

Antenna Sketch

STA Confirmation: EL775264

STA File Number: 0771-EX-ST-2019

FRN: 0023950942

Company: Skylark Wireless LLC

Date: 4/28/2019

Application Purpose

- Field-testing of new radio systems in co-operation with commercial license holder for CMA667, in 704-716, 734-746 MHz range.
- Field testing of beamforming and multi-tower interference mitigation technologies before certification activities begin.
- Prototype radio hardware is not yet FCC certified, requiring use of STA license.
- < 6 months of experimental testing will occur within the geographical region of CMA667.

Equipment Description & Antenna Sketch

Faros-BTS-UHF-01

Equipment Description

Each Faros-BTS-UHF-01 is a base station unit that consists of 8x MA-WA580-DP8 antennas and 1x Faros-ENC-03-UHF radio. Multiple Faros-BTS-UHF-01 units are deployed on a single tower and operate coherently.



A: Mars MA-WA580-DP8 Dual-Polarized Directional Antenna

Maximum Gain: 8 dBi

Frequency Range: 470-760 MHz

3dB Beam Width: 78°

Polarization: H and V polarized feeds

Tilt: 0° - 3° downward



B: Skylark Wireless Faros-ENC-04-UHF Radio Unit

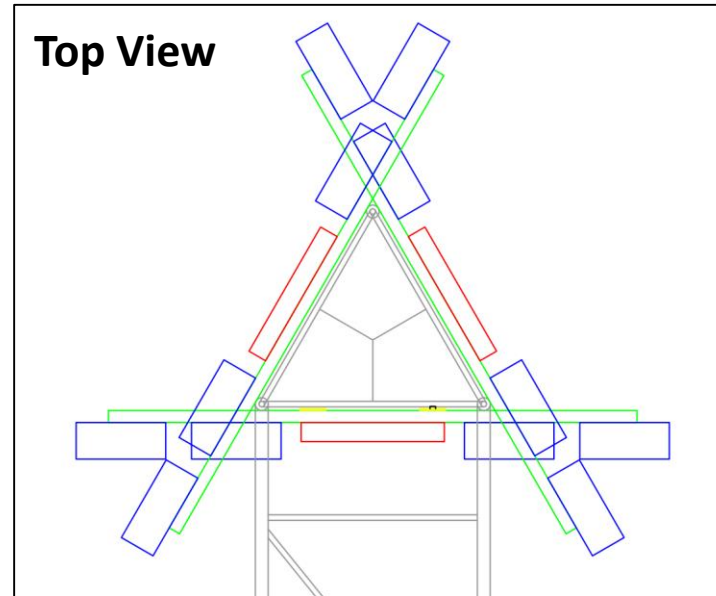
of Ports: 16

Max Output Power: 30 dBm CW, each port

Frequency Range: 704-716, 734-746 MHz

Channel Bandwidth: 1, 5, 10 MHz

Faros-BTS-UHF-01 Tower Installation

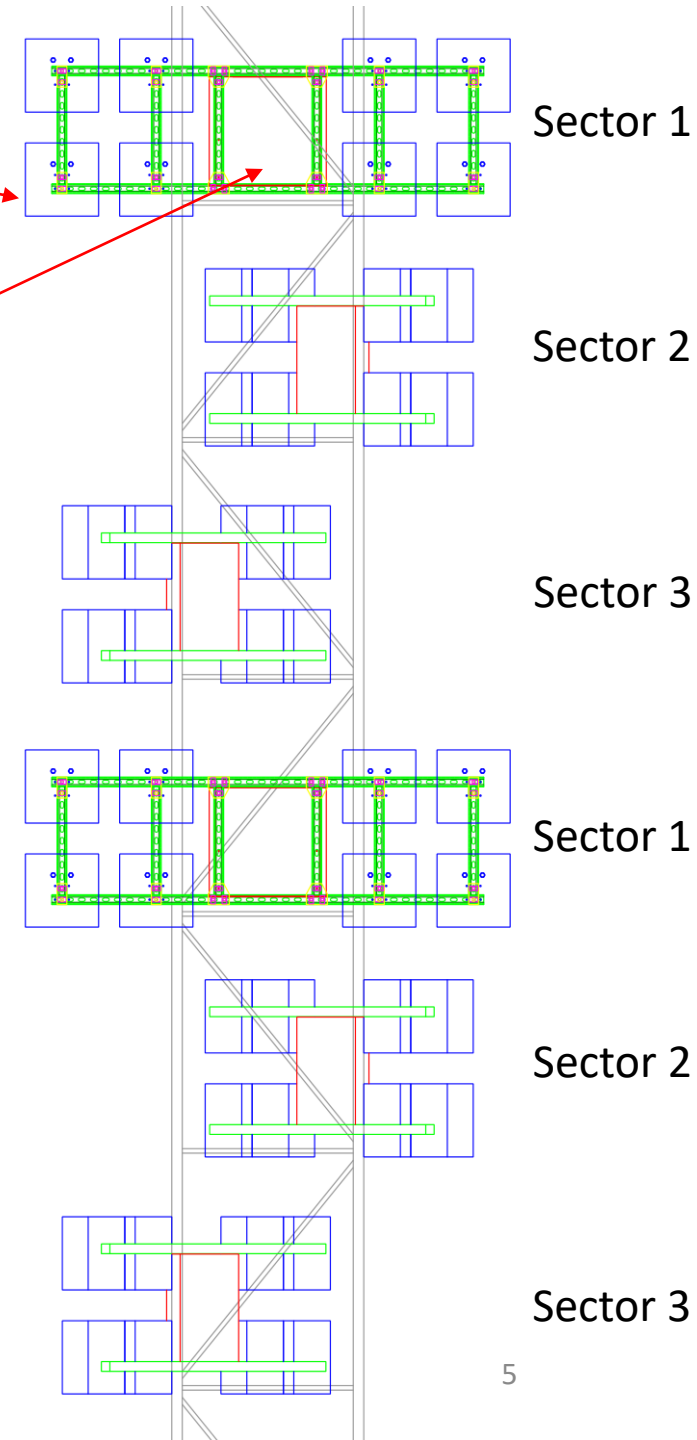


- 3 sectors of coverage, each sector consists of 16x dual-polarized antennas, for 32x radios total per-sector.
- Horizontal orientation will be adjusted during testing; we request all horizontal orientations be permitted.

Side View

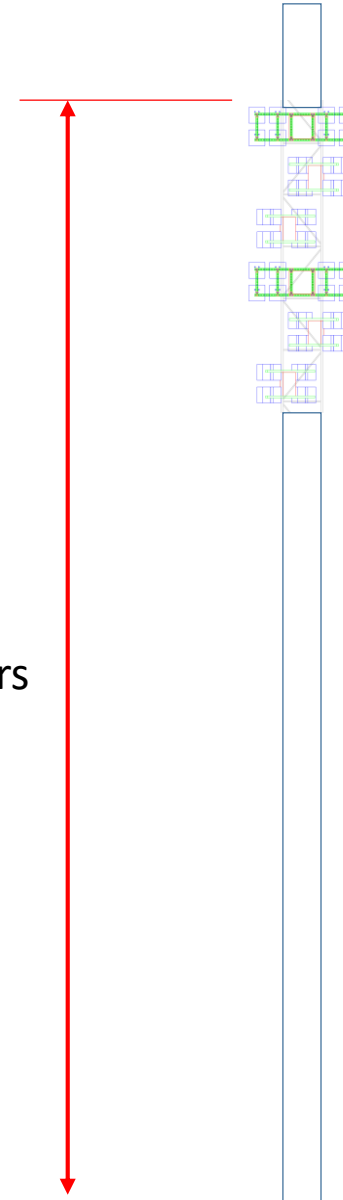
8x A

1x B



Antenna Profile

Base Height
Ganado 76 meters
Blessing 61 meters
Matagorda 31 meters



Iris-030-UHF-01: Fixed Consumer Premises Equipment - Prototype

Iris-030-UHF-01

of Ports: 2

Max Output Power: 30 dBm CW, each port

Frequency Range: 704-716, 734-746 MHz

Channel Bandwidth: 1, 5, 10 MHz

Signal Format: OFDM

Ethernet Port



Tx/Rx Port A

Tx/Rx Port B

Faros-CPE-UHF-01: Fixed Consumer Premises Equipment – Engineering Sample

Faros-CPE-UHF-01

of Ports: 2

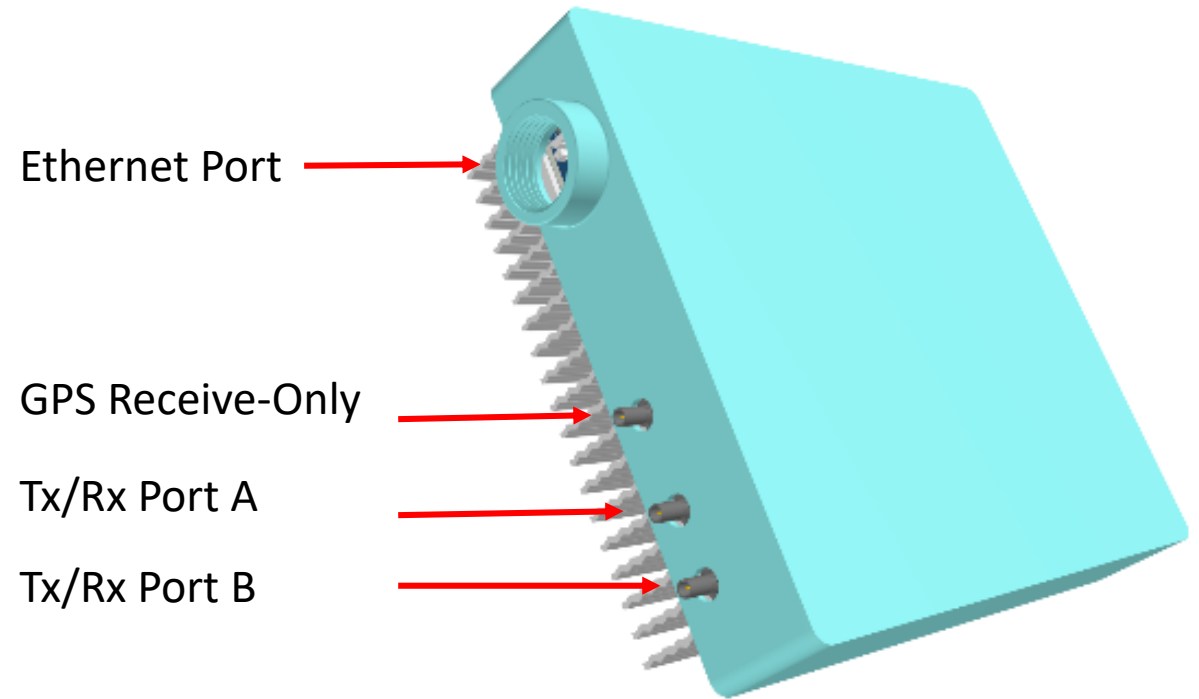
Max Output Power: 30 dBm CW, each port

Frequency Range: 704-716, 734-746 MHz

Channel Bandwidth: 1, 5, 10 MHz

Signal Format: OFDM

Antenna ports are keyed



Antennas for Fixed “Mobiles”

Faros-CPE-UHF-01 and Iris-030-UHF-01



Option 1: Mars MA-WA580-DP8 Dual-Polarized Directional Antenna

Maximum Gain: < 8 dBi

Frequency Range: 470-760 MHz

3dB Beam Width: 78°

Polarization: H and V polarized feeds

Tilt: 0° - 5° upward



Example Installation



e.g. WaveLink PRO690-14

Option 2: Single or Dual-Polarized Yagi Antenna

Maximum Gain: < 15 dBi

Frequency Range: 690 - 746 MHz

3dB Beam Width: < 44° both poles

Polarization: H and/or V polarized feeds

Tilt: 0° - 5° upward

Base and "Mobile" Locations

Base Installed at:

Ganado, 29°02'38.4"N 96°31'08.0"W, 50 km radius

Blessing, 28°52'26.1"N 96°12'59.6"W, 50 km radius

Matagorda, 28°41'30.9"N 95°58'04.8"W, 40 km radius

CMA667 Contour

Fixed "mobile" to
roam within yellow
bounds

Google Earth

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Data SIO, NOAA, U.S. Navy, NGA, GEBCO

28°54'32.40" N - 96°14'53.52" W - elev - 0 ft - eye alt 115.88 mi