

# Murata Magicstrap on PCB



Real example of 3 PCBs in one frame  
in combination with highly selective antenna from Kathrein  
in production line



# KATHREIN

RFID

# Testcenter



Pick and Place



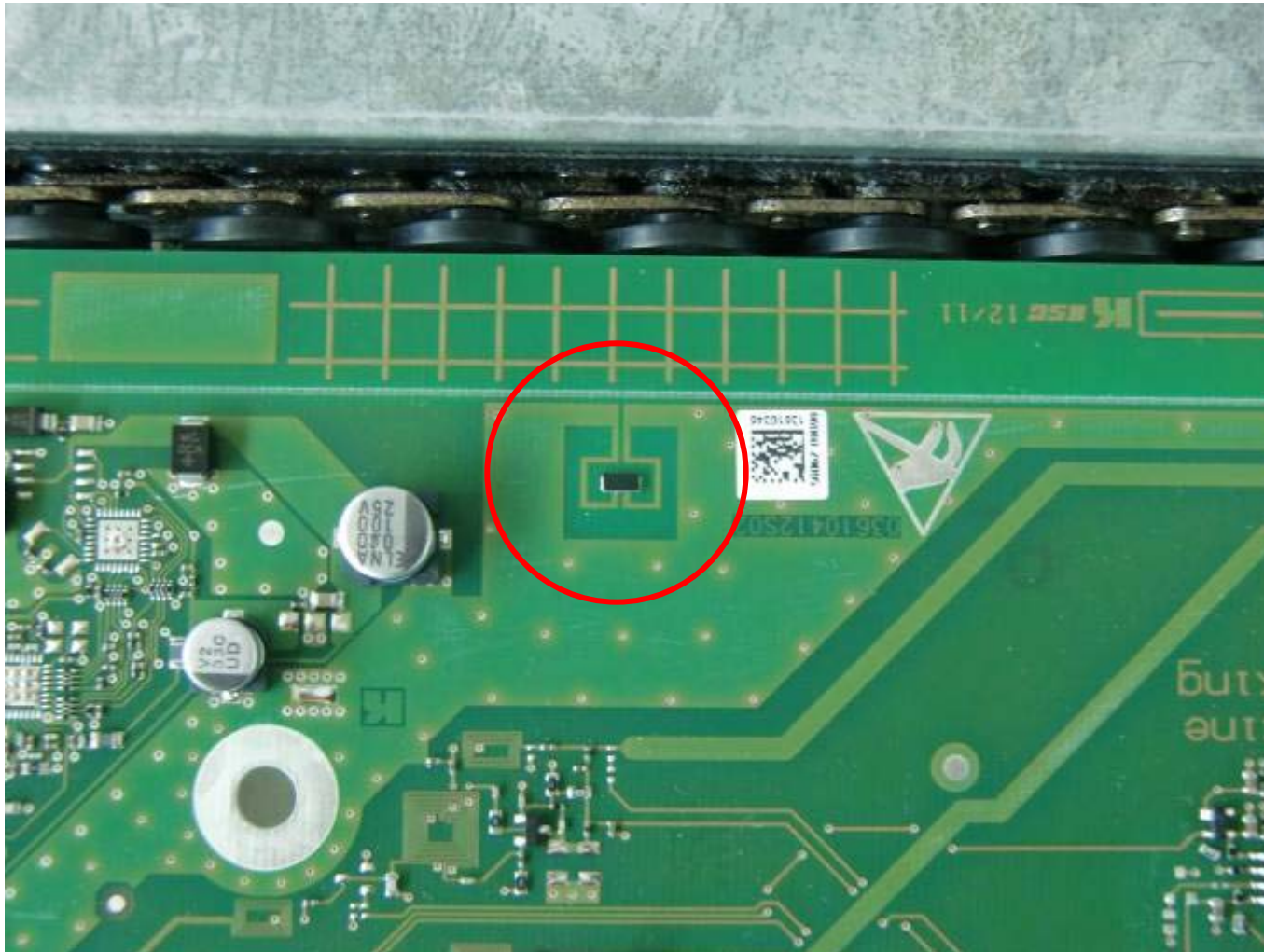
Antennas for individual reading and for bulk reading in process



Reflow Oven

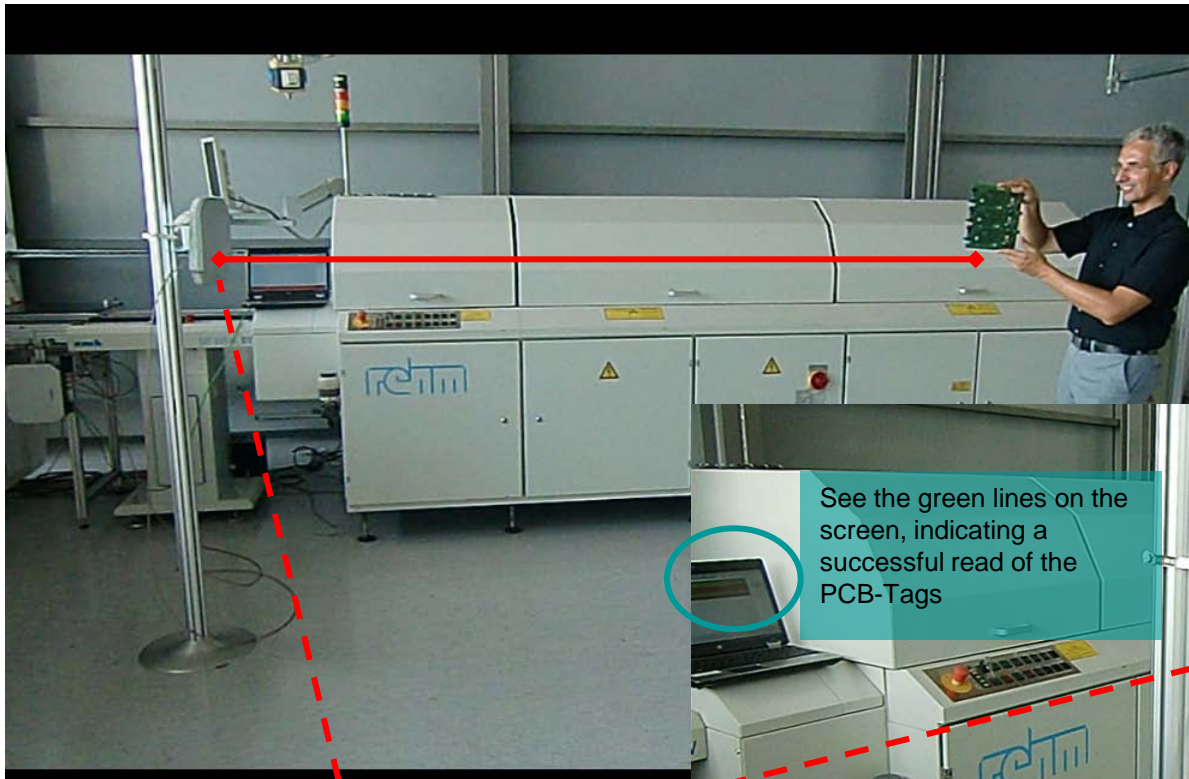
- basically the UHF technology enables a read range of several meters
- we call a PCB, which has a Magicstrap mounted on a booster antenna pattern in order to equip this PCB with RFID UHF Tag function, a PCB-Tag
- the PCB-Tag shown in this documentation has a read range of 4 meters with a Kathrein long range reader (@ 2W ERP)  
(see also: [http://www.cst.com/Content/Events/downloads/eugm2011/Talk\\_5-1-2\\_CST\\_UGM\\_2011.pdf](http://www.cst.com/Content/Events/downloads/eugm2011/Talk_5-1-2_CST_UGM_2011.pdf))
- in production it is often necessary to limit the read range of a PCB-Tag to a minimum, in order to ensure to read on (while the long range function of the PCB-Tag of course remains)
- this can be achieved by the choice of the appropriate antenna, limiting the reader power and some software algorithms
- best choice for single read in PCB production environment is the LORA antenna from Kathrein

# Magicstrap position on PCB



**Murata  
standard PCB-  
Tag antenna  
layout type 3  
(making use of  
PCB ground  
plane as  
antenna)**

# Long Read range with same PCB-Tags



The PCB-Tags do have a read range of several meters with a long range antenna on reader side and full reader power (2W ERP)

Reader Antenna (WIRA)

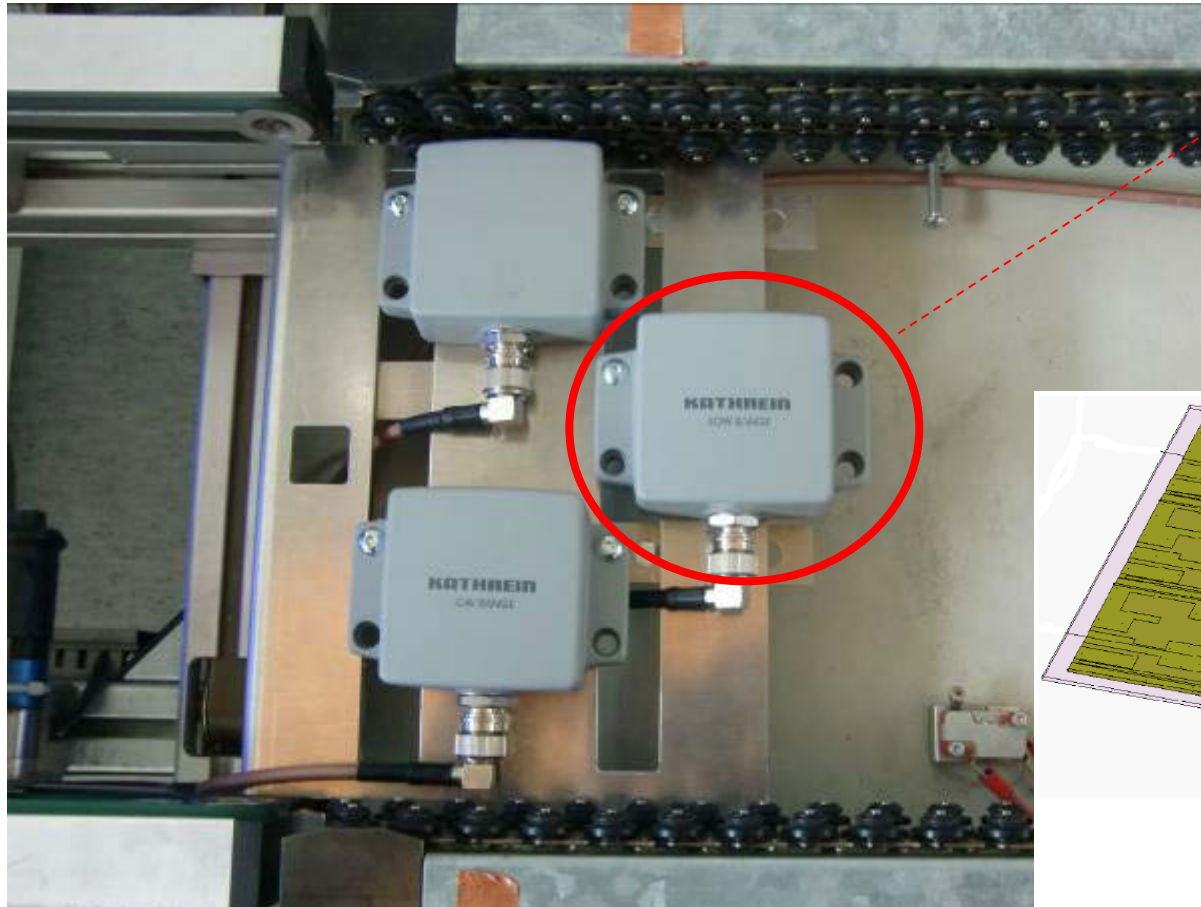


**Range 4m** (verified under lab conditions: [http://www.cst.com/Content/Events/downloads/eugm2011/Talk\\_5-1-2\\_CST\\_UGM\\_2011.pdf](http://www.cst.com/Content/Events/downloads/eugm2011/Talk_5-1-2_CST_UGM_2011.pdf))

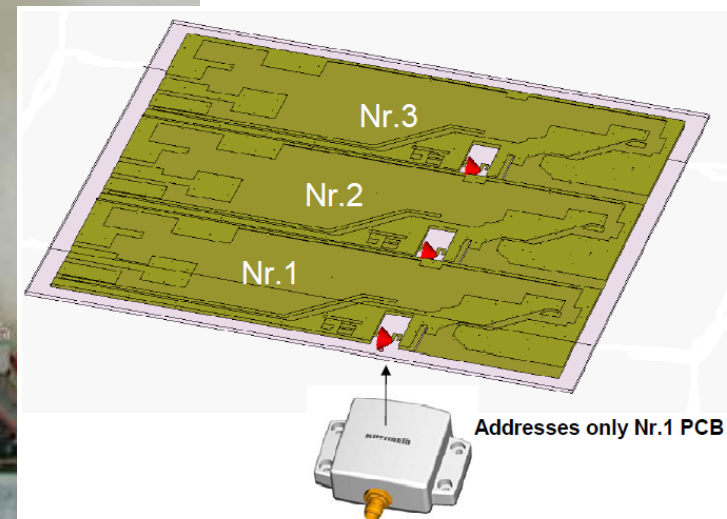
# 3 Tagged PCBs in one panel on conveyor



# Low range antennas for individual read



**Kathrein „LORA“ –  
Low Range antenna  
for single read**

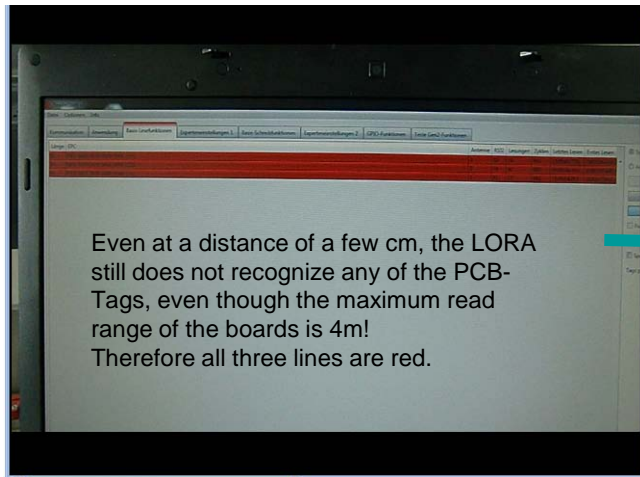


view on installed reader antennas

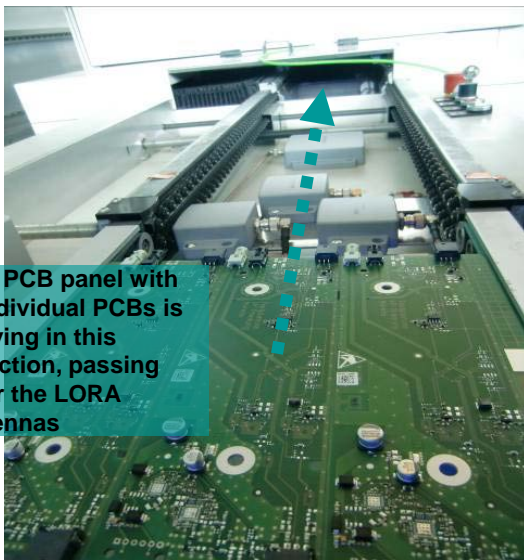
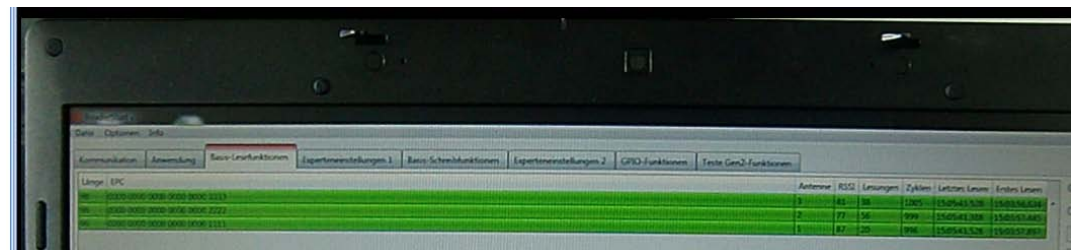
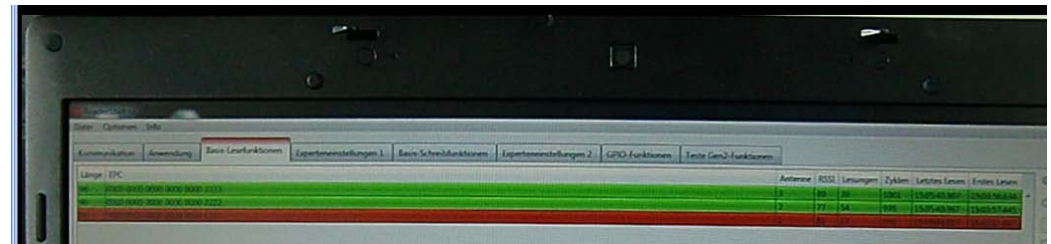
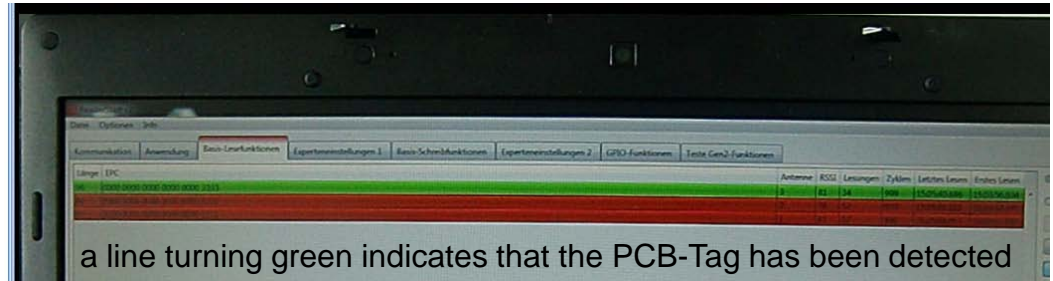
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The Ultra Low Range Antenna  
reads selectively a single board  
in a panel with multiple PCBs

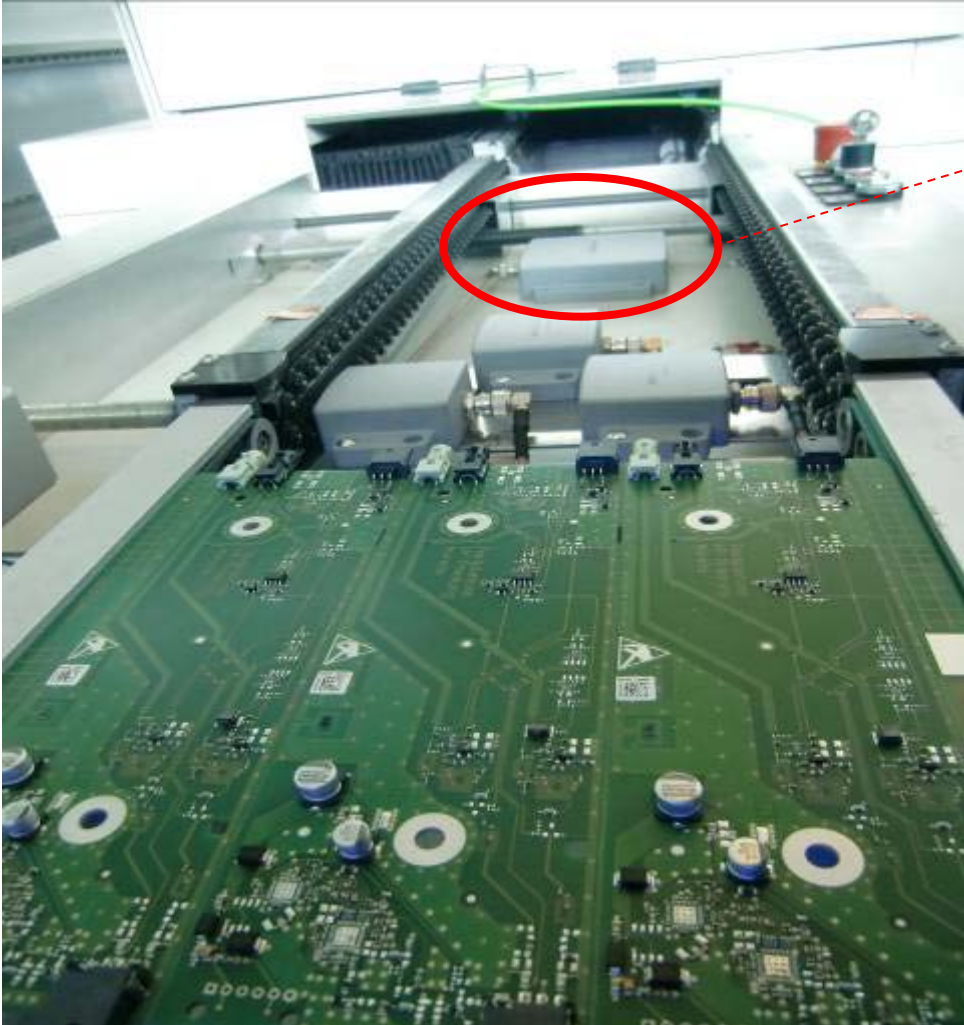
# Individual Detection of PCBs in production line



One PCB after the other gets detected (individually)



# Group detection with MIRA



**MIRA – mid range antenna for bulkread of all PCB tags simultaneously (reading all 3 PCB tags)**

# Thank you for your interest in our RFID solution!

## This is all just the beginning...

Visits to the Kathrein Testcenter can be arranged on request  
please contact: [aschmoldt@murata.de](mailto:aschmoldt@murata.de)  
or: [t.brunner@kathrein-sachsen.de](mailto:t.brunner@kathrein-sachsen.de)