

2.3 UNLICENSED RADIO

The MDR-8X05u (unlicensed) radio provides fast deployment of service with microwave radio. No license and small antennas (no FCC requirements) allow immediate turnup. After the license is received, the unlicensed radio can be easily converted to the lower 6 GHz licensed band.

The MDR-8X05u radio operates in the 5725-5850 Information, Scientific, and Medical (ISM) band in accordance with FCC Part 15.247. This unlicensed radio, although operating in the same band as a spread spectrum radio, operates using narrower bandwidths than spread spectrum. Advantages, disadvantages, and antenna recommendations for the unlicensed radio follow:

2.3.1 Advantages

- Fast installation and turnup
- 2, 4, 8, 16 DS1 and 1 DS3 capacities
- Field convertible to lower 6 GHz licensed band
- Field expandable to higher capacities.
- Common network management with licensed radios.
- Common spares and training with licensed radios

2.3.2 Disadvantages

- No interference protection
- Operating restrictions
 - 5.725 to 5.850 GHz band
- Performance could deteriorate due to interference as the frequency band becomes congested.

2.3.3 Antenna Recommendations

- Frequency - 5.8 GHz
- Size and Type - 2,4, 6, 8, or 10 foot parabolic; 1 or 2 foot flat panel.
- Gain and Beamwidth (3 dB)
 - 2 ft parabolic - 29 dB/6°
 - 4 ft parabolic - 35 dB/3°
 - 6 ft parabolic - 38 dB/2°
 - 8 ft parabolic - 41 dB/1.5°
 - 10 ft parabolic - 42.5 dB/1.2°
 - 1 ft flat panel - 23 dB/9°

- 2 ft flat panel - 28 dB/4°

NOTE

When using a 1 ft flat panel antenna with a 1 watt (+30 dBm) output power, the antenna must be located in an area that does not allow the general population access to within 5 feet of the antenna.