

WiFi Antennas

WiFi antennas are typically selected by Wi-Fi Alliance name, IEEE standard number, or frequency bands that are supported by the standards. Table 1 shows the relationship between these selection criteria.

Table 1. WiFi Antenna Technology Selection Criteria

Wi-Fi Alliance Designation	-	WiFi 4	WiFi 5	WiFi 6	WiFi 6E
IEEE Standard	802.11b/g	802.11n	802.11ac	802.11ax	802.11ax
Frequency Band(s)	2.4 GHz	2.4 GHz, 5 GHz	5 GHz	2.4 GHz, 5 GHz	6 GHz

Note: Wi-Fi Alliance HaLow™ relates to IEEE 802.11ah and typically the 900 MHz band.

The detailed range of frequencies associated with the frequency bands in Table 1 are shown in Table 2.

Table 2. WiFi Frequency Bands

Common Name	Other Name(s)	Low Frequency (GHz)	High Frequency (GHz)	Comment
2.4 GHz	-	2.400	2.485	
5 GHz	U-NII-1	5.150	5.250	U-NII is a United States FCC designation
	U-NII-2A	5.250	5.350	
	U-NII-2B	5.350	5.470	
	U-NII-2C	5.470	5.725	
	U-NII-3	5.725	5.850	
	U-NII-4	5.850	5.925	Reserved for licensed use in U.S.
6 GHz	U-NII-5	5.925	6.425	U-NII bands 5-8 are proposed, not standard
	U-NII-6	6.425	6.525	
	U-NII-7	6.525	6.875	
	U-NII-8	6.875	7.125	

Once the frequency band(s) required are decided, the next task for WiFi antenna selection is to determine the *mounting location* and *mounting type* for the antenna. These parameters are selected based on the type of enclosure to be used for the end solution and, to some degree, the end performance requirements. Mounting Location explanations are provided in Table 3.

Table 3. Mounting Location Explanations

Mounting Location	Explanation
Internal/Embedded	Mounted inside an enclosure. Embedded typically refers to an internal mount on a printed circuit board (PCB).
External	Mounted external to an enclosure with the antenna directly attached to the enclosure.
Remote	Mounted external to and away from an enclosure, connected to the enclosure via a length of cable.

Mounting Types define the means by which the antenna is physically connected to the Mounting Location. Some mounting types apply to multiple mounting locations, such as adhesive mount which applies to Internal/Embedded and Remote mounting locations. Others, like surface mount, apply to only one mounting location (Internal/Embedded).

Mounting Type Explanations

Mounting Type	Explanation
Connector	Connector (e.g. SMA) directly attaches antenna to mounting location
Panel Mount	Antenna mounts to enclosure panel/surface and signal connects to radio via cable
Surface Mount	Antenna mounts directly to printed circuit board with surface-mount solder connection
Adhesive	Antenna mounts to mounting location using adhesive
Through Hole	Antenna mounts to printed circuit board with a through-hole solder connection

With the Mounting Location and Mounting Type decided, all that remains to WiFi antenna selection is to choose an option with termination type (e.g. SMA connector) and performance parameters which best support the application – such as electrical type, VSWR/return loss, gain, and efficiency. Linx Technologies’ offering of WiFi antennas may be found in Table 4, and on the [Linx website WiFi Antennas page](#).

Linx Technologies is here to help with your selection and design process. Linx provides complimentary design reviews and matching circuit design. [Contact Linx today for more information](#).

Table 4. Linx WiFi Antenna Selection

Linx WiFi Antenna	Frequency Band(s)			Mounting Location			Mounting Type			Termination	
	2.4 GHz	5 GHz	6 GHz	Internal/Embedded	External	Remote	Surface Mount	Connector	Panel Mount		Adhesive
ANT-DB1-nSP250-T	x	x		x			x				Solder Pad
ANT-W63-FPC-UFL-100	x	x	x	x				x		x	U.FL/MHF1
ANT-W63WS3-SMA	x	x	x		x			x			SMA
ANT-DB1-LCD-SMA	x	x			x			x			SMA
ANT-DB1-LCD-RPS	x	x			x			x			RP-SMA
ANT-DB1-RAF-SMA	x	x			x			x			SMA
ANT-DB1-RAF-RPS	x	x			x			x			RP-SMA
ANT-DB1-LPD-125	x	x			x				x		U.FL/MHF1
ANT-DB1-WRT-SMA	x	x							x		SMA
ANT-DB1-WRT-RPS	x	x							x		RP-SMA
ANT-DB1-WRT-UFL	x	x							x		U.FL/MHF1
ANT-DB1-WRT-MON-SMA	x	x							x		SMA
ANT-DB1-WRT-MON-RPS	x	x							x		RP-SMA
ANT-DB1-WRT-MON-UFL	x	x							x		U.FL/MHF1
ANT-2/5-HDP-2000-SMA	x	x				x				x	SMA
ANT-2/5-HDP-2000-RPS	x	x				x				x	RP-SMA
ANT-DB1-HDP-SMA	x	x				x				x	SMA
ANT-DB1-HDP-RPS	x	x				x				x	RP-SMA
ANT-DB1-HDP-TNC	x	x				x				x	TNC
ANT-2/5-VDP-2000-SMA	x	x				x				x	SMA
ANT-2/5-VDP-2000-RPS	x	x				x				x	RP-SMA
ANT-DB1-VDP-SMA	x	x				x				x	SMA
ANT-DB1-VDP-RPS	x	x				x				x	RP-SMA
ANT-DB1-VDP-TNC	x	x				x				x	TNC

Internal/Embedded-Mount Antennas

Surface Mount



ANT-DB1-nSP250-T

Adhesive Mount



ANT-W63-FPC-UFL-100

External-Mount Antennas

Connector Mount



ANT-W63WS3-SMA

Connector Mount



ANT-DB1-LCD-SMA
ANT-DB1-LCD-RPS

Connector Mount



ANT-DB1-RAF-SMA
ANT-DB1-RAF-RPS

Panel Mount



ANT-DB1-LPD-125

Panel Mount



ANT-DB1-WRT-SMA
ANT-DB1-WRT-RPS

Panel Mount



ANT-DB1-WRT-UFL

Panel Mount



ANT-DB1-WRT-MON-SMA
ANT-DB1-WRT-MON-RPS

Panel Mount



ANT-DB1-WRT-MON-UFL

Panel Mount



ANT-DB1-WRT-MON-UFL

Remote-Mount Antennas

Adhesive Mount



ANT-2/5-HDP-2000-SMA
ANT-2/5-HDP-2000-RPS

Adhesive Mount



ANT-DB1-HDP-SMA
ANT-DB1-HDP-RPS
ANT-DB1-HDP-TNC

Adhesive Mount



ANT-2/5-VDP-2000-SMA
ANT-2/5-VDP-2000-RPS

Adhesive Mount



ANT-DB1-VDP-SMA
ANT-DB1-VDP-RPS
ANT-DB1-VDP-TNC

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