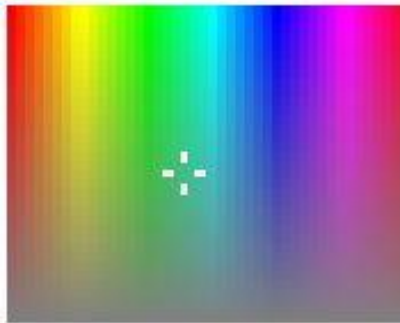




VVDN
TECHNOLOGIES

*Spectrum of
Embedded Design Expertise
in Networking / Telecom / Storage Domain*



Networking / Telecom / Storage Experience

Wired Networking

- *Layer 2 Switches*
 - *Control Plane and Data Plane*
- *Layer 2 PoE Switches for Indoor and Outdoor*
- *Layer 3 Switches*
 - *Control Plane and Data Plane*
- *Layer 3 Gateways / Routers*

Wireless Networking

- *Indoor Access Points*
- *Outdoor Access Points*
- *Long distance IP backhaul*

Networking / Telecom / Storage Experience

Telecom

- *Long distance E1 backhaul*
- *3G VoIP Gateway*
- *VoIP Wi-Fi Gateway*
- *Video VoIP Door Phone*

Storage

- *NAS Box*
- *Solid State Disk*

Wired Networking

- *Layer 2 Switches*
 - *Control Plane – MIPS32 Core from Realtek, RMI Network Processor*
 - *Data Plane – Switch fabric from Broadcom , Realtek, Marvel*
 - *TI Chipset for PoE Logic*
- *Layer 3 Switches*
 - *Control Plane –RMI Network Processor, Broadcom Network Processor, Freescale PowerPC*
 - *Data Plane – Switch fabric from Broadcom , Netlogic*
- *Layer 3 Gateways / Routers*
 - *Chipset – Realtek, Atheros*

Wireless Networking

- *Indoor and Outdoor Access Point*
 - *Chipset – Realtek, Atheros*
- *Long Distance IP Backhaul*
 - *Chipset - Atheros*

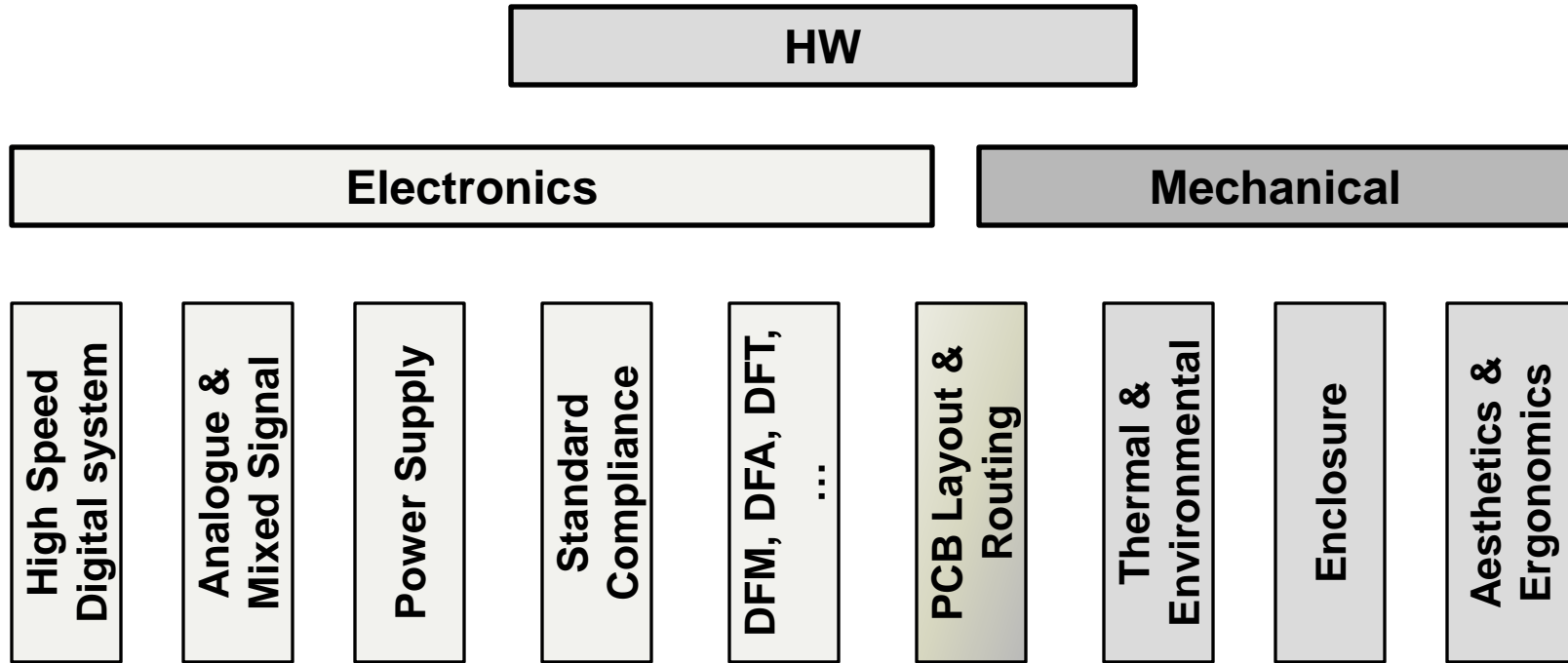
Telecom Domain

- *Long Distance E1 Backhaul*
 - *Wireless*
 - *Chipset - Atheros*
 - *E1 to IP Converter*
 - *Chipset – Maxim*
 - *Control Plane Processor – Freescale PowerPC*
- *3G VoIP Gateway*
 - *Chipset – Realtek*
 - *SLIC Codec – Silicon Labs*
- *VoIP Wi-Fi Gateway*
 - *Chipset – Realtek*
 - *SLIC Codec – Silicon Labs*
- *Video VoIP Door Phone*
 - *Chipset – Freescale iMX27*
 - *Wi-Fi - Realtek*

Storage Domain

- ***NAS Box***
 - ***Networking Processor***
 - *Chipset – MSP8510 from PMC Sierra*
 - *Optimized the Ethernet driver from processing speed of 67K PPS to 400K PPS*
 - *Enable the Ethernet driver to use SKB recycling*
 - ***SATA Controller***
 - *Chipset – Silicon Image*
 - *Optimized the Silicon image driver especially the DMA operations for higher processing speed in a non-cache coherent system*
- ***Solid State Disk***
 - ***Control Plane – PXA 270 from Intel***
 - *Logical Block to Physical Block Mapping*
 - *Wear Leveling*
 - *Garbage Collection*
 - *Power Management*
 - *Data Security*
 - *Address Table Translation*
 - ***Storage Controller – Build inside FPGA***
 - ***NAND Flash - Samsung***

Hardware Expertise



Mechanical -Electronics Co-Design

Electronics Design

- *High Speed Processor based designs*
 - *Single-core/ Multi-core Processors*
 - *Network I/Fs*
 - *OC196/ XGigE/ GigE/ XFI/ XAUI/T1/E1...*
 - *Storage I/Fs*
 - *SATA, SCSI*
- *Board Power supplies and Power management*
- *Intelligent Platform Management Controllers*
- *Standard Platform based design*
(Electronics/ PCB/ Mechanical etc..)
 - *PCI / CPCI/ PCI Mezanine*
 - *ATCA / AMC/ uTCA (including IPMC)*
 - *ATX, PCMCIA, Mini-Card etc.*

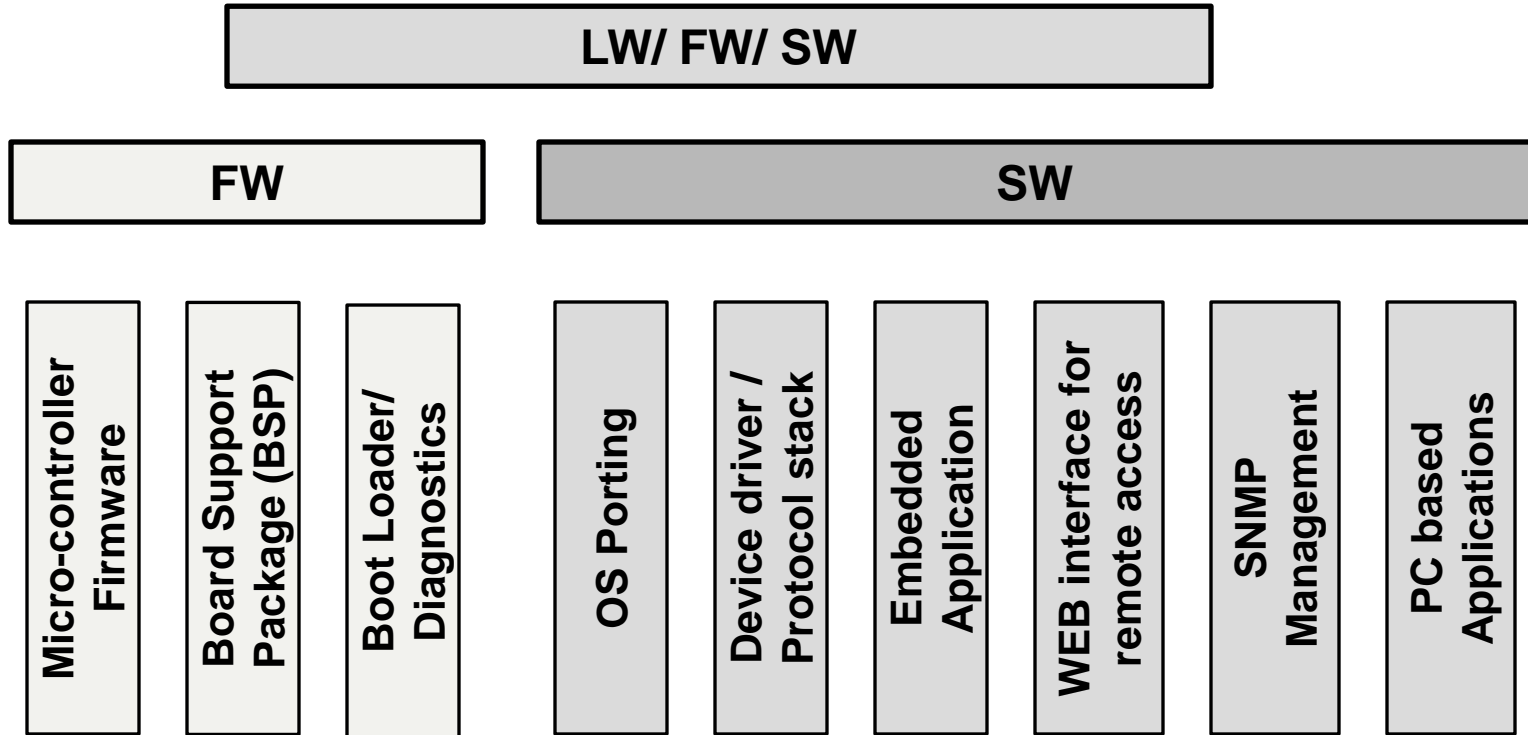
PCB Designs

- *Digital/ Analogue / RF and mixed PCBs*
- *Up to 24 Layer PCBs with 1500+ pin BGA devices*
- *Complete PCB design expertise – from Schematic to Gerber*
 - *Board stackup and controlled impedance*
 - *Layout /Routing analysis and optimization*
 - *Signal integrity analysis*
 - *EMCompatibility design*
 - *DFM/ DFA/ DFT*
 - *Power & Thermal design at Circuit & Board level*
- *EDA Tools: Altium & OrCAD*
- *Working Partnership with EMS for prototype & Volume production*

Mechanical Design

- *Mechanical design compatible for Standard platforms*
 - *PCI/ CPCI/ ATCA/ uTCA etc.*
 - *Custom enclosures / platform*
- *Complete Enclosure design / Tooling/ development support*
 - *PCB- Enclosure Co-design*
 - *Thermal & Environment aspects*
 - *Aesthetics and Ergonomics in design*
 - *DFM, DFA & Cost optimization*
- *CAD Tools: SolidWorks*
- *Mechanical Prototyping (Through Partners in India/ Taiwan)*
- *Tooling - Plastic / Metal options (Partners in India/ Taiwan)*
- *Production & Sub-assembly (Partners in India/ Taiwan)*

Software



LW/ FW/ SW/ HW Co-Design

Firmware

- *Firmware*
 - *Microcontroller FW development for different family devices*
 - *FW Applications like Platform/ Board/ Device management*
 - *BSP / Boot-loader/ Board diag etc for ARM/ MIPS/ PPC*
 - *Low level device driver/ bus driver etc.*

Software

- *OS porting to new platforms*
 - *Linux Porting on PPC/ MIPS/ ARM/ DSP based platforms*
- *Device driver /Protocol Development / Porting*
 - *Standard Bus based drivers – PCI / USB/ UART/ I2C etc.*
 - *Driver for Network devices:*
 - *Ethernet/ Wi-Fi/ SFP/XFP / T1/E1 framers*
 - *Driver for Storage:*
 - *SATA, SCSI*
- *Embedded and Application Software Development*
 - *Layer 2, Layer 3 Protocol Stack Integration / Porting*
 - *Embedded Web Servers*
 - *SNMP, TR069, Soap XML*
 - *VoIP (SIP, H323) based application*

Automated Test System/ Tool Development

- *Test Platform (In house development)*
 - *Nail bed based Board PTS (for assembled PCBs)*
 - PTS hardware & Software Including Test Scripts*
 - Test Automation Script (PERL, TCL)*
 - Detailed test report / Statistics logging*
 - Developed and deployed for Multiple products*
 - *Product Level Testing*
 - Script based Functionality test, configuration check etc.*
 - Serial number vise report logging*



VVDN
TECHNOLOGIES

*A **Partner** you can count-on
for
all dimensions of
Embedded Product Development
life cycle*

*“**From Concept to Customer**”*