



# **Electronic Article Surveillance by using RFID-UHF technology**

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# RFID UHF EAS Gate and traditional solutions



## NXP UHF theft detection gate

- Open 'gate free' design, unlimited width
- Identifies the product
- Same label for SCM, inventory & EAS

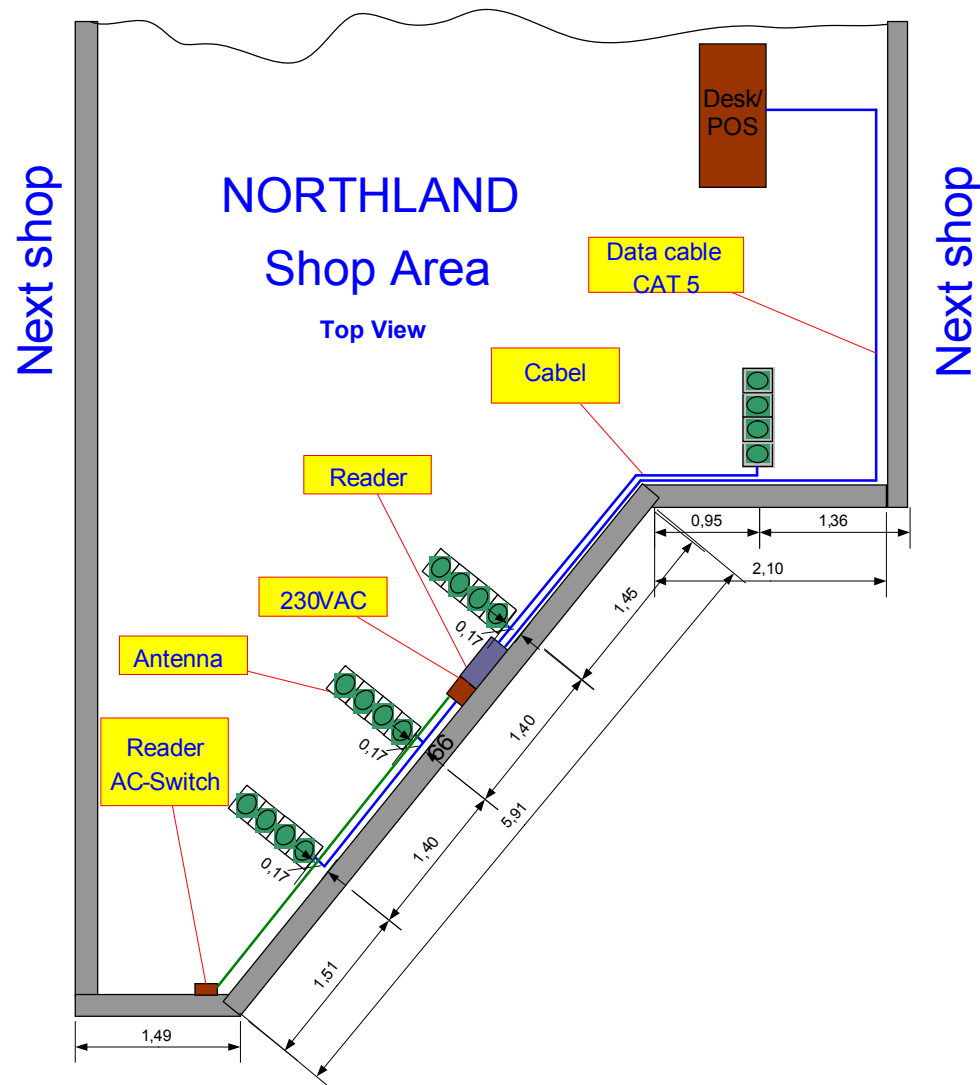
## Traditional EAS gate solution:

- Visible gate in the entry/exit area
- Gates every ~ 2 meters
- Additional tag for EAS



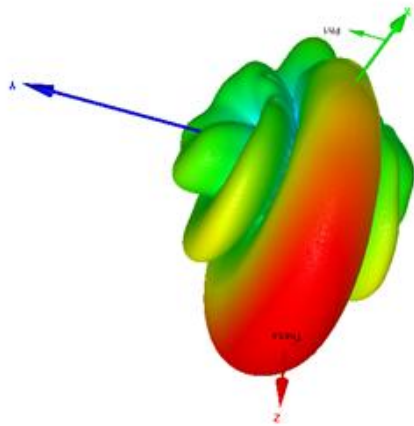
# EAS UHF gate installation

- The RFID UHF gate covers an entrance width of 8 meters
- Establishes a well confined UHF reader field like an electronic curtain
- Only one reader and four antennas



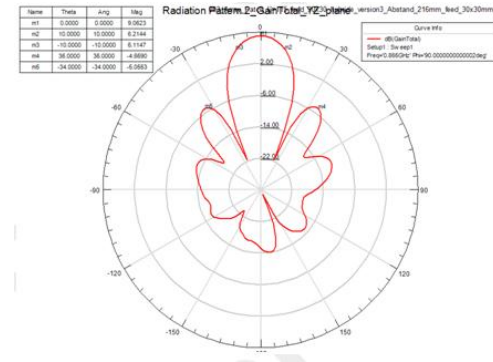
# Reader and curtain antenna mounting

- Antennas hanging from the ceiling – no installation on the floor necessary
- Reader is fixed to the wall
- Very simple and cost effective installation
- Antenna field characteristics:

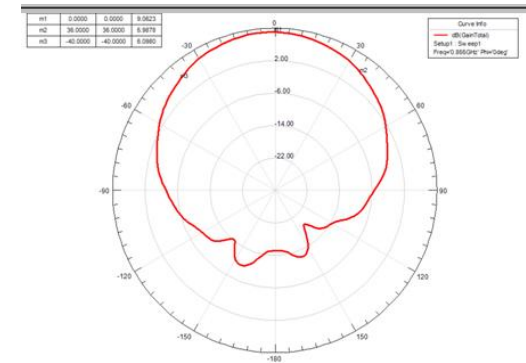


# EAS UHF Antenna field

- ▶ Less than 20 Degrees opening angle
  - Provides for a „curtain like“ shape of the antenna field
  - Reduces false positive reads



- ▶ Over 70 Degrees opening width
  - In order to cover a large stretch with one antenna



# Detection Rates

Average detection rates tested in real live in 500 walk-throughs

- ▶ 1, 2 & 5 products in a **plastic shopping bag**.
- ▶ 3 different product categories:
  - Jacket, Trousers & T-Shirt



## Results

- ▶ 1 Product: 100%
- ▶ 2 Products: 98%
- ▶ 5 Products: 93%



# Project Partners

- ▶ Software & System Integration:



- ▶ RFID UHF Tags:



- ▶ UHF EAS Antenna Industrialization:



- ▶ Printer:

Toshiba

- ▶ Transponder RFID UHF Chips:



# Advantages of the UHF EAS antenna

- ▶ Open and 'gate free' EAS system
- ▶ Same label used for inventory and theft detection
- ▶ The retailer has detailed visibility, which product is being stolen
  - To replenish products more quickly to avoid out of stock situations.
  - To trigger different actions depending on the value of the stolen good
- ▶ The gate can be used to detect theft at:
  - the shop entrance
  - the entrance to changing rooms
  - back doors



# UHF EAS – One solution from the source to the point of sale

- ▶ Loss prevention throughout the entire supply chain
  - Theft detection and reduction of shrink throughout supply chain
- ▶ Labour cost savings
  - No application of additional tags
- ▶ Faster POS:
  - Enhanced customer experience
  - Shorter queues
- ▶ Secure but open door ways, “no entry barrier”
  - Ease and speed of installation
- ▶ Replenishment benefits
  - Knowing what has been stolen



