

100 foot free-space calculations (from radiation point)

Colton (Bloomington) Diesel Shop Site 1: -128 dBm

link budget calculations for Colton (Bloomington) Diesel Shop Site 1

roof antenna gain: 38 dB

roof antenna cable (lmr-400, 30 ft.) loss (5.1 dB / 100 ft): 1.5 dB

s-12 repeater amplifier gain: 24 dB

total subsystem gain: 60.5 dB

Antenna a branch:

repeater antenna cable (lmr-400, 30 ft.) loss (5.1 dB / 100ft.): 1.5 dB

a-11 repeater amplifier gain: 6.1 dB

repeater antenna gain: 3 dB

total system gain: 68 dB

average receive power of 11 GPS signals in North America: -130 dBm

effective radiated power (average receive power + total system gain): -62 dBm

Antenna b branch:

repeater antenna cable (lmr-400, 125 ft.) loss (5.1 dB / 100 ft.): 6.4 dB

a-11 repeater amplifier gain: 10.9 dB

repeater antenna gain: 3 dB

total system gain: 68 dB

average receive power of 11 GPS signals in North America: -130 dBm

effective radiated power (average receive power + total system gain): -62 dBm

100 foot free-space calculations (from radiation point)

Colton (Bloomington) Diesel Shop Site 2: -128 dBm

link budget calculations for Colton (Bloomington) Diesel Shop Site 2

roof antenna gain: 38 dB

roof antenna cable (lmr-400, 30 ft.) loss (5.1 dB / 100 ft): 1.5 dB

s-12 repeater amplifier gain: 24 dB

total subsystem gain: 60.5 dB

Antenna a branch:

repeater antenna cable (lmr-400, 30 ft.) loss (5.1 dB / 100ft.): 1.5 dB

a-11 repeater amplifier gain: 6.1 dB

repeater antenna gain: 3 dB

total system gain: 68 dB

average receive power of 11 GPS signals in North America: -130 dBm

effective radiated power (average receive power + total system gain): -62 dBm

Antenna b branch:

repeater antenna cable (lmr-400, 125 ft.) loss (5.1 dB / 100 ft.): 6.4 dB

a-11 repeater amplifier gain: 10.9 dB

repeater antenna gain: 3 dB

total system gain: 68 dB

average receive power of 11 GPS signals in North America: -130 dBm

effective radiated power (average receive power + total system gain): -62 dBm