



## ANTENNAS FOR 5G APPLICATIONS (EMBEDDED, INTERNAL, EXTERNAL AND OUTDOOR)

PCB, FPC, STICK, BLADES, STUBBY AND COMPOSITE

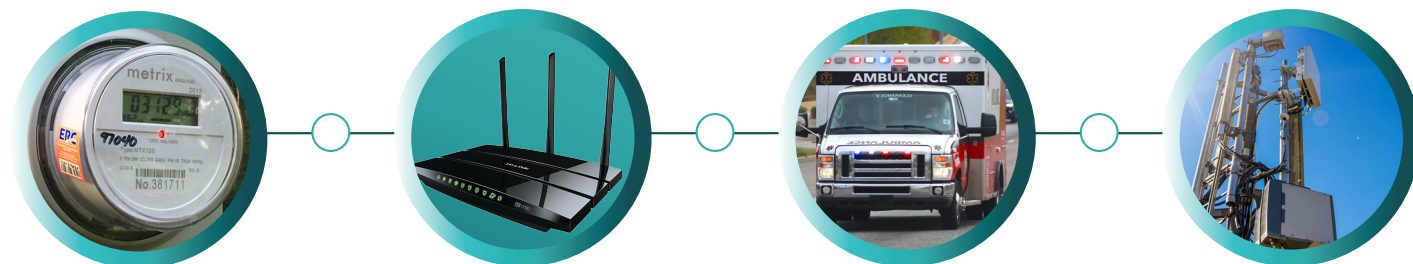
The 5th generation of wireless technology, 5G, is set to revolutionize our networking systems by providing bigger channels for higher data speeds, lower latency for more responsiveness and the ability to connect to significantly more devices for sensors and smart devices. To enable these improvements 5G will operate in three different bands (low-band, mid-band and millimeter-band) which greatly increases the number of nodes and complexity of the system. Within this complexity a robust and reliable antenna solution is key to system performance. Pulse's strong engineering capability allows us to provide high performance, compact antenna solutions to ensure your product operates effectively within the 5G ecosystem. Pulse's 5G antenna products include PCB/FPC antennas, composite antennas and stick antennas with multiple connector options to meet customer requirements. Applications include consumer devices, automotive electronics, industrial surveillance, enterprise router and small cell applications.

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## FEATURES & BENEFITS





- Wide range of antenna options for 5G applications including flexible circuit board (FPC), PCB, direct mount, magnetic mount
- Frequency Bands from 617MHz to 7125MHz
- WiFi, Bluetooth, BLE, Zigbee, MiMo, GNSS
- Excellent Gain across bandwidth
- IoT, SmartGrid, Meters, Remote Monitoring, Sensor Networks
- Security, Video, Graphics
- TE Radios, Femto Cell, SOHO
- Telemetry, High Speed Data
- Smart Connected Vehicles; DSRC, CV2X

	Pulse PN	Antenna Type	Frequency Range	Gain	Efficiency	Polarization	Radiation Pattern	Connector	Ingress Protection	Size (mm)
	W3415	Embedded (SMT Composite)	617 to 6000 MHz	-1.0 to 2.5 dBi	55-75%	Linear	Omni	SMT Mounted		40 x 7 x 3
	W6114xxxxx	Internal (FPC)	617 to 7125 MHz	1.5 to 5.5 dBi	38-62%	Linear	Omni	U.FL/MMCX		224.4 x 20.4 x 0.15
	W3435xxxxx	Internal (FPC)	617 to 6000 MHz	2.5 dBi	50%	Vertical	Omni	U.FL		116 x 30
	W3554xxxxx	Internal (PCB)	698 to 6000 MHz	1.9 to 3.5 dBi	37-66%	Vertical	Omni	U.FL/SMA/MMCX		30 x 120 x 0.2
	W5150	External / In-building (Blade)	617 to 6000 MHz	1.2 to 5.5 dBi	45-70%	Vertical	Omni	SMA Male	IP65	229 x 30
	W1096	External / In-building (Stick)	698 to 3800 MHz	-3.0 to 1.5 dBi	30-60%	Linear	Omni	SMA Male	IP65	106 (length)
	W1696-M	External / In-building (Stubby)	617 to 3800 MHz	-0.5 to 1 dBi	30-45%	Linear	Omni	RP SMA Male	IP65	10 x 50
	W1696 W1697	External / In-building (Stubby)	617 to 3800 MHz	-0.5 to 1 dBi	30-45%	Linear	Omni	SMA Male	IP42	10 x 49.6
	LPT600/71DMN LPT600/71DMNW	Outdoor (Single-Ant)	617 to 7125 MHz	2 to 6.1 dBi	70-83%	Vertical	Omni	N-Female/ Direct mount	IP67	Ø41 x 95.9
	LPT600/71NMO LPT600/71NMOW	Outdoor (Single Ant)	617 to 7125 MHz	2 to 4 dBi	65-80%	Linear	Omni	NMO (Pogo Pin)	IP67	Ø40.9 x 95.9



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	Pulse PN	Antenna Type	Frequency Range	Gain	Efficiency	Polarization	Radiation Pattern	Connector	Ingress Protection	Size (mm)
	RO600/71NFKIT	Outdoor (Single Ant)	617 to 7125 MHz	2.3 to 3.7 dBi	66-77%	Linear	Omni	N-Female	IP67	Ø62.2 x 219.4
	TWC	Vehicular (MultiBand)	617 to 6000 MHz (4x 4G/5G-FR1, 4x WiFi 6E, 1x GNSS)	LTE/5G-FR1 = 2 to 5 dBi, WiFi 6E = 6.5 dBi	57-67%	Linear	Omni	Custom Connector Configurations Available	IP67	122.8 x 274.5 x 95.2
	DASLPP5GXMIMO	DAS (IDAS-PS-DAS)	617 to 4200 MHz (2x MIMO)	2.5 to 3 dBi	55-85%	Linear	Omni	4.3-10 Female or N- Female	Indoor	Ø250 x 8
	SKF5G	Vehicular (MultiBand)	617 to 7125 MHz (2x 4G/5G-FR1, 3x WiFi 6E, 1x GNSS)	LTE/5G-FR1 = 2 to 5 dBi, WiFi 6E = 6.0 dBi	51-68%	Linear	Omni	Custom Connector Configurations Available	IP67	178.3 x 52.5 x 62

## Notes:

1. Operating Temperature Range for all products is -40°C to 85°C except W0196 (-40°C to 80°C) and W1696/W1697/W1696-M (-30°C to 85°C)

## Other Great Products from Pulse Electronics



### Embedded Antennas Ceramic/ Helical/FPC/Stamped

Embedded ceramic chip and patch, composite, Helical, FPC and Stamp metal antennas for effective miniaturization and simplicity



### 3D Antennas LDS/LAP/FluidANT

Get Inspired of 3D Shapes by using LDS, LAP & FluidANT antenna design and manufacturing process.



### Internal Antennas FPC/ PCB/ NFC/WPC/LCP Antennas

Pre-optimized performance with common plastic housing. Compact dimensions and adhesive mount. Providing high efficiency solutions of NFC and WPC compliance



### External/ In-Building Antennas

Reliable blade/ stick antennas for routers & gateways. Cutting edge design and performance proven DAS antennas for in-building wireless and public-safety.



### IPD RF Components - LTCC

LTCC based BPF, LPF, Balun, Diplexer, Triplexer, Balanced BPF, and Coupler



### Outdoor Antennas

Weather proof portable and fixed outdoor antennas for portable radio and data collecting purposes.



### Vehicular Antennas

Extensive ruggedized, tamper-proof and aesthetically pleasing legacy Larsen and multiband antennas for public safety, transportation, and other applications.



### Cable & Mounting Solutions

Support NMO and various mounting types with custom cable types and connector selections.