.5 to 3 GHz / 3 to 6 GHz
Return Loss (dB)	<-4 / <-3	<-4 / <-6	<-4	<-6	<-10 / <-5 / <-5	<-4 / <-5 / <-5	<-3 / <-5 / <-5
Peak Gain (dBi)	-0.45 / 1.76	0 / 4.3	1.4 / 3.0	2.3 / 3.1	1.2 / 5.2 / 2.7	1.7 / 2.65 / 4.8	2.6 / 4.9 / 5.4
Total Radiation Efficiency	>25% / >50%	30% / 60%	>60% / >65%	>66% / >60%	>45% / >55% / >55%	>69% / >68% / >67%	>70% / >65% / >70%
Product Image							

Cellular Ceramic Internal Antennas



CELLULAR CERAMIC ANTENNAS

Series	204774	206649	206760	146200	208485
Key Features	Small size, low profile	Tiny size, specifically designed for NB-IoT	Low profile, high performance	MIMO pair -0001 and -0011	Low profile, ultra wide band
Size (mm)	33.00 by 6.00 by 3.00	20.00 by 10.00 by 1.20	38.00 by 8.00 by 3.00	40.00 by 5.00 by 5.00	38.00 by 8.00 by 3.00
Frequency Range	790 to 960 MHz / 1.71 to 2.17 GHz	698 to 869 / 791 to 862 / 824 to 960 / 698 to 960 MHz	698 to 960 MHz / 1.7 to 2.7 GHz	698 to 960 MHz / 1.71 to 2.7 GHz	617 to 894 / 1.71 to 2.69 GHz / 3.3 to 3.8 GHz
Return Loss (dB)	<-6	<-4 / <-6 / <-7 / <-5	<-5	<-5	<-6 / <-4 / <-4
Peak Gain (dBi)	0.6 / 4.8	0.5 / 0.8 / 1.1 / 0.9	1.3 / 4.4	1.1 / 4.5	1.6 / 4.7 / 3.6
Total Radiation Efficiency	>50% / >70%	>50% / >50% / >55% / >55%	>60% / >70%	>60% / >70%	>70% / >65% / >65%
Product Image					








GNSS Internal Antennas (1 of 2)



GPS ANTENNAS				
Series	146216	146235	206560	215634
Key Features	LDS plastic material, superior performance, and small form factor		Flexible with cable, multiple length options	Low profile, edge mounting
Frequency Range (MHz)	1561 / 1575 / 1602	1561 / 1575 / 1602	1561 / 1575 / 1602	1561/1575/1602
Size (mm)	11.80 by 11.55 by 6.00	3.00 by 5.00 by 4.00	40.40 by 15.40	3.20 by 1.60 by 0.65
Polarization	RHCP	Elliptic	Linear	Linear
Axial Ratio	<3.0	<6.0	N.A.	N.A.
Total Radiation Efficiency	>55% / >57% / 60%	>50% / >55% / 50%	>74% / >74% / >75%	> 55%
Product Image				

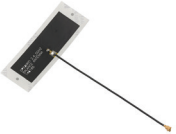

GNSS Internal Antennas (2 of 2)



CERAMIC GPS ANTENNAS							
Series	213602	211624	212203	206640	208890	146168	204286
Key Features	Stacked ceramic patch for high precision navigation			Active patch with cable, two stage LNA	Ceramic patch, single feed pin, customized length options		
Frequency Range (MHz)	L2: 1227.6 / L1: 1575.42	L5: 1176.45 / L1: 1575.42 / GLONASS: 1602	L5: 1176.45 / L1: 1575.42	1561 / 1575 / 1602	1575	1575	1561 / 1575 / 1602
Size (mm)	36.00 by 36.00 by 7.00	36.00 by 36.00 by 7.00	25.00 by 25.00 by 8.00	25.00 by 25.00 by 6.50	18.00 by 18.00 by 2.00	25.00 by 25.00 by 4.00	25.00 by 25.00 by 4.00
Polarization	RHCP	RHCP	RHCP	RHCP	RHCP	RHCP	Elliptic
Axial Ratio	N.A.	N.A.	N.A.	N.A.	<2.0	<3.0	<13.0 / <7 / <12
Total Radiation Efficiency	>50% / >80%	>74% / >74% / >75%	>65% / >75%	N.A.	>45%	>75%	>70% / >70% / 75%
Product Image							

Combo Internal Antennas (Wi-Fi, GPS, ISM and Cellular)



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COMBO ANTENNAS					
Series	146186	146220	201932	213353	216942
Key Features	Multiple bands in one antenna, small form, high performance				
Standard	WiFi 4/5/6/6E + GNSS	WiFi 4/5/6/6E + GNSS	WiFi 4/5/6 + ISM900	LTE + GNSS	WiFi 4/5/6 + GNSS
Frequency Range (GHz)	1.561 to 1.602/ 2.4 to 2.5 / 5.15 to 5.85 / 3 to 6 / 5.925 to 7.125		0.9 to 0.924MHz / 2.4 to 2.5 / 5.15-5.85	0.698 to 8.5 (LTE) and 1.561 / 1.575 / 1.602 (GNSS)	1.561 to 1.602 2.4 to 2.5 5.15 to 5.85
Size (mm)	53.00 by 18.00	53.50 by 16.60	20 by 5 by 4	119.40 by 19.40	3.20 by 1.60 by 1.20
Polarization	Linear	Linear	Linear	Linear	Linear
Return Loss (dB)	-5 ~ -10	-5	<-5 / <-6 / <-5	< -5 (LTE) < -10 (GNSS)	<-6 / <-7 / <-5
Peak Gain (dBi)	2.13 to 5.49	2.39 ~ 3.97	0.7 / 4.2 / 4.5	2.3~7(LTE) / 1.9~2.4 (GNSS)	0.8 / 1.3 / 3.0
Total Radiation Efficiency	65% ~ 70%	70% ~75%	>40% / >65% / >55%	>60% (LTE) >45% (GNSS)	>40% >50% >65%
Product Image					

Ultra Wide Band (UWB) Internal Antennas

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ULTRA WIDE BAND (UWB) ANTENNAS

Series	146184	211996
Key Features	Ground plane-independent, dipole-style antenna	Designed for V2X/DSRC communications
Size (mm)	47.00 by 17.60	16.40 by 7.60 by 0.16
Material	Flexible	Flexible
Frequency Range (GHz)	3.0 to 6.0	5.85 to 5.295
Return Loss (dB)	<-10	<-10
Peak Gain (dBi)	4.7	5.75
Total Radiation Efficiency	>74%	>79%
Product Image		

Industrial, Scientific and Medical (ISM) Internal Antennas

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	FLEXIBLE ANTENNAS				SMT ANTENNA
Series	105262	206764	211140	204287	208142
Key Features	Balanced, multiple cable length options	Dipole-type, balanced, multiple cable length options	Small size	Dipole-type, balanced, multiple cable length options	Small footprint, low profile
Frequency Range (MHz)	863 to 928	863 to 928	863 to 928	433	868 or 915 (by different matching)
Size (mm)	79.00 by 10.00	87.40 by 12.40	38.00 by 10.00 by 0.10	90.00 by 40.00	9.00 by 3.00 by 0.63
Return Loss (dB)	<-6	<-9	<-5	<-10	<-10 / <-5
Peak Gain (dBi)	0.4 / 1.4	1.2	0.3 / 1.0	0.7	1.5 / 1.8
Total Radiation Efficiency	50% / >66%	>70%	>55% / >60%	>55%	70% / 65%
Product Image					

Near Field Communication (NFC) Internal Antennas



RECTANGULAR NEAR FIELD COMMUNICATION (NFC) ANTENNA

Series	146236		
Name	NFC Antenna with Ferrite	NFC Antenna	NFC Antenna with Ferrite and Twisted pair
Size (mm)	15.00 by 25.00 by 0.27	15.00 by 25.00 by 0.17	15.00 by 25.00 by 0.27
	23.00 by 27.00 by 0.27	23.00 by 27.00 by 0.17	23.00 by 27.30 by 0.27
	34.00 by 46.00 by 0.27	34.00 by 46.00 by 0.17	34.39 by 46.10 by 0.27
	45.00 by 55.00 by 0.27	45.00 by 55.00 by 0.17	45.00 by 55.00 by 0.27
	15.00 by 15.00 by 0.27	15.00 by 15.00 by 0.17	15.00 by 15.00 by 0.27
Material	FFC with Ferrite	FFC	FFC with Ferrite and AWG28
Antenna Type	Near Field Coupling		
Frequency Range	13.56 MHz		
Inductor @ 13.56 MHz	3.10 μ H	2.00 μ H	2.00 μ H
	3.00 μ H	2.00 μ H	2.00 μ H
	3.80 μ H	2.60 μ H	4.20 μ H
	3.50 μ H	2.40 μ H	2.40 μ H
	2.10 μ H	1.40 μ H	1.40 μ H
Product Image			

www.molex.com/cm/readytouseantenna.html

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