

Antenna Gain and cable loss clarifications:

There are two worst normal case cable configurations and two theoretical case configurations:

- 1) A High Gain antenna (Amtech AA3152 Universal Toll Antenna) which when installed is further away from the transmitter and requires a longer cable (approx 3dB loss).
- 2) A Lower Gain antenna (TransCore AA3153 antenna) which when installed is closer to the transmitter and uses a shorter lower loss cable (approx 1.1dB loss).

The higher gain antenna is intended to be used with the longer higher loss cable. The lower gain antenna is intended to be used with the shorter lower loss cable. All configurations both normal and theoretical comply with the power requirements when calculating the applicable ERP power.

LGA = Low Gain antenna	= 10.50dBi	= 8.35dBd
HGA = High Gain antenna	= 14.00dBi	= 11.85dBd
SC = Shorter cable (lower loss)	= 1.10dB	
LC = Longer cable (higher loss)	= 3.00dB	

Normal Configurations:

HGA - LC = 8.85	Total Gain	(High gain antenna and high loss cable)
LGA - SC = 7.25	Total Gain	(Low gain antenna and low loss cable)

Theoretical Calculations:

HGA - SC = 10.75	Total Gain	(High gain antenna and low loss cable)
LGA - LC = 5.35	Total Gain	(Low gain antenna and high loss cable)

For the purposes of calculating ERP power and for RF exposure calculations the theoretical HGA - SC calculations have been used in this application to show compliance with the requirements.

There may be additional antennas with lower gain than those referenced here. What is referenced here is the worst case antenna configuration that can be used.