

## 2.4 Combo with Panel: PL6-ISM-BTS-R2

1. **FCC:** How many phased array antennas are applied for?  
**Navini:** Panel Antenna with eight antenna elements.
2. **FCC:** What type of antenna elements are used?  
**Navini:** Eight Linear arrays of twelve vertically polarized dipole antenna elements are used. The antenna is specially configured with a back plane to generate additional directivity and gain.
3. **FCC:** How many antenna elements are used?  
**Navini:** Eight antenna elements are used.
4. **FCC:** What is the gain of each element?  
**Navini:** Gain of the each element 17dBi.
5. **FCC:** What is the total gain of the array?  
**Navini:** Total Antenna gain is 17 dBi. An additional 9dB of gain is produced by the 8-antenna array; and by cohering the signals at the CPE a further gain of 9dB (theoretically) is achieved for a total beam forming gain of 18dB. Due to antenna element blocking and non-perfect coherence the effective gain is 2 dB lower.
6. **FCC:** How many beams can be formed?  
**Navini:** The current software of the product can only generate up to eighty simultaneous beams. However, the more beams we form, the smaller the power of each beam since the total transmit power of each element is fixed. Therefore, the more beams means lower range and lower average data rate to each user. In practice, to guarantee each user enjoys the broadband experience of more than 500Kbps within a reasonable coverage, we typically do not see more than nine simultaneous beams or users.
7. **FCC:** How many beams can be formed simultaneously?  
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8. **FCC:** When single beam is formed, does it transmit to multiple receivers at a time or one at a time?  
**Navini:** No, each beam transmits to only one receiver at a time.
9. **FCC:** If applicable, when multiple beams are formed simultaneously, does each of the beams transmit to multiple receivers at a time or one at a time?  
**Navini:** No, each beam transmits to only one receiver at a time.
10. **FCC:** Are the beams sending the same information or different information in each beam?  
**Navini:** Different information: Each beam represents separate link between base station and an individual receiver.
11. **FCC:** Are the beams formed by independent transmitters that transmit different information?  
**Navini:** All the transmitters are involved in forming each beam for specific receiver and carries information specific to that receiver.

12. **FCC:** What is the maximum conducted output power to each antenna element when only a single beam is formed?  
**Navini:** The maximum conducted output power (peak power) at each antenna element is 22dBm when only a single beam is formed.
13. **FCC:** What is the total (aggregate) conducted output power to all of the antenna elements when only a single beam formed?  
**Navini:** The total (aggregate) conducted output power across all of the antenna elements is 31dBm (peak) when only a single beam formed.
14. **FCC:** If applicable, when multiple beams are formed simultaneously, what is the maximum conducted output to each antenna element?  
**Navini:** The maximum power to each element is 22dB. The total (aggregate) conducted output power across all of the antenna elements is 31dBm (peak) when multiple beams are formed simultaneously.
15. **FCC:** If applicable, when multiple beams are formed simultaneously, what is the total (aggregate) conducted output power to all of the antenna elements?  
**Navini:** The total (aggregate) conducted output power across all of the antenna elements is 31dBm (peak) when multiple beams are formed simultaneously.