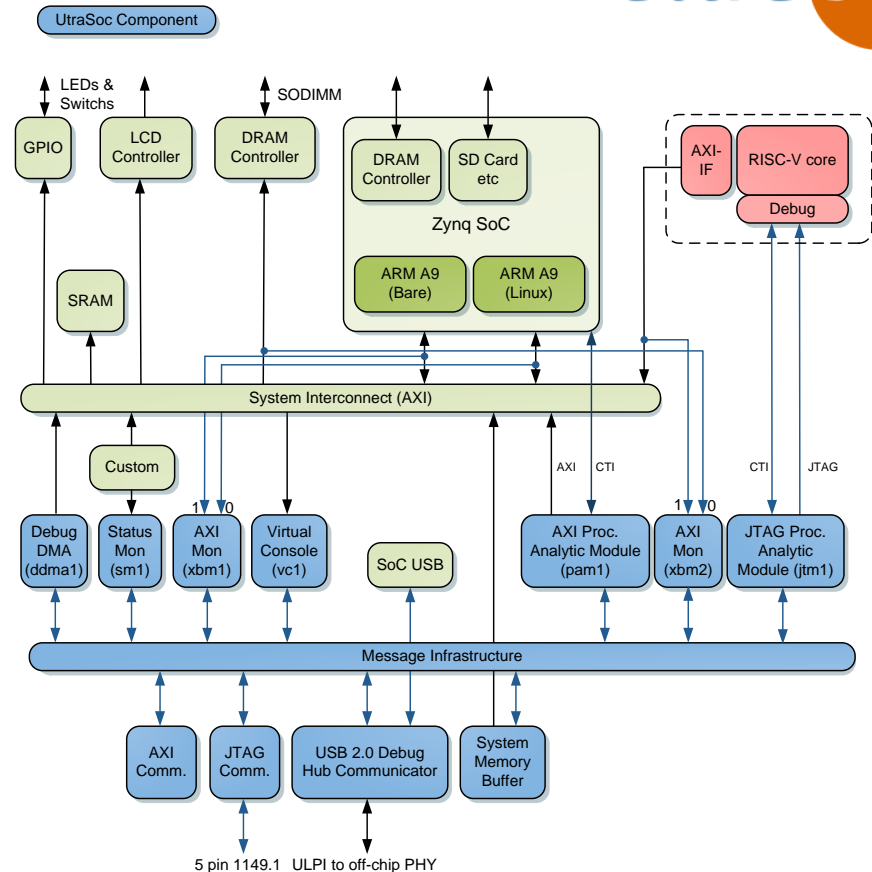


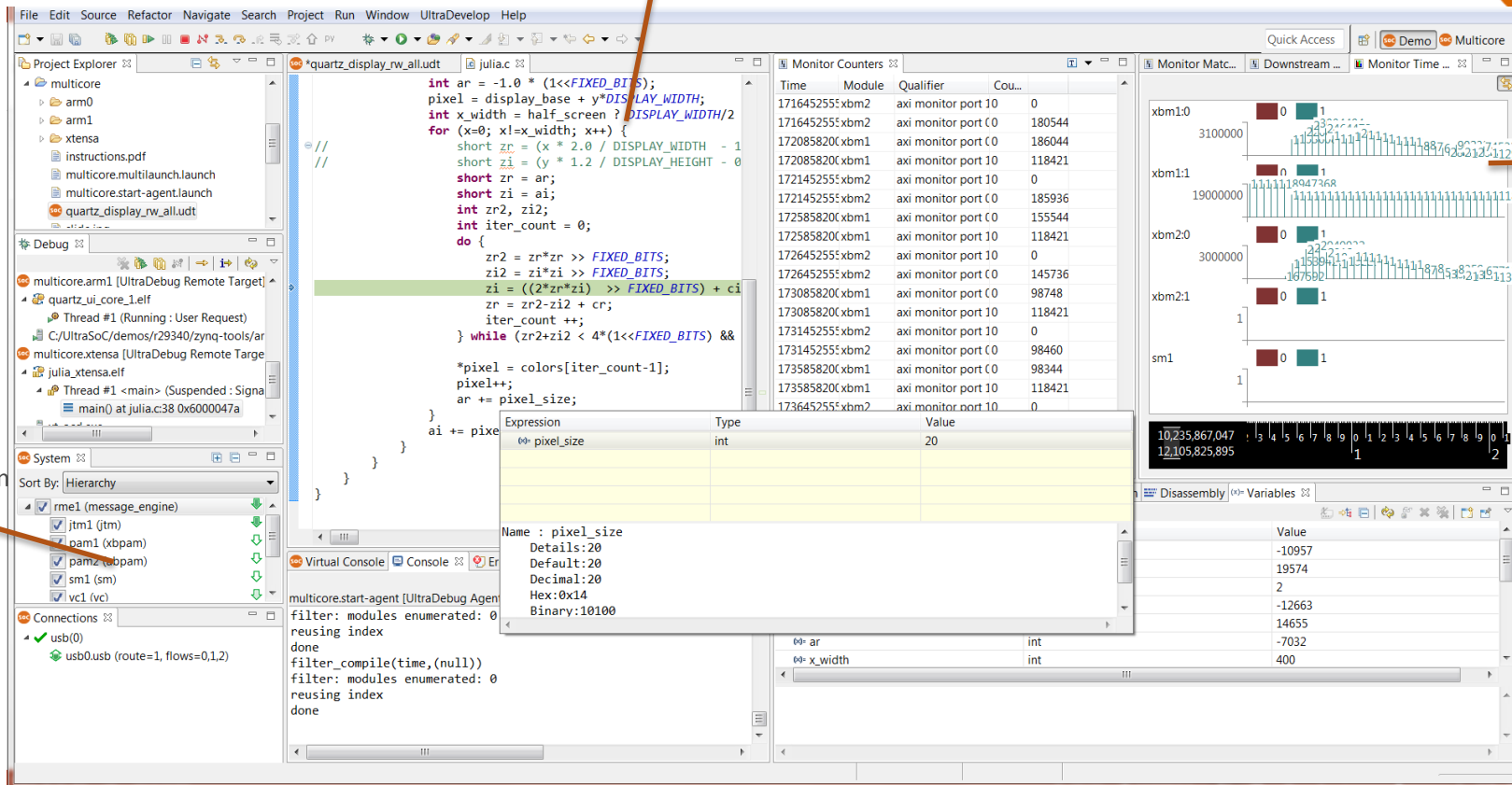
Demo System Architecture

- Zynq FPGA platform
 - ARM
 - Rocket RV32 RISC-V
 - custom logic
- Demo shows:
 - Bus state
 - Traffic
 - Performance histogram
 - Memory
 - Processor control



Demonstration Features

- **Heterogeneous multi-core + Custom logic**
- 2 x ARM A9 + Rocket RISC-V
- Processor status & code visibility (three processors)
- AXI Bus Monitor counters (read/write bytes) & trace
- Status Monitor for custom logic (FIFO, traffic source + sink)
- UltraSoC DMA access (read/write to system memory)
- Heterogeneous CPU run and halt
- USB 2.0 Debug Hub connectivity
- Deadlock detection



The screenshot displays the UltraSoC IDE interface with several panels:

- Project Explorer:** Shows the project structure including 'multicore', 'arm0', 'arm1', and 'xtensa'.
- Debug:** Shows the current thread 'Thread #1 (Running: User Request)' and the execution state.
- System:** Shows the system hierarchy with components like 'rme1 (message_engine)', 'jtm1 (itm)', 'pam1 (xbpam)', 'pam2 (xbpam)', 'sm1 (sm)', and 'vc1 (vc)'.
- Connections:** Shows the connection status for 'usb(0)' and 'usb0.usb'.
- Code Editor:** Displays the source code for 'quartz_display_rw_all.udt' in C, showing a loop for displaying a pixel.
- Monitor Counters:** A table showing the execution of various modules and their counts.
- Monitor Matc...:** A panel showing bus activity for various components like 'xbm1:0', 'xbm1:1', 'xbm2:0', 'xbm2:1', and 'sm1'.
- Disassembly:** A panel showing the disassembly of the current instruction.
- Variables:** A panel showing the values of various variables, including 'pixel_size'.

The 'Monitor Counters' table is as follows:

Time	Module	Qualifier	Count
1716452555	xbm2	axi monitor port 10	0
1716452555	xbm2	axi monitor port 0	180544
1720858200	xbm1	axi monitor port 0	186044
1720858200	xbm1	axi monitor port 10	118421
1721452555	xbm2	axi monitor port 10	0
1721452555	xbm2	axi monitor port 0	185936
1725858200	xbm1	axi monitor port 0	155544
1725858200	xbm1	axi monitor port 10	118421
1726452555	xbm2	axi monitor port 10	0
1726452555	xbm2	axi monitor port 0	145736
1730858200	xbm1	axi monitor port 0	98748
1730858200	xbm1	axi monitor port 10	118421
1731452555	xbm2	axi monitor port 10	0
1731452555	xbm2	axi monitor port 0	98460
1735858200	xbm1	axi monitor port 0	98344
1735858200	xbm1	axi monitor port 10	118421
1736452555	xbm2	axi monitor port 10	0

The 'Variables' panel shows the following values:

Variable	Value
ar	-10957
x_width	19574
pixel_size	2
zr2	-12663
zi	14655
zr	-7032
xi	400