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Note: QFN packages for U8 and U15 show 9 EPAD pads. It is actually a single pad, shown as 9 to simplify specification of 9 was under EPAD to improve heat sink

Model 353		Elphel, Inc 1 of 1	
Universal Interface Brd		DESIGNED BY: Andrew Filippov	
REV: 1.0		DATE: 12/15/2007	
USER: 1D20369	QTY: 1	REV: A 100+	DATE: 12/15/2007
FILE: 10369A	80369	PRINTED: 3/4/2008 11:34:04 PM	

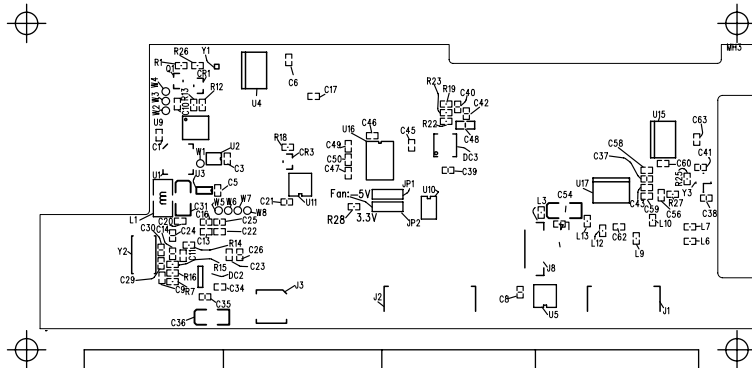
SUB-ASSEMBLY														
USAGE	#		NO.			4A20369	RELEASE DATE	03/04/08	P/L	REV.	REV.	Units to	Total	Cost per
			TITLE			Model 353 Universal Interface Brd PCB Assembly 80369	JOB#	N/A	DATE	LTR	DATE	Build	Cost	Unit
	353	1							12/15/2007	A	3/1/2008	1	\$120.07	\$120.07
			# TO	MFGR		1	WORK ORDER #	N/A						
			NEXT	ASSY		4A-?????	NON STANDARD NOTATIONS							
DESIGNATOR	ITEM	QTY	EXT	STK	ROHS		PART	MANUFAC	VENDOR	VENDOR	PURCH	UNIT	TOTAL	NEW
NUMBER	#	REQ	QTY	CHK		DESCRIPTION	#	TURER	VENDOR	PART #	QTY	PRICE	TOTAL	STOCK
Related Documents														
	0.5	1	1			Schematic 10369a (80369), Model 353	1D20369 Rev.A	Designed by Andrey Filippov						
	20	1	1			Fabrication (80369), Model 353	4F20369 Rev.A							
	21	1	1			Artwork (80369), Model 353	4G20369 Rev.A							
Modules														
M1	40	1	1		Y	Fan, Axial, 16mm x 16 mm x 4.0mm, 3.3V, 20mA, 0.07W, F16EA-03LLC	F16EA-03LLC	Copal Electronics	Digi-Key	563-1106-ND	1	13.94	13.94	0
Integrated Circuits														
U7, U13	41	2	2		Y	Optocoupler, High Speed Open Collector Output, 3.3V, PS-SOP-5	PS9121A	CEL	Digi-Key	PS9121-ND	2	2.93	5.86	0
U1	42	1	1		Y	8 bit I2C poer with 2Kb EEPROM, HVQFN-16	PCA9500BS	NXP Semiconductors	Digi-Key	568-3351-1-ND	1	1.78	1.78	0
U10	43	1	1		Y	Current-Limited Power Distribution Switch, DGN-8	TPS2061DGNR	Texas Instruments	Digi-Key	296-17225-1-ND	1	1.25	1.25	0
U15, U17	44	2	2		Y	Dual Channel Power Distribution Switch, SOIC-8	MIC2026-1YM	Micrel	Digi-Key	576-1059-1-ND	2	0.95	1.9	0
U3	45	1	1		Y	Dual Inverter, SC-70-6, marked as CD_	SN74LVC2GU04DCKR	Texas Instruments	Digi-Key	296-13277-1-ND	1	0.4	0.4	0
U8	46	1	1		Y	Generic SATA Bridge, QFN-64	GENERIC-SATA-BRIDGE	Generic	Generic		1	6.69	6.69	0
U9	47	1	1		Y	Local/Remote Temperature Sensor with I2C Interface, TSSOP-8	SA56004ADP	NXP Semiconductors	Digi-Key	568-3330-1-ND	1	0.84	0.84	0
U6, U12	48	2	2		Y	Optocoupler, Darlington Phototransistor Output, SHARP-SOP-4	PC3H510NIP0F	Sharp	Digi-Key	425-2106-1-ND	2	0.69	1.38	0
U2	49	1	1		Y	Quad 2 Input AND Gate, VSSOP-8, marked as C08	SN74LVC2G08DCUR	Texas Instruments	Digi-Key	296-13264-1-ND	1	0.64	0.64	0

DESIGNATOR	ITEM	QTY	EXT	STK	ROHS		PART	MANUFAC		VENDOR	PURCH	UNIT	TOTAL	NEW
NUMBER	#	REQ	QTY	CHK		DESCRIPTION	#	TURER	VENDOR	PART #	QTY	PRICE	TOTAL	STOCK
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U4	50	1	1		Y	Real Time Clock/Calendar, SOIC-8	PCF8563TD	NXP Semiconductors	Digi-Key	568-1068-1-ND	1	1.33	1.33	0
U16	51	1	1		Y	RS232 driver, Dual Tx/Rx, TSSOP-16	ADM3202ARUZ	Analog Devices	Digi-Key	ADM3202ARUZ-ND	1	1.35	1.35	0
U5, U11	52	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	2.54	5.08	0
U14	53	1	1		Y	USB 2.0 High-Speed 4-Port Hub Controller, QFN-36	USB2514-AEZG	SMSC	NuHorizons		1	3.25	3.25	0
						Power Supply Modules								
DC2	54	1	1		Y	LDO regulator, 1.8V, 200mA , TSOT-23-5	TPS79918DDCR	Texas Instruments	Digi-Key	296-17778-1-ND	1	0.87	0.87	0
DC3	55	1	1		Y	Step-Up DC/DC Synchronous Converter, 750mA , DFN-8, marked as LTCFB	LTC3499BEDD#PBF	Linear Technology	Linear Technology		1	3.07	3.07	0
						Transistors								
Q1	56	1	1		Y	N-channel Enhanced Mode FET, 100V, 170mA, 200mW , SOT-323, marked as K23	BSS123W-7-F	Diodes Inc	Digi-Key	BSS123W-FDICT-ND	1	0.53	0.53	0
						Diodes								
CR2-CR3	57	2	2		Y	Shottky Diode, Series, 30V, 200mA, 200mW , SOT-323, marked as KL8	BAT54SW-7-F	Diodes Inc	Digi-Key	BAT54SW-FDICT-ND	2	0.81	1.62	0
CR1	58	1	1		Y	Shottky Diode, Series, 100nA Reverse Current, 70V, 70mA , SOT-323, marked as KL8	BAS70-04W	NXP Semiconductors	Digi-Key	568-3408-1-ND	1	0.37	0.37	0
						Oscillators and Crystals								
Y3	59	1	1		Y	Quartz Crystal, 24MHZ, ±10ppm , XTAL2520	NX2520SA-24.000000MHZ	NDK	Digi-Key	644-1061-1-ND	1	1.5	1.5	0
Y1	60	1	1		Y	Quartz Crystal, 32.768KHZ, ±20ppm , ECX-31	ECS-.327-12.5-32-TR	ECS	Digi-Key	XC1085CT-ND	1	4.47	4.47	0
Y2	61	1	1		Y	Quartz Crystal, 25MHZ, ±50ppm , NX5032GA	NX5032GA-25.000000MHZ	NDK	Digi-Key	644-1041-1-ND	1	0.57	0.57	0
						Resistors								
R15	62	1	1		Y	Resistor, 49.9Ω, ±1% , SMD 0402, marked as 49R9	RC0402FR-0749R9L	Yageo	Digi-Key	311-49.9LRCT-ND	10	0.094	0.94	9
R7-R8, R10-R11	63	4	4		Y	Resistor, 100Ω, ±1% , SMD 0402, marked as 1000	ERJ-2RKF1000X	Panasonic	Digi-Key	P100LCT-ND	10	0.098	0.98	6
R6, R18	64	2	2		Y	Resistor, 332Ω, ±1% , SMD 0402, marked as 3320	RC0402FR-07332RL	Yageo	Digi-Key	311-332LRCT-ND	10	0.094	0.94	8
R2, R17	65	2	2		Y	Resistor, 510Ω, ±1% , SMD 0402, marked as 5100	RC0402FR-07510RL	Yageo	Digi-Key	311-510LRCT-ND	10	0.094	0.94	8
R12-R13, R26	66	3	3		Y	Resistor, 1.21KΩ, ±1% , SMD 0402, marked as 1211	RC0402FR-071K21L	Yageo	Digi-Key	311-1.21KLRCT-ND	10	0.094	0.94	7

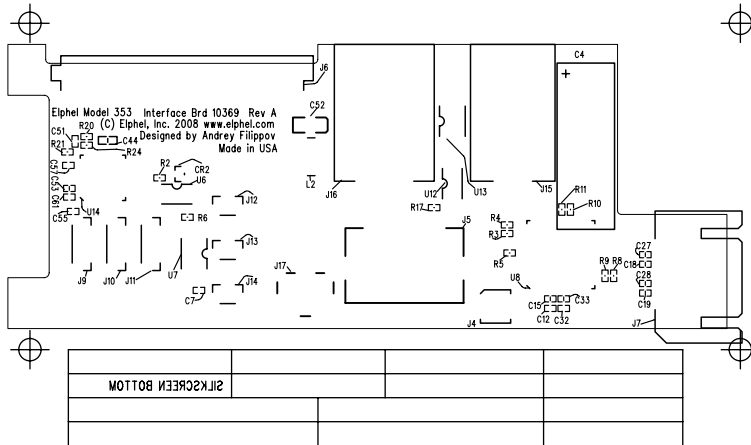
DESIGNATOR	ITEM	QTY	EXT	STK	ROHS		PART	MANUFAC		VENDOR	PURCH	UNIT	TOTAL	NEW
NUMBER	#	REQ	QTY	CHK		DESCRIPTION	#	TURER	VENDOR	PART #	QTY	PRICE		STOCK
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R1, R3	67	2	2		Y	Resistor, 4.7KΩ , $\pm 1\%$, SMD 0402, marked as 4701	ERJ-2RKF4701X	Panasonic	Digi-Key	P4.70KLCT-ND	10	0.098	0.98	8
R5	68	1	1		Y	Resistor, 5.62KΩ , $\pm 1\%$, SMD 0402, marked as 5621	ERJ-2RKF5621X	Panasonic	Digi-Key	P5.62KLCT-ND	10	0.098	0.98	9
R4, R9, R28	69	3	3		Y	Resistor, 10KΩ , $\pm 1\%$, SMD 0402, marked as 1002	RC0402FR-0710KL	Yageo	Digi-Key	311-10.0KLRCT-ND	10	0.094	0.94	7
R14, R27	70	2	2		Y	Resistor, 12.1KΩ , $\pm 1\%$, SMD 0402, marked as 1212	RC0402FR-0712K1L	Yageo	Digi-Key	311-12.1KLRCT-ND	10	0.094	0.94	8
R19-R21, R24	71	4	4		Y	Resistor, 100KΩ , $\pm 1\%$, SMD 0402, marked as 1003	RC0402FR-07100KL	Yageo	Digi-Key	311-100KLRCT-ND	10	0.094	0.94	6
R23	72	1	1		Y	Resistor, 287KΩ , $\pm 1\%$, SMD 0402, marked as 2873	ERJ-2RKF2873X	Panasonic	Digi-Key	P287KLCT-ND	10	0.098	0.98	9
R22	73	1	1		Y	Resistor, 887KΩ , $\pm 1\%$, SMD 0402, marked as 8873	ERJ-2RKF8873X	Panasonic	Digi-Key	P887KLCT-ND	10	0.098	0.98	9
R16, R25	74	2	2		Y	Resistor, 1MΩ , $\pm 1\%$, SMD 0402, marked as 1004	ERJ-2RKF1004X	Panasonic	Digi-Key	P1.00MLCT-ND	10	0.098	0.98	8
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C37, C53	75	2	2		Y	Capacitor, Ceramic Chip, X5R, 1μF , 10V , $\pm 10\%$, C-0402	GRM155R61A105KE15D	Murata	Digi-Key	490-3890-1-ND	10	0.078	0.78	8
C44, C48	76	2	2		Y	Capacitor, Ceramic Chip, X5R, 4.7μF , 10V , $\pm 10\%$, C-0603	LMK107BJ475KA-T	Taiyo Yuden	Digi-Key	587-1441-1-ND	10	0.396	3.96	8
C4	77	1	1		Y	Electric Double Layer Capacitors, 1F , 2.5V , D8L22	EECA0EL105	Panasonic	Digi-Key	P6963-ND	1	4.15	4.15	0
C8, C21, C35, C39	78	4	4		Y	Capacitor, Ceramic Chip, 2.2μF , 6.3V , C-0402	GRM155R60J225ME15D	Murata	Digi-Key	490-4519-1-ND	10	0.371	3.71	6
C31, C36, C52, C54	79	4	4		Y	Low ESR Tantalum Chip Capacitor with Polymer Electrode, 100μF , 6.3V , 3216-12	TCTAL0J107M8R	Rohm	Digi-Key	511-1498-1-ND	4	0.75	3	0
C1, C3, C5-C7, C9-C13, C17, C20, C22-C23, C32, C34, C43, C45-C47, C49-C51, C55-C63	80	32	32		Y	Capacitor, Ceramic Chip, 0.1μF , 10V , C-0402D	C0402C104K8PACTU	Kemet	Digi-Key	399-3027-1-ND	32	0.083	2.656	0
C29-C30	81	2	2		Y	Capacitor, Ceramic Chip, 10pF , 50V , C-0402	ECJ-0EC1H100D	Panasonic	Digi-Key	PCC100CQCT-ND	10	0.019	0.19	8
C38, C41	82	2	2		Y	Capacitor, Ceramic Chip, 27pF , 50V , C-0402	ECJ-0EC1H270J	Panasonic	Digi-Key	PCC270CQCT-ND	10	0.026	0.26	8
C40	83	1	1		Y	Capacitor, Ceramic Chip, 330pF , 50V , C-0402	C0402C331K5RACTU	Kemet	Digi-Key	399-1023-1-ND	1	0	0	0
C14-C16, C24-C26, C33	84	7	7		Y	Capacitor, Ceramic Chip, 1nF , 50V , C-0402	ECJ-0EB1H102K	Panasonic	Digi-Key	PCC1721CT-ND	10	0.019	0.19	3

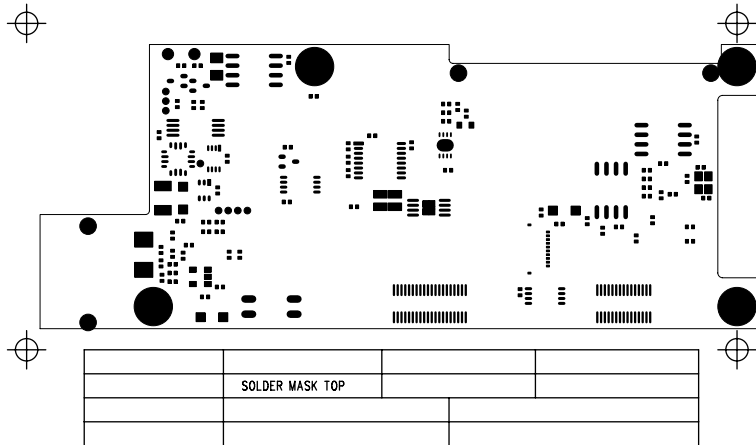
DESIGNATOR	ITEM	QTY	EXT	STK	ROHS		PART	MANUFAC		VENDOR	PURCH	UNIT		NEW
NUMBER	#	REQ	QTY	CHK		DESCRIPTION	#	TURER	VENDOR	PART #	QTY	PRICE	TOTAL	STOCK
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C18-C19, C27-C28, C42	85	5	5		Y	Capacitor, Ceramic Chip, 0.01µF, 50V, C-0402	GRM155R71H103KA88D	Murata	Digi-Key	490-4516-1-ND	10	0.021	0.21	5
						Inductors and LC filters								
L2	86	1	1		Y	SMD Inductor, 4.7µHn, 1.7A, VLCF5020T	VLCF5020T-4R7N1R7-1	TDK	Digi-Key	445-3207-1-ND	1	0.81	0.81	0
L1	87	1	1		Y	SMD Inductor, 6.8µHn, 300mA, L-1210	ELJ-PA6R8MF	Panasonic	Digi-Key	PCD1483CT-ND	1	0.27	0.27	0
L3-L4, L6-L7, L9-L10, L12-L13	88	8	8		Y	SMD Inductor, 120 Ohm, 1.2A, SMD 0402	MPZ1005S121C	TDK	Digi-Key	445-2981-1-ND	8	0	0	0
						Connectors								
J4	89	1	1			Connector header, Milli-Grid 2mm, Vertical SMT, 4 contacts, 125V, 1A, 87759-0414	87759-0414	Molex	Digi-Key	WM18712-ND	1	0.83	0.83	0
J17	90	1	1		Y	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	1.25	1.25	0
J18	91	1	1		Y	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	0.54	0.54	0
J5	92	1	1		Y	Connector header, Micro-Fit 3.0, SMT, Right-Angle, 4 contacts, 250V, 5A, 43650-0410	43650-0410	Molex	Digi-Key	43650-0410	1	4.04	4.04	0
J19	93	1	1		Y	Connector receptacle Micro-Fit 3.0, Crimp Housing, 4 contacts, 250V, 5A, 43645-0400	43645-0400	Molex	Digi-Key	WM1847-ND	1	0.56	0.56	0
J3	94	1	1		Y	Connector Receptacle Low profile Milli-Grid 2mm, 2 rows, 2 contacts, 500V, 2A, SMD 873400424	873400424	Molex	Digi-Key	WM18688-ND	1	1.2	1.2	0
J8-J11	95	4	4		Y	0.5 mm-Pitch Right Angle FPC Connector, 10 pos., Bottom Contacts, FH19SC10S05SH05	FH19SC-10S-0.5SH-05	Hirose	Digi-Key	HFN510CT-ND	4	1.83	7.32	0
J12-J13	96	2	2		Y	0.5 mm-Pitch Right Angle FPC Connector, 4 pos., Bottom Contacts, FH19SC4S05SH05	FH19SC-4S-0.5SH-05	Hirose	Digi-Key	HFN504CT-ND	2	1.5	3	0
J14	97	1	1		Y	0.5 mm-Pitch Right Angle FPC Connector, 4 pos., Top Contacts, FH34S4S05SH10	FH34S-4S-0.5SH-10	Hirose	Digi-Key	HFT04CT-ND	1	3	3	0
J1	98	1	1		Y	Connector Receptacle 30 pins, 0.5mm pitch, DF12D30DP05V	DF12D(4.0)-30DP-0.5V(81)	Hirose	Digi-Key	H5234CT-ND	1	1.83	1.83	0
J2	99	1	1		Y	Connector Receptacle 40 pins, 0.5mm pitch, DF12D40DP05V	DF12D(4.0)-40DP-0.5V(81)	Hirose	Digi-Key	H5236CT-ND	1	2.17	2.17	0
J7	100	1	1		Y	Connector SATA, Right Angle, Plug, 7 contacts, 5607-4200-SH	5607-4200-SH	3M	Digi-Key	3M5561-ND	1	0.39	0.39	0

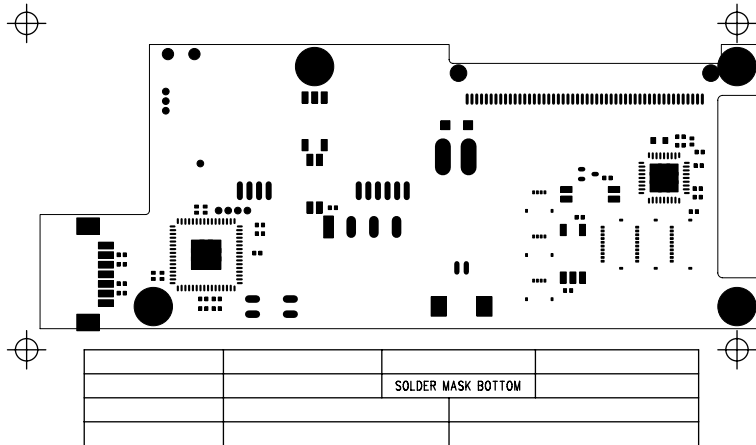
DESIGNATOR	ITEM	QTY	EXT	STK	ROHS		PART	MANUFAC		VENDOR	PURCH	UNIT		NEW
NUMBER	#	REQ	QTY	CHK		DESCRIPTION	#	TURER	VENDOR	PART #	QTY	PRICE	TOTAL	STOCK
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J6	101	1	1		Y	Horizontal Socket, 50 pins, 2 rows 1.27mm pitch, SFMH-125-02-L-D-LC	SFMH-125-02-L-D-LC	Samtec	Samtec		0	0	0	-1
J15	102	1	1		Y	Modular Jack 4p4c, 95001-6441	95001-6441	Molex	Digi-Key	WM5416-ND	1	1.24	1.24	0
J16	103	1	1		Y	Modular Jack 6p6c, 95001-6661	95001-6661	Molex	Digi-Key	WM5418-ND	1	1.36	1.36	0
						Sockets and Matching Parts								
XJ18	104	2	2			1.25mm Pitch Super Low profile Crimping Connector, 26-28AWG Crimp Gold Terminal, DF142628SCFA	DF14-2628SCFA	Hirose	Digi-Key		0	0	0	-2
XJ19	105	4	4			Connector Terminal, Micro-Fit 3.0, Female, 20-24AWG, Gold, 43030-0002	43030-0002	Molex	Digi-Key		0	0	0	-4

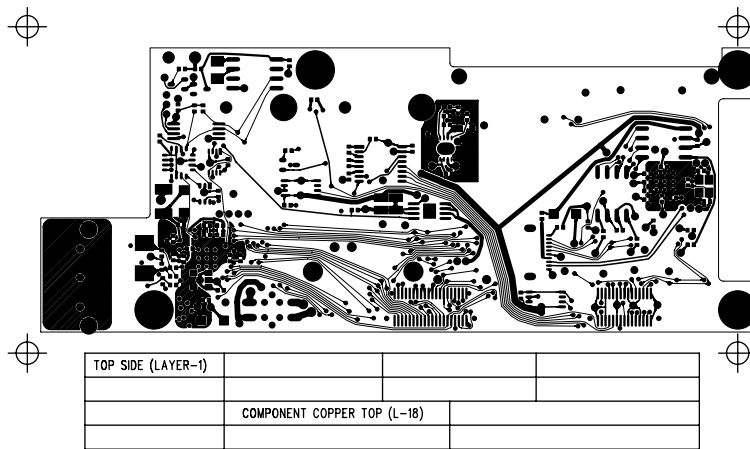


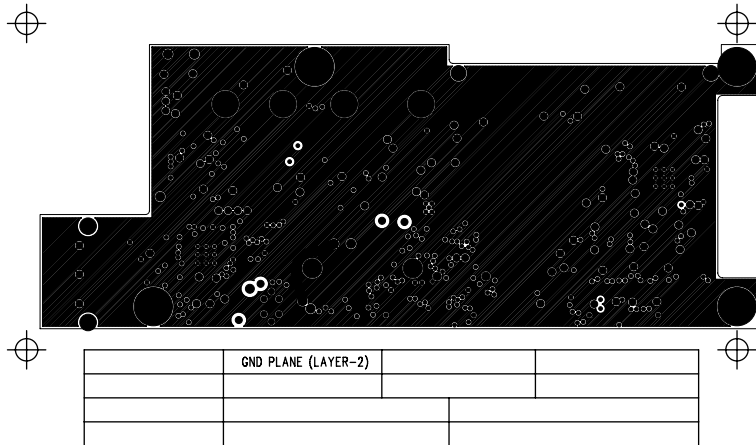
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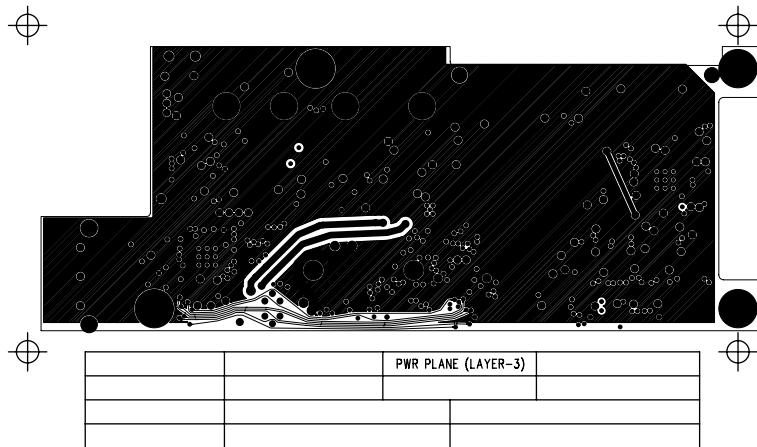


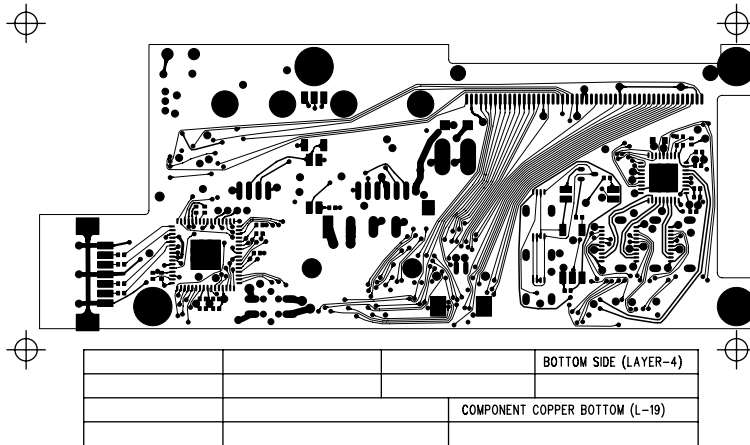


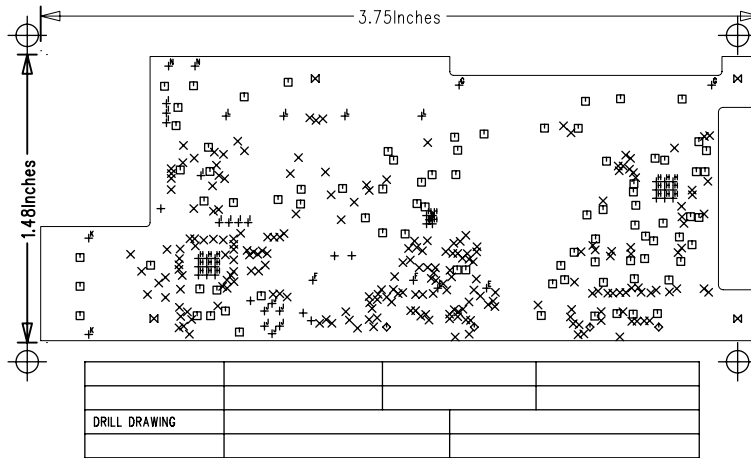




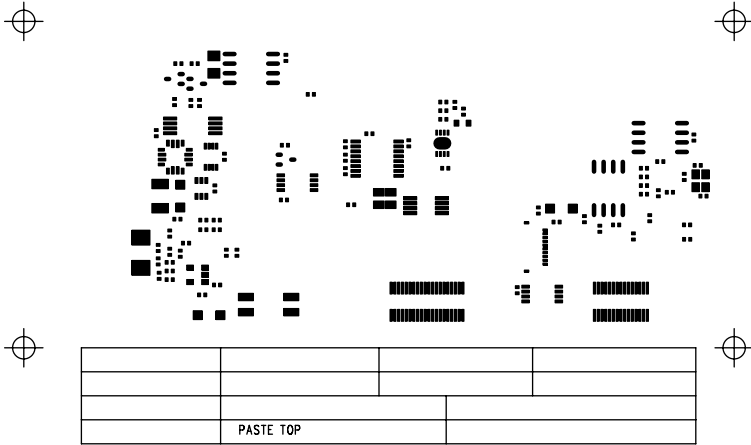


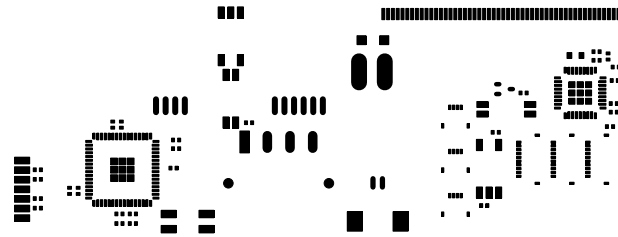






SIZE	QTY	SYM	PLTD
32	6	+	PLTD
10	224	×	PLTD
22	84	□	PLTD
23.62	4	◇	NPLTD
87	4	⊠	NPLTD
43.31	2	E	NPLTD
100	2	F	NPLTD
55.51	2	G	PLTD
11.81	23	H	PLTD
25	8	I	PLTD
31.5	6	J	NPLTD
59.06	2	K	PLTD
137.8	4	L	NPLTD
31.5	2	N	PLTD





			PASTE BOTTOM