

UNIVERSITY OF SOUTH FLORIDA - WCSP GROUP

ULTRA-WIDEBAND (UWB) RESEARCH

AREAS OF EXPERTISE

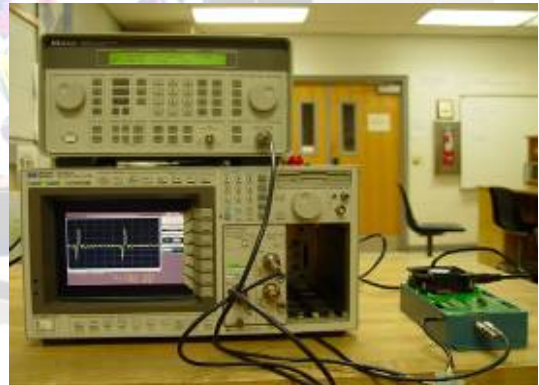
- A strong background on UWB related fields including
 - Ⓢ UWB Channel Estimation
 - Ⓢ Adaptive Transceiver Design
 - Ⓢ Synchronization
 - Ⓢ Interference Detection & Suppression
 - Ⓢ UWB Ranging
 - Ⓢ Multiple Accessing and multi-user detection
 - Ⓢ Multiband-OFDM UWB
- A quantity of related publications including book chapters, patents, and journal & conference papers



OUR CAPABILITIES

- We have a hardware based analog/digital UWB testbed along with
 - Ⓢ High Sampling Rate ADCs
 - Ⓢ Xilinx FPGAs
 - Ⓢ Texas Instruments DSPs,
 - Ⓢ Lyrtech Hybrid DSP/FPGA,
 - Ⓢ Nallatech XtremeDSP
- Our research on the testbed targets a Software Defined Radio (SDR) based approach

- Considering the future needs of UWB systems, the testbed is aimed to be
 - Ⓢ entirely reconfigurable
 - Ⓢ adaptable
 - Ⓢ and totally digital
- SDR based UWB testbed enables
 - Ⓢ designing an SDR Controlled Transceiver
 - Ⓢ developing numerous DSP algorithms for UWB including Interference cancellation (NBI, ISI, MUI), Channel Estimation, and Synchronization
- We are also capable of doing High System-level MATLAB/Simulink Design using high performance UNIX terminals



CONTACT INFORMATION

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