

**Environmental evaluation and exposure limit according to FCC CFR 47part 1,  
§1.1307, §1.1310**

The transceiver CRM 3.65GHz is classified as fixed (pole mounted) and limited for use in Airspan outdoor CPE V70 and MRTe series products.

The WiFi module FCC ID:PPD-AR5BHB112 may be installed together with the CRM 3.65GHz module. The transceiver CRM 3.65GHz and WiFi module were evaluated for Maximum Permissible Exposure compliance for end-use multi-radio.

The simultaneous transmission of 2 above mentioned transmitters is evaluated.

Limit for power density for general population/uncontrolled exposure is  $1 \text{ mW/cm}^2$  for 1500 -100000 MHz frequency range.

The power density  $P (\text{mW/cm}^2) = P_T / 4\pi r^2$ , where

$P_T$  is the transmitted power, which is equal to the peak transmitter output power plus maximum antenna gain.

26.8 dBm is the CRM maximum conducted output power of the both RF chains (Table 7.1.3 of the AIRRAD\_FCC.23805 test report),

5.6 dBi – antenna gain.

**Table of estimated safe distance calculation**

Tx	Frequency, MHz	Peak Tx power		Antenna gain, dBi	Duty cycle	Power density, $\text{mW/cm}^2$	Limit, $\text{mW/cm}^2$	% of Std
		dBm	mW					
Tx1	3650-3700	26.8	478.6	5.6	1.0	0.346	1.0	0.346
Tx2*	2412-2462	22.48	176.0	8.37	1.0	0.24	1.0	0.24
Tx3*	5470-5725	20.90	123.05	9.53	1.0	0.22	1.0	0.22

\*- data from RF Exposure Evaluation ReportNo.FA0O0823, FCC ID:PPD-AR5BHB112. The device operates either in 2412-2462 MHz band or 5180-5825 MHz bands but not both in the same time. Maximum total power used for calculation.

- 1) Total % of standard:  $Tx1 + Tx2 = 0.346 + 0.24 = 0.586$
- 2) Total % of standard:  $Tx1 + Tx3 = 0.346 + 0.22 = 0.566$

Distance (estimated) =  $20 \times \sqrt{0.586} = 15.3 \text{ cm}$ .

Recommended MPE distance is 20 cm when all antennas are within 20 cm of each other.

Below is given % MPE contour map and Table prepared in accordance with FCC recommendations worksheet

<http://transition.fcc.gov/oet/ea/presentations/files/oct05/MPE-mobile.xls>

Section	Topic	Sub-Topic	Definition	Example	Notes
1	Algebra	Equations	Linear Equations	$x + 3 = 7$	
			Quadratic Equations	$x^2 + 5x + 6 = 0$	
2	Geometry	Shapes	Circle	A closed curve with a center and radius.	
			Triangle	A three-sided polygon.	
3	Calculus	Derivatives	First Derivative	$\frac{dy}{dx}$	
			Second Derivative	$\frac{d^2y}{dx^2}$	
4	Statistics	Data Analysis	Mean	$\bar{x} = \frac{1}{n} \sum x_i$	
			Median	$M = \text{middle value}$	
5	Physics	Motion	Velocity	$v = \frac{d}{t}$	
			Acceleration	$a = \frac{\Delta v}{\Delta t}$	
6	Chemistry	Molecules	Atom	The smallest particle of an element.	
			Molecule	A group of atoms bonded together.	
7	Biology	Cells	Prokaryote	Simple cells with no nucleus.	
			Eukaryote	Complex cells with a nucleus.	
8	Computer Science	Algorithms	Flowchart	A diagram showing the steps of an algorithm.	
			Code	Written instructions for a computer.	
9	Economics	Market	Supply	The amount of a good or service available for purchase.	
			Demand	The amount of a good or service that consumers want to buy.	
10	History	Timeline	Ancient Civilizations	Early human societies.	
			Modern History	Recent human history.	

### % MPE Contour

**Note: The 0% contour surrounding the antennas identifies a 20 cm perimeter surrounding all active antennas**

