

# PRODUCT PROFILE & CROSS-REFERENCE



Product Category: RF Communications / Antennas



## NAN Series Family

### RF Antenna

The NAN family of Antennas covers both internal and external antennas designed for WiFi, Bluetooth, GNSS, ISM, LoRa/Sigfox, UWB, and DECT protocols. The NAN antenna products are available both off the shelf and customized to meet individual customer's requirements.

The NAN products support multiple band frequencies from 698 MHz to 8 GHz with an operating temperature range covering -40°C to +85°C. Standard 50Ω impedance and polarizations ranges cover linear and RHCP. End-use applications\* include smart metering, wearable electronics, routers, gateways, navigation, tracking systems, and IoT.

Antenna Series	Type	Frequency Ranges (MHz)	Protocol
NAN-P	PCB	2400 to 5400	LTE, WiFi, Bluetooth,
NAN-F	FPC	829 to 5400	LTE, WiFi, Bluetooth
NAN-E	EXTERNAL	698 to 5400	LTE, WiFi, Bluetooth, GNSS, GSM
NAN-Cx	CHIP	698 to 8000	ISM, Bluetooth, WiFi, LTE, GNSS, UWB, DECT, LoRa/Sigfox
NAN-Hx	PATCH	1176.45 & 1575.42	GNSS

**NIC Series** \*Applications - End Use (but not limited to):

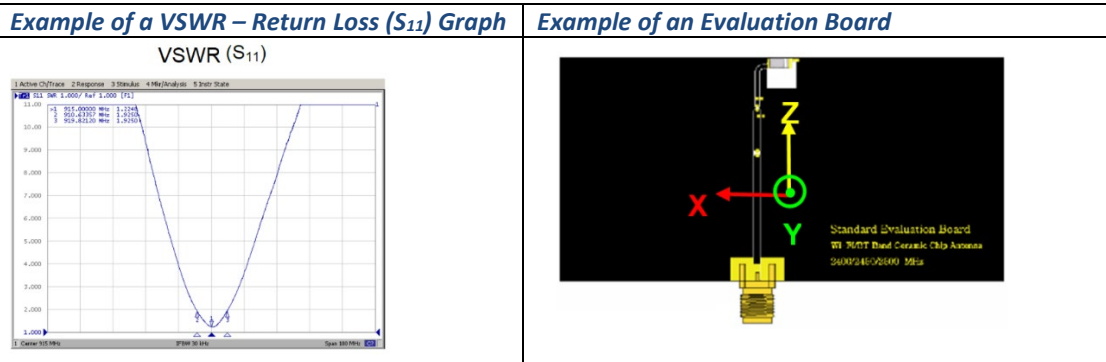
NAN-P	Connected Home, Fleet Tracking, Gateways,
NAN-F	GPS, Handheld Devices, Healthcare,
NAN-E	Inventory Control, IoT, Navigation, Point of
NAN-Cx	Sale, Radio Systems, Routers, Security,
NAN-Hx	Sensors, & Smart Meters

**Features:**

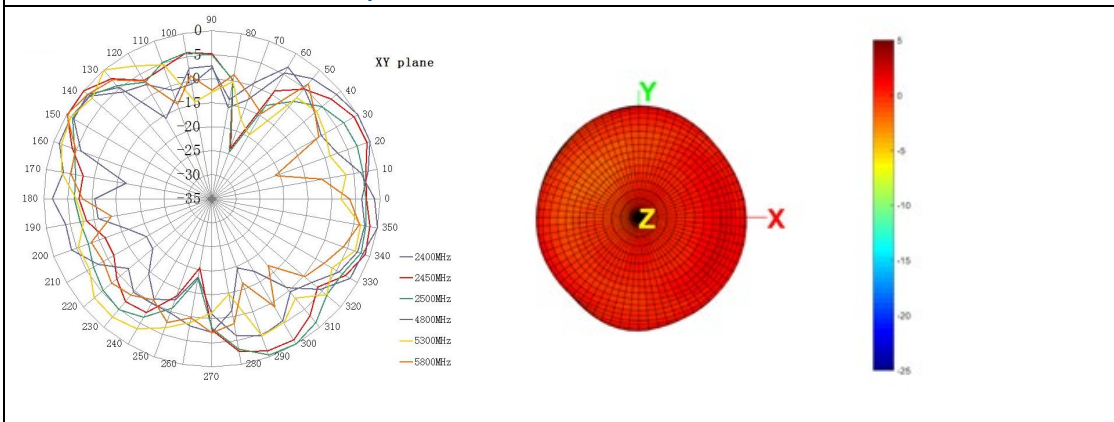
- Chip, FPC, PCB, External and Patch types
- Customizable cable length and connectors
- Multiple SMT case sizes
- Wide Range of Frequencies
- RoHS Compliant

Antenna Specs	Examples	Substitution Guide
Center Frequency (Mhz, Ghz)	2450 MHz, 2.45GHz	Match to design frequency
Impedance (Z)	50 Ohm (Ω, Ohm)	Match to circuit Z → Z ←
Polarization	Linear RCHP	↔ Wider is better
Gain (dbi)	3dbi	↑ Higher is better
Efficiency (%)	35%	↑ Higher is better
Return Loss (db)	10 dB (10% reflection, 90% power into the antenna)	↓ Lower is better
VSWR	2.0 = same as 10dB return loss	↓ Lower is better

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## Example of 2D and 3D Antenna Radiation Patterns



For performance curve support please contact: [tpmg@niccomp.com](mailto:tpmg@niccomp.com)



Antenna products: [www.niccomp.com/products/pType.php?pType=Antennas](http://www.niccomp.com/products/pType.php?pType=Antennas)



### Cross-Reference Guide:

NIC Components	<i>Abrakon</i>	<i>Taoglas</i>	<i>Molex</i>
<b>NAN-P</b>	ABAR	PC	146187 146220
<b>NAN-F</b>	AFAC AFAG	FXP	105262 146153
<b>NAN-E</b>	AEA	GW	214414
<b>NAN-Cx</b>	ACAG	_LA	206649 146200
<b>NAN-Hx</b>	APAR	GP CGGP	208890 146168



Technical Support: [tpmg@niccomp.com](mailto:tpmg@niccomp.com)