

E-Navcon

Circuits and
Schematics

23 July 2015

Engineering Mgr.	Project Engr.	Checker

Rev	Description	Date	By

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NOTES: UNLESS OTHERWISE SPECIFIED

- BOARD ASSY SHALL MEET REQUIREMENTS OF IPC-A-610 CLASS 3.
- ASSEMBLE IN STATIC FREE AREA.
- MARK ASSEMBLY REVISION LETTER IN AREA SHOWN.
- MAX. COMPONENT HEIGHT TOP-6.4[.25], BOTTOM-6.4[.25] EXCEPT J4-10[.4].
- MAX. LEAD PROTRUSION: 2.3 [.09].
- FOR SCHEMATIC SEE 530.1556-SCH.
- REMOVED.
- DO NOT SOLDER U2, MUST BE BALL BONDED.
- CHECK Q8, Q12, Q23 FOR ANY SHORTS.
- DETAIL FOR TRANSISTORS Q1, Q4, Q5, Q7, Q10, Q15, Q17, Q19, & Q21:

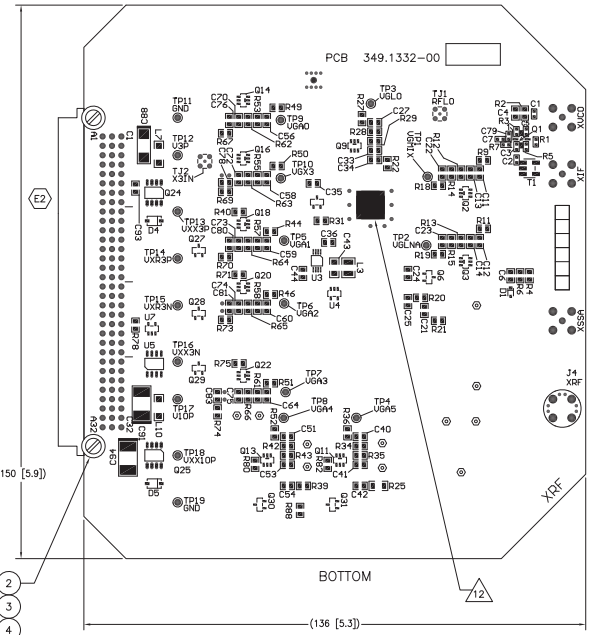
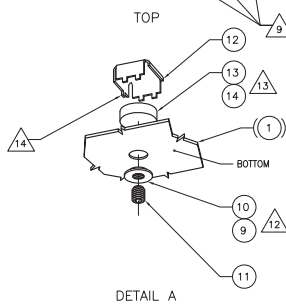
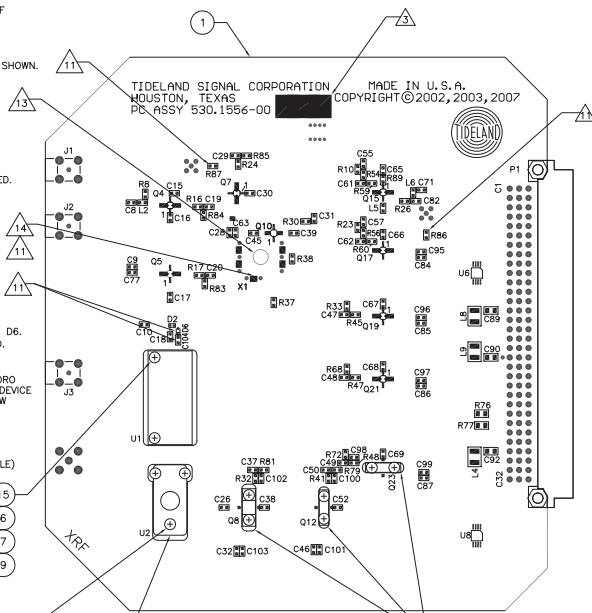


- DO NOT INSTALL T2, R86, R87, X1, C104, D6. T2, R86, R87, C104 & D6 ARE NOT USED. X1 IS INSTALLED AT TEST, REF DETAIL A.
- APPLY ADHESIVE (ITEM 9) TO FLANGE OF DRO TUNING DEVICE (ITEM 10). INSERT TUNING DEVICE IN COUNTERBORED HOLE. INSTALL SETSCREW (ITEM 11) AS INDICATED. DO NOT TOUCH TRANSMISSION LINE. (BY TSC ONLY)
- INSTALL OSCILLATOR (ITEM 13) ON TOP OF BOARD (ON THE SILKSCREENED WHITE CIRCLE) USING ADHESIVE (ITEM 14). (BY TSC ONLY)
- POSITION SHIELD ON PADS WITH OPEN SIDE UPWARD (TOWARD "TIDELAND SIGNAL CORPORATION"). HOLD SHIELD DOWN ON BOARD AND SOLDER TAB INDICATED AFTER ALIGNING ALL TABS WITH PADS. SOLDER REMAINING TABS WHILE HOLDING SHIELD IN PLACE. (BY TSC ONLY)

- THE FOLLOWING COMPONENTS TO HAVE GOLD REMOVED VIA HOT SOLDER DIP TO PREVENT GOLD RELATED SOLDER EMBRITTLMENT. PARTS ARE TO BE TINNED WITH SN63/37, REF IPC J-STD-001: Q1, Q4, Q5, Q7, Q8, Q10, Q12, Q15, Q17, Q19, Q21, AND Q23.

- DENOTES REVISION SYMBOL.

TIDELAND SIGNAL CORPORATION
HOUSTON, TEXAS
PC ASSY 530.1556-00
MADE IN U.S.A.
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DASH OPTION	
DASH NO.	DESCRIPTION
-00	XRF, SBCN-2 SYS 6 (UNTUNED)
-01	XRF, SBCN-2 SYS 6 (TUNED)

APPROVED FOR:
ONLY
INT. DATE

REV	EDN	ZONE	DESCRIPTION	BY	CHK	DATE	APVD
F	6351		1) ADDED DASH OPTION TABLE	HA	LM	18JAN13	PFM
E	6240	C4	2) DELETED NOTE 7	HA	FS	07SEP12	PFM
D	5509		1) REMOVED NOTE 7	KJN	KN	20OCT10	PFM
C	4612		ADDED NOTE 15	HA	HF	22JAN07	PFM
B	4398		REMOVED SOLDER MASK AT X1, Z151	HA	HF	08FEB04	PFM
A	---		ADDED ITEM 15	HA	HF	31MAR05	PFM
			X8 RELEASED AS REV. A	HA	HF		PFM

ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED.

UNLESS OTHERWISE SPECIFIED:		MATERIAL		SEE BOM		TIDELAND SIGNAL CORP.	
1. TOLERANCE	2. TOLERANCE	3. TOLERANCE	4. TOLERANCE	5. TOLERANCE	6. TOLERANCE	7. TOLERANCE	8. TOLERANCE
MILLIMETERS	INCHES	MILLIMETERS	INCHES	MILLIMETERS	INCHES	MILLIMETERS	INCHES
1. = 10.4	1. = 0.41	1. = 10.4	1. = 0.41	1. = 10.4	1. = 0.41	1. = 10.4	1. = 0.41
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REV	EDN	ZONE	DESCRIPTION	BY	CHK	DATE	APVD
F	6351		1) ADDED DASH OPTION TABLE	HA	LM	18JAN13	PFM
E	6240	C4	2) DELETED NOTE 7	HA	FS	07SEP12	PFM
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C	4612		ADDED NOTE 15	HA	HF	22JAN07	PFM
B	4398		REMOVED SOLDER MASK AT X1, Z151	HA	HF	08FEB04	PFM
A	---		ADDED ITEM 15	HA	HF	31MAR05	PFM
			X8 RELEASED AS REV. A	HA	HF		PFM

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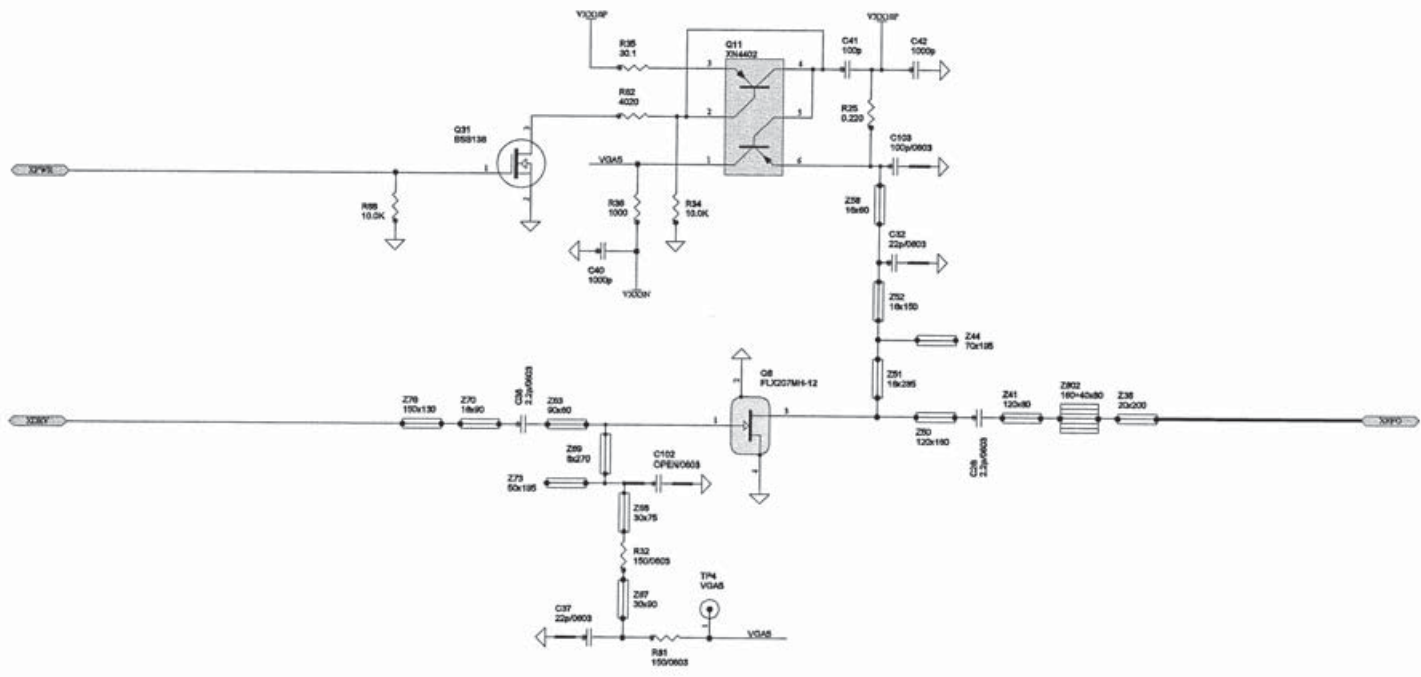
APPROVED FOR:
 XXXXXXXX ONLY
 XXX INT. XXXXXX DATE

SealBeacon 2 System 8 - X Band RF Module	
530 1559-8CH	
24-Mar-2005	
C:\TIDELAND\TIDELAND\TIDELAND-TEMP\TIDELAND\TIDELAND	



Tideland Signal Corp.
 4315 Cleveland Ave.
 Houston, Texas 77062
 713-561-8151
 REV: A
 05/05/05
 1 OF 8

ORIGINAL



NOTES: RF SUBSTRATE IS ROGERS RO4003, E=3.38, H=16mil, T=2.8mil, C=600ohm. RF TRACK WIDTHS: W = 8 mil W = 24 mil
 RF VARIOID IS 32mil ROUND PAD, 19mil HOLE. W = 10 mil W = 30 mil
 RF VARIOID REFERENCE PLANE IS THROUGH CENTER OF PAD. W = 12 mil W = 35 mil
 DISTRIBUTED ELEMENT PARAMETERS ARE SPECIFIED IN MILS.
 CHIP R, L, C ARE 0805 FOOTPRINT UNLESS OTHERWISE NOTED.

X RF Module - RF Power Amplifier			Tideland Signal Corp. 4010 Directors Row Houston, Texas 77062 713-881-8121
530.1558-001			REV: A
24-Mar-2005			02/05/05
D:\TIDELAND\COMMISSIONERS\RF\RF_MODULE\RF_MODULE.ASCH			5 OF 9

ORIGINAL

X-BAND ENVELOPE
BASEBAND
(465MHz, +1048Hz)

J3
XBSA

X-BAND ANTENNA PORT
9300 - 9500 MHz

J4
XBP

XBP

Z1
20x75

Z3
20x75

Z2
8x40

Z5
20x107

Z4
20x75

Z601
150x40x80

U2
9.4 GHz

BPF

U1
9.4 GHz

R21
48.8

C21
10n

R20
3010

C26
300n

VCCP

C24
300n

Q8
FMMT2007A

VCCIN

C104
0.1p/0803

C18
1.2p/0803

Z25
20x105

Q2
NPL4700

Z24
20x75

Z18
8x200

Z13
50x200

XBP

C10
22p/0803

VCCIN

VCCP

R8
50.1K

R4
1000

D1
MA3J728

Q8
OPEN

NOTES: RF SUBSTRATE IS ROGERS RO4003, E=0.38, H=16mil, T=0.8mil, C=500mil.
RF VCCIN IS 32mil ROUND PAD, 16mil HOLE.
RF VCCIN REFERENCE PLANE IS THROUGH CENTER OF PAD.
DISTRIBUTED ELEMENT PARAMETERS ARE SPECIFIED IN MILS.
GSP & L C ARE 0805 FOOTPRINT UNLESS OTHERWISE NOTED.

RF TRACK WIDTHS:

W = 8 mils W = 24 mils
W = 10 mils W = 30 mils
W = 12 mils W = 35 mils

XBP Module - Diplexer
530 1559-8CH
24-Mar-2006
TIDELAND/ALCOHOL/ELITE-TDMP_NEW/BOUDEX.BCH



Tideland Signal Corp.
4310 Cleveland Ave
Houston, Texas 77062
713-981-8100
REV: A
05/05/06
6 OF 8

ORIGINAL

1. ALL DIMENSIONS ARE BASIC.
2. THIS MANUFACTURER SHALL MEET THE REQUIREMENTS OF MIL-STD-883C, CLASS B, TEST 1005 AND TEST 1009.
3. MANUFACTURE USING ARMY/NAVY 3403-12-01 REV E, SIX COPPER LAYERS WITH SOLDER MASK, SUGCREEN, AND PASTE MASK ON BOTH OUTER LAYERS. FOR MANUFACTURING PURPOSES THIS ARMY/NAVY SHALL NOT BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.
4. LAYER 1 (TOP GROUND) AND LAYER 2 (INTERNAL GROUND) TO BE 0.0125 OUNCES COPPER ON ROGERS RO4003 SUBSTRATE OF THICKNESS 0.141 [0.016] INCH. LAYER 3 (INTERNAL GROUND) TO BE 0.0125 OUNCES COPPER ON FR-4 SUBSTRATE OF THICKNESS 0.0625 [0.008] INCH. LAYER 4 (INTERNAL GROUND) TO BE 0.0125 OUNCES COPPER ON FR-4 MATERIAL, SIZED TO MAKE OVERALL THICKNESS OF BOARD 2.39 [0.016] INCH. LAYER 5 (INTERNAL GROUND) TO BE 0.0125 OUNCES COPPER ON FR-4 SUBSTRATE OF THICKNESS 0.0625 [0.008] INCH. LAYER 6 (BOTTOM GROUND) TO BE 0.0125 OUNCES COPPER ON ROGERS RO4003 SUBSTRATE OF THICKNESS 0.141 [0.016] INCH. DIELECTRIC CONSTANT 3.38, NOMINAL COPPER, COPPER CLAD LAMINATE AND PREPARED MATERIALS SHALL CONFORM TO MIL-PRC-131, TYPE 1, CLASS 1. ALL DIMENSIONS SHALL BE IN ACCORDANCE WITH LAYER AND LAYER ARRANGEMENTS SHALL BE IN ACCORDANCE WITH DETAIL A.
5. BOARD MUST BE PERMANENTLY MARKED, ON LAYER 6 (BOTTOM GROUND) WITH THE FOLLOWING DATA: (1) PART NUMBER, (2) LOT NUMBER, (3) PURCHASE ORDER IN COPPER IN AREA INDICATED BY "X".
6. CURRENTLY LISTED AS SUPPLIER MARK AS RECOGNIZED FOR UL LISTING (UL 94V-0) OF DATE CODE 0002 (YEAR OF MANUFACTURE).
7. MINIMUM CONDUCTOR WIDTH 0.025 [0.008] INCH.

8. TOP AND BOTTOM LAYERS TO BE FINISHED BY GOLD IMMERSION PROCESS, 0.0008 [0.00003] - 0.00020 [0.00008] GOLD OVER NICKEL (ENIG) PER IPC-4552.

9. ALL PLATED THRU HOLES SHALL HAVE A MINIMUM OF 0.00008 [.000003] - 0.00020 [.00008] GOLD.

10. ALL HOLE SIZES ARE AFTER PLATING, WITH TOLERANCE ± 0.05 [$\pm .002$].

11. SOLDERMASK GREEN.
12. SILKSCREEN SHALL BE APPLIED TO BOTH SIDES OF BOARD PER MASTER PATTERN SILKSCREENS, USING NON-CONDUCTIVE WHITE EPOXY INK.
13. BOARD MUST BE 1.00M BARE BOARD TESTED DOWN TO 0.0015 IN MINIMUM

13. BOARD MUST BE 100% BARE BOARD TESTED POINT TO POINT ON MANIA SYSTEM OR EQUIVALENT. TEST CERTIFICATION MUST BE PROVIDED. TEST CERTIFICATION MUST INCLUDE 40VDC TEST VOLTAGE, 50 OHM OPEN SENSITIVITY, 2.5 MEGOHM SHORT AND 300mA MAX TEST CURRENT.

15. BOARD FLATNESS TO BE 0.25 [0.10] 25.40 [1.00] / 25.40 [1.00],

17. DIMENSIONS FOR 5 MILLED RECESSES ON TOP SIDE ARE BEFORE PLATING. TOP SIDE RECESSES PLATED WITH MINIMUM 0.03 [0.001] COPPER AND MAKE DIRECT CONTACT WITH GROUND PLANE ON LAYER 2. INSPECT TOP SIDE RECESSES IN AREAS MARKED BY A REMOVE ANY PLATING THAT

REMOVED

19. CRITICAL DIMENSION HOLD TOLERANCE AS MARKED.

20. THESE DIMENSIONS ARE USE TO SET THE BOARD EDGES, REFERENCED TO THE CENTER LINES OF TRACES AT U2.

11.94 [.470]

2X 4.70 [.185]

20.58 [.810]

2X 1.27 [.050] → 9.40^{+0.25}_{-.00} [.370^{+0.010}_{-.000}] Δ_{19}

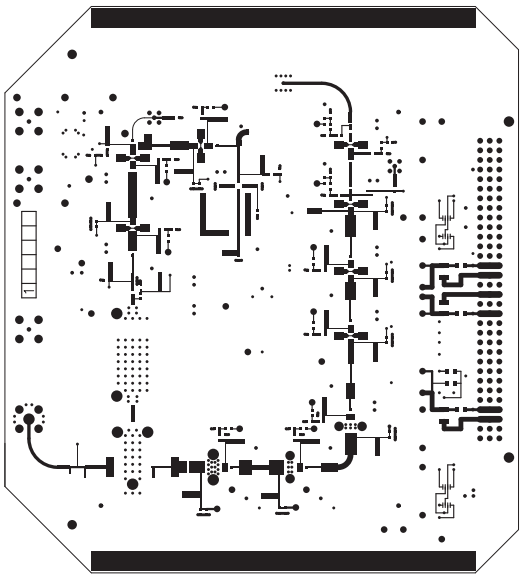
DETAIL B
 $\nabla 1.40 \pm .08$ [.055 $\pm$.003]
 FROM TOP OF UNPLATED SUBSTRATE

6100	REVISED NOTE 3	HA	FS	21MAY12
5988	REVISED SLOT TOLERANCE	HA	FS	30JAN12

5531	REVISED, ADDED A FIELD OF VIAS	HA	PM	09MAY11
4612	UPDATED AWK, SOLDER MASK	HA	HF	18JAN07
4593	ADDED "J" HOLE, REVISED NOTES	HA	HF	30NOV06
--	X6 RELEASED AS REV. A	HA	HF	31MAR05

EDN	DESCRIPTION	BY	CHK	DATE
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED.				
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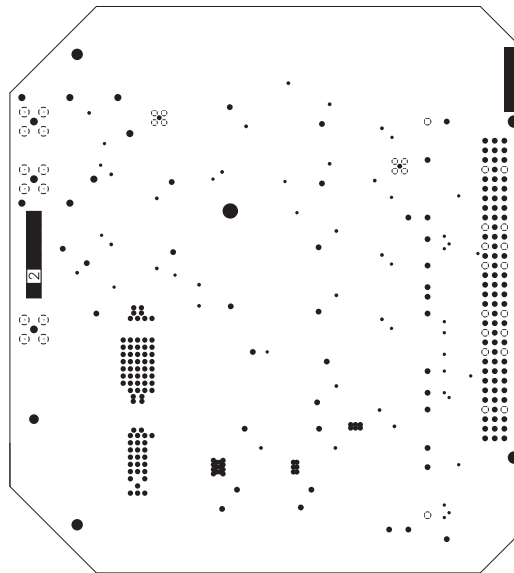
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Layer Name _____ TopLayer
Stacking Chart _____ 1

E	6100	DELETED DIMENSIONS, REMOVED UNUSED	LH	FS	14MAY12	PFM			
		PASTE MASK PADS							
D	5531	ADDED A FIELD OF VIAS	BM						
C	4612	REMOVE SOLDER MASK AT X1, Z151	JTH	HF	17JAN07	PFM			
B	4593	LARGER PAD AT J2, MORE CLEARANCE	JTH	HF	30NOV06				
A		X6 REL. AS A	JU	HF	10MAY02				
REV	ECN	DESCRIPTION	BY	CHK	DATE	APVD			
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED									

		TIDELAND SIGNAL CORP.		TITLE	
4310 DIRECTORS RD		HOUSTON, TEXAS 77092		ARTWORK	
THIS DRAWING EMBODIES PROPRIETARY AND CONFIDENTIAL INFORMATION AND IS LOANED BY TIDELAND SIGNAL CORPORATION WITH THE UNDERSTANDING THAT IT WILL NOT BE REPRODUCED IN PART OR WHOLE OR USED FOR ANY PURPOSE OTHER THAN MAINTENANCE, REPAIR, OR INSTALLATION AND THAT IT SHALL BE RETURNED ON DEMAND.				XRF MODULE	
DRAWN		DATE	DESIGN BY:	DWG SIZE	PART NUMBER
Juanelli	10MAY02	ANALYSIS & DESIGN GROUP			
CHECKED	DATE	P.O. BOX 54430			
		HOUSTON, TEXAS 77234			
		(281) 481-4823			
PROJ ENGR	DATE	UL	EX	DO NOT SCALE DRAWING	SCALE
SHEET 1 OF 15					



Layer Name InternalPlane1

Stacking Chart 2

REV	ECN	DESCRIPTION	BY	CHK	DATE	APVD
E	6100	DELETED DIMENSIONS, REMOVED UNUSED PASTE MASK PADS	LH	FS	14MAY12	PFH
D	5531	ADDED A FIELD OF VIAS	BM			
C	4612	REMOVE SOLDER MASK AT X1, Z151	JTH	HF	17JAN07	PFH
B	4593	LARGER PAD AT J2, MORE CLEARANCE	JTH	HF	30NOV06	
A		X6 REL. AS A	JU	HF	10MAY02	
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED						

		TIDELAND SIGNAL CORP.		TITLE	
4310 DIRECTORS RD		HOUSTON, TEXAS 77092		ARTWORK	
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DRAWN Jvanelli		DATE 10MAY02		SBCN2 SYS6	
DESIGN BY: ANALYSIS & DESIGN GROUP		DWG SIZE B		PART NUMBER	
P.O. BOX 54430		HOUSTON, TEXAS 77234		349.1332-AWK	
(281) 481-4823		DO NOT SCALE DRAWING		SCALE	
PROJ ENGR		DATE		SHEET 2 OF 15	

11-May-2012
08:00:26
3491332EPCB

Layer Name _____ MidLayer1

Stacking Chart _____ 3 _____

REV	ECN	DESCRIPTION	BY	CHK	DATE	APUD
E	6100	DELETED DIMENSIONS, REMOVED UNUSED PASTE MASK PADS	LH	FS	14MAY12	PFH
D	5531	ADDED A FIELD OF VIAS	BM			
C	4612	REMOVE SOLDER MASK AT X1, Z151	JTH	HF	17JAN07	PFH
B	4593	LARGER PAD AT J2, MORE CLEARANCE	JTH	HF	30NOV06	
A		X6 REL. AS A	JU	HF	10MAY02	
REV	ECN	DESCRIPTION	BY	CHK	DATE	APUD
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED						

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4310 DIRECTORS RD		HOUSTON, TEXAS 77092		ARTWORK	
THIS DRAWING EMBODIES PROPRIETARY AND CONFIDENTIAL INFORMATION AND IS LOANED BY TIDELAND SIGNAL CORPORATION WITH THE UNDERSTANDING THAT IT WILL NOT BE REPRODUCED IN PART OR WHOLE OR USED FOR ANY PURPOSE OTHER THAN PRESENTANCE, REPAIR, OR INSTALLATION AND THAT IT SHALL BE RETURNED ON DEMAND.				XRF MODULE	
DRAWN		DATE	DESIGN BY:	DWG SIZE	PART NUMBER
Juanelli	10MAY02	ANALYSIS & DESIGN GROUP			
CHECKED	DATE	P.O. BOX 34430			
		HOUSTON, TEXAS 77234			
		(281) 481-4823			
PROJ ENGR	DATE	UL	EX	DO NOT SCALE DRAWING	SCALE
SHEET 3 OF 15				REV E	

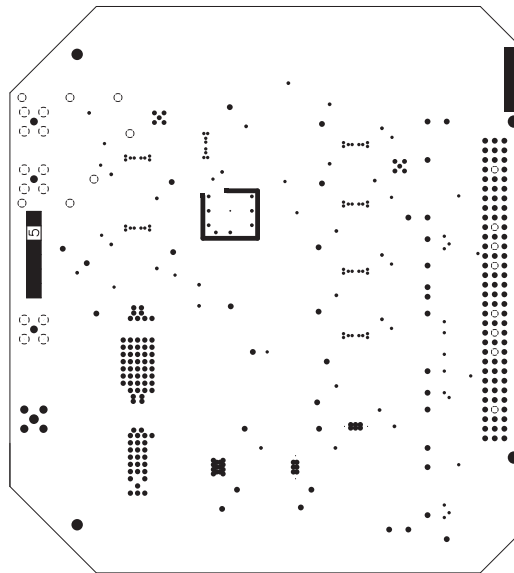
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Layer Name _____ MidLayer2

Stacking Chart _____ 4 _____

REV	ECN	DESCRIPTION	BY	CHK	DATE	APUD
E	6100	DELETED DIMENSIONS, REMOVED UNUSED	LH	FS	14MAY12	PFH
PASTE MASK PADS						
D	5531	ADDED A FIELD OF VIAS	BM			
C	4612	REMOVE SOLDER MASK AT X1, Z151	JTH	HF	17JAN07	PFH
B	4593	LARGER PAD AT J2, MORE CLEARANCE	JTH	HF	30NOV06	
A		X6 REL. AS A	JU	HF	10MAY02	
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED						

		TIDELAND SIGNAL CORP.		TITLE	
4310 DIRECTORS RDW		HOUSTON, TEXAS 77092		ARTWORK	
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DRAWN		DATE	DESIGN BY:	DWG SIZE	PART NUMBER
Jvanelli		10MAY02	ANALYSIS & DESIGN GROUP		
CHECKED		DATE	P.O. BOX 54430		
			HOUSTON, TEXAS 77234	B	349.1332-AWK
			(281) 481-4823		E
PROJ ENGR	DATE	UL	EX	DO NOT SCALE DRAWING	SCALE
				SHEET 4	OF 15



Layer Name InternalPlane2

Stacking Chart 5

REV	ECN	DESCRIPTION	BY	CHK	DATE	APVD
E	6100	DELETED DIMENSIONS, REMOVED UNUSED PASTE MASK PADS	LH	FS	14MAY12	PFH
D	5531	ADDED A FIELD OF VIAS	BM			
C	4612	REMOVE SOLDER MASK AT X1, Z151	JTM	HF	17JAN07	PFM
B	4593	LARGER PAD AT J2, MORE CLEARANCE	JTM	HF	30NOV06	
A		X6 REL. AS A	JU	HF	10MAY02	
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED						

		TIDELAND SIGNAL CORP.		TITLE	
4310 DIRECTORS RD		HOUSTON, TEXAS 77092		ARTWORK	
THIS DRAWING EMBODIES PROPRIETARY AND CONFIDENTIAL INFORMATION AND IS LOANED BY TIDELAND SIGNAL CORPORATION WITH THE UNDERSTANDING THAT IT WILL NOT BE REPRODUCED IN PART OR WHOLE OR USED FOR ANY PURPOSE OTHER THAN PRESENTATION, REPAIRS, OR INSTALLATION AND THAT IT SHALL BE RETURNED ON DEMAND.				XRF MODULE	
DRAWN		DATE	DESIGN BY:	DWG SIZE	PART NUMBER
Juanelli	10MAY02	ANALYSIS & DESIGN GROUP			
CHECKED	DATE	P.O. BOX 54430			
		HOUSTON, TEXAS 77234			
		(281) 481-4823			
PROJ ENGR	DATE	UL	EX	DO NOT SCALE DRAWING	SCALE
SHEET 5 OF 15					

11-May-2012
08:00:27
3491332EPCB

Layer Name _____ BottomLayer
Stacking Chart _____ [6]

REV	ECN	DESCRIPTION	BY	CHK	DATE	APUD
E	6100	DELETED DIMENSIONS, REMOVED UNUSED PASTE MASK PADS	LH	FS	14MAY12	PFM
D	5531	ADDED A FIELD OF VIAS	BM			
C	4612	REMOVE SOLDER MASK AT X1, Z151	JTH	HF	17JAN07	PFM
B	4593	LARGER PAD AT J2, MORE CLEARANCE	JTH	HF	30NOV06	
A		X6 REL. AS A	JU	HF	10MAY02	
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED						

 TIDELAND SIGNAL CORP. 4310 DIRECTORS RD HOUSTON, TEXAS 77092		TITLE ARTWORK XRF MODULE SBCN2 SYS6	
THIS DRAWING EMBODIES PROPRIETARY AND CONFIDENTIAL INFORMATION AND IS LOANED BY TIDELAND SIGNAL CORPORATION WITH THE UNDERSTANDING THAT IT SHALL NOT BE REPRODUCED IN PART OR WHOLE OR USED FOR ANY PURPOSE OTHER THAN PRESENTANCE, REPAIR, OR INSTALLATION AND THAT IT SHALL BE RETURNED ON DEMAND.			
DRAWN Jvanelli	DATE 10MAY02	DESIGN BY: ANALYSIS & DESIGN GROUP P.O. BOX 24430 HOUSTON, TEXAS 77234 (281) 481-4823	DWG SIZE B
CHECKED	DATE	PART NUMBER 349.1332-AWK	REV E
PROJ ENGR	DATE	UL	EX
DO NOT SCALE DRAWING		SCALE	SHEET 6 OF 15



 TIDELAND SIGNAL CORP. 4310 DIRECTORS ROW HOUSTON, TEXAS 77092				TITLE ARTWORK XRF MODULE SBNC2 SYS6	
THIS DRAWING CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION AND IS LOANED BY TIDELAND SIGNAL CORP. TO THE UNDERSIGNED PARTY. IT SHALL NOT BE REPRODUCED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN THE INSTANTaneous, REPAIR, OR INSTALLATION AND THAT IT SHALL BE RETURNED ON DEMAND.					
DRAWN Jwaneli CHECKED	DATE 10MAY02 DATE	DESIGN BY: ANALYSIS & DESIGN GROUP P.O. BOX 34490 HOUSTON, TEXAS 77234 (281) 481-1823	DWG SIZE B	PART NUMBER 349.1332-AWK	REV E
PROJ ENGR DATE	U/L EX	DO NOT SCALE DRAWING	SCALE	SHEET 7 OF 15	

11-May-2012
08:00:27
3491332EPCB

Layer Name _____ Bottom Overlay

Stacking Chart _____

REV	ECN	DESCRIPTION	BY	CHK	DATE	APVD
E	6100	DELETED DIMENSIONS, REMOVED UNUSED PASTE MASK PADS	LH	FS	14MAY12	PFR
D	5531	ADDED A FIELD OF VIAS	BM			
C	4612	REMOVE SOLDER MASK AT X1, Z151	JTH	HF	17JAN07	PFR
B	4593	LARGER PAD AT J2, MORE CLEARANCE	JTH	HF	30NOV06	
A		X6 REL. AS A	JU	HF	10MAY02	
REV	ECN	DESCRIPTION	BY	CHK	DATE	APVD
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED						

		TIDELAND SIGNAL CORP.		TITLE	
4310 DIRECTORS RD		HOUSTON, TEXAS 77092		ARTWORK	
THIS DRAWING EMBODIES PROPRIETARY AND CONFIDENTIAL INFORMATION AND IS LOANED BY TIDELAND SIGNAL CORPORATION WITH THE UNDERSTANDING THAT IT SHALL NOT BE REPRODUCED IN PART OR WHOLE OR USED FOR ANY PURPOSE OTHER THAN PERFORMANCE, REPAIR, OR INSTALLATION AND THAT IT SHALL BE RETURNED ON DEMAND.				XRF MODULE	
DRAWN		DATE	DESIGN BY:	DWG SIZE	PART NUMBER
Juanelli	10MAY02	ANALYSIS & DESIGN GROUP		B	349.1332-AWK
CHECKED	DATE	P.O. BOX 34430	HOUSTON, TEXAS 77234		REV
		(281) 481-4823			E
PROJ ENGR	DATE	UL	EX	DO NOT SCALE DRAWING	SCALE
					SHEET 8 OF 15

11-May-2012
08:00:27
3491332EPCB

Layer Name _____ Top Solder Mask
Stacking Chart _____

REV	ECN	DESCRIPTION	BY	CHK	DATE	APVD
E	6100	DELETED DIMENSIONS, REMOVED UNUSED PASTE MASK PADS	LH	FS	14MAY12	PFM
D	5531	ADDED A FIELD OF VIAS	BM			
C	4612	REMOVE SOLDER MASK AT X1, Z151	JTM	HF	17JAN07	PFM
B	4593	LARGER PAD AT J2, MORE CLEARANCE	JTM	HF	30NOV06	
A		X6 REL. AS A	JU	HF	10MAY02	
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED						

		TIDELAND SIGNAL CORP.		TITLE	
4310 DIRECTORS RD		HOUSTON, TEXAS 77092		ARTWORK	
THIS DRAWING EMBODIES PROPRIETARY AND CONFIDENTIAL INFORMATION AND IS LOANED BY TIDELAND SIGNAL CORPORATION WITH THE UNDERSTANDING THAT IT WILL NOT BE REPRODUCED IN PART OR WHOLE OR USED FOR ANY PURPOSE OTHER THAN MAINTENANCE, REPAIR, OR INSTALLATION AND THAT IT SHALL BE RETURNED ON DEMAND.				XRF MODULE	
DRAWN		DATE	DESIGN BY:	DWG SIZE	PART NUMBER
Juanelli	10MAY02	ANALYSIS & DESIGN GROUP			
CHECKED	DATE	P.O. BOX 34430			
		HOUSTON, TEXAS 77234			
		(281) 481-4823			
PROJ ENGR	DATE	UL	EX	DO NOT SCALE DRAWING	SCALE
SHEET 9 OF 15					

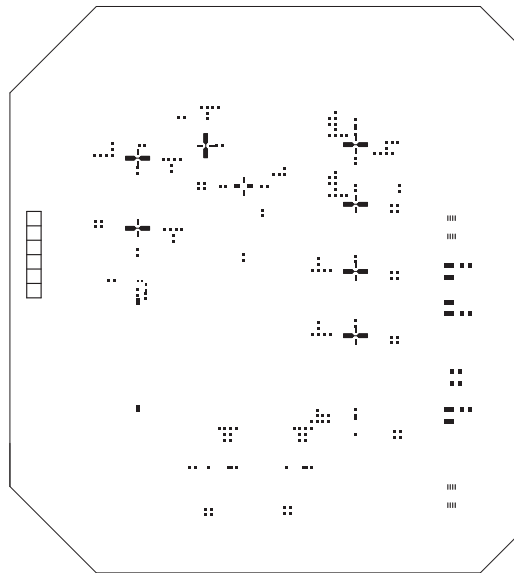
11-May-2012
08:00:27
3491332EPCB

Layer Name _____ Bottom Solder Mask

Stacking Chart _____

REV	ECN	DESCRIPTION	BY	CHK	DATE	APVD
E	6100	DELETED DIMENSIONS, REMOVED UNUSED PASTE MASK PADS	LH	FS	14MAY12	PFM
D	5531	ADDED A FIELD OF VIAS	BM			
C	4612	REMOVE SOLDER MASK AT X1, Z151	JTM	HF	17JAN07	PFM
B	4593	LARGER PAD AT J2, MORE CLEARANCE	JTM	HF	30NOV06	
A		X6 REL. AS A	JU	HF	10MAY02	
REV	ECN	DESCRIPTION	BY	CHK	DATE	APVD
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED						

		TIDELAND SIGNAL CORP.		TITLE	
4310 DIRECTORS RD		HOUSTON, TEXAS 77092		ARTWORK	
THIS DRAWING EMBODIES PROPRIETARY AND CONFIDENTIAL INFORMATION AND IS LOANED BY TIDELAND SIGNAL CORPORATION WITH THE UNDERSTANDING THAT IT WILL NOT BE REPRODUCED IN PART OR WHOLE OR USED FOR ANY PURPOSE OTHER THAN PRESENTANCE, REPAIRS, OR INSTALLATION AND THAT IT SHALL BE RETURNED ON DEMAND.				XRF MODULE	
DRAWN		DATE	DESIGN BY:	DWG SIZE	PART NUMBER
Juanelli	10MAY02	ANALYSIS & DESIGN GROUP			
CHECKED	DATE	P.O. BOX 34430			
		HOUSTON, TEXAS 77234			
		(281) 481-4823			
PROJ ENGR	DATE	UL	EX	DO NOT SCALE DRAWING	SCALE
				SHEET 10	OF 15



Layer Name _____ Top Paste

Stacking Chart _____

REV	ECN	DESCRIPTION	BY	CHK	DATE	APVD
E	6100	DELETED DIMENSIONS, REMOVED UNUSED	LH	FS	14MAY12	PFH
D	5531	ADDED A FIELD OF VIAS	BM			
C	4612	REMOVE SOLDER MASK AT X1, Z151	JTM	HF	17JAN07	PFM
B	4593	LARGER PAD AT J2, MORE CLEARANCE	JTM	HF	30NOV06	
A		X6 REL. AS A	JU	HF	10MAY02	
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED						

		TIDELAND SIGNAL CORP.		TITLE	
4310 DIRECTORS RDW		HOUSTON, TEXAS 77092		ARTWORK	
THIS DRAWING EMBODIES PROPRIETARY AND CONFIDENTIAL INFORMATION AND IS LOANED BY TIDELAND SIGNAL CORPORATION WITH THE UNDERSTANDING THAT IT WILL NOT BE REPRODUCED OR USED FOR ANY PURPOSE OTHER THAN PRESENTATION, REVIEW, OR INSTALLATION AND THAT IT SHALL BE RETURNED ON DEMAND.				XRF MODULE	
DRAWN		DATE	DESIGN BY:	DWG SIZE	PART NUMBER
Juanelli		10MAY02	ANALYSIS & DESIGN GROUP		
CHECKED		DATE	P.O. BOX 54430		
			HOUSTON, TEXAS 77234		
			(281) 481-4823		
PROJ ENGR		DATE	UL	EX	DO NOT SCALE
					DRAWING
					SCALE
					SHEET 11 OF 15

11-May-2012
08:00:27
3491332EPCB

Layer Name _____ Bottom Paste

Stacking Chart _____

REV	ECN	DESCRIPTION	BY	CHK	DATE	APVD
E	6100	DELETED DIMENSIONS, REMOVED UNUSED	LH	FS	14MAY12	PFM
PASTE MASK PADS						
D	5531	ADDED A FIELD OF VIAS	BM			
C	4612	REMOVE SOLDER MASK AT X1, Z151	JTM	HF	17JAN07	PFM
B	4593	LARGER PAD AT J2, MORE CLEARANCE	JTM	HF	30NOV06	
A		X6 REL. AS A	JU	HF	10MAY02	
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED						

		TIDELAND SIGNAL CORP.		TITLE	
4310 DIRECTORS RD		HOUSTON, TEXAS 77092		ARTWORK	
THIS DRAWING EMBODIES PROPRIETARY AND CONFIDENTIAL INFORMATION AND IS LOANED BY TIDELAND SIGNAL CORPORATION WITH THE UNDERSTANDING THAT IT WILL NOT BE REPRODUCED IN PART OR WHOLE OR USED FOR ANY PURPOSE OTHER THAN PRESENTANCE, REPAIRS, OR INSTALLATION AND THAT IT SHALL BE RETURNED ON DEMAND.				XRF MODULE	
DRAWN		DATE	DESIGN BY:	DWG SIZE	PART NUMBER
Jvanelli		10MAY02	ANALYSIS & DESIGN GROUP	B	349.1332-AWK
CHECKED		DATE	P.O. BOX 34430		
			HOUSTON, TEXAS 77234		
			(281) 481-4823		
PROJ ENGR	DATE	UL	EX	DO NOT SCALE DRAWING	SCALE
				SHEET 12 OF 15	

280	16mil	0.4064mm	PTH
98	20mil	0.508mm	PTH
10	32mil	0.8128mm	PTH
3	42mil	1.0668mm	NPTH
135	42mil	1.0668mm	PTH
7	55mil	1.397mm	PTH
1	62mil	1.5748mm	NPTH
20	67mil	1.7018mm	PTH
7	80mil	2.032mm	PTH
2	100mil	2.54mm	NPTH
2	110mil	2.794mm	NPTH
565	Total		

Layer Name _____ DrillDrawing

Stacking Chart _____

REV	ECN	DESCRIPTION	BY	CHK	DATE	APVD
E	6100	DELETED DIMENSIONS, REMOVED UNUSED	LH	FS	14MAY12	PFH
D	5531	ADDED A FIELD OF VIAS	BM			
C	4612	REMOVE SOLDER MASK AT X1, Z151	JTH	HF	17JAN07	PFH
B	4593	LARGER PAD AT J2, MORE CLEARANCE	JTH	HF	30NOV06	
A		X6 REL. AS A	JU	HF	10MAY02	
REV	ECN	DESCRIPTION	BY	CHK	DATE	APVD
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED						

 TIDELAND SIGNAL CORP. 4310 DIRECTORS ROW HOUSTON, TEXAS 77092		TITLE ARTWORK XRF MODULE SBCN2 SYS6	
THIS DRAWING EMBODIES PROPRIETARY AND CONFIDENTIAL INFORMATION AND IS LOANED BY TIDELAND SIGNAL CORPORATION WITH THE UNDERSTANDING THAT IT WILL NOT BE REPRODUCED IN PART OR WHOLE OR USED FOR ANY PURPOSE OTHER THAN PRESENTANCE, REPAIR, OR INSTALLATION AND THAT IT SHALL BE RETURNED ON DEMAND.			
DRAWN Jvanelli CHECKED DATE 10MAY02	DESIGN BY: ANALYSIS & DESIGN GROUP P.O. BOX 34430 HOUSTON, TEXAS 77234 (281) 481-4823	DWG SIZE B	PART NUMBER 349.1332-AWK
PROJ ENGR DATE UL	EX	DO NOT SCALE DRAWING	SCALE SHEET 13 OF 15

Components 432
Nets 171
Holes 567
11-May-2012
08:00:28
3491332EPCB

Layer Name Mechanical

Stacking Chart

REV	ECN	DESCRIPTION	BY	CHK	DATE	APUD
E	6100	DELETED DIMENSIONS, REMOVED UNUSED PASTE MASK PADS	LH	FS	14MAY12	PFH
D	5531	ADDED A FIELD OF VIAS	BM			
C	4612	REMOVE SOLDER MASK AT X1, Z151	JTH	HF	17JAN07	PFH
B	4593	LARGER PAD AT J2, MORE CLEARANCE	JTH	HF	30NOV06	
A		X6 REL. AS A	JU	HF	10MAY02	
REV	ECN	DESCRIPTION	BY	CHK	DATE	APUD
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED						

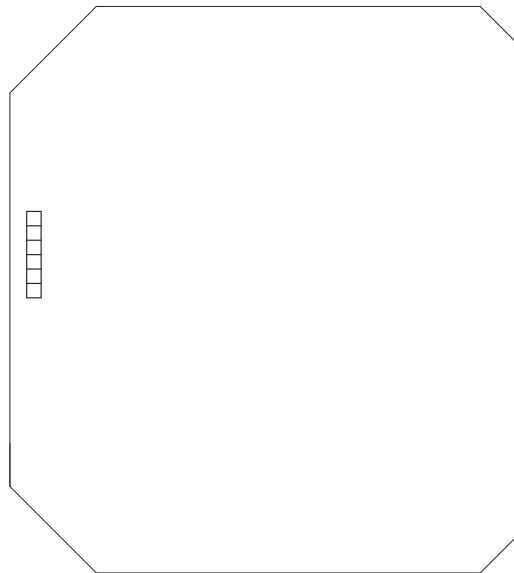
		TIDELAND SIGNAL CORP.		TITLE	
4310 DIRECTORS RD		HOUSTON, TEXAS 77092		ARTWORK	
THIS DRAWING EMBODIES PROPRIETARY AND CONFIDENTIAL INFORMATION AND IS LOANED BY TIDELAND SIGNAL CORPORATION WITH THE UNDERSTANDING THAT IT WILL NOT BE REPRODUCED IN PART OR WHOLE OR USED FOR ANY PURPOSE OTHER THAN MAINTENANCE, REPAIR, OR INSTALLATION AND THAT IT SHALL BE RETURNED ON DEMAND.				XRF MODULE	
DRAWN		DATE	DESIGN BY:	DWG SIZE	PART NUMBER
Juanelli	10MAY02	ANALYSIS & DESIGN GROUP		B	349.1332-AWK
CHECKED		DATE	P.O. BOX 54430		REV
			HOUSTON, TEXAS 77234		E
			(281) 481-4823		
PROJ ENGR	DATE	UL	EX	DO NOT SCALE DRAWING	SHEET 14 OF 15

11-May-2012
08:00:28
3491332EPCB

Layer Name _____ Mechanical4
Stacking Chart _____

REV	ECN	DESCRIPTION	BY	CHK	DATE	APVD
E	6100	DELETED DIMENSIONS, REMOVED UNUSED PASTE MASK PADS	LH	FS	14MAY12	PFH
D	5531	ADDED A FIELD OF VIAS	BM			
C	4612	REMOVE SOLDER MASK AT X1, Z151	JTH	HF	17JAN07	PFH
B	4593	LARGER PAD AT J2, MORE CLEARANCE	JTH	HF	30NOV06	
A		X6 REL. AS A	JU	HF	10MAY02	
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED						

		TIDELAND SIGNAL CORP.		TITLE	
4310 DIRECTORS RD		HOUSTON, TEXAS 77092		ARTWORK	
THIS DRAWING EMBODIES PROPRIETARY AND CONFIDENTIAL INFORMATION AND IS LOANED BY TIDELAND SIGNAL CORPORATION WITH THE UNDERSTANDING THAT IT WILL NOT BE REPRODUCED OR USED FOR ANY PURPOSE OTHER THAN MAINTENANCE, REPAIR, OR INSTALLATION AND THAT IT SHALL BE RETURNED ON DEMAND.				XRF MODULE	
DRAWN		DATE	DESIGN BY:	DWG SIZE	PART NUMBER
Juanelli		10MAY02	ANALYSIS & DESIGN GROUP	B	349.1332-AWK
CHECKED		DATE	P.O. BOX 54430		
			HOUSTON, TEXAS 77234		
			(281) 481-4823		
PROJ ENGR	DATE	UL	EX	DO NOT SCALE DRAWING	SCALE
SHEET 15				OF 15	



Layer Name _____

Stacking Chart _____

REV	ECN	DESCRIPTION	BY	CHK	DATE	APVD
E	6100	DELETED DIMENSIONS, REMOVED UNUSED PASTE MASK PADS	LH	FS	14MAY12	PFH
D	5531	ADDED A FIELD OF VIAS	BM			
C	4612	REMOVE SOLDER MASK AT X1, Z151	JTM	HF	17JAN07	PFM
B	4593	LARGER PAD AT J2, MORE CLEARANCE	JTM	HF	30NOV06	
A		X6 REL. AS A	JU	HF	10MAY02	
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED						

 TIDELAND SIGNAL CORP. 4310 DIRECTORS RD HOUSTON, TEXAS 77092		TITLE ARTWORK XRF MODULE SBCN2 SYS6	
THIS DRAWING EMBODIES PROPRIETARY AND CONFIDENTIAL INFORMATION AND IS LOANED BY TIDELAND SIGNAL CORPORATION WITH THE UNDERSTANDING THAT IT WILL NOT BE REPRODUCED IN PART OR WHOLE OR USED FOR ANY PURPOSE OTHER THAN MAINTENANCE, REPAIR, OR INSTALLATION AND THAT IT SHALL BE RETURNED ON DEMAND.			
DRAWN Jvanelli	DATE 10MAY02	DESIGN BY: ANALYSIS & DESIGN GROUP P.O. BOX 54430 HOUSTON, TEXAS 77234 (281) 481-4823	DWG SIZE B
CHECKED	DATE	PART NUMBER 349.1332-AWK	REV E
PROJ ENGR	DATE	DO NOT SCALE DRAWING	SCALE
SHEET			OF 15

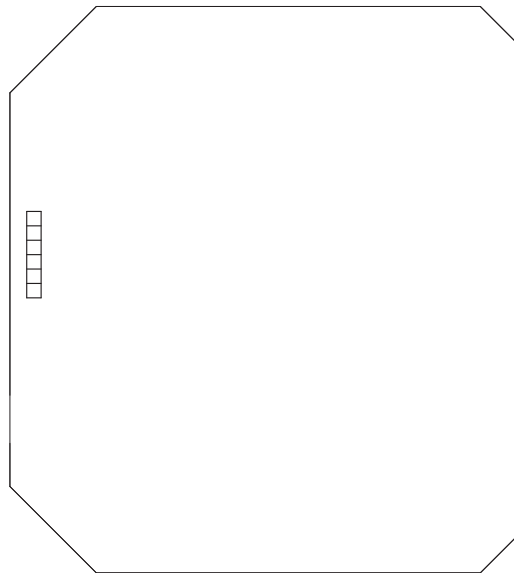
11-May-2012
08:00:28
3491332EPCB

Layer Name _____

Stacking Chart _____

REV	ECN	DESCRIPTION	BY	CHK	DATE	APVD
E	6100	DELETED DIMENSIONS, REMOVED UNUSED PASTE MASK PADS	LH	FS	14MAY12	PFH
D	5531	ADDED A FIELD OF VIAS	BM			
C	4612	REMOVE SOLDER MASK AT X1, Z151	JTH	HF	17JAN07	PFH
B	4593	LARGER PAD AT J2, MORE CLEARANCE	JTH	HF	30NOV06	
A		X6 REL. AS A	JU	HF	10MAY02	
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED						

		TIDELAND SIGNAL CORP.		TITLE	
4310 DIRECTORS RD		HOUSTON, TEXAS 77092		ARTWORK	
THIS DRAWING EMBODIES PROPRIETARY AND CONFIDENTIAL INFORMATION AND IS LOANED BY TIDELAND SIGNAL CORPORATION WITH THE UNDERSTANDING THAT IT WILL NOT BE REPRODUCED IN PART OR WHOLE OR USED FOR ANY PURPOSE OTHER THAN MAINTENANCE, REPAIR, OR INSTALLATION AND THAT IT SHALL BE RETURNED ON DEMAND.				XRF MODULE	
DRAWN Jvanelli		DATE 10MAY02		DESIGN BY: ANALYSIS & DESIGN GROUP P.O. BOX 54430 HOUSTON, TEXAS 77234 (281) 481-4823	
CHECKED DATE		DATE		DWG SIZE B	
PROJ ENGR		DATE		PART NUMBER 349.1332-AWK	
UL		EX		REV E	
DO NOT SCALE DRAWING		SCALE		SHEET OF 15	

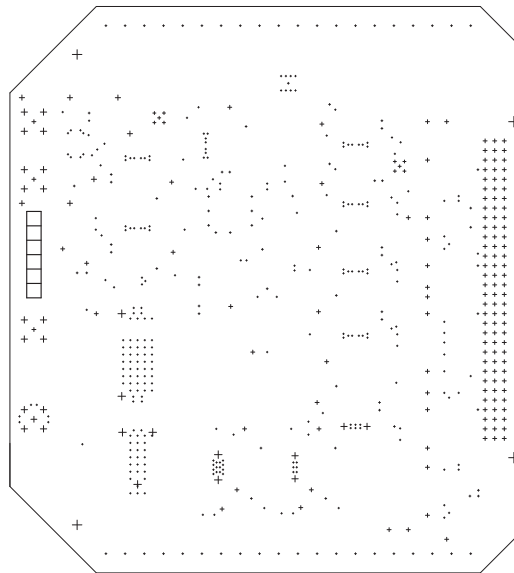


Layer Name _____

Stacking Chart _____

REV	ECN	DESCRIPTION	BY	CHK	DATE	APVD
E	6100	DELETED DIMENSIONS, REMOVED UNUSED PASTE MASK PADS	LH	FS	14MAY12	PFH
D	5531	ADDED A FIELD OF VIAS	BM			
C	4612	REMOVE SOLDER MASK AT X1, Z151	JTM	HF	17JAN07	PFM
B	4593	LARGER PAD AT J2, MORE CLEARANCE	JTM	HF	30NOV06	
A		X6 REL. AS A	JU	HF	10MAY02	
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED						

		TIDELAND SIGNAL CORP.		TITLE	
4310 DIRECTORS RD		HOUSTON, TEXAS 77092		ARTWORK	
THIS DRAWING EMBODIES PROPRIETARY AND CONFIDENTIAL INFORMATION AND IS LOANED BY TIDELAND SIGNAL CORPORATION WITH THE UNDERSTANDING THAT IT WILL NOT BE REPRODUCED IN PART OR WHOLE OR USED FOR ANY PURPOSE OTHER THAN MAINTENANCE, REPAIRS, OR INSTALLATION AND THAT IT SHALL BE RETURNED ON DEMAND.				XRF MODULE	
				SBCN2 SYS6	
DRAWN	DATE	DESIGN BY:	DWG SIZE	PART NUMBER	REV
Juanelli	10MAY02	ANALYSIS & DESIGN GROUP			
CHECKED	DATE	P.O. BOX 54430			
		HOUSTON, TEXAS 77234	B	349.1332-AWK	E
		(281) 481-4823			
PROJ ENGR	DATE	UL	EX	DO NOT SCALE DRAWING	SCALE
					SHEET OF 15



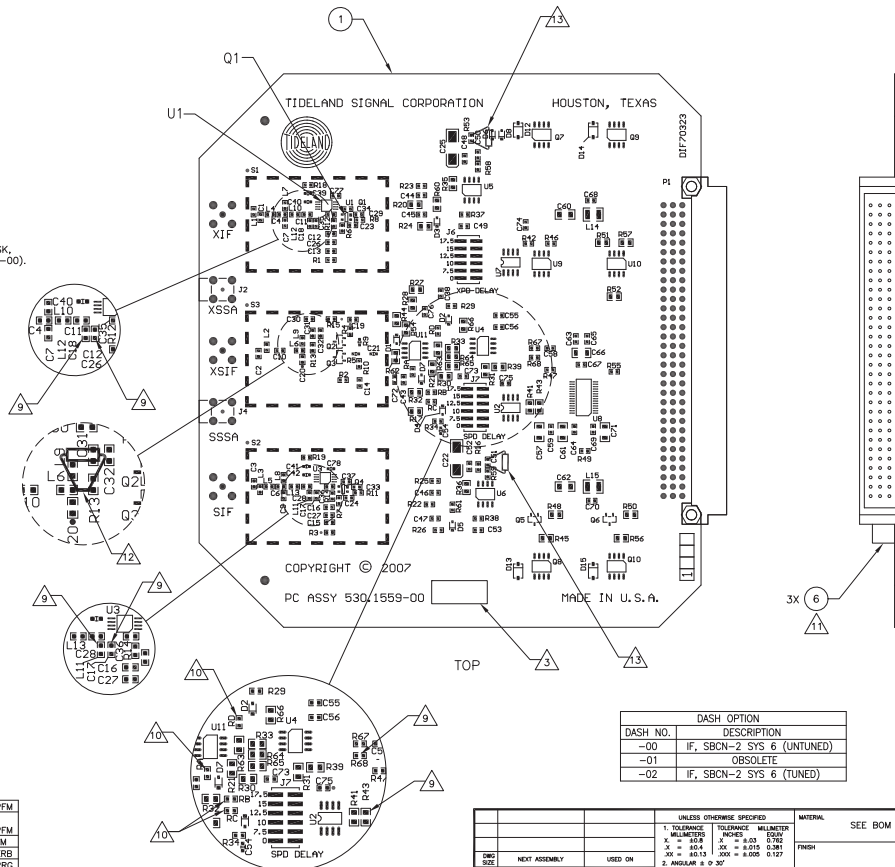
Layer Name _____ DrillGuide
Stacking Chart _____

REV	ECN	DESCRIPTION	BY	CHK	DATE	APVD
E	6100	DELETED DIMENSIONS, REMOVED UNUSED PASTE MASK PADS	LH	FS	14MAY12	PFH
D	5531	ADDED A FIELD OF VIAS	BM			
C	4612	REMOVE SOLDER MASK AT X1, Z151	JTH	HF	17JAN07	PFH
B	4593	LARGER PAD AT J2, MORE CLEARANCE	JTH	HF	30NOV06	
A		X6 REL. AS A	JU	HF	10MAY02	
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED						

		TIDELAND SIGNAL CORP.		TITLE	
4310 DIRECTORS RD		HOUSTON, TEXAS 77092		ARTWORK	
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DRAWN		DATE	DESIGN BY:	DWG SIZE	PART NUMBER
Jvanelli		10MAY02	ANALYSIS & DESIGN GROUP	B	349.1332-AWK
CHECKED		DATE	P.O. BOX 54430		
			HOUSTON, TEXAS 77234		
PROJ ENGR		DATE	UL	EX	DO NOT SCALE DRAWING
					SCALE
					SHEET OF 15

NOTES: UNLESS OTHERWISE SPECIFIED

- SEE DRAWING 530.1559-SCH FOR SCHEMATIC.
- ASSEMBLE IN STATIC FREE AREA.
- MARK ASSEMBLY REVISION LETTER IN AREA SHOWN.
- MAX. COMP. HEIGHT: TOP = 5 [.2], EXCEPT P1 = 10 [.4]; J1 TO J5 = 6.1 [.24] BOTH SIDES; BOTTOM = 5 [.2].
- MAX. LEAD PROTRUSION: 2.3 [.09].
- BOARD ASSY SHALL MEET REQUIREMENTS OF IPC-A-610, CLASS 3.
- REMOVED.
- DO NOT INSTALL R43, R68, L11, L12, C17 & C18.
- RA, RB, RC AND RD VALUE DETERMINE AT TEST.
- SHIELD (6) INSTALLED BY VENDOR, 3 TOTAL.
- CUT TRACE BETWEEN L6 AND R13, SCRAPE OFF SOLDER MASK, TIN THE TRACES, AND INSERT A 100pf CAPACITOR (118.1037-00). (C5) POS # 160 ON BOM.
- PIGGY BACK 49.9 OHM RESISTOR 196-4990-10 (POS 870 ON BOM) ON C50 AND C51.
- DENOTES REVISION SYMBOL.



APPROVED FOR:

ONLY

INT. DATE

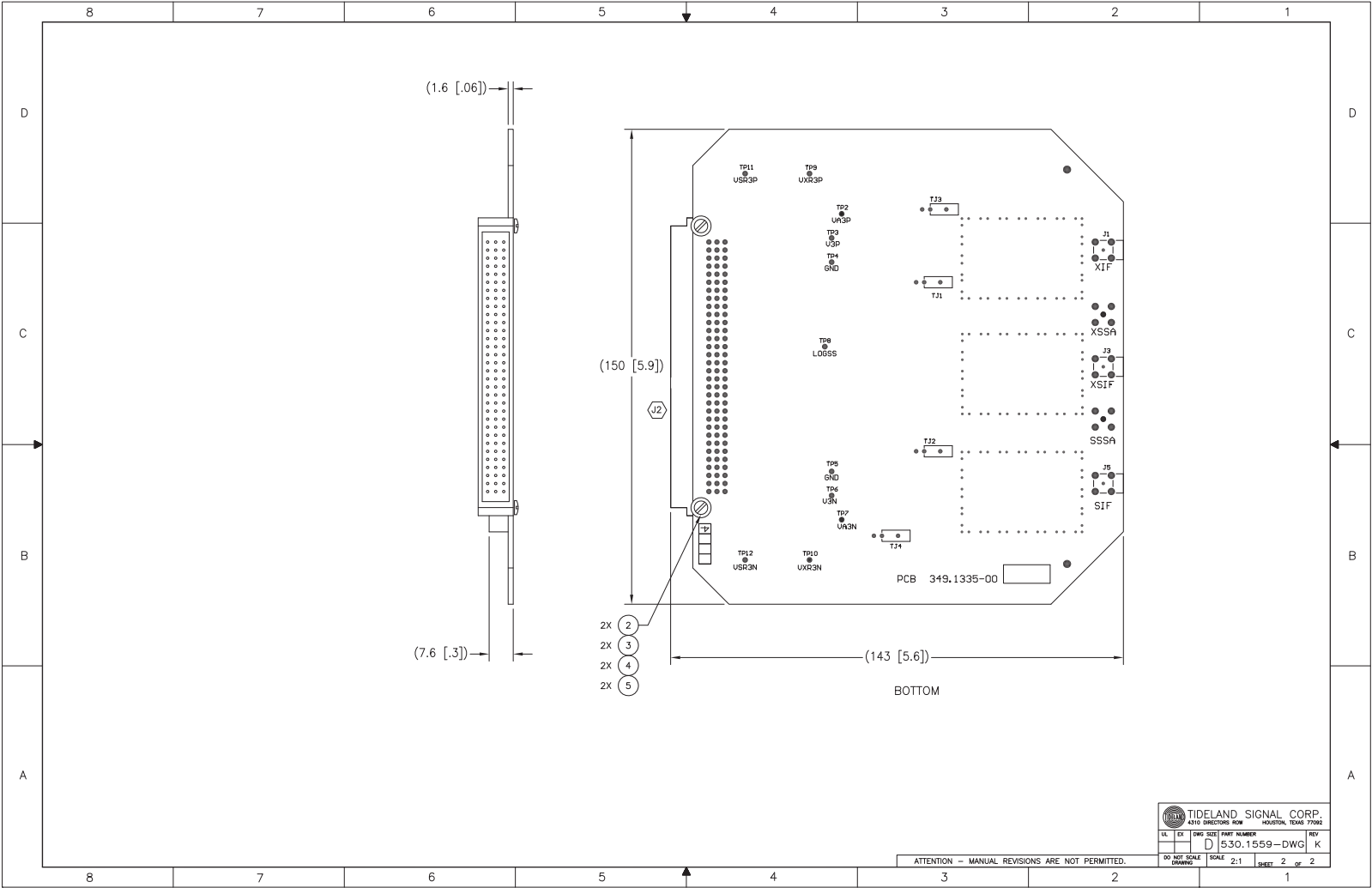
DASH NO.	DASH OPTION
-00	IF, SBCN-2 SYS 6 (UNTUNED)
-01	OBSELETE
-02	IF, SBCN-2 SYS 6 (TUNED)

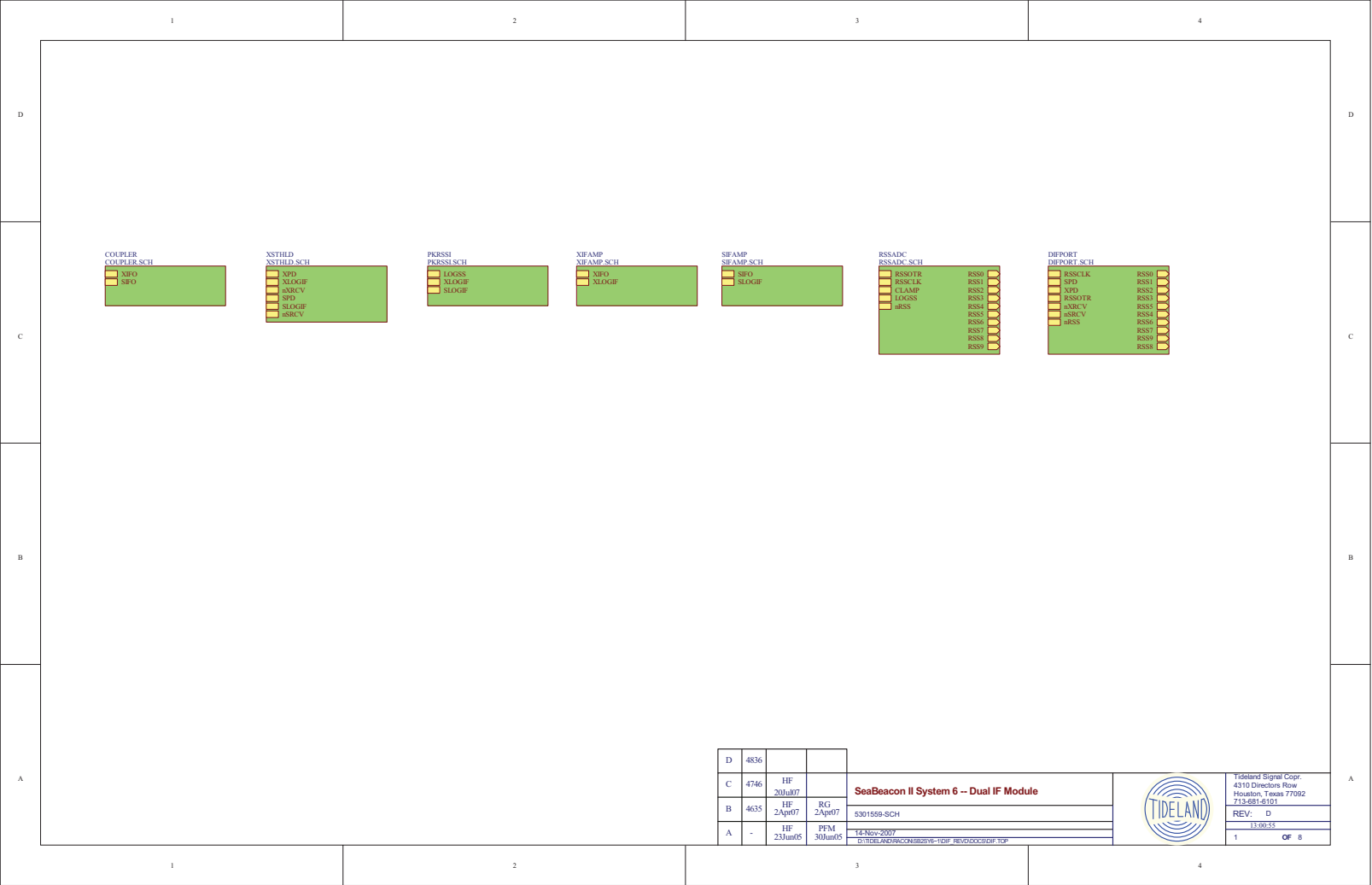
REV	EDN	ZONE	DESCRIPTION	BY	CHK	DATE	APPO
K	6351		1) ADDED DASH OPTION TABLE	HA	LM	18JAN13	PFM
J	6240	C5-2	2) DELETED NOTE 7	HA	FS	07SEP12	PFM
H	6207		1) REMOVED NOTE 7	HA	FS	02JUL12	LM
G	4836		ADDED NOTE 12 AND 13	TGB	HF	14NOV07	ERB
F	4746		REVISED NOTE 9, AND ADDED DETAIL	HA	HF	26JUL07	RRG
E	4435		REDESIGN INPUT & OUTPUT FILTERS	HA	HF	02APR07	RRG
D	3738		REVISED	HA	HF	24JUN05	PFM

ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED.

UNLESS OTHERWISE SPECIFIED:	MATERIAL	SEE BOM	TIDELAND SIGNAL CORP.
1. TOLERANCE: MILLIMETERS A = .004 B = .004 C = .004 D = .004 E = .004 F = .004 G = .004 H = .004 I = .004 J = .004 K = .004 L = .004 M = .004 N = .004 O = .004 P = .004 Q = .004 R = .004 S = .004 T = .004 U = .004 V = .004 W = .004 X = .004 Y = .004 Z = .004	2. DIMENSIONS ARE IN MILLIMETERS OR INCHES (INCHES)	3. ALL DIMENSIONS ARE IN MILLIMETERS OR INCHES (INCHES)	4. TOLERANCES ARE NON-ACCUMULATIVE.
5. DIMENSIONS IN PARENTHESES ARE MAXIMUM PERMITTED VARIATION.	6. DIMENSIONS IN PARENTHESES ARE MAXIMUM PERMITTED VARIATION.	7. DIMENSIONS IN PARENTHESES ARE MAXIMUM PERMITTED VARIATION.	8. DIMENSIONS IN PARENTHESES ARE MAXIMUM PERMITTED VARIATION.
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97. DIMENSIONS IN PARENTHESES ARE MAXIMUM PERMITTED VARIATION.	98. DIMENSIONS IN PARENTHESES ARE MAXIMUM PERMITTED VARIATION.	99. DIMENSIONS IN PARENTHESES ARE MAXIMUM PERMITTED VARIATION.	100. DIMENSIONS IN PARENTHESES ARE MAXIMUM PERMITTED VARIATION.

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D	4836		
C	4746	HF	20Jul07
B	4635	HF	RG 2Apr07 2Apr07
A	-	HF	PTM 23Jun05 30Jun05

SeaBeacon II System 6 -- Dual IF Module	
8301159-9CH	
14-Nov-2007	
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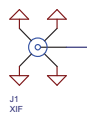


Tideland Signal Corp.
4310 Directors Row
Houston, Texas 77052
713-681-6101

REV.: D

13:00:33

1 OF 8



NOTES: RF SUBSTRATE IS ROGERS R04003, E=3.38, H=16mils, T=2.8mil, C=500mils.
RF VIA/GND IS 32mil ROUND PAD, 16mil HOLE.
RF VIA/GND REFERENCE PLANE IS THROUGH CENTER OF PAD.
DISTRIBUTED ELEMENT PARAMETERS ARE SPECIFIED IN MILS.
CHIP R, L, C ARE 0805 FOOTPRINT UNLESS OTHERWISE NOTED.



Dual IF Module – X-Band Amplifier

5301559-SCH

14-Nov-2007

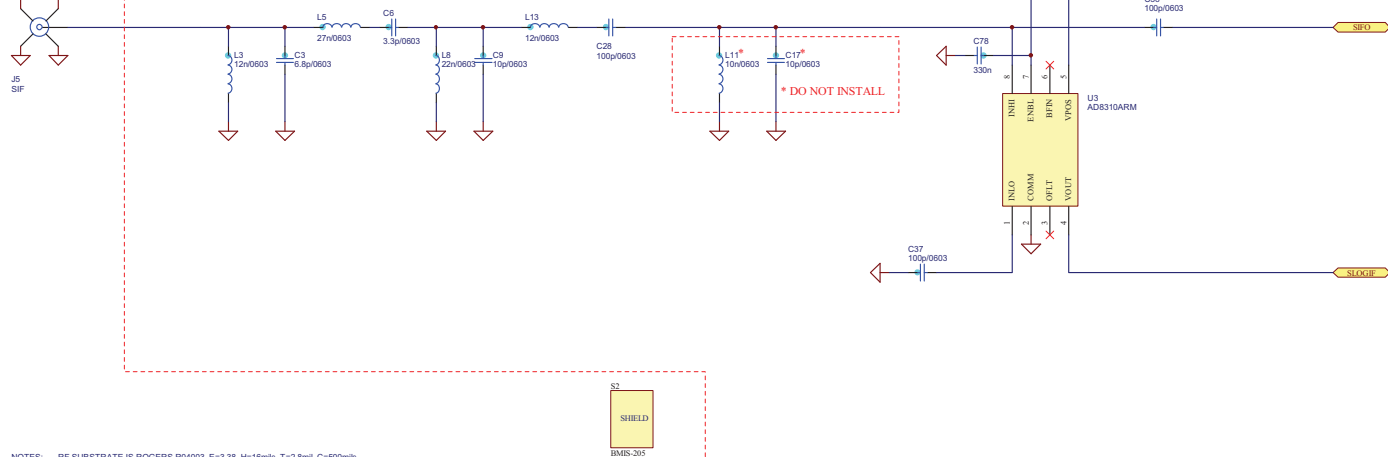


Tideland Signal Copr.
4310 Directors Row
Houston, Texas 77092
713-681-6101

REV: D

13:00:58

S-BAND IF INPUT
400 - 600 MHz
(-70 dBm, +10 dBm)



NOTES: RF SUBSTRATE IS ROGERS RM4003, E=3.38, H=16mils, T=2.8mil, C=500mils.
RF VIA/GND IS 52mil ROUND PAD, 16mil HOLE.
RF VIA/GND REFERENCE PLANE IS THROUGH CENTER OF PAD.
DISTRIBUTED ELEMENT PARAMETERS ARE SPECIFIED IN MILS.
CHIP R, L, C ARE 0805 FOOTPRINT UNLESS OTHERWISE NOTED.

S2
SHIELD
BMS-305

Dual IF Module - S-Band Amplifier

8301559-SCH

14-Nov-2007

U:\TIDELAND\WORK\8301559-SCH\8301559-SCH



Tideland Signal Corp.
4310 Directors Row
Houston, Texas 77062
713-681-6101

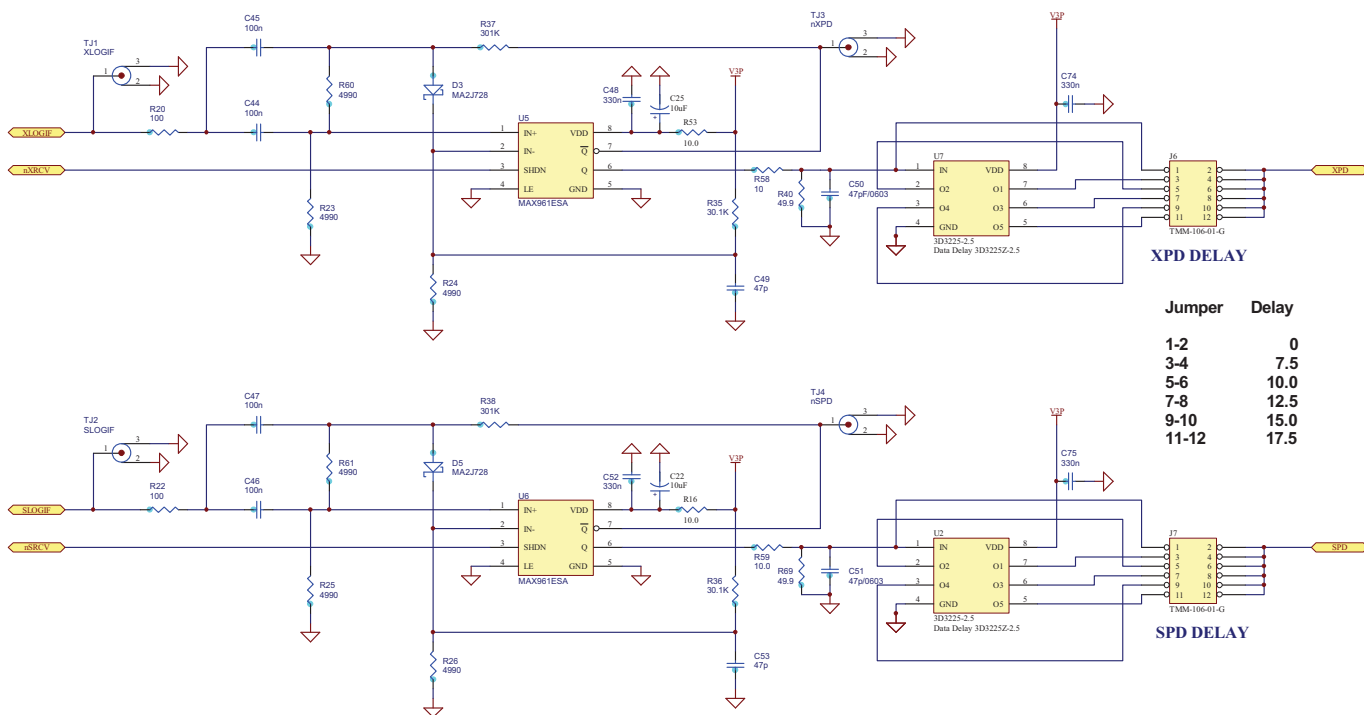
REV: D

11/30/06

3 OF 8



OF 8



Jumper	Delay
1-2	0
3-4	7.5
5-6	10.0
7-8	12.5
9-10	15.0
11-12	17.5

NOTES: RF SUBSTRATE IS ROGERS RO4003, E=3.38, H=16mils, T=2.8mils, C=500mils.
 RF VIA/GND IS 32mil ROUND PAD, 16mil HOLE.
 RF VIA/GND REFERENCE PLANE IS THROUGH CENTER OF PAD.
 DISTRIBUTED ELEMENT PARAMETERS ARE SPECIFIED IN MILS.
 CHIP R, L, C ARE 0605 FOOTPRINT UNLESS OTHERWISE NOTED.

Dual IF Module - Threshold Logic

63011559-BCH

14-Nov-2007

0-TIDELAND\WORK\63011559-BCH-PCB_REV000003011559-BCH



TideLand Signal Corp.
 4310 Directors Row
 Houston, Texas 77052
 713-681-6101

REV.: D

11/30/07

5 OF 8

NOTES: RF SUBSTRATE IS ROGERS RO4003, E=3.38, H=16mils, T=2.9mils, C=500mils.
 RF VIA/ND IS 32mil ROUND PAD, 16mil HOLE.
 RF VIA/ND REFERENCE PLANE IS THROUGH CENTER OF PAD.
 DISTRIBUTED ELEMENT PARAMETERS ARE SPECIFIED IN MILS.
 CHIP R, L, C ARE 0805 FOOTPRINT UNLESS OTHERWISE NOTED.

Dual IF Module -- Peak RSSI Sum

5301559-SCH
 14-Nov-2007
 D:\TIDELAND\WORK\5301559-SCH\5301559-SCH



Tideland Signal Corp.
 4310 Directors Row
 Houston, Texas 77052
 713-681-6101
 REV: D
 11/30/06
 6 OF 8



Tideland Signal Copr.
4310 Directors Row
Houston, Texas 77092
713-681-6101

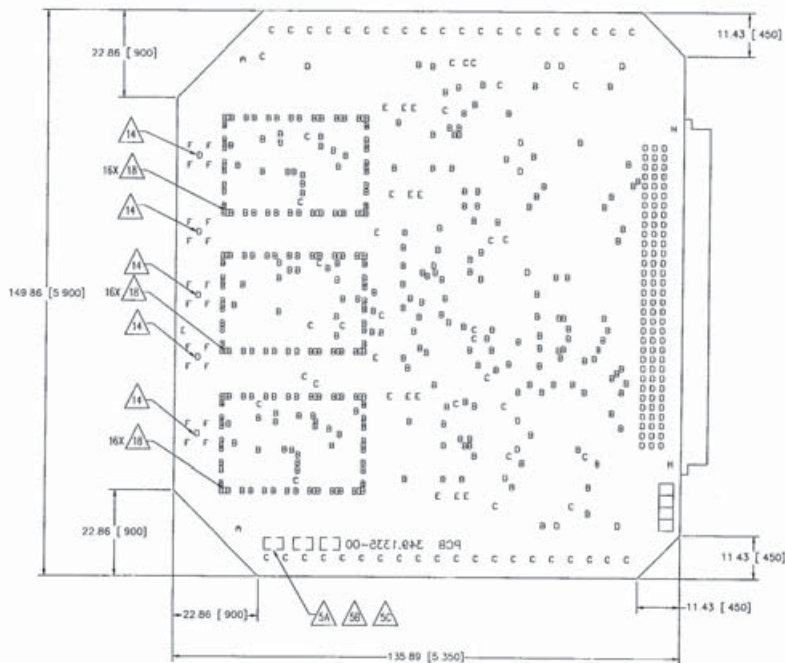
REV: D

13:00:57

8 OF 8

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE BASIC
2. THIS MULTI-LAYER BOARD SHALL MEET THE REQUIREMENTS OF IPC-6011, CLASS 3
3. MANUFACTURE USING ARTWORK 349.1335-AWK REV B, LAYER 1 THRU LAYER 4, TOP & BOTTOM SOLDERMASK, TOP & BOTTOM SUKSCREEN, AND PASTERMASK. FOR MANUFACTURING PURPOSES THIS ARTWORK SHALL NOT BE REPRODUCED TO OR FROM A REPRODUCIBLE MEDIA THAT IS LESS THAN A STABLE BASE MATERIAL
4. COPPER CLAD LAMINATE AND PREPREG MATERIALS SHALL CONFORM TO TYPE OF PER MIL-S-13849. SPECIFIC MATERIAL REQUIREMENTS, THICKNESS AND LAYER ARRANGEMENTS SHALL BE IN ACCORDANCE WITH FIGURE 1
5. BOARD MUST BE PERMANENTLY MARKED, ON SOLDER SIDE, WITH:
 - A. REVISION LETTER SPECIFIED ON THIS DRAWING AND ON THE PURCHASE ORDER IN COTTER IN AREA INDICATED BY C
 - B. CURRENTLY LISTED UL SUPPLIER MARK AS RECORDED FOR UL LISTING
 - C. A FOUR DIGIT DATE YEAR AND WEEK OF MANUFACTURE
6. MINIMUM CONDUCTOR WIDTH: PER IPC-6011, CLASS 3
7. MINIMUM SPACING BETWEEN CONDUCTORS: PER IPC-6011, CLASS 3
8. MINIMUM ANNUAL RING PER IPC-6011
9. ALL PLATED THRU HOLES SHALL HAVE A MINIMUM OF 0.036 (0014) THK PLATED COPPER
10. ALL HOLE SIZES ARE AFTER PLATING
11. SOLDERMASK BOTH SIDES OF BOARD. R04003 COMPLIANT MATERIAL PER AMS/IPC-94-840
12. SUKSCREENS SHALL BE APPLIED TO COMPONENT AND CONDUCTOR SIDE OF BOARD PER MASTER PATTERN SUKSCREENS USING R04003 COMPLIANT WHITE EPOXY INK
13. BOARD MUST BE 100% BARE BOARD TESTED POINT TO POINT ON MANIA SYSTEM OR EQUIVALENT. TEST CERTIFICATION MUST BE PROVIDED. TEST CERTIFICATION MUST INCLUDE 40VDC TEST VOLTAGE, 50 OHM OPEN SENSITIVITY, 2.5 MEGOHM SHORT AND 300mA MAX TEST CURRENT
14. DO NOT PLATE THRU 5 HOLES TOTAL
15. LAYER #1 (TOP CIRCUIT) AND LAYER #2 (INTERNAL GND) TO BE 1 OUNCE COPPER ON ROGERS RO4003 SUBSTRATE OF THICKNESS 0.406 (016) NOMINAL, DIELECTRIC CONSTANT 3.38 NOMINAL
16. TOP AND BOTTOM LAYERS PLATING TO BE R04003 COMPLIANT PER IPC-4552 ELECTROLESS NICKEL/AMERSON GOLD (ENIG) 3-5 MICRO INCHES GOLD
17. LAYER #3 (INTERNAL SIGNAL & POWER) AND LAYER #4 (BOTTOM CIRCUIT) TO BE 1 OUNCE COPPER FR-4 MATERIAL, SIZED TO MAKE OVERALL THICKNESS OF BOARD 1.000 (003) NOMINAL. THE FR-4 MATERIAL TO BE R04003 COMPLIANT PER IPC-4101 WITH MINIMUM Tg 170° C OR HIGHER, 24 342° C OR HIGHER AND FLAME RATED UL 94V-0
18. DO NOT DRILL "C" HOLES 48 TOTAL



VIEWED FROM COMPONENT SIDE

LAYERS STACKED AS FOLLOWS:

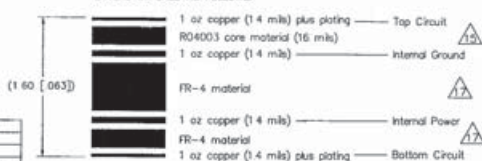


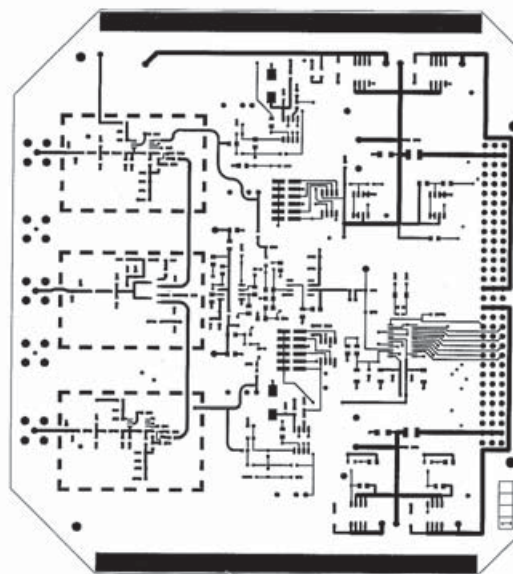
FIGURE 1
SCALE: NONE

HOLE SCHEDULE				
DIAMETER	QTY	SYM	PLTD	
#2.79 (A.110)	3	H	NO	
#2.54 (A.100)	2	A	NO	
#1.70 (A.067)	20	F	YES	
#1.07 (A.042)	110	D	YES	
#0.89 (A.035)	14	C	YES	
#0.76 (A.030)	48	O	YES	18
#0.51 (A.020)	68	C	YES	
#0.41 (A.016)	315	B	YES	
#1.07 (A.042)	5	D	NO	14

REV	DATE	DESCRIPTION	BY	CHK	DATE	APPROV
1	4748	ADDED NOTE 18	HA	AP	21 JUN 07	PPM
2	4835	REDESIGN INPUT & OUTPUT FILTERS	HA	HF	21 JUN 07	PPM
3	4735	33 RELEASED AS REV. A	HA	HF	21 JUN 07	PPM

UNLESS OTHERWISE SPECIFIED		TIDELAND SIGNAL CORP.	
1. DIMENSIONS UNLESS OTHERWISE SPECIFIED ARE IN INCHES		FAB. DIF MODULE	
2. DIMENSIONS UNLESS OTHERWISE SPECIFIED ARE IN MILLIMETERS		SBCN-2, SYSTEM-6	
3. DIMENSIONS UNLESS OTHERWISE SPECIFIED ARE IN MILLIMETERS		SCALE: 1/2	
4. DIMENSIONS UNLESS OTHERWISE SPECIFIED ARE IN MILLIMETERS		SHEET: 1 OF 1	
5. DIMENSIONS UNLESS OTHERWISE SPECIFIED ARE IN MILLIMETERS		DATE: 21 JUN 07	
6. DIMENSIONS UNLESS OTHERWISE SPECIFIED ARE IN MILLIMETERS		BY: HA	
7. DIMENSIONS UNLESS OTHERWISE SPECIFIED ARE IN MILLIMETERS		CHK: HF	
8. DIMENSIONS UNLESS OTHERWISE SPECIFIED ARE IN MILLIMETERS		APPROV: PPM	

3491335C.DWG 21 JUN 07 11:43



Layer Name _____ Top Layer

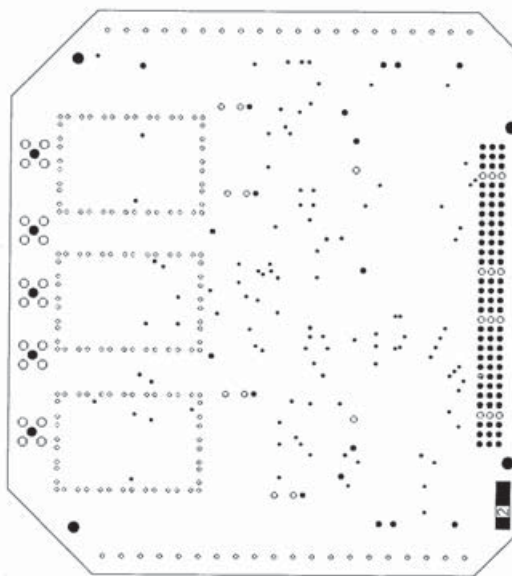
Stacking Chart _____

1			
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B	4635	RECEIVED INPUT & OUTPUT FILTERS	27M	JP	2-23-00				
A	--	X3 RELEASED AS A	27M	HF	23Jun00				
REV	EDN	DESCRIPTION	BY	CNK	DATC				

ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED

	TIDELAND SIGNAL CORP.				FILE	
	1320 DIRECTORS AVE. HOUSTON, TEXAS 77002		DIF MODULE SBCN-2 SYS-6			
THIS DRAWING ORIGINATED FROM AND CONTAINS CONFIDENTIAL INFORMATION AND IS LOANED TO YOU BY TIDELAND SIGNAL CORPORATION WITH THE UNDERSTANDING THAT IT WILL NOT BE REPRODUCED OR IN ANY MANNER OR USED FOR ANY PURPOSE OTHER THAN THAT AUTHORIZED, WITHOUT OR IN VIOLATION OF THAT IT SHALL BE RETURNED ON DEMAND.						
DOMAIN:	DATE:	DESIGN BY:	OMB SIZE:	PART NUMBER:	REV	
JTN	02/29/82					
CHECKED:	DATE:	BY	B	349.1335-AWK	B	
	23Jun80	BRITTON VINCENT				
PROJ ENGR	DATE	DL	EX	DO NOT SCALE	SCALE	
JFTH	20Jun80			DRAWING		
					SHEET	1 of 12



DATE MAR 02 2007

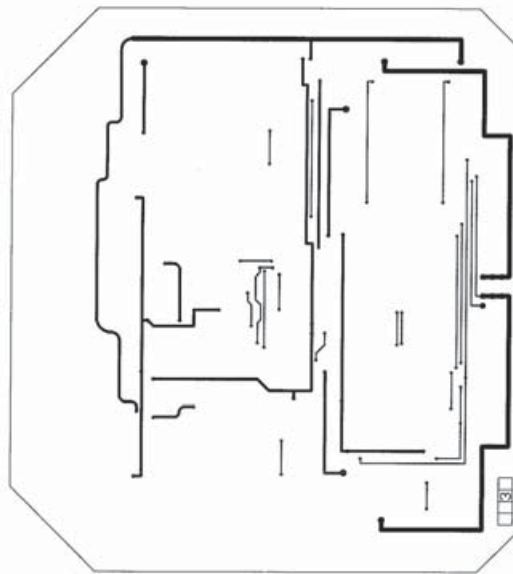


Stocking Chart _____

B	4638	RECEIVED INPUT & OUTPUT FILTERS	JTH	BP	2/12/07				
A	--	X3 RELEASED AS A	JTH	HF	22Jun08				
REV	EON	DESCRIPTION	BY	CWK	DATE	APPROV			
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED									

 TIDELAND SIGNAL CORP. 4310 DISCOVERY RD HOUSTON, TEXAS 77062				TITLE DIF MODULE SBCN-2 SYS-6	
THIS DRAWING CREATED PROPRIETARY AND CONFIDENTIAL INFORMATION AND IS LOANED TO YOU FOR ILLUSTRATION PURPOSES WITH THE UNDERSTANDING THAT IT WILL NOT BE REPRODUCED OR COPIED OR USED FOR ANY PURPOSE OTHER THAN THAT INTENDED. DESIGN, OR EXACTIFICATION, AND THAT IT SHALL BE RETURNED IN 10 WORKING DAYS.					
DESIGN	DATE	DESIGN BY	OUR SIZE	PART NUMBER	REV
JFM	01/27/05				
CHECKED	DATE	BRITTON VINCENT	B	349.1335-AWK	B
HF	02/10/05				
DRAWN	DATE	SL	EX	DO NOT SCALE DRAWING	SCALE
DFT1	02/10/05				
				SHEET	2 of 12

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VERIFY PLOT
DATE: MAR 02 2007

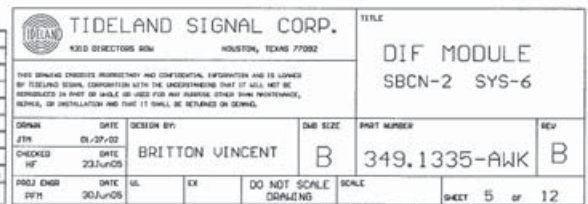
Layer Name _____ Mid Layer 1
Stacking Chart _____ 131

REV	ECN	DESCRIPTION	BY	CHK	DATE	APPROV
B	4626	PROCESSING INPUT & OUTPUT FILTERS	JTK	WP	2-12-07	
A	---	X3 RELEASED AS A	JTK	HF	23-Jun-08	

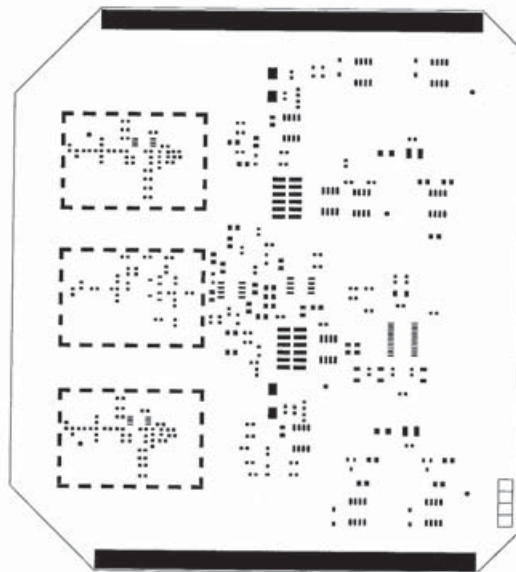
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED

 TIDELAND SIGNAL CORP. 4310 DIRECTORS ROW HOUSTON, TEXAS 77062		TITLE DIF MODULE SBCN-2 SYS-6	
DESIGN DATE JTK 01/27/02 CHECKED DATE HF 23-Jun-08		DESIGN BY: BRITTON VINCENT DWD SIZE B	
PART NUMBER 349.1335-AWK		REV B	
DO NOT SCALE DRAFTING		SCALE SHEET 3 of 12	

23-Mar-2007
11:29:19
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VERIFY PLOT

DATE MAR 02 2007



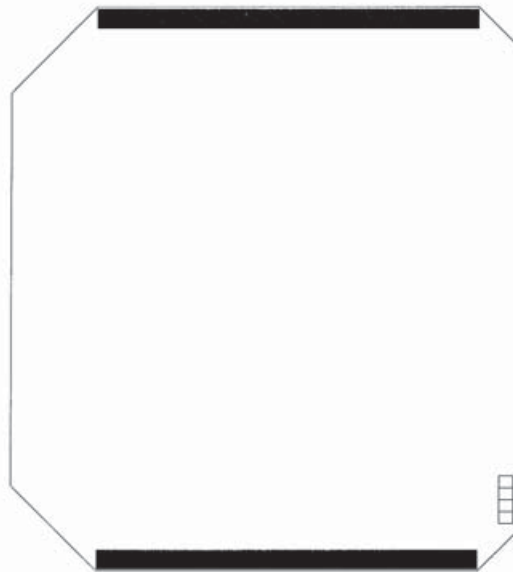
Stacking Chart _____

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B	4636	RECEIVED INQUIRY & OUTGOING FILTERS	JTH	MF	2/13/07				
A	--	X3 RELEASED AS A	JTH	MF	2/14/09				
REV	ECON	DESCRIPTION	BY	CNK	DTEC	APU			
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED									

 TIDALAND SIGNAL CORP. 1310 DIRECTORS AVE HOUSTON, TEXAS 77002				TITLE DIF MODULE SBCN-2 SYS-6	
THIS DRAWING PREPARED BY MECHANICAL AND ELECTRICAL ENGINEERS AND IS LOANED BY TIDALAND SIGNAL CORPORATION WITH THE UNDERSTANDING THAT IT WILL NOT BE REPRODUCED IN WHOLE OR IN PART FOR ANY OTHER PROJECT WITHOUT THE WRITTEN PERMISSION OF TIDALAND SIGNAL CORPORATION. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PROJECT WITHOUT THE WRITTEN PERMISSION OF TIDALAND SIGNAL CORPORATION. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PROJECT WITHOUT THE WRITTEN PERMISSION OF TIDALAND SIGNAL CORPORATION.					
DRAWN JLN 01/27/05 CHECKED HF 23Jun05	DATE 01/27/05 DATE 23Jun05	DESIGN BY BRITTON VINCENT	END SIZE B	PART NUMBER 349.1335-AWK	REV B
PLOT ENGR JFL 30Jun05	DATE 30Jun05	DL EX DO NOT SCALE DRAWING	SCALE	SHEET 7 OF 12	

23-Mar-2007
11:29:24
D:\TDLAND\VRACONS\SB2SY6\1\WIF_REV\PCBN\335_B.PCB



VERIFY PLOT
DATE MAR 02 2007



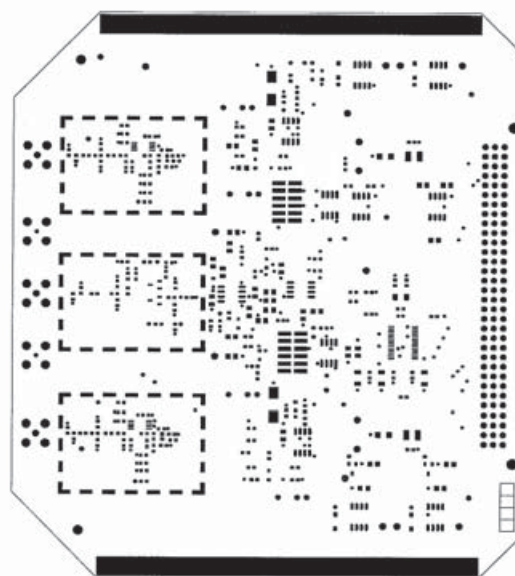
Stacking Chart _____

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B	4630	RECESSION INPUT & OUTPUT FILTERS	JTW	HPI	2-12-87				
A	--	X3 RELEASED AS A	JTW	HF	23JAN89				
REV	EDN	DESCRIPTION	BY	CNK	DHTE	HOW			
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED									

	TIDALAND SIGNAL CORP. 4310 DIRECTORS AVE HOUSTON, TEXAS 77092				TITLE DIF MODULE SBCN-2 SYS-6	
	THIS DRAWING DEPENDS UPON PREVIOUS AND CONCURRENT DRAWINGS AND IS LOANED BY TIDALAND SIGNAL CORP. TO THE UNDERSIGNED THAT IT SHALL NOT BE REPRODUCED IN PART OR WHOLE OR USED FOR ANY PURPOSE OTHER THAN THAT SPECIFIED, REVISED, OR INSTRUCTIONS AND THAT IT SHALL BE RETURNED ON DEMAND.					
DRAWN JTM CHECKED JTM ISSUED ENGR JTM	DATE 02/27/92 DATE 22/Jun/90 DATE 30/Jun/90	DESIGNED BY BRITTON VINCENT	DWS SIZE B	DWG NUMBER 349.1335-AWK	REV B	
SCALE 1" = 30' (NOT SCALE)			SCALE (DRAWING)		SHEET 8 of 12	

D:\TIDELAND\RACON\SB2SY6\1\DF_REV\PCB\1.335_B.PCB



VERIFY PLOT
DATE MAR 02 2007

Layer Name _____ Top Solder Mask

Stacking Chart _____

REV	CON	DESCRIPTION	BY	CHK	DATE	APPROV
B	4605	REDESIGN INPUT & OUTPUT FILTERS	JTM	WF	2/12/07	
A	--	X3 RELEASED AS A	JTM	WF	23Jun08	

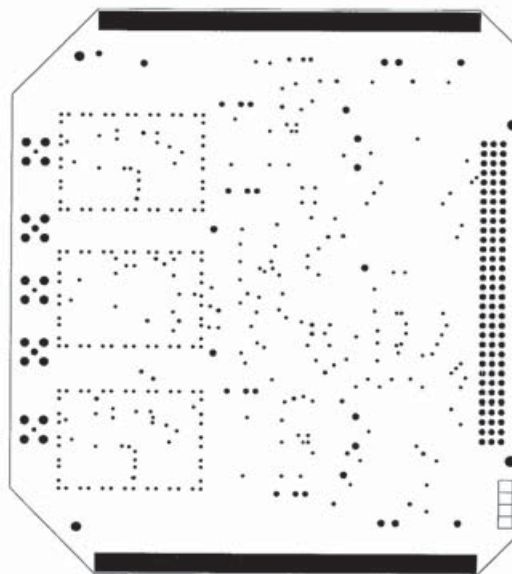
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED

 TIDELAND SIGNAL CORP. 4360 DIRECTORS RD HOUSTON, TEXAS 77062		TITLE DIF MODULE SBCN-2 SYS-6	
THIS DRAWING EMBODIES PROPRIETARY AND CONFIDENTIAL INFORMATION AND IS LOANED BY TIDELAND SIGNAL CORPORATION WITH THE UNDERSTANDING THAT IT WILL NOT BE REPRODUCED IN ANY OR LOANED OR USED FOR ANY PURPOSE OTHER THAN PERFORMANCE, REPAIR, OR INSTALLATION AND THAT IT SHALL BE RETURNED ON DEMAND.			
DESIGN BY JTM	DATE 05/27/02	DESIGN BY BRITTON VINCENT	DESIGN BY B
CHECKED WF	DATE 23Jun05	CHECKED B	DATE 349.1335-AWK
PAGE ENDS RPM	DATE 30Jun05	DO NOT SCALE DRAWING	SCALE
SHEET 9 of 12			

23-Mar-2007

11:29:26

D:\TIDELAND\RACON\SB2SY6\1\QDF_REV6\PCB\1335_B.PCB

Stacking Chart _____

--	--	--	--

B	6C36	SESSION INPUT & OUTPUT FILTERS	ZTH	HF	2-82-GP				
A	--	X3 RELEASED AS A	ZTH	HF	20JUN90				
REV	ECON	DESCRIPTION	BY	CNK	DTE	NOUN			

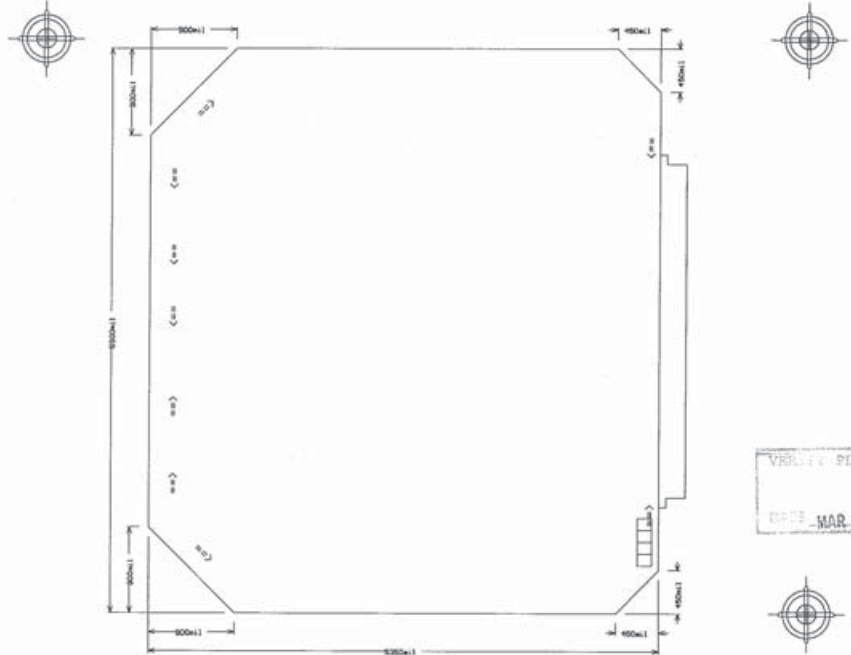
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED

		TIDAL SIGNAL CORP. 1310 DIRECTORS RD HOUSTON, TEXAS 77002				TITLE DIF MODULE SBCN-2 SYS-6	
THIS DRAWING IS UNCLASSIFIED AND CONFIDENTIAL, SUPERSEDED AND IS LOANED BY TIDAL SIGNAL CORPORATION WITH THE UNDERSTANDING THAT IT WILL NOT BE REPRODUCED IN WHOLE OR IN PART OR USED FOR ANY PURPOSE OTHER THAN THAT AUTHORIZED, REVISED, OR EXTENDED BY TIDAL SIGNAL CORP. IT SHALL BE RETURNED ON DEMAND.							
DESIGN JFM	DATE 01/29/05	DESIGNED BY BRITTON VINCENT	DIM SIZE B	PART NUMBER 349.1335-AWK	REV B		
CHECKED W	DATE 23/01/05						
DRAFT JFM	DATE 30/01/05	IS NO	DO NOT SCALE DRAWING	SCALE NONE	SHEET 10	OF 12	

23-Mar-2007
11:29:27
D:\TIDELAND\RACONS\B2SY61\DF REV\PCB\1335_BPCB

NOTES:

1. MANUFACTURE USING ARROW CHILL-ON-AWK REVISION B, FOUR COPPER LAYERS WITH SOLDER MASK AND SUGARCOAT ON BOTH OUTER LAYERS.
2. LAYER # 1 (TOP CIRCUIT) AND LAYER # 2 (INTERNAL GROUND) TO BE 1 OUNCE COPPER ON ROUGHENED SUBSTRATE OF THICKNESS 5000 MICES NOMINAL, DIELECTRIC CONSTANT 3.38 NOMINAL.
3. LAYER # 3 (INTERNAL SIGNAL & POWER) AND LAYER # 4 (BOTTOM CIRCUIT) TO BE 1 OUNCE COPPER ON FR-4 MATERIAL, SIZE TO MATCH SIGNAL THICKNESS OF BOARD 5000 MICES NOMINAL. THE FR-4 MATERIAL TO BE RIMS COMPLIANT PER IPC-4101 WITH PATTERN Tg 170 DEGREES C OR HIGHER, TO 2% DEGREES C OR HIGHER AND FLAME RATED UL 94V-0.
4. EDGE CLEARANCE ON INTERNAL LAYERS NOT TO EXCEED 30 MILS.
5. LAYERS STACKED AS FOLLOWS:
- | | |
|-------------------------------------|-----------------|
| 1 oz copper (1.4 mils) plus plating | Top Circuit |
| 20450 core material (0.8 mils) | |
| 1 oz copper (1.4 mils) | Internal Ground |
| FR-4 material | |
| 1 oz copper (1.4 mils) | Internal Power |
| FR-4 material | |
| 1 oz copper (1.4 mils) plus plating | Bottom Circuit |
6. BOARD FINISHES TOLERANCE TO BE 5000 MICES NOMINAL.
7. MINIMUM CONDUCTOR WIDTH TO BE 5000 MICES.
8. SOLDERMASK BOTH SIDES OF BOARD WITH RIMS COMPLIANT MATERIAL PER ANSLPC-30-000.
9. DRILLED HOLES TO BE PLATED THROUGH WITH MINIMUM 5000 MICES COPPER.
10. DRILLED HOLE SIZES APPLY AFTER PLATING WITH TOLERANCE +/- 5000 MICES.
11. DO NOT PLATE THROUGH HOLES MARKED WITH ARROW (---) LINE PLACES:
--- UPPER LEFT CORNER AND LOWER LEFT CORNER OF BOARD;
--- J, J2, J3, J4, J5 CORNER CONNECTORS;
--- P1 MOUNTING HOLES.
12. PLATING BOTH TOP AND BOTTOM LAYERS TO BE RIMS COMPLIANT PER IPC-4101, ELECTROLESS NICKEL, 2% IMPERMEABLE GOLD (ENIG) THICKNESS TO BE 2 TO 8 MICES THICK.
13. APPLY SUGARCOAT TO BOTH SIDES OF BOARD USING NON-CONDUCTIVE RIMS COMPLIANT WHITE EPOXY INK.
14. BOARD MUST BE PERMANENTLY MARKED ON SOLID SIDE WITH:
--- REVISION LETTER SPECIFIED ON THIS DRAWING AND ON THE PURCHASE ORDER IN CORNER IN AREA INDICATED BY []
--- CURRENTLY LISTED UL SUPPLIER MARK AS RECOMMENDED FOR UL LISTING.
--- FOUR DIGIT DATE CODE TO SHOW YEAR AND WEEK OF MANUFACTURE.



VERIFIED PLOT
DATE MAR 02 2007

Layer Name _____Mechanical Layer 1

Stacking Chart _____

REV	EDN	DESCRIPTION	BY	CHK	DATE	APPROV
B	1635	REDESIGN INPUT & OUTPUT FILTERS	JTH	MF	2-12-07	
A	--	X3 RELEASED AS A	JTH	MF	23-Jun-08	DFM

TIDELAND SIGNAL CORP.		TITLE	
4350 DIRECTORS ROW HOUSTON, TEXAS 77082		DIF MODULE SBCN-2 SYS-6	
THIS DRAWING CONVEYS PROPRIETARY AND CONFIDENTIAL INFORMATION AND IS LOANED BY EXCLUSIVE LICENSE. REPRODUCTION IN ANY FORM OR BY ANY MEANS IS PROHIBITED. IT SHALL NOT BE REPRODUCED IN ANY FORM OR BY ANY MEANS OR USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS ORIGINALLY SUBMITTED. IT SHALL BE RETURNED TO THE ORIGINATOR.			
DESIGN	DATE	DESIGN BY	DWG SIZE
JTH	02-07-07	BRITTON VINCENT	B
CHECKED	DATE	PART NUMBER	REV
MF	23-Jun-08	349.1335-AWK	B
FILED ENGR	DATE	EX	DO NOT SCALE DRAWING
DFM	30-Jun-08	SCALE	SHEET 11 OF 12

Components _____ 230
Nets _____ 173
Holes _____ 584
29-Mar-2007
13:45:57
d:\tideland\vocon\lab2sy6\1\idf_rev0\pcb\1335_b1.PCB



VERIFY PLOT
DATE MAR 02 2007

H	2	110m	2.794mm
A	2	100m	2.54mm
F	20	67m	1.7018mm
D	115	42m	1.0668mm
E	14	35m	0.889mm
G	48	30m	0.762mm
C	68	20m	0.508mm
B	315	16m	0.4064mm
	584	Total	

Layer Name _____ Drill Drawing for Through Hole

Stacking Chart _____ ☐ ☐ ☐ ☐

[illegible]

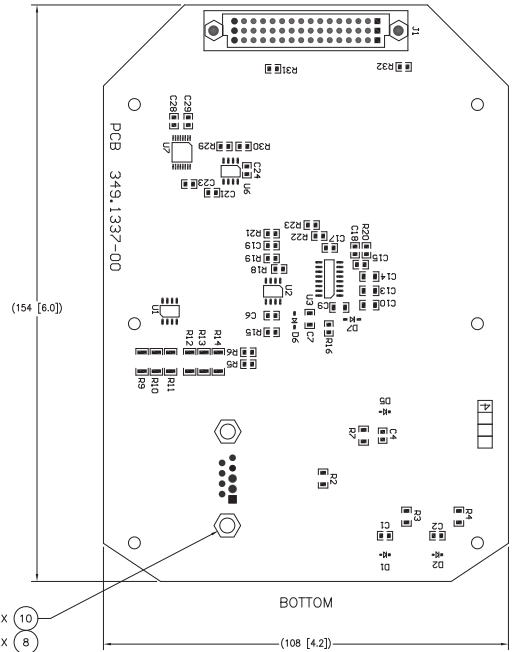
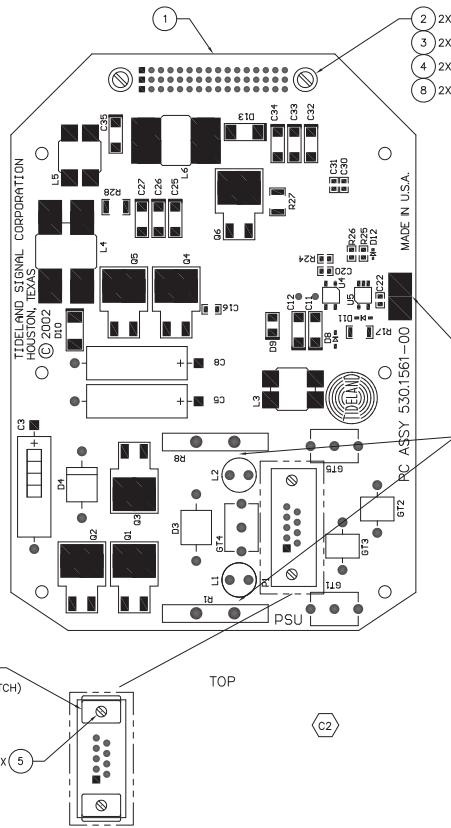
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED

 TIDELAND SIGNAL CORP. 4210 DISCREET RD HOUSTON, TEXAS 77062		TITLE DIF MODULE SBCN-2 SYS-6			
THIS DRAWING IS UNCLASSIFIED AND CONFIDENTIAL. INFORMATION IS NOT LOANED BY TIDELAND SIGNAL. COOPERATION WITH THE UNDERSTANDING THAT IT WILL NOT BE REPRODUCED OR IN ANY MANNER BE USED FOR OR ALIENATE OTHER THAN PROVISIONAL, SUCH AS INSTALLATION AND THAT IT SHALL BE RETURNED TO OR DESTROYED.					
DESIGN	DATE	DESIGN BY	OWN SIZE	PART NUMBER	REV
21R	02/29/62				
DRAWN BY	DATE				
16	21Jun60	BRITTON VINCENT	B	349.1335-AWK	B
PROJ ENGR	DATE	IN	EX	DO NOT SCALE	SCALE
DFR	30Jun60			DRAWING	
					SHEET 12 OF 12

23-Mar-2007
11:29:32
D:\TIDELAND\NACON\SB2SY6\1\DFI_REV\PCB\1335_B.PCB

NOTES: UNLESS OTHERWISE SPECIFIED

- FOR SCHEMATIC SEE 530.1561-SCH.
- ASSEMBLE IN STATIC FREE AREA.
- MARK ASSEMBLY REVISION LETTER IN AREA SHOWN.
- MAX. COMPONENT HEIGHT TOP & BOTTOM IS 5MM, EXCEPT C3,C5,C8,D4,G11-GT5 IS 10MM, J1 IS 12MM, & 31MM FOR R1 & R8.
- MAX. LEAD PROTRUSION: 2.3 [.09].
- APPLY ITEM 9 TO R1 & R8, FASTENING TO L1 & L2.
- BOARD ASSY SHALL MEET REQUIREMENTS OF IPC-A-610B CLASS 3.
- DENOTES REVISION SYMBOL.



DASH OPTION	
DASH NO.	DESCRIPTION
-00	PWR SUPPLY, SBCN-2 SYS 6 (UNTUNED)
-01	OBSELETE
-02	PWR SUPPLY, SBCN-2 SYS 6 (TUNED)

REV	ECO	ZONE	DESCRIPTION	BY	CHK	DATE	APPD
D	0014	A6	3) ADDED ITEM (5)	CS	AZ	18DEC14	AD
B	5840	A5	2) ADDED ITEM (10)	HA	LM	18JAN13	PFM
A	--	A4	1) ADDED FIXED LATCH	JD	KN	21JUL11	MK
		A3	2) REMOVED VIEW OF -D1	HA	HF	26APR05	PFM
		A2	1) ADDED DASH OPTION TABLE	JD	KN	21JUL11	MK
		A1	ADDED -01	HA	HF	26APR05	PFM
		A0	X4 RELEASED AS REV. A	HA	HF	26APR05	PFM

ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED.

REV	ECO	ZONE	DESCRIPTION	BY	CHK	DATE	APPD
D	0014	A6	3) ADDED ITEM (5)	CS	AZ	18DEC14	AD
B	5840	A5	2) ADDED ITEM (10)	HA	LM	18JAN13	PFM
A	--	A4	1) ADDED FIXED LATCH	JD	KN	21JUL11	MK
		A3	2) REMOVED VIEW OF -D1	HA	HF	26APR05	PFM
		A2	1) ADDED DASH OPTION TABLE	JD	KN	21JUL11	MK
		A1	ADDED -01	HA	HF	26APR05	PFM
		A0	X4 RELEASED AS REV. A	HA	HF	26APR05	PFM

UNLESS OTHERWISE SPECIFIED
1. TOLERANCE MILLIMETER
2. MILLIMETER
3. INCHES
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99. ANGULAR
100. ANGULAR

REV	ECO	ZONE	DESCRIPTION	BY	CHK	DATE	APPD
D	0014	A6	3) ADDED ITEM (5)	CS	AZ	18DEC14	AD
B	5840	A5	2) ADDED ITEM (10)	HA	LM	18JAN13	PFM
A	--	A4	1) ADDED FIXED LATCH	JD	KN	21JUL11	MK
		A3	2) REMOVED VIEW OF -D1	HA	HF	26APR05	PFM
		A2	1) ADDED DASH OPTION TABLE	JD	KN	21JUL11	MK
		A1	ADDED -01	HA	HF	26APR05	PFM
		A0	X4 RELEASED AS REV. A	HA	HF	26APR05	PFM

5301561C.DWG 21JAN13 15:00



10 BY JONG-
 11 VIN
 12 GO NODD
 13 GO NODD
 14 BY JONG-
 15 LUXIX
 16 EXEX
 17 KUBAT

QD1000
BLANK
QD1000
QD1000
BLANK
UNICE
EXIDE
-88 ANK
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R0202

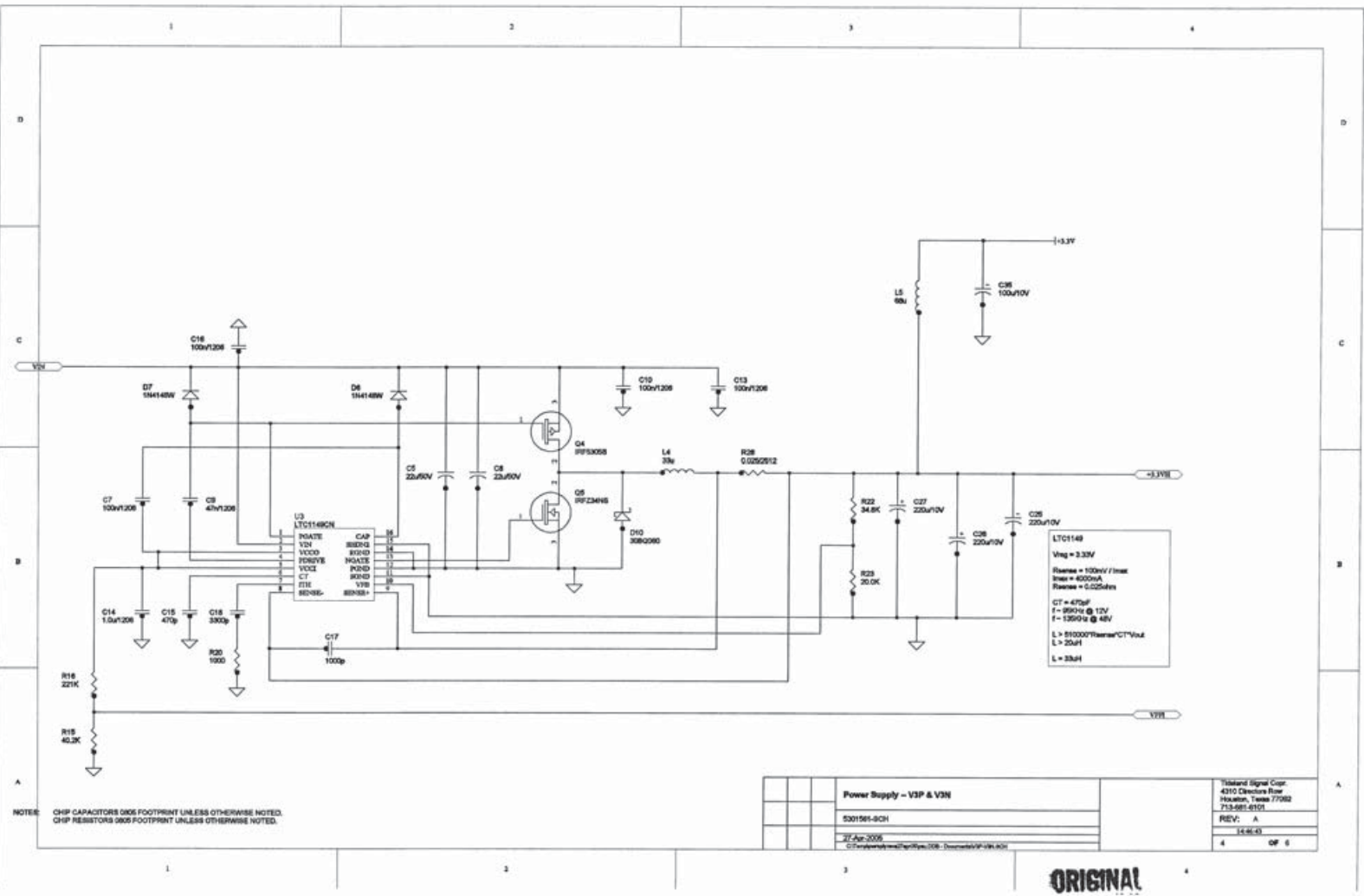
☐	0.1M
☐	0.2M
☐	0.3M
☐	0.4M
☐	0.5M

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MOSI
MISO
NC/JK
RSTZ
WE
007H000
VDD
RD
DQ
#BANK
PCSR
CSMG

XXXXXXX ONLY
XXX INT. XXXXXX DATE

3/26/08 REV 1/27/08 SeaBacon 2 System 6 - Power Supply  TideLand Signal Corp 4310 Directors Row Houston, Texas 77092 713-681-8101
5301981-GCH REV. A
1.1.2008 05/06/08
1 CP 6

ORIGINAL



NOTE: CHIP CAPACITORS 0605 FOOTPRINT UNLESS OTHERWISE NOTED.
CHIP RESISTORS 0605 FOOTPRINT UNLESS OTHERWISE NOTED.

MAX1771
 $V_{in} = 3.3V$
 $V_{out} = 10.0V$
 $I_{max} = 1.0A$
 $R_{sense} = 0.025\Omega$ per design choice
 $L = V_{in} \cdot 0.00002 / (I_{max} / 2)$
 $L > 3.3V \cdot 0.00002 / (1.0 / 2)$
 $L = 13\mu H$
 $L = 22\mu H$

MAX764
 $V_{out} = -3.3V$
 $I_{out} < 100mA$
 $L = 69\mu H$

NOTE: CHIP CAPACITORS 0805 FOOTPRINT UNLESS OTHERWISE NOTED.
 CHIP RESISTORS 0805 FOOTPRINT UNLESS OTHERWISE NOTED.

Power Supply - V1SP

5301561-8CH

1/1 Apr-2008

C:\Temp\proj\max764\proj\max764_V1SP_2008

Yellow Signal Corp.
 4310 Devonshire Blvd.
 Houston, Texas 77062
 713-467-4500
 REV: A
 144631
 5 OF 6

ORIGINAL



		Power Supply – Output to Backplane		Thailand Signal Corp. 4910 Clearview Road Houston, Texas 77082 713-681-8151
		5301561-SCH		REV: A
		27 Apr 2006		14:44:34
		C:\temp\psm\test\April\Output_2006 - Schenck output.xls		S OF S

ORIGINAL

NOTES: UNLESS OTHERWISE SPECIFIED

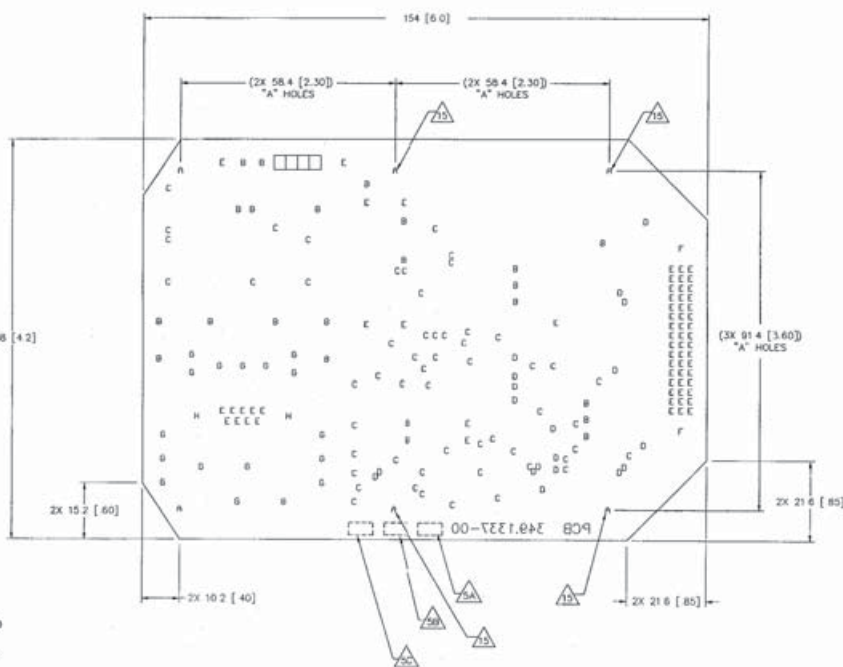
- ALL DIMENSIONS ARE BASIC
- THIS MULTILAYER BOARD SHALL MEET THE REQUIREMENTS OF IPC-6011 & IPC-6013A, TYPE 3, CLASS 3
- MANUFACTURE USING ARTWORK 349.1337-000 REV A, FOUR COPPER LAYERS WITH SOLDER MASK, SILKSCREEN, AND PASTE MASK ON BOTH OUTER LAYERS. FOR MANUFACTURING PURPOSES THIS ARTWORK SHALL NOT BE REPRODUCED TO OR FROM A REPRODUCIBLE MEDIA THAT IS LESS THAN A STABLE BASE MATERIAL
- COPPER CLAD LAMINATE AND PREPREG MATERIALS SHALL CONFORM TO TYPE OF PER MIL-S-13949. SPECIFIC MATERIAL REQUIREMENTS, THICKNESS AND LAYER ARRANGEMENTS SHALL BE IN ACCORDANCE WITH FIGURE 1
- BOARD MUST BE PERMANENTLY MARKED, ON SOLDER SIDE, WITH:
 - REVISION LETTER SPECIFIED ON THIS DRAWING AND ON THE PURCHASE ORDER IN COPPER IN AREA INDICATED BY []
 - CURRENTLY LISTED UL SUPPLIER MARK AS RECOMMENDED FOR UL LISTING []
 - A FOUR DIGIT DATE CODE YEAR AND WEEK OF MANUFACTURE []
- MINIMUM CONDUCTOR WIDTH, MINIMUM SPACING BETWEEN CONDUCTORS, & MINIMUM ANNUAL RING PER IPC-6011 & 6013A, TYPE 3, CLASS 3
- ALL PLATED THRU HOLES SHALL HAVE A MINIMUM OF 0.00008 [0.00003] - 0.00020 [0.00008] GOLD
- ALL HOLE SIZES ARE AFTER PLATING, TOLERANCE ± 0.05 [± 0.002]
- SOLDERMASK: GREEN
- SILKSCREEN SHALL BE APPLIED TO BOTH SIDES OF BOARD PER MASTER PATTERN SILKSCREENS, USING NON-CONDUCTIVE WHITE EPOXY INK
- BOARD MUST BE 100% BARE BOARD TESTED POINT TO POINT ON MANA SYSTEM OR EQUIVALENT. TEST CERTIFICATION MUST BE PROVIDED. TEST CERTIFICATION MUST INCLUDE 40VDC TEST VOLTAGE, 50 OHM OPEN SENSITIVITY, 2.5 MEGOHM SHORT AND 300mA MAX TEST CURRENT
- BOARD FLATNESS TO BE 0.25 [0.0] 25.4 [1.00]
- USE PCB LAMINATE WITH A WATER ABSORPTION LESS THAN OR EQUAL TO 0.13%
- TOP AND BOTTOM LAYERS TO BE FINISH BY GOLD IMMERSION PROCESS 0.00008 [0.00003] - 0.00020 [0.00008] GOLD OVER NICKEL (DNG) PER IPC-4552
- PLATED THRU HOLES "A", 4 TOTAL

HOLE SCHEDULE				
SIZE	QTY	TYPE	FIN	PLT
1.30 [1.30]	2	A	NPLTD	
5.05 [5.05]	2	H	NPLTD	
2.79 [2.79]	2	F	NPLTD	
1.52 [1.52]	2	B	PLTD	
1.27 [1.27]	17	C	PLTD	
1.07 [1.07]	66	E	PLTD	
0.71 [0.71]	55	C	PLTD	
0.51 [0.51]	19	D	PLTD	
1.30 [1.30]	4	A	PLTD	

LAYERS TO BE STACKED AS FOLLOWS:



FIGURE 1
SCALE: NONE

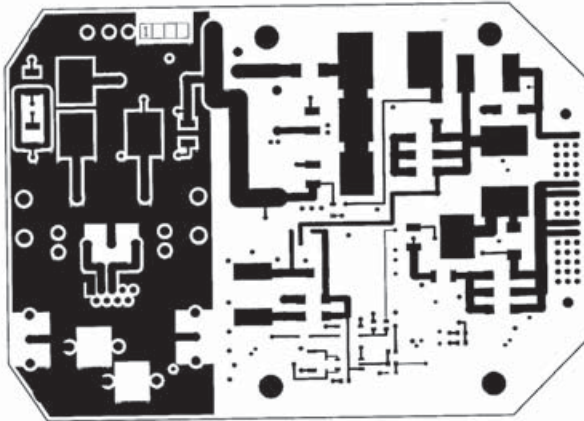


REV	DATE	DESCRIPTION	BY	CHK	DATE	APPROV
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED.

UNLESS OTHERWISE SPECIFIED:		MATERIAL:	
1. TOLERANCE	2. DIMENSIONAL TOLERANCE	TIDELAND SIGNAL CORP.	
3. FINISH	4. FINISH	PC FAB, POWER SUPPLY	
5. FINISH	6. FINISH	SBCN-2 SYS 6	
7. FINISH	8. FINISH	349.1337-00	
9. FINISH	10. FINISH	C	
11. FINISH	12. FINISH	SCALE: 2:1	
13. FINISH	14. FINISH	SHEET 1 OF 1	

349.1337C.DWG 26JUN07 14:00



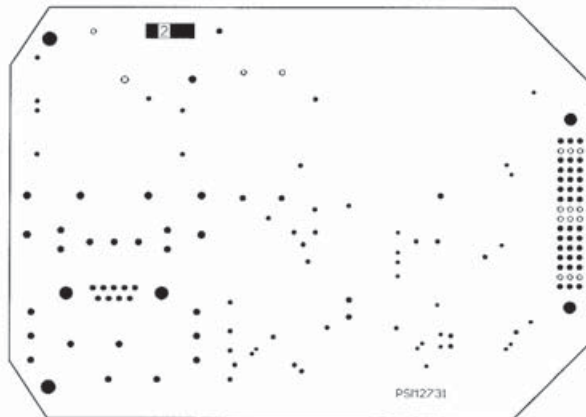
DATE APR 08 2005

Stacking Chart _____

1			
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[illegible]

 IDRAN SIGNAL CORP. 4310 DIRECTORS ROW HOUSTON, TEXAS 77092				TITLE ARTWORK POWER SUPPLY SB2 SYS6	
THIS DRAWING CARRIES TRADEMARK AND/OR COPYRIGHT INFORMATION AND IS LOANED TO YOUR FIRM UNDER CONTRACT WITH THE UNDERSTANDING THAT IT WILL NOT BE REPRODUCED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN THE PROJECT, ORIGINAL OR REPRODUCTION AND THAT IT SHALL BE RETURNED ON REQUEST.					
DRAWN J. WALKER CHECKED W. E. BARRON PROJECT NO. 84-01-00000	DATE 05-21-82 DATE 05-21-82 DATE 05-21-82	DESCRIPTION ANALYSIS & DESIGN GROUP 100 G. BOX 125-0 HOUSTON, TEXAS 77024 (281) 446-4927	DWG. SIZE A PART NUMBER 349.1337-AWK B	REV. A	
INCHES 1/8" X 1/2"		LB. 15.00	CR. 15.00	DO NOT SCALE DRAWING	SCALE 1" = 1"
SHEET 1 OF 12		SHEET 1 OF 12			



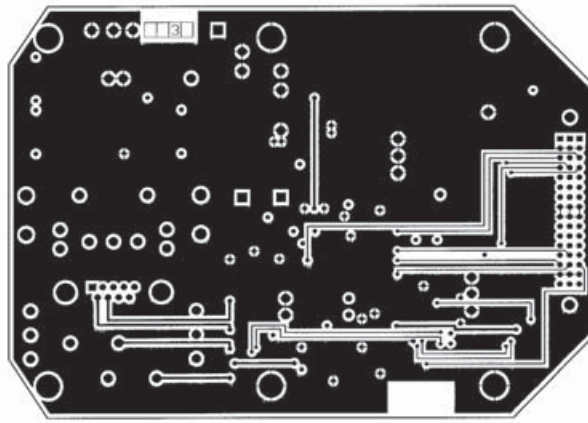
DATE APR 08 2005

Stacking Chart

	2		
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[illegible]

	TIDELAND SIGNAL CORP.							TITLE
	4310 DIRECTORS BOY HOUSTON, TEXAS 77092							ARTWORK
								POWER SUPPLY
								SBS2 SYS6
	THIS DRAWING CONVEYS PROPRIETARY AND CONFIDENTIAL INFORMATION AND IS LOANED TO TIDELAND SIGNAL CORPORATION BY THE UNDERSIGNED PARTY FOR USE ONLY IN CONNECTION WITH THE PROJECT OR WORK ORDER SPECIFICALLY IDENTIFIED HEREIN. NO REPRODUCTION, MODIFICATION, OR DISTRIBUTION OF THIS DRAWING IS PERMITTED ON ANY OTHER BASIS.							
DRAWN	DATE	DESIGN BY	CAGE CODE	PART NUMBER	REV			
Juanelli	09-21-02	ANALYSIS & DESIGN GROUP						
	DATE	BY	PROJECT & DESIGN GROUP	B	349.1337-AWK	A		
HS	09/21/02		4310 DIRECTORS BOY HOUSTON, TEXAS 77092 (299) 465-1922					
PROJ ENG	DATE	BY	EX	DO NOT SCALE DRAWING	SCALE	SHEET	Z OF 12	
	09-21-02					2	of 12	

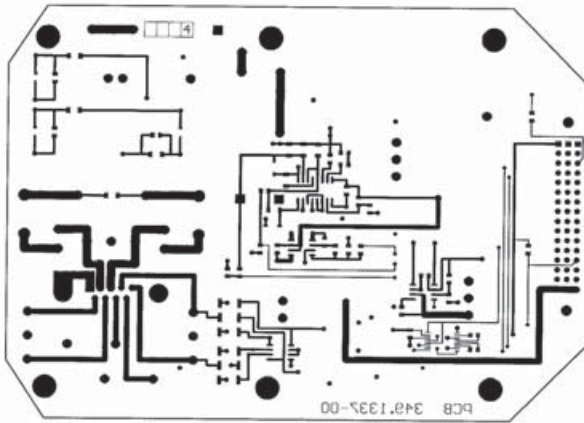


VERIFY PLOT
DATE APR 08 2005

Layer Name _____ Mid Layer 1
Stacking Chart _____ 3

REV	CDN	DESCRIPTION	BY	CHK	DATE	NOV
A		33.881. AS A	Jm	WF	4/04/05	33
ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED						

		TIDELAND SIGNAL CORP.		TITLE	
4310 DECEASED ROW		HOUSTON, TEXAS 77052		ARTWORK	
THIS DRAWING IS THE PROPERTY OF TIDELAND SIGNAL CORP. AND IS LOANED TO YOU FOR YOUR INFORMATION ONLY. IT IS NOT TO BE REPRODUCED OR USED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF TIDELAND SIGNAL CORP.				POWER SUPPLY	
				SB2 SYS6	
DESIGN	DATE	DESIGN BY	QWS SIZE	PART NUMBER	REV
JPM/111	08/21/02	ANALYSIS & DESIGN GROUP	B	349.1337-AWK	A
CHECKED	DATE	P.O. BOX 31100			
HF	08/21/05	HOUSTON, TEXAS 77231			
PROJ ENG	DATE	(202) 461-4023			
JPM	08/21/05				
DO NOT SCALE			SCALE		
DRAWING			SHEET 3 of 12		



DATE APR 08 2005

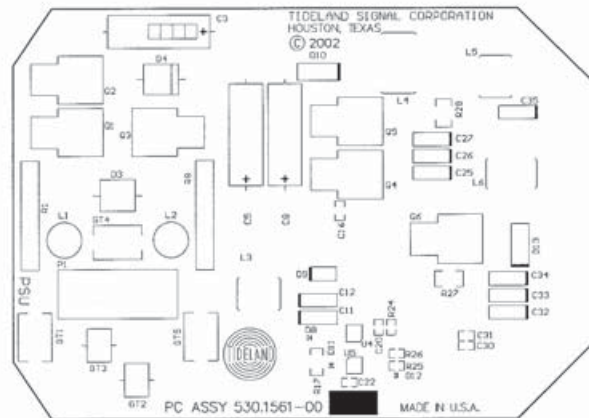
Layer Name Bottom Layer

Stacking Chart [1] [4]

REV	EDN	DESCRIPTION	BY	CHK	DATE	APPR
A		K3 DEL. AS *	JTM	HF	4/04/05	LF
REV	EDN	DESCRIPTION	BY	CHK	DATE	APPR

ATTENTION - MANUAL REVISIONS ARE NOT PERMITTED

		TIDELAND SIGNAL CORP.		TITLE	
4310 DIRECTORS ROW		HOUSTON, TEXAS 77032		ARTWORK	
THIS DRAWING ENCLOSED REPRESENTS THE DESIGN AND CONSTRUCTION INFORMATION AND IS LOANED BY TIDELAND SIGNAL CORPORATION WITH THE UNDERSTANDING THAT IT SHALL NOT BE REPRODUCED IN ANY FORM OR MANNER OR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT WAS ORIGINALLY SUBMITTED AND THAT IT SHALL BE RETURNED TO ORIGINATOR.				POWER SUPPLY	
				SB2 SYS6	
DATE	09/21/03	DESIGN BY:	ANALYSIS & DESIGN GROUP	DWG. SIZE	REV
CHECKED	DATE	DATE	P.O. BOX 24400	B	349.1337-AWK A
HP	06/08/05	HP	HOUSTON, TEXAS 77234		
		(2812) 486-4923			
PROJ. ENGR	DATE	UL	EX	DO NOT SCALE	SCALE
VP	SCALE	SCALE	SCALE	DRAWING	SCALE
				SHEET 4 OF 12	



VERIFY DATE
APR 9.8 2005

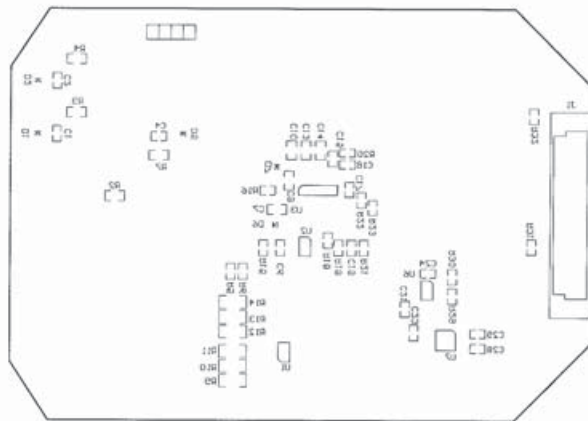


Layer Name _____ Top Overlay
Stacking Chart _____

REV	ECN	DESCRIPTION	BY	CHK	DATE	APPROV
A		X3 REL. AS A	JM	RF	4/24/05	JF

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 TIDELAND SIGNAL CORP. 4310 DIRECTORS ROW HOUSTON, TEXAS 77052		TITLE ARTWORK POWER SUPPLY SB2 SYS6	
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DRAWN JLANKILL		DESIGN BY ANALYSIS & DESIGN GROUP	
CHECKED MF		DATE 08 APR 05	
PROJ. ENG JPM		DATE 06/04/05	
REV B		REV A	
DO NOT SCALE DRAWING		SCALE SHEET 5 of 12	



	TIDELAND SIGNAL CORP. 4310 DIRECTORS ROW HOUSTON, TEXAS 77092		TITLE ARTWORK	
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DRAWN JUNE11 CHECKED HF INSP JUNE11 DATE 05/29/02 DATE 06/04/02 DATE 06/04/02	DESIGN BY ANALYSIS & DESIGN GROUP P.O. BOX 3344 HOUSTON, TEXAS 77224 (281) 444-4823	DWG. SIZE B	PRINT NUMBER 349.1337-AWK	REV A
PROJ. ENGR JUNE11 DATE 06/04/02	DRG. NO. 06/04/02	DO NOT SCALE DRAWINGS	SHEET 6 OF 12	