

Reply to Correspondence Reference Number: 13490 and 13509

731 Confirmation Number: EA96729

Applicant: Spike Technologies, Inc

FCC Item 1.

1. The info submitted for this filing indicates this transmitter is a subscriber unit - located at the subscriber side of the link. Table 1 of 1.1307 requires a label to be attached to Part 21 MDS and Part 74 ITFS subscriber transceiver or transverter antennas to provide adequate notice on RF exposure and to reference applicable FCC rules on this label. Please review rules in 1.1307 and provide a copy of this label to be placed on the subscriber unit antenna, including supporting information for determining applicable minimum separation distance etc. based on the antennas used for the subscriber unit. Either measurement results or estimations may be used to support the info on the label. Please include the antenna info and also indicate the size of the label and its location on the antenna, it should be visible to persons exposed within the vicinity of the antenna.

Spike Reply to Item 1:

The following label will be placed on our Subscriber Antennas. The label is provided in a 1:1 scale. The dimensions are 2.3 cm wide by 8 cm long.



Figure 1. RF Exposure Warning Label

The minimum separation distance was calculated by using the following information.

Frequency: 2500 MHz
Antenna Gain: 24 dBi
Transceiver Output Power: 22 dBm
MPE Limit: 1.0 mW/cm²

The equation for calculating the power density from a known antenna is:

$$S = PG/(4\pi R^2)$$

P = power at the antenna terminals, mW
G = gain of the antenna, linear isotropic gain
R = distance, cm

Rearranging the equation to calculate the separation distance results in:

$$R = (PG/(4\pi S))^{1/2}$$

P = 22 dbm = 158.5 mW
G = 24dbi = 251
S = 1.0 mW/cm²

R = 56.3 cm = 22.15 inches

We rounded up to 24 inches = 2 feet = 61 cm.

The label will be placed directly on the antenna. Figures 2 and 3 show the location of the label on the subscriber antenna.

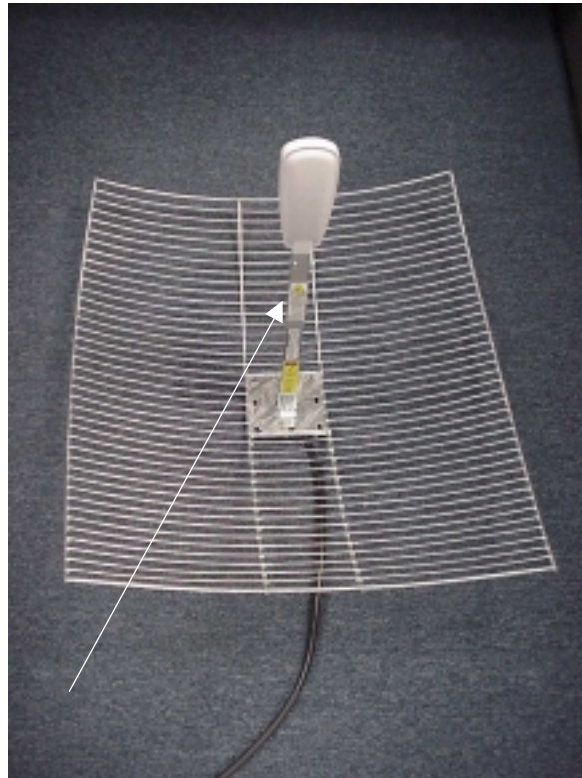


Figure 2. RF Exposure Label on the antenna.



Figure 3. RF Exposure Label, Close Up

The Spike Installation team have been advised to properly mount the antenna so that the label is visible to personnel that may be exposed to the antenna. The installation manual will also be updated to include instructions to ensure this.

Copies of the revised applicable pages from the installation manual are included in the following two pages.

A full copy of the manual is also provided under a separate file.

Assembling and Mounting of QLP Parabolic Antenna(s)

- To assemble mast, first insert the cable that is attached to the feed through the hole in the center of the reflector (fig. 4.38).
- Turn reflector so that the two slots near the center hole of the reflector are situated so that one is on top of the hole and the other on the bottom.
- Insert the feed camps (2 ea.) labeled #1 into the slots.
- Insert the feed into the clamps verifying that the wide portion of the feed is orientated in the horizontal plane.
- Insert Bolt #2 into the hole provided through clamp #1, feed and second clamp #1.
- Put the nut #3 on the bolt #2 and tighten. The antenna is now assembled and ready for mounting.
- To mount Antenna inset the U-bolts #4 from the front, through the holes as shown in above drawing. The orientation of these U-bolts will vary depending on whether the mast is horizontal or vertical.
- On the backside of the antenna slide a mast cradle (2 ea.) #5 on to each U-bolt.
- Put the antenna on the mast with the mast cradles touching the mast.

WARNING: The antenna must be mounted so that the RF Exposure Warning Label is visible to personnel that may approach the antenna. This label includes the following warning sign .



- Slide the second pair of mast cradles on the U-bolts
- The second antenna, if used should be placed a minimum of 6 in. above or below the first antenna when mounting to a vertical mast.
- When mounting to a horizontal mast a minimum of 1 foot of separation should be maintained.
- Put nuts (4 ea.) #6 on the U-bolts and tighten. Do not over tighten, the antenna will need to be adjusted for alignment.

Verify the required orientation of the antenna prior to assembly.

WARNING: The antenna must be mounted so that the RF Exposure Warning Label is visible to personnel that may approach the antenna. This label includes the following warning sign .



Position the antenna and insert the mounting studs.

Slide one mast cradle over the studs provided with the antenna.

Put the antenna on the mast so that the mast cradle rests on the mast.
Slide second mast cradle over mounting studs.

Thread nuts onto the studs.

Tighten the nuts finger tight. Do not tighten completely, the antenna will need to be moved for alignment purposes.

FCC Item 2.

2. Only the RF exposure label is handled during equipment approval. RF exposure compliance for fixed transmitters are typically addressed at the time of site licensing or other similar licensing procedures, by the appropriate bureau(s). This will be indicated or clarified on the grant of equipment authorization to avoid confusion.

Spike Reply to Item 2:

Acknowledged.