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Radio System Group

Instituto de Telecomunicações Universidade de Aveiro

radio systems

universidade de aveiro

instituto de telecomunicações

@radiosystems.av.it.pt

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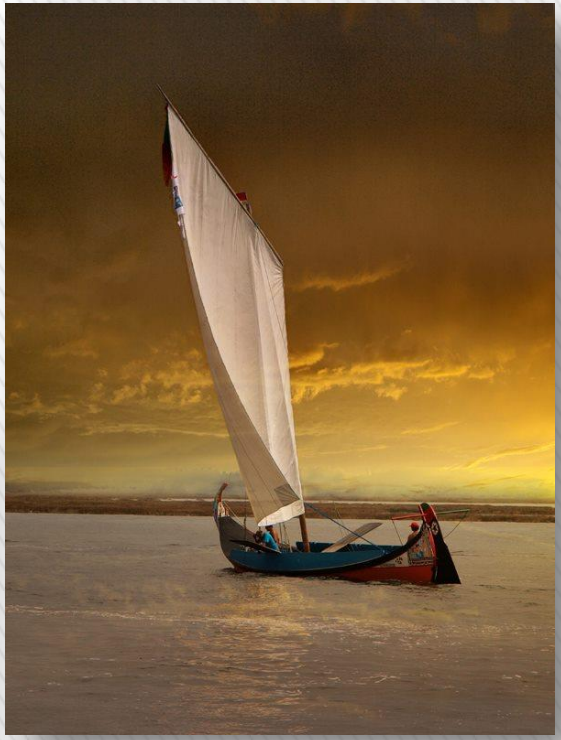
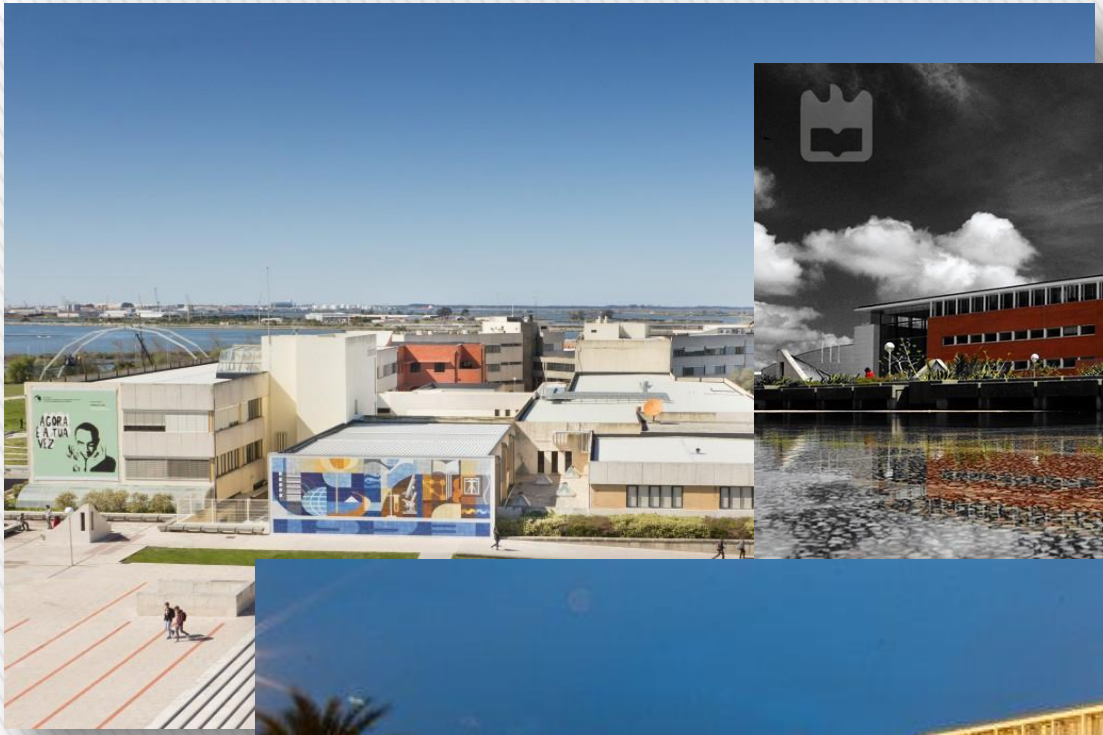
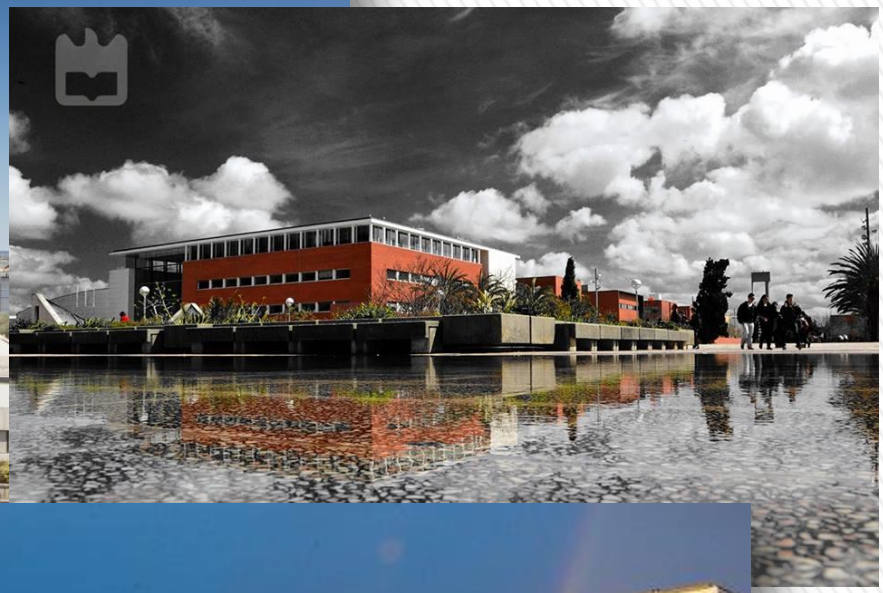
AVEIRO

Mapa de Portugal



Universidade de Aveiro





Electronic and Telecom Dep.

1974 – BSc in Electronics and Telecommunications Eng.

1978 – 5 year BSc in Electronics and Telecommunications Eng.

1988 – 5 year BSc in Electronics teaching

1991 – MSc in Electronics Eng.

1998 – 5 year BSc in Computers and Telematics Eng.

2006 – Bologna restructuration: creation of the Integrated Master degrees

2007 – Creation of the BSc Technology Information Systems

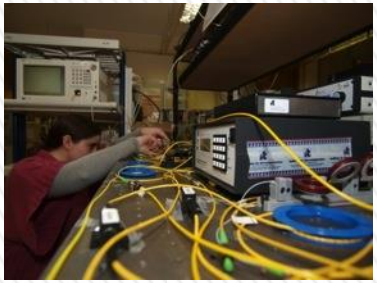
2014 – Creation of BSc in Informatics

deti in numbers

2013

- **1200** BSc and MSc students
- **150** PhD students
- **80** teachers

deti – BSc & MSc



5 years

Integrated Master Degree in Electronics and Telecomm.

Integrated Master Degree in Computers and Telematics

MSc in Informatics

BSc in Informatics

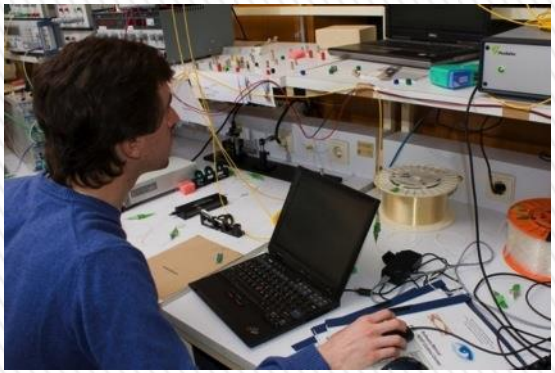
PhD programs

PhD Programs

- Electrical Engineering
- Informatics Engineering

Joint PhD Programs: Aveiro, Minho and Porto (MAP)

- MAP-Tele – Telecommunications
- MAP-i – Informatics



Research & Development

IT – Instituto de Telecomunicações (Aveiro pole)

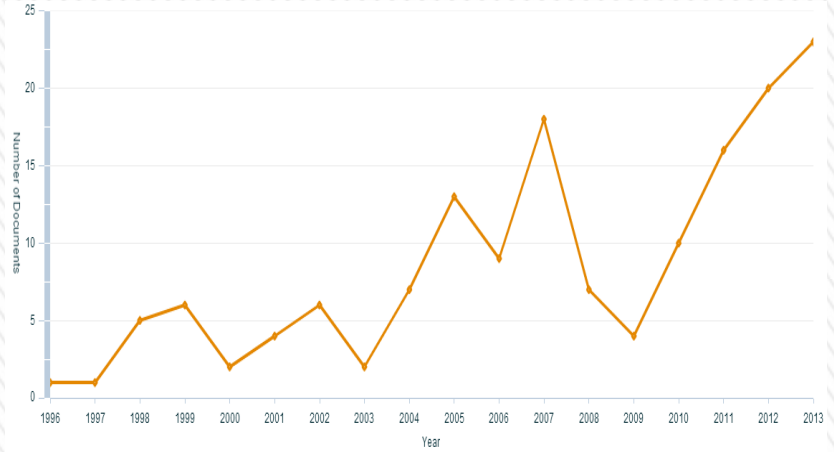
300 researchers

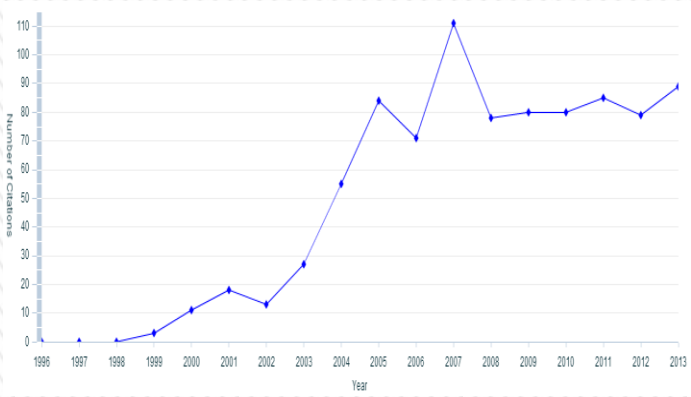
Members

- Professors
  - Nuno Borges Carvalho (Full Professor)
  - João Nuno Matos (Associate Professor)
  - Armando da Rocha (Assistant Professor)
  - Arnaldo Oliveira (Assistant Professor)
  - Pedro Pinho (Polytechnic Professor)
- Pos-doc
  - Wonhoon Jang
  - Pedro Cruz
- 10 PhD students
- Several MsC and Grant holder Students

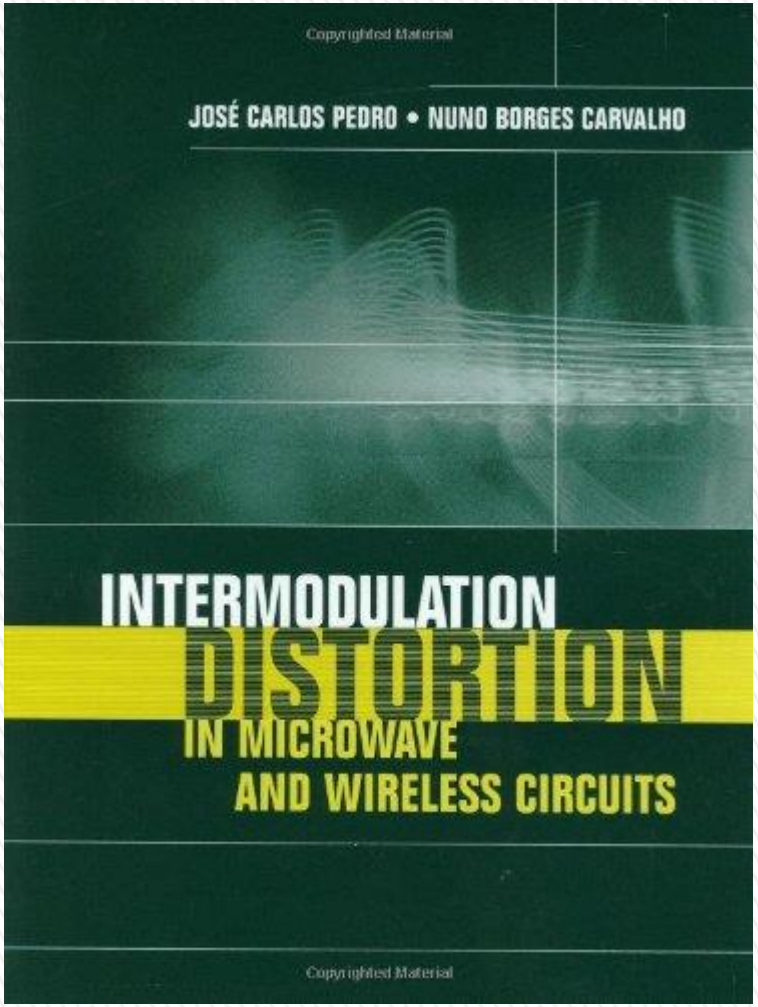
Scientific Production

- Main publications in the area of Microwave Circuits and Systems and Radio Propagation
- 5 book chapters
- 3 co-authored book
- 6 patents
- Creation of 2 spin-offs





Book's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IN MICROWAVE
AND WIRELESS CIRCUITS
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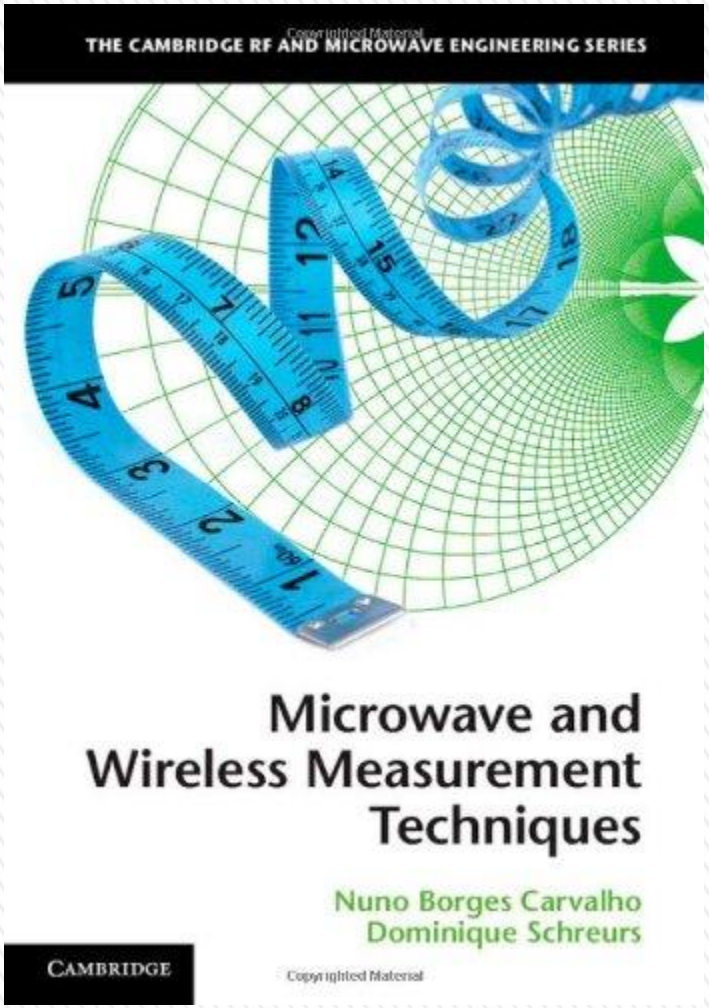
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Techniques
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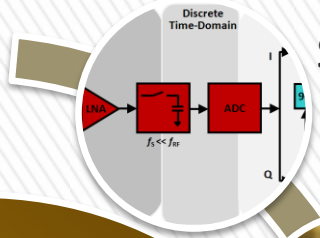
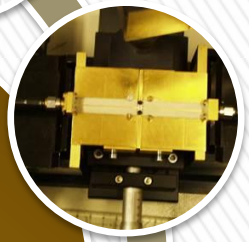
-> IT Aveiro -> Radio Systems

Radios Systems Characterization and Design

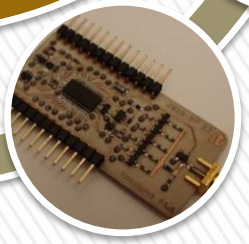


Software Defined Radio
Receiver Dynamic Range Increase
Transmitter Efficiency



Measurements
Instrumentation for Mixed-signal and Mixed-domain

RF-DC Converter Efficiency



Analysis of nonlinear behavior for:
Power Measurements
Wireless Power Transmission

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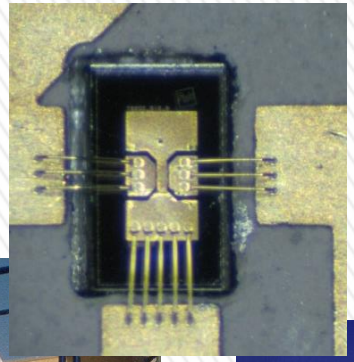
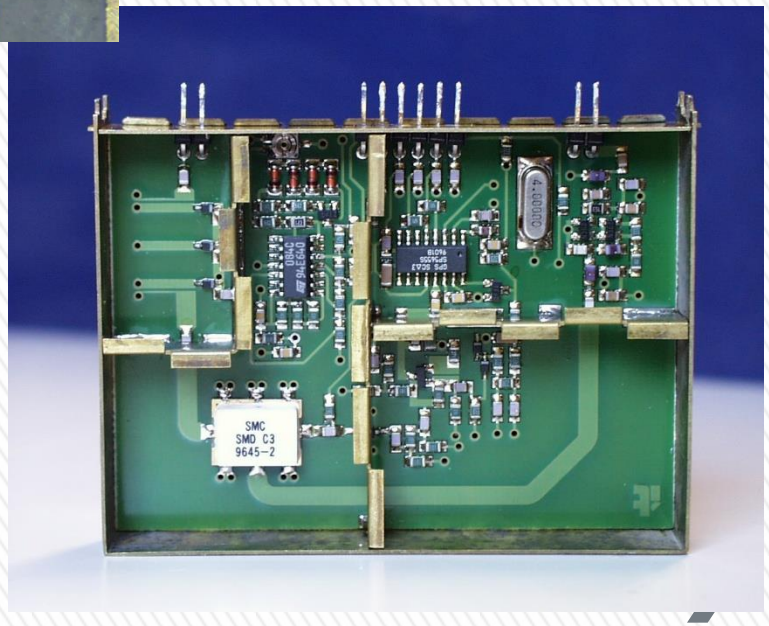
RF and Microwaves

- Designs cover from basic research to applied telecommunications.



22GHz Radiometer

CATV systems



R&D Projects

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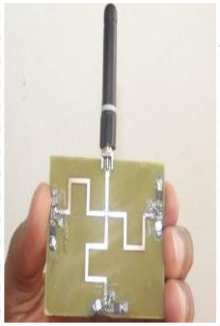
WPT for Home Appliances

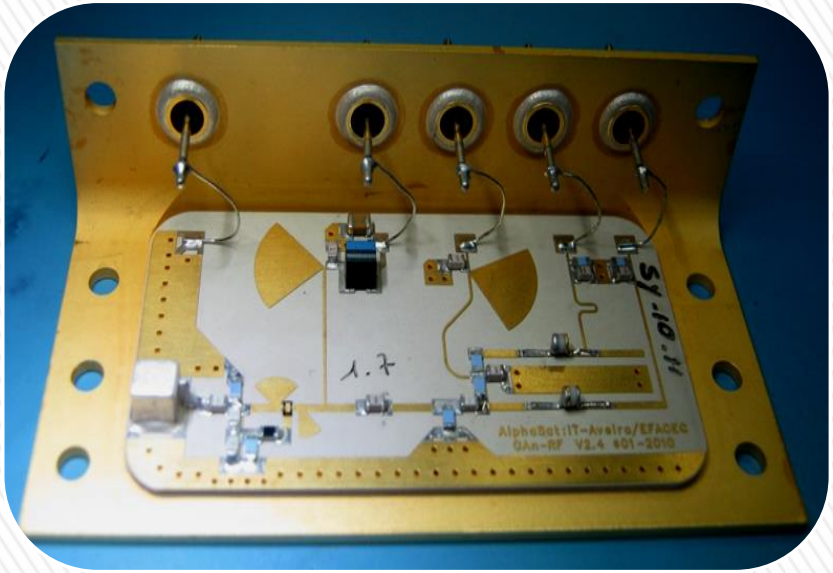


Bateryless
Remote Control

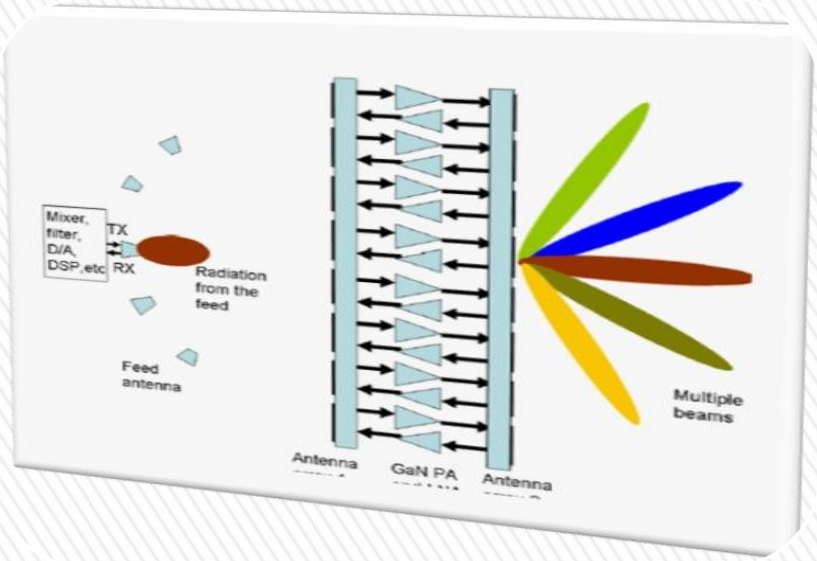
Cork RFID

IoT Smart floor

Space Applications

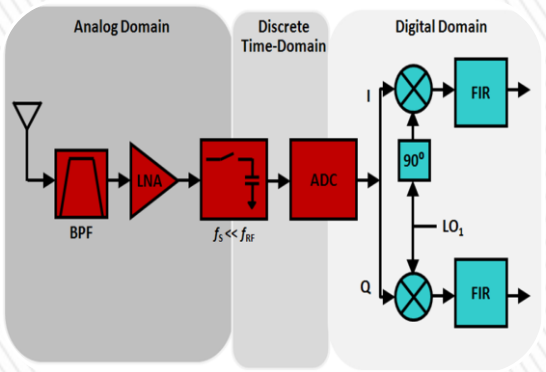


Design of a RF GaN oscillator to use in space environemnts.



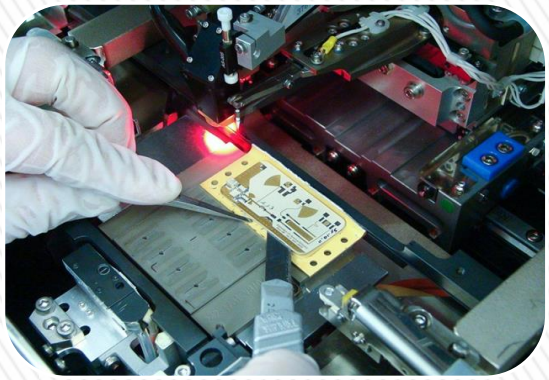
GANSAT FP7 EU Project on very high eficiency GaN Transceiver for Ka Band

Software and Cognitive Radio



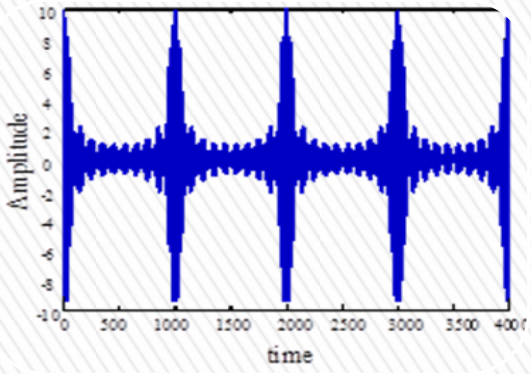
High Dynamic Range Radio

All Digital Transmmitters

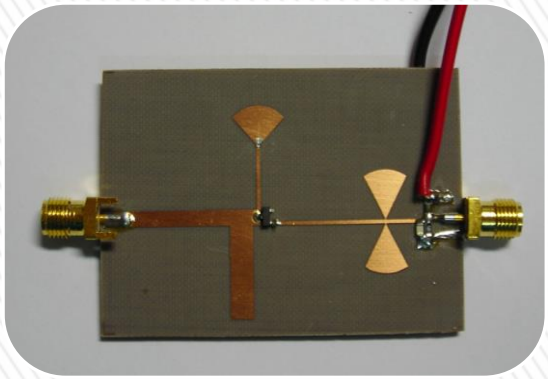


Passive Radios

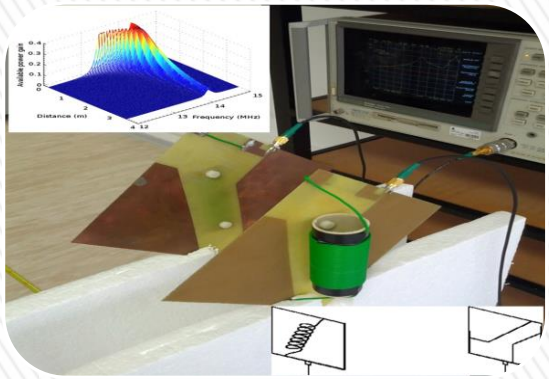
Wireless Power Transmission



Increase Coverage using Special Designed Waveforms



RF-DC converter efficiency increase



Electrical Ressonant Coupling

Pre-Industrial Project

Communications

RFOverlay CATV Distribution using Digital waveforms

PANORAMA

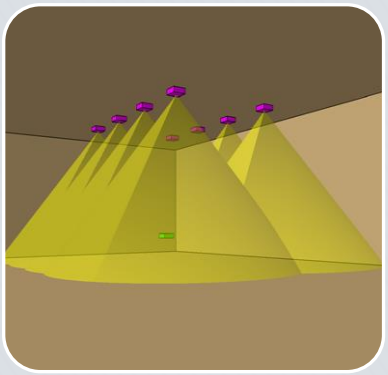
Point to point Communications using millimeter wave siganls

Location and Critical Comm

I-Garment developed full-bodied smart garments equipped with sensors to monitor position, vital signals (temperature and heart beat) of the agents. This information is sent via a wireless link to Civil Protection Officers in the HQ, processed and returned to the field officers equipped with PDAs and/or TabletPCs.

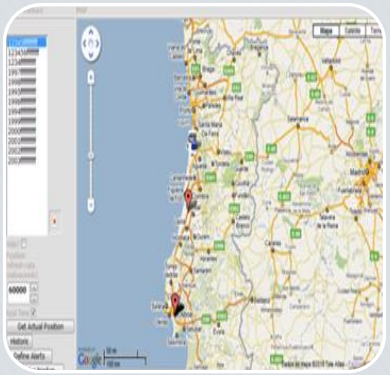
NAPIS

Navy Antenna design and wireless sensor networks for indoor and critical location and web server implementation.



Lopes

All art galleries, museums and other public buildings such as cathedrals need some way to tell the visitor what they are looking at. Project LOPES was implemented and installed in the Fábrica - Center of Alive Science of Aveiro. LOPES is the concept of virtual museum that provides visitors, in an automatic way, dedicated information about the art pieces that they are seeing at that moment.

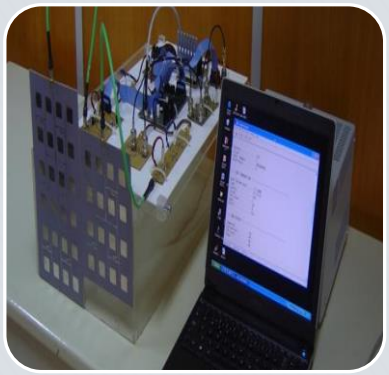


CICLORIA

Location for turistic applications

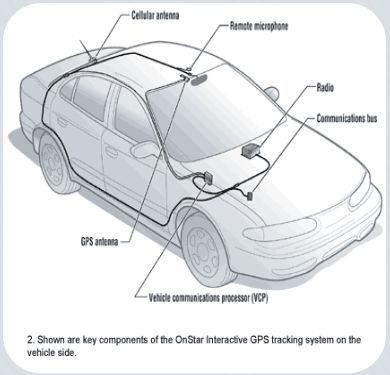
Wireless Systems for Vehicular

Sectorial Antennas for Maritime Applications.



Viave, a project for automatic tooling using the DSRC standard, The Viave project aims the design and development of Dedicated Short Range Communications (DSRC) equipment for Road Transport and Traffic Telematics (RTTT).

Headway, car to car and car to road communications.



2. Shown are key components of the OnStar Interactive GPS tracking system on the vehicle side.

Transparent antennas for vehicular communications.

Thank you for your attention!

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