

100 foot free-space calculations (from radiation point)

Denver Burnham (receive antenna 1): -128 dBm

Link budget calculations (Denver Burham, receive antenna 1)

Roof antenna gain: 38 dB

Roof antenna cable (lmr-400, 20 ft.) loss (5.1 dB / 100 ft.): 1.0 dB

s-14 repeater amplifier gain: 21 dB

total subsystem gain: 58.0 dB

Antenna a branch:

Repeater antenna cable (lmr-400, 150 ft.) loss (5.1 dB / 100 ft.): 7.7 dB

a-11 repeater amplifier gain: 14.7 dB

repeater antenna gain: 3 dB

total system gain: 68 dB

average receive power of L1 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, 150 ft.) loss (5.1 dB / 100 ft.): 7.7 dB

a-11 repeater amplifier gain: 14.7 dB

repeater antenna gain: 3 dB

total system gain: 68 dB

average receive power of L1 GPS signals in North America: -130 dBm

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

Antenna c branch:

Repeater antenna cable (lmr-400, 20 ft.) loss (5.1 dB / 100 ft.): 1.0 dB

a-11 repeater amplifier gain: 8.0 dB

repeater antenna gain: 3 dB

total system gain: 68 dB

average receive power of L1 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)

Denver Burnham (receive antenna 2): -128 dBm

Link budget calculations (Denver Burham, receive antenna 2)

Roof antenna gain: 38 dB

Roof antenna cable (lmr-400, 20 ft.) loss (5.1 dB / 100 ft.): 1.0 dB

s-14 repeater amplifier gain: 21 dB

total subsystem gain: 58.0 dB

Antenna a branch:

Repeater antenna cable (lmr-400, 80 ft.) loss (5.1 dB / 100 ft.): 4.1 dB

a-11 repeater amplifier gain: 11.1 dB

repeater antenna gain: 3 dB

total system gain: 68 dB

average receive power of L1 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, 80 ft.) loss (5.1 dB / 100 ft.): 4.1 dB

a-11 repeater amplifier gain: 11.1 dB

repeater antenna gain: 3 dB

total system gain: 68 dB

average receive power of L1 GPS signals in North America: -130 dBm

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

Antenna c branch:

Repeater antenna cable (lmr-400, 40 ft.) loss (5.1 dB / 100 ft.): 2.0 dB

a-11 repeater amplifier gain: 9.0 dB

repeater antenna gain: 3 dB

total system gain: 68 dB

average receive power of L1 GPS signals in North America: -130 dBm

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