





SerDes transmitter and receiver evaluation board

#### 1. General Discription

THCV215/216-8LANE Evaluation Kits are designed to evaluete THCV215 and THCV216 for transmission of video data.

Each has four THCV215's or four THCV216's.

This kits can transmit video data of "Full-HD / 240 Hz / 30 bit" and "4Kx2K / 60 Hz / 30 bit". The supply voltage range are "3.0V to 3.6V" or "5.0V to 12.0V".

#### 2. Block Diagram

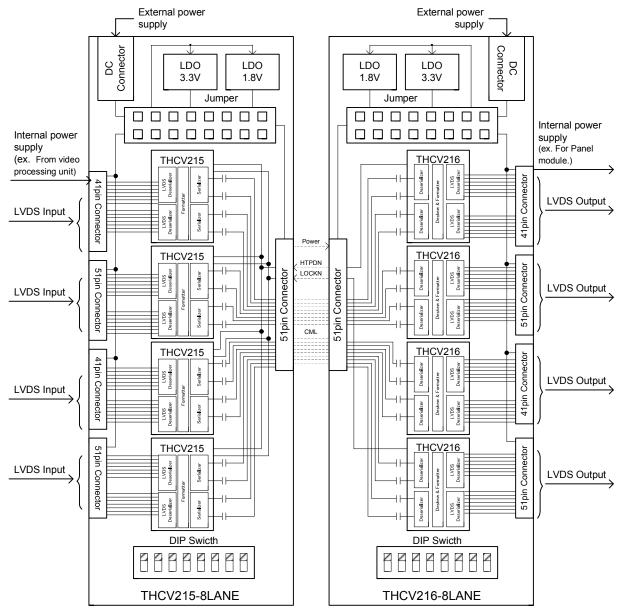


Figure 2-1. Block Diagram





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#### 3. Connector

This chapter shows the connector to connect the THCV215 and THCV216.

Table 3-1. Pin assignments of LVDS connector (41 pin )

( 41 pin )						
THCV215 CN101 & CN301		Descriptions	THCV216 CN102 & CN104			
Pin No.	Symbol		Symbol	Pin No.		
1 2 3 4	Vcc	Supply voltage from video processing unit, And for Panel module (Internal Supply)	Vcc	41 40 39 38		
5	No		NO.	37		
6 7	NC	Non Connected	NC	36 35		
8 9	GND	Ground	GND	34 33		
10	TLA0-		RLA0-	32		
11	TLA0+		RLA0+	31		
12	TLB0-	LVDS data	RLB0-	30		
13	TLB0+	input/output	RLB0+	29		
14	TLC0-		RLC0-	28		
15	TLC0+		RLC0+	27		
16	GND	Ground	GND	26		
17	TLCLK0-	LVDS clock	RLCLK0-	25		
18	TLCLK0+	input/output	RLCLK0+	24		
19	GND	Ground	GND	23		
20	TLD0-		RLD0-	22		
21	TLD0+	LVDS data	RLD0+	21		
22	TLE0-	input/output	RLE0-	20		
23	TLE0+		RLE0+	19		
24	GND	Ground	GND	18		
25	TLA1-		RLA1-	17		
26	TLA1+		RLA1+	16		
27	TLB1-	LVDS data	RLB1-	15		
28	TLB1+	input/output	RLB1+	14		
29	TLC1-		RLC1-	13		
30	TLC1+		RLC1+	12		
31	GND	Ground	GND	11		
32	TLCLK1-	LVDS clock	RLCLK1-	10		
33	TLCLK1+	input/output	RLCLK1+	9		
34	GND	Ground	GND	8		
35	TLD1-		RLD1-	7		
36	TLD1+	LVDS data	RLD1+	6		
37	TLE1-	input/output	RLE1-	5		
38	TLE1+	0	RLE1+	4		
39	GND	Ground	GND	3		
40	NC	Non Connected	NC	2		
41	L			1		

Table 3-2. Pin assignments of LVDS connector (51 pin )

THCV215 CN201 & CN401		Descriptions	THCV216 CN103 & CN105	
Pin No.	Symbol		Symbol	Pin No.
1 2 3 4 5	Vcc	Supply voltage from video processing unit, And for Panel module (Internal Supply)	Vcc	51 50 49 48 47
6	NC	Non Connected	NC	46
7 8 9	GND	Ground	GND	45 44 43
10 11 12	TLA0- TLA0+ TLB0-	LVDS data	RLA0- RLA0+ RLB0-	42 41 40
13 14 15	TLB0+ TLC0- TLC0+	input/output	RLB0+ RLC0- RLC0+	39 38 37
16 17 18	GND TLCLK0- TLCLK0+	Ground LVDS clock input/output	GND RLCLK0- RLCLK0+	36 35 34
19 20 21	GND TLD0- TLD0+	Ground LVDS data	GND RLD0- RLD0+	33 32 31
22 23 24	TLE0- TLE0+ GND	input/output Ground	RLE0- RLE0+ GND	30 29 28
25 26	TLA1- TLA1+		RLA1- RLA1+	27 26
27 28 29	TLB1- TLB1+ TLC1-	LVDS data input/output	RLB1- RLB1+ RLC1-	25 24 23
30 31	TLC1+ GND	Ground LVDS clock	RLC1+ GND	22 21
32 33 34	TLCLK1- TLCLK1+ GND	input/output Ground	RLCLK1- RLCLK1+ GND	20 19 18
35 36 37	TLD1- TLD1+ TLE1-	LVDS data input/output	RLD1- RLD1+ RLE1-	17 16 15
38 39	TLE1+ GND	Ground	RLE1+ GND	14 13
40 41 42 43 44 45 46	NC	Non Connected	NC	12 11 10 9 8 7 6
47 48 49 50 51				5 4 3 2





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### 3. Connector and Cable ( Continued )

Table 3-3. Pin assignments of CML connector (51 pin)

THCV215_CN501		THCV216_Ct		_CN101
Pin No.	Symbol		Symbol	Pin No.
51 50 49				1 2 3
48	Vcc	Supply voltage from THCV215	Vcc	4 5
46 45 44		to THCV216	100	6 7 8
43 42 41				9 10 11
40 39 38	GND	Ground	GND	12 13 14
37 36	HTPDN	Hot plug detect	HTPDN	15 16
35	LOCKN	Lock detect	LOCKN	17
34 33	GND Tx0n	Ground V-by-One® HS	GND Rx0n	18 19
32 31	Tx0p GND	Channel 0 (CML)	Rx0p GND	20 21
30 29	GND Tx1n	Ground V-by-One® HS	GND Rx1n	22 23
28	Tx1p	Channel 1 (CML)	Rx1p	24
27 26	GND GND	Ground	GND GND	25 26
25 24	Tx2n Tx2p	V-by-One® HS Channel 2 (CML)	Rx2n Rx2p	27 28
23 22	GND GND	Ground	GND GND	29 30
21	Tx3n Tx3p	V-by-One® HS Channel 3 (CML)	Rx3n Rx3p	31 32
19	GND	Ground	GND	33 34
18 17	GND Tx4n	V-by-One® HS	GND Rx4n	35
16 15	Tx4p GND	Channel 4 (CML) Ground	Rx4p GND	36 37
14	GND Tx5n	V-by-One® HS	GND Rx5n	38 39
12 11	Tx5p GND GND	Channel 5 (CML) Ground	Rx5p GND GND	40 41 42
9	Tx6n	V-by-One® HS	Rx6n	43
7	Tx6p GND	Channel 6 (CML)  Ground	GND	44 45
6 5	GND Tx7n	V-by-One® HS	GND Rx7n	46 47
3	Tx7p GND	Channel 7 (CML) Ground	Rx7p GND	48 49
2	NC	Non Connected	NC	50 51





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#### 4. Power supply setting

This chapter shows the power supply setting with the jumper.

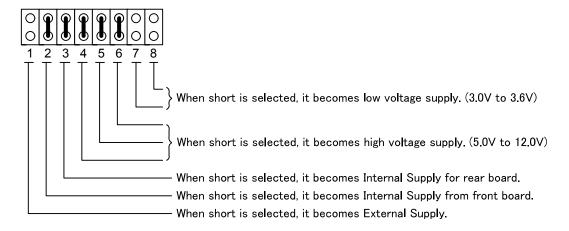


Figure 4. power supply setting with the jumper

#### Example4-1: Internal Supply 5.0 V to 12.0V (Default Setting)

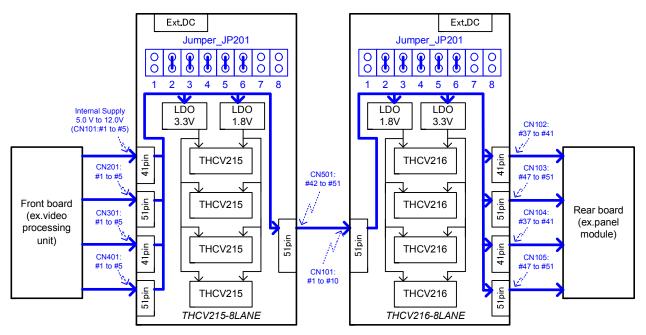


Figure 4-1. Internal Supply 5.0V to 12.0V





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#### 4. Power supply setting (Continued)

Example4-2: External Supply 5.0V to 12.0V

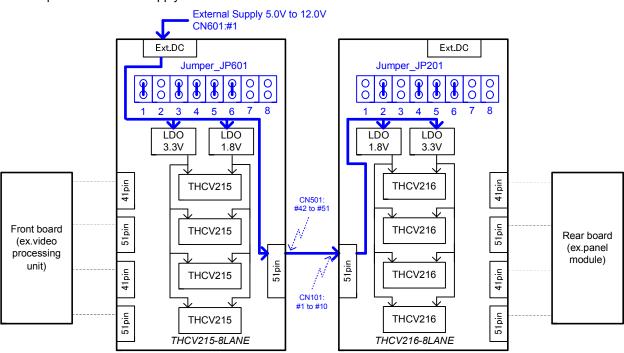


Figure 4-2. External Supply 5.0V to 12.0V

Example4-3: External Supply 3.0V to 3.6V

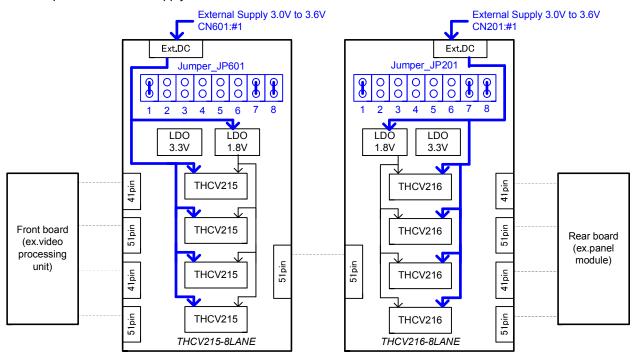


Figure 4-3. External Supply 3.0V to 3.6V





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### 5. Function setting

This chapter shows the DIP switches of the control settings.

Table 5-1. DIP switches on the THCV215-8LANE Board

SW#	Symbol	Default Setting	Function			
1	SDSEL	High ( 8 lane )	Selects the Lanes. Low: Not available High: 8 lane			
2	COL0	Low	Selects the color depth.  COL0 COL1 Function  Low Low 6 bit mode			
3	COL1	High	High Low 8 bit mode Low High 10 bit mode High High Not available			
4	PDN	High ( Normal )	Selects the power down.  Low: Power down ( CML output High Fix, other Hi-Z )  High: Normal operation			
5	DRV1	Low	Selects the drive strength.			
6	DRV0	High	Must be set to DRV1=Low and to DRV0=High			
7	PRE1	Low ( 0% )	Selects the pre-emphasis level.  Low: 0%  High: 100%			
8	RES1	Low ( Normal )	Selects the Field BET Mode. * Low: Normal operation (default) High: Field BET Mode enable			

 $<sup>^{\</sup>star}$  Please see the datasheet for details. ( <code>THCV215-THCV216\_Rev.x.xx\_E.pdf</code> )

Table 5-2. DIP switches on the THCV216-8LANE Board

SW#	Symbol	Default Setting	Function		
1	SDSEL	High ( 8 lane )	Selects the Lanes. Low: Not available High: 8 lane		
2	COL1	High	Selects the color depth.  COL1 COL0 Function  Low Low 6 bit mode		
3	COL0	Low	Low High 8 bit mode High Low 10 bit mode High High Not available		
4	PDN	High ( Normal )	Selects the power down.  Low: Power down  High: Normal operation		
5	RES3	Low ( Normal )	Selects the Field BET Mode. * Low: Normal operation (default) High: Field BET Mode enable		
6	NC	Low	— Not connected		
7	NC	Low			
8	RS	Low ( Normal )	Direction of RS pin depends on RES3. Selects the LVDS swing range when RES3=Low High: Normal swing ( 350 mV typ. ) Low: Reduced swing ( 200mV typ. ) Field BET output when RES3=High *		

 $<sup>^{\</sup>star}$  Please see the datasheet for details. ( <code>THCV215-216\_Rev.x.xx\_E.pdf</code> )





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#### **6. Other functional Descriptions**

This chapter shows other function.

#### 6-1. About LED on the board.

Board	Power On detect.	Lock detect.
THCV215-8LANE	D601	D701
THCV216-8LANE	D201	-

#### 6-2. THCV215 Link Ready function (RDY)

This is a CMOS output for indicating the link status. If link is ready RDY = High.

#### 6-3. THCV216 Field BET mode settings.

Please detach Jumper ( JP101 to JP104 ) for Field BET mode.





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#### 7. Schematic

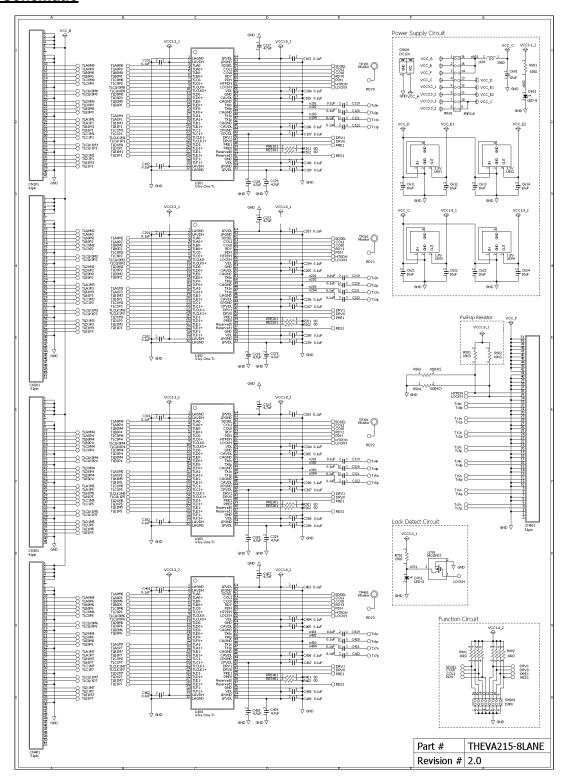


Figure 7-1. THCV215-8LANE schematic







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#### 7. Schematic

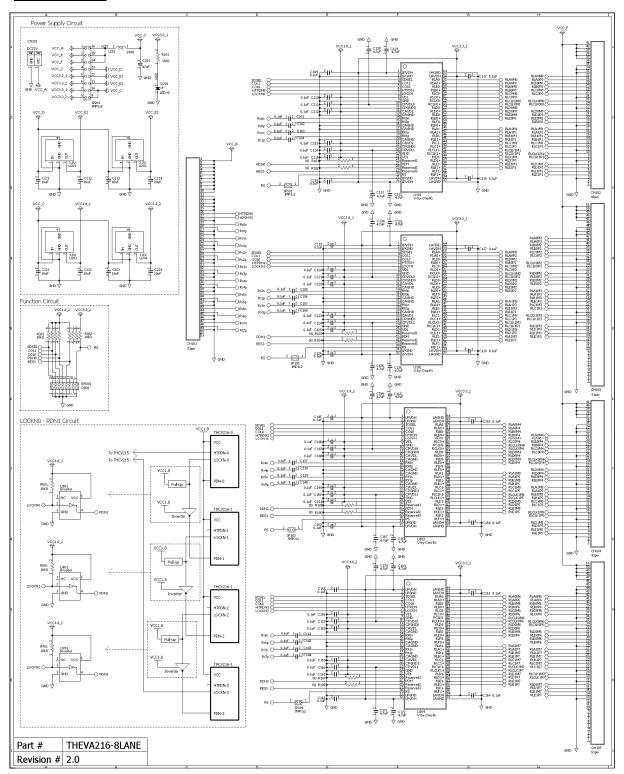


Figure 7-2. THCV216-8LANE schematic





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#### 8. Bill of Materials (BOM)

Table 8-1. BOM for THCV215-8LANE

Table 8-1. BOM for THCV215-8LANE				
	Description	PKG 1005	Part Number	Manufacturer
C101	0.1uF	1005	GRM155B31C104KA87	Murata
C102	0.1uF		GRM155B31C104KA87	Murata
C103	0.1uF	1005	GRM155B31C104KA87	Murata
C104	0.1uF	1005	GRM155B31C104KA87	Murata
C105	0.1uF	1005	GRM155B31C104KA87	Murata
C106	0.1uF	1005	GRM155B31C104KA87	Murata
C107	0,1uF	1005	GRM155B31C104KA87	Murata
C108	0.1uF	1005	GRM155B31C104KA87	Murata
C109	0.1uF		GRM155B31C104KA87	Murata
C119	0.1uF	1005	GRM155B31C104KA87	Murata
C120	0.1uF	1005	GRM155B31C104KA87	Murata
C121	0.1uF	1005	GRM155B31C104KA87	Murata
C122	0.1uF	1005	GRM155B31C104KA87	Murata
C127	4.7uF	1608	GRM188R60J475KE19D	Murata
C128	4.7uF	1608	GRM188R60J475KE19D	Murata
C129	4.7uF	1608	GRM188R60J475KE19D	Murata
C201	0.1uF	1005	GRM155B31C104KA87	Murata
C202	0.1uF		GRM155B31C104KA87	Murata
C203	0.1uF	1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata Murata
C204 C205	0.1uF 0.1uF	1005	GRM155B31C104KA87	Murata
C206	0.1uF	1005	GRM155B31C104KA87	Murata
C207	0.1uF	1005	GRM155B31C104KA87	Murata
C208	0.1uF	1005	GRM155B31C104KA87	Murata
C209	0.1uF		GRM155B31C104KA87	Murata
C219	0,1uF	1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata
C220 C221	0.1uF 0.1uF	1005	GRM155B31C104KA87	Murata Murata
C222	0.1uF	1005	GRM155B31C104KA87	Murata
C227	4.7uF	1608	GRM188R60J475KE19D	Murata
C228	4.7uF	1608	GRM188R60J475KE19D	Murata
C229	4.7uF	1608	GRM188R60J475KE19D	Murata
C301	0.1uF	1005	GRM155B31C104KA87	Murata
C302	0.1uF	1005	GRM155B31C104KA87	Murata
C303	0.1uF	1005	GRM155B31C104KA87	Murata
C304	0.1uF	1005	GRM155B31C104KA87	Murata
C305	0.1uF	1005	GRM155B31C104KA87	Murata
C306	0.1uF	1005	GRM155B31C104KA87	Murata
C307	0.1uF	1005	GRM155B31C104KA87	Murata
C308	0.1uF	1005	GRM155B31C104KA87	Murata
C309	0.1uF	1005	GRM155B31C104KA87	Murata
C319	0.1uF	1005	GRM155B31C104KA87	Murata
C320	0.1uF	1005	GRM155B31C104KA87	Murata
C321	0.1uF	1005	GRM155B31C104KA87	Murata
C322	0.1uF 4.7uF	1005 1608	GRM155B31C104KA87 GRM188R60J475KE19D	Murata
C327 C328	4.7uF	1608	GRM188R60J475KE19D	Murata Murata
C329	4.7uF	1608	GRM188R60J475KE19D	Murata
C401	0.1uF	1005	GRM155B31C104KA87	Murata
C402	0.1uF	1005	GRM155B31C104KA87	Murata
C403	0.1uF		GRM155B31C104KA87	Murata
C404	0.1uF	1005	GRM155B31C104KA87	Murata
C405	0.1uF	1005	GRM155B31C104KA87	Murata
C406	0.1uF	1005	GRM155B31C104KA87	Murata
C407	0.1uF	1005	GRM155B31C104KA87	Murata
C408	0.1uF	1005	GRM155B31C104KA87	Murata
C409	0.1uF	1005	GRM155B31C104KA87	Murata
C419	0.1uF		GRM155B31C104KA87	Murata
C420 C421	0.1uF	1005	GRM155B31C104KA87	Murata
C422	0.1uF 0.1uF	1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata Murata
C427	4.7uF	1608	GRM188R60J475KE19D	Murata
C428	4.7uF		GRM188R60J475KE19D	Murata
C429	4,7uF	1608	GRM188R60J475KE19D	Murata
C601	47uF	3225	GRM32EB31A476ME20L	Murata
C611 C612	10uF	2012	GRM21BB31C106KE15	Murata
C613	10uF	2012	GRM21BB31C106KE15	Murata
	10uF	2012	GRM21BB31C106KE15	Murata
C614	10uF	2012	GRM21BB31C106KE15	Murata
C621	10uF	2012	GRM21BB31C106KE15	Murata
C622	10uF	2012	GRM21BB31C106KE15	Murata
C623	10uF	2012	GRM21BB31C106KE15	Murata
C624	10uF	2012	GRM21BB31C106KE15	Murata
CN101	41 pin	3404	FX15SC-41S-0.5SH	HRS
CN201	51 pin	3804	FX15SC-51S-0.5SH	HRS
CN301	41 pin	3404	FX15SC-41S-0.5SH	HRS
CN401	51 pin	3804	FX15SC-51S-0.5SH	HRS
CN501	51pin	3804	FX16-51S-0.5SH	HRS
CN601	DC12V	1105	ML-800-S1H-2P	Sata-parts
D601	LED-G	1608	SML-310MT	Sato-parts ROHM
D701	JMP2x8	1608	SML-310MT	ROHM
JP601		2.54mm	2*8-PinHeaders	-
L601	390 Ω	1608	MPZ1608R391A	TDK
R101	0 Ω	1005	MGR01MZPJ000	ROHM
R102	0Ω	1005	MCR01MZPJ000	ROHM
R103	0Ω(NC)		MCR01MZPJ000	ROHM
R104	0Ω(NC)	1005	MCR01MZPJ000	ROHM
R201	0Ω	1005	MCR01MZPJ000	ROHM
R202	0Ω	1005	MCR01MZPJ000	ROHM
R203	0Ω(NC)	1005	MCR01MZPJ000	ROHM
R204	0Ω(NC)	1005	MCR01MZPJ000	ROHM
R301 R302	0Ω	1005	MCR01MZPJ000 MCR01MZPJ000	ROHM ROHM
R303	0Ω(NC)	1005	MCR01MZPJ000	ROHM
R304	0Ω (NC)	1005	MCR01MZPJ000	ROHM
R401	0Ω	1005	MCR01MZPJ000	ROHM
R402	0Ω	1005	MCR01MZPJ000	ROHM
R403	0Ω(NC)	1005	MCR01MZPJ000	ROHM
R404 R501	0Ω(NC)	1005	MCR01MZPJ000 MCR01MZPF103	ROHM ROHM
R502	10KΩ 10KΩ	1005	MCR01MZPF103	ROHM
R503	0Ω (NC)	1005	MCR01MZPJ000	ROHM
R504	0Ω (NC)	1005	MCR01MZPJ000	ROHM
R601	150 Ω	1608	MCR03EZPFX151	ROHM
R701	150 Ω	1608	MCR03EZPFX151	ROHM
R801	10kΩ	2010	EXB-28V103JX	Panasonic
R802	10kΩ	2010		Panasonic
SW801	DIP8	2206	A6S-8104-H	Omuron
U101	V-by-One-Tx	TSSOP64	THCV215	THine
U102	V-by-One-Tx	TSSOP64	THCV215	THine
U103	V-by-One-Tx	TSSOP64	THCV215	THine
U104	V-by-One-Tx	TSSOP64	THCV215	THine
U601	3.3V	SC-63	uPC2933BT-AZ	NEC
U602	3.3V	SC-63	uPC2933BT-AZ	NEC
U603	1,8V	SC-63	uPC2918BT-AZ	NEC
U604	1.8V	SC-63	uPC2918BT-AZ	NEC
U701	MOSFET	1616	SSM3K16FS	Toshiba

Table 8-2. BOM for THCV216-8LANE

Designator	Description	PKG	Part Number	Manufacturer
C101 C102	0.1uF	1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata
C103	0.1uF 0.1uF	1005	GRM155B31C104KA87	Murata Murata
C104 C105	0.1uF 0.1uF	1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata Murata
C106	0.1uF	1005	GRM155B31C104KA87	Murata
C107 C108	0.1uF 0.1uF	1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata Murata
C109	0,1uF	1005	GRM155B31C104KA87	Murata
C110 C111	0.1uF 0.1uF	1005 1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata Murata
C112 C113	0.1uF	1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata Murata
C114	0.1uF 0.1uF	1005	GRM155B31C104KA87	Murata
C115 C116	0.1uF 0.1uF	1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata Murata
C117	0,1uF	1005	GRM155B31C104KA87	Murata
C118 C119	0.1uF 0.1uF	1005 1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata Murata
C120	0.1uF	1005	GRM155B31C104KA87	Murata
G121 G122	0.1uF 0.1uF	1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata Murata
C123 C124	0,1uF	1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata Murata
C125	0.1uF 0.1uF	1005	GRM155B31C104KA87	Murata
C126 C127	0.1uF 0.1uF	1005 1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata Murata
C128	0.1uF	1005	GRM155B31C104KA87	Murata
C129 C130	4.7uF 4.7uF	1608	GRM188R60J475KE19D GRM188R60J475KE19D	Murata Murata
C131	4.7uF	1608 1608	GRM188R60J475KE19D GRM188R60J475KE19D	Murata Murata
C132 C133	4.7uF 4.7uF	1608	GRM188R60J475KE19D	Murata
C134 C135	4,7uF 4,7uF	1608 1608	GRM188R60J475KE19D GRM188R60J475KE19D	Murata Murata
C136	4.7uF	1608	GRM188R60J475KE19D	Murata
C137 C138	0.1uF 0.1uF	1005 1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata Murata
C139	0,1uF	1005	GRM155B31C104KA87	Murata
C140 C141	0.1uF 0.1uF	1005 1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata Murata
C142 C143	0.1uF 0.1uF	1005 1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata Murata
C144	0.1uF	1005	GRM155B31C104KA87	Murata
C145 C146	0.1uF 0.1uF	1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata Murata
C147	0.1uF	1005	GRM155B31C104KA87	Murata
C148 C149	0.1uF 0.1uF	1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata Murata
C150	0.1uF	1005	GRM155B31C104KA87	Murata
C151 C152	0.1uF 0.1uF	1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata Murata
C153 C154	0.1uF 0.1uF	1005 1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata Murata
C155	0.1uF	1005	GRM155B31C104KA87	Murata
C156 C157	0.1uF 0.1uF	1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata Murata
C158	0.1uF	1005	GRM155B31C104KA87	Murata
C159 C160	0.1uF 0.1uF	1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata Murata
C161 C162	0.1uF	1005 1005	GRM155B31C104KA87 GRM155B31C104KA87	Murata
C163	0.1uF 0.1uF	1005	GRM155B31C104KA87	Murata Murata
C164 C165	0.1uF 4.7uF	1608	GRM155B31C104KA87 GRM188R60J475KE19D	Murata Murata
C166	4,7uF	1608	GRM188R60J475KE19D	Murata
C167 C168	4.7uF 4.7uF	1608	GRM188R60J475KE19D GRM188R60J475KE19D	Murata Murata
C169	4.7uF	1608	GRM188R60J475KE19D	Murata
C170 C171	4.7uF 4.7uF	1608 1608	GRM188R60J475KE19D GRM188R60J475KE19D	Murata Murata
C172 C201	4.7uF 47uF	1608 3225	GRM188R60J475KE19D GRM32EB31A476ME20L	Murata Murata
C211	10uF	2012	GRM21BB31C106KE15	Murata
G212 G213	10uF 10uF	2012 2012	GRM21BB31C106KE15 GRM21BB31C106KE15	Murata Murata
C214	10uF	2012	GRM21BB31C106KE15	Murata
G221 G222	10uF 10uF	2012	GRM21BB31C106KE15 GRM21BB31C106KE15	Murata Murata
G223 G224	10uF	2012	GRM21BB31C106KE15	Murata
CN101	10uF 51pin	3804	GRM21BB31C106KE15 FX16-51S-0.5SH	Murata HRS
CN102	41 pin	3404	FX15SC-41S-0.5SH FX15SC-51S-0.5SH	HRS
CN103 CN104	51pin 41pin	3804 3404	FX15SC-41S-0.5SH	HRS HRS
CN105 CN201	51pin DC12V	3804 1105	FX15SC-51S-0.5SH ML-800-S1H-2P	HRS Sato-parts
D201	LED-G	1608	SML-310MT	ROHM
JP101 JP102	JMP1x2 JMP1x2	2.54mm 2.54mm	1*2-PinHeaders 1*2-PinHeaders	<u> </u>
JP103	JMP1x2	2.54mm	1*2−PinHeaders	E
JP104 JP201	JMP1x2 JMP2x8	2.54mm 2.54mm	1*2-PinHeaders 2*8-PinHeaders	<u> </u>
L201 R101	390Ω 0Ω	1608 1005	MPZ1608R391A	TDK ROHM
R102	0Ω 0Ω	1005	MCR01MZPJ000 MCR01MZPJ000	ROHM
R103 R104	0Ω 0Q	1005	MCR01MZPJ000 MCR01MZPJ000	ROHM
R105	0Ω	1005	MCR01MZPJ000	ROHM
R106 R107	0Ω 0Ω	1005 1005	MCR01MZPJ000 MCR01MZPJ000	ROHM ROHM
R108	0Ω	1005	MCR01MZPJ000	ROHM
R201 R301	150Ω 10kΩ	1608 2010	MCR03EZPFX151 EXB-28V103JX	ROHM Panasonic
R302 R501	10kΩ 10KΩ	2010	EXB-28V103JX MCR01MZPF103	Panasonic ROHM
R601	10KΩ	1005	MCR01MZPF103	ROHM
R701 SW301	10KΩ DIP8	1005 2206	MCR01MZPF103 A6S-8104-H	ROHM Omuron
U101	V-by-One-Rx	TSSOP64	THCV216	THine
U102 U103	V-by-One-Rx V-by-One-Rx	TSSOP64 TSSOP64	THCV216 THCV216	THine THine
U104	V-by-One-Rx	TSSOP64	THCV216	THine
U201	3.3V	SC-63	uPC2933BT-AZ uPC2933BT-AZ	NEC NEC
	3.3V	SC-63		
U202 U203	1.8V	SC-63	uPC2918BT-AZ	NEC
U202		SC-63 SC-63 SON5	uPC2918BT-AZ uPC2918BT-AZ TC7SG04FU	
U202 U203 U204	1.8V 1.8V	SC-63 SC-63	uPC2918BT-AZ uPC2918BT-AZ	NEC NEC





SerDes transmitter and receiver evaluation board

#### 9. Layout

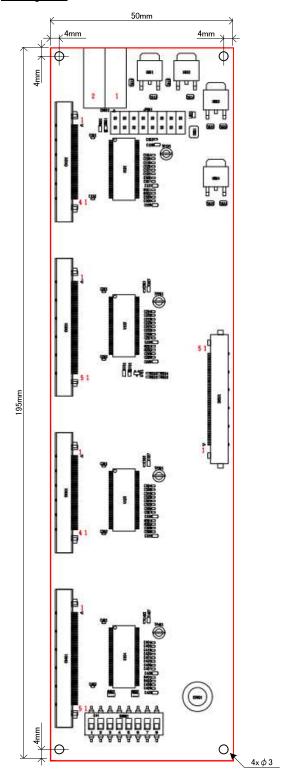


Figure 9-1. Component Placement Guide of THCV215-8LANE

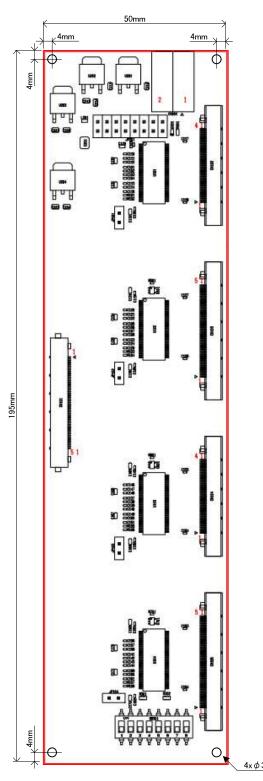


Figure 9-2. Component Placement Guide of THCV216-8LANE







SerDes transmitter and receiver evaluation board

#### **10. Cable**

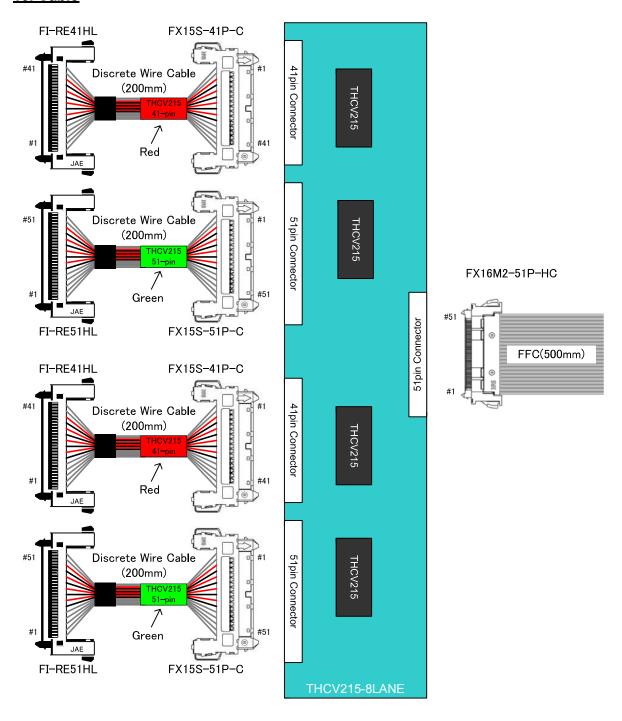


Figure 10-1. Cable of THCV215-8LANE





SerDes transmitter and receiver evaluation board

#### **10. Cable**

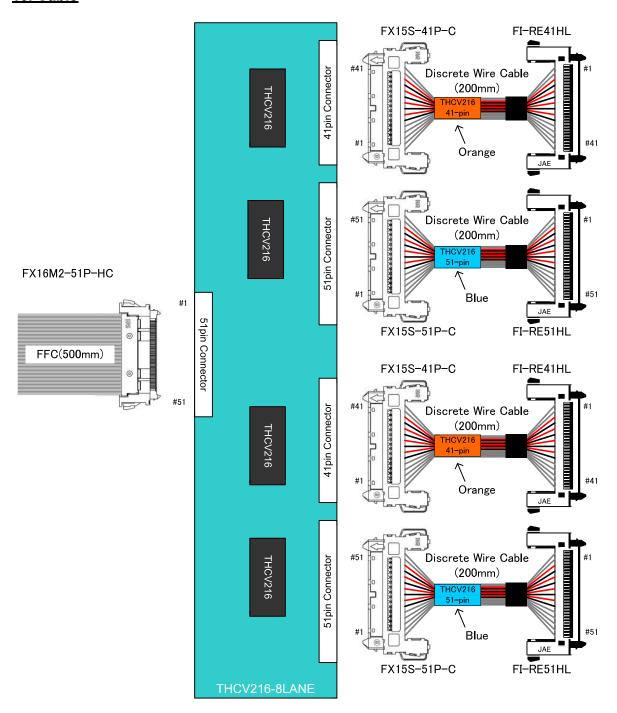


Figure 10-2. Cable of THCV216-8LANE





SerDes transmitter and receiver evaluation board

#### **Notices and Requests**

- 1. The product specifications described in this material are subject to change without prior notice.
- 2. The circuit diagrams described in this material are examples of the application which may not always apply to the customer's design. We are not responsible for possible errors and omissions in this material. Please note if errors or omissions should be found in this material, we may not be able to correct them immediately.
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- 6. Despite our utmost efforts to improve the quality and reliability of the product, faults will occur with a certain small probability, which is inevitable to a semi-conductor product. Therefore, you are encouraged to have sufficiently redundant or error preventive design applied to the use of the product so as not to have our product cause any social or public damage.
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