

Full HD HMD

SpatialLight

Output Signal of Games & Desktop PC's

Sony, MS support 1080P with HDMI cable. Nintendo can not support 1080P.

Sony PS3



Screen size: 480i, 480p, 720p, 1080i, **1080p**
HDMI: **HDMI out x 2**
Analog: AV MULTI OUT x 1
Digital audio: DIGITAL OUT (OPTICAL) x 1

MS XBOX



MIDI/DLS2 Support	Yes
HDTV Support	Yes
HDTV Game Support	Yes
Maximum resolution	1920 x 1080

Nintendo

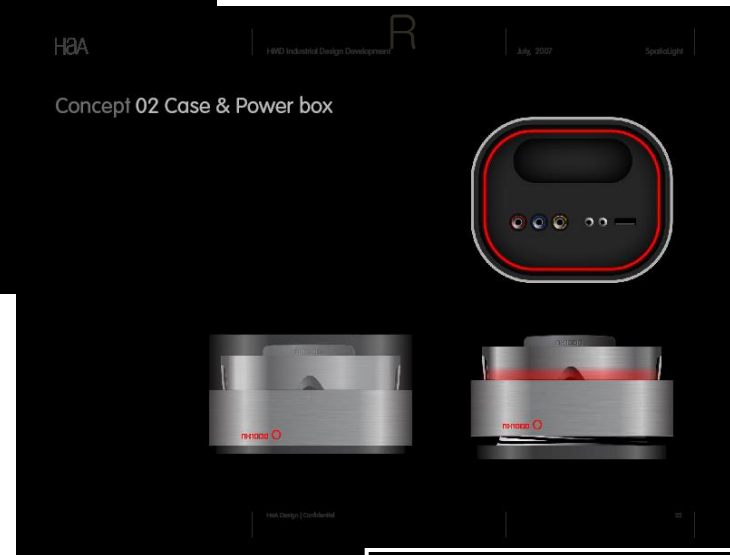


Screen size: 480i, 480p

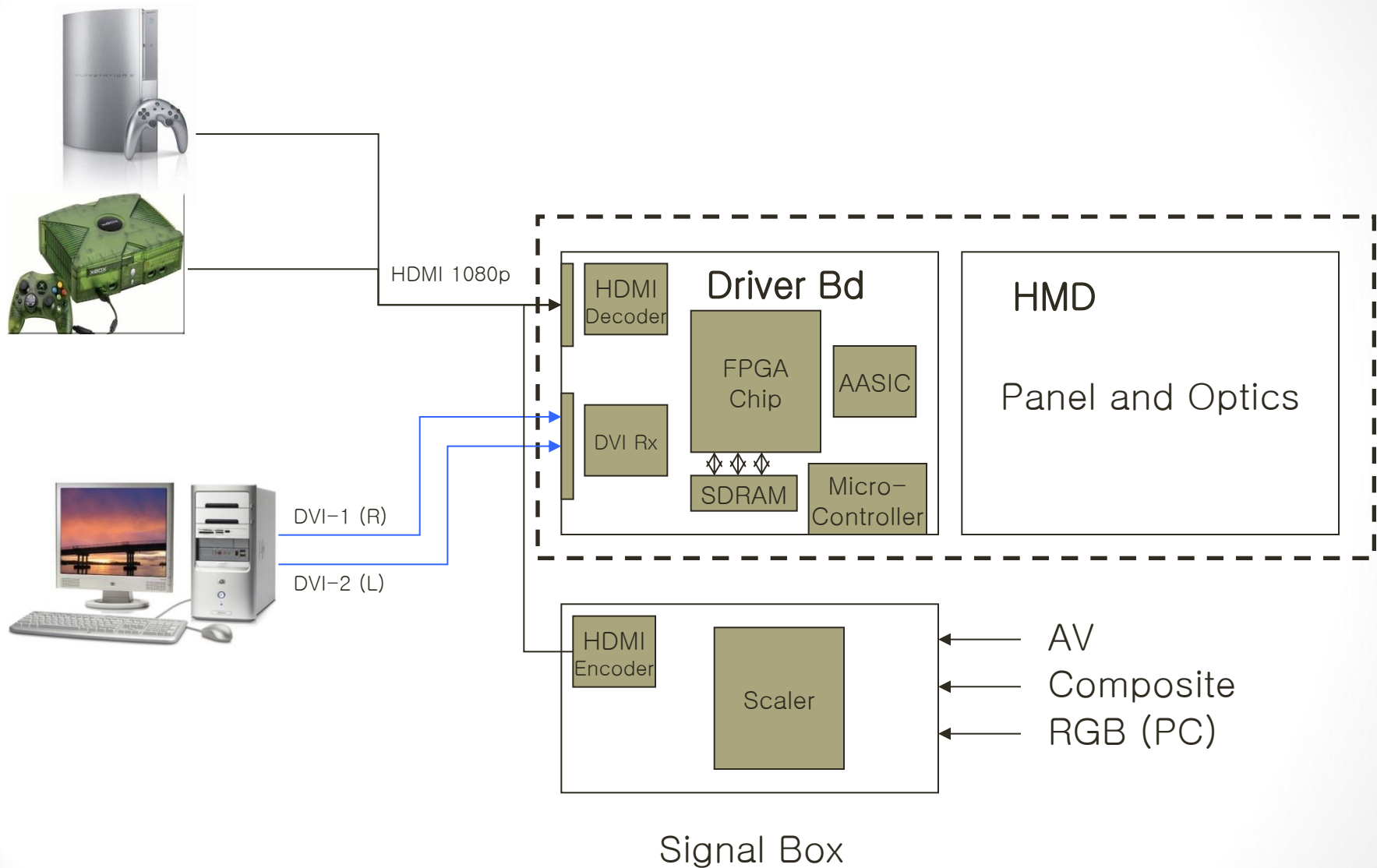


Some graphic cards for desktop PC's (e.g. Nvidia GeForce 6800) have 2x DVI 3D-Output.

HMD Concept



System Block Diagram



MD : Micro Display

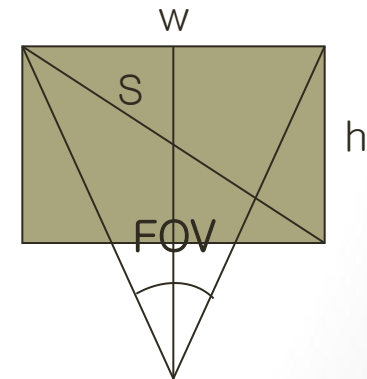
Specifications for New LCoS Product Line-Up	T3S 0.74" Low-Power 1-Panel Application	T6S 0.33" 1-Panel Micro-Projector
Display Size	1080P	SVGA
Pixels	2048 x 1120	800 x 600
Active area W x H (mm)	16.3 x 9.2	6.8 x 5.1
Active area diagonal (mm)	18.7	8.5
Pixel Dimension		
Pixel mirror dimension	8.5 x 8.5	8.5 x 8.5
Interpixel spacing	0.35	0.35
Fill factor %	91.9%	91.9%
Contrast (F/2.8) using PBS Optics	>1000:1	1000:1
Liquid Crystal Alignment	VAN	VAN
Native Reflectivity	>90%	>90%
Display throughput	>65%	>65%
Addressable Dynamic Range	10 bit	10 bit
Response Time @ 45°C	<2 ms	<2 ms
Refresh Rate (frames/sec.-color)	60	60 to 240 max
Operating Temperature	10°C - 75°C	10°C - 75°C
Nominal (preferred)	45°C	45°C
Display Design Base	5 volt CMOS	5 volt CMOS
Frame Rate	180 fps (60 fps/color)	≥ 180 fps
Flicker	No visible flicker	No visible flicker
Image Retention at Nominal Operating Temperature	No retention after 10 hrs burn-in	No retention after 10 hrs burn-in
Storage Temperature	-20 to 120°C	-20 to 120°C
Device Inputs / Pin Out	40 pins	30 pins
Flex Cable Direction	Landscape	Landscape
Key Benefits	Low-power, low-data rate 1-panel operation	Selectable low or medium power operation mode
Availability	Now	Q1 2008

Optical System Specification

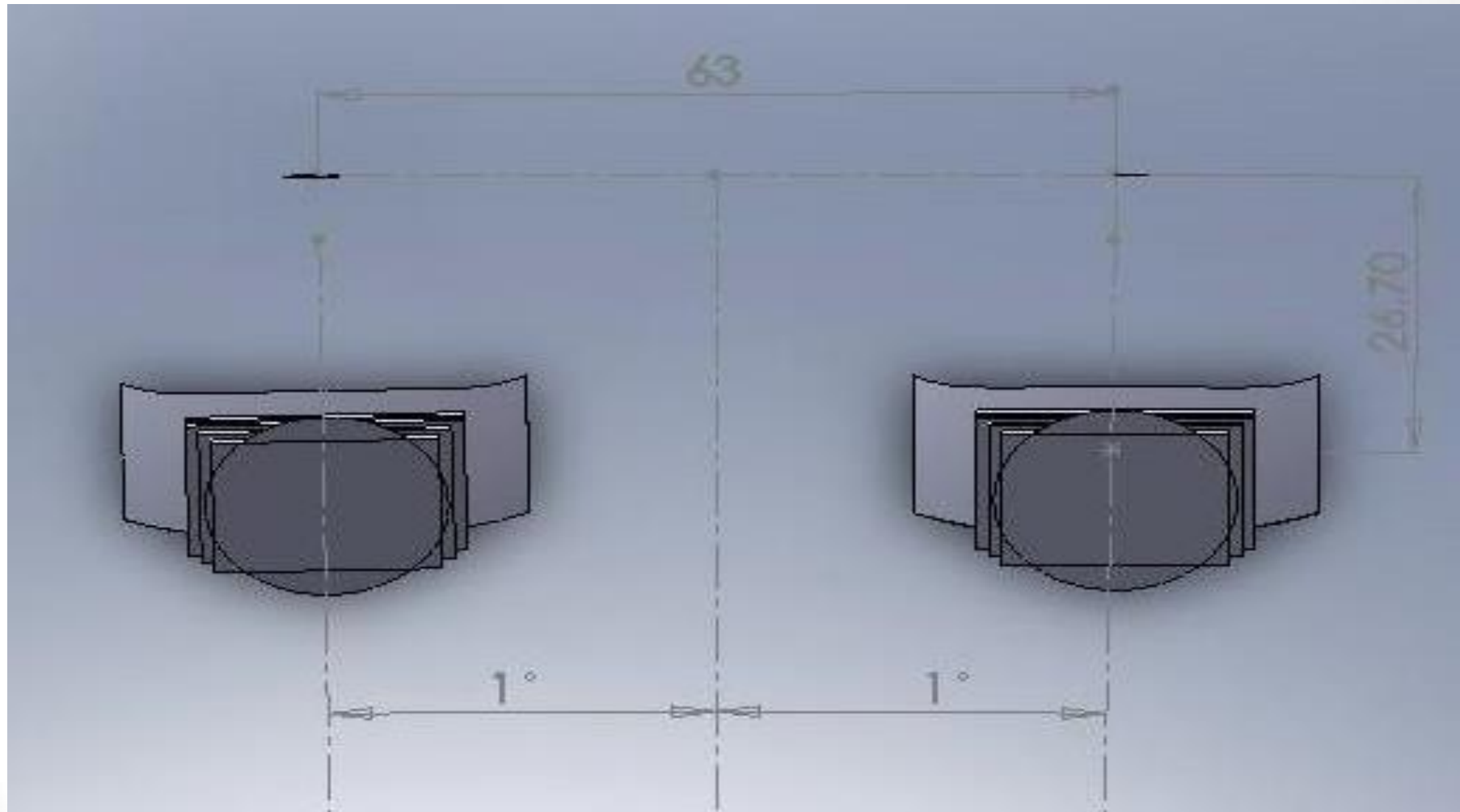
Specification:	HMD
Type	See Through
Resolution	1920 x 1080
Screen Size (S)	80" at 8 ft. (horizontal FOV 45 deg.)
Brightness	300 cd/m2
Pixel Resolution	1 mrad (~0.05 deg.)
Contrast	NA
Weight	Less than 6 oz./170g (4 oz./110g target)
Dimension	Less than 8 mm thick (<5mm target)
Video Input	HDMI, Dual DVI
Display Panel	0.74" LCoS
3D	Option via Dual DVI PC input
Audio Out	Under 1W (?)

- Typical laptop FOV @ 1280 x 800 (13.3" screen): 30 deg.
- Equivalent @ 1920 x 1080 (~equivalent to 20" monitor): 43 deg.

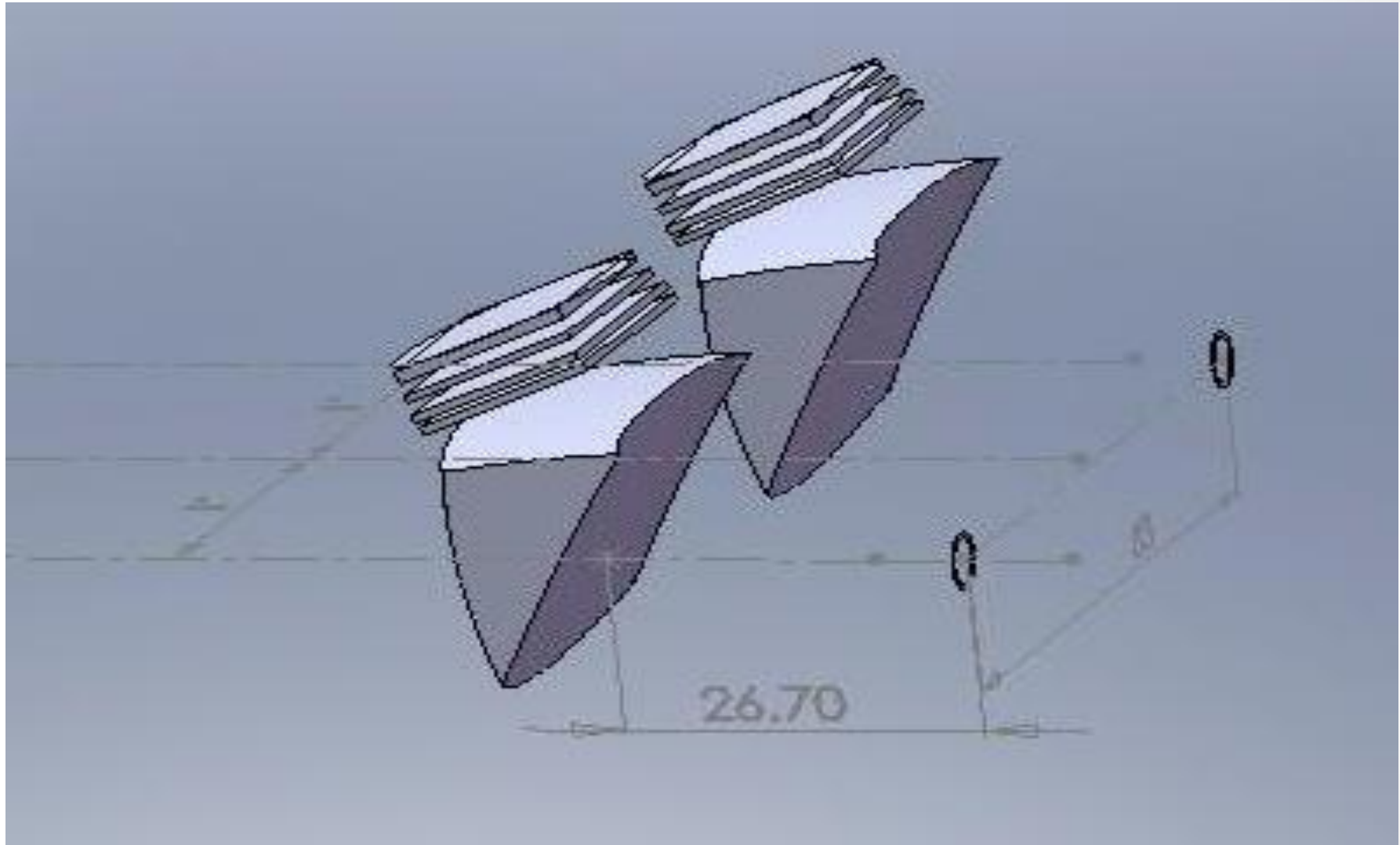
FOV (deg.)	d (ft.)	w (in.)	S 16:9 (in.)	S 4:3 (in.)
22	8	36	42	46
27.5	8	45	52	57
30	8	49	56	61
45	8	72	82	90
60	8	93	106	116



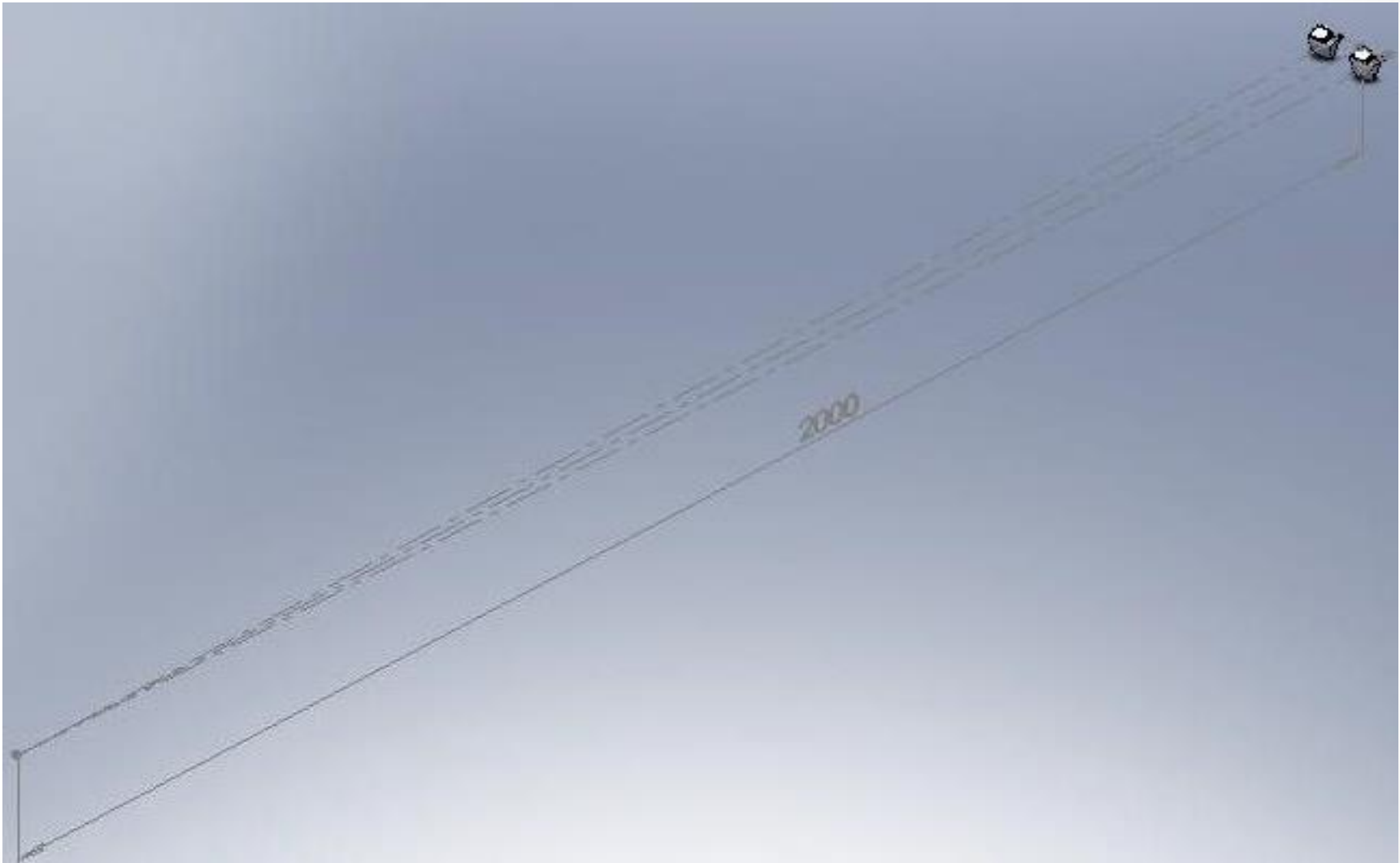
Optics Lay-out



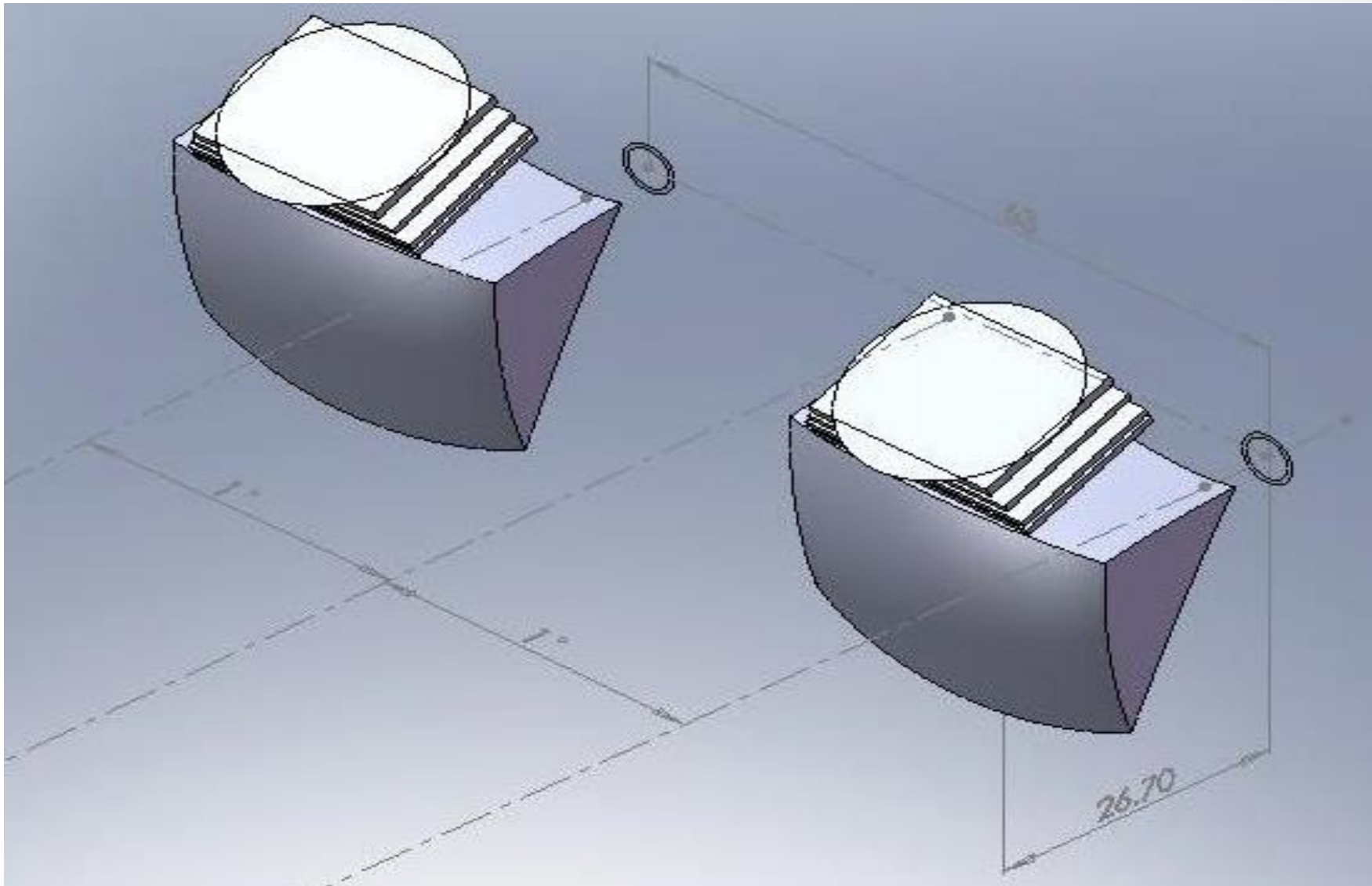
Optics Lay-out



Optics Lay-out

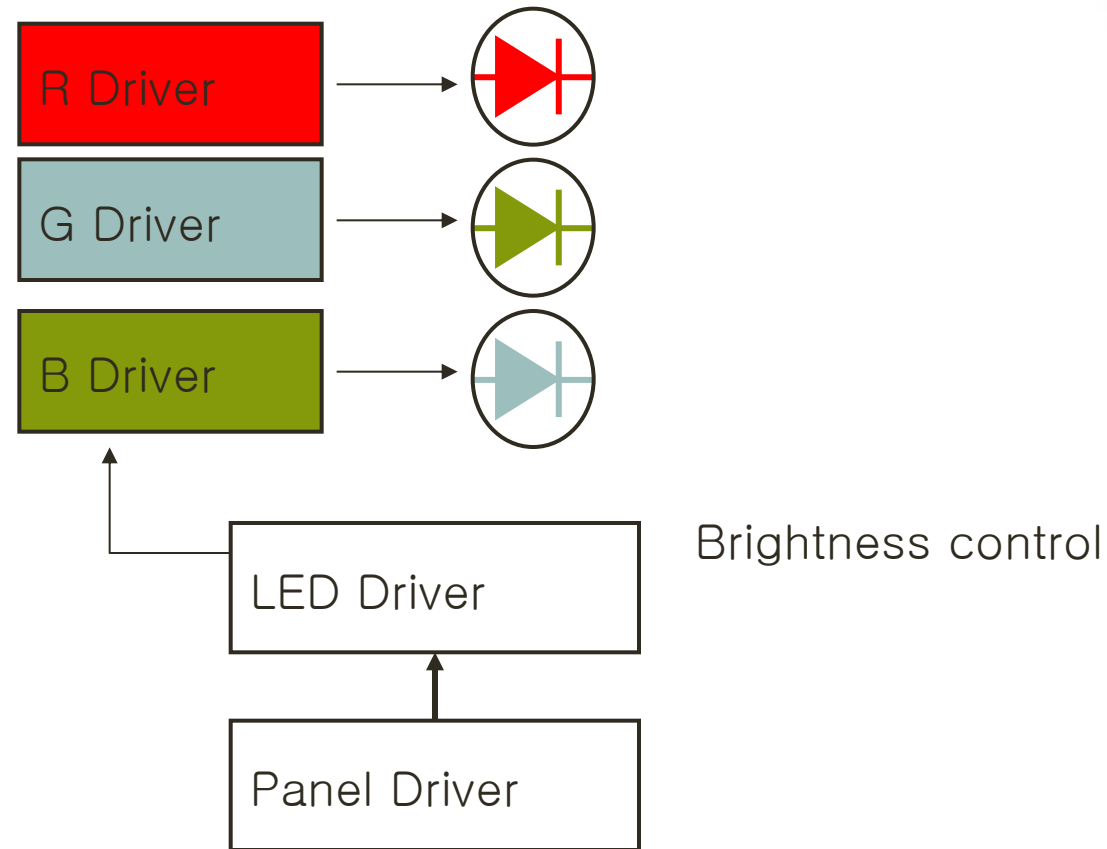


Optics Lay-out

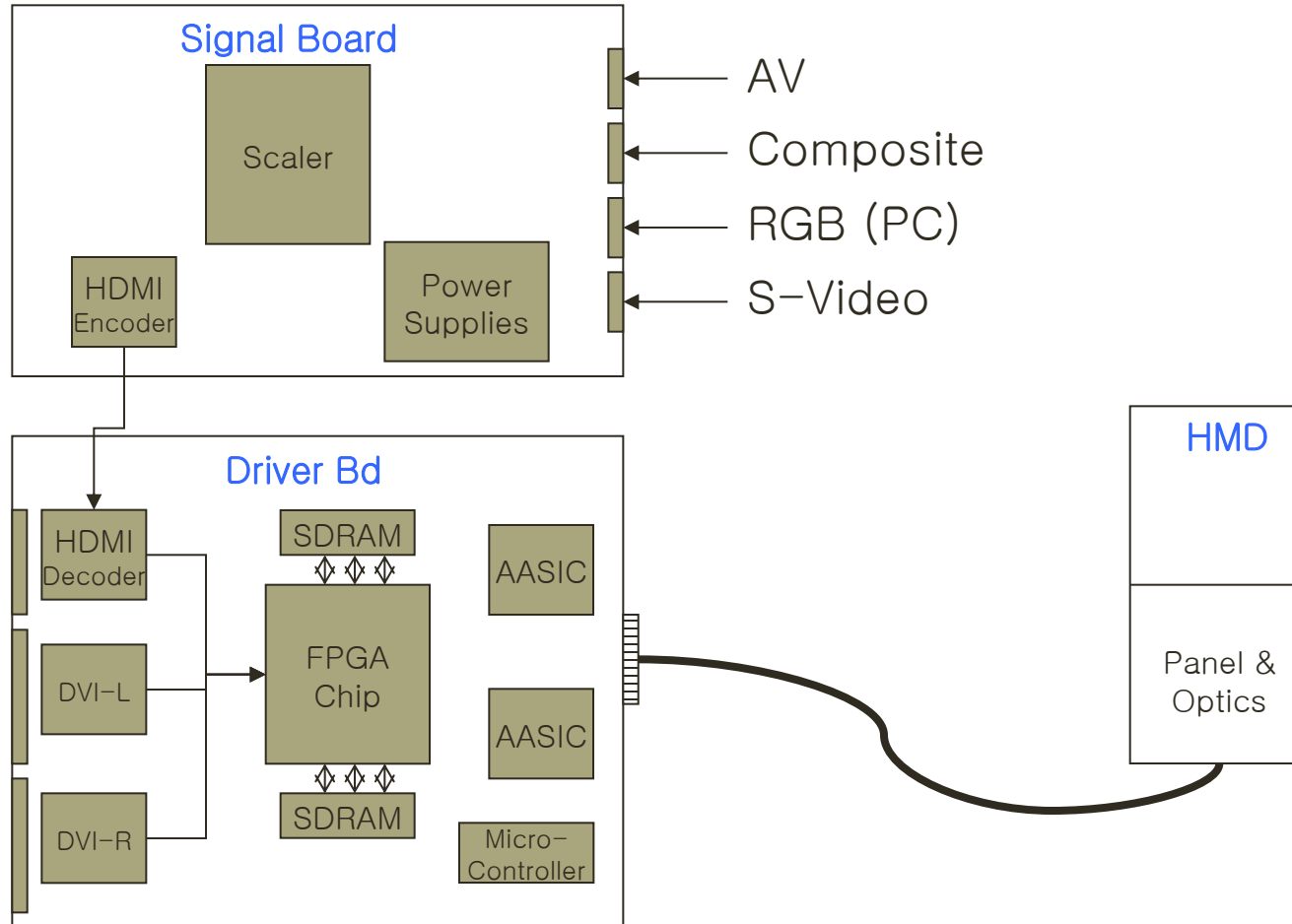


Spec for each Board

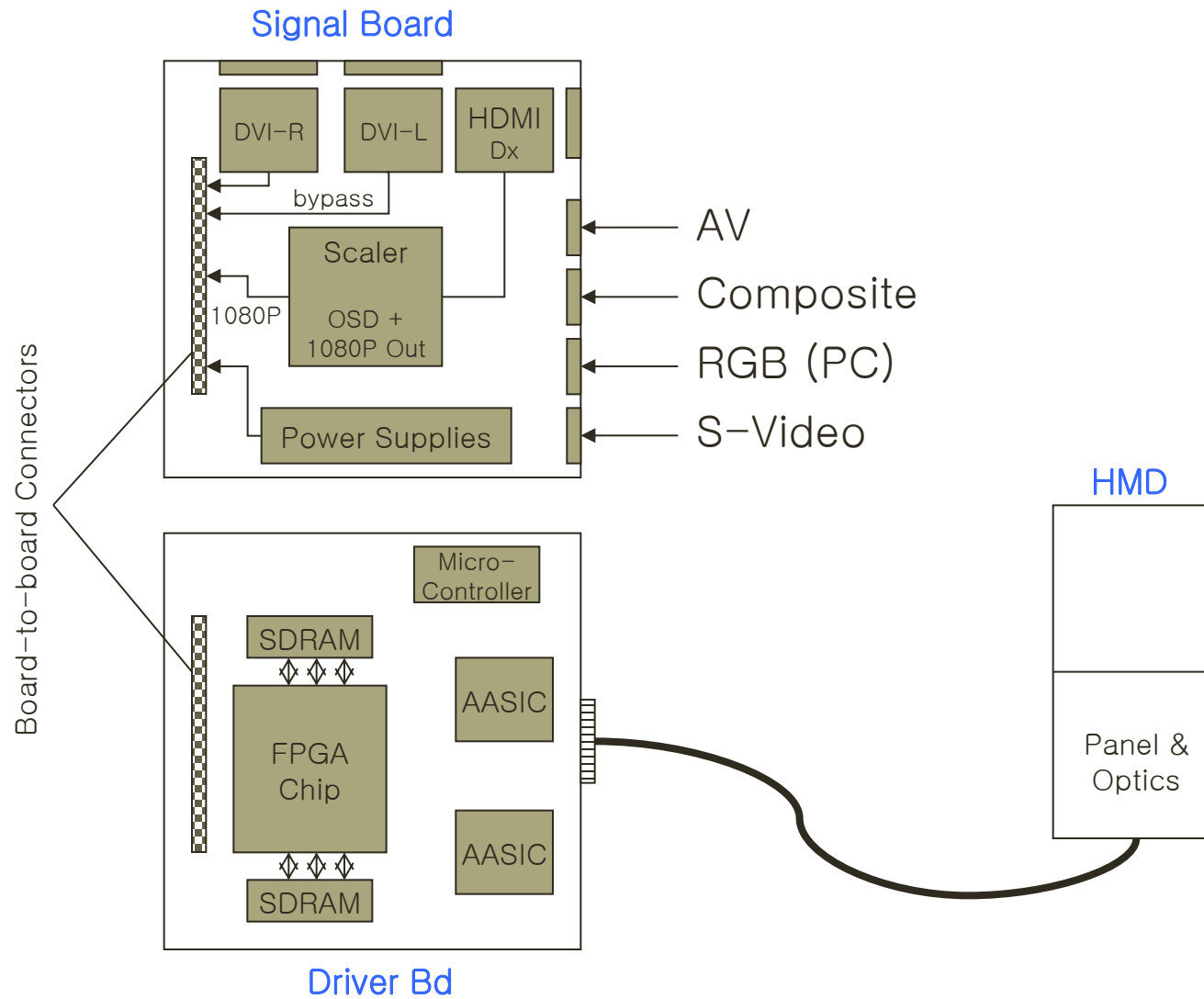
LED Board



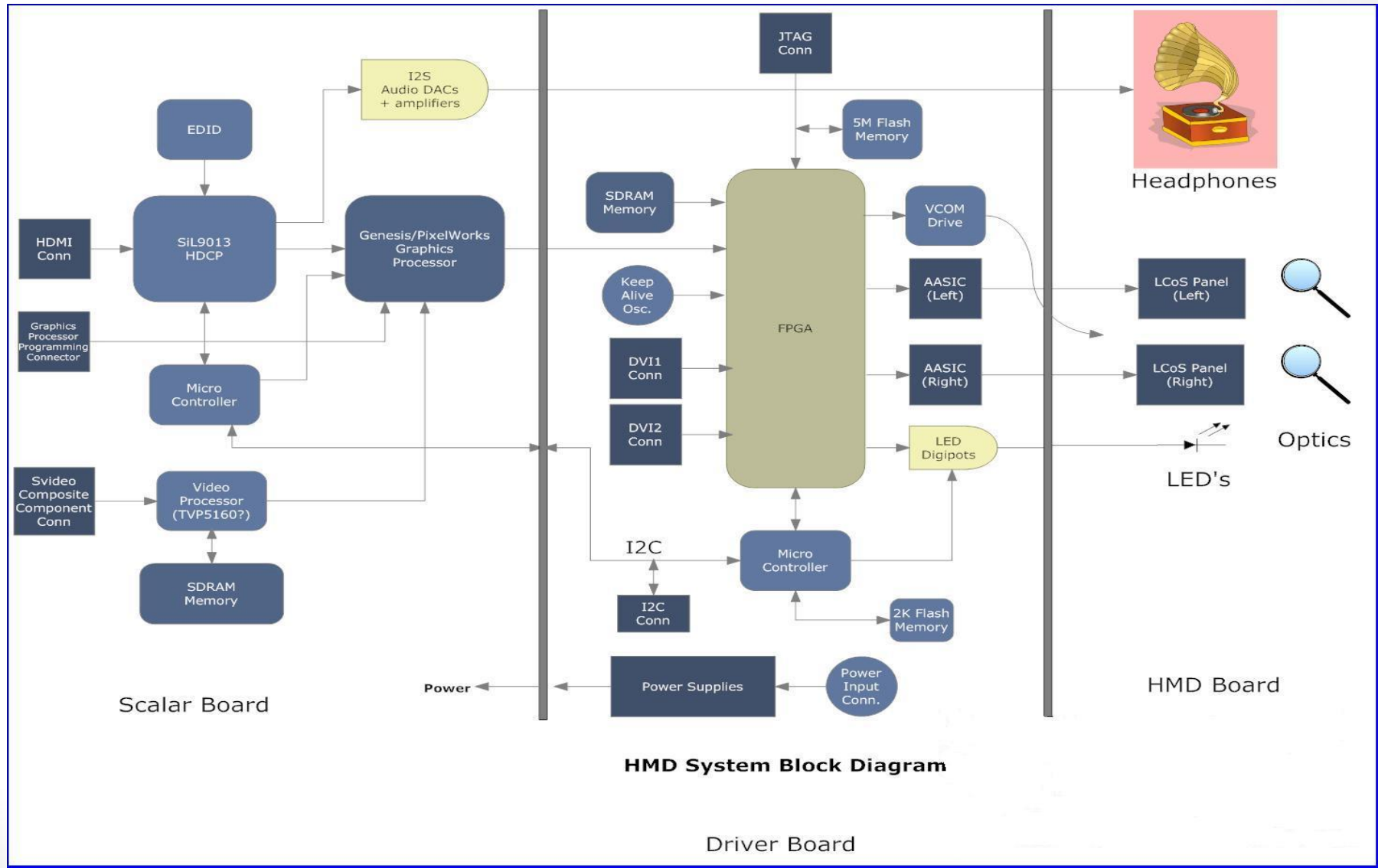
New driver / scaler board concept 1



New driver / scaler board concept 2



HMD System Block Diagram

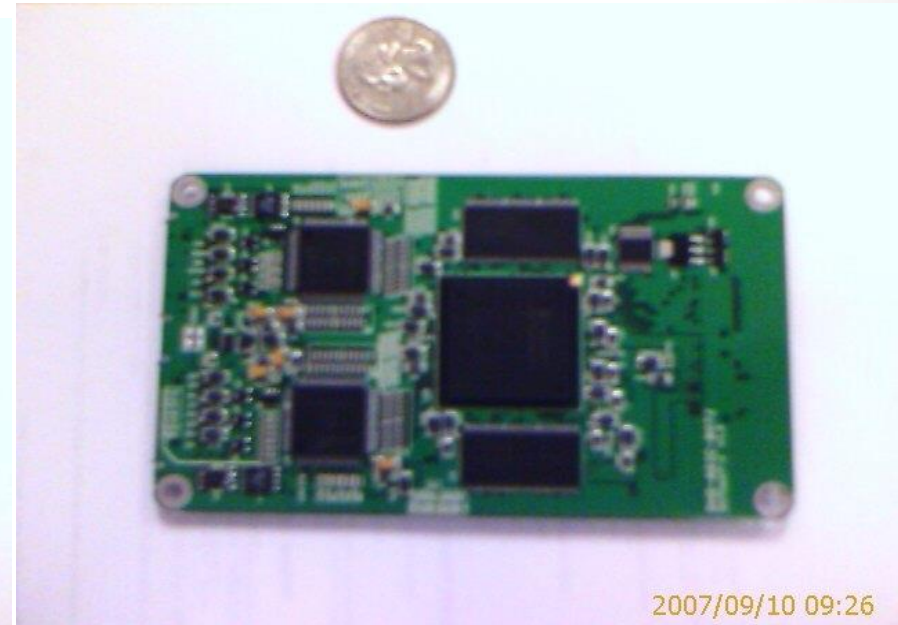


HMD Scaler and Drive Boards

Scaler Board-Genesis Based



Drive Board-SL ASICS + FPGA



Connected Board Set
Side View

Thank you!