

## Product Brief



# Splatch® SP610 Embedded LTE, LTE-M, NB-IoT Monopole Antenna

Linx Technologies' Splatch® SP610 is a surface-mount monopole antenna for embedded LTE and cellular IoT (LTE-M and NB-IoT) applications. The SP610 specifically supports low-frequency LTE bands from 698 MHz to 960 MHz, notably the 700 MHz bands, and 1710 MHz to 2400 MHz making it an outstanding antenna for LTE and cellular low-power wide-area (LPWA) applications in North America, Europe and worldwide.

The SP610 uses a grounded-line technique to achieve outstanding performance when subject to nearby sources of interference.

It is available in tape and reel packaging and is designed for reflow-solder mounting directly to a printed circuit board for high-volume applications.



## Features

- 700 MHz bands: Efficiency 61%, Peak Gain 5.1 dBi, VSWR  $\leq$  3.4
- Compact package (40 mm x 10 mm x 2.8 mm)
- Excellent performance with small ground plane (102 mm x 45 mm)
- Resistant to proximity effect from nearby interferers
- Direct surface-mount PCB attachment
- Reflow- or hand-solder assembly

## Applications

- Cellular IoT: LTE-M (Cat-M1) and NB-IoT
- Worldwide LTE, UMTS and GSM
- Low-power, wide-area (LPWA)
- Smart Home networking
- Sensing and remote monitoring
- Internet of Things (IoT) devices

## Selected Carrier and Regional Performance

Carrier (Region)	LTE Bands	Maximum VSWR
AT&T, T-Mobile (North America)	2, 4, 5, <b>12</b> , 14, <b>17</b> , 29, 30, 66	3.4
Verizon (North America)	2, 4, 5, <b>13</b> , 66	3.4
Sprint (North America)	<b>25</b> , 26 / 7	3.4 / 5.0
Europe, Latin America	1, 3, <b>8</b> , 20, 28 / 7	3.4 / 5.0

## Ordering Information

Part Number	Description
ANT-LTE-SP610-T	Tape and reel (1000 per reel, lower quantities available)
AEK-LTE-SP610	Antenna evaluation kit

Available from Linx Technologies and select distributors and representatives.

## Electrical Specifications

Select LTE Bands	12, 13, 14, 17, 26, 28, 29	5, 8, 20	1, 2, 3, 4, 25, 66	30, 40	7, 41
Frequency Range	698 MHz to 803 MHz	791 MHz to 960 MHz	1710 MHz to 2200 MHz	2305 MHz to 2400 MHz	2496 MHz to 2690 MHz
VSWR	$\leq 3.4 : 1$	$\leq 3.4 : 1$	$\leq 3.1 : 1$	$\leq 3.0 : 1$	$\leq 5.0 : 1$
Peak Gain	5.1 dBi	5.1 dBi	5.3 dBi	4.9 dBi	2.7 dBi
Average Gain	-2.3 dBi	-2.4 dBi	-1.3 dBi	-1.7 dBi	-3.0 dBi
Efficiency	61%	60%	80%	71%	52%
Polarization	Linear				
Radiation	Omnidirectional				
Max Power	10 W				
Wavelength	1/4-wave				
Impedance	50 $\Omega$				
Connection	Surface-mount				
Weight	1.5 g (0.05 oz)				
Dimensions	40 mm x 10 mm x 2.8 mm (1.6 in x 0.4 in x 0.1 in)				
Operating Temp.	-40 °C to +120 °C				
ESD Sensitivity	NOT ESD sensitive. As a best practice, Linx may use ESD packaging.				

Electrical specifications and plots measured with a 102 mm x 45 mm (4.0 in x 1.77 in) reference ground plane.

## VSWR

Figure 1 provides the voltage standing wave ratio (VSWR) across the SP610 bandwidth. VSWR describes the power reflected from the antenna back to the radio. A lower VSWR value indicates better antenna performance at a given frequency. Reflected power is also shown on the right-side vertical axis as a gauge of the percentage of transmitter power reflected back from the antenna.

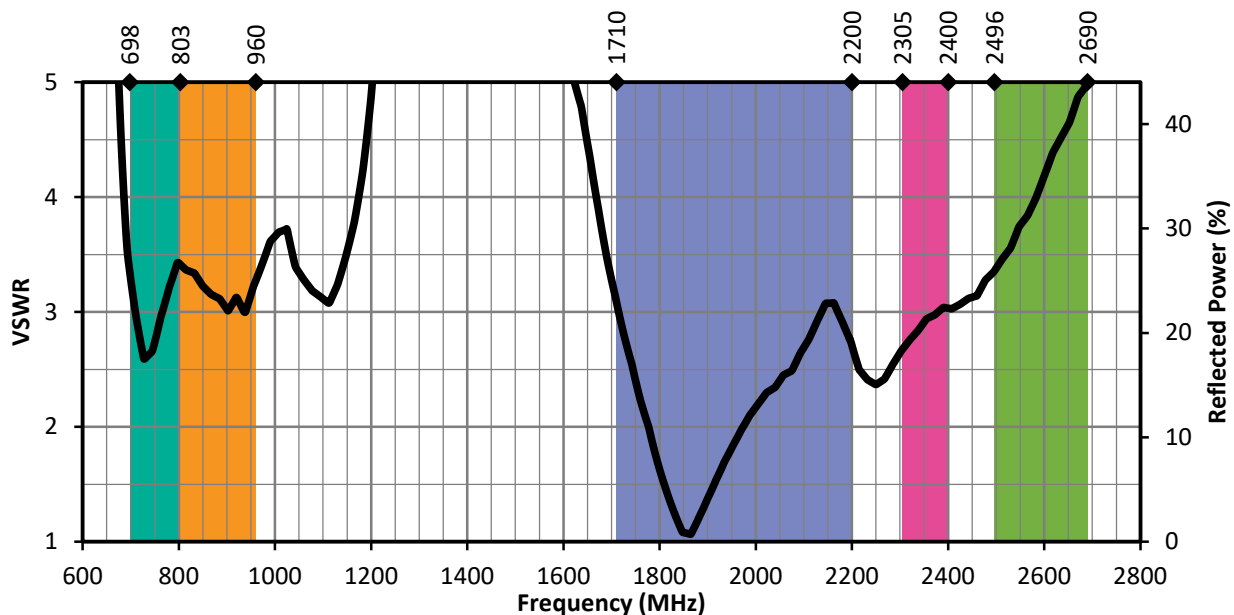


Figure 1. SP610 VSWR

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