Lighthouse™ High Power Smart Repeater

Airgain's Lighthouse™ Smart Repeater is a 5GNR n77 solution that can extend cell coverage by improving uplink and downlink signal power, specifically for sub-6GHz frequencies (TDD FR1). This high-power outdoor smart repeater offers a flexible design with unique smart features. It has an optional built-in smart donor antenna with beam-switching capability to ease installation. The device's channelization allows the operator to amplify the desired signal and filter out the rest, while automated features such as TDD detection, gain control, and echo cancellation creates excellent signal quality stability. This innovative design offers up to 200MHz instantaneous bandwidth with different carrier aggregation and MIMO options anywhere within operational bandwidth (4CA SISO 10~50MHz, 2CA 2x2MIMO 10~100MHz).

FEATURES

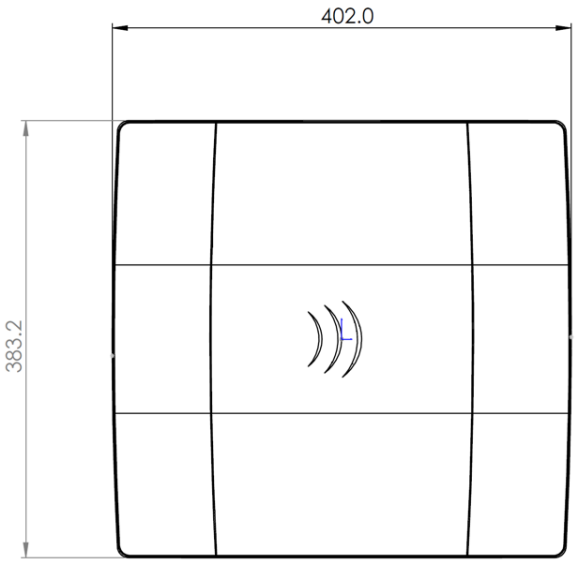
- High output power (>27dBm OP, >40dBm EIRP)
- Plug and play with automatic gain control, TDD synchronization, and active echo cancellation
- Channelization (10~200MHz)
- Compliant to 3GPP TS 38.106
- Two 100MHz CA 2T2R or four 50MHz CA SISO
- Built-in smart Donor antenna

ADVANTAGES

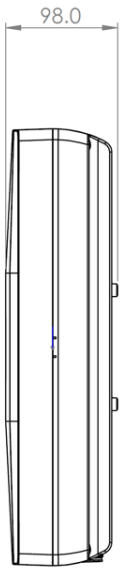
- Reduces infrastructure costs
- Easy installation
- Offers a flexible design for multiple configurations
- Delivers both high power and excellent signal quality
- Supports remote control and management

DIMENSIONS (in mm)

Front View



Side View



TECHNICAL SPECIFICATIONS

ELECTRICAL	
System	5G NR TDD
Operational Frequency	3300~4000 MHz (n77)
Max. Instantaneous Bandwidth	200 MHz (two CA each 100MHz)
Channelization	10MHz up to 200MHz with 10MHz steps
Carrier Aggregation	2CA (2T2R MIMO 10~100MHz) or 4CA (1T1R SISO 10~50MHz)
MIMO Option	Up to 2T2R
Max. Output Power UL/DL	27/27 dBm ± 2dB
Max. Gain UL/DL	40~65 dB ± 2 dB, 1 dB/step, Manual or Auto Gain Control Support
Gain Flatness	<= 3 dBpp within 100 MHz
Group Delay	<= 3.2 μs
UL/DL EVM	<= 3.5% (at Max. Output Power)
UL Noise Figure	<= 6 dB (at Max. Gain)
VSWR	<= 1.8
Max. Input Power Without Damage	>= 0 dBm (UL&DL)
Out-of-band Gain Rejection	Compliant to 3GPP TS 38.106
Adjacent Channel Leakage Ratio	
Frequency Stability	
Spurious Emission	
Unwanted Emission (Emission Mask)	
TDD Synchronization	Automatic Frame Start Time Acquisition Rx Sensitivity: -88 dBm for 100 MHz and 30 kHz SCS User-set TDD Slot Format for RF SW Control
Optional Built-in DU Antenna	Smart beam switching antenna, gain≧13dBi, beam direction: 0°, ±15°, ±30°
Antenna Port	2x2 MIMO 4.3-10 Female RF Connector
Impedance	50Ω
Power	AC 100~240V, 50/60Hz ; DC 48V
Power Consumption	< 110W
Dimensions	400 x 380 x 100 mm (LxHXD)
Weight	< 10kg (<22LBS)
Operating Temperature	0°C ~ +55°C
IP rate	66
Automatic Shutdown Function	RSSI Overpower Shutdown (Max. -20 dBm ± 2 dB, OMT Programmable) RSSI Underpower Shutdown (Min. -86 dBm ± 2 dB, OMT Programmable)
Local Control	Wi-Fi 802.11 b/n/g with commissioning tool (will be turned off after completed) Optional DB9
Remote Control	RCU with IoT Modem (4G, 5G) OMC: Web Server Connection: MQTT/TCP/IP or SNMP/UDP/IP