



Winning
Through
Creativity

OVERVIEW

- ❖ Core team started Semiconductor work in 1990. Our experience was acquired at Bell Labs, Texas Instruments, ADI, IBM, AMD and Intel – 8 PhDs
- ❖ Successful FPGA and ASIC designs verified in systems
- ❖ Submitted 20 contributions to the WiMAX 802.16m standards committee
- ❖ Published numerous papers including 10 papers on WiMAX and preparing to file two patents and several others in development

EXPERTISE

- ❖ Digital IC design (VHDL, Verilog)
- ❖ System level modeling and simulations
- ❖ ARM programming
- ❖ PCB design and prototyping
- ❖ Digital design verification and timing closure
- ❖ Synthesis to FPGA or ASIC
- ❖ Implementation on programmable DSP
- ❖ Testing and qualification

PROJECT TYPES

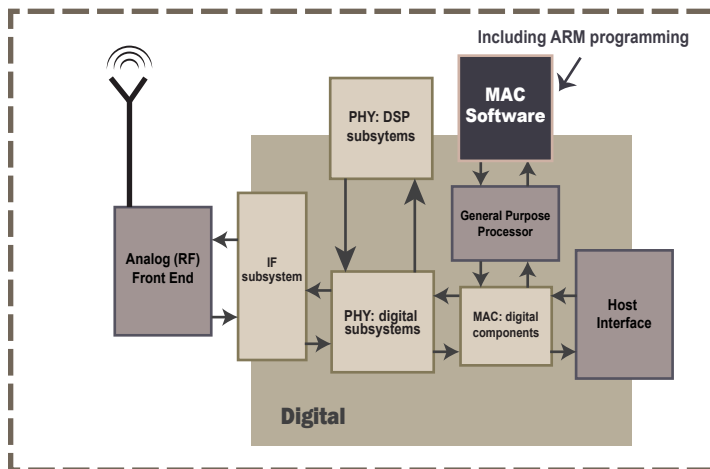
- ❖ **Design Services**
Fixed-price and T&M
Development process either customer's or Varkon's
Example: LTE UE fully digital implementation
- ❖ **IP**
Custom Developed by Varkon
Portfolio available on website
Full Systems e.g.: DVB-C/T2 full digital implementation
Sub Systems e.g.: FFT, Channel Estimation Engine & Turbo Decoder

Activities focused on Broadband Physical Layer implementations

Design Services

Communications transceiver blocks:

- ❖ Available:
 - Error Correction
LDPC, BCH, Turbo Decoder, Reed Solomon, Viterbi
 - Modulation / Demodulation
FFI / IFFT, OFDM Channel Estimator
- ❖ Others: Available upon request



Typical Customer Engagements :

- ❖ From specification to silicon
- ❖ Focus on wireless applications
- ❖ Work with partners to provide full solution
- ❖ Support and training at your site

INTELLECTUAL PROPERTY

- ❖ DVB-C/T2: Complete FPGA prototype
- ❖ Bluetooth: Complete PHY digital design
- ❖ WiMAX: Active participation in the IEEE 802.16 standards meetings
- ❖ ADSL2, VDSL subsystems
- ❖ Base-band building blocks such as IFFT/FFT, Sampler, OFDM receiver, Turbo and LDPC decoders, channel estimator and many others

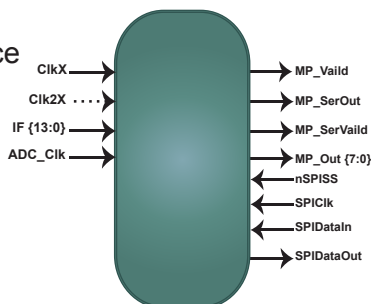
IP: DVB

- ❖ Synthesis ready RTL



- ❖ FPGA proven

- ❖ Competitive performance



Recent Projects

Project	Technology
System/Architecture Design	WiLAN 802.11a and 802.11b
Architecture System Modeling (MATLAB)	WiMAX 802.16
Architecture System Modeling	WPAN 802.15.3
Full Chip PHY Design	Bluetooth
Architecture System Modeling	LTE

TEAM EVOLUTION

- ❖ Current headcount: 26
- ❖ Core team started semiconductor work 1990
- ❖ Access to a pool of experienced consultants and industry veterans on a need basis
- ❖ 8 PhDs
- ❖ 3 Masters
- ❖ 160 man years of experience

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