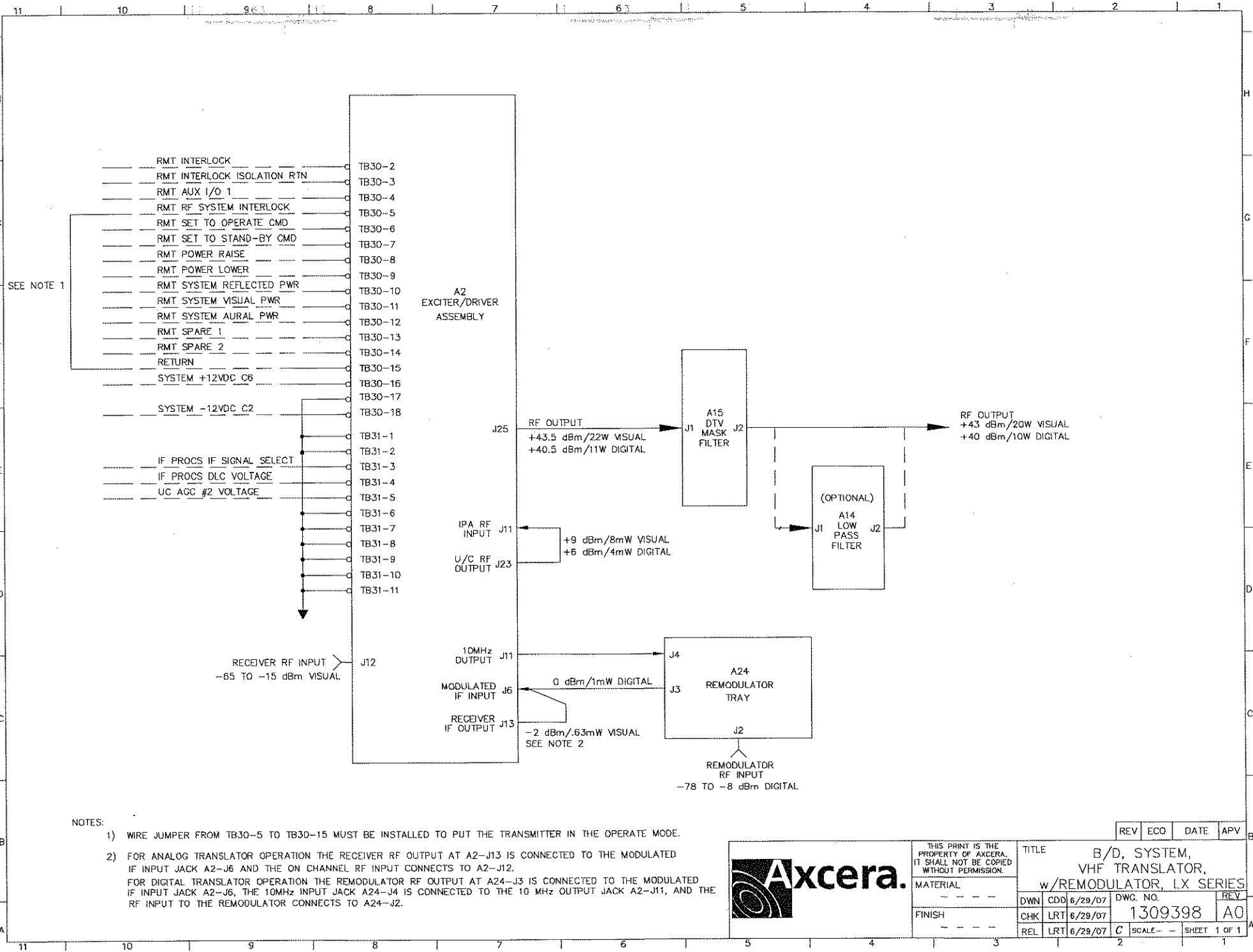




THIS PRINT IS THE PROPERTY OF AXCCERA. IT SHALL NOT BE COPIED WITHOUT PERMISSION.

MATERIAL		DWN		CDD 6/29/07		DWG. NO.		REV	
FINISH		CHK		LRT 6/29/07		1309398		A0	
		REL		LRT 6/29/07		C		SCALE - SHEET 1 OF 1	

TITLE
B/D, SYSTEM,
VHF TRANSLATOR,
w/REMODULATOR, LX SERIES

REV ECO DATE APV

11 10 9 8 7 6 5 4 3 2 1

SEE NOTE 1

RMT INTERLOCK TB30-2
 RMT INTERLOCK ISOLATION RTN TB30-3
 RMT AUX I/O 1 TB30-4
 RMT RF SYSTEM INTERLOCK TB30-5
 RMT SET TO OPERATE CMD TB30-6
 RMT SET TO STAND-BY CMD TB30-7
 RMT POWER RAISE TB30-8
 RMT POWER LOWER TB30-9
 RMT SYSTEM REFLECTED PWR TB30-10
 RMT SYSTEM VISUAL PWR TB30-11
 RMT SYSTEM AURAL PWR TB30-12
 RMT SPARE 1 TB30-13
 RMT SPARE 2 TB30-14
 RETURN TB30-15
 SYSTEM +12VDC C6 TB30-16
 SYSTEM -12VDC C2 TB30-17
 IF PROCS IF SIGNAL SELECT TB31-1
 IF PROCS DDC VOLTAGE TB31-2
 IF AGC #2 VOLTAGE TB31-3
 TB31-4
 TB31-5
 TB31-6
 TB31-7
 TB31-8
 TB31-9
 TB31-10
 TB31-11

A2
DRIVER/AMPLIFIER
ASSEMBLY

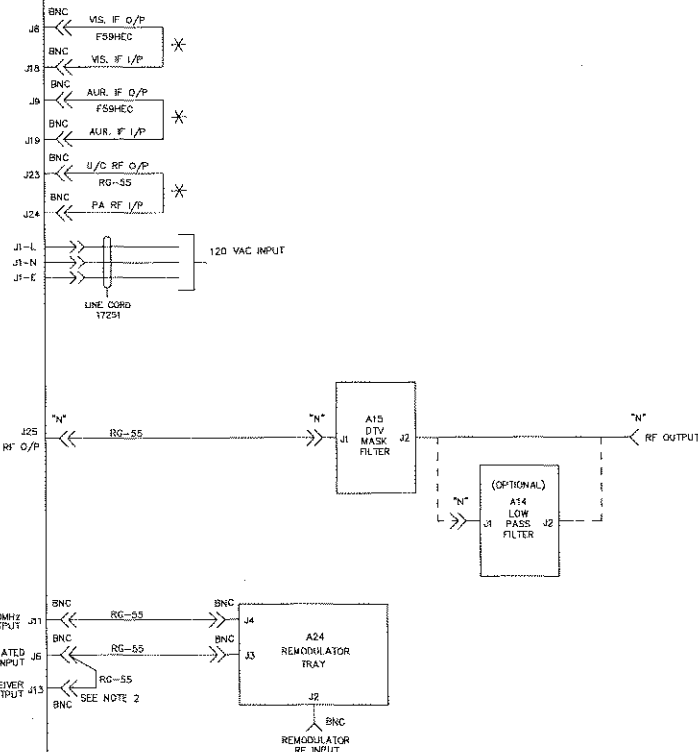
KEYS TB30-4, TB30-15

KEYS TB31-3, TB31-16

TB30 IS AN 18 POS TERMINAL BLOCK
 TB31 IS AN 18 POS TERMINAL BLOCK
 TB02 IS AN 3 POS TERMINAL BLOCK

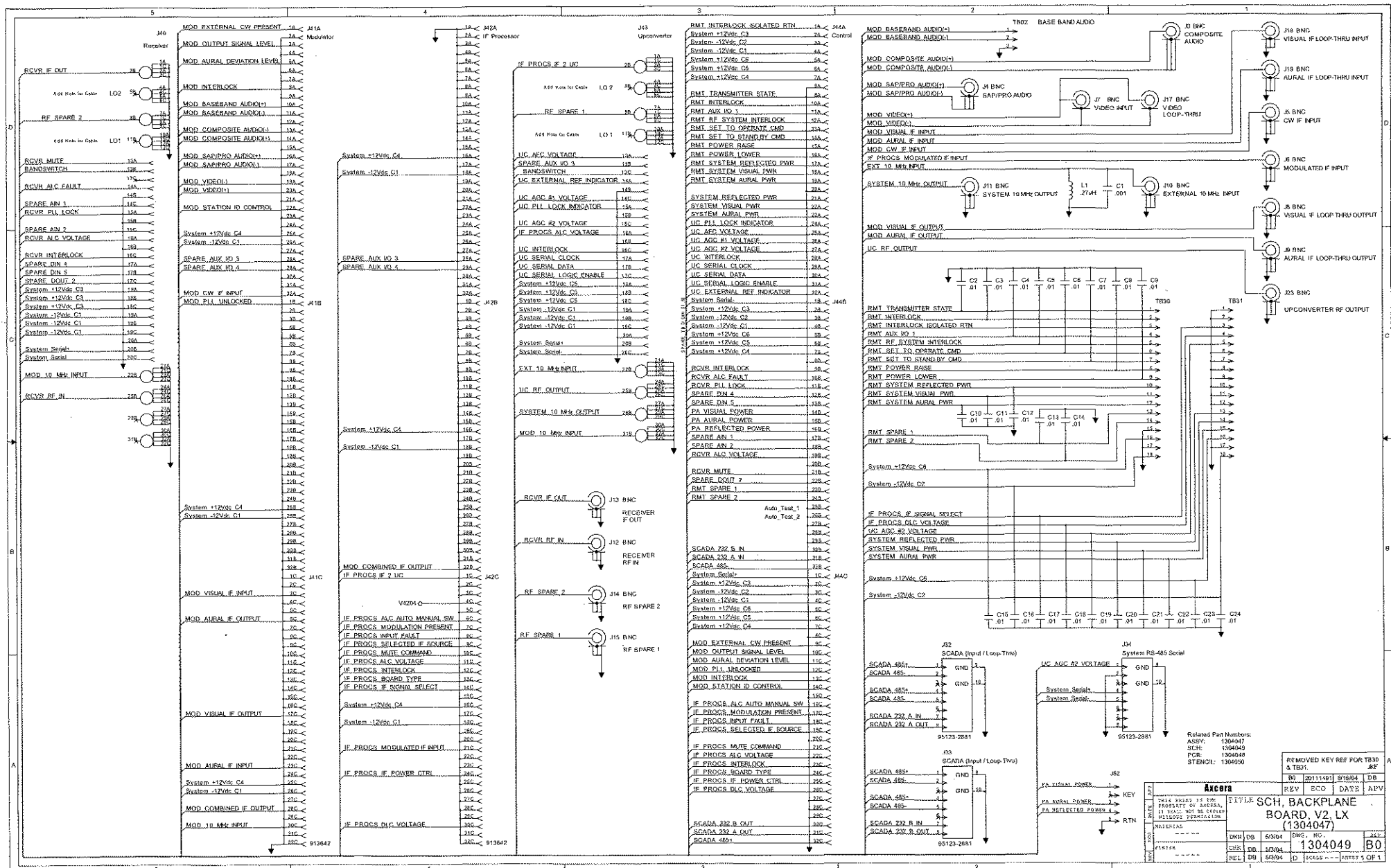
NOTES

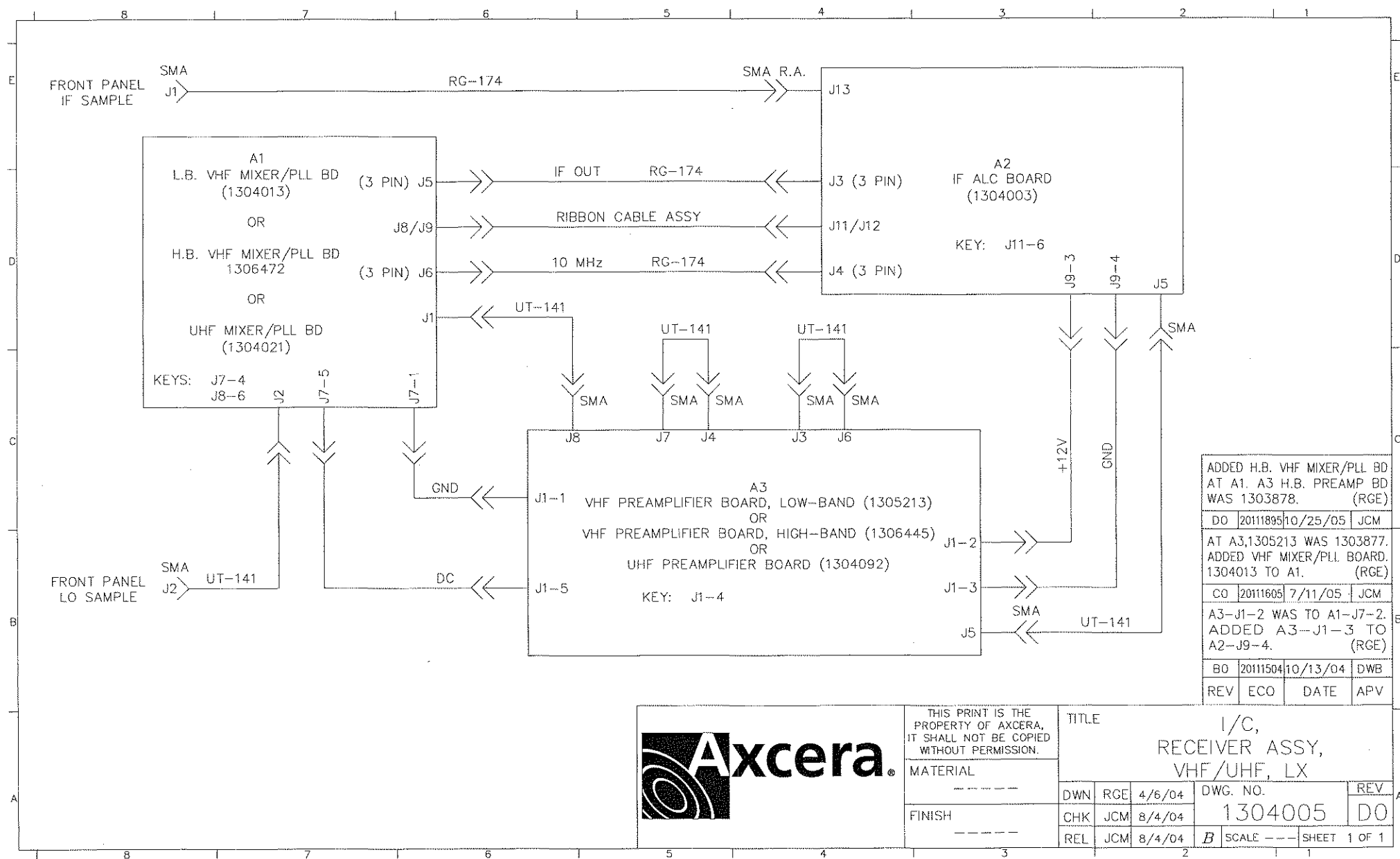
- 1) WIRE JUMPER FROM TB30-5 TO TB30-15 MUST BE INSTALLED TO PUT THE TRANSLATOR IN THE OPERATE MODE.
- 2) * DENOTES CABLE/WIRE IS PART OF TRANSMITTER ASSY.
- 3) ALL WIRES ARE 22AWG UNLESS OTHERWISE NOTED.
- 4) FOR ANALOG TRANSLATOR OPERATION THE RECEIVER RF OUTPUT AT A2-J13 IS CONNECTED TO THE MODULATED IF INPUT JACK A2-J6 AND THE ON CHANNEL RF INPUT CONNECTS TO A2-J2. FOR DIGITAL TRANSLATOR OPERATION THE REMODULATOR RF OUTPUT AT A24-J3 IS CONNECTED TO THE MODULATED IF INPUT JACK A2-J6, THE 10MHz INPUT JACK A24-J4 IS CONNECTED TO THE 10 MHz OUTPUT JACK A2-J11, AND THE RF INPUT TO THE REMODULATOR CONNECTS TO A24-J2.

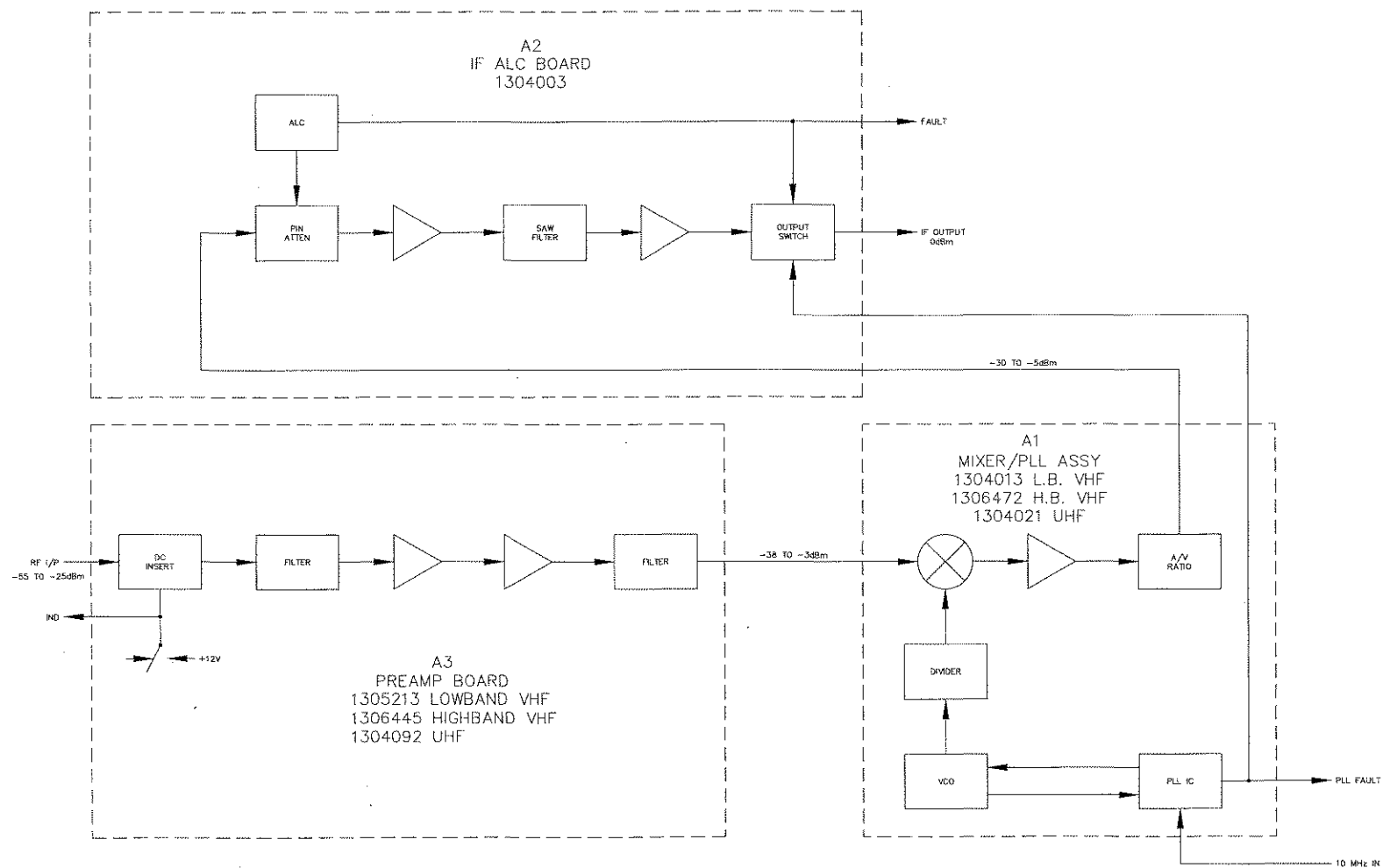


REV ECD DATE APV		TITLE	
I/C, SYSTEM,		VHF TRANSLATOR, LX SERIES	
w/REMULATOR, LX SERIES		DWG. NO.	
MATERIAL		FINISH	
OWN		CHK	
CDD 6/29/07		LRT 6/29/07	
REL		LRT 6/29/07	
Q. SCALE		1"=1' SHEET 1 OF 1	



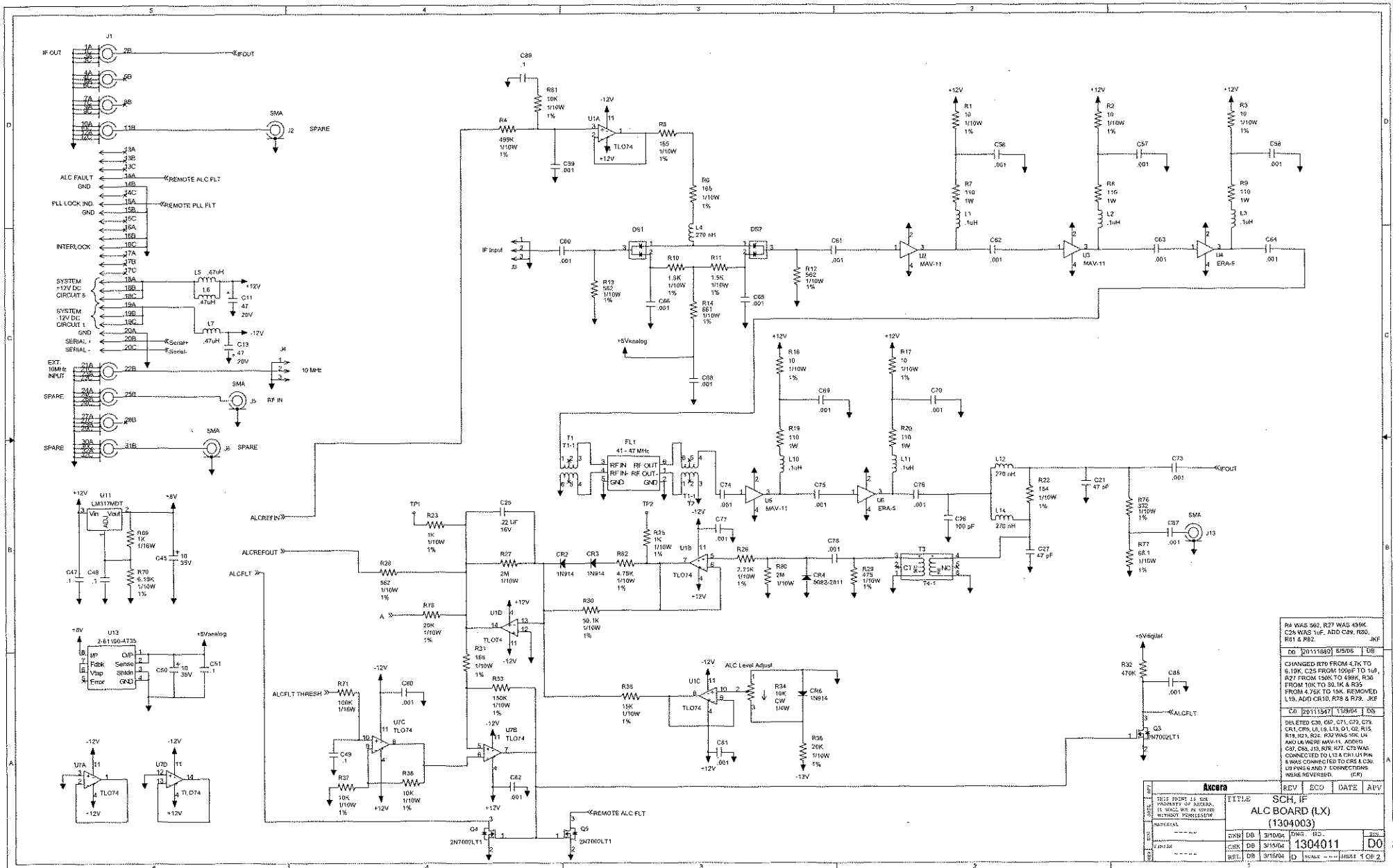


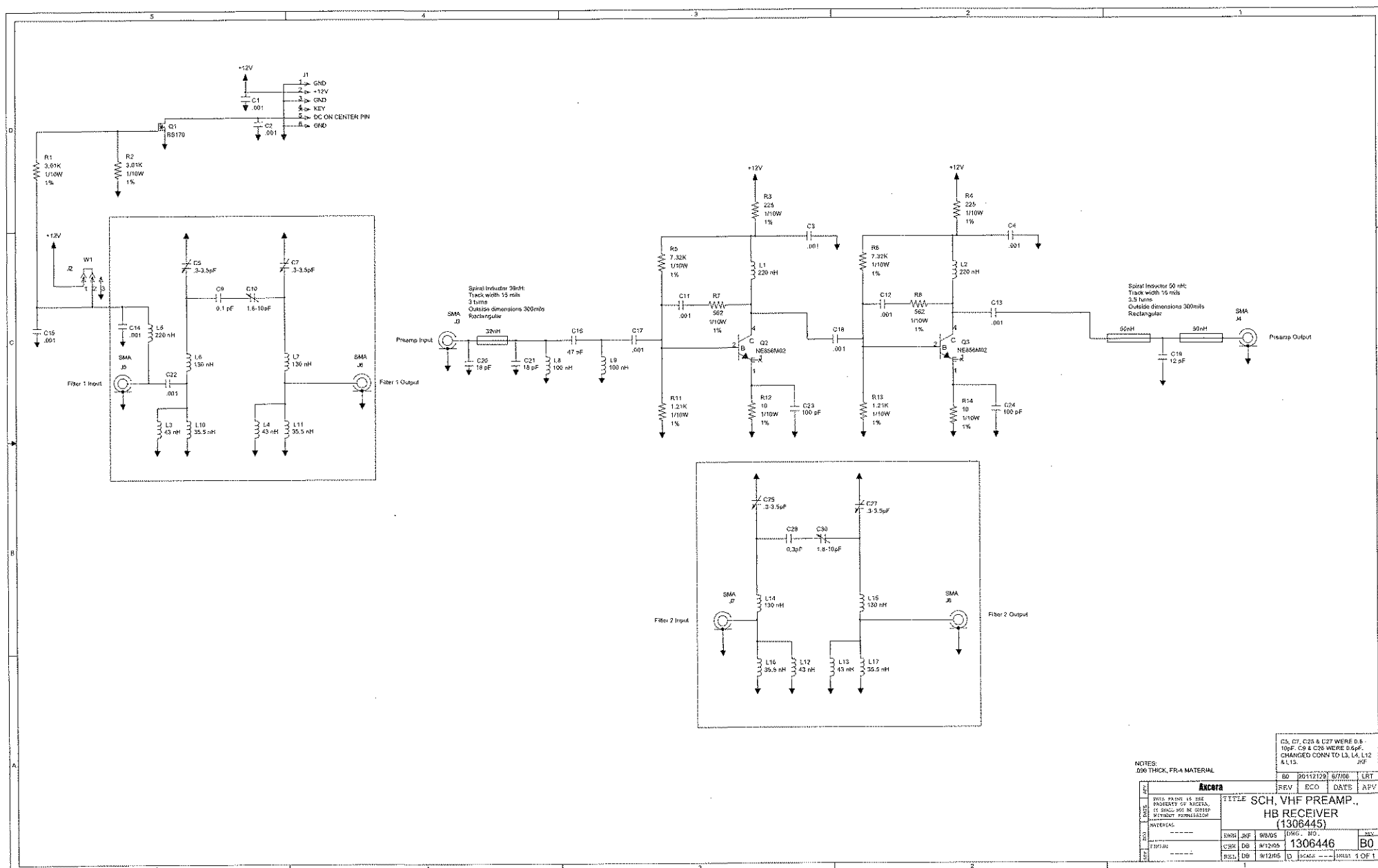


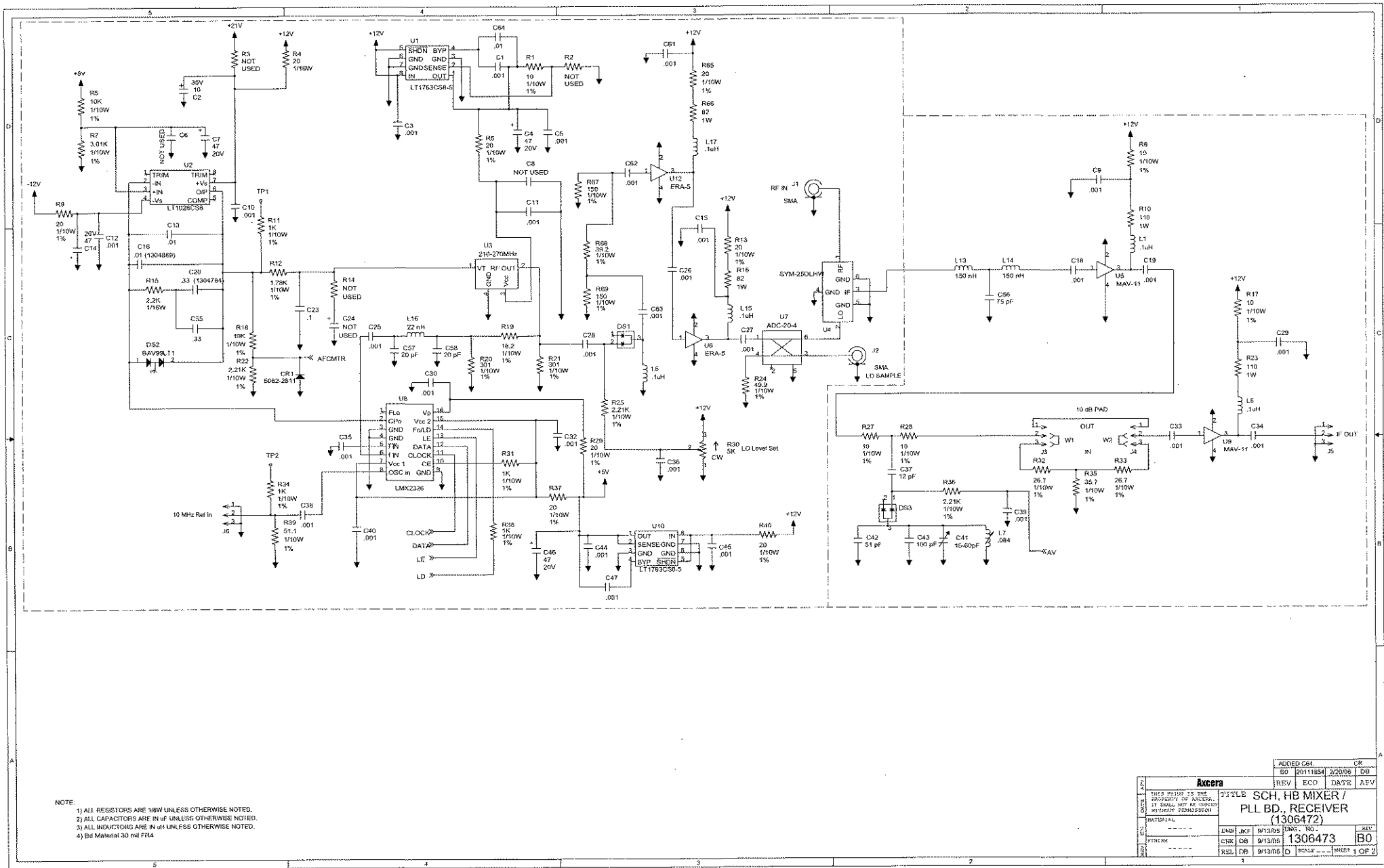


		THIS PRINT IS THE PROPERTY OF AXCCERA. IT SHALL NOT BE COPIED WITHOUT PERMISSION.		TITLE B/D, RECEIVER ASSEMBLY, VHF/UHF LX	
		MATERIAL FINISH		DWG. NO. 1304004	
REL. DWG. 8/26/04		DWN. RGE. 3/4/04		CHK. DWG. 8/26/04	
REV. ECO. DATE APV.		SCALE		SHEET 1 OF 1	

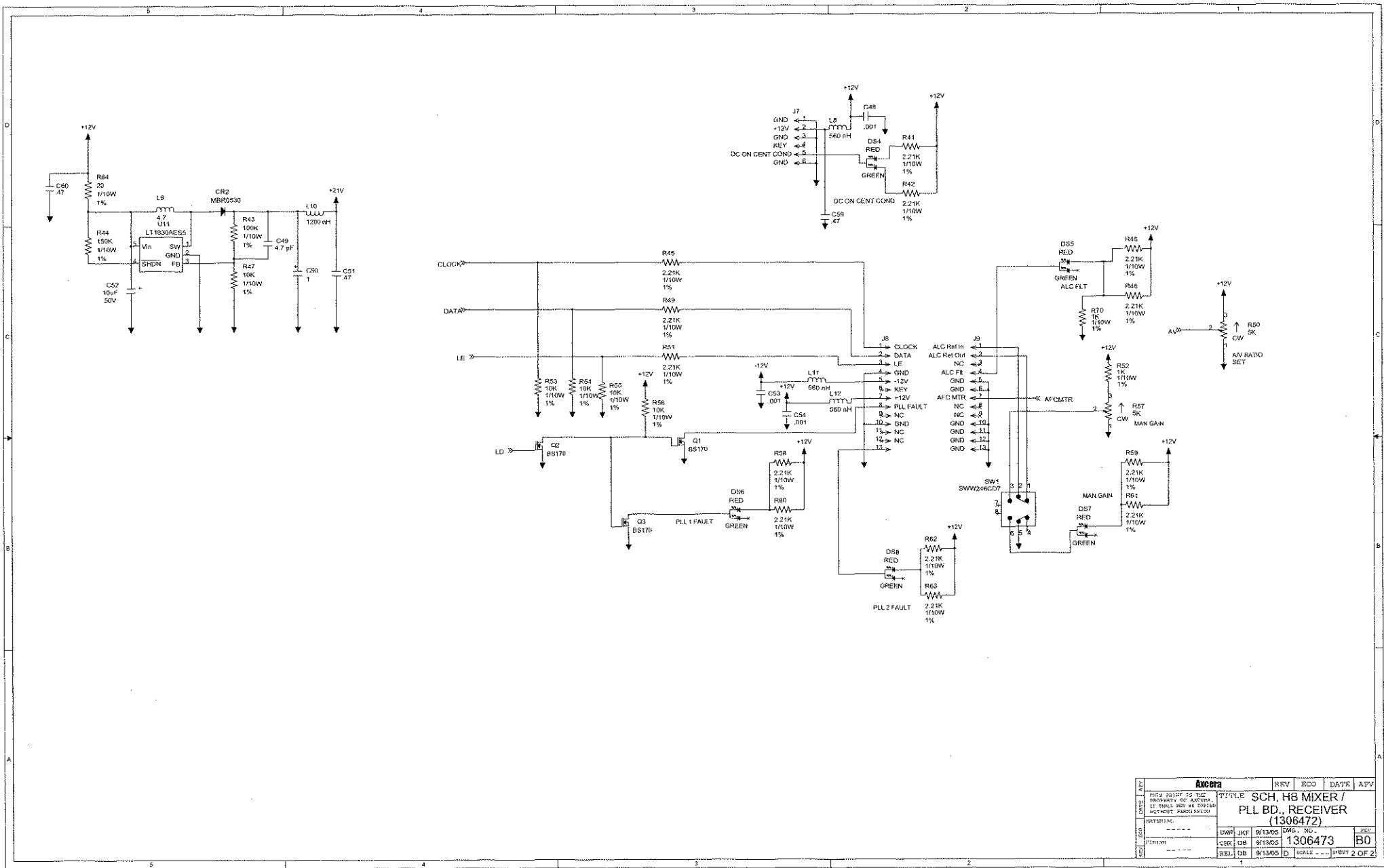
ADDED H.B. VHF MIXER/PLL BD AT A1, A3 H.B. PREAMP BD WAS 1303878, (RGE)
 CO 20118010/25/05 JCM
 A3 LOWBAND VHF PRE-AMP BD WAS 1303877, (RGE)
 BD 201182 7/5/05 URT

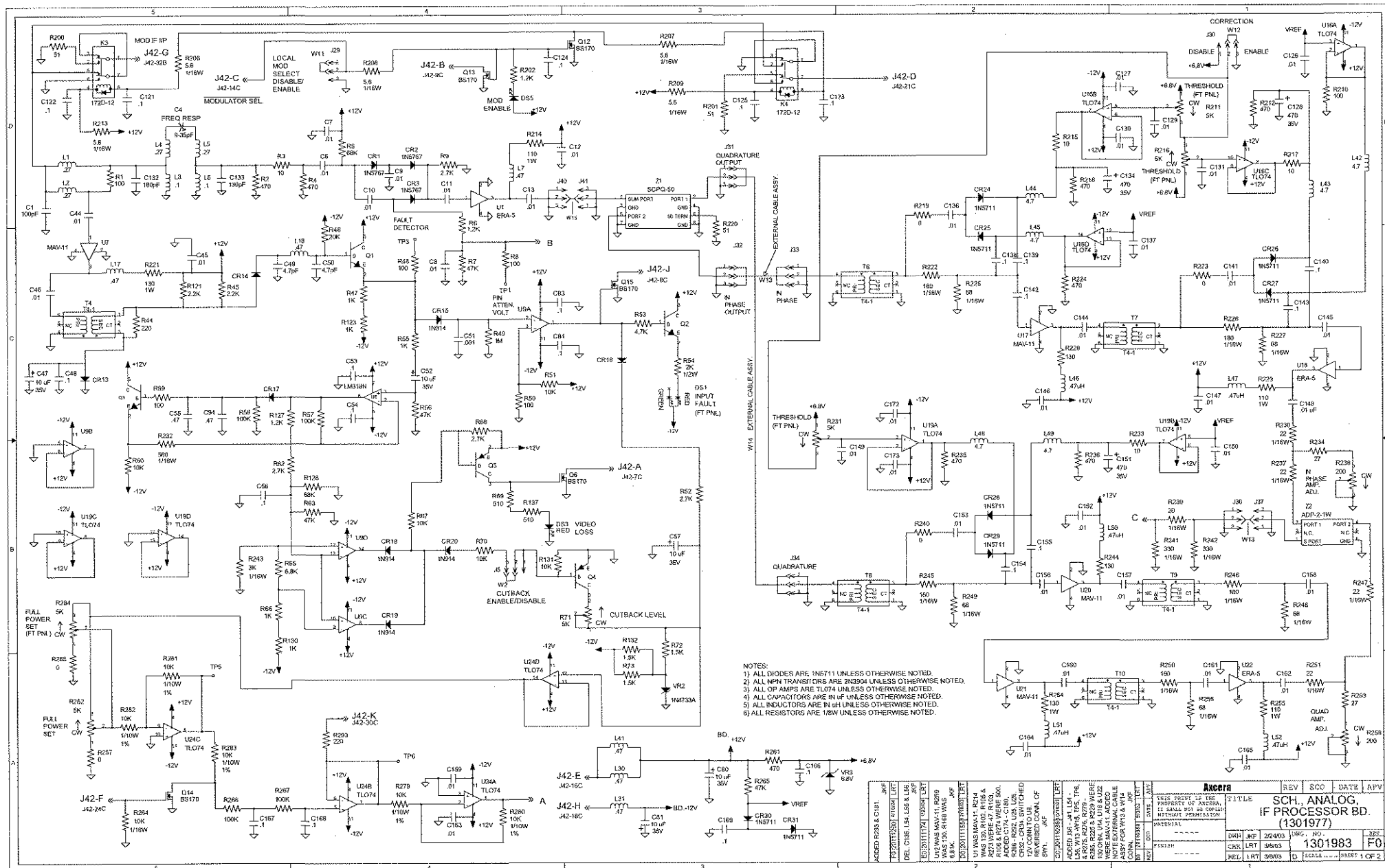


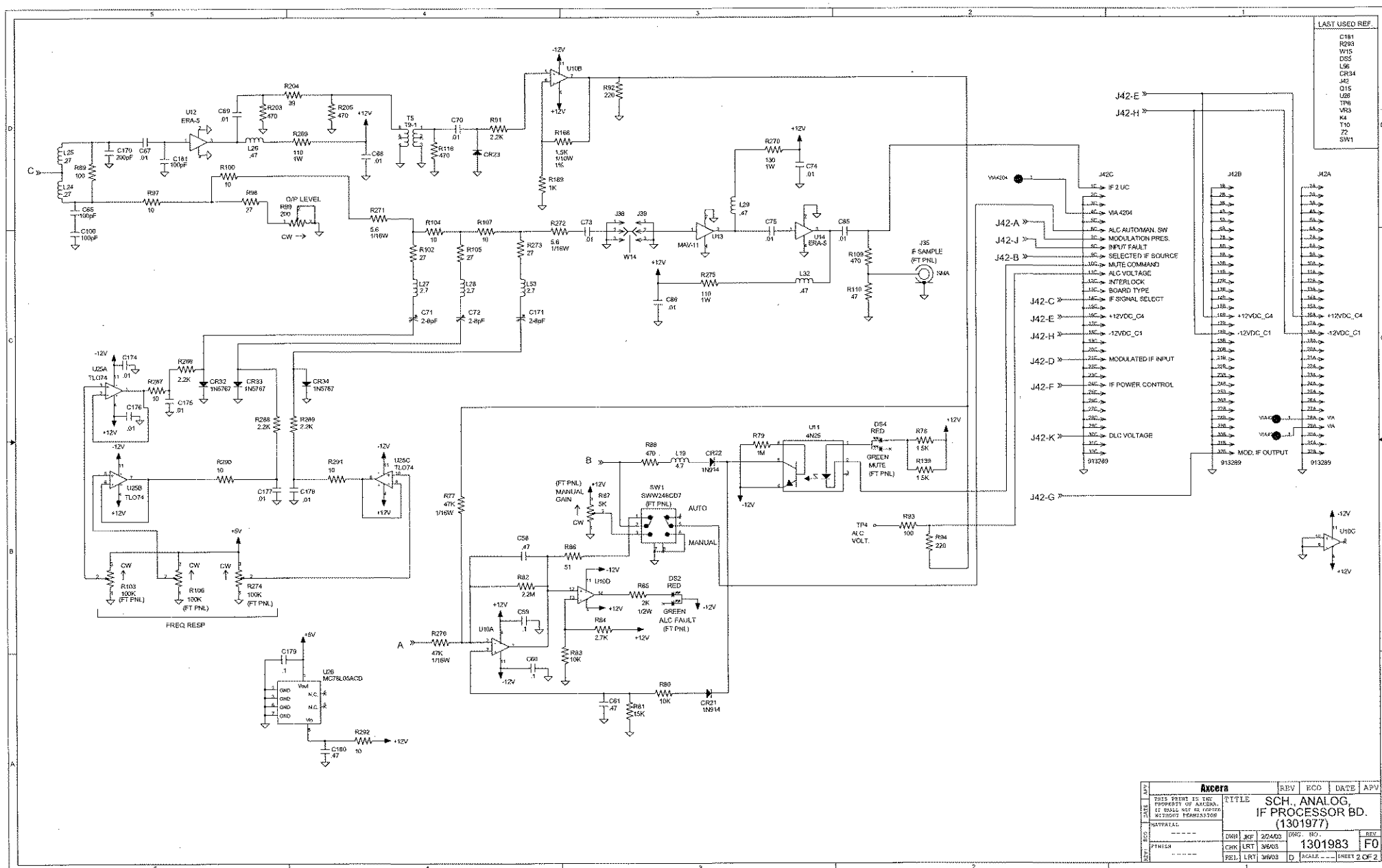


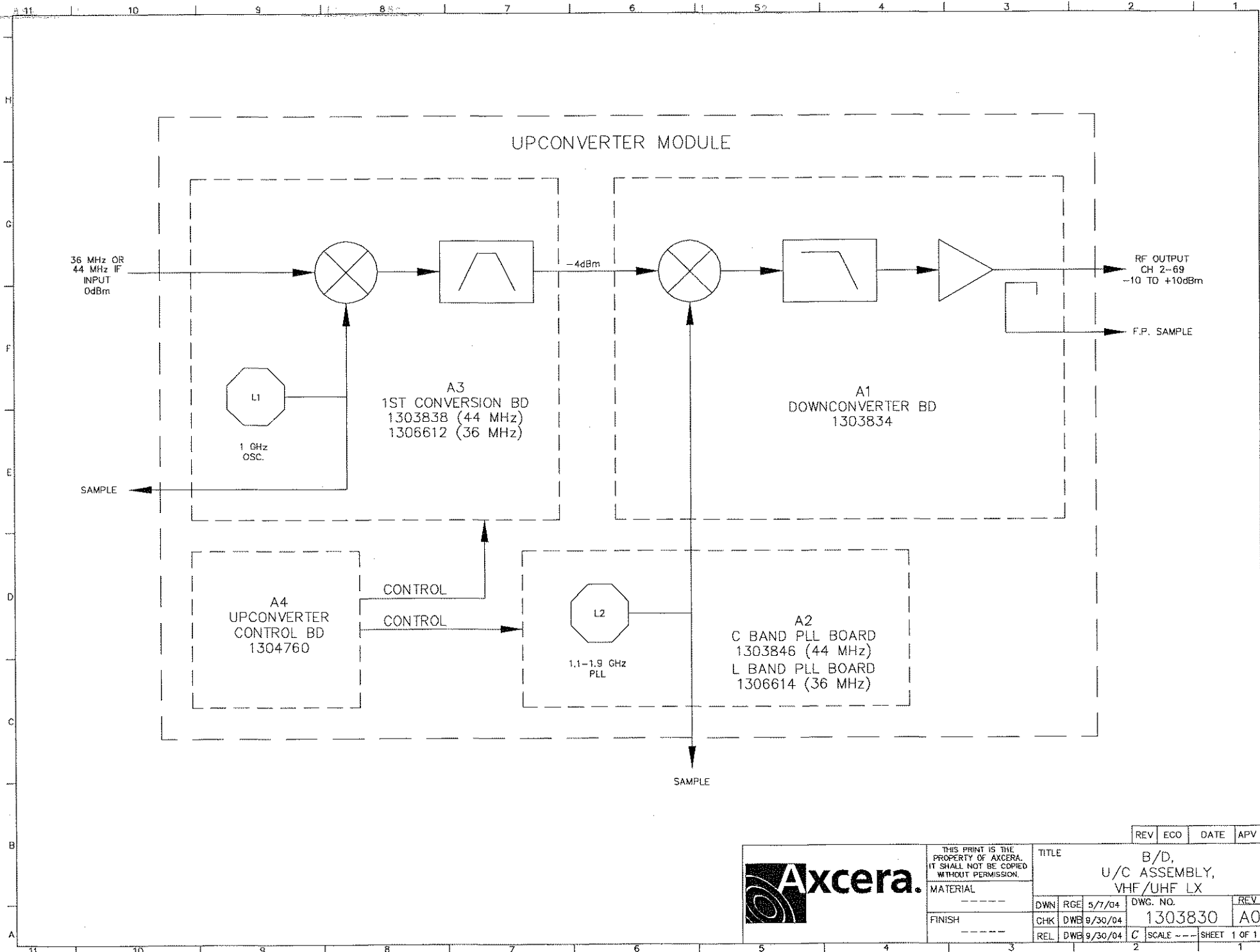


		ADDED C61		CR	
		B0		2/20/06 DB	
		REV ECO		DATE AFV	
P		Axtera			
E		THIS PRINT IS THE PROPERTY OF AXTERA. IT SHALL NOT BE COPIED WITHOUT PERMISSION.			
C		TITLE SCH, HB MIXER / PLL BD, RECEIVER (1306472)			
D		NATIONAL			
G		LNSG JCF		DES. NO.	
		REL DB		1306473	
		CHK DB		9/13/05	
		REL DB		9/13/05	
				SCALE	
				SHEET 1 OF 2	



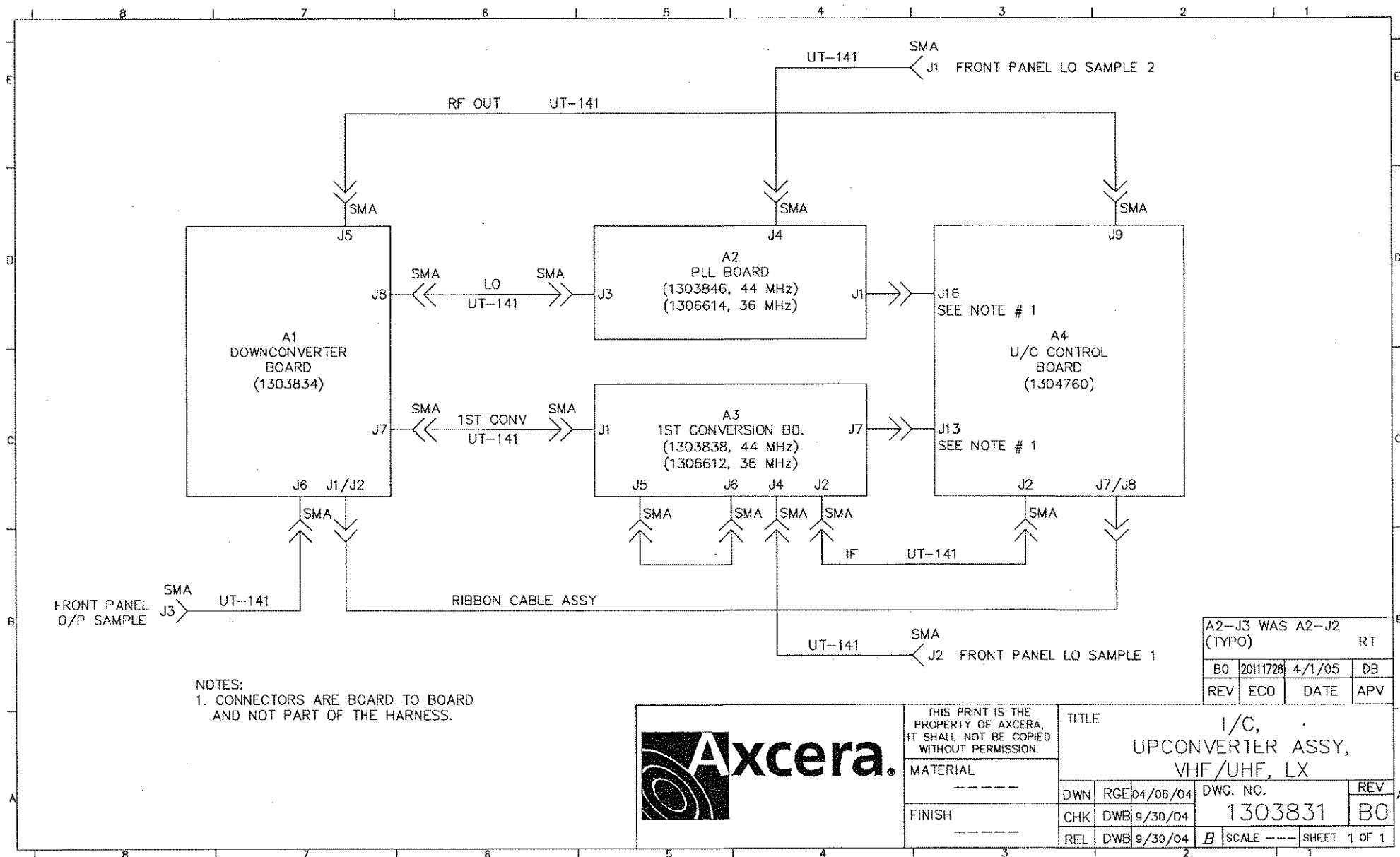






		THIS PRINT IS THE PROPERTY OF AXCERA. IT SHALL NOT BE COPIED WITHOUT PERMISSION.				TITLE B/D, U/C ASSEMBLY, VHF/UHF LX	
		MATERIAL		DWN RGE 5/7/04		DWG. NO.	
		FINISH		CHK DWB 9/30/04		REV A0	
				REL DWB 9/30/04		SCALE --- SHEET 1 OF 1	

REV	ECO	DATE	APV
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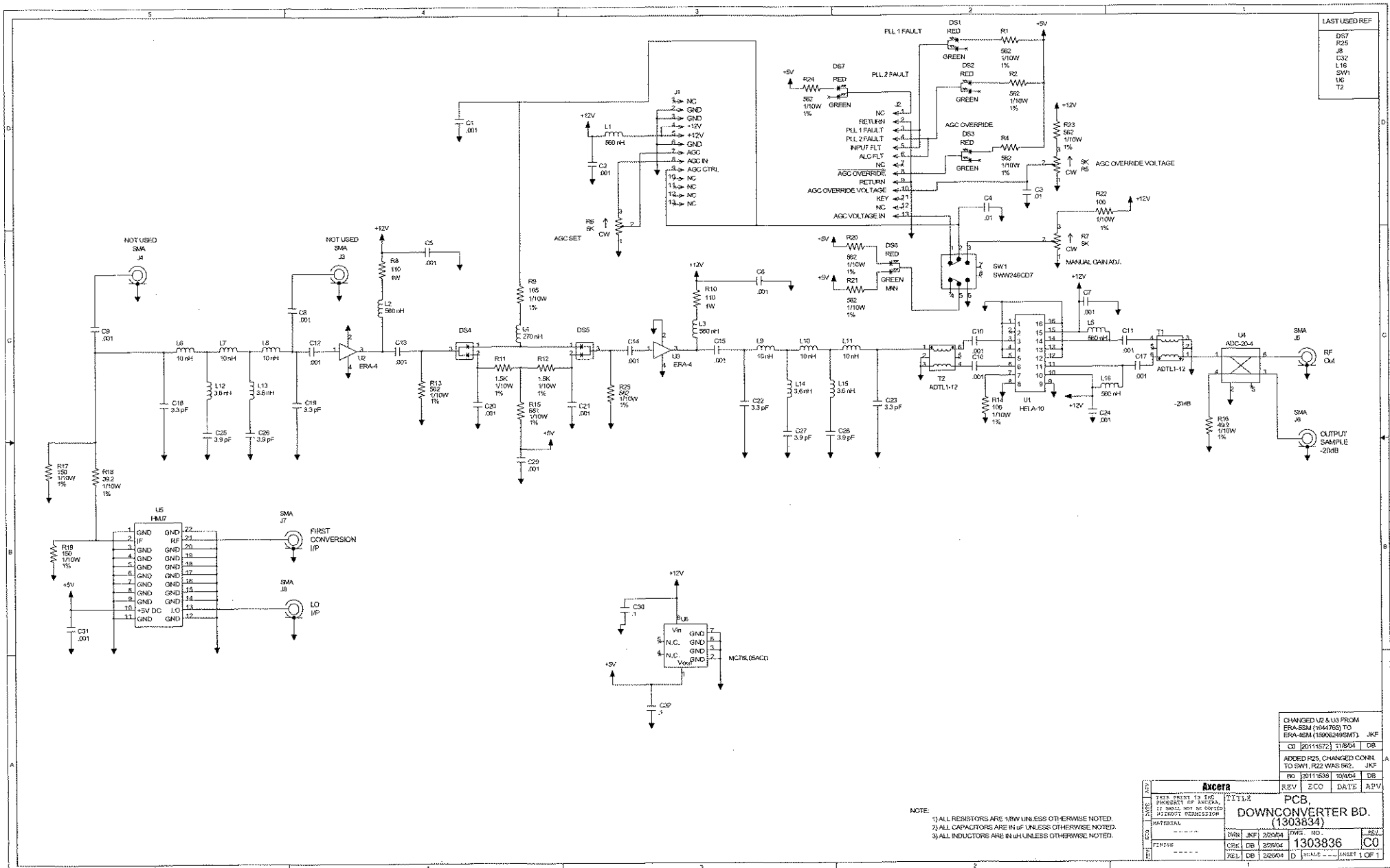
MATERIAL

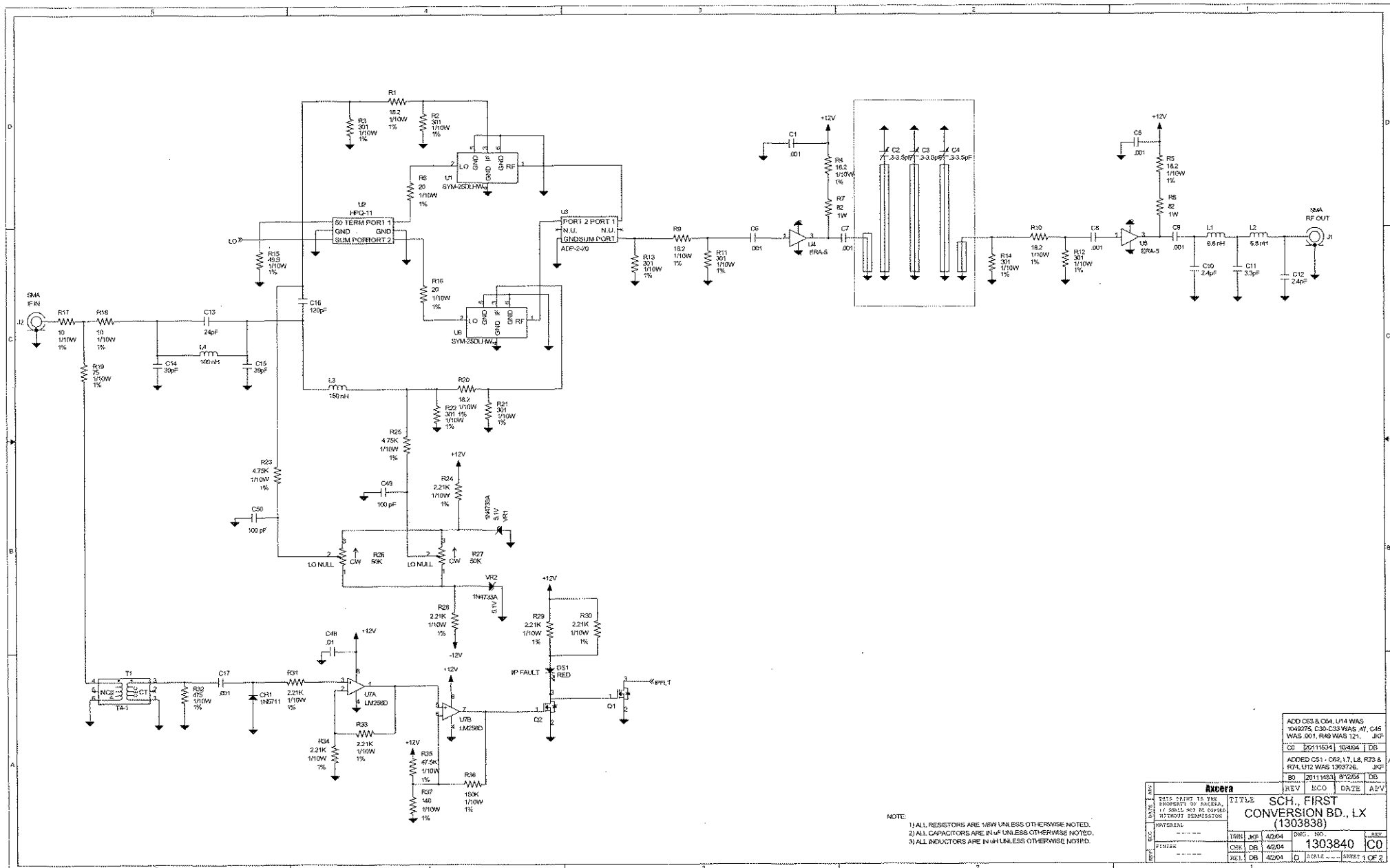
FINISH

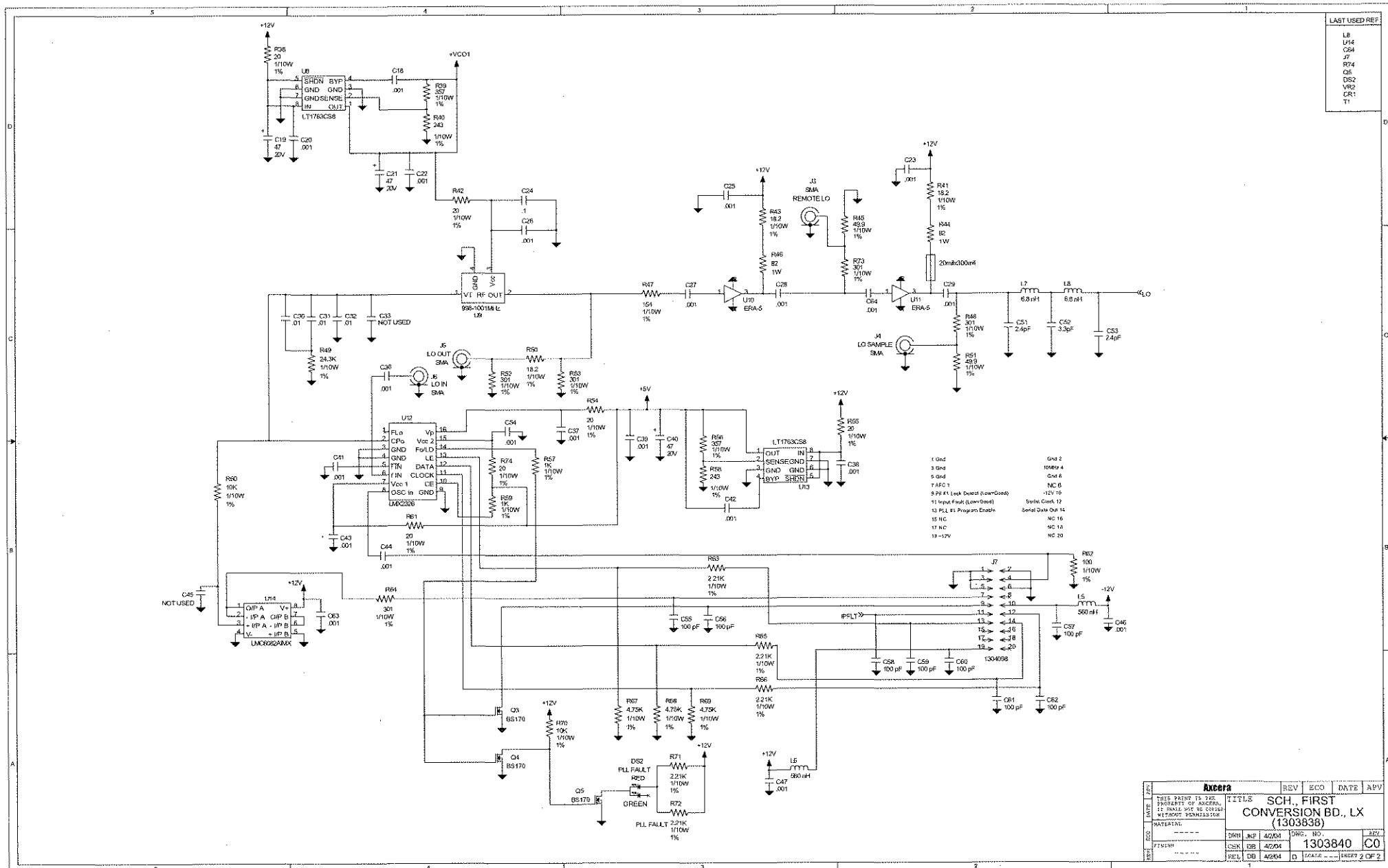
TITLE

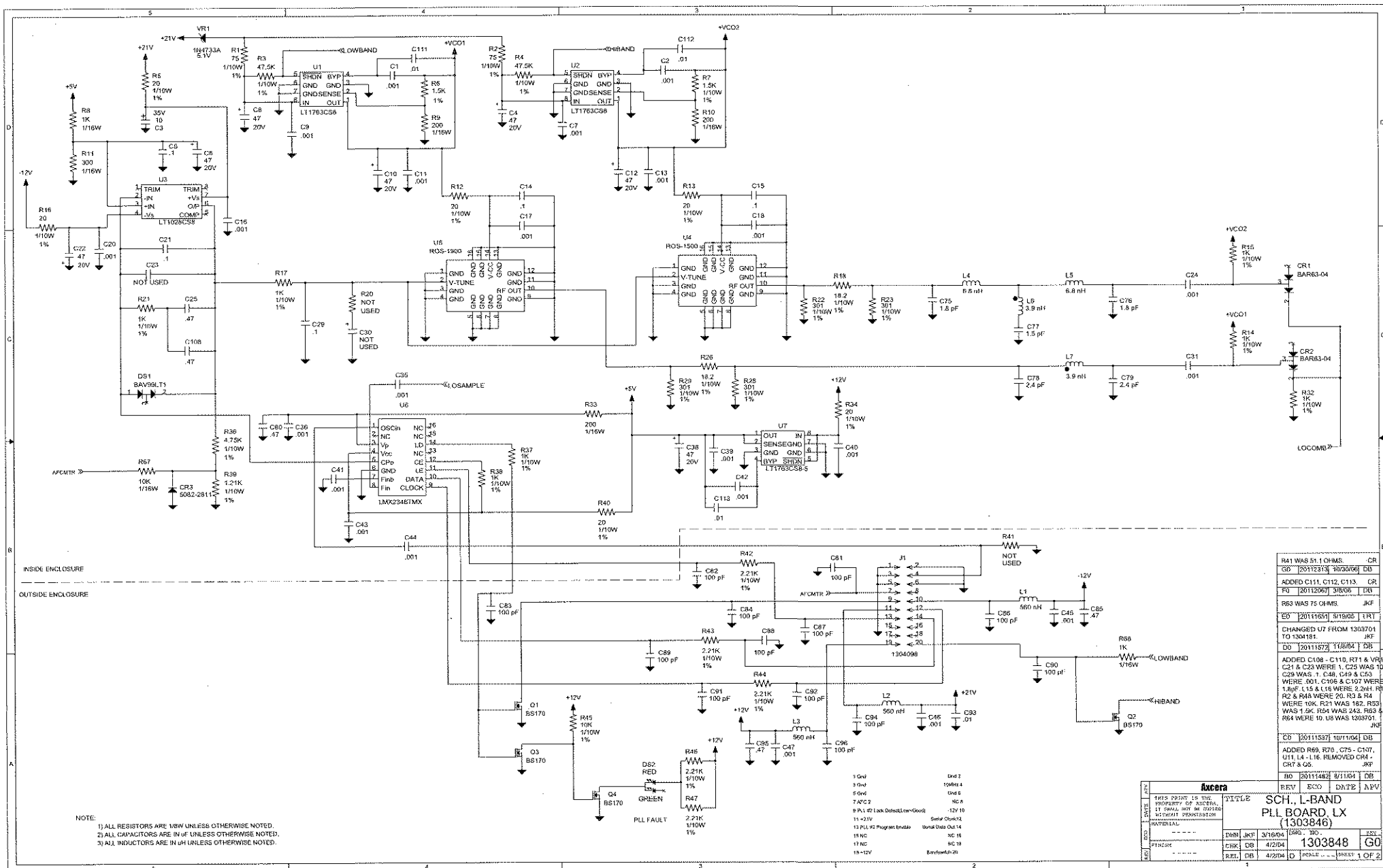
I/C,
UPCONVERTER ASSY,
VHF/UHF, LX

DWN	RGE	04/06/04	DWG. NO.	REV
CHK	DWB	9/30/04	1303831	B0
REL	DWB	9/30/04	B	SCALE --- SHEET 1 OF 1





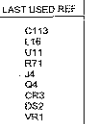




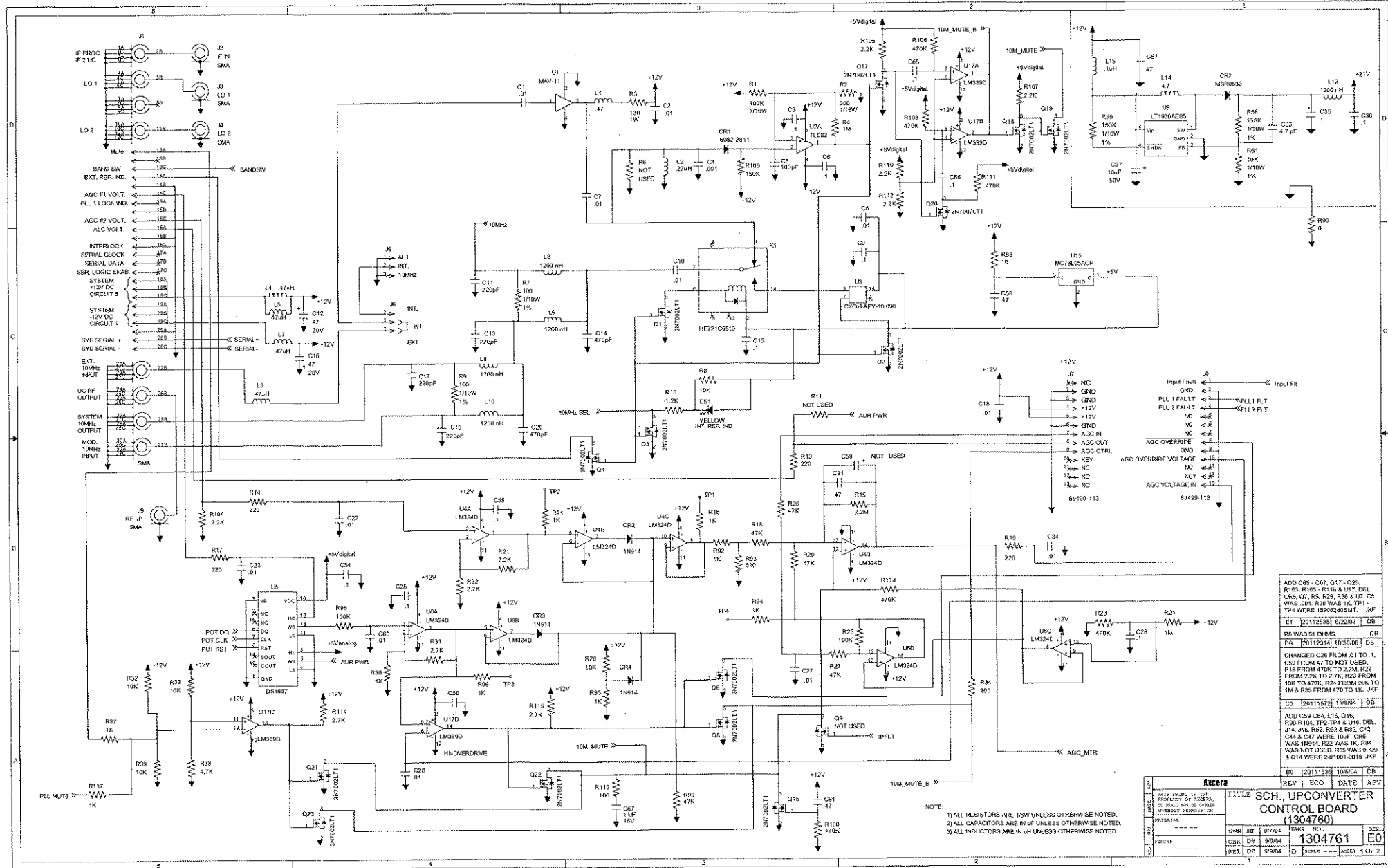
NOTE:

- 1) ALL RESISTORS ARE 1/8W UNLESS OTHERWISE NOTED.
- 2) ALL CAPACITORS ARE IN μF UNLESS OTHERWISE NOTED.
- 3) ALL INDUCTORS ARE IN μH UNLESS OTHERWISE NOTED.

REV	ECO	DATE	APV
Ascera THIS PRINT IS THE PROPERTY OF ASCERA. IT SHALL NOT BE COPIED WITHOUT PERMISSION TITLE SCH., L-BAND PLL BOARD. LX (1303846)			
----- DATE 3/7/04 ISSD BO. REV CHK OG 4/2/04 1303848 G0 PRIN DB 4/2/04 SCALE ----- SHEET 1 OF 2			



REV	Ancera				REV	ECO	DATE	APV
THIS PRINT IS THE PROPERTY OF ANCERA. IT SHALL NOT BE COPIED WITHOUT PERMISSION	TITLE				SCH., L-BAND PLL BOARD, LX (1303846)			
MATERIAL	DRAWN				JOF	3/10/04	DWG. NO.	REV
-----	CHKD				DB	4/2/04	1303848	G0
VERSION	REEL				DB	4/2/04	ID	SCALE --- SHEET 2 OF 2



ADD C65 - C67, Q17 - Q25,
R106, R108 - R116 & U17, DEL
C56, Q7, RS, R28, R36 & U7. C5
WAS .001. R36 WAS 1K. TP1 -
TP4 WERE 100K/250K/1K. JKF

ET 20112639 072207 CR

RS WAS R1 CH45.

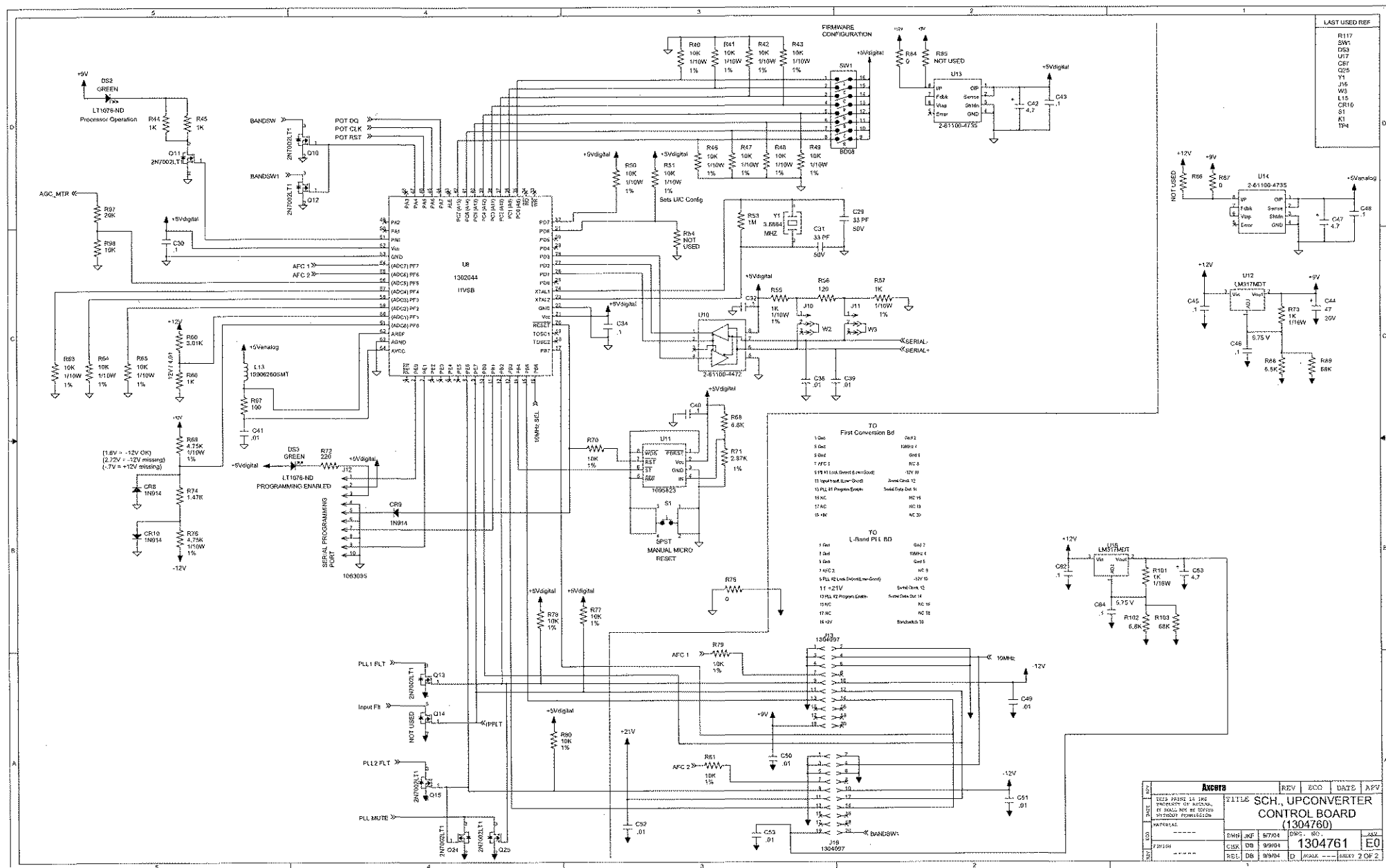
DO 20112274 093006 DB

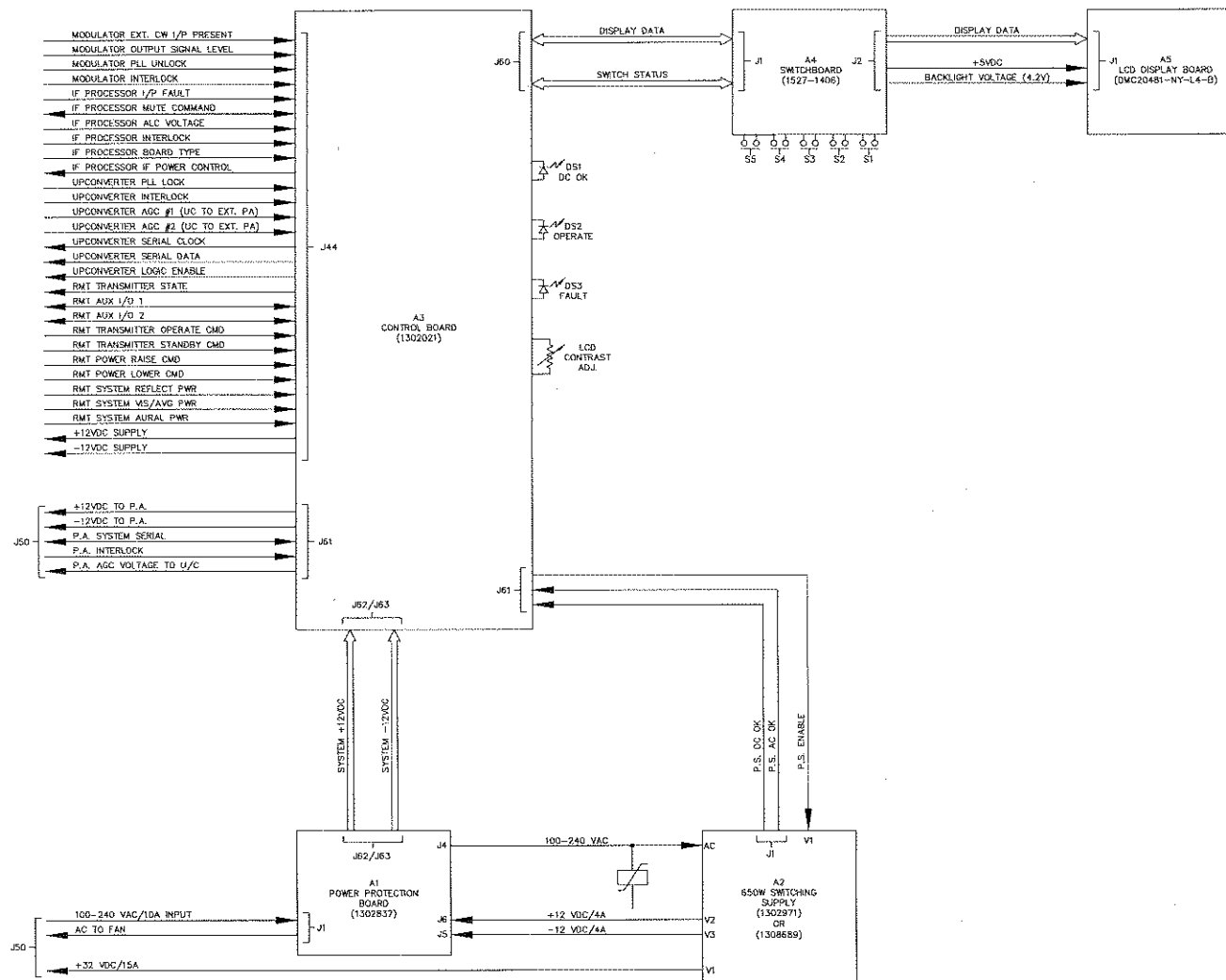
CHANGED C26 FROM .01 TO 1.
C59 FROM .47 TO NOT USED.
R15 FROM 47K TO 2.2K. R22
FROM 2.2K TO 2.7K. R32 FROM
10K TO 47K. R34 FROM 20K TO
1M & R35 FROM 470 TO 1K. JKF

ADD C59, C64, L18, Q16,
R00, R104, TP2-TP4 & U16. DEL
J14, R15, R32, R35 & R36. C42,
C44 & C47 WERE 100F. CR6
WAS 1N4148. R22 WAS 1K. R34
WAS NOT USED. R35 WAS R. C9
& Q14 WERE 2-41001-0015. JKF

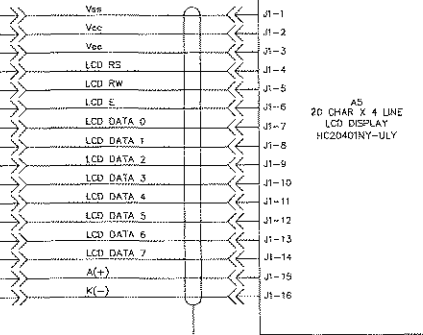
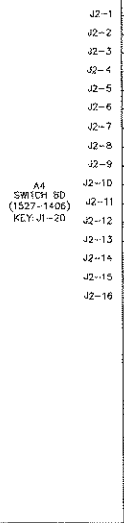
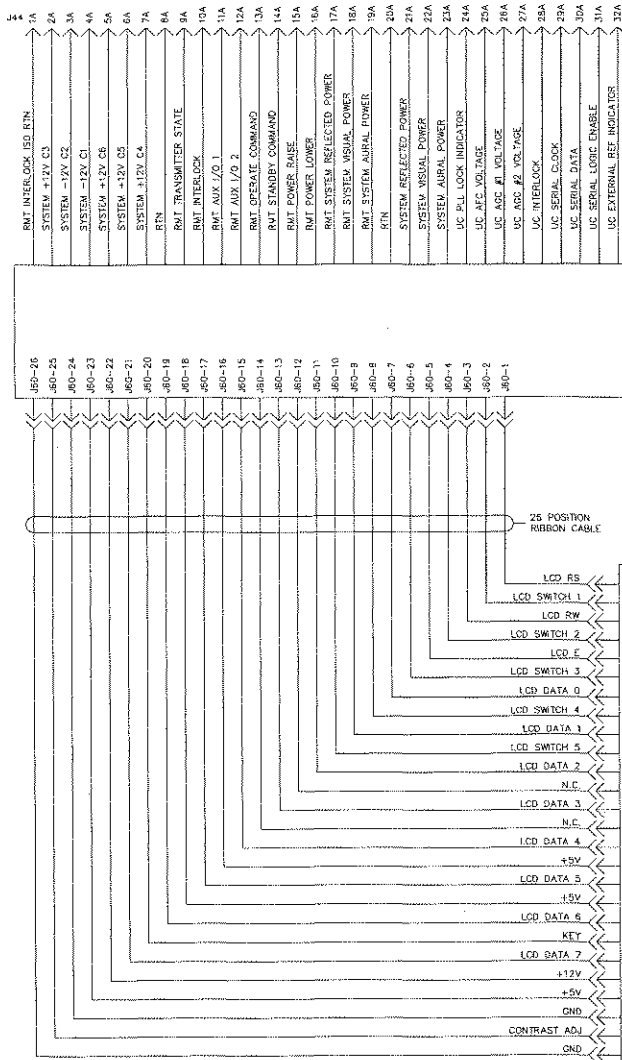
DO 20112626 100604 DB

REV				ECO	DATE	APV
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REV		ECD	DATE	APV
				
THIS PRINT IS THE PROPERTY OF AXCIERA. IT SHALL NOT BE COPIED OR REPRODUCED WITHOUT PERMISSION.				
TITLE B/D, CONTROL/POWER SUPPLY ASSEMBLY, INNOVATOR LX				
DWN	RGE	1/28/04	DWG. NO.	REL
CHK	JCM	2/2/04	1303889	A0
REL	JCM	2/2/04	D SCALE	SHEET 1 OF 1



HARNES 1527-1426 (SEE NOTE 4)

- NOTES:
- 1) ALL SINGLE WIRE IS 18AWG UNLESS OTHERWISE NOTED.
 - 2) VALUES FOR VRI, VR2 AND VR3 ARE PART OF VOLTAGE SELECTION KITS.
 - 3) THIS CONNECTION MUST BE EQUIPPED WITH LONGER GROUND PIN (MAKE FIRST BREAK LAST).
 - 4) CHANCE LABELING "A20-J1 TO A12-J2" BECOMES "A5-J1 TO A4-J2".

A3
CONTROL BOARD
(1302021)
KEY: J60-20

WIRE GAUGE CHART
(NATIONAL ELECTRICAL CODE DATA)

WIRE SIZE	CURRENT RATING
18AWG	6
16AWG	10
14AWG	20
12AWG	30

SHEET 1 OF 1
12V WAS +12V. (SND)
DO 20120608 6/10/07 JCM
WIRE AT A3-J61-2 WAS 18AWG. AT POWER SUPPLY CONNECTOR DETAIL A2 WAS A1. (PCE)
CG 20110603/27/04 LRT
ADDED NOTE 4.
REVERSED A1-J2 AND A1-J3 AND REWIRED TO MAINTAIN THE SAME CONNECTIONS. (ROF)
REV ECG DATE APV

THIS PRINT IS THE PROPERTY OF AXCIERA. IT SHALL NOT BE COPIED WITHOUT PERMISSION.

FINISH: - - - - -

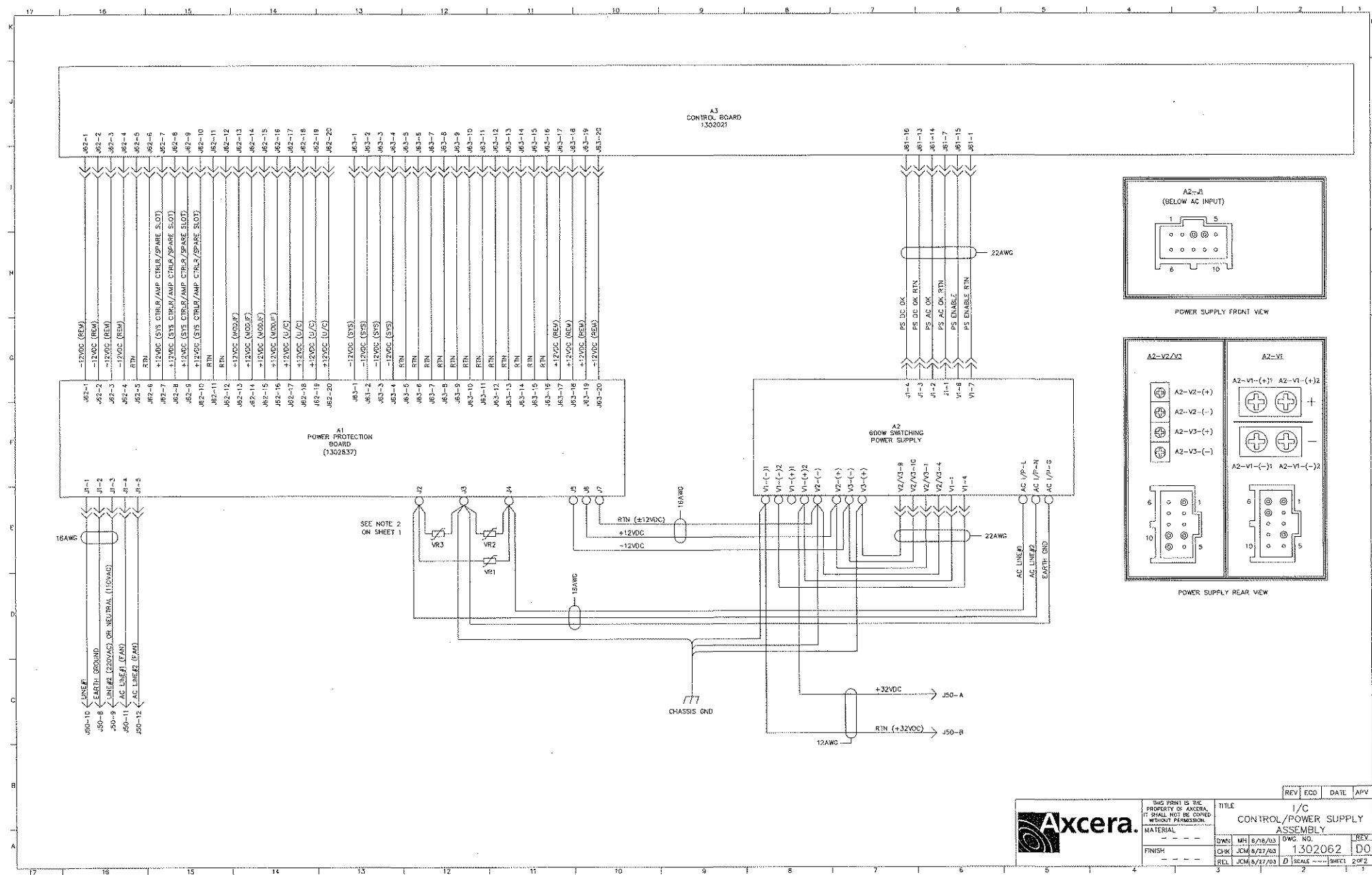
TITLE: I/C CONTROL/POWER SUPPLY ASSEMBLY

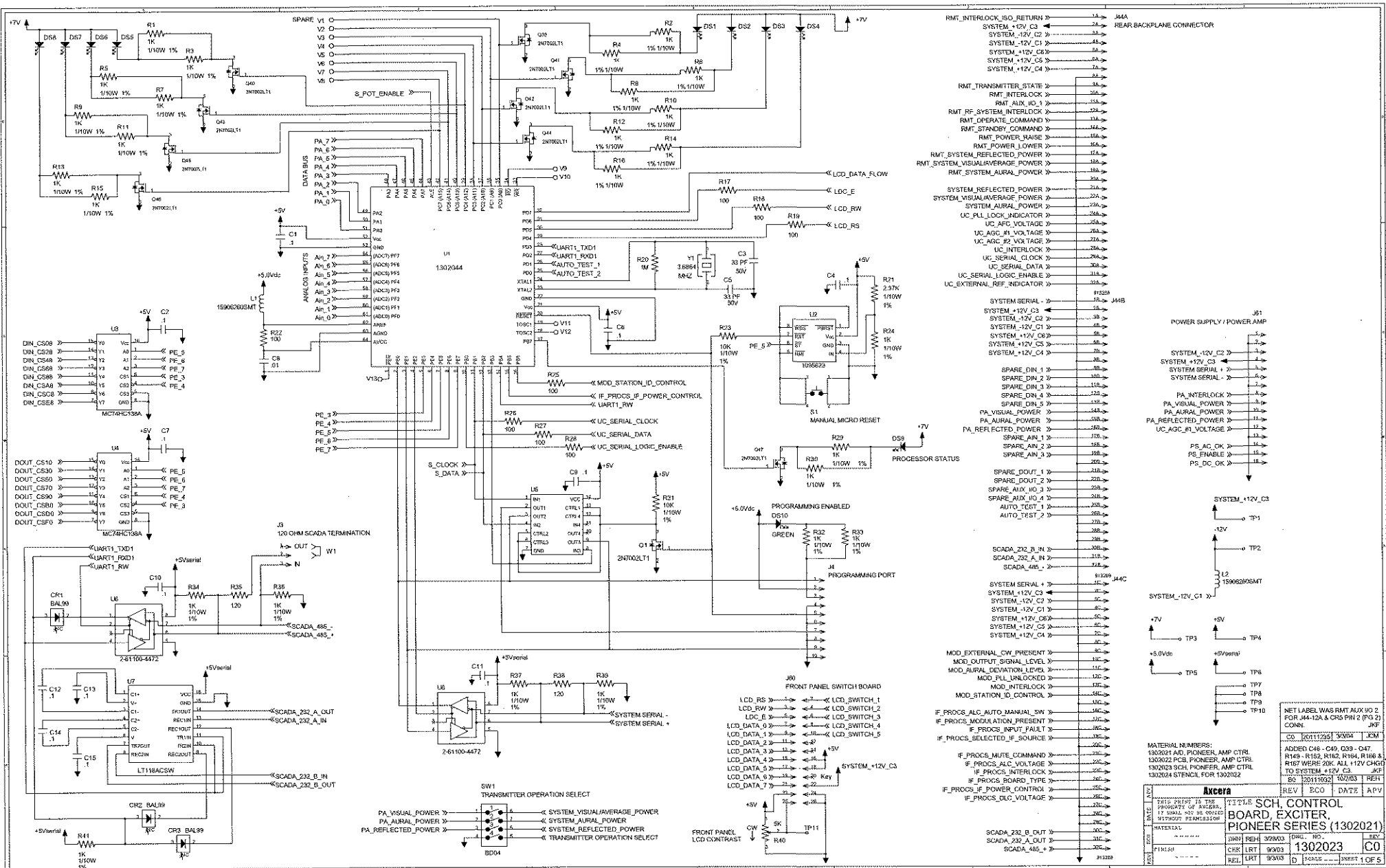
DWG. NO.: 1302062

CHK: JCM 6/27/03

REL: JCM 6/27/03

REV: 1 OF 2





NET LABEL WAS RMT AUX 90 2
FOR J44-12A & CR5 PIN 2 (PG 2)
CONN. JKF

CO	20111235	3/3/04	JCM
----	----------	--------	-----

ADDED C46 - C49, Q39 - Q47.

R149, R152, R162, R164, R166 & R167. 14/05/2016. AM. 1201.012.

R167 WERE ZUR. A21 +12V WASH
TO SYSTEM +12V C3. JKP

80	20111032	10/2/03	REH
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REV	ECO	DATE	APV
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4. CONTROL

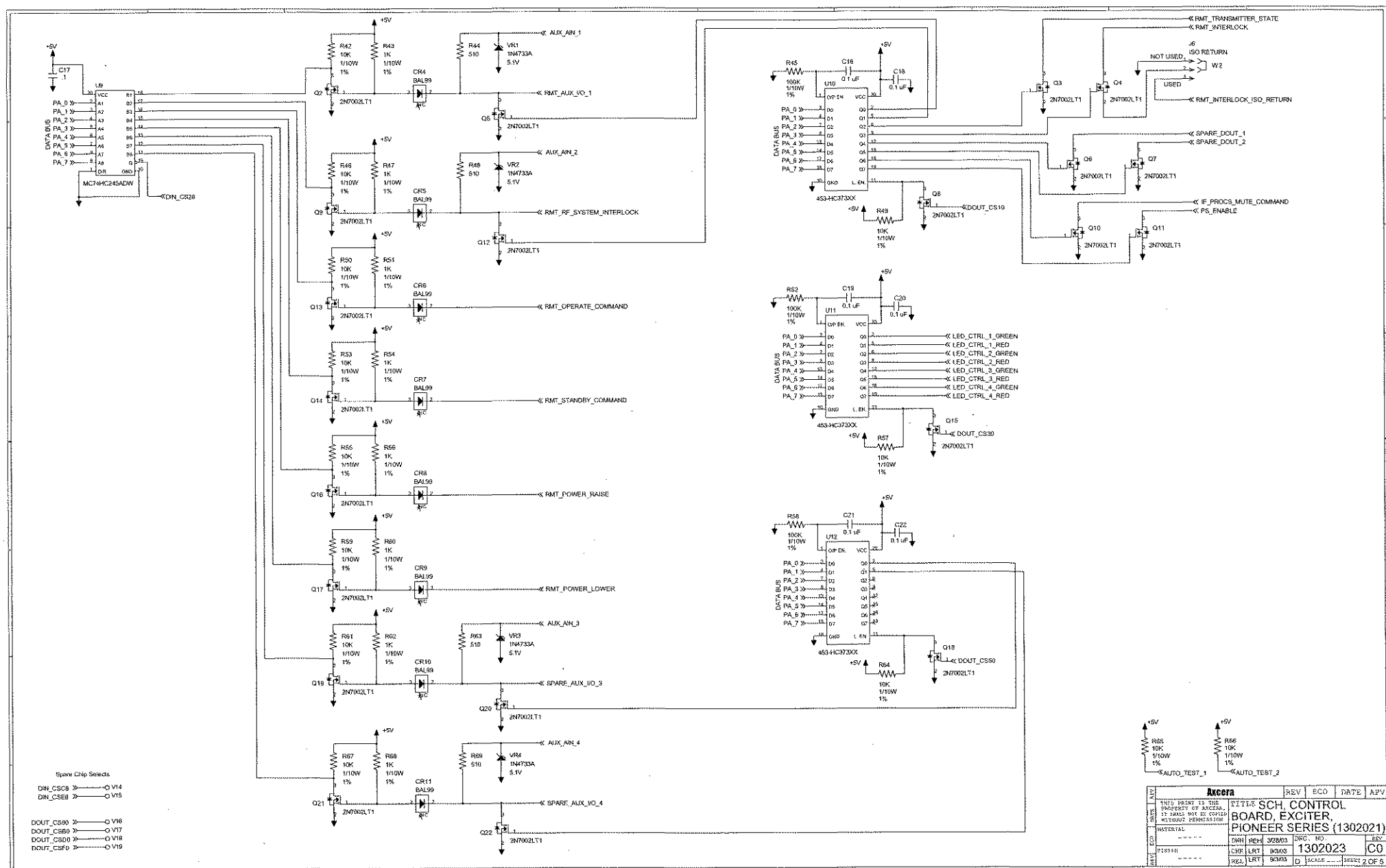
EXCITER.

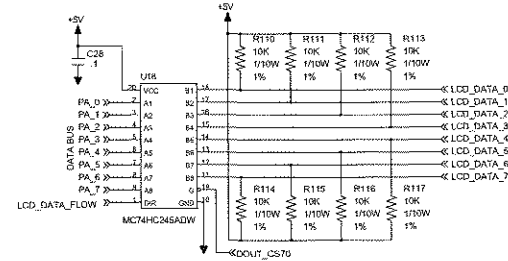
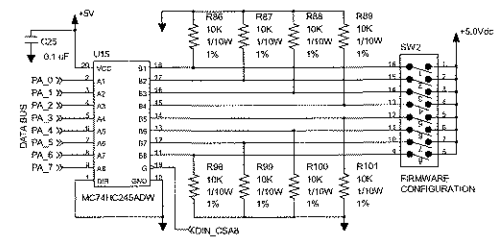
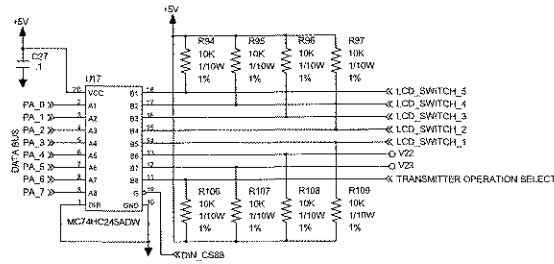
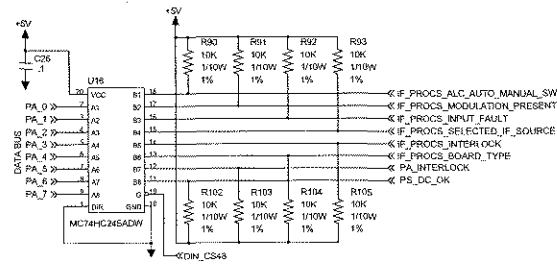
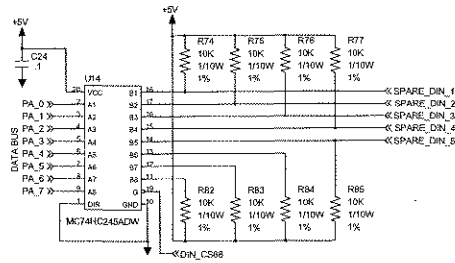
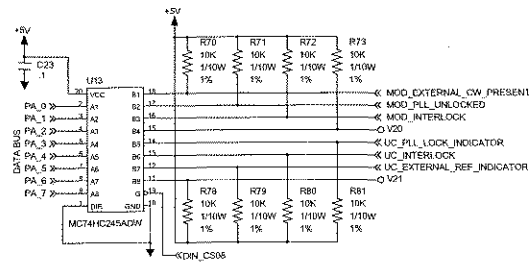
R SERIES (1302021)

403	DRG. NO.	REV
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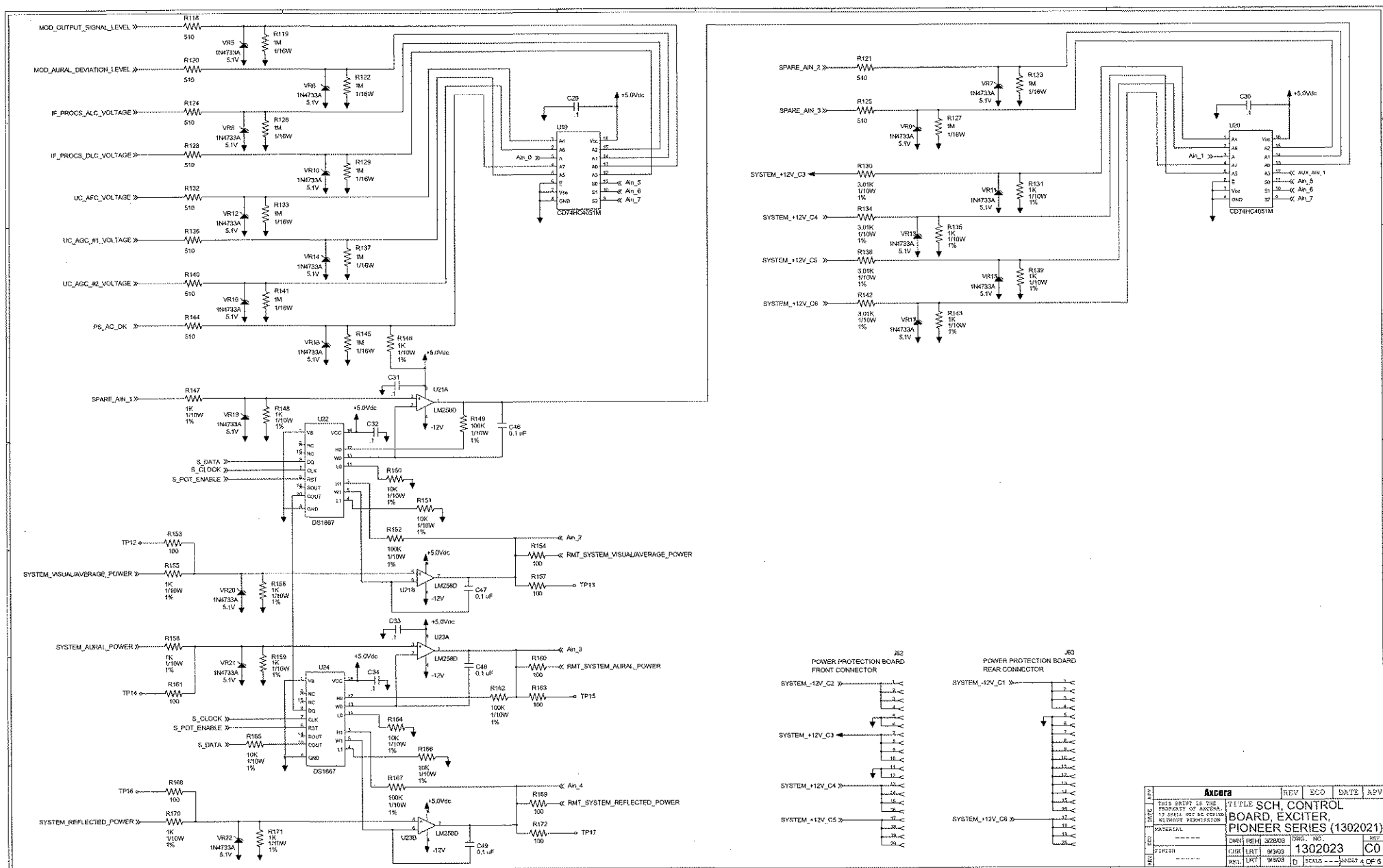
1302023 C0

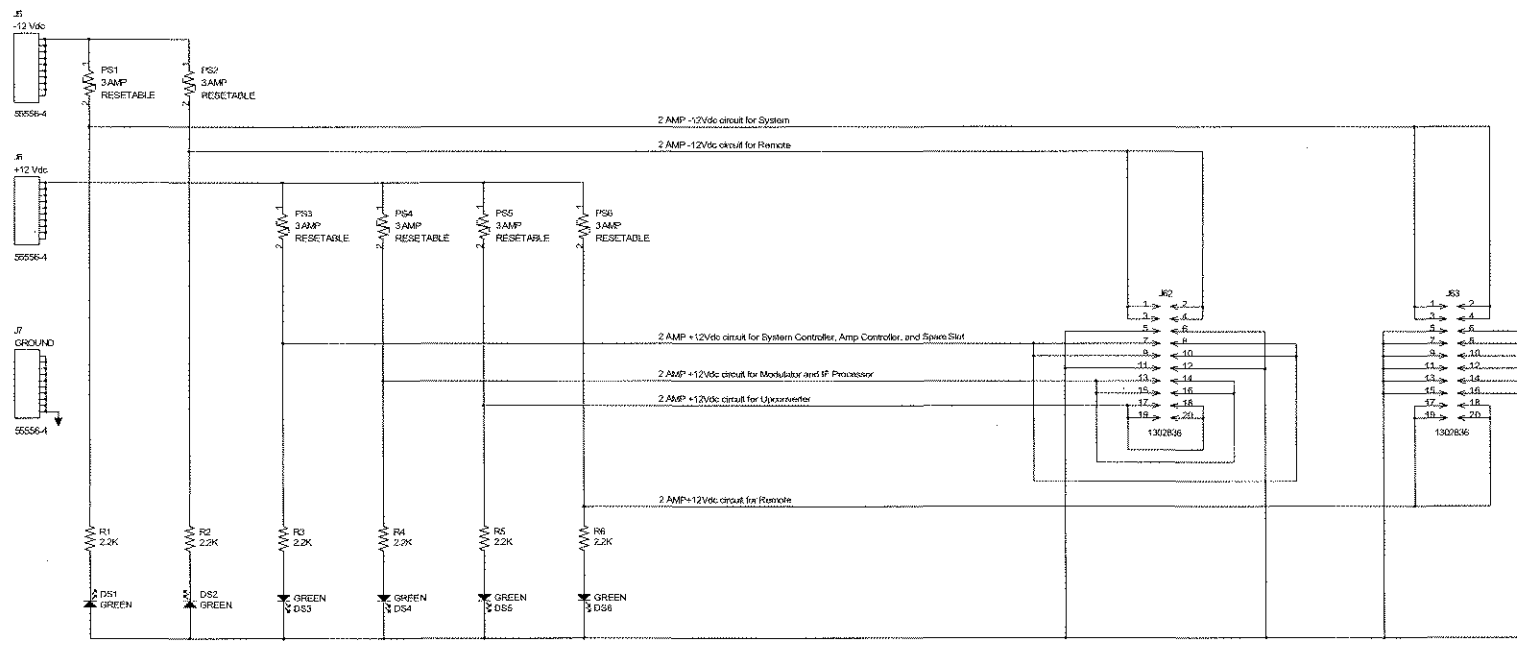
SCALE --- SHEET 1 OF 5

[illegible]

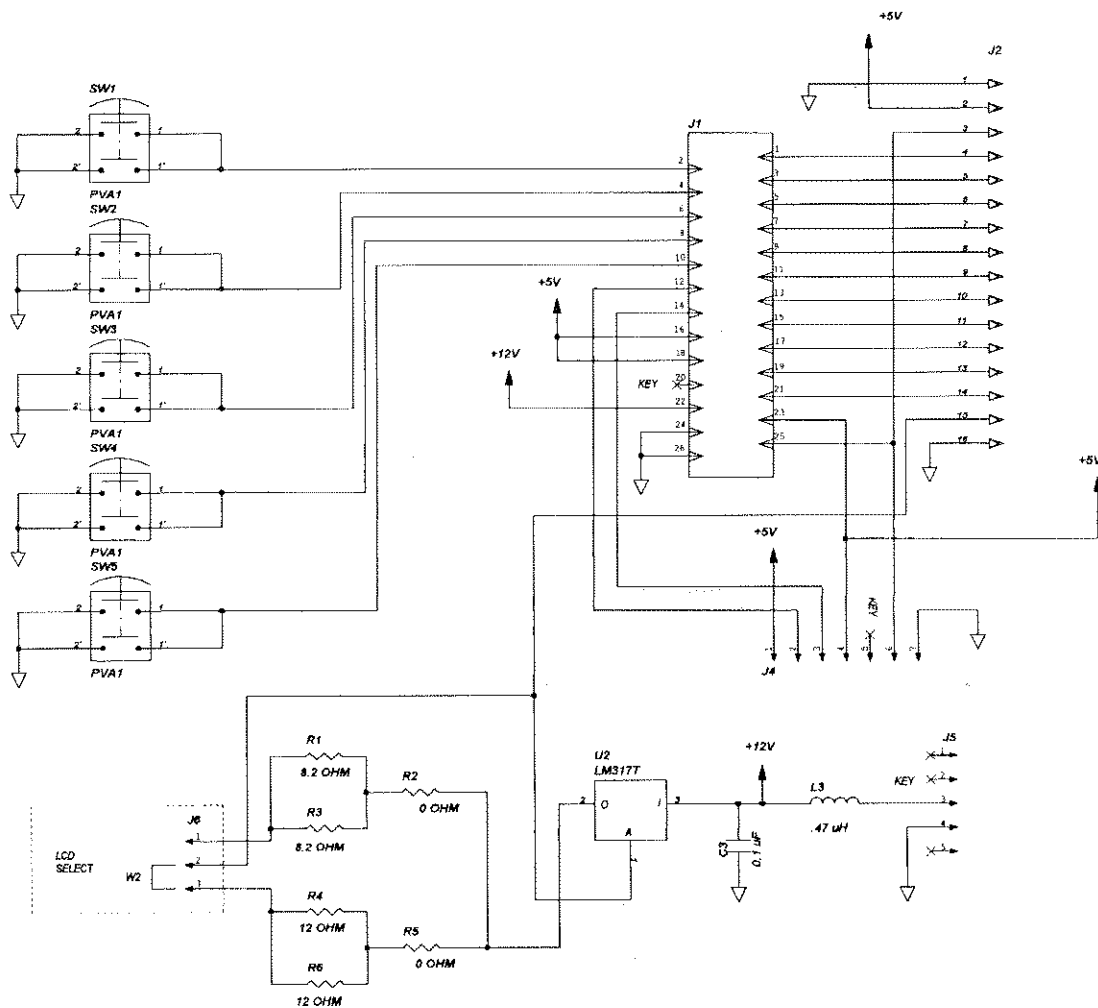


Axcera		REV	ECO	DATE	REV
THIS PRINT IS THE PROPERTY OF AXICERA. IT SHALL NOT BE COPIED, REPRODUCED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT PERMISSION FROM AXICERA.		TITLE SCH. CONTROL BOARD, EXCITER, PIONEER SERIES (1302021)			
DATE	130203	REV	130203	ECO	130203
CHK	130203	DATE	130203	SCALE	1:1
REV	130203	DATE	130203	SCALE	1:1





REV		ECC		DATE		APV	
Axcera THIS IS THE PROPERTY OF AXCERA, IT SHALL NOT BE LOANED WITHOUT PERMISSION MATERIAL ----- THIR ----- TITLE SCH, PIONEER, PWR PROTECT (1302837) REV AO							
DWG	REV	52903	DWG. NO.				
CHK	REV	02903	1302839		AO		
REL	REV	52903	D	SCALE	---	SHEET	1 OF 1



DELETED C1, C2, L1, L2,
U1, J3, & W1. MOVED
W2 FROM J6-1,-2 TO J6
-2,-3. JKF

3 8603 11/2/96 RAS

AT J2 W2 WAS W1. (TMY)

2 8424 9/29/96 JCM

SWITCHED PINS 1 & 2 OF
U2 (TMY)

1 8368 8/27/96 RAS

REV ECN DATE APV

ITS CORPORATION

THIS PRINT IS THE
PROPERTY OF ITS CORP
IT SHALL NOT BE COPIED
WITHOUT PERMISSION

TITLE SCHEMATIC
SWITCH BOARD
(1527-1406)

MATERIAL

FINISH

DWN DLM 6/3/96

CHK RAS 6/14/96

REL RAS 6/14/96

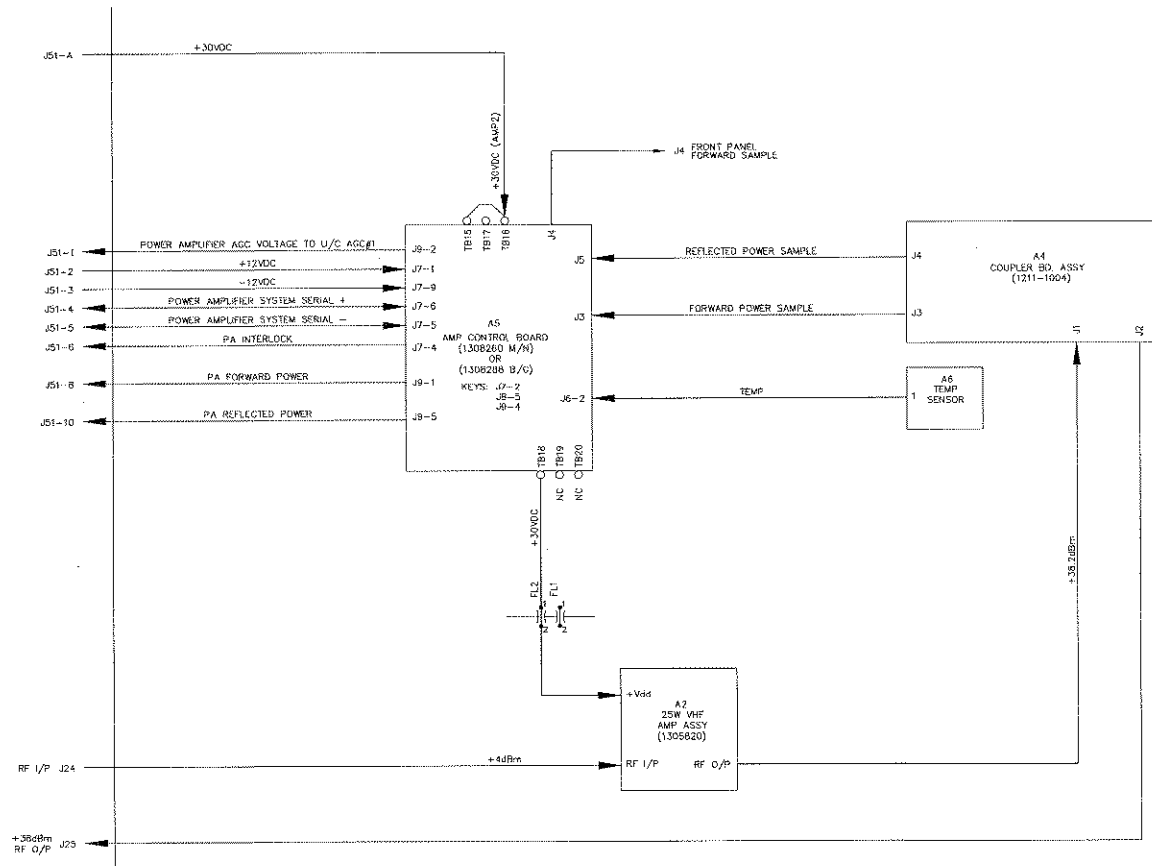
DWG. NO.

1527-3406

SCALE SHEET 1 OF 1

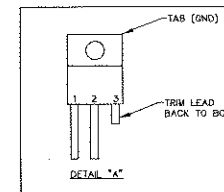
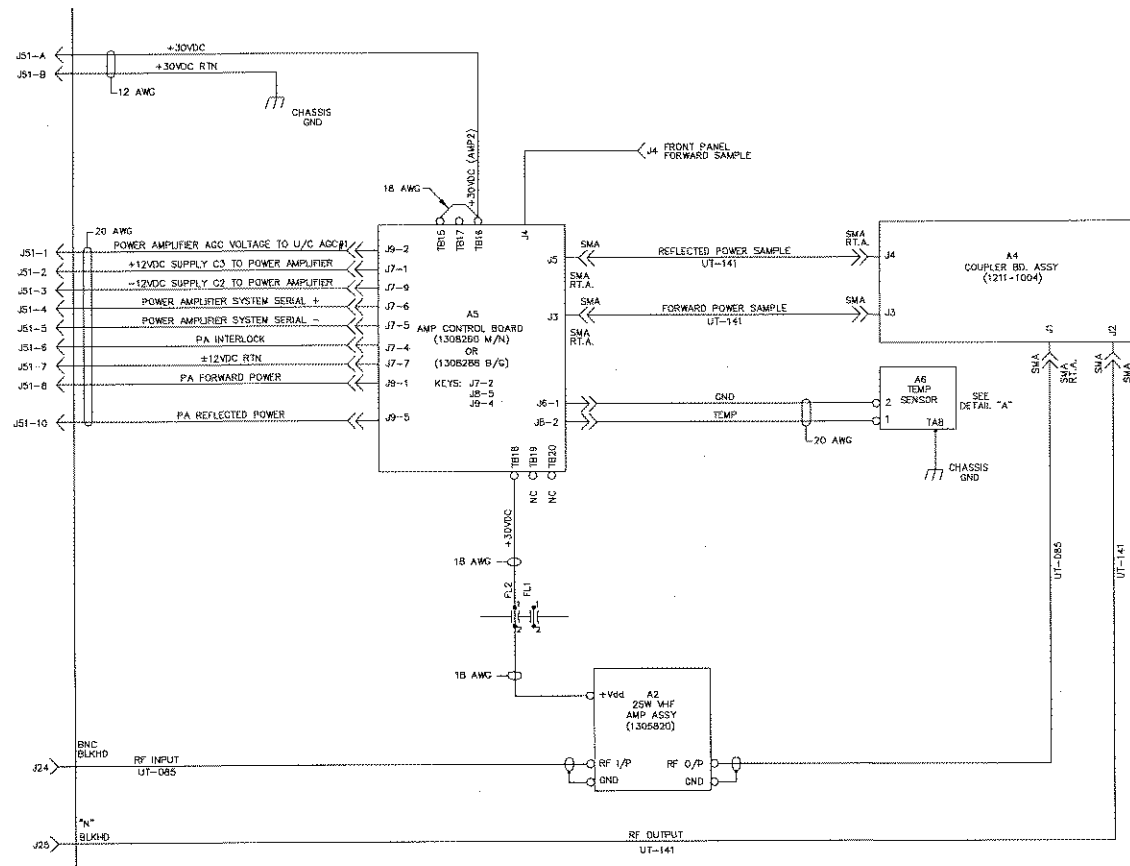
REV

3



		THIS PRINT IS THE PROPERTY OF AXCIERA. IT SHALL NOT BE COPIED WITHOUT PERMISSION.		TITLE: B/D DRIVER ASSEMBLY SW. HIR. VHF. DTV	
		MATERIAL:		DWN: RGE/22/05 CHG: LRT/24/05 REL: LRT/24/05	
FINISH:		DWG. NO: 1305837		REV: 1 OF 1	

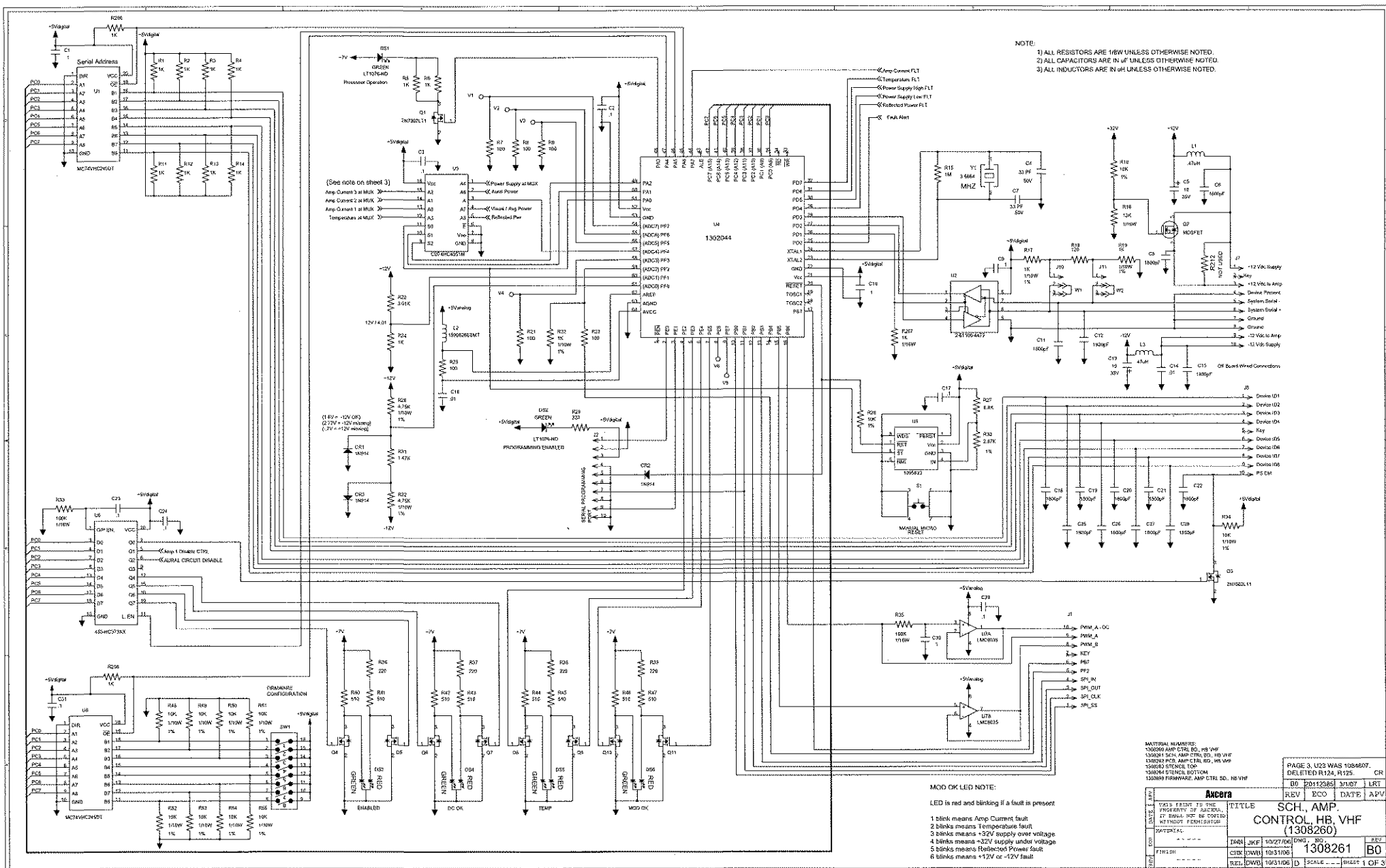
A5 WAS 1305682 OR 1304674 (SAMS)	
BD: 20102203/2/28/07	LRT1
REV: EGO	DATE: APV



NOTE:
1. ALL WIRE IS 18AWG UNLESS OTHERWISE NOTED.

	THIS PRINT IS THE PROPERTY OF AXCIERA. IT SHALL NOT BE COPIED WITHOUT PERMISSION.		TITLE	
	MATERIAL		I/C. DRIVER ASSEMBLY, 5W VHF DTV	
FINISH		Q/RN: RGE 10/22/15	DWG. NO.	REV
CHK: LRT 04/21/05		1305836		B0
REL: LRT 04/21/05		D SCALE ---		SHEET 1 OF 1

AS WAS 1303682 OF 1304674 (SAR)	
BO 02/22/03	LRT
REV: ECD	DATE: APV



NOTE:

MOO OK LED NOTE:

LED is red and blinking if a fault is present

- 1 blink means Amp Current fault
- 2 blinks means Temperature fault
- 3 blinks means +32V supply over voltage
- 4 blinks means +32V supply under voltage
- 5 blinks means Reflected Power fault
- 6 blinks means +12V or -12V fault

MATERIAL NUMBERS:
1300260 AMP CTRL BD., HS WHF
1300261 SCH. AMP CTRL BD., HS WHF
1300262 PCB AMP CTRL BD., HS WHF
1300263 STENCIL TOP
1300264 STENCIL BOTTOM
1300699 FIRMWARE AMP CTRL BD. HS WHF

PAGE 3, U23 WAS 1084607.
DELETED R124, R125. CR

BO	20112385	3/1/07	LRT
----	----------	--------	-----

REV	ECO	DATE	APV
COL	AND		

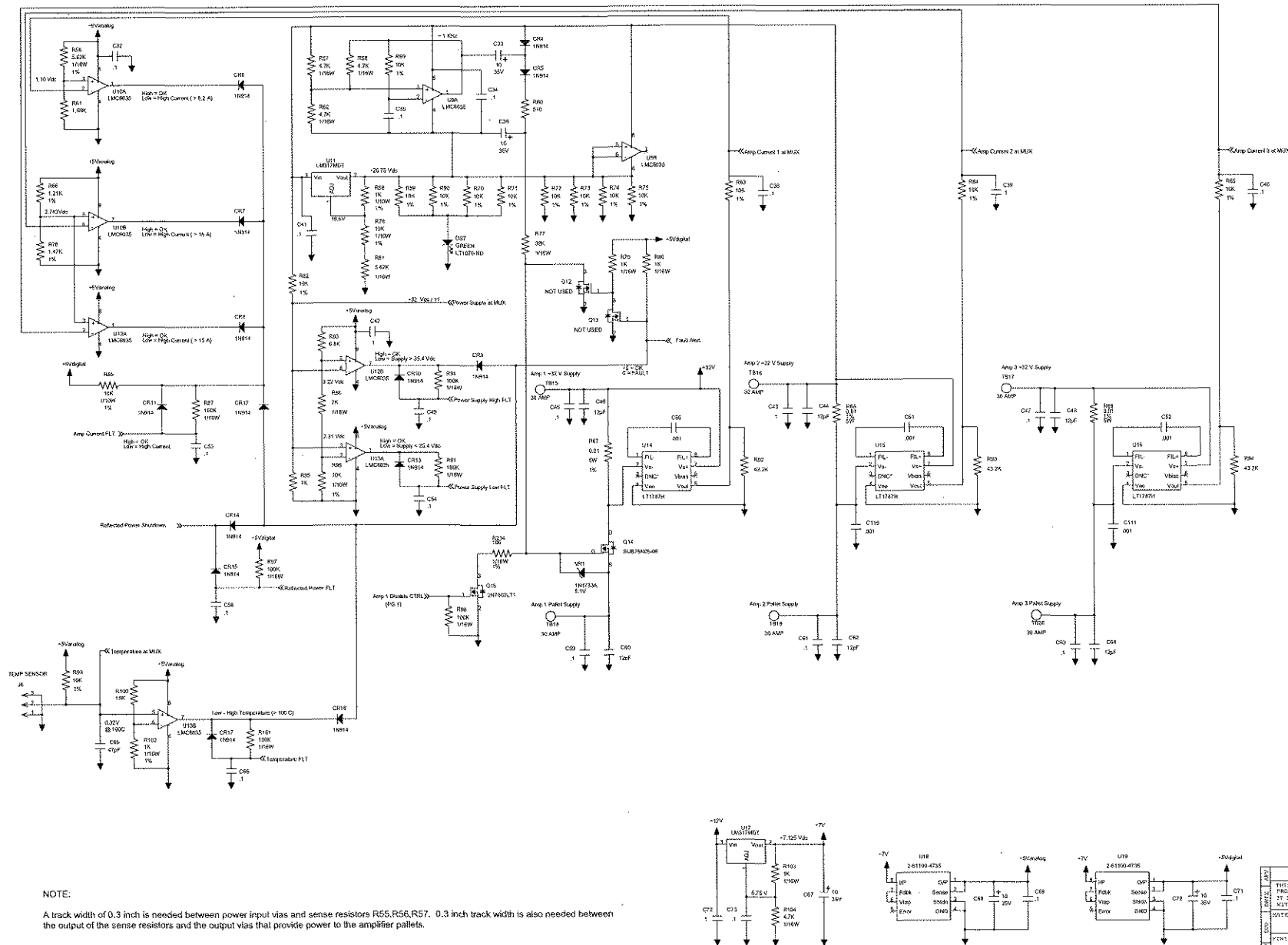
SCH., AMP.

CONTROL, HB, VHF
(1308260)

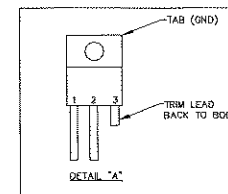
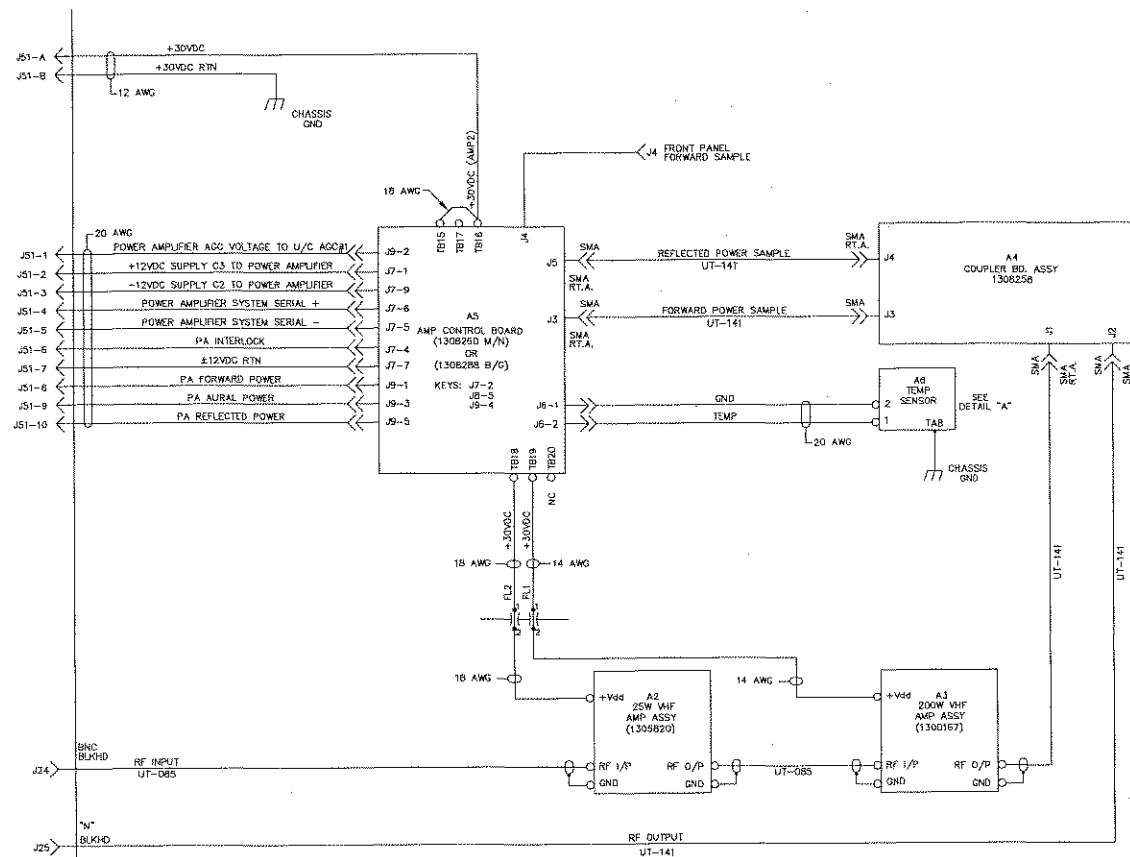
1306260

1308261 B0

31706 D SCALE --- SHEET 1 OF 3



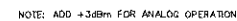
Axcera				
REV	ECO	DATE	APV	
TITLE: SCH. AMP. CONTROL HB. VHF (1308261)				
PROPERTY OF AXCERA, IT SHALL NOT BE COPIED WITHOUT PERMISSION				
DRAWN BY: 10/27/06				
CHECKED BY: 10/31/06				
SCALE: 1:1				
SHEET 2 OF 3				



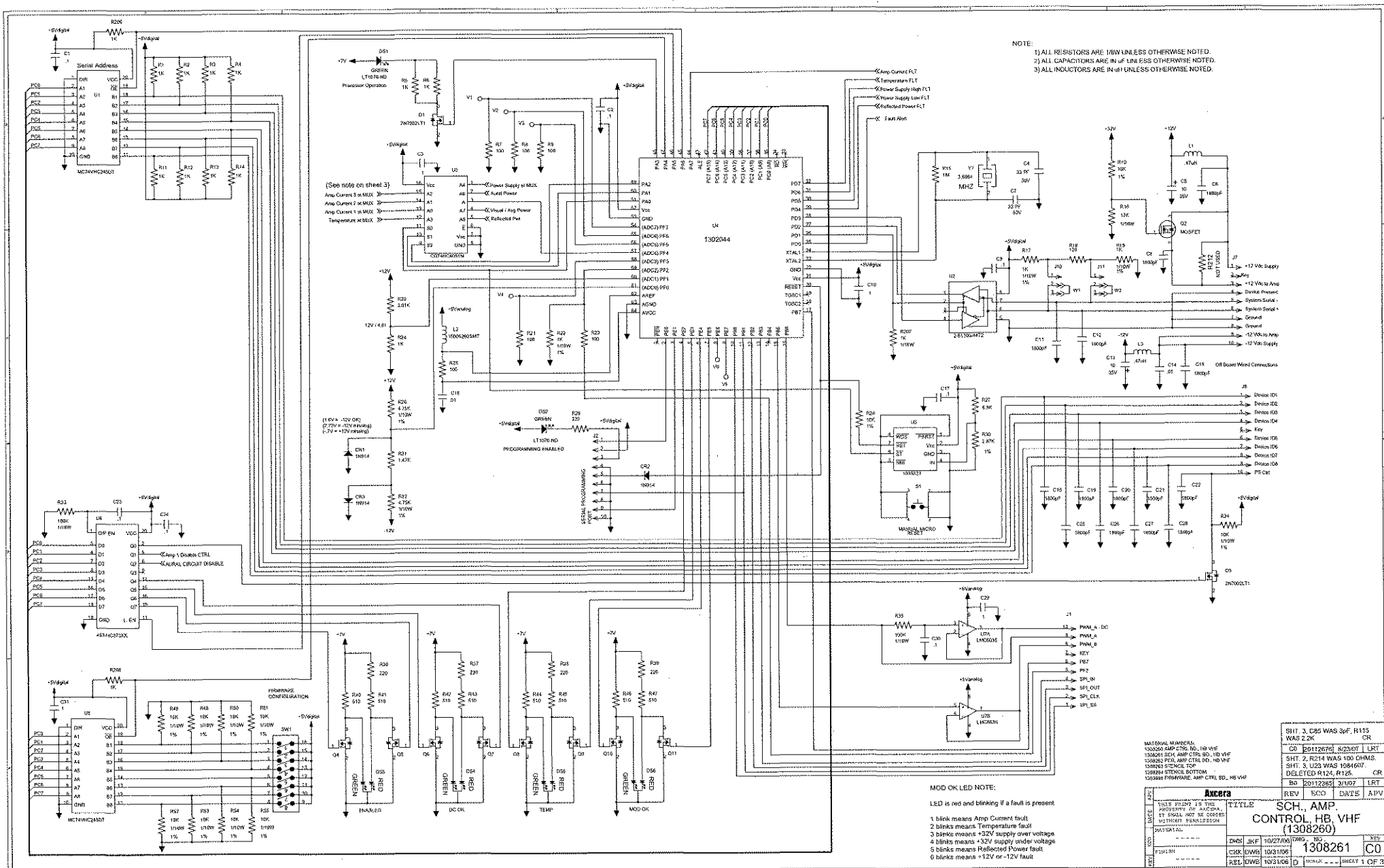
NOTE:
1. ALL WIRE IS 18AWG UNLESS OTHERWISE NOTED.

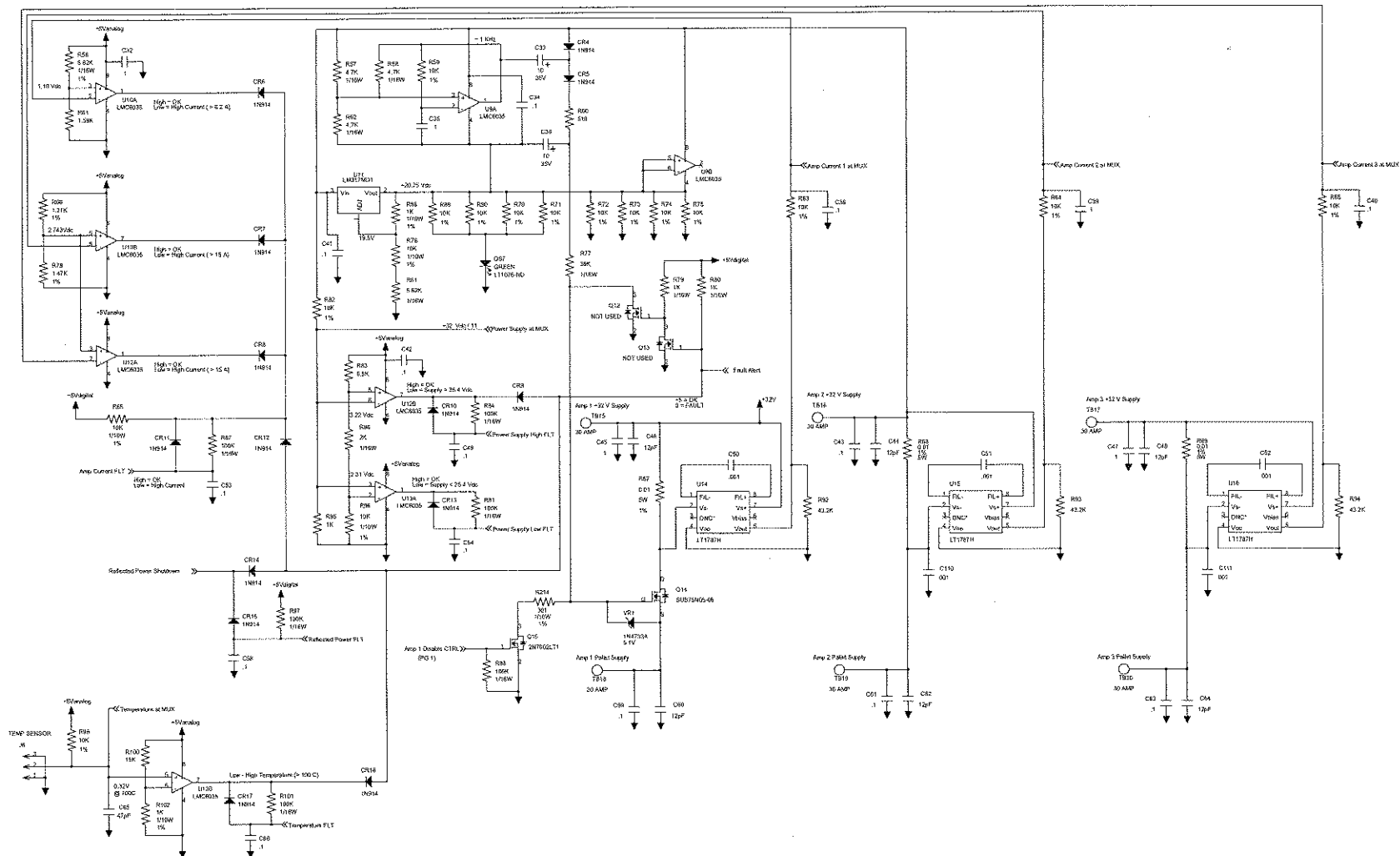
A4 WAS 1211-1004.
A5 WAS 1303690 M/N
AND 1304674 B/G. WB
CO 121122001/18/07 LRT
ADDED WIRE BETWEEN
J51-8 AND A5-J5-3. WB
SO 081224 B/2/08 JCM
REV ECD DATE APV

		THIS DRAWING IS THE PROPERTY OF AXCCERA. IT SHALL NOT BE COPIED WITHOUT PERMISSION.		TITLE	
		MATERIAL		I/C, PA ASSEMBLY, 50W HB VHF QTV	
FINISH		DRAWN	RGE 03/18/06	DWG. NO.	REV
REL		CHK	LRT 04/15/06	1305823	CO
		REL	LRT 04/15/06	D	SCALE --- SHEET 1 OF 1



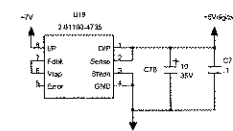
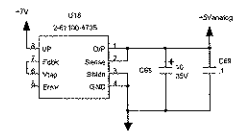
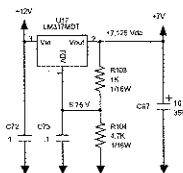
	TWO PRINTS IN THE PROPERTY OF AXCERA. IT SHALL NOT BE COPIED WITHOUT PERMISSION.	TITLE B/D PA ASSEMBLY, 50W HS VHF DTV
	MATERIAL (SEE PAGE 0000000000)	DWN ROE 04/18/05 DWG. NO. CHK LRT 04/18/05 1305824 BR LRT 04/18/05 D SCALE 1:1 SHEET 1 OF 1
FINISH (SEE PAGE 0000000000)		



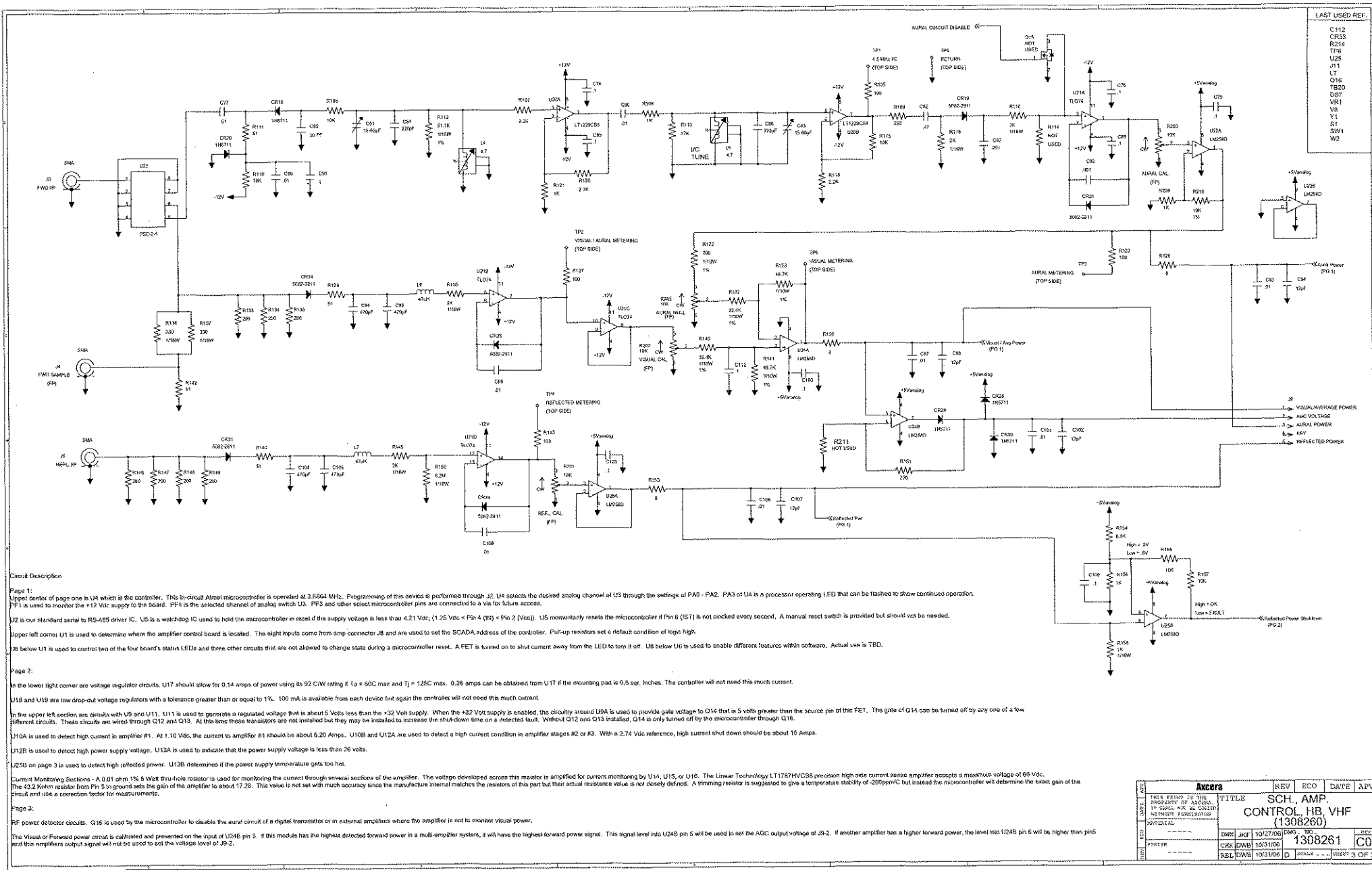


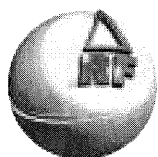
NOTE:

A track width of 0.3 inch is needed between power input vias and sense resistors R55, R56, R57. 0.3 inch track width is also needed between the output of the sense resistors and the output vias that provide power to the amplifier pallets.



Axcera		REV	ECO	DATE	APV
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		SCH. AMP. CONTROL HB. VHF (1308260)			
		DRAWN BY: JCF			
		CHECKED BY: JCF			
		DATE: 10/27/06			
		SCALE: 1:1			
		REV: 2 OF 3			



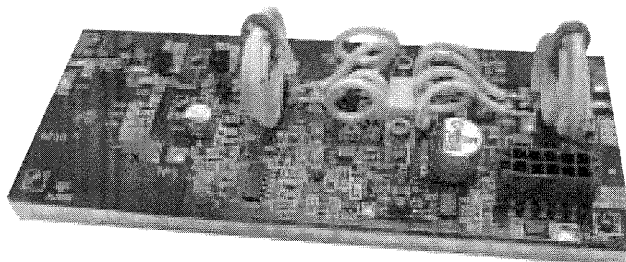


PA25-VHF-H-34-A0

High Power RF Amplifiers and Accessories

25W VHF Band III TV Linear Pallet Amplifier

The **PA25-VHF-H-34-A0** is a versatile output or driver pallet amplifier. Offering a minimum of 34dB gain, this two stage amplifier can be used as a driver or output stage depending on the application. With no circuit changes required, the PA25-VHF-H-34 can be configured as a Class A driver or Class AB output stage offering excellent flexibility. A gold metallized LDMOS driver and gold metallized MOSFET output are used in this design.



- No RF assembly or circuit tuning!
- 25 Watts of Linear Output Minimum!
- 34dB typical gain at Channel 13!
- Combined Video and Aural at full rated power!
- Modular Construction for ease of Integration!

Specifications:

$V_{sup} = +32V_{dc}$, $I_{dg} = 0.8A$, 170-230MHz

Parameter	Min	Typ	Max	Units
Fundamental Pout, PEP 2-tone, 215-218MHz, IMD3 -30dBc		50		Watts
Linear Power Out, Pk Sync	25	35		Watts
Power Input	8	10	13	+dBm
Power Gain		34		dB
IMD, Full Field Red, NTSC-NA For input signal 10dB better than desired output	-54	-58		dBc
Drain Current		3		A
Input VSWR		1.1:1	1.4:1	
Insertion Phase Variation (unit to unit)		±5		°
Power Gain Variation (unit to unit)		±1		dB
F2 Second Harmonic		-15		dBc
F3 Third Harmonic		-25		dBc
Baseplate Operating Temp	0		+60	°C
Physical Dimensions	2.0" x 5.0" x 1.0" / 5cm x 13cm x 3cm			

All values listed are without pre-correction.

Absolute Maximum Ratings:

Parameter	Value	Units
Maximum Operating Voltage	+32.0	V DC
Stable Operating Voltage	+26.0 to +32.0	V DC
Maximum Bias Current, Q1 Factory set to 0.020A.	0.25	A
Maximum Bias Current, Q4 Factory set to 2.75A.	3.0	A
Maximum Total Drain Current	5	A
Load Mismatch Survival At all phase angles with the base plate held at 40C and Id current limited to 5A, 2 seconds maximum	3:1	
Storage Temperature	-40 to +105	°C
Maximum Operating Baseplate Temperature	+60	°C

Features Include:

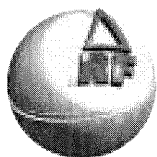
- Temperature Compensated Bias
- Temperature Controller- Analog Temp Output
- High Temp alarm with automatic PA disable
- High Temp alarm output
- Amplifier Disable
- Current Sense, Each Transistor
- Connectorized Power and I/O

web <http://www.drft.com> • email : sales@drft.com • 1.775.DELTA RF • FAX 1.775.DELTA FX

Delta RF Technology, Inc. • 801 East Glendale Ave • Sparks • NV • 89431 • U S A

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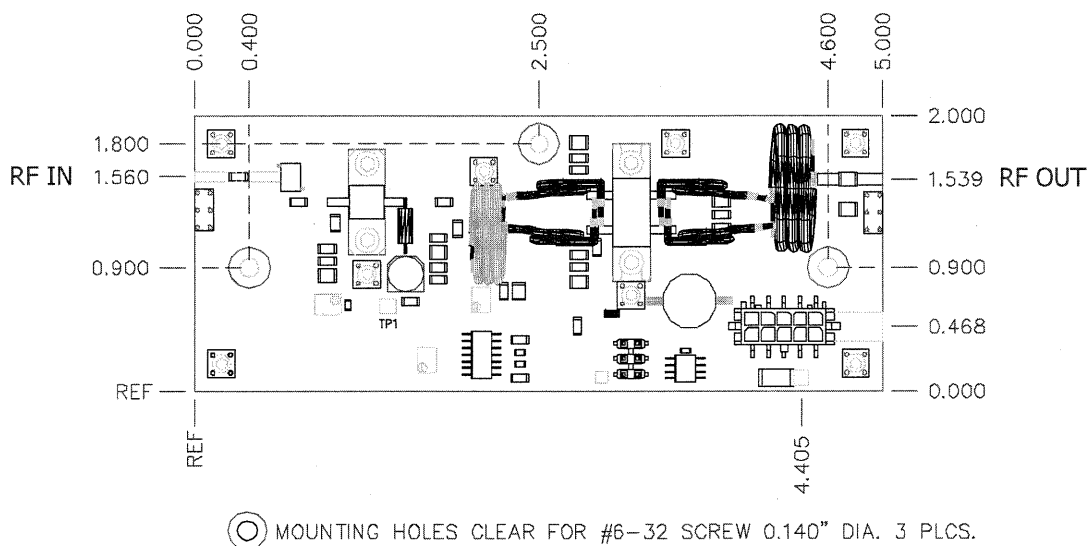
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PA25-VHF-H-34-A0

High Power RF Amplifiers and Accessories

25W VHF Band III TV Linear Pallet Amplifier



Tips for Mechanical Mounting:

- 1 All holes are clear for #6 Screw. Stainless Steel mounting hardware is recommended, grade 18-8 or better. A lock washer of same material should also be used.
- 2 Ensure mounting surface is flat to better than 0.003" / "
- 3 Use a thin layer of thermal compound on the backside of the PA - no more than 0.001" - 0.002" thickness!
- 4 Torque all screws to 10-12 in-lbs

Considerations for Mechanical Mounting:

- Considerations for proper thermal design include
- Total power dissipated = Total DC Power Consumed x (1-Efficiency)
- Ambient Airflow
- Thermal Resistance of Heat Sink

For this PA, typical DC efficiency is 30%. At 25W Pk power output, 15W Average, +28.0V DC operation, 84 total watts are consumed, which leaves 70W dissipated power. If we assume an input air temperature of +25°C, and a maximum desired baseplate temperature of 55°C, this leaves a temperature differential between baseplate and ambient air of 30°C. The desired thermal resistance for heatsink mounting surface to air is therefore 30°C/74W = 0.4°C/W.

Since the baseplate is aluminum, it is important to find a heat sink that is sized at least as big as the outline of the PA which can give this thermal resistance. For example, a 100mm x 54mm heat sink with serrated fins, 70mm in length, (20 fins across 127mm dimension) with an air velocity of 4 m / s exceeds this value.

Revision 1.c Release Date July 24 2007

Revision Notes Revised mechanical drawing, new format

Technical Specifications Summary

Frequency Range: 170 - 230 MHz
P1dB: 200 Watts CW
Class: AB
Supply Voltage: 32.0V

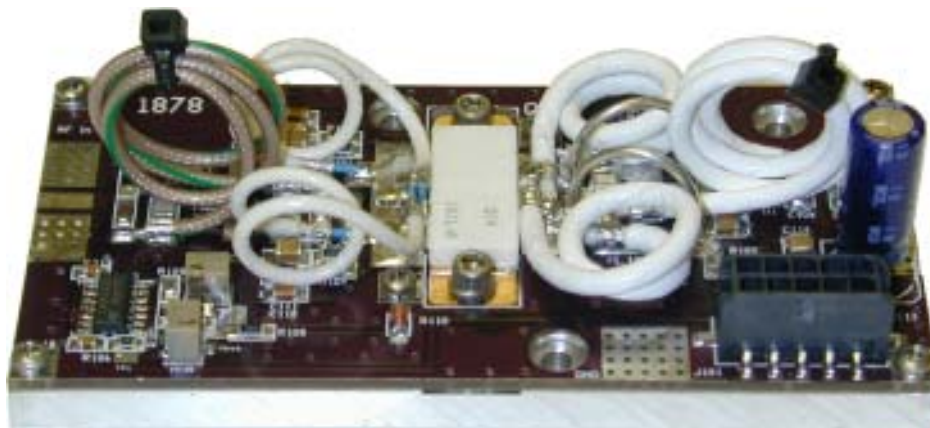
Gain: 16dB
Efficiency: 45%
Temperature Range: 0 to 70°C
Max VSWR: 5:1

Amplifier General Description

The P200-VHF-H-16 is an integrated TV linear amplifier designed for the television integrator. In steady production for 10 years, this gold metallized MOSFET amplifier provides a minimum of 175 W Pk Sync linear power. The P200-VHF-H-16 is the perfect IPA or output amplifier for any Band III television transmitter.

- No RF assembly or circuit tuning
- 200 Watts of Output Power
- 16dB typical gain at Channel 13
- Combined Video and Aural at full rated power
- Modular Construction for ease of integration

Amplifier Picture

**Delta RF Technology, Inc.**

High Power RF Amplifiers and Accessories

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Fax +1.775 DELTA FX [775 335 8239]

website: <http://www.drft.com>email: sales@drft.com

Parameter	Min	Typ	Max	Units	Notes
Frequency	170		230	MHz	
P1dB		200		W, CW	
Linear Power Out	175	200		W, Pk Sync	
IMD3	-40			dBc	For 2 tones, 1MHz spacing, 175 W PEP
Power Input		5	8	W Pk Sync	
Gain	15	16		dB	
Vsupply	28	32	34	V, DC	
Drain Current		10	11	A, DC	200W Pk Sync
Input VSWR		1.2:1	1.5:1		
Insertion Phase Variation		±5		°	Unit to unit
Gain Variation		±1		dB	Unit to unit
F2 Second Harmonic		-35		dBc	
F3 Third Harmonic		-15		dBc	
Baseplate Operating Temperature	0		70	°C	

Physical Dimensions

2.0" x 4.0" x 1.5" / 5cm x 10cm x 4cm

All specifications valid for 50 Ω output load, $V_{sup} = +32VDC$, $I_{dq} = 0.8A$

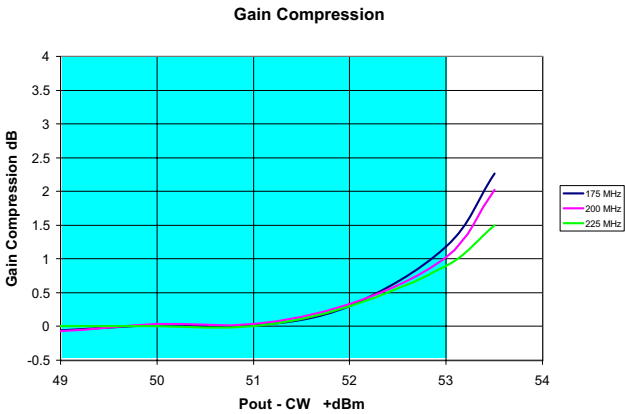
Absolute Maximum Ratings

Parameter	Value	Units	Notes
Maximum Operating Voltage	34	V, DC	
Stable Operating Voltage	28 - 34	V, DC	
Maximum Bias Current, Q100	3.0	A, DC	Factory set to 0.8A
Maximum Drain Current	14	A, DC	
Load Mismatch Survival	5:1		All Phase angles, Id limit 12A, 2 seconds max
Storage Temperature	-40 to +105	°C	
Maximum Operating Baseplate Temp	70	°C	

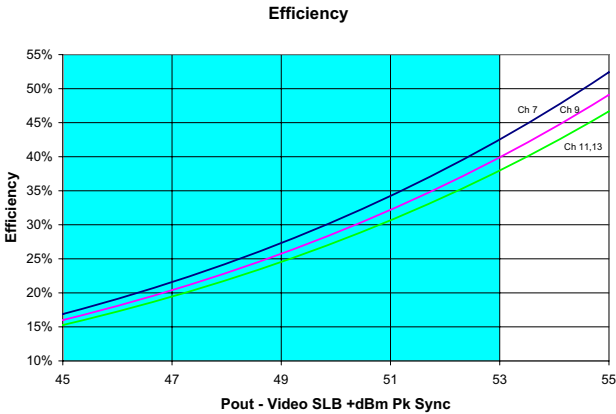
Features, Auxillary Functions

- ◆ Temperature Compensated Bias
- ◆ Amplifier Disable
- ◆ Current Sense
- ◆ Connectorized Power and I/O

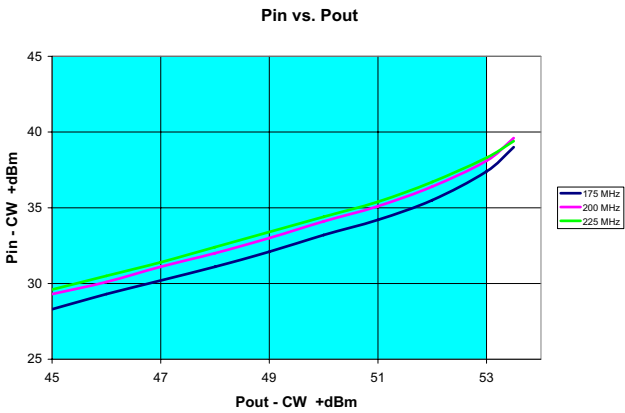




Graph 1. Gain Compression

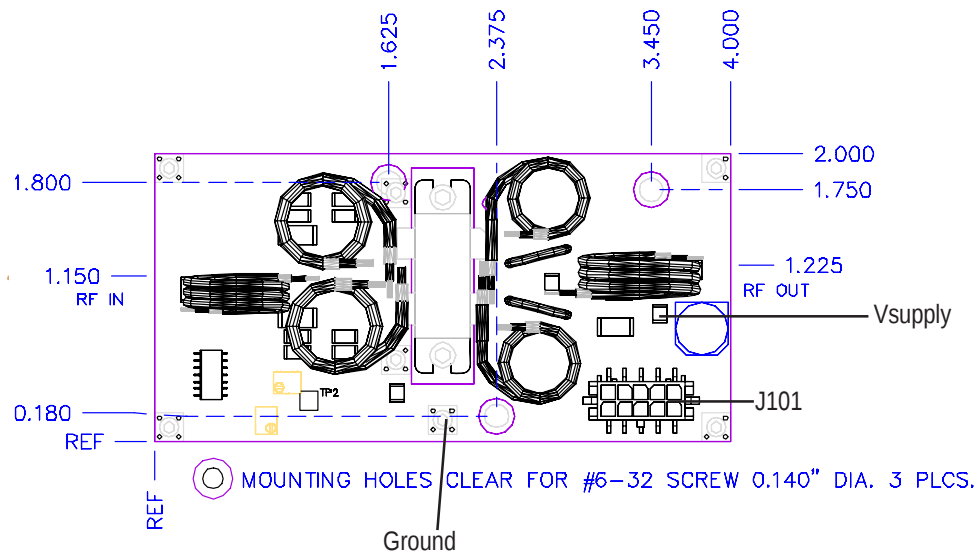


Graph 2. Efficiency



Graph 3. Pin vs. Pout





Tips for Mechanical Mounting:

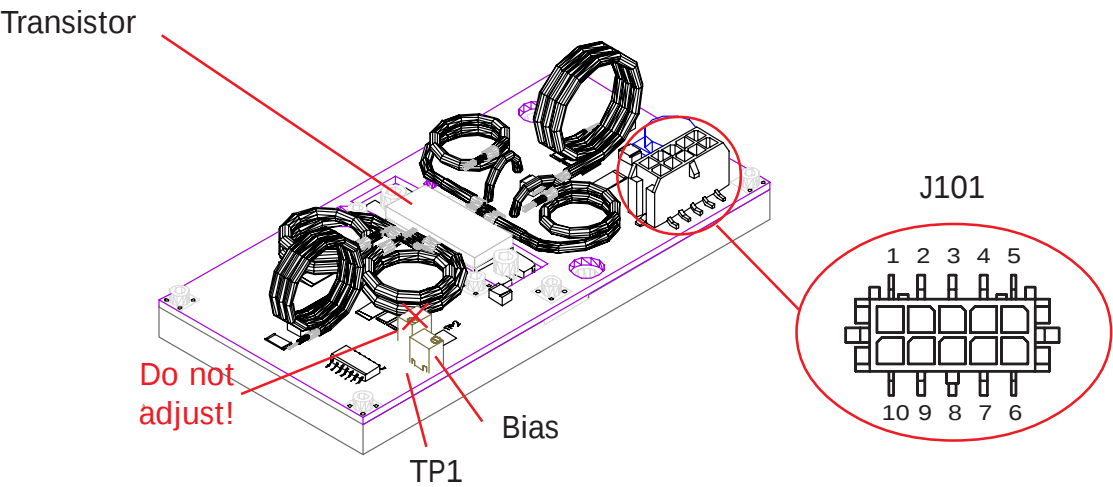
- 1 All holes are clear for #6 Screw. Stainless Steel mounting hardware is recommended, grade 18-8 or better. A lock washer of same material should also be used.
- 2 Ensure mounting surface is flat to better than 0.003" / "
- 3 Use a thin layer of thermal compound on the backside of the PA - no more than 0.001" - 0.002" thickness!
- 4 Torque all screws to 10-12 in-lbs

Considerations for Mechanical Mounting:

- Considerations for proper thermal design include
- Total power dissipated = Total DC Power Consumed x (1-Efficiency)
- Ambient Airflow
- Thermal Resistance of Heat Sink



Electrical Connections:



Power 3.0mm Micro Connector: MOLEX 43025-1000 MOLEX Pin 43030-0001, 43030-0007 AMP 1-794617-0 AMP Pin 794610, 794606 -or- Solder directly to pad adjacent to connector	J101-1	CURRENT	Current Sense
	J101-2,3,8,9	GROUND	System Ground
	J101-4,5	Vsup	+28 to +32 VDC
	J101-6,7,10	N/C	No Connection

Connections:
Connect amplifier to +Vsup and Ground using either 3.0mm modular 10-position plug (J101) or soldering directly to pad adjacent to connector. If using Single connection, 14 gauge wire is recommended, 14 gauge ground wire. 20 gauge wire is recommended for use in modular connector, and all power connections must be used! In all cases, use of teflon insulated wire is highly recommended.

Amplifier Startup

+Vsup should be applied to amplifier with no drive applied. The system must allow drain voltage to reach +26V minimum before applying drive or damage can result to the amplifier and void warranty. This typically takes between 2 - 10 seconds and should be verified by the system integrator. The amplifier may be disabled by applying ground to TP1, which is the solder pad to the left of bias pot. This point must be allowed to float for proper operation.

Bias Current:

Bias current is controlled via temperature compensated bias system that uses a hermetically sealed glass thermistor as reference. If excessive air is directed above the amplifier such that the thermistor is cooled below the temperature of the baseplate, this circuitry may not perform properly. Bias has been pre-set at the factory to 0.5A at +32.0V DC. This bias point has been selected to offer the optimum balance between IMD performance, efficiency, and gain. If the bias point is changed, take great care to set the same bias point on each transistor in your system, and not to exceed the bias maximum listed on page 1.

Fault Condition - Bad VSWR

Current sense J101-1 should be monitored for excessive current. The voltage difference between J100-1 to J100-4,5 is scaled 1A per 0.010 V. If the transistor experiences currents in excess of normal operation, a fault condition exists, and the amplifier should be disabled through TP1 or removing drain voltage. If current on the transistor drops to below 0.5A indicated, a fault condition exists, and the amplifier should be disabled through TP1 or by removing drain voltage.

Amplifier Shutdown

To prevent damage to amplifier and surrounding systems, bias and drive should be removed prior to powering down PA. This can be accomplished by grounding TP1 and removing drive then powering down PA, or simply removing drive and powering down PA.

Miscellaneous:

It is normal for the output transformers (flexible coax on the output of transistor) to get warm during operation. These components are rated for continuous operation in excess of 150°C. Placing noisy analog or digital systems, such as additional control circuitry, directly over the top of transistors or RF path can cause improper operation. Care should be taken to locate these components where they will not cause interference.



Ordering Information:

Order Code	Description	DRFT Reference
P200-VHF-H-16	200W Pk Sync Television Pallet Amplifier, 170 - 230 MHz	1093
PAB200-VHF-H-16	Amplifier in Enclosure	TBD
Options		
-A11	SMA Female Connectors In / Out	0201
-A12	Heat Sink Option	0202
-A13	Heat Sink Option with DC Fan, pre wired	0203
-A14	Ruggedized for vibration	0204
-A15	Wire harness, 1' length, 10 wires for pallet amplifier only (NON-FM)	0205
-A16	Wire harness, customer specified length for pallet amplifier only	0206
-T2	Extended Burn In	0271
-T3	Extended Data Collection	0272

Standard Pallet Options:

SMA Female Connectors, Input and Output. Stainless Body, Gold Center pin, 4-hole SMA bolted to pallet amplifier edge through bottom two holes located at amplifiers RF IN and RF OUT locations. All stainless steel hardware.

Enclosure- all aluminum machined enclosure available for most pallet amplifiers. Alodined aluminum, alloy 6061-T6. SMA Female input and output RF connectors. Supply voltage and ground through solder / feedthrough connections. Module must be bolted to appropriate heatsink.

Heat Sink - aluminum extruded heat sink, black anodized. Pallet amplifier or module will be bolted to heatsink. Customer will be required to provide adequate airflow.

Heat sink with fan - aluminum extruded heat sink as above, with included fan bolted to push air through the heat sink. Depending on heat requirements, a second fan may also be provided on the output of the unit.

Ruggedized - all screws have threadlocking compound applied, and all flying components are staked and attached to base. Designed to withstand MIL-STD-810E 514.4 Category 8.

Power Connector - a 10 pin molex connector is used on all standard pallet amplifiers to supply +Vsup and Ground connections, as well as hi-side current shunts for current monitoring. Delta RF offers the mating connector with 1' wires - Red (Vsup), Black (Ground), Yellow (Current monitor). All wires are 18 gauge teflon insulated wires. Customer may optionally specify wire length and wire color.

Testing Options:

Standard - includes power test and brief burn - in under laboratory conditions. Printed test report gives graph of Gain and Input Return Loss at rated P1dB and Voltage Conditions. Report shows pass/fail criteria. All amplifiers include this test.

Extended burn in - 8-hour burn in at P1dB with standard test run at completion. Unit is monitored during test and any discrepancy reported. Standard test data is included.

Extended data collection - Standard data is run and included. Detailed data is taken point by point giving the customer 25 - 70 frequency points, depending on the amplifier model. For each frequency point, data is generated to include gain, input power, input return loss, current, second harmonic, third harmonic, efficiency, audio distortion.

Other tests available - Vibration, Temp cycling, Shock. Please inquire.

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