



RFID systems

BEAM STEERING OVERHEAD

The RFID Overhead Antenna is an anti-theft / loss prevention system based on RFID UHF. It comprises an antenna with an embedded reader, controller and alarm combining EAS and RFID functions in one system.

The RFID Overhead Antenna detects the tagged items that pass below the antenna, verify if those items have been paid, and sounds an alarm if any item has not been paid.

The RFID Overhead system comprises a master unit and several slave units:

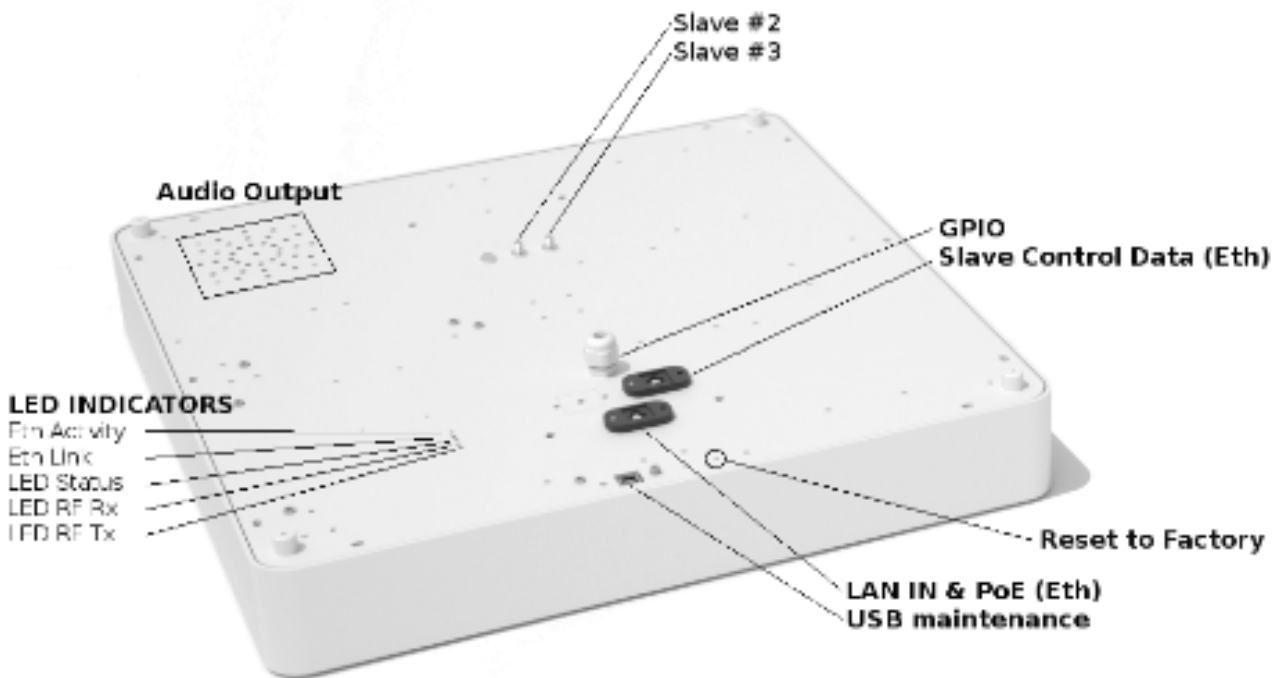
- The master unit has an integrated reader, a controller, an alarm, a visual alarm indicator and one directive antenna.
- Each slave unit comprises one directive antenna and a visual alarm indicator. By using The RFID Overhead Antenna it is no longer necessary to install two technologies for using EAS and RFID functions in one single shop.

Business benefits of RFID Overhead Antenna:

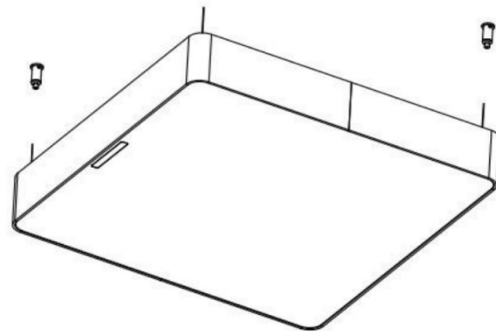
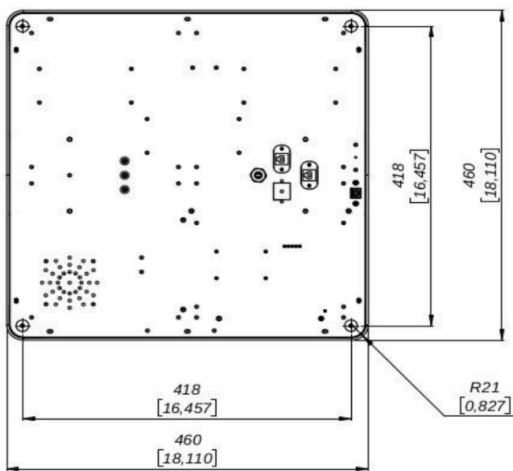
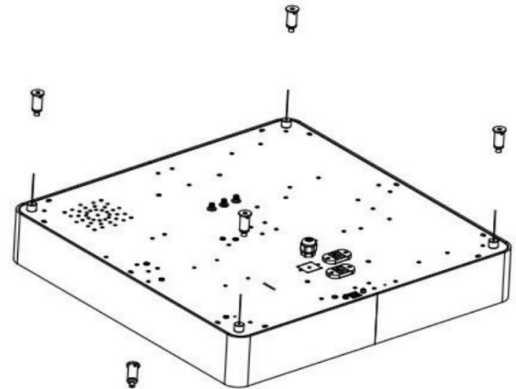
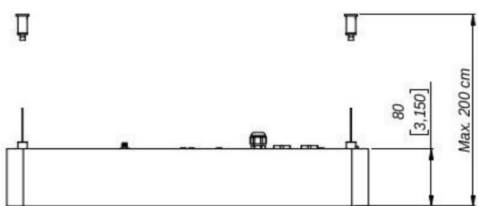
- Combination of EAS and RFID in one system, which reduces labeling costs
- Improved store aesthetics, by having an open entrance area in the shop (no antennas on the floor)
- Improved customer experience, since tags are very thin and can be embedded in labels (for apparel). This allows the customer to try on a garment without suffering the annoyance of a traditional EAS mechanisms
- Shrinkage reduction
- Provides data to detect which products suffer more theft attempts, which allows to take corrective actions
- Statistics of EAS alarms
- Plug and play installation



BEAM STEERING OVERHEAD System design



BEAM STEERING OVERHEAD System dimensions



BEAM STEERING OVERHEAD **System specifications**

Technical data

Air Protocol Interface	EPC Class1 Gen2
Supported regions	ETSI (EU) (865.6-867.6) MHz FCC (NA, SA) (902-928) MHz MIC (KR) (910-914) MHz SRRRC-MII (P.R.China) (920-925) MHz ACMA (AU,NZ) (920 - 926) MHz Brazil (902 – 907.5) MHz and (915 – 928) MHz ¹ Peru (916 – 928) MHz ² IN (IN) (865 - 867) MHz
RF connections	Three 50 Ohm SMA connectors for mono-static antennas . Ports used for slave operation.
RF power	Programmable from 5 dBm to 31.5 dBm in 0.5 dBm steps. (Maximum power may have to be reduced to meet regulatory limits)
Detection height	2 - 3 m (recommended) Maximum: 4 m (Use above heights with caution. Read distance depends highly on tag model and products being used)
Detection ground width	Up to 3 m
Radiation angle	Fan shape 20° (narrow direction) / 80° (broad direction) -13 dB sidelobes
Data communications	Ethernet • IEEE 802.3 up to 100 Mbps Ethernet over USB (USB Type-B connector) ³ Maintenance only port ⁴ • USB Type B connector as an alternative to the Ethernet communications port in case the Ethernet interface is not available. When the USB port is connected, a virtual Ethernet interface will be created in the host computer.
Power supply	Power Over Ethernet (PoE): IEEE 802.3af and 802.3at (Type 1 & Type 2)
Energy consumption	Max consumption (@31.5 dBm) < 15 W Idle consumption < 2 W
On-board LED indicators	Power on LED (white or blue) Status LED (orange) RF Rx LED (red) RF Tx LED (green)

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Slave LED board connections	Three LED board outputs (LED2, LED3, LED4): LED boards output connectors: <ul style="list-style-type: none">• Aerial connector: TE CONNECTIVITY / AMP (3-640440- 2)• Pitch spacing 2.54 mm
Alarm light	5 ultra-bright white Light Emitting Diodes (LED)
Alarm audio	Loudspeaker (2 W sound output)
Alarm function preset	System gives audio alarm and light by detection of NXP EAS bit ON, or by a specific bit set in the EPC code (can be adjusted to different EAS data models)
Anti-collision	Yes
Material housing	Aluminium and Methacrylate
Color	White
Conformity	EN 50364, EN 301 489, EN 302 208 (LBT), EN 300 220, FCC Part 15
Temperature range	-20°C to +55°C
Dimensions	880mmx220mmx73 ⁶ mm(34.6inx8.7inx2.9)
Antenna weight	4.35 Kg (9.6 lb)
Human exposure	EN 50364
Regulation	EMC - EN 301 489, EN 300 220 - Air interface (EU) - EN 302 208 v1.2 (DRM) - FCC - RF module certified under code: QV5MERCURY6E

¹ Band is defined as a carrier sub-set from FCC. There is no specific Surface Acoustic Wave (SAW) filter for the band.

² Band is defined as a carrier sub-set from FCC. There is no specific Surface Acoustic Wave (SAW) filter for the band.

³ Only available in the non-enclosed readers

⁴ The device is class B under EN 55022. Use this USB port only for maintenance or troubleshooting operations.

When this USB port is used, the device may cause radio interference in which case the user may be required to take adequate measures.

⁶ Height when slave antennas use right angle connectors. If straight connectors are used the height will be higher and will depend on the flexibility of the RF cables.

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Port	Port type	Description
LAN IN & PoE	LAN connector	10/100 Ethernet and PoE AdvanSafe-200 supports the following PoE standards: IEEE 802.3af (equivalent to IEEE 802.3at Type I) IEEE 802.3at Type II
USB maintenance	USB Type B	Maintenance USB connection
Reset to factory	Push button	Performs a reset to factory operation: user persisted data and network settings are restored
Secondary #2	SMA	RF connector for Secondary #2. Note Secondary #2 is the number one Secondary. Secondary numbering starts at 2, as they used the internal Primary port 2.
Secondary #3	SMA	RF connector for Secondary #3. Note Secondary #3 is the number two Secondary. Secondary #3 connector may be missing in some revisions. It means the Primary unit only accepts one salve unit.
GPIO	4 x cables pairs	
GPIO - #2	cable pair	Cable pair to be connected to Secondary #2 LED data cable General purpose output specifically designed to drive a LED bar, it can also drive other external hardware. 5 V (DC) 100 mA maximum current
GPIO - #3	cable pair	Cable pair to be connected to Secondary #3 LED data cable General purpose output specifically designed to drive a LED bar, it can also drive other external hardware. 5 V (DC) 100 mA maximum current
GPIO - #4	cable pair	GPO #4 cable pair. Can be used to control a remote system General purpose output specifically designed to drive a LED bar, it can also drive other external hardware. 5 V (DC) 100 mA maximum current GPIO - R cable pair Relay enabled output.
GPIO - R	cable pair	Relay enabled output. General purpose output digital line connected internally to a relay. It can be used as a dry contact to drive external devices. +5 V cable pair Non isolated +5 V power supply. Limited to 100 mA
GPI	cable pair	V IN : from 0 to 30 V V IH : min: 2 V max 30 V V IL : Min 0 V max 0.6 V Input Current 30 uA @ -3 VDC 50 ua @ 3 VDC 560 uA @ 30 VDC



Since 2004, MTC has been the trusted loss prevention solution supplier for both local and global distributors. Meanwhile, we are proud to have our products trusted, successfully sold and installed in more than 75 countries.

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