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Model 343
CCD Control/Timing

DESIGNED BY: **Andrey Filippov**
 DRAWN BY: **Andrey Filippov**

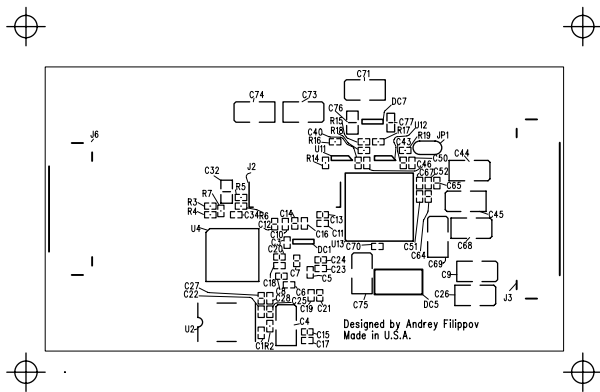
NEXT ASSY: **1D20347**
 USED: **QTY 1**
 FILE: **10347** REV: **0** ECN: **4**
 DATE: **12/24/2006**
 PRINTED: **1/9/2007 AT 8:38:28 PM**

SUB-ASSEMBLY										
	USAGE	#		NO.	4A20347	RELEASE DATE	01/09/07	P/L	REV.	REV.
	343	1		TITLE	Model 343 CCD Control/Timing PCB Assembly 80347	JOB#	N/A	DATE	LTR	DATE
				# TO	1	WORK ORDER #	N/A	12/24/2006	0	
				NEXT	4A-?????	NON STANDARD				
						NOTATIONS				
DESIGNATOR	ITEM	QTY	EXT	STK		PART	MANUFAC		VENDOR	PURCH
NUMBER	#	REQ	QTY	CHK	DESCRIPTION	#	TURER	VENDOR	PART #	QTY
					Related Documents					
	0.5	1	1		Schematic 10347 (80347), Model 343	1D20347 Rev.0	Designed by Andrey Filippov			
	20	1	1		Fabrication (80347), Model 343	4F20347 Rev.0				
	21	1	1		Artwork (80347), Model 343	4G20347 Rev.0				
					Modules					
M1	40	1	1		Fan, 25x6mm, 5V, 100mA, 0.4W, KDE0502PEB2-8	KDE0502PEB2-8	Sunon	Digi-Key	259-1115-ND	1
					Integrated Circuits					
U2	41	1	1		Oscillator, 125MHZ, 3.3V, CERAMIC75X50	ECS-3953M-1250- BN	ECS	Digi-Key	XC346CT-ND	1
U13	42	1	1		CCD Signal Processor, Dual Channel, 14- bit, 36MHz, BGA-96	VSP2254GSJ	Texas Instruments	Digi-Key	296-14396-ND	1
U7	43	1	1		Dual Buffer/Driver with Open-Drain Outputs, SC-70-6, marked as CV_	SN74LVC2G07DC KR	Texas Instruments	Digi-Key	296-13495-1-ND	1
U4	44	1	1		Dual, 10-Bit, 125Msps Digital-to-Analog Converter, TQFP-48	DAC2900Y	Texas Instruments	Digi-Key	DAC2900Y/250C T-ND	1
U5-U6	45	2	2		Dual-Bit Dual Supply Bus Transceiver, VSSOP-8	SN74LVC2T45DC UR	Texas Instruments	Digi-Key	286-17014-1-ND	2
U1	46	1	1		Single 2-AND Gate, SOT-553, marked as AE?	SN74AHC1G08D RLR	Texas Instruments	Digi-Key	296-19376-1-ND	1000
U8-U9	47	2	2		Single 9-A High Speed Low-side MOSFET Driver with Enable, MSOP-8	UCC27321DGN	Texas Instruments	Digi-Key	296-13671-5-ND	2
U3	48	1	1		Spartan 3E FPGA, 1.2 M gates, FT256, programmed as x347	XC3S1200E- 5FT256C	Xilinx	Insight Electronics		1
U11-U12	49	2	2		Wideband, Unity Gain stable Operational Amplifier, SOT-23-6, marked as OAGI	OPA692IDBVT	Texas Instruments	Digi-Key	296-15364-1-ND	2
					Power Supply Modules					
DC6	50	1	1		Positive Voltage Regulator, 6V, 500mA, TS- 003	UA78M06CKVUR G3	Texas Instruments	Digi-Key	296-19532-1-ND	1

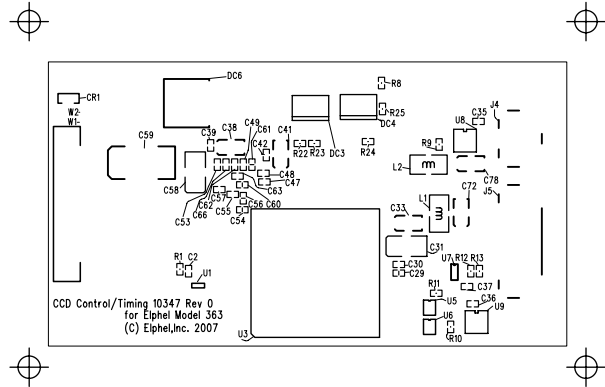
DESIGNATOR	ITEM	QTY	EXT	STK		PART	MANUFAC		VENDOR	PURCH	
NUMBER	#	REQ	QTY	CHK	DESCRIPTION	#	TURER	VENDOR	PART #	QTY	
DC1	51	1	1	---	LDO regulator, 2.5V, 400mA , SOT-23-5	TPS73625DBVT	Texas Instruments	Digi-Key	296-15817-1-ND	1	
DC5	52	1	1	---	Low Dropout Voltage Regulator, 3.3V, 700mA , SOT-223	LT1129CST-3.3	Linear Technology	Digi-Key	LT1129CST-3.3-ND	1	
DC4	53	1	1	---	Low Dropout Adjustable Negative Voltage Regulator, 5V, 500mA , S8	LT1175CS8	Linear Technology	Digi-Key	LT1175CS8-ND	1	
DC7	54	1	1	---	Micropower 150 mA Low-Noise Ultra Low-Dropout Regulator, 5V, 150mA , SOT-23-5, marked as L0UA	LP2985AIM5-5.0	National Semiconductor	Digi-Key	LP2985AIM5-5.0CT-ND	1	
DC3	55	1	1	---	Low Dropout Adjustable Voltage Regulator, 700mA , S8	LT1129CS8	Linear Technology	Digi-Key	LT1129CS8-ND	1	
					Diodes						
CR1	56	1	1	---	2 diodes, series, 70V, 200mA , SOT-23-123, marked as A7	BAV99	Fairchild	Digi-Key	BAV99FSCT-ND	1	
					Resistors						
R18-R19	57	2	2	---	Resistor, 22Ω, ±1% , SMD 0402, marked as 22R0	RC0402FR-0722RL	Yageo	Digi-Key	311-22.0LRCT-ND	10	
R13	58	1	1	---	Resistor, 100Ω, ±1% , SMD 0402, marked as 1000	ERJ-2RKF1000X	Panasonic	Digi-Key	P100LCT-ND	10	
R3-R6	59	4	4	---	Resistor, 130Ω, ±1% , SMD 0402, marked as 1300	ERJ-2RKF1300X	Panasonic	Digi-Key	P130LCT-ND	10	
R14-R17	60	4	4	---	Resistor, 510Ω, ±1% , SMD 0402, marked as 5100	RC0402FR-07510RL	Yageo	Digi-Key	311-510LRCT-ND	10	
R9-R10	61	2	2	---	Resistor, 1.21KΩ, ±1% , SMD 0402, marked as 1211	RC0402FR-071K21L	Yageo	Digi-Key	311-1.21KLRCT-ND	10	
R8	62	1	1	---	Resistor, 2.49KΩ, ±1% , SMD 0402, marked as 2491	ERJ-2RKF2491X	Panasonic	Digi-Key	P2.49KLCT-ND	10	
R1-R2	63	2	2	---	Resistor, 4.64KΩ, ±1% , SMD 0402, marked as 4641	9C04021A4641FLHF3	Yageo	Digi-Key	311-4.64KLCT-ND	10	
R7	64	1	1	---	Resistor, 4.99KΩ, ±1% , SMD 0402, marked as 4991	ERJ-2RKF4991X	Panasonic	Digi-Key	P4.99KLCT-ND	10	
R12	65	1	1	---	Resistor, 5.62KΩ, ±1% , SMD 0402, marked as 5621	ERJ-2RKF5621X	Panasonic	Digi-Key	P5.62KLCT-ND	10	
R11	66	1	1	---	Resistor, 21KΩ, ±1% , SMD 0402, marked as 2102	ERJ-2RKF2102X	Panasonic	Digi-Key	P21.0KLCT-ND	10	
R23, R25	67	2	2	---	Resistor, 150KΩ, ±1% , SMD 0402, marked as 1503	RC0402FR-07150KL	Yageo	Digi-Key	311-150KLRCT-ND	10	
R22	68	1	1	---	Resistor, 324KΩ, ±1% , SMD 0402, marked as 3243	ERJ-2RKF3243X	Panasonic	Digi-Key	P324KLCT-ND	10	
R24	69	1	1	---	Resistor, 383KΩ, ±1% , SMD 0402, marked as 3833	ERJ-2RKF3833X	Panasonic	Digi-Key	P383KLCT-ND	10	
					Capacitors						
C32, C76	70	2	2	---	Capacitor, Film, 10nF, 16V, ±2% , C-0805	ECH-U1C103GX5	Panasonic	Digi-Key		10	

DESIGNATOR	ITEM	QTY	EXT	STK		PART	MANUFAC		VENDOR	PURCH
NUMBER	#	REQ	QTY	CHK	DESCRIPTION	#	TURER	VENDOR	PART #	QTY
C31, C58, C69, C75	71	4	4		Low ESR Tantalum Chip Capacitor with Polymer Electrode, 68µF, 4V , SMD B	T520B686M004AS	Kemet	Digi-Key	399-3060-1-ND	4
C4, C9, C26	72	3	3		Low ESR Tantalum Chip Capacitor with Polymer Electrode, 100µF, 4V , SMD B	T520B107M004AS E070	Kemet	Digi-Key	399-3167-1-ND	3
C77	73	1	1		Capacitor, Ceramic Chip, 2.2µF, 6.3V , C-0603	ECJ-1VB0J225K	Panasonic	Digi-Key	PCC2273CT-ND	10
C68, C71	74	2	2		Low ESR Tantalum Chip Capacitor with Polymer Electrode, 47µF, 6.3V , SMD B	T520B476M006AS	Kemet	Digi-Key	399-3061-1-ND	2
C33, C38, C41, C72, C78	75	5	5		Capacitor, Tantalum Chip. low ECR, 10µF, 16V , SMD A	T494A106M016AS	Kemet	Digi-Key	399-3105-1-ND	5
C44-C45, C73-C74	76	4	4		Capacitor, Tantalum Chip, 10µF, 20V , SMD B, marked as 106/20V	ECS-T1DX106R	Panasonic	Digi-Key	P11324CT-ND	10
C7-C8, C12-C15, C20-C21, C24-C25	77	10	10		Capacitor, Ceramic Chip, 0.01µF, 25V , C-0402	C0402C103K3RA CTU	Kemet	Digi-Key	399-1278-1-ND	10
C1-C3, C5-C6, C10-C11, C16-C19, C22-C23, C28, C30, C34-C37, C39, C42, C46-C53, C55, C57, C62-C63, C66-C67, C70	78	36	36		Capacitor, Ceramic Chip, 0.1µF, 25V , C-0402D	GRM155F51E104 ZA01D	Murata	Digi-Key	490-3271-1-ND	36
C59	79	1	1		Capacitor, Tantalum Chip, 10µF, 35V , SMD D	T491D106M035AS	Kemet	Digi-Key	399-1655-1-ND	1
C27, C29, C40, C43, C54, C56, C60-C61, C64-C65	80	10	10		Capacitor, Ceramic Chip, 1nF, 50V , C-0402	ECJ-0EB1H102K	Panasonic	Digi-Key	PCC1721CT-ND	10
					Inductors and LC filters					
L1-L2	81	2	2		SMD Inductor, 15µHn, 220mA , L-1210	ELJ-PA150KF	Panasonic	Digi-Key	PCD1486CT-ND	2
					Connectors					
J10	82	1	1		1.25mm Pitch Super Low profile Crimping Connector, 10 pos., Crimp Socket, 150V, 1A , DF1410S125C	DF14-10S-1.25C	Hirose	Digi-Key	H1571-ND	1
J7	83	1	1		1.25mm Pitch Super Low profile Crimping Connector, 15 pos., Crimp Socket, 150V, 1A , DF1415S125C	DF14-15S-1.25C	Hirose	Digi-Key	H1572-ND	1
J6	84	1	1		1.25mm Pitch Super Low profile Crimping Connector, 2 pins, Right angle SMT header, 10 contacts, 150V, 1A , DF14A10P125H	DF14A-10P-1.25H-55	Hirose	Digi-Key	H10329-ND	1
J3	85	1	1		1.25mm Pitch Super Low profile Crimping Connector, 2 pins, Right angle SMT header, 15 contacts, 150V, 1A , DF14A15P125H	DF14A-15P-1.25H-55	Hirose	Digi-Key	H10331-ND	1

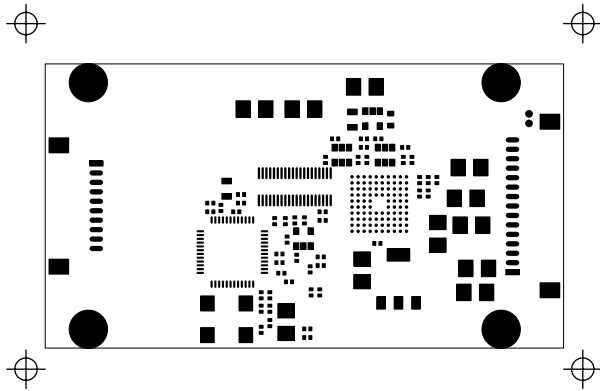
DESIGNATOR	ITEM	QTY	EXT	STK		PART	MANUFAC		VENDOR	PURCH	
NUMBER	#	REQ	QTY	CHK	DESCRIPTION	#	TURER	VENDOR	PART #	QTY	
-----	----	---	----	---	-----	-----	-----	-----	-----	-----	
J4	86	1	1		1.25mm Pitch Super Low profile Crimping Connector, 2 pins, Right angle SMT header, 2 contacts, 150V, 1A , DF142P125H	DF14-2P-1.25H-55	Hirose	Digi-Key	H10311-ND	1	
J5	87	1	1		1.25mm Pitch Super Low profile Crimping Connector, 2 pins, Right angle SMT header, 8 contacts, 150V, 1A , DF148P125H	DF14-8P-1.25H-55	Hirose	Digi-Key	H10325-ND	1	
J8	88	1	1		1.25mm Pitch Super Low profile Crimping Connector, 2 pos., Crimp Socket, 150V, 1A , DF142S125C	DF14-2S-1.25C	Hirose	Digi-Key	H1563-ND	1	
J9	89	1	1		1.25mm Pitch Super Low profile Crimping Connector, 8 pos., Crimp Socket, 150V, 1A , DF148S125C	DF14-8S-1.25C	Hirose	Digi-Key	H1569-ND	1	
J1	90	1	1		0.5 mm-Pitch Slide-Lock FPC Connector, bottom contact, 30 pos., FH12-30S-0.5SHCOMBO	FH12-30S-0.5SH55	Hirose	Digi-Key	HFJ130CT-ND	1	
J2	91	1	1		Connector Header 40 pins, 0.5mm pitch, DF1240DS05V	DF12-40DS-0.5V	Hirose	Digi-Key	H5217CT-ND	1	
-----	----	---	----	---	Sockets and Matching Parts	-----	-----	-----	-----	-----	
XJ7-XJ10	92	30	30		1.25mm Pitch Super Low profile Crimping Connector, 26-28AWG Crimp Gold Terminal, DF142628SCFA	DF14-2628SCFA	Hirose	Digi-Key		0	
XJ2	93	1	1		Flex Cable, 0.5 mm pitch, 30 conductors, 2 in long, 050-30-51B	050-30-51B	Parlex	Digi-Key	HFF-30U-02-ND	1	



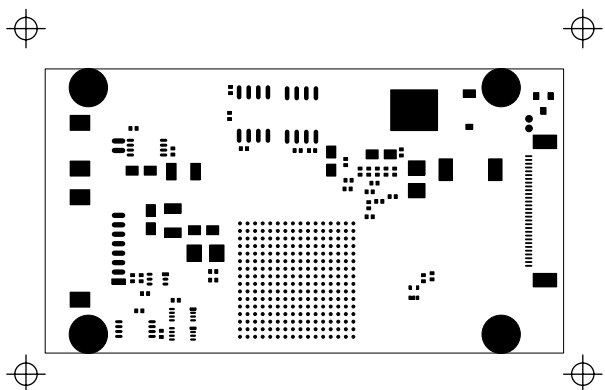
SILKSCREEN TOP			



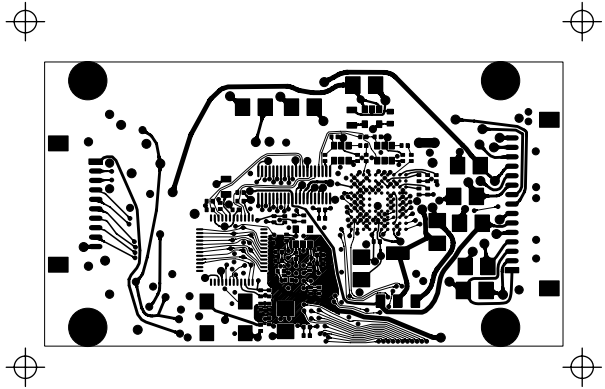
SILKSCREEN BOTTOM			



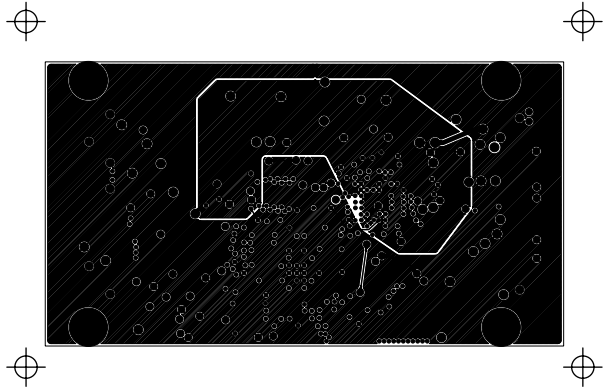
	SOLDER MASK TOP		



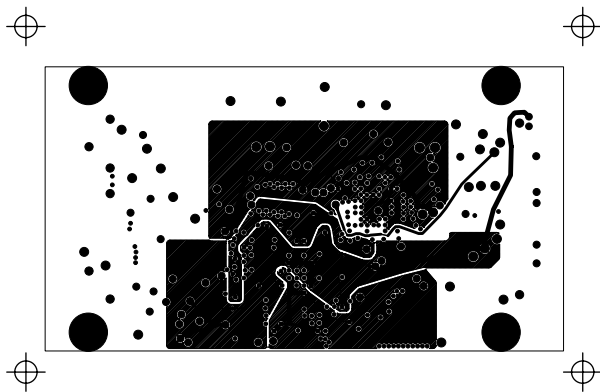
		SOLDER MASK BOTTOM	



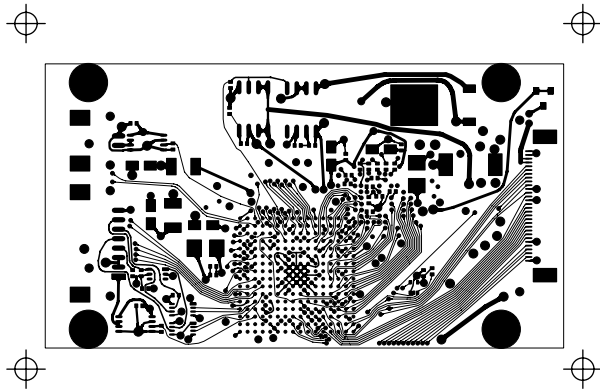
TOP SIDE (LAYER-1)			
	COMPONENT COPPER TOP (L-10)		



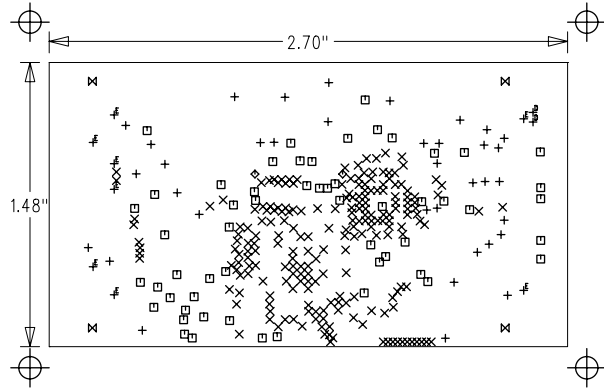
	GND PLANE (LAYER-2)		



		PWR PLANE (LAYER-3)	



			BOTTOM SIDE (LAYER-4)
			COMPONENT COPPER BOTTOM (L-19)



DRILL DRAWING			

SIZE	QTY	SYM	PLTD
32	36	+	PLTD
10	210	×	PLTD
22	56	□	PLTD
23.62	2	◇	NPLTD
120	4	⊗	NPLTD
25	2	D	PLTD
43.31	8	E	NPLTD

