

# FPGA Technical Capabilities

- ❑ FPGA Design Experts from Embedded FPGA to ASIC Emulation Systems with 25 years of ASIC and FPGA Design Experience
- ❑ From Floating Point Simulations to MATLAB bit/cycle accurate to realizable HDL
- ❑ Broadcast Quality Video (MPEG-2 ,H.264) from 1992 to today
- ❑ DSP and Communications Systems, Digital Multirate Filters (MATLAB to HDL)
- ❑ High Speed Peripherals: GigE, DDR2/DDR3, PCIe, Hypertransport, OCP, AXI
- ❑ High Density, High Speed PCB Layout to support FPGA small package pitch and 1000+ pin densities
- ❑ Prototype to High volume production
- ❑ Product Certifications FCC/IC/CE/UL/BT/ZigBee
- ❑ Embedded Wireless (M2M, 3G, WiFi, ZigBee, 802.15.4 and Talon proprietary)



3750 Convoy Street  
Suite 320  
San Diego, CA 92111  
858-653-0100  
email: [scott.mcdermaid@taloncom.com](mailto:scott.mcdermaid@taloncom.com)  
[www.taloncom.com](http://www.taloncom.com)



Xilinx Experts      Video Systems

Verilog      VHDL      SoC / ARM

DSP and Communications



## Examples of Talon FPGA Accomplishments

Starting with the world's 1<sup>st</sup> Broadcast Quality 4:2:2 MPEG-2 Encoder to the latest 3-D H.264...

*3D H.264 Encoder*



*Designed by our Xilinx and TI DSP experts*

*Voice CODEC*



*TI DSP with G.729 and AES Encryption*

Using Xilinx and TI DSP technology Talon designed this secure Voice and Data 300-900MHz transceiver

Talon engineers architected and designed a complete MPEG-2/H.264 mobile Broadcast series of product

*H.264 Receiver for UAV/Helicopter Links*



*Designed with Xilinx and TI DSP*

*H.264 Decoder*



*Designed with Xilinx and TI DSP*

Other recent products include:

- Security Cameras
- PCM on analog TV
- Multirate Filtering
- Zynq SoC
- MIPI Sensor IF
- GigE, PCIe, SRIO
- AIX, OCP Bus
- MicroBlaze MCU
- DDR2, DDR3

## Talon Designed Product Examples

### MPEG-2 and H.264 Systems

Beginning with the first MPEG-2 products on the market in the early 90's to the latest compact H.264 Broadcast Quality low latency systems available today, Talon engineering has been involved with the architecture and design.

### Communications and DSP

With a long history of working on communications projects including MODEMS, Multirate Filtering, DSP and many other customer defined algorithms, we are well versed in architecting and implementing these systems. From the initial floating point algorithm or idea we can take it to MATLAB bit/cycle accurate sims to FPGA HDL implementation.

## Project Success

Rapid prototype and application development is key to getting your design tested and productized. Our 25-year history of FPGA and ASIC product development will contribute to your success.

A broad range of product development from consumer to medical to military gives us the ability to quickly adapt to your needs. Additional considerations are:

- Emphasis on project management including risk assessment and mitigation
- Complete project documentation to ensure technology transfer upon delivery
- Manufacturing assistance from low volume pilot runs to high volume at our offshore CM's

## Technical Focus

- Digital/Analog Audio/Video/Data (Security Cameras, Set Top Box, Broadcast H.264)
- Communications and DSP, Digital Multirate Filtering
- Sensor Networks
- Embedded Wireless Systems
- Medical Devices