

Document: Requirements of INSIST DMD Chipset Board
 Date: 04-10-2021
 Version v0.2

Reference Documents:	
RD1	DLPC410 DMD Digital Controller datasheet (Rev. G)
RD2	DLP010A_SCH
RD3	DLPA200 DMD Micromirror Driver datasheet (Rev. E)
RD4	UG1066_VCU108_Evaluation Board_User_Guide
RD5	DLPR410 Configuration PROM datasheet (Rev. G)

Key Requirements:			
1	FPGA Chip:	Virtex 5 XC5VLX30/DLPC410	Package = FFG676FGU1817
2	PROM Chip CONFIGURATION MEMORY	XCF16P/DLPR410	Package = XCF16P FSG48C 48pin TFBGA
3	Connectors		
	FMC connectors	2 Nos. HPC FMC (Male type) on UIC Side,	To be used with Two VITA 57.1 FMC HPC1 connectors J2, J22 (Female type) on Virtex UltraScale FPGA VCU108 Evaluation Kit
	DMD FLEX Connector	1 Pair	to match with the pair of Flex Cable connector on DLPC096A DMD PCB. See connectors J13 and J14 of RD2 (page 14, 15).
4	JTAG Port	Yes required	
5	Oscillator	50MHz	Part No: ASVMPC-50.000MHZ-LR-T, Package = OSC4PIN
6	Application clock frequency	400 MHz (Max, Nominal), Minimum 395 MHz.	
7	This board will be used to interface with DMD module & UIC FPGA Card.		
8	FPGA and PROM should be reprogrammable, so that we can change the program as the project progress.		
9	Power source	5V DC	Board should be operated by 5V DC external power supply and LDOs suitable for different IC should be used on this board.
10	Test criteria	Board should come with basic functionality test firmware developed by Contractor.	Application firmware will be developed by IIA.
11	Component grade required	Commercial grade.	
12	Total I/Os	TBD	
	Test points	Test points are to be provided for all LDO outputs, Clocks, and other test points as per RD1, RD5.	
	Indicators	LEDS, Programming done.	
13	Mounting holes	Required. Preferable on corners.	
14	DIMENSIONS (LxB)	< 150x150 mm (approximate)	
15	Documents	BOM, Schematics, Gerber, other related documents.	
16	Codes	Basic test firmware bit file with Verilog/VHDL codes, UDF, etc.	

Features:		
1	This board will be used to interface with UIC FPGA Card & DMD module.	
2	FPGA and PROM should be reprogrammable, so that we can change the program as the project progress.	PROM to be installed on removable IC Socket.

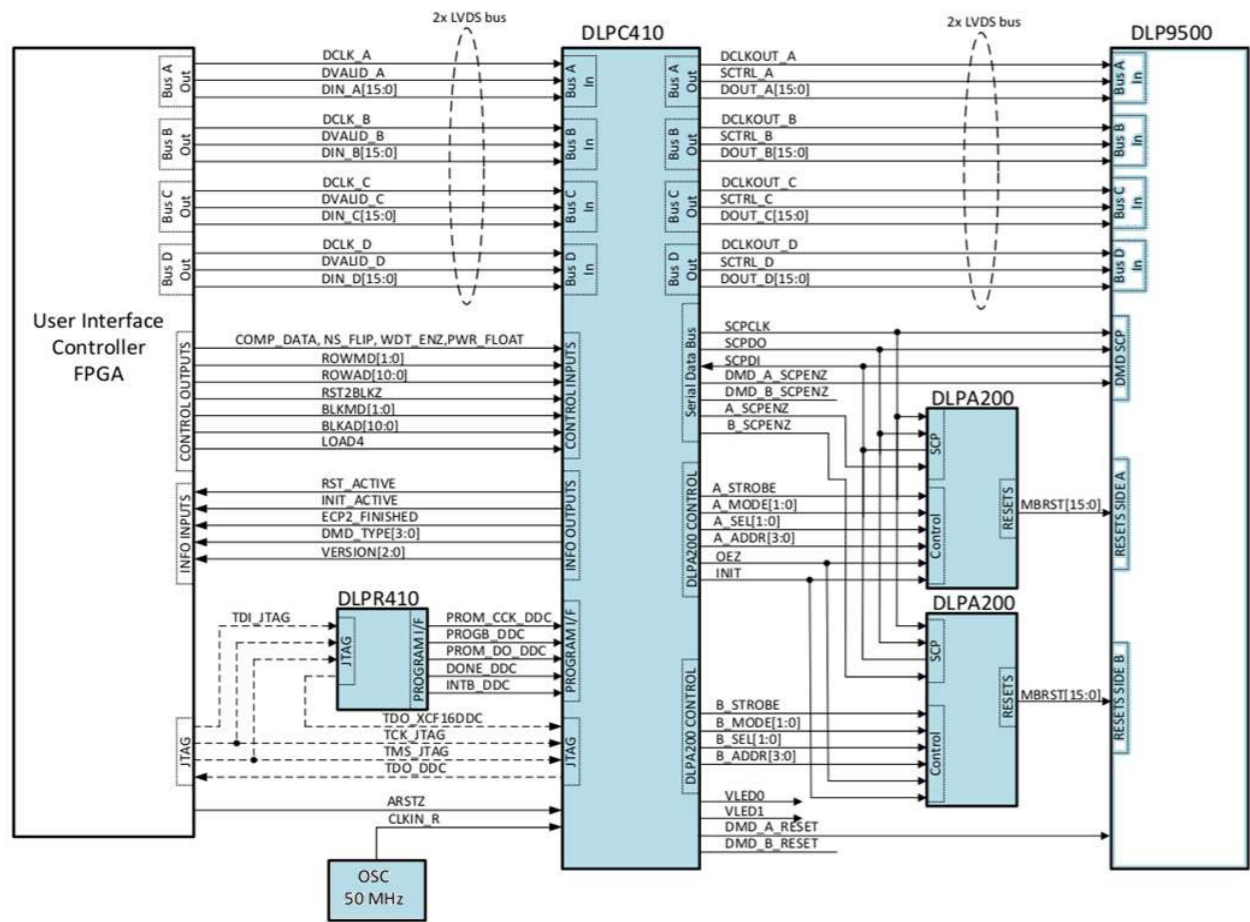


Figure: Block Diagram of INSIST DMD Controller. The blocks indicated in Blue colour are to be included on this Chipset board.