



Technical Note

WipLL 900 MHz

Wireless IP-Based Local Loop System

External Antenna Specifications

Connecting the World with Wireless Access Solutions

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1. Introduction

The WipLL BSR and IDR devices operating in the 900 MHz band, provide N-type receptacles for connecting external antennas. The BSR provides two N-type receptacles (for antenna diversity), and the IDR provides one TNC-type receptacle.

This document lists the specifications of these external antennas intended for the BSR and IDR devices.

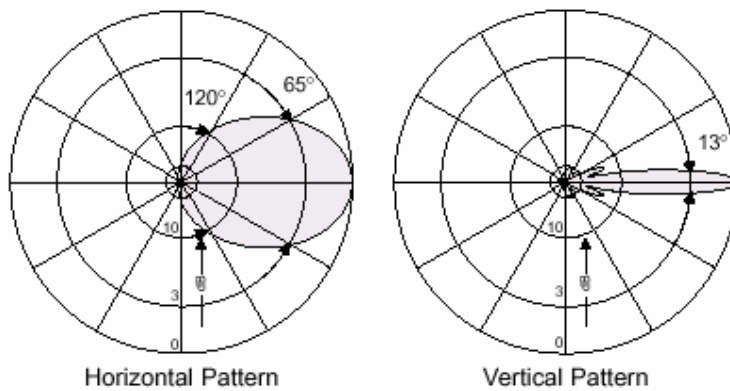
2. BSR External Antennas

Airspan provides the following external antennas for BSR devices operating in the 900 MHz band:

- Sector antenna
- Dual Polarization Sector antenna
- Omnidirectional antenna

2.1. Sector Antenna

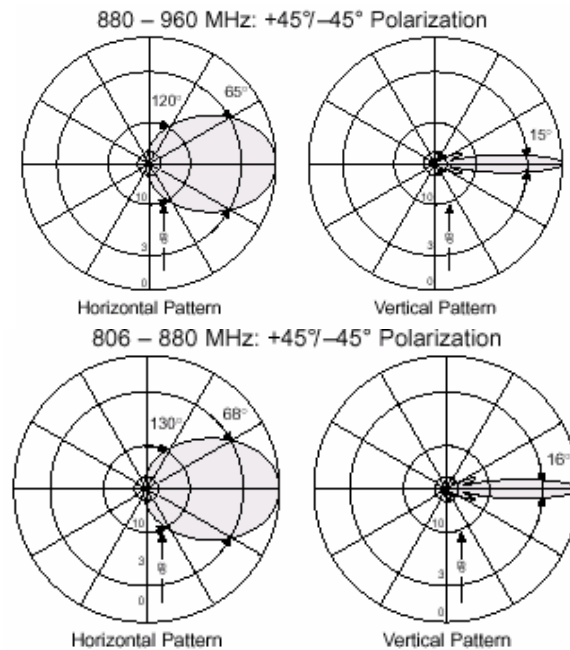
This antenna is designed for best non-line of sight performance with Airspan's BSR operating in the 900 MHz band. Advanced features include: high gain and mechanical downtilt.



Electrical specifications	
Frequency range	870 –960 MHz
Polarization	Vertical
Gain	15.5 dBi
Half-power beam width	• H-plane:65° • E-plane:13°
Front-to-back ratio	>25 dB
Impedance	50 .
VSWR	<1.3
Intermodulation IM3 (2 x 43 dBm carrier)	<-150 dBc
Max.power	500 W (at 50 °C ambient temperature)
Mechanical specifications	
Input	7-16 female
Connector position	Bottom
Weight	6 kg
Wind load	• Frontal: 220 N (at 150 km/h) • Lateral: 140 N (at 150 km/h) • Rearside: 490 N (at 150 km/h)
Max.wind velocity	200 km/h
Packing size	1422 x 272 x 160 mm
Height/width/depth	1294 /258 /103 mm

2.2. Sector Antenna Dual Polarization

This antenna is designed for best non-line of sight performance with Airspan's BSR operating in the 900 MHz band. Advanced features include: high gain and mechanical downtilt.

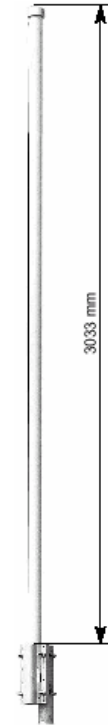
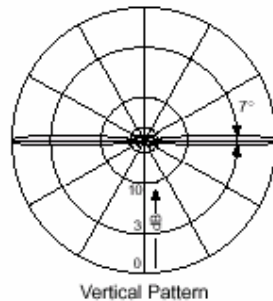


Electrical specifications		
Frequency range	806 –880 MHz	880 –960 MHz
Polarization	+45°, –45°	+45°, –45°
Gain	2 x 15 dBi	2 x 15.5 dBi
Half-power beam width Copolar +45°/ –45°	• Horizontal: 68° • Vertical: 16°	• Horizontal: 65° • Vertical: 15°
Front-to-back ratio, copolar	>30 dB	
Isolation	>30 dB	
Impedance	50Ω	
VSWR	<1.4	
Intermodulation IM3 (2 x 43 dBm carrier)	<–150 dBc	
Max. power per input	600 W (at 50 °C ambient temperature)	
Mechanical specifications		
Input	2 x 7-16 female	
Connector position*	Bottom or top	
Weight	10 kg	
Wind load	• Frontal:230 N (at 150 km/h) • Lateral:130 N (at 150 km/h) • Rearside:500 N (at 150 km/h)	
Max. wind velocity	200 km/h	
Packing size	1422 x 287 x 165 mm	
Height/width/depth	1296 /262 /116 mm	

* Inverted mounting: connector position top. Change drain hole screw

2.3. Omnidirectional Antenna

This antenna is designed for best non-line of sight performance with Airspan's BSR operating in the 900 MHz band.



Electrical specifications		
Frequency range	870 – 960 MHz	
Polarization	Vertical	
Gain	11 dBi	
Impedance	50Ω	
VSWR	<1.5	
Intermodulation IM3 (2 x 43 dBm carrier)	<−150 dBc	
Max. power	500W (at 50 °C ambient temperature)	
Mechanical specifications		
Model Type	736 347	736 348
Input	7-16 female	7-16 female
Connector position	Bottom	Top
Weight	8 kg	
Radome diameter	51 mm	
Wind load	210 N (at 150 km/h)	
Max.wind velocity	200 km/h	
Packing size	3316 x 148 x 112 mm	
Height/width/depth	3033 mm	3022 mm

3. IDR External Antennas

Airspan provides one of the following external antennas for the IDR device operating in the 900 MHz band:

- 10 dBi Panel antenna
- 65 dBi Panel antenna

3.1. 10 dBi Panel

Electrical				
Frequency range	902 - 928 MHz			
Gain	10 dBi (min)			
VSWR	1.5:1 (max)			
3 dB Beamwidth (related to vertical polarization)	• Azimuth: 65 (typ) • Elevation: 55 (typ)			
Polarization	Linear (Vertical or Horizontal)			
Sidelobes level	-18dB (max) @ +/-90			
Cross polarization	-14dB (max)			
F/B ratio	-20dB (max)			
Input impedance	50 (ohm)			
Input power	6W (max)			
Lightning protection	Non			
Mechanical				
Dimensions (LxWxD)	305x305x25 mm (max)			
Weight	1.5 kg (max)			
Connector	N-Type Female			
Radome	Plastic			
Base plate	Aluminum with chemical conversion coating			
Mounting kit	MT-120018			
Environmental				
Test	Standard	Duration	Temperture	Notes
Low temperature	IEC 68-2-1	72 h	-55°C	-
High temperature	IEC 68-2-2	72 h	+71°C	-
Temp. cycling	IEC 68-2-14	1 h	-45°C +70°C	3 Cycles
Vibration	IEC 60721-3-4	30 min/axis	-	Random 4M3
Shock mechanical	IEC 60721-3-4	-	-	4M3
Humidity	ETSI EN300-2-4 T4.1E	144 h	-	95%
Water tightness	IEC 529	-	-	IP67
Solar radiation	ASTM G53	1000 h	-	-
Flammability	UL 94	-	-	CLASS HB
Salt spray	IEC 68-2-11 Ka	500 h	-	-
Ice and snow	-	-	-	25mm radial
Wind speed survival	-	-	-	220 Km/h
Operation				160 Km/h
Wind load (survival): • Front thrust • Side thrust	-	-	-	• 26.8 kg • 2.2 kg

3.2. 6.5 dBi Panel

Electrical				
Frequency range	902-928 MHz			
Gain	6.5 dBi (min)			
VSWR	1.5:1 (max)			
3 dB Beamwidth	• 80° (typ) • 80° (typ)			
• Azimuth • Elevation				
polarization	Linear (Vertical or Horizontal)			
Cross polarization	-14dB (max)			
F/B ratio	-11dB (max)			
Input impedance	50 (ohm)			
Input power	6W (max)			
Lightning protection	NON			
Mechanical				
Dimensions (LxWxD)	190x190x30 mm (max)			
Weight	0.7kg (max)			
Connector	N-Type Female			
Radome	Plastic			
Base plate	Aluminum with chemical conversion coating			
Outline drawing	RD41245600C			
Mounting kit	MT-120018/A			
Environmental				
Test	Standard	Duration	Temperture	Notes
Low temperature	IEC 68-2-1	72 h	-55°C	-
High temperature	IEC 68-2-2	72 h	+71°C	-
Temp. cycling	IEC 68-2-14	1 h	-45°C +70°C	3 Cycles
Vibration	IEC 60721-3-4	30 min/axis	-	Random 4M3
Shock mechanical	IEC 60721-3-4	-	-	4M3
Humidity	ETSI EN300-2-4 T4.1E	144 h	-	95%
Water tightness	IEC 529	-	-	IP67
Solar radiation	ASTM G53	1000 h	-	-
Flammability	UL 94	-	-	Class HB
Salt spray	IEC 68-2-11 Ka	500 h	-	-
Ice and snow	-	-	-	25mm radial
Wind speed survival	-	-	-	220 Km/h
Operation				160 Km/h
Wind load (survival):	-	-	-	
• Front thrust				• 10 kg
• Side thrust				• 1.6 kg