



# Video Test Generator Project Overview

ELE 480/481

Lewis Collier

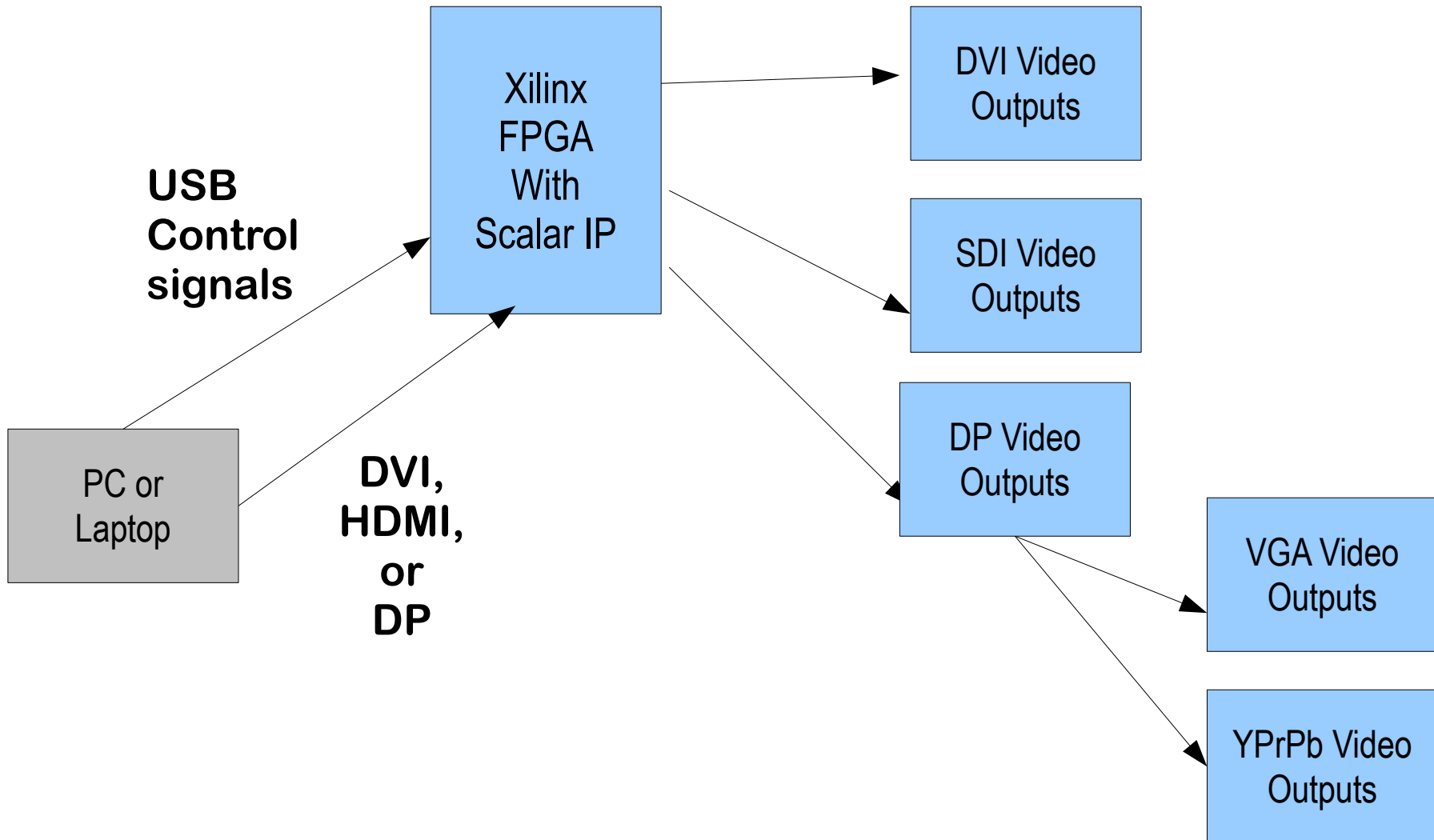
Capstone Visual Product Development

[LCollier@CapstoneVisual.com](mailto:LCollier@CapstoneVisual.com)

# Overview

- Design and test a printed circuit board (PCB) that converts input DisplayPort (DP), High Definition Media Interface (HDMI), and/or Digital Video Interface (DVI) signals into multiple formats of video output
  - Xilinx FPGA with Video Scalar Processing
  - Schematic Capture and Analysis
  - PCB layout and verification

# Block Diagram



# Project Goals

Use existing Capstone Visual designs and Xilinx reference designs as basis for development of a video test signal generator

- Review current designs and combine them to create a video test signal generator
- Design circuitry schematic and PWB layout
- Develop VHDL for Xilinx chips
- Test hardware and demonstrate generation of test signals

# Project Status

This project is a change of direction for a project from the 2010/11 year

- We were using the Genesis chip, will now use Xilinx FPGA.
- Define all video outputs and control features
- Develop schematic and PWB layout
- Develop firmware and PC control software
- Test and write User's Manual

# Functional Positions

- Circuit Designer
  - Review reference designs and current designs to gain understanding of entire system
  - Utilize DipTrace to complete schematic capture and PCB layout, validate design, and define Bill of Materials
- VHDL Engineer –
  - Design and develop VHDL code