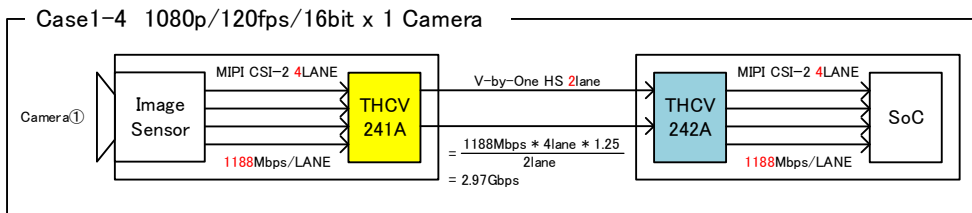
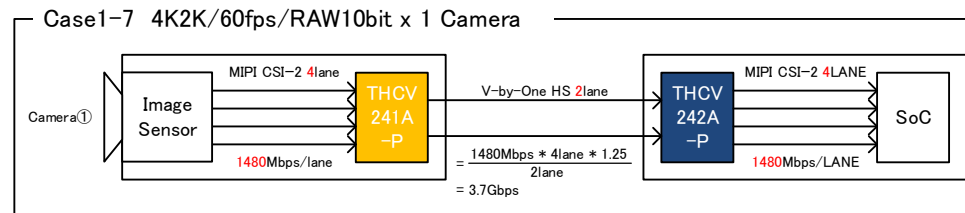
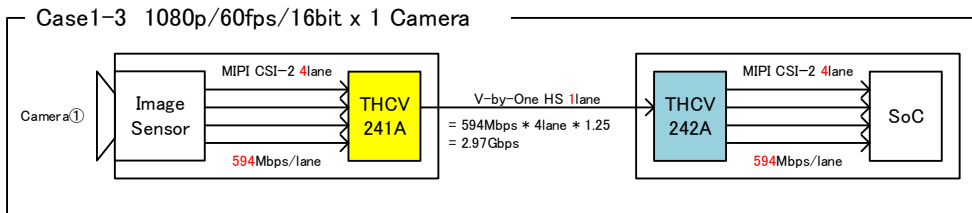
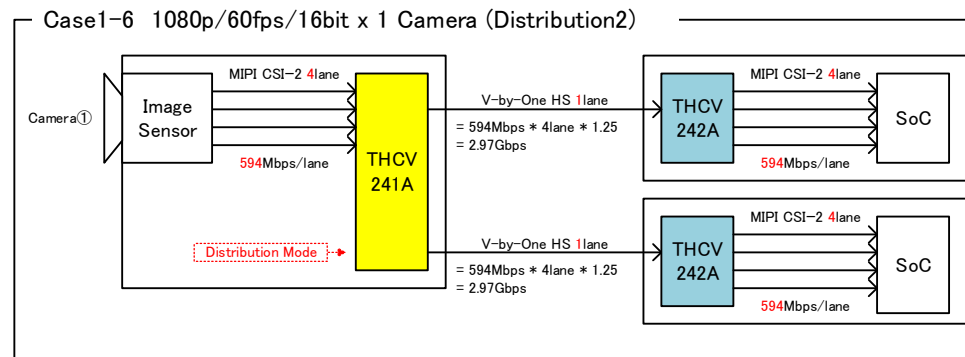
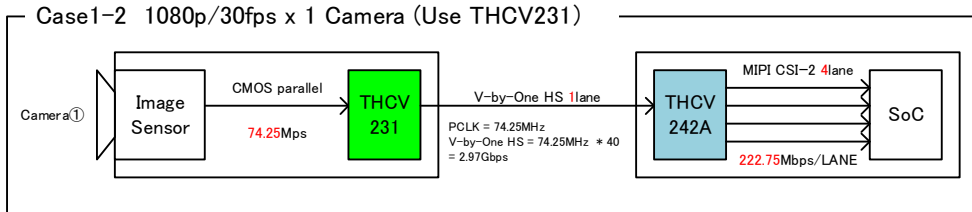
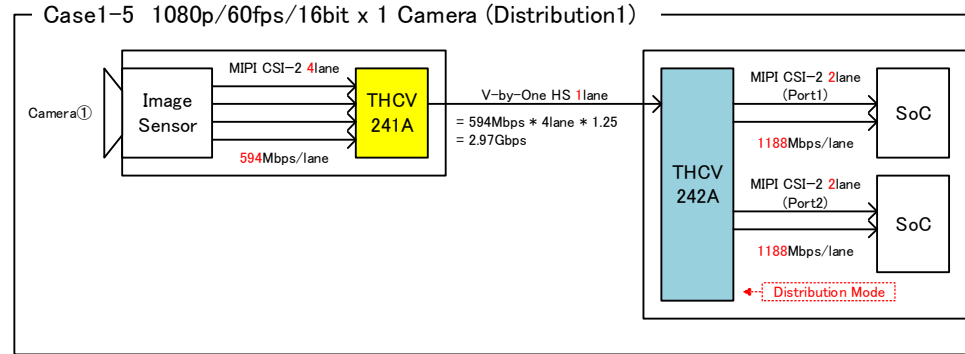
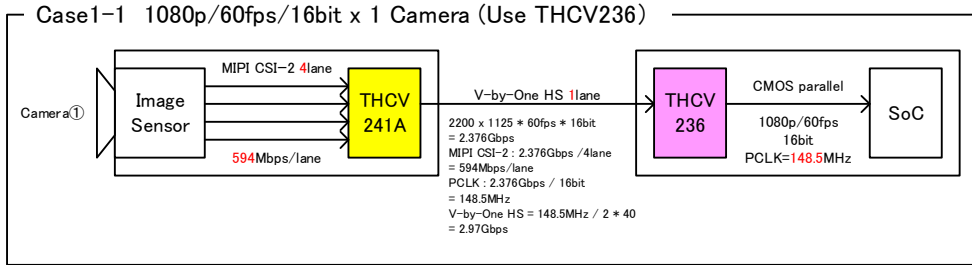


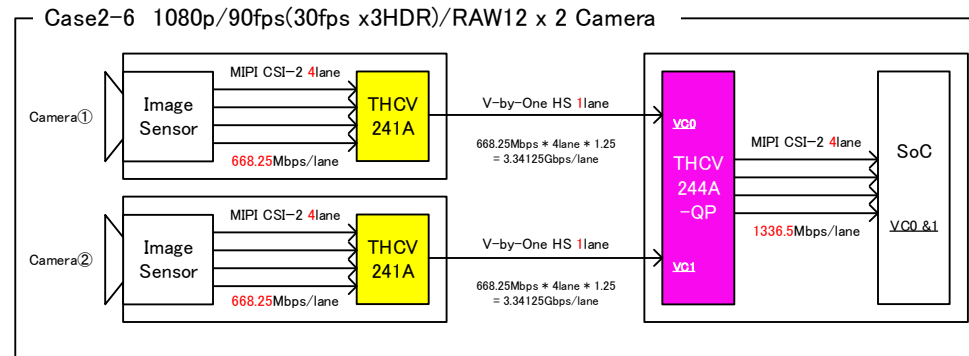
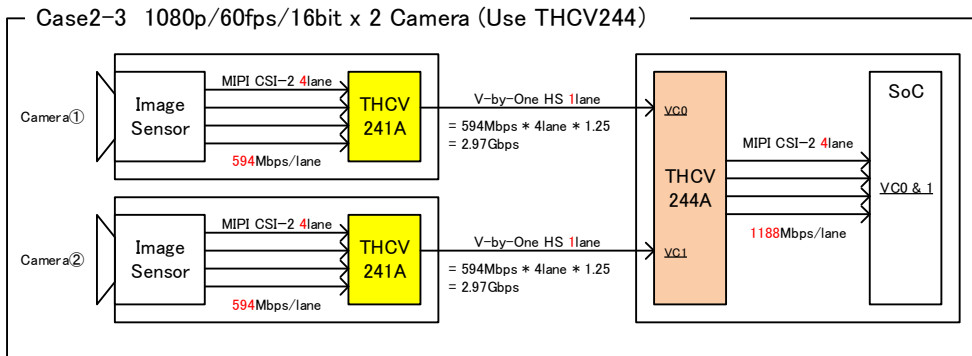
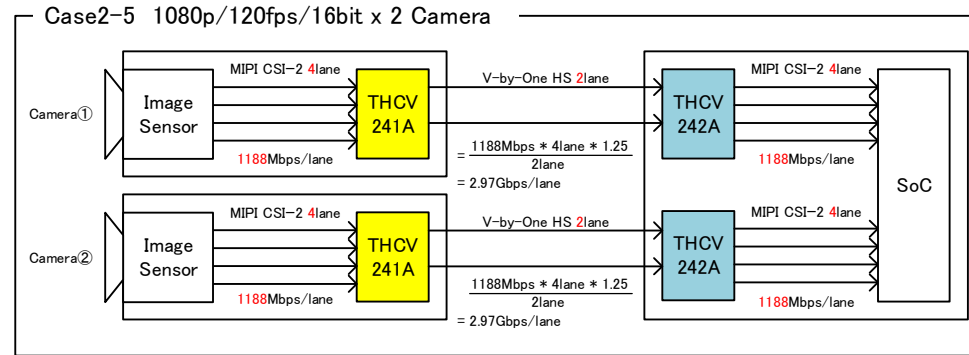
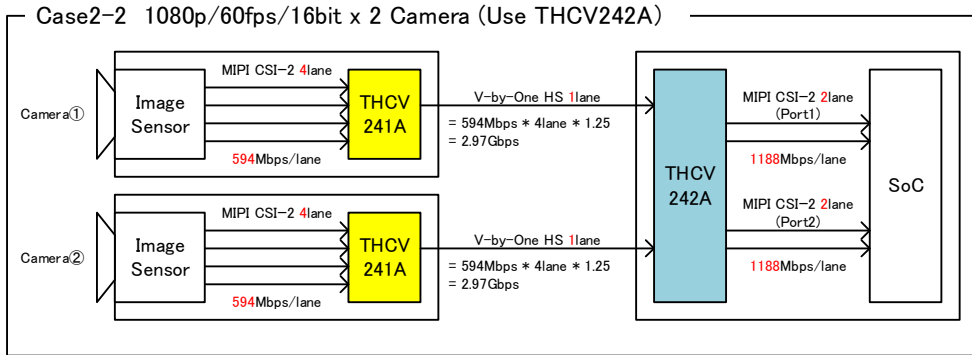
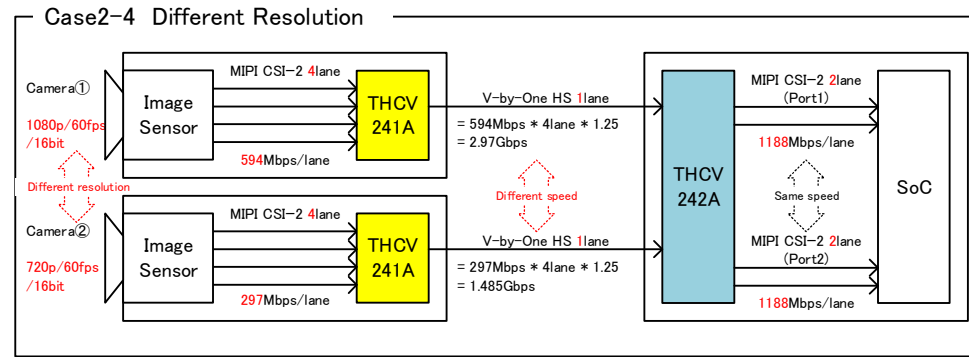
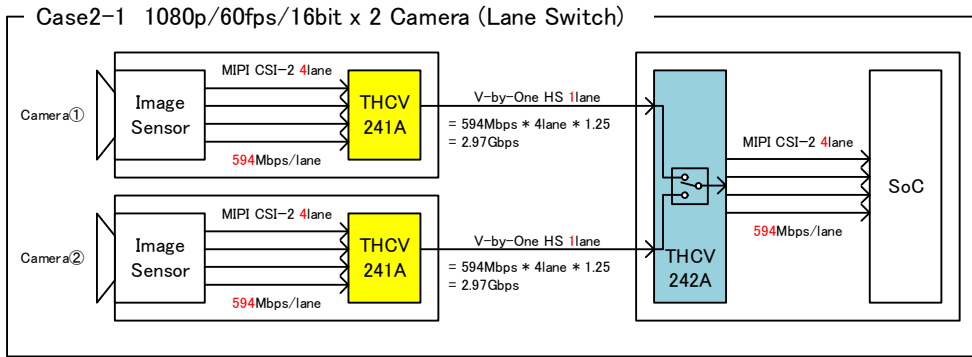
# MIPI CSI-2 Products Example of Main-Link Usage



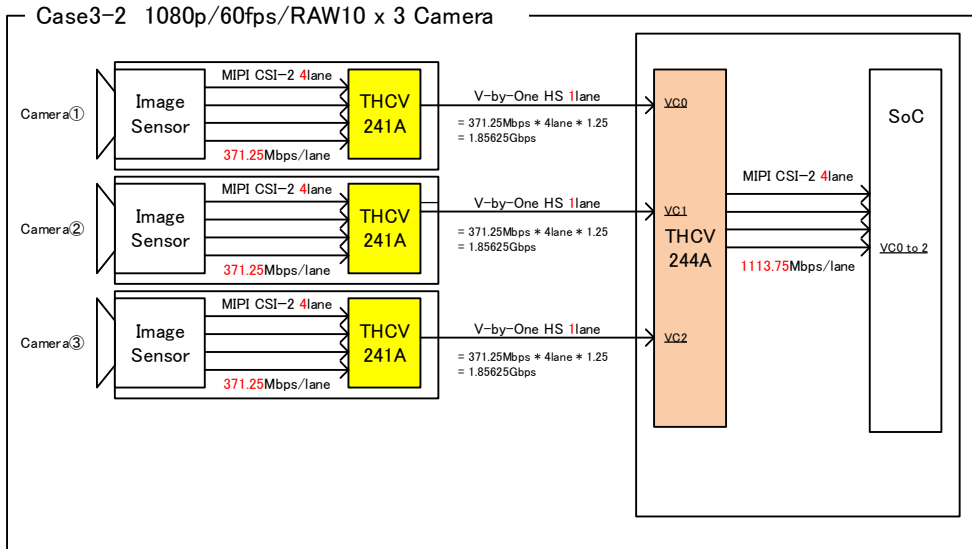
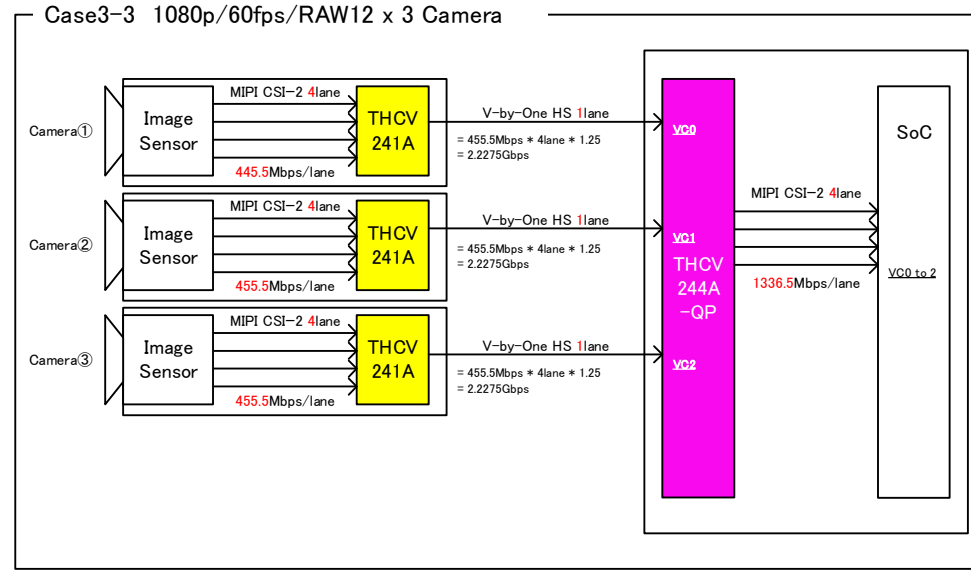
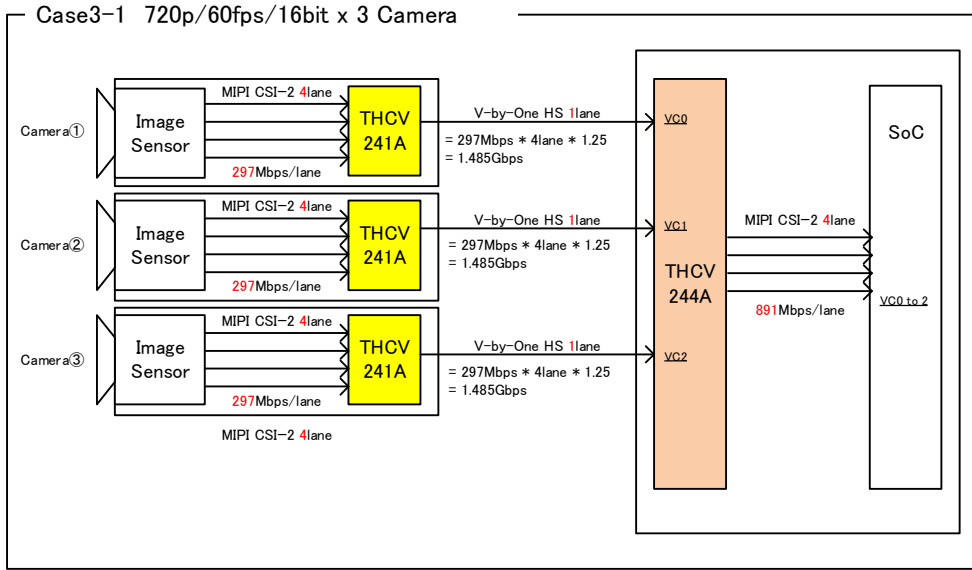
# 1-Camera



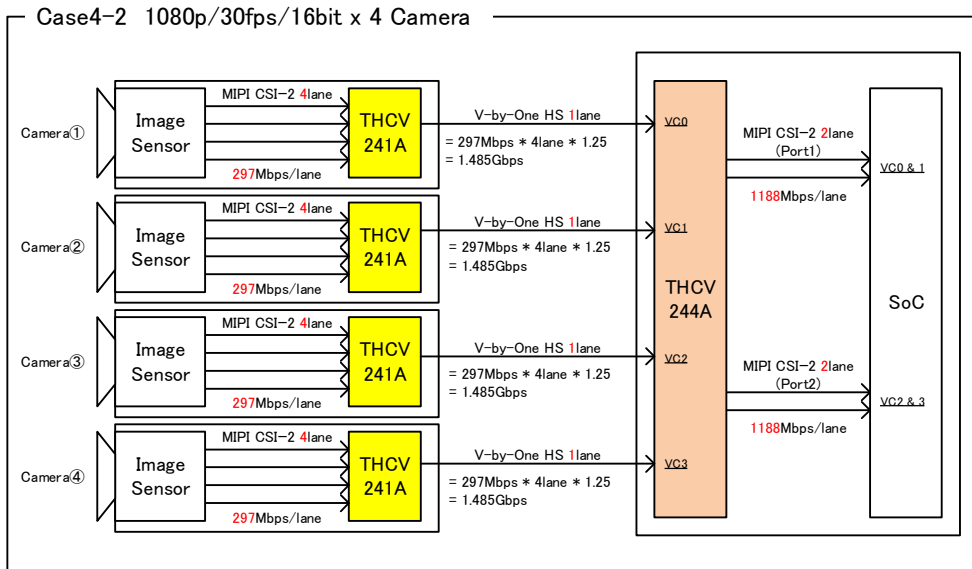
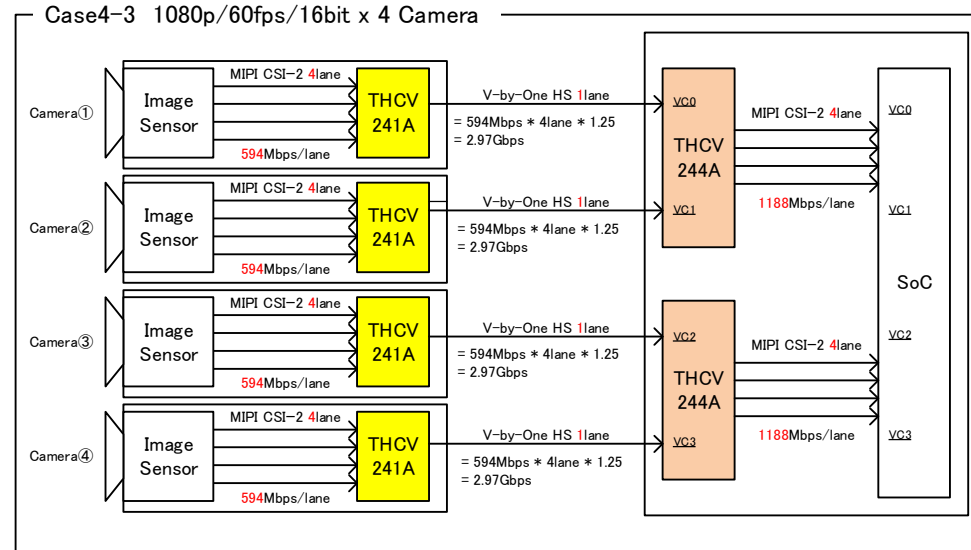
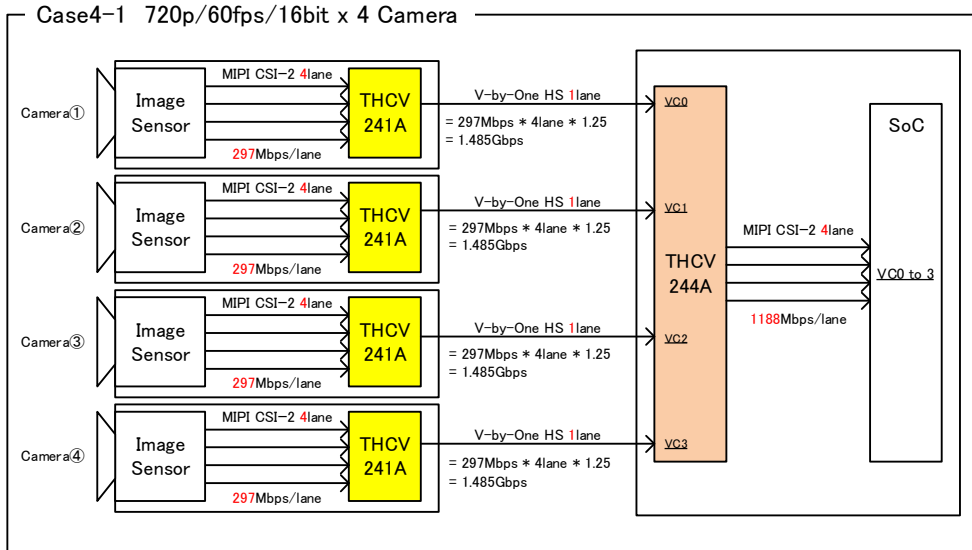
# 2-Camera



# 3-Camera



# 4-Camera



# THCV241A(-P)/THCV242A(-P)

Resolution	H-Total	V-Total	Frame Rate [fps]	Data Bit [bit]	MIPI CSI-2 Data Rate [Mbps] *1 (Range : 80Mbps to 1200Mbps)			V-by-One® HS Data Rate [Gbps] *2 (Range : 0.400Gbps to 4.0Gbps)		Comment
					1 lane	2 lane	4 lane	1 lane	2 lane	
HD 1280x720 (720p)	1650	750	30	10	371.250	185.625	92.813	0.464063	0.23203	*3
				12	445.500	222.750	111.375	0.556875	0.27844	
				16	594.000	297.000	148.500	0.742500	0.37125	
				20	742.500	371.250	185.625	0.928125	0.46406	
				24	891.000	445.500	222.750	1.113750	0.55688	
			60	8	594.000	297.000	148.500	0.742500	0.37125	*3
				10	742.500	371.250	185.625	0.928125	0.46406	
				12	891.000	445.500	222.750	1.113750	0.55688	
				16	1188.000	594.000	297.000	1.485000	0.74250	
				20	1485.000	742.500	371.250	1.856250	0.92813	
			120	24	1782.000	891.000	445.500	2.227500	1.11375	
				8	1188.000	594.000	297.000	1.485000	0.74250	
				10	1485.000	742.500	371.250	1.856250	0.92813	
				12	1782.000	891.000	445.500	2.227500	1.11375	
				16	2376.000	1188.000	594.000	2.970000	1.48500	
				20	2970.000	1485.000	742.500	3.712500	1.85625	
FHD 1920x1080 (1080p)	2200	1125	30	8	594.000	297.000	148.500	0.742500	0.37125	*3
				10	742.500	371.250	185.625	0.928125	0.46406	
				12	891.000	445.500	222.750	1.113750	0.55688	
				16	1188.000	594.000	297.000	1.485000	0.74250	
				20	1485.000	742.500	371.250	1.856250	0.92813	
			60	24	1782.000	891.000	445.500	2.227500	1.11375	
				8	1188.000	594.000	297.000	1.485000	0.74250	
				10	1485.000	742.500	371.250	1.856250	0.92813	
				12	1782.000	891.000	445.500	2.227500	1.11375	
				16	2376.000	1188.000	594.000	2.970000	1.48500	
			120	20	2970.000	1485.000	742.500	3.712500	1.85625	
				24	3564.000	1782.000	891.000	4.455000	2.22750	*4
				8	2376.000	1188.000	594.000	2.970000	1.48500	
				10	2970.000	1485.000	742.500	3.712500	1.85625	
				12	3564.000	1782.000	891.000	4.455000	2.22750	*4
				16	4752.000	2376.000	1188.000	5.940000	2.97000	

\*1 : MIPI CSI-2 Data Rate = H-Total x V-Total x Frame Rate x Data Bit / # of Lanes

\*2 : V-by-One® HS Data Rate = Total MIPI CSI-2 Data Rate x 1.25 / # of Lanes

\*3 : V-by-One® HS can be used in only 1-lane.

\*4 : V-by-One® HS can be used in only 2-lane.

	available
	only -P available
	not available

# THCV241A(-P)/THCV242A(-P)

Resolution	H-Total	V-Total	Frame Rate [fps]	Data Bit [bit]	MIPI CSI-2 Data Rate [Mbps] *1 (Range : 80Mbps to 1200Mbps)			V-by-One <sup>®</sup> HS Data Rate [Gbps] *2 (Range : 0.400Gbps to 4.0Gbps)		Comment	
					1 lane	2 lane	4 lane	1 lane	2 lane		
WQHD 2560x1440 (1440p) (3.7M)	3300	1500	30	8	1188.000	594.000	297.000	1.485000	0.74250		
				10	1485.000	742.500	371.250	1.856250	0.92813		
				12	1782.000	891.000	445.500	2.227500	1.11375		
				16	2376.000	1188.000	594.000	2.970000	1.48500		
				20	2970.000	1485.000	742.500	3.712500	1.85625		
				24	3564.000	1782.000	891.000	4.455000	2.22750	*4	
			60	8	2376.000	1188.000	594.000	2.970000	1.48500		
				10	2970.000	1485.000	742.500	3.712500	1.85625		
				12	3564.000	1782.000	891.000	4.455000	2.22750	*4	
				16	4752.000	2376.000	1188.000	5.940000	2.97000		
				120	8	4752.000	2376.000	1188.000	5.940000	2.97000	
					10	5940.000	2970.000	1485.000	7.425000	3.71250	*5
UHD 3840x2160 (4K2K)	4400	2250	30	8	2376.000	1188.000	594.000	2.970000	1.48500		
				10	2970.000	1485.000	742.500	3.712500	1.85625		
				12	3564.000	1782.000	891.000	4.455000	2.22750	*4	
			60	16	4752.000	2376.000	1188.000	5.940000	2.97000		
				8	4752.000	2376.000	1188.000	5.940000	2.97000		
				10	5940.000	2970.000	1485.000	7.425000	3.71250	*5	

\*1 : MIPI CSI-2 Data Rate = H-Total x V-Total x Frame Rate x Data Bit / # of Lanes

\*2 : V-by-One<sup>®</sup> HS Data Rate = Total MIPI CSI-2 Data Rate x 1.25 / # of Lanes

\*3 : V-by-One<sup>®</sup> HS can be used in only 1-lane.

\*4 : V-by-One<sup>®</sup> HS can be used in only 2-lane.

\*5 : Only THCV241A-P/242-P support

	available
	only -P available
	not available

# THCV243/THCV242A

Resolution	H-Total	V-Total	Frame Rate [fps]	Data Bit [bit]	MIPI CSI-2 Data Rate [Mbps] *1 (Range : 80Mbps to 1200Mbps)			V-by-One <sup>®</sup> HS Data Rate [Gbps] *2 (Range : 0.400Gbps to 4.0Gbps)	Comment
					1 lane	2 lane	4 lane	1 lane	
HD 1280x720 (720p)	1650	750	30	10	371.250	185.625	92.813	0.464063	
				12	445.500	222.750	111.375	0.556875	
				16	594.000	297.000	148.500	0.742500	
				20	742.500	371.250	185.625	0.928125	
				24	891.000	445.500	222.750	1.113750	
			60	8	594.000	297.000	148.500	0.742500	
				10	742.500	371.250	185.625	0.928125	
				12	891.000	445.500	222.750	1.113750	
				16	1188.000	594.000	297.000	1.485000	
				20	1485.000	742.500	371.250	1.856250	
			120	8	1188.000	594.000	297.000	1.485000	
				10	1485.000	742.500	371.250	1.856250	
				12	1782.000	891.000	445.500	2.227500	
				16	2376.000	1188.000	594.000	2.970000	
				20	2970.000	1485.000	742.500	3.712500	
			FHD 1920x1080 (1080p)	2200	1125	30	8	594.000	297.000
10	742.500	371.250					185.625	0.928125	
12	891.000	445.500					222.750	1.113750	
16	1188.000	594.000					297.000	1.485000	
20	1485.000	742.500					371.250	1.856250	
60	8	1188.000				594.000	297.000	1.485000	
	10	1485.000				742.500	371.250	1.856250	
	12	1782.000				891.000	445.500	2.227500	
	16	2376.000				1188.000	594.000	2.970000	
	20	2970.000				1485.000	742.500	3.712500	
120	8	2376.000				1188.000	594.000	2.970000	
	10	2970.000				1485.000	742.500	3.712500	
	12	3564.000				1782.000	891.000	4.455000	

\*1 : MIPI CSI-2 Data Rate = H-Total x V-Total x Frame Rate x Data Bit / # of Lanes

\*2 : V-by-One<sup>®</sup> HS Data Rate = Total MIPI CSI-2 Data Rate x 1.25

	available
	not available



# THCV243/THCV242A

Resolution	H-Total	V-Total	Frame Rate [fps]	Data Bit [bit]	MIPI CSI-2 Data Rate [Mbps] *1 (Range : 80Mbps to 1200Mbps)			V-by-One <sup>®</sup> HS Data Rate [Gbps] *2 (Range : 0.400Gbps to 4.0Gbps)	Comment
					1 lane	2 lane	4 lane	1 lane	
WQHD 2560x1440 (1440p) (3.7M)	3300	1500	30	8	1188.000	594.000	297.000	1.485000	
				10	1485.000	742.500	371.250	1.856250	
				12	1782.000	891.000	445.500	2.227500	
				16	2376.000	1188.000	594.000	2.970000	
				20	2970.000	1485.000	742.500	3.712500	
			60	8	2376.000	1188.000	594.000	2.970000	
				10	2970.000	1485.000	742.500	3.712500	
4K2K 3840x2160	4400	2250	30	8	2376.000	1188.000	594.000	2.970000	
				10	2970.000	1485.000	742.500	3.712500	

\*1 : MIPI CSI-2 Data Rate = H-Total x V-Total x Frame Rate x Data Bit / # of Lanes

\*2 : V-by-One<sup>®</sup> HS Data Rate = Total MIPI CSI-2 Data Rate x 1.25

	available
	not available

# THCV241A/THCV236

Resolution	H-Total	V-Total	Frame Rate [fps]	Data Bit [bit]	MIPI CSI-2 Data Rate [Mbps] *1 (Range : 80Mbps to 1200Mbps)			Multiplied	V-by-One® HS Data Rate [Gbps] (Range : 0.600Gbps to 4.0Gbps) *3	THCV236 Output PCLK [MHz] (Range : 6MHz to 160MHz) *2	Comment
					1 lane	2 lane	4 lane				
HD 1280x720 (720p)	1650	750	30	8	297.000	148.500	74.250	x20	0.7425	37.125	
				10	371.250	185.625	92.813				
				12	445.500	222.750	111.375				
				16	594.000	297.000	148.500				
				20	742.500	371.250	185.625	x30			
				24	891.000	445.500	222.750				
			60	8	594.000	297.000	148.500	x20	1.4850	74.250	
				10	742.500	371.250	185.625				
				12	891.000	445.500	222.750				
				16	1188.000	594.000	297.000				
				20	1485.000	742.500	371.250	x30			
				24	1782.000	891.000	445.500				
			120	8	1188.000	594.000	297.000	x20	2.9700	148.500	
				10	1485.000	742.500	371.250				
				12	1782.000	891.000	445.500				
				16	2376.000	1188.000	594.000				
FHD 1920x1080 (1080p)	2200	1125	30	8	594.000	297.000	148.500	x20	1.4850	74.250	
				10	742.500	371.250	185.625				
				12	891.000	445.500	222.750				
				16	1188.000	594.000	297.000				
				20	1485.000	742.500	371.250	x30			
			24	1782.000	891.000	445.500					
			60	8	1188.000	594.000	297.000	x20	2.9700	148.500	
				10	1485.000	742.500	371.250				
				12	1782.000	891.000	445.500				
				16	2376.000	1188.000	594.000				
20	2970.000	1485.000		742.500							
WQHD 2560x1440 (1440p) (3.7M)	3300	1500	30	8	1188.000	594.000	297.000	x20	2.9700	148.500	
				10	1485.000	742.500	371.250				
				12	1782.000	891.000	445.500				
				16	2376.000	1188.000	594.000				

\*1 : MIPI CSI-2 Data Rate = H-Total x V-Total x Frame Rate x Data Bit / # of Lanes

\*2 : PCLK = H-Total x V-total x Frame Rate

\*3 : V-by-One®HS Data Rate = PCLK x Multiplied

	available
	not available

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