

Certificate No: 07042011000TE1

Certificate

of Applied Tag Performance

Manufacturer: TAGEOS

Tag: EOS-500

IC: Impinj Monza 4D

The TAGEOS EOS-500 tag is certified in accordance with the following EECC performance measurement modules:

- Module I: **Free space production consistency**
Free Space Performance
- Module II: **Performance on EECC reference materials:**
Metal, Water, Teflon 2mm / 10mm
- Module III: **Performance on NXP reference materials:**
PTFE, PMMA, PC, PET, PU, CARP, KITE, Glass

Average (free space) Read Range and Standard Deviation for different regulations

Europe (ETSI)		USA (FCC)				Japan (ARIB)	
866 MHz / 2 W (ERP)		910 MHz / 4 W (EIRP)		922 MHz / 4 W (EIRP)		953 MHz / 4 W (EIRP)	
Read Range	Standard Dev.	Read Range	Standard Dev.	Read Range	Standard Dev.	Read Range	Standard Dev.
4,28 m	0,52 m	5,83 m	0,64 m	5,96 m	0,63 m	5,62 m	0,56 m

Special Feature:

The TAGEOS EOS-500 tag has an outstanding read range consistency, almost independent from subsurface material (except water and metal) across worldwide UHF RFID frequencies.

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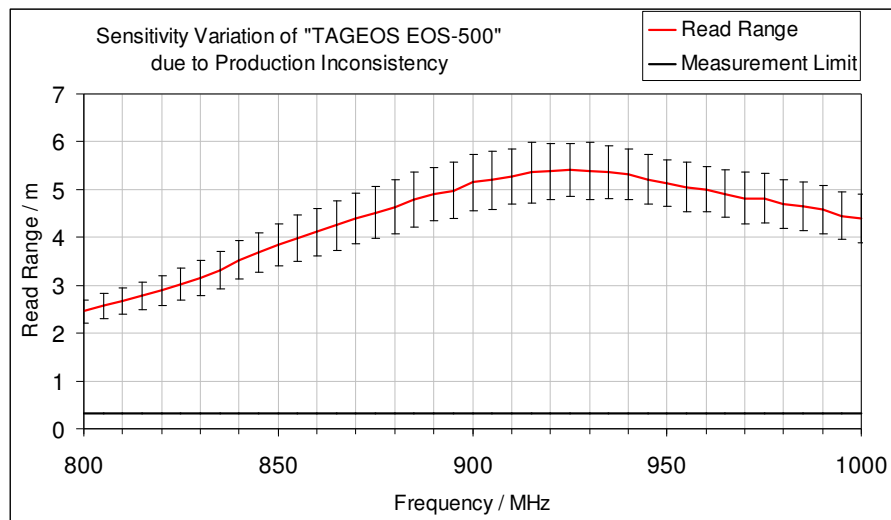
EECC Laboratory Neuss, Germany
7th April 2011

Author:
Erhard Handel

Certification Measurement Results: TAGEOS EOS-500

Module I

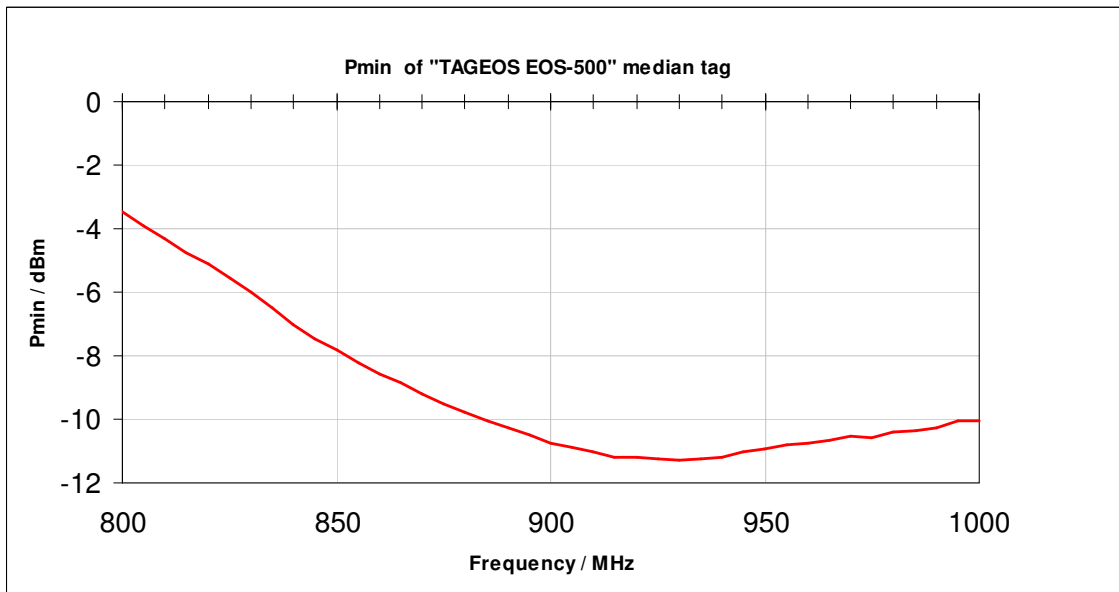
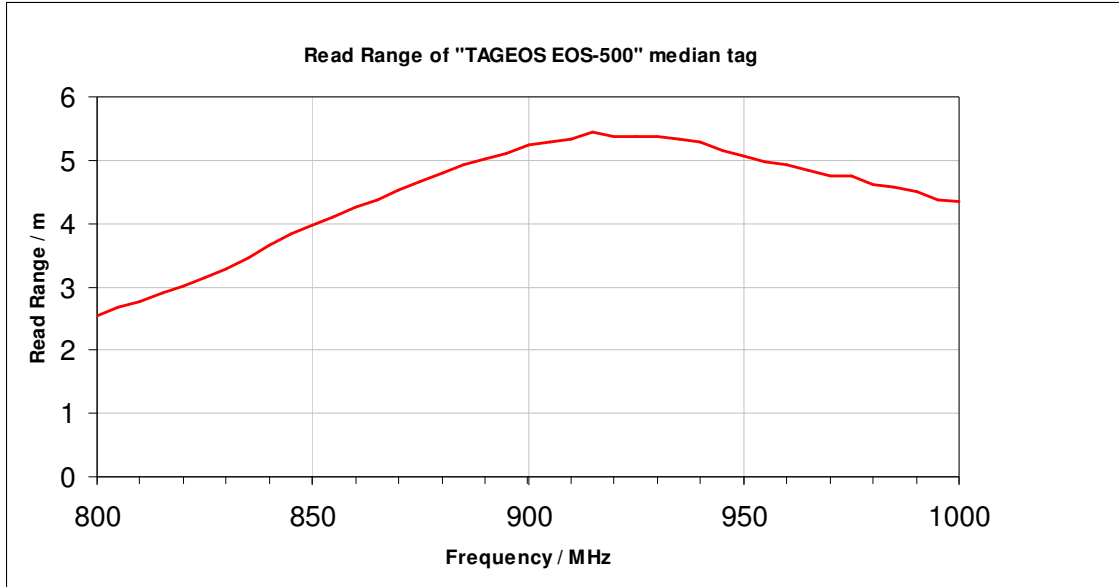
1. Production consistency of TAGEOS EOS-500, 30-tag-batch

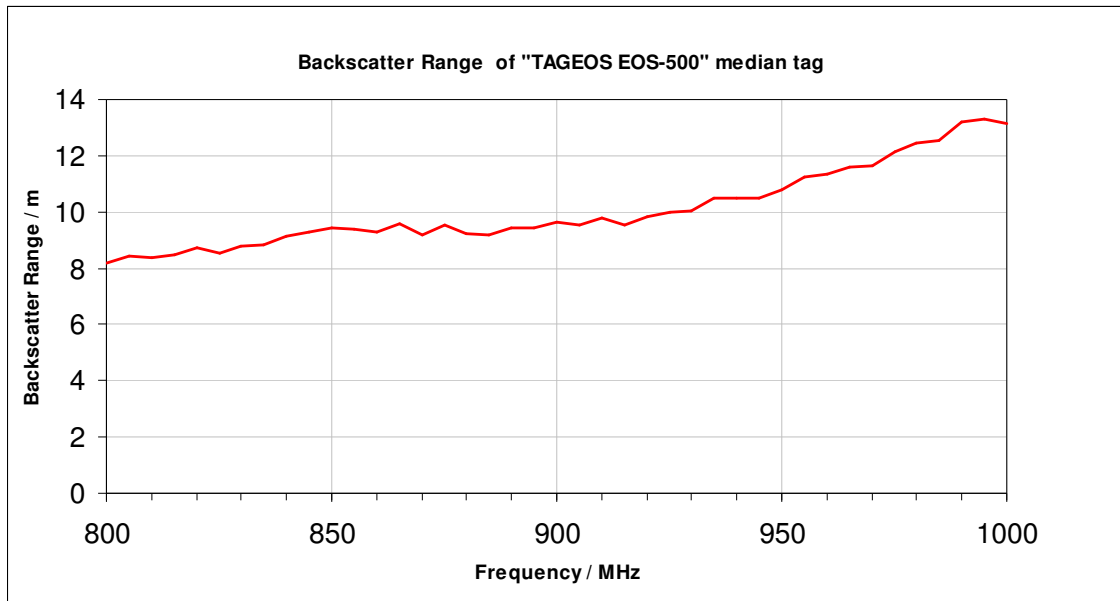


Average (free space) Read Range and Standard Deviation for different regulations.

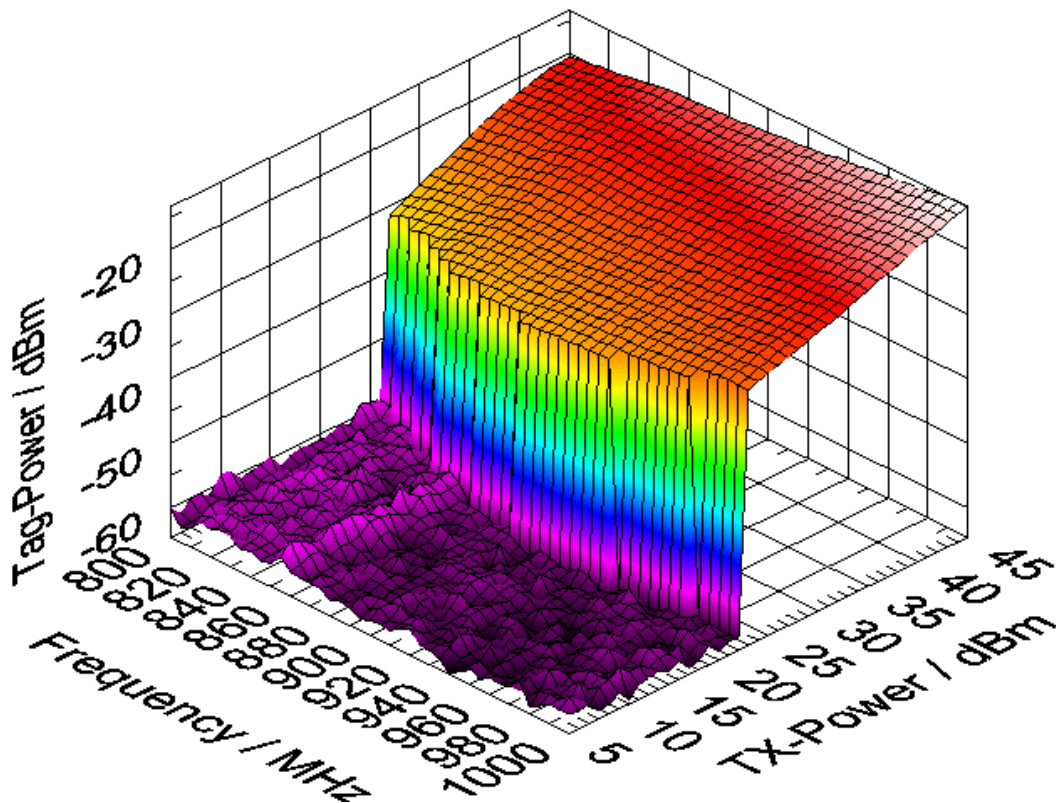
866 MHz / 2 W (ERP)		910 MHz / 4 W (EIRP)		922 MHz / 4 W (EIRP)		953 MHz / 4 W (EIRP)	
Read Range	Standard Dev.	Read Range	Standard Dev.	Read Range	Standard Dev.	Read Range	Standard Dev.
4,28 m	0,52 m	5,83 m	0,64 m	5,96 m	0,63 m	5,62 m	0,56 m

2. TAGEOS EOS-500 median tag performance results (free space)





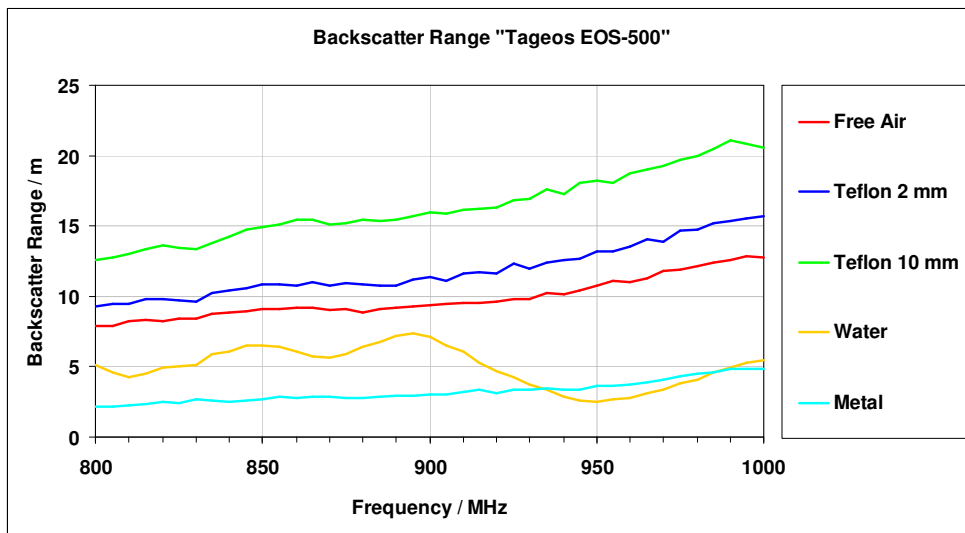
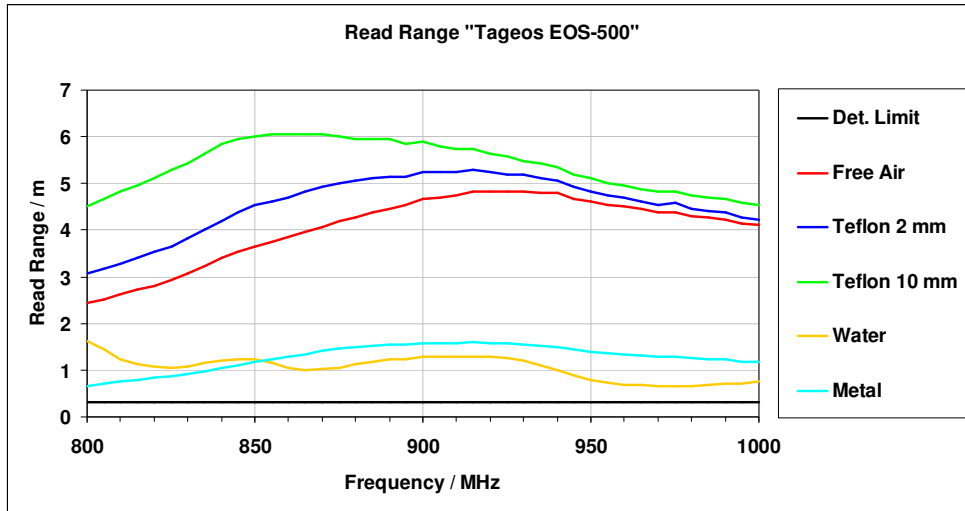
3. TAGEOS EOS-500 median tag 3-D characteristic graph (free space)



All further measurements will be performed with the median tag.

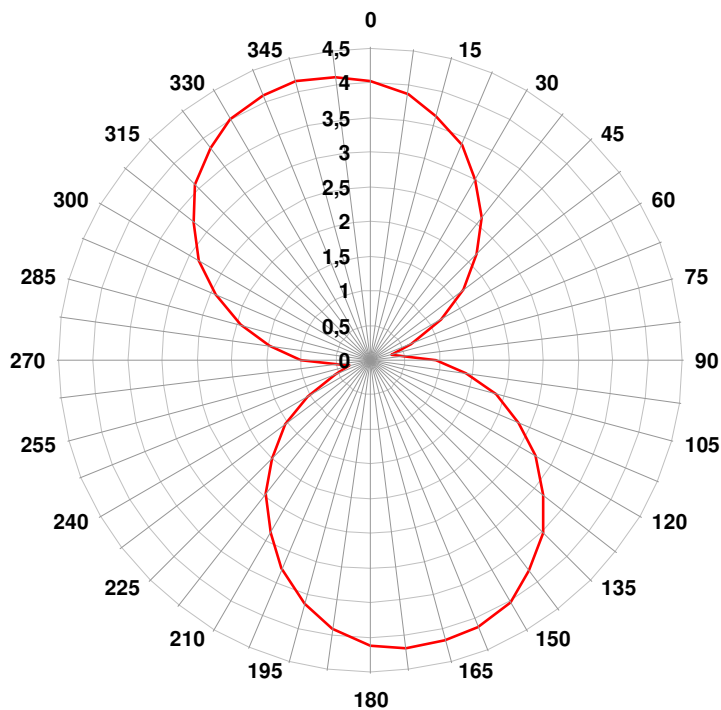
Module II

1. & 2. Read- / Backscatter Range of TAGEOS EOS-500 on EECC test materials

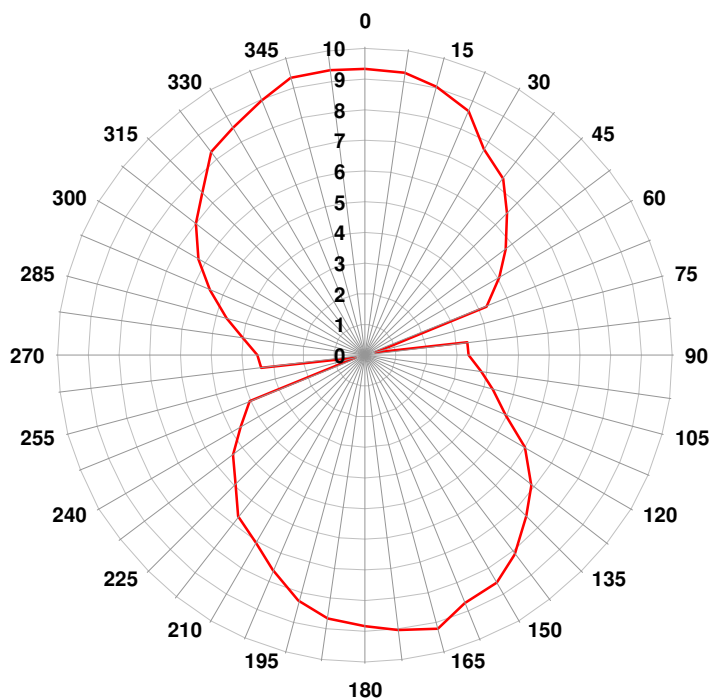


3. Free air direction sweep of "TAGEOS EOS-500"

Orientation dependent Read Range of "Tageos EOS-500"
in free space at 866,3 MHz

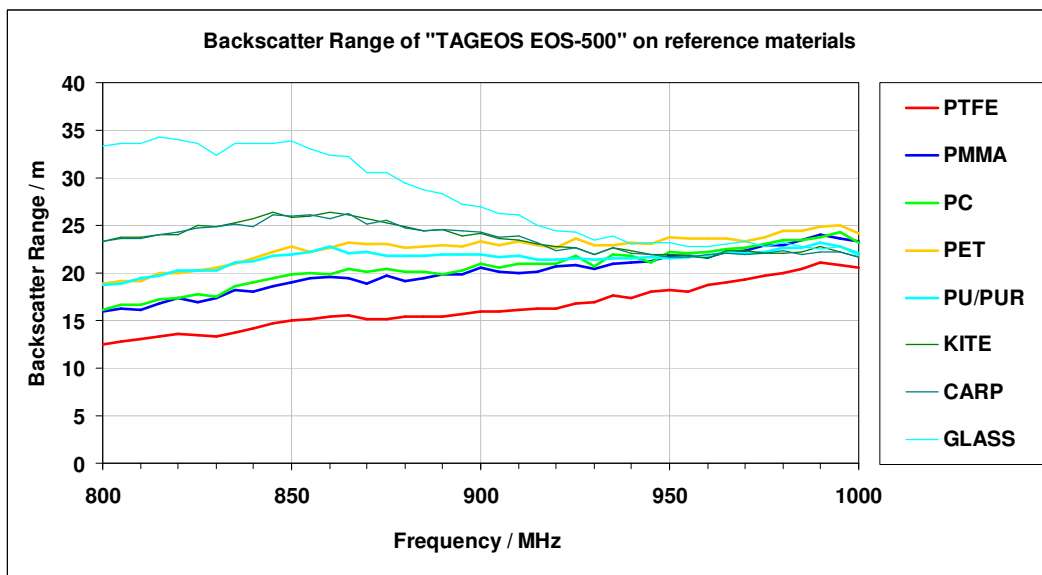
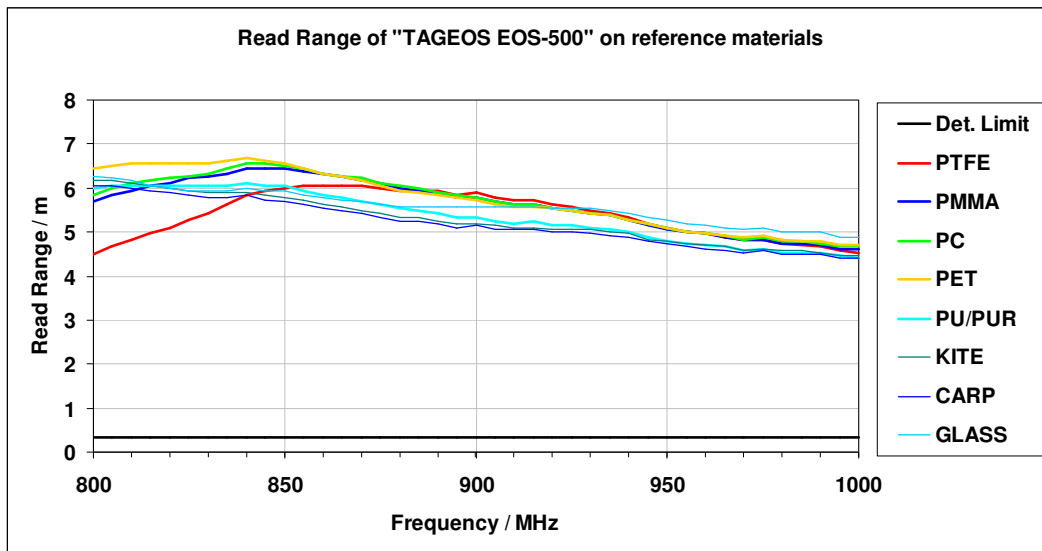


Orientation dependent Backscatter Range of "Tageos EOS-500"
in free space at 866,3 MHz

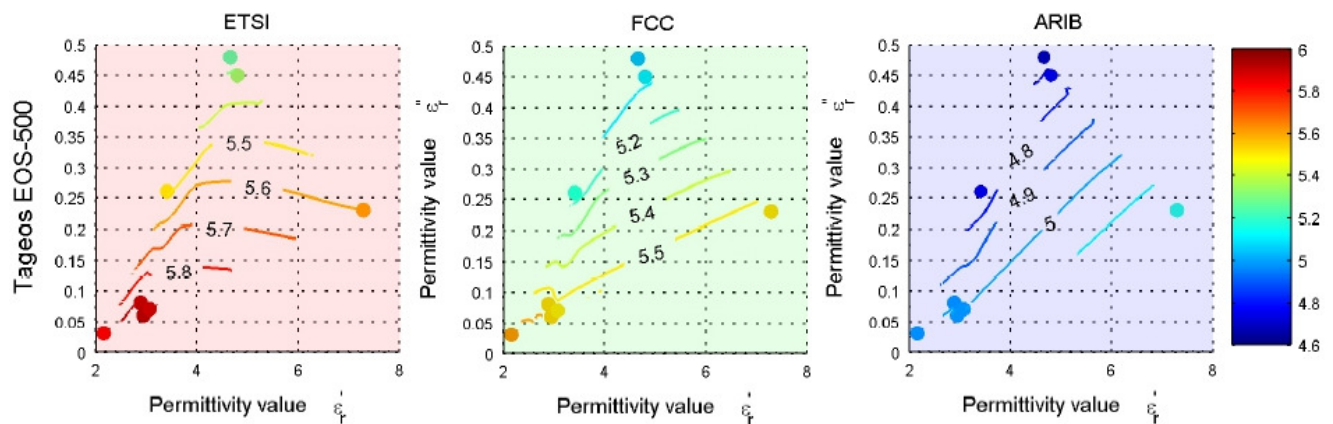


Module III

**1. Read / Backscatter Range of "TAGEOS EOS-500"
on permittivity reference materials**



2. Evaluation model on material-dependent tag performance



Conclusion

The TAGEOS EOS-500 UHF RFID tag is an EPC Class 1 Gen 2 dipole tag. The measurement results show the behaviour of a typical UHF dipole tag with an average production consistency of 0,52 m variation in read range. The read range reaches a minimum of 4 m (free air) under all regulations. This enables the tag to be used world wide. The EOS-500 tag has an outstanding read range consistency, almost independent from subsurface material (except water and metal) across worldwide UHF RFID frequencies. The applied tag has an average read range of about 5 m. The subsurface material dependency of the EOS-500 is the lowest we have measured so far and thus an exceptional characteristic compared to other UHF RFID inlays.