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FCCID: LKT-VL-53

The BreezeACCESS VL 5.3 and BreezeNET B 5.3, both use identical hardware and software mechanisms to determine TX power. In the system manual, chapter 3 "Commissioning", for both these products describes what parameters must be configured prior to operation of the product. Antenna gain is one of those parameters. If the product has an attached antenna then the gain will be configured from the factory. The section below taken from the product system description document titled "System Description; Maximum TX Power", describes parameters that define the maximum power for the product from the factory. In addition to these parameters, certain country dependent parameters such as maximum allowed transmitter power by regulation and maximum EIRP allowed by regulation are factory set and can not be changed nor reset by the user/installer. The table "5.3 GHz Band, HW Rev B" below describes the integrated or provided antennas for the BreezeACCESS VL 5.3 models. For these models, the gain is factory configured. For the BreezeNET B models (same hardware as the BA VL SU-E model), the antennas are not integrated and must be attached by a professional installer. The maximum allowed gain is 28dBi and must be configured by the installer. The antenna gain value is initially set as "Not Yet Set" by the factory and will not allow the transmitter to operate until a valid supported value for antenna gain is entered. The section titled "Country Codes Appendix" below details all the factory set parameters as defined by the destination country of the product. Included are maximum transmitter power and maximum EIRP. Once the antenna gain is configured (including any cable loss) by the installer, the maximum transmitter power is automatically set by the radio (to the factory set EIPR value less the configured antenna gain), or the maximum regulation power, which ever is the lesser. The transmitter will now operate within the limits established by the country code parameters which are determined at the time of regulatory certification.

5.3GHz Band, HW Rev B

Frequency	5.25 – 5.35GHz	
Channels	20MHz, 10MHz center step (7 options), 10MHz guard band between adjacent sectors	
Antenna	SU Antenna	21dBi, 10.5° horizontal EN 302 085, Class TS 1,2,3,4,5 compliant
		21dBi, 10.5° vertical, EN 302 085, Class TS 1,2,3,4,5 compliant
	Sector Antenna	17dBi, 90° horizontal x 7° vertical, EN 302 085, Class CS 3 compliant
		15dBi, 120° horizontal x 6° vertical, EN 302 085, Class CS 3 compliant

System Description; Maximum TX Power

The maximum value of the Transmit Power Parameter depends on several unit properties and parameters:

- The HW revision of the unit
- The modulation level
- The Maximum Allowed Tx Power as defined for the applicable Sub Band.
- The Maximum EIRP as defined for the applicable Sub Band (country code), together with the value of the Antenna Gain. In certain countries the Maximum EIRP of some equipment types cannot exceed a certain value. **In these cases the Transmit Power cannot exceed the value of (Maximum EIRP – Antenna Gain).**
- The Maximum Tx Power parameter (in SU/RB only)

COUNTRY CODES APPENDIX

Some operational parameters as well as several features of BreezeACCESS VL and BreezeNET B systems may be limited by the applicable local radio regulations. These regulations and the impact they have on the parameters and features of BreezeACCESS VL and BreezeNET B differ significantly among countries. To ensure compliance with various different regulations, BreezeACCESS VL and BreezeNET B units are delivered with a Country Code that depends on the country in which they will be used.

The list of available Country Codes is continuously growing. The following sections provide detailed on the Country Codes and the Sub Bands supported by each Country Codes at the time of this publication. For each Country Code, there is also information on the maximum Tx power supported by the applicable hardware.

The Country Code defines the following parameters:

Security Parameters

Certain security features may not be supported in devices sent to some countries due to restrictions on the sale of security technologies. The applicable parameters are:

- **Data Encryption Support**
- **AES Encryption Support:**
- **Authentication Encryption Support.**

Sub Band Parameters

Each Country Code may include one or more Sub Bands. Where more than Sub Band is available, the Sub Bands differ mainly in the available bandwidth and/or frequencies. The Sub Band parameters are:

- **Frequencies**
- **Bandwidth:**
- **Regulation Max Tx Power at Antenna Port:**
- **Regulation Max EIRP**
- **Minimum Modulation Level:**
- **Maximum Modulation Level**
- **Burst Mode**
- **Maximum Burst Duration:**
- **DFS Option**
- **Minimum HW Revision Support**

FCC 5.3 GHZ

HW limitations on maximum Tx power:

Modulation Level	Maximum Tx Power (dBm)	
	AU	SU, BU, RB
1 – 5	18	13
6	17	12
7	16	11
8	14	9

General Country Parameters:

Parameter	Value/Option
Country Code	1023
Data Encryption	Enabled
AES Encryption	Enabled
Authentication Encryption	Enabled

Applicable for BreezeACCESS VL and BreezeNET B

Parameter	Value/Option
Minimum HW Revision Support	B
Center Frequencies	5260-5320 MHz in 10 MHz steps
Bandwidth	20 MHz
Regulation Max Tx Power at Antenna Port	24 dBm
Regulation Max EIRP	30 dBm
Min Modulation Level	1
Max Modulation Level	8
Burst Mode	Enabled
Maximum Burst Duration	10 milliseconds
DFS Option	Not Supported

Note: For full compliance with FCC regulation, the following rules must be met when using this Sub Band (20 MHz bandwidth):

- a. Frequency channel 5260 MHz should not be used.
- b. When operating at 5270 MHz, the Transmit Power parameter in the AU/BU, and the Maximum Tx Power parameter in the SUs/RB connected to this AU/BU, should not be set to a value above "17-Antenna Gain" (The maximum allowed EIRP for 5270 MHz is 17 dBm).