

# Dual Polarized Switched Beam MIMO Antenna for 5G SBA3438B-DP

The SBA3438B-DP is a switched beam antenna for the 5G 3.4 to 3.8 GHz frequency band providing output for dual  $\pm 45^\circ$  slant polarizations to support MIMO usage. The antenna offers extremely fast beam steering capability to achieve optimal gain to the desired direction and avoid interference from and to unwanted directions (LPI/LPD). The antenna provides up to 20 sharp beams with a minimum of 18 degree beamwidth to cover the full 360 degree horizontal area. On top of sharp beam mode the antenna supports also wide and quasi-omni modes

- Dual  $\pm 45^\circ$  slant polarizations to support MIMO usage
- Extremely fast beam steering to support 5G complex node and Mesh networks
- Optimized spectrum efficiency: antenna gain steered to the desired directions and interference minimized to and from unwanted directions



Product details*	
Frequency range	3400 - 3800 MHz
Polarization	$\pm 45^\circ$ slant polarizations
Antenna type	Switched beam antenna
Radiation pattern	Directional (see typical patterns on Page 2)
Gain (typical)	14 dBi
3 dB beamwidth, VP & HP	E-plane $15^\circ$ , H-plane $25^\circ$ (typical)
Sidelobe level (typical)	-12 dB
VSWR	$\leq 2.5$
Nominal Impedance	50 $\Omega$
Power rating	10 W (CW)
Power supply	12 VDC (< 200 mA)
Beam switching speed	< 1 $\mu$ s (see information on Page 3)
Standard color	Black
Radiator	20 x selectable dual polarized patch array element
Height	390 mm (including the mast mount adapter)
Diameter	370 mm
Weight	4.5 kg

Installation	
RF connection	2 x Female N-type connector
Power and control	Full Duplex RS-485 *
Mounting	Mast mount adapters for 40-60 mm masts included

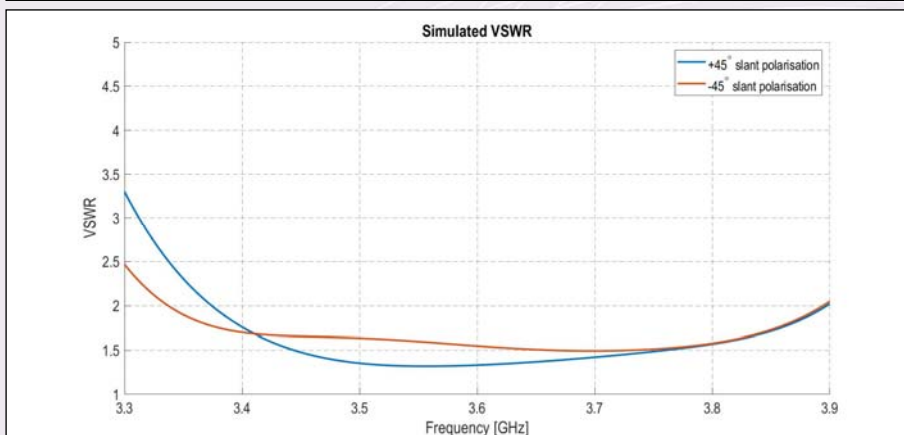
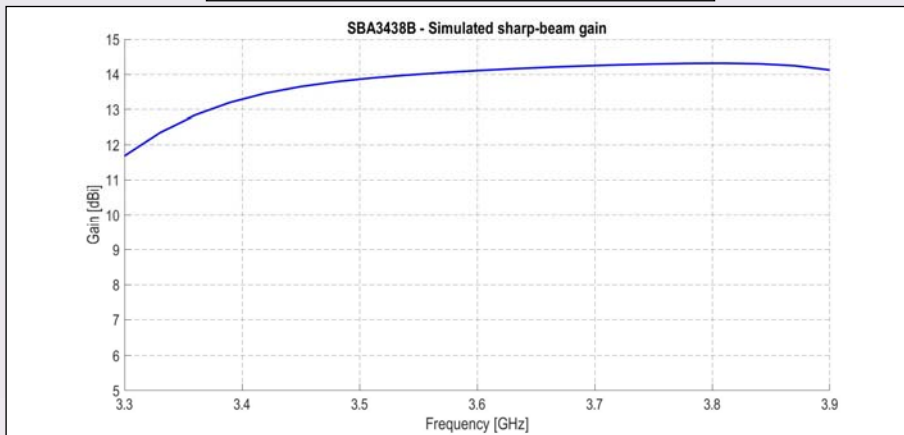
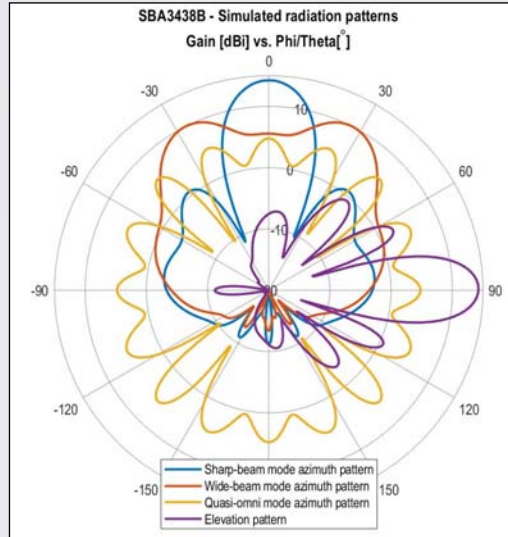
\* More information on request

Order number	
SBA3438B-DP	Antenna as described above

# Radiation performance

## SBA3438B-DP

Typical radiation patterns antenna gain and VSWR in free space:



For perfect operation there should be free space around the antenna.

## Environmental specifications SBA3438B-DP

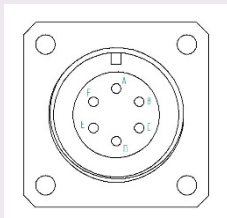
The antenna is designed to fulfill the requirements of the following standards

Environmental and EMC standards	
Temperature range (operating)	-40 ... +71 °C
Temperature range (storage)	-40 ... +85 °C
Humidity	MIL-STD-810E, Method 507.3 Procedure III (cycle with extreme at 95 % RH, +60 °C)
Sand and Dust	MIL-STD-810F, Method 510.4 Procedure II (18 m/s)
Blowing Rain	MIL-STD-810F, Method 506.4 Procedure I (rainfall rate 150 mm/h, wind speed 30 m/s)
Water Immersion	MIL-STD-810F, Method 512.4 Procedure I (depth 1 m)
Wind Speed (survival)	180 km/h
MIL-STD-461G	CE102 for conducted emissions on power leads, 10 kHz to 10 MHz
MIL-STD-461G	RS103 for electric field radiated susceptibility, 80 MHz to 6 GHz
IEC 61000-4-2: 2009	Electrostatic discharge (ESD) immunity test
IEC 61000-4-4: 2012	Electrical fast transient/burst (EFT) immunity test
IEC 61000-4-6: 2014	Conducted disturbances, induced by radio-frequency fields

## Control Interface information

The control connector is a circular military connector (MIL-DTL-5015 compatible, shell style MS3102-14S6P) to which the power supply as well as the control communication interface of the antenna are connected. The control communication interface is based on RS-485 type signaling in a full-duplex configuration. Contact COJOT for detailed information about the communication protocol. The switching speed stated ( $< 1 \mu\text{s}$ ) does not include the communication with the transceiver (reception of a frequency command and sending of an acknowledgement).

NOTE: wrong wiring may damage the antenna.



Pin number	Signal
A	DC IN (regulated DC voltage of +12 V, I < 200 mA)
B	RS485 RP (positive conductor of RS485 pair on which the antenna receives commands)
C	RS485 RM (negative conductor of RS485 pair on which the antenna receives commands)
D	GND
E	RS485 TM (negative conductor of RS485 pair on which the antenna sends responses)
F	RS485 TP (positive conductor of RS485 pair on which the antenna sends responses)