

mBDA Digital Band Selective Repeater

Flexible Indoor Wireless Enhanced Solutions

Features

- Max. 5 bands of E800/E900/1800/2100/2600MHz.
- Max. 2W total output power, support GSM, WCDMA, LTE, NB-IoT (Stand Alone, Guard Band and In-band) and 5G NR*, or hybrid application
- Supports multi operator configurations and up to 4 sub bands per band.
- Operation via OMT software.
- Friendly and easy OMT interface via RJ45 connection
- Integrated wireless modem or Ethernet for remote monitoring and control.



Note: 5G NR will be support by software upgrade at Q2, 2021

Product Description

mBDA is a wireless enhanced solution where high-quality voice or high-speed data service is not available between a mobile and a base station. mBDA is ideal for the first phase of the network rollout and for any subsequent phase where cost, coverage, and quality need to be optimized.

mBDA offers a modular, robust design that is easy to install, manage and upgrade. It supports three individually adjustable sub-bands for flexibility and high RF performance, supports multi-carrier and multi-band operation.

Remote configuration and surveillance is possible through Comba's remote control and monitoring system via PC or wireless modem to the OMT/OMC.

Support Technologies

Band	Technologies	Frequency Range (MHz)	
		Downlink (DL)	Uplink (UL)
800MHz	LTE / NB-IoT / 5G NR*	791-821	832-862
900MHz	GSM / WCDMA / LTE / NB-IoT / 5G NR*	925-960	880-915
1800MHz	GSM / LTE / NB-IoT / 5G NR*	1805-1880	1710-1785
2100MHz	WCDMA / LTE / NB-IoT / 5G NR*	2110-2170	1920-1980
2600MHz	LTE / NB-IoT / 5G NR*	2620-2690	2500-2570

WCDMA complies with 3GPP TS 25.106 V9.0.0 (2009-12) table 9.2, 9.3, 9.4 spectrum emission mask.

LTE service is based on 3GPP TS 36.106 V9.0.0 (2009-12)

*: 5G NR will be support by software upgrade at Q2, 2021.

RF Parameter

800 MHz		
RF Parameter	DL	UL
Frequency Range (MHz)	791-821	832-862
Max Output Power Per Antenna Port 1(Composite)	27, 30, 33	17
2 Carriers	-3	/
4 Carriers	-6	/
8 Carriers	-9	/
Sub-bands	4	4
Operating Bandwidth (MHz)	3-20	3-20
Maximum System Gain (dB)	90	90
Pass Band Ripple at FBW, p-p (dB)	4	4
System Noise Figure (dB)	/	5
System Group Delay (usec)	6	6
Gain Adjustable Range	0-30	0-30
Emission Mask	3GPP	3GPP
Intermodulation	3GPP	3GPP

1800 MHz		
RF Parameter	DL	UL
Frequency Range (MHz)	1805-1880	1710-1785
Max Output Power Per Antenna Port 1(Composite)	27, 30, 33	23
2 Carriers	-3	/
4 Carriers	-6	/
8 Carriers	-9	/
Sub-bands	4	4
Operating Bandwidth (MHz)	0.2-25	0.2-25
Maximum System Gain (dB)	90	90
Pass Band Ripple at FBW, p-p (dB)	4	4
System Noise Figure (dB)	/	5
System Group Delay (usec)	6	6
Gain Adjustable Range	0-30	0-30
Emission Mask	3GPP	3GPP
Intermodulation ²	3GPP	3GPP

900 MHz		
RF Parameter	DL	UL
Frequency Range (MHz)	925-960	880-915
Max Output Power Per Antenna Port 1(Composite)	27, 30, 33	23
2 Carriers	-3	/
4 Carriers	-6	/
8 Carriers	-9	/
Sub-bands	4	4
Operating Bandwidth (MHz)	0.2-25	0.2-25
Maximum System Gain (dB)	90	90
Pass Band Ripple at FBW, p-p (dB)	4	4
System Noise Figure (dB)	/	5
System Group Delay (usec)	6	6
Gain Adjustable Range	0-30	0-30
Emission Mask	3GPP	3GPP
Intermodulation ¹	3GPP	3GPP

2100 MHz		
RF Parameter	DL	UL
Frequency Range (MHz)	2110-2170	1920-1980
Max Output Power Per Antenna Port 1(Composite)	27, 30, 33	17
2 Carriers	-3	/
4 Carriers	-6	/
8 Carriers	-9	/
Sub-bands	4	4
Operating Bandwidth (MHz)	3-20	3-20
Maximum System Gain (dB)	90	90
Pass Band Ripple at 3.84MHz	2	2
System Noise Figure (dB)	/	5
System Group Delay (usec)	6	6
Gain Adjustable Range	0-30	0-30
Emission Mask	3GPP	3GPP
Intermodulation	3GPP	3GPP

*WCDMA complies with 3GPP TS 25.106 V9.0.0 (2009-12) table 9.2, 9.3, 9.4 spectrum emission mask.

**LTE service is based on 3GPP TS 36.106 V9.0.0 (2009-12)

¹Intermodulation: WCDMA@3GPP; GSM @Less than-13dBm.

²Intermodulation: LTE@3GPP; GSM @Less than-13dBm.

RF Parameter (continued)

2600 MHz		
RF Parameter	DL	UL
Frequency Range (MHz)	2620-2690	2500-2570
Max Output Power Per Antenna Port 1(Composite)	27, 30, 33	17
2 Carriers	-3	/
4 Carriers	-6	/
8 Carriers	-9	/
Sub-bands	4	4
Operating Bandwidth (MHz)	3-20	3-20
Maximum System Gain (dB)	90	90
Pass Band Ripple at FBW, p-p (dB)	4	4
System Noise Figure (dB)	/	5
System Group Delay (usec)	6	6
Gain Adjustable Range	0-30	0-30
Emission Mask	3GPP	3GPP
Intermodulation	3GPP	3GPP

Combiner Specifications

Electrical	Band1	Band2	Band3	Band4
Operating Frequency (MHz)	791-960	1710-1880	1920-2170	2500-2690
Insert Loss (dB)	≤ 0.8	≤ 0.9	≤ 0.9	≤ 0.8
VSWR	≤ 1.5	≤ 1.5	≤ 1.5	≤ 1.5

Mechanical Specifications

Dimensions, H x W x D, mm (in)	System Rack	267 x 482 x 485, (10.5 x 19 x 19.1)
	Power and Monitor Unit	220 x 80 x 440, (8.7 x 3.1 x 17.3)
	Combiner Unit	220 x 60 x 230, (8.7 x 2.4 x 9.1)
	RF Unit	220 x 60 x 350, (8.7 x 2.4 x 13.8)
Weight, kg (lb) (approx.)	System Rack	13.2, (29.1)
	Power & Monitoring Unit	4, (8.8)
	Combiner Unit	4, (8.8)
	RF Card	3.8, (8.4)
Power Consumption, W (approx.)	Power & Monitoring Unit	15
	RF Unit	50
Power Supply		100-240VAC/47-63Hz
Power Up Waiting Time (sec) (approx.)		180
Enclosure Cooling		Convection or Fan
RF Connectors		N Female
Operating Temperature (°C)		-20 to +40
Operating Humidity		10% to 85%
Environmental Class		IP30
MTBF (hr)		≥ 50,000
Mounting		19" Rack