



Antennas for RFID

SCANNING ANTENNAS
FOCUSED BEAM RADIATION PATTERN
DIRECTIONAL PANEL
DOOR JAMB
433MHz, 868MHz, 915MHz

RFID and EUROPEAN ANTENNAS LTD

Radio frequency identification (RFID) has evolved into a major technology tool for tracking goods and assets. Organisations can locate and track expensive equipment more quickly, improving operational efficiency as required in today's world. Manufacturers and logistics providers are utilising RFID to improve the management of assets by tracking goods from the point of manufacture through to point of sale (POS). As a result there is a significant uptake of RFID at many stages of the supply chain.

With these developments it is important to ensure that RFID systems are designed and installed to maximise performance. Tags and readers are a key component, but the overall performance of the system can be improved by selecting the correct antennas during planning and installing them in the right location to operate with the readers.

European Antennas, in conjunction with a number of RFID reader manufacturers and RFID system integrators, has developed antennas to maximise installation performance. By providing a range of antennas that offer controlled and repeatable pattern coverage, accurate efficient RFID systems are being achieved.

The European Antennas' range of RFID antennas cover the 433 and 868MHz bands and the 915MHz band for non-European installations. The range includes omni and directional antennas with a variety of gain measurements. Antennas with sector coverage are used for portal control, providing a reading zone directly below doorways.

RFID antennas supplied by European Antennas are being used in several locations including:

- Stock monitoring at military depots
- A private hospital operating theatre to ensure accurate charging
- Cargo monitoring system that enables a tag to be read on an approaching container vehicle so that the correct crane and replacement container can be in place on arrival
- Road tolling where each vehicle has to be correctly identified to ensure accurate charging
- Securing valuable artefacts at museums and galleries

Each antenna is rigorously measured during the design process to ensure that international standards for antenna radiation patterns are met. They are 100% tested during manufacture to ensure that they match quoted specification and customers' requirements.



RFID ANTENNAS - THE RANGE

| Antenna | Reference | Frequency GHz | Gain dBi | Polarisation | Beamwidth azimuth° x elevation° |
|-----------------------------------|----------------|---------------|----------|----------------|------------------------------------|
| RFID ANTENNA, 433MHZ RANGE | | | | | |
| Flat Panel | FPA0-0.4R/9401 | 0.433 | 0 | Right Circular | 80 x 80 |
| Flat Panel | FPA4-0.4R/9402 | 0.433 | 4 | Right Circular | 47 x 48 |
| Flat Panel (tile) | FPA0-0.4R/9403 | 0.433 | 0 | Right Circular | 80 x 80 |
| Sector (door jamb) | SA4-0.4V/9404 | 0.400 - 0.450 | 5 | Vertical | 57.5 x 160 |
| RFID ANTENNA, 868MHZ RANGE | | | | | |
| Flat Panel | FPA0-0.9R/9405 | 0.868 | 0 | Right Circular | 80 x 80 |
| Flat Panel | FPA2-0.9R/9406 | 0.868 | 1-2 | Right Circular | 45 x 45 |
| Sector (door jamb) | SA4-0.9V/9407 | 0.820 - 0.920 | 4 | Vertical | 75 x 180 |

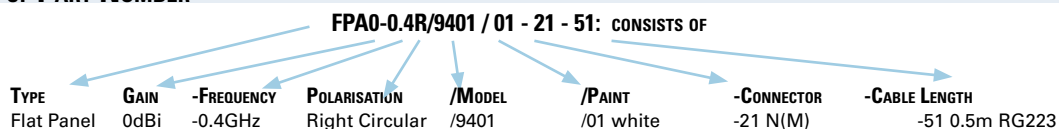
STANDARD •

| PAINT FINISH | 00 | 01 | 02 | 03 | 04 | 05 |
|--------------|-------------|-------------|------------|------------|------------|-----|
| | Not painted | Gloss White | Matt Black | Gloss Grey | Olive Drab | Tan |

CONNECTOR AND CABLE

| Connector code: | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | |
|--|------------|------|--------|--------|--------|--------|--------|--------|-----------|-----------|-----------|-----------|-----------|-----------|--|
| | N(F) | N(M) | SMA(F) | SMA(M) | TNC(F) | TNC(M) | BNC(F) | BNC(M) | RP-SMA(F) | RP-SMA(M) | RP-BNC(F) | RP-BNC(M) | RP-TNC(F) | RP-TNC(M) | |
| MODELS 9401, 9403, 9404, 9405, 9406, 9407 | | | | | | | | | | | | | | | |
| Cable code (below) | | | | | | | | | | | | | | | |
| 50 | No cable | • | • | | • | | | | | | | | | | |
| 51 | 0.5m cable | | • | • | | • | | • | | • | | • | | • | |
| 52 | 1.0m cable | | • | • | | • | | • | | • | | • | | • | |
| 53 | 2.0m cable | | • | • | | • | | • | | • | | • | | • | |
| MODEL 9402 | | | | | | | | | | | | | | | |
| Cable code (below) | | | | | | | | | | | | | | | |
| 50 | No cable | • | • | | • | | | | | | | | | | |
| 51 | 0.5m cable | | | | | | | | | | | | | | |
| 52 | 1.0m cable | | | | | | | | | | | | | | |
| 53 | 2.0m cable | | | | | | | | | | | | | | |

EXPLANATION OF PART NUMBER



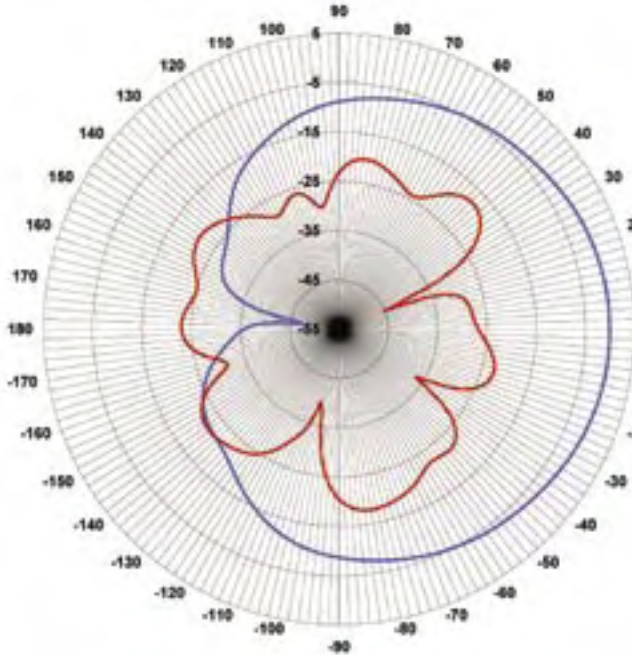
Works of Art *Vehicles* *Traffic*
Warehouse *Materials* *Container Ports*
Operating Theatre *Medical* *Military*

Accurate, focused beam ensures extraneous RF signals, or tags in other areas do not affect the reading of the scanning antenna.

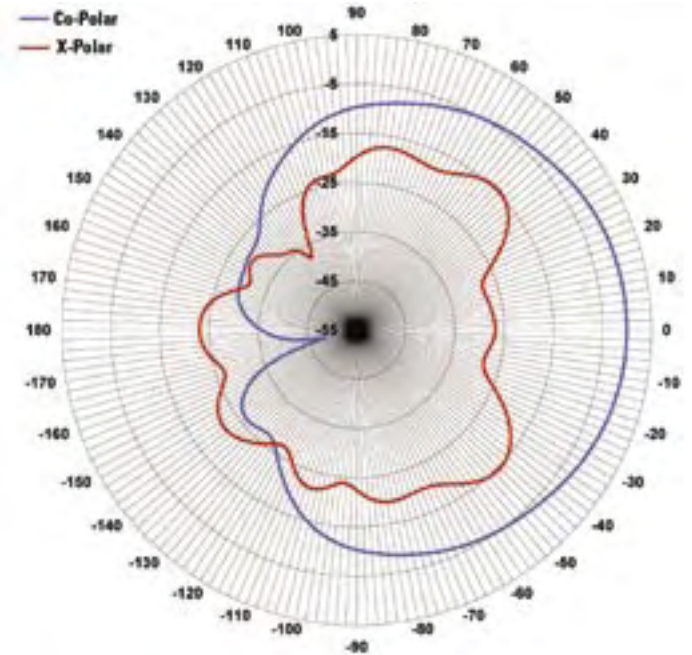


- If our existing range does not include the antenna you need, we can undertake a development project for you
- Antennas can be designed to meet specific zone coverage
- All antennas have a high specification and meet quoted radiation pattern data
- Small, lightweight and discreet in appearance for minimum environmental impact
- Robust construction with mounting kit options
- Optional colour finishes, connectors and cable lengths

Antenna 9401 Azimuth Pattern



Antenna 9401 Elevation Pattern



For more information and a quotation, please complete the following and
 FAX +44 (0)1638 731999, or EMAIL sales@european-antennas.co.uk

| | | | |
|---|--|---|-----------|
| Name* | Gain* (dBi/dBiC) | | |
| Company* | Polarisation* | | |
| Email* | Azimuth HPBW (°) | | |
| Telephone* | Elevation HPBW (°) | | |
| Country of origin* | VSWR (maximum) | | |
| Date* | Mounting requirements | | |
| Project * | Cross Polar/Axial Ratio (dB) | | |
| Market* (please circle) Civil Security Military Satellite | Electrical tilt (°) | | |
| Quantity* | Radiation pattern envelope (Regulatory Compliance) | | |
| Time scale* | Front to back ratio (dB) | | |
| Antenna type* (eg sector, direction, omni) | Interport isolation (dB) | | |
| Frequency range* (GHz) | Connector type/location | | |
| *Essential data | Antenna environment | | |
| Constraints | Dimensions (mm) | Power rating (W) including cyclic loading | Mass (Kg) |
| Additional notes | | | |

Spherical Near Field Test Facility

Our spherical near field test facility provides enhanced technical support.

Radiation pattern data verifies antenna specifications and ensures compliance with stringent radiation pattern envelopes.

The far field radiation pattern can be calculated in any direction, in any polarisation, circular or linear, at any angle.

Operating range is up to 40GHz.

Gain measurements are traceable to international standards.



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European Antennas Ltd has a policy of continuous development and stress that the information provided is a guide only and does not constitute an offer or contract or part thereof.

European Antennas Limited
 Lambda House, Cheveley, Newmarket, Suffolk CB8 9RG, UK
 Tel +44 (0) 1638 731888
 Tel Sales +44 (0) 1638 732177
 Fax +44 (0) 1638 731999
 Email Sales sales@european-antennas.co.uk
 Email Military military@european-antennas.co.uk
 www european-antennas.co.uk

