ePix Lin-EU ANTENNA

The ePix Lin-EU is a wide-angle antenna designed for difficult environments; It is a linear polarised ('on' or 'off' metal) antenna for EU Gen2 RFID readers. For other regions see ePix Lin-US and EPix Lin-CH. Uniquely; this antenna can be tuned, by the installer, to any Gen 2 RFID region.

Features:

- High performance at just 12mm thick
- User retunable before or after installation.
- Wide-angle of coverage 85 degrees
- Works with all Gen2 UHF RFID Readers
- Can be fitted flat onto any surface
- Optimized bandwidth to cover all channels
- Perfect bandwidth for optimum interference rejection and noise reduction
- Robust design whilst maintaining low cost
- Low VSWR; (good 50-Ohm match), high dielectric wide-angle antenna.
- Filters out unwanted noise and interference.

Applications:

- 'On' or 'Off' metal applications and general use; especially where small size is required
- Ideal for inside metal cabinets or other small spaces
- Works in fridges, freezers, coolers etc.
- Door entry systems and badge reading.
- This linear antenna gives reduced reflections and reduced nulls
- Ideal for shelving, behind products or in display cabinets
- Compatible with all RFID Gen 2 reader installations and tags
- Compatible with the full range of EPix® bottle tracking tags and readers
- Ideal for teaching and research
- Two antennas can be used to create a cross polarised or circular polarised beam
- Two antennas can be used back to back for apparel applications
- Can be tuned using a Power-Mapper.

Specifications:

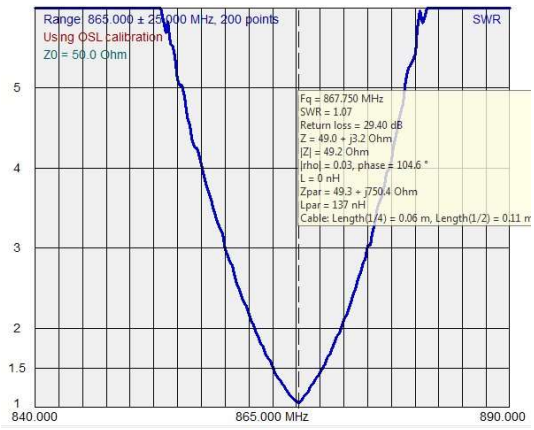
- Size: 12mm X 5cm X 10cm. Size: 0.47" X 1.96" X 3.94"
- Retunable from 855MHz to 1.05GHz, using the slider under the label; VSWR is maintained
- Forward Gain is approximately 3dBi (wide angle/area of coverage)
- Beamwidth 85 degrees
- Typical Range 5 Meters, 16 feet (with a wide coverage angle)
- Bandwidth -3dB = 850MHz to 980MHz, when tuned to 866 MHz, Flat response over the entire US 52 channel bandwidth when tuned to 916MHz
- Mounting hole diameter 3.3 mm spaced 42.4 mm and 92.0 mm
- Base plate thickness of 2.4 mm
- Tested at full power with US, EU and CH Gen2 RFID readers
- Compliant with all known Gen2 radio standards
- SMA female connector. Side-mounted.
- The ePix Lin-EU contains no banned substances, RoHS compliant
- Compliant with WEEE disposal for electronic equipment or can be returned for disposal

What makes this antenna special: The ePix Lin-EU uses a high dielectric material to reduce its size whilst maintaining excellent range. High dielectric materials also reduce the antenna's bandwidth; this can cause a problem with other dielectric antennas as are not able to cover all designated RFID channels; especially in the USA. The ePix Lin-EU has been designed so that its bandwidth is not too wide or not too narrow. It has the ideal antenna bandwidth to maintain power over all reader channels too within a +/- 1.5 dB window whilst giving a high 'Q' to get better interference rejection and noise reduction.

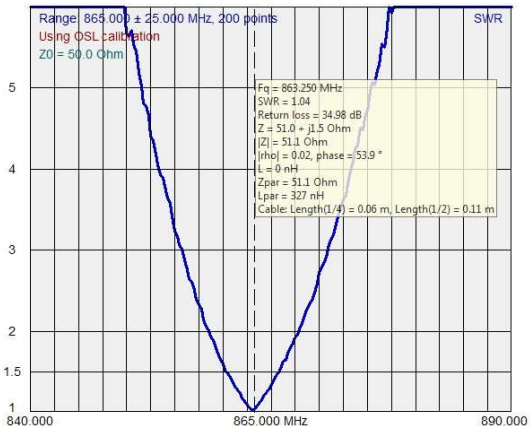
Instructions: Most Gen 2 tags are linear polarised, this means that they will only receive the full signal strength when they are in the same orientation as a linear antenna. If the tag is vertical then the antenna should be vertical and if the tag is horizontal then the antenna should be mounted horizontally. Note the alignment does not need to be precise.

If the tag orientation is not under your control then two orthogonal linear antennas will need to be used. This is best achieved using a two-port reader (two outputs) or if only one port is available a splitter can be used if a 25% range loss can be tolerated. Note, in the case of a splitter, if the lead length to one antenna is one-quarter lambda longer than to the other orthogonal antenna lead, a circularly polarised wave will be created. Note. Use linear antennas vertically if possible.

Matching:



FREE SPACE



ON METAL

The graphs above show the typical EU VSWR, the US VSWR is approximately the same. The closer the curve is to the bottom line the closer the antenna is to a 50 Ohm input match. If the antenna was perfectly matched to 50 Ohms then all the energy would radiate from the antenna and none would be reflected back to the reader. The design inherently maintains VSWR when re-tuned to other frequencies. (A 'VSWR' better than 2 is acceptable in most RFID systems.)

Retuning instructions: Remove the sticker and slide the internal plate away from the input to lower the frequency or towards the input to increase the frequency. The nuts can be loosened and re-tightened to lock the frequency. Clean the surface and replace the sticker. Use an ePix Power-Mapper to retune the antenna and carry out accurate installation and tests

Compliant with Rohs, CE, UKCA and Disposal (WEEE). The disposal should be in accordance with local regulations for electrical equipment. Complies with EN60950 safety.

Safety Regulations state that you should avoid working within 25cm 9.5" of a 2W ERP transmission for long periods