

## 2.4GHz Booster Antenna for ISM Band

### Introduction

The Booster Antenna is a highly efficient and compact unit designed to increase the performance and range of any wireless device in the 2.4 GHz ISM band. Such devices include all Bluetooth, P2P, P2MP, 802.11b, 802.11b+, 802.11g, and 802.11b+g access points and wireless routers. In certain conditions the Booster Antenna is able to double the range of the wireless device. The Booster Antenna can extend the signal range and eliminate the use of an additional radio with its associated data line, power outlet, signal interference, and setup headaches. The Booster Antenna is the fast and easy way to extend your signal range in any environment.

The SENAO Booster Antenna uses Time Division Duplex (TDD) technology. For Tx, we use a high-power, high-efficiency, linear amplifier MMIC manufactured on an advanced Gallium Arsenide Heterojunction Bipolar Transistor (HBT). Also, a power limit function regulates the output power level to an acceptable range. In WLAN applications, it produces a continuous output power of 500 mW (5V) or 1000 mW (7V) under the 802.11b spectral mask. For Rx, a low noise LNA provides greater receive dynamic range and improves the overall quality of the incoming signal.

### Features

- High Switching speed
- High Gain and Low Noise LNA
- Low Power Consumption : 5V@600mA, max
- Low Heat Effect
- Compact Size and Light Weight
- PWR/Tx/Rx Diagnosis Lights

### Applications

- WLAN 802.11b & 802.11b+
- WLAN 802.11g & 802.11b+g
- Bluetooth
- Digital Spread Spectrum on the ISM Band

### Absolute Maximum Ratings

- |                         |              |
|-------------------------|--------------|
| ➤ Supply Voltage        | 7.5 V        |
| ➤ RX Input Power        | 0 dBm        |
| ➤ TX Input Power        | 23 dBm       |
| ➤ Operating Temperature | -30 ~ +50 °C |
| ➤ Storage Temperature   | -40 ~ +75 °C |

### Available Connectors

- Reverse Polarity SMA (RP-SMA) 0° and 90°
- Reverse Polarity TNC (RP-TNC) 0° and 90°





## Specifications – SENA0 Booster Antenna

### Electrical Characteristics at 25°C

<b>Model Number</b>	<b>BA24-CAWWXXYYY-ZZ</b>	
<b>Frequency Band</b>	2.4 ~ 2.5 GHz	
<b>Signal Type</b>	DSSS	
<b>TR Switch Time</b>	< 1μsec	
<b>RX Max. Input Power</b>	-10 dBm	
<b>RX Power Gain</b>	10 ~ 20 dB	
<b>TX Input Power</b>	0 ~ 20 dBm	
<b>TX Power Gain</b>	10 ~ 20 dB	
<b>TX Max. Linear Output Power</b>	500 mW / 27 dBm	1000 mW / 30 dBm
<b>DC Supply Voltage</b>	DC 5V	DC 7V
<b>Current Consumption</b>	< 700 mA	
<b>Diagnosis LED</b>	PWR@Green, TX@Red, RX@Yellow	
<b>RF Connector Type</b>	RP-SMA @Male or RP-TNC@Male	
<b>Operating Temperature</b>	-30 ~ +50 °C	
<b>Size - L*W*H</b>	155mm * 21.6mm * 18.88mm	
<b>Weight</b>	20 g	

### Product Identification

[BA 24 - B A WW XX YYY - ZZ](#)

(1) (2) (3)(4) (5) (6) (7) (8)

(1) Product series name

(2) Frequency band      24 = 2400MHz

(3) Color Code          B = Black,      C = Cream,      G = Gray

(4) Mechanical Code      A

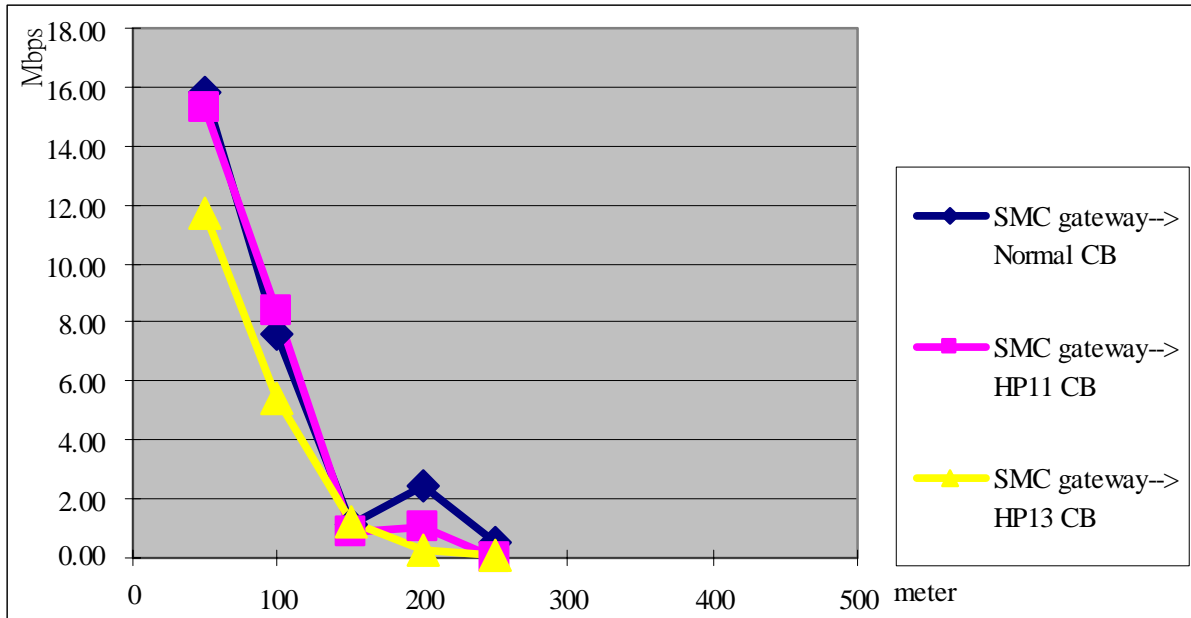
(5) RX power gain        10 = 10dB,      15 = 15dB,      20 = 20dB

(6) TX power gain        10 = 10dB,      15 = 15dB,      20 = 20dB

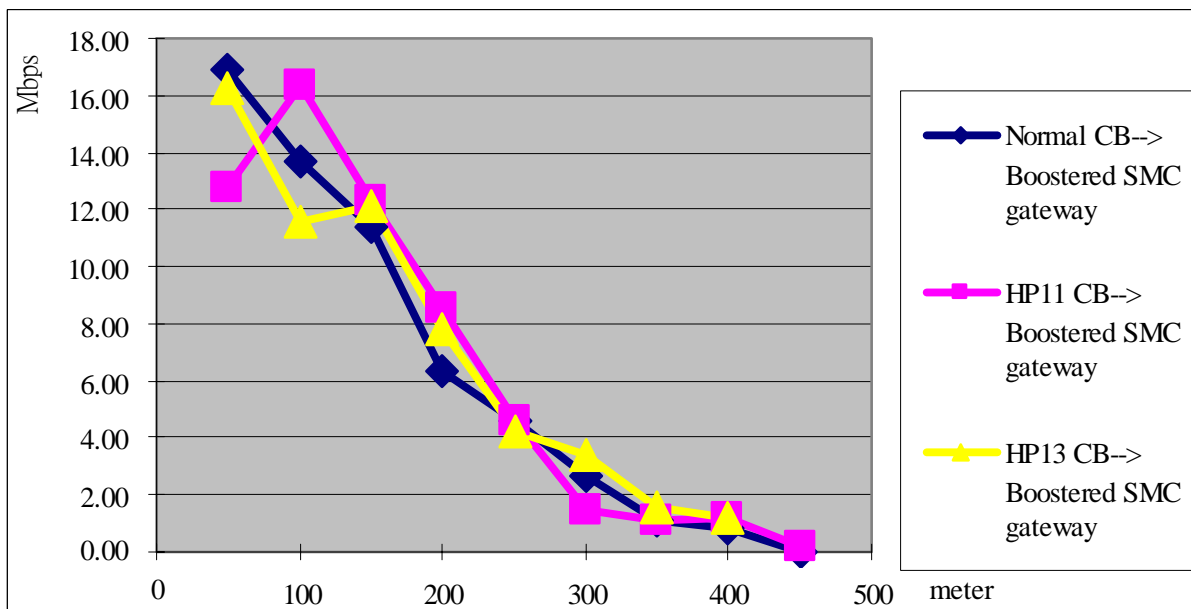
(7) RF connector type    SRT = Straight RP-TNC@Male, RRT = Right-Angle RP-TNC@Male  
                                   SRS = Straight RP-SMA@Male, RRS = Right-Angle RP-SMA@Male

(8) TX continue power    27 = 27dBm,      30 = 30 dBm

The SENAIO Booster increases the transmission distance by 80% as well as increasing the throughput, as shown in the graphs below. At 100 meters the average throughput without the Booster is 7 Mbps. The throughput with the Booster at 100 meters is 14 Mbps. The throughput is doubled at the same location.



Graph 1 – Data rate and distance without SENAIO Booster.



Graph 2 – Data rate and distance with SENAIO Booster.

