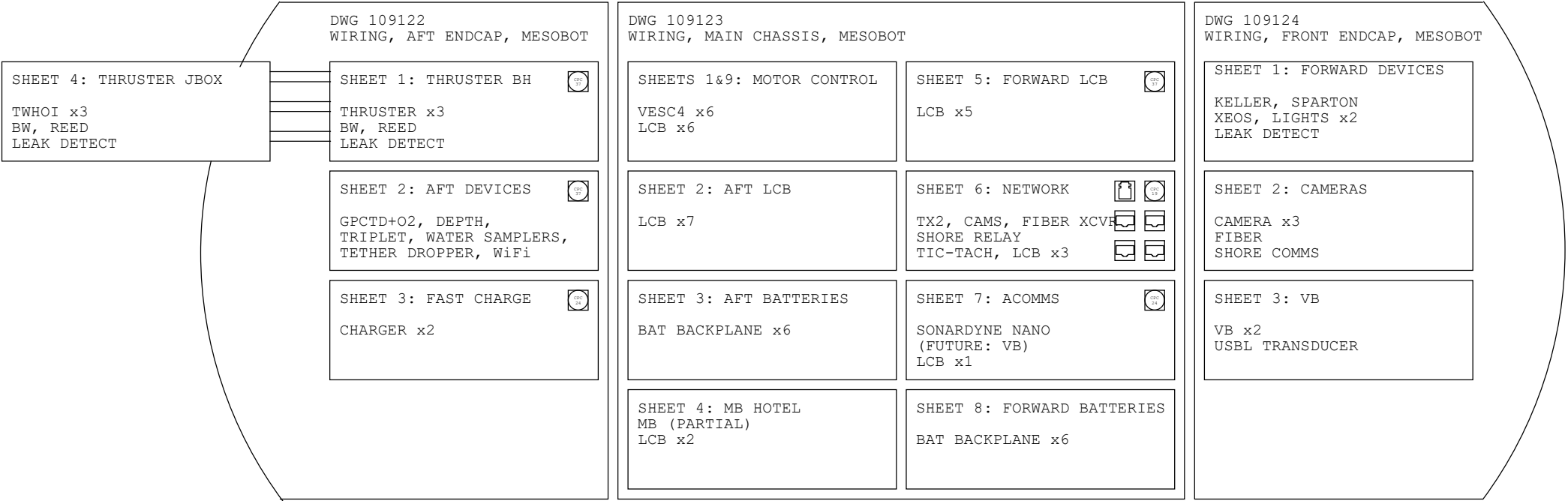




REED SWITCH
RSBH2F // RSIL2M // 10 feet P3C18 OS

TETHER DROPPER CABLE
MCIL8F // 7 ft P8C20 // MCIL8M

DWG 109247
WIRING, GPCTD+O2 CABLE

IMPACT DEPTH SENSOR CABLE
MCIL8F // 6 ft P8C20 // MCIL8M

TRIPLNET CABLE
MCIL6F // 7 ft P8C20 // MCIL6M

DWG 109309
WIRING, WiFi CABLE, MCIL8

DWG 109310
WIRING, BULLET WiFi HOUSING

DWG 109342
WIRING, CABLE SPLICE, EDNA SAMPLER

DWG 109240
WIRING, BATTERY CHARGER, MESOBOT

WIRING AND SCHEMATIC CONVENTIONS:

Endcaps and Bulkhead connectors are shown facing left and right. Left-facing connectors face aft. Right-facing connectors face forward. This convention does not apply to connectors on individual PCBs and devices.

Unless otherwise specified, all wire is PTFE-insulated stranded copper MIL-DTL-16878/4 (Type E) hook-up wire.

Seawater and chassis potential is green.
Battery ground potential is black.
Switched voltages (5,12, battery, 24V) are red.
Unswitched battery discharge bus is orange = ORG.
Current-limited battery charge supply is yellow = YEL#20.

Serial up (transmit from device to LCB/MB) is YEL#24.
Serial down (transmit from LCB/MB to peripheral device) is GRN#24 and serial direction is indicated by arrow.
Leak detects are gray and white. Gray is weakly pulled to ground and measured while white is strongly pulled up to 3V.

Plugs on the end of removable wires and cables are designated by "P".
Jacks/receptacles on circuit boards, and bulkhead connectors that are fixed to chassis or endcaps are designated "J".

The infinity symbol means groups of wires are twisted together.



DSPL LIGHTS x2
LSL-2025-WW/DR-FLD-AL-A-B-
RS4-I-SUMC5MS-LO5004-

LIGHT CABLE x2 SUBCONN
MCIL5M // 6 ft // MCIL5F

DWG 109192
WIRING, TRACKING CAMERA, MESOBOT

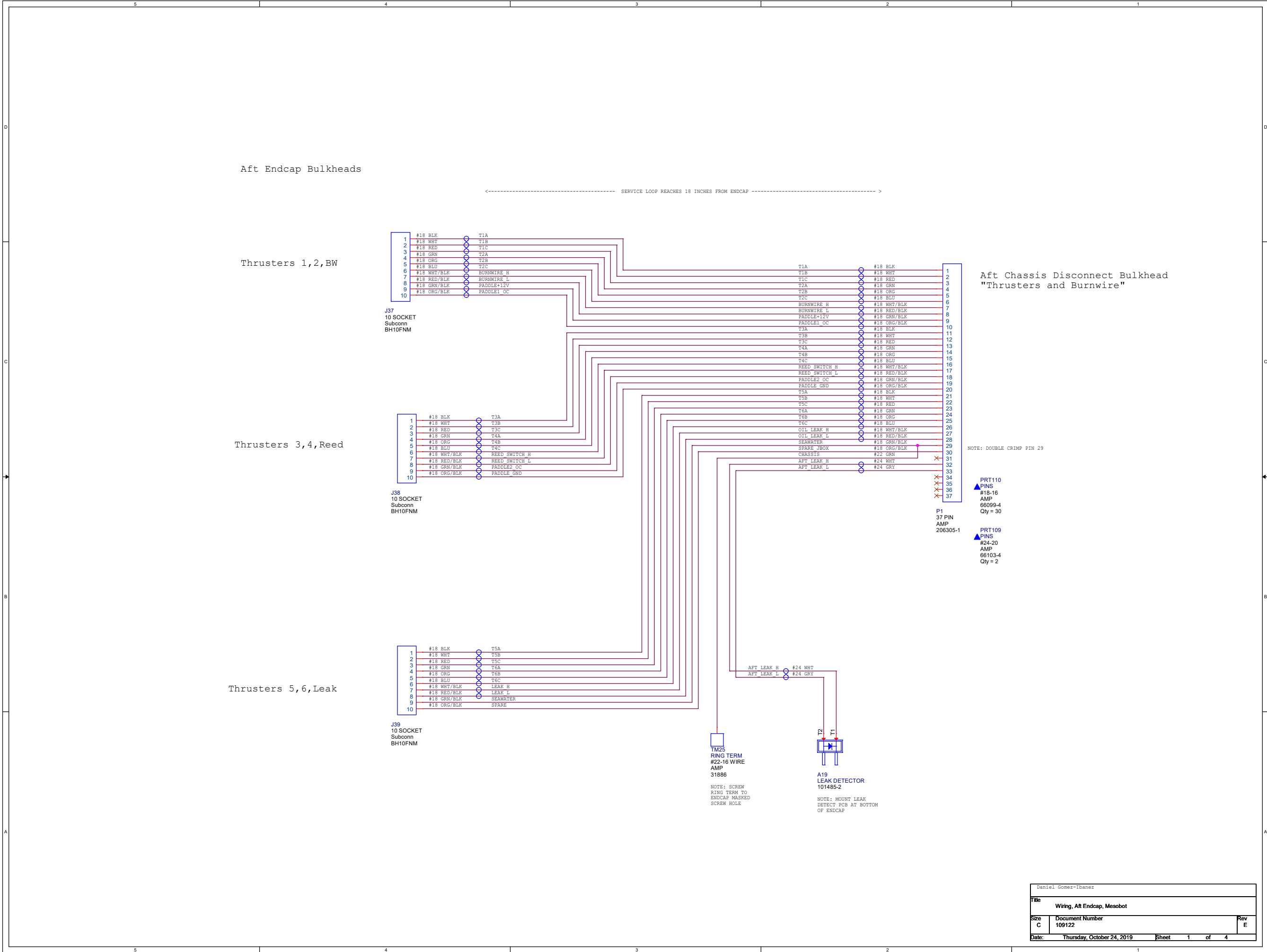
CAMERA CABLE x3 SUBCONN
DIL13F // 4 ft // DIL13M

DWG 109239
WIRING, SONY S3CA CAMERA, MESOBOT

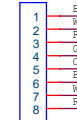
SHOREPOWER CABLE SUBCONN
DIL13F // 10 feet

SONARDYNE OEM NANO TRANSDUCER
STOCK CODE 641-0565
SONARDYNE DWG OL3-8052-001-06

Daniel Gomez-Ibanez			
Title			
Wiring, Top Level, Mesobot			
Size	Document Number	Rev	
C	109121	D	
Date:	Thursday, October 24, 2019	Sheet	1 of 1



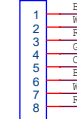
Guest Port 1
Seabird GPCTD+02



J30
8 SOCKET
Subconn
MCBH8FNM

SECURE EXTRA CONDUCTORS IN A LOOP

Guest Port 2
Impact Depth Sensor



J31
8 SOCKET
Subconn
MCBH8FNM

SECURE EXTRA CONDUCTORS IN A LOOP

Guest Port 3
Sampler



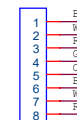
J32
4 SOCKET
Subconn
MCBH4FNM

Guest Port 4
Sampler



J33
4 SOCKET
Subconn
MCBH4FNM

Guest Port 5
Tether Dropper



J34
8 SOCKET
Subconn
MCBH8FNM

SECURE EXTRA CONDUCTORS IN A LOOP

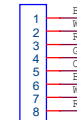
Guest Port 6
Wetlabs
Eco Triplet



J35
Subconn
MCBH6FNM
6 SOCKET

SECURE EXTRA CONDUCTORS IN A LOOP

Guest Port 7
WiFi



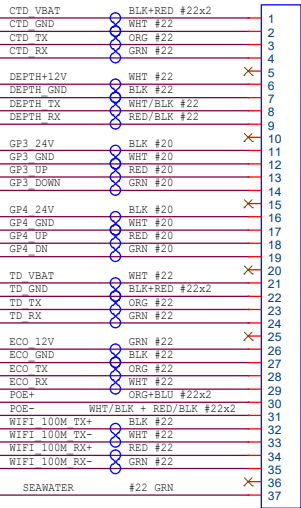
J36
8 SOCKET
Subconn
MCBH8FNM

NOTE: SPLICE TP= CLOSE TO BULKHEAD

COMPATIBILITY NOTES:
PORTS 1, 2, 3, 4, 5, 7 MATCH NO KNOWN STANDARDS.
PORT 6 MATCHES WETLABS PINOUTS

Main Chassis
Aft Disconnect

NOTE: DOUBLE CRIMP PINS 2,7,22,32



P2
37 SOCKET
AMP
206150-1

PRT107
▲ SOCKETS
#20-24
AMP
66399-3
Qty = 25

PRT187
▲ SOCKETS
#18-16
AMP
66101-4
Qty = 4

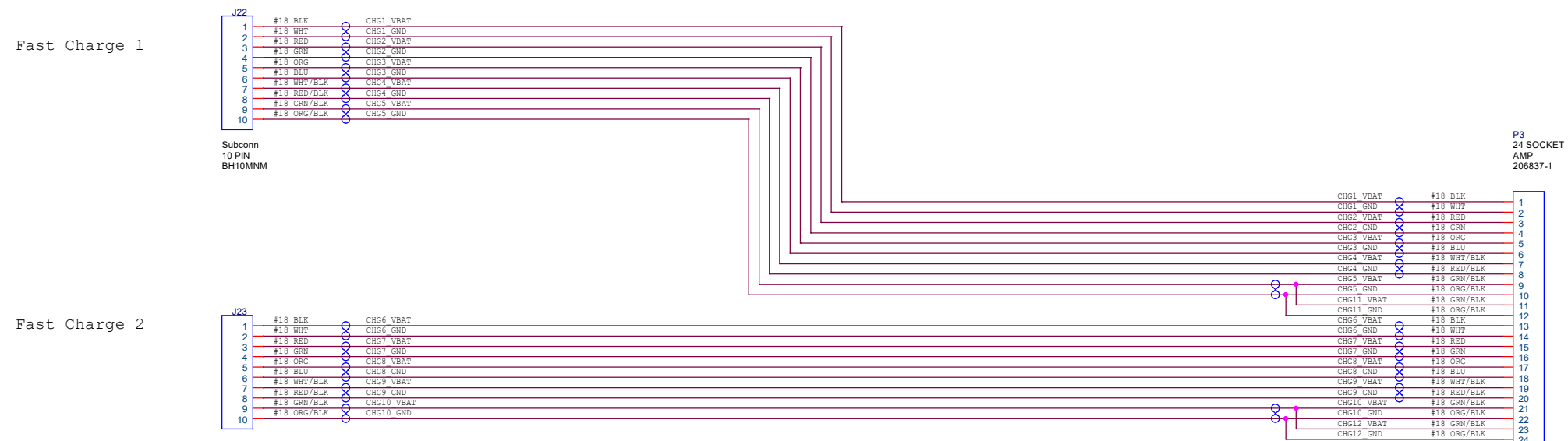
TM24
RING TERM
#22-16 WIRE
AMP
31886

NOTE: SCREW
RING TERM TO
ENDCAP MASKED
SCREW HOLE

Daniel Gomez-Ibanez			
Title			
Wiring, Aft Endcap, Mesobot			
Size	Document Number	Rev	
C	109122	E	
Date:	Thursday, October 24, 2019	Sheet	2 of 4

Aft Endcap Bulkheads

```
<----- SERVICE LOOP REACHES 18 INCHES FROM ENDCAP ----->
```

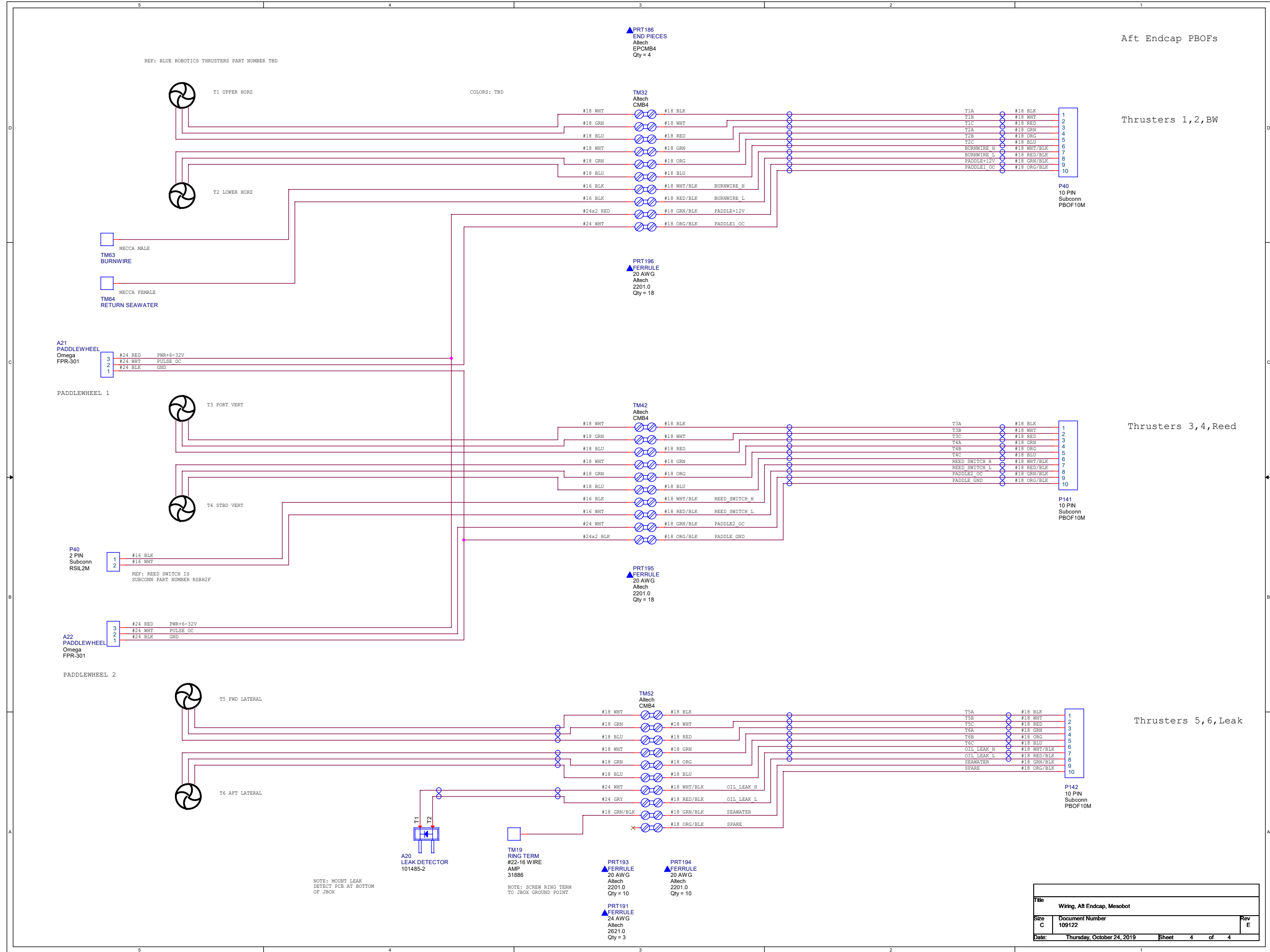


NOTE: INLINE SPLICE 9+11, 10+12, 21+23, 22+24

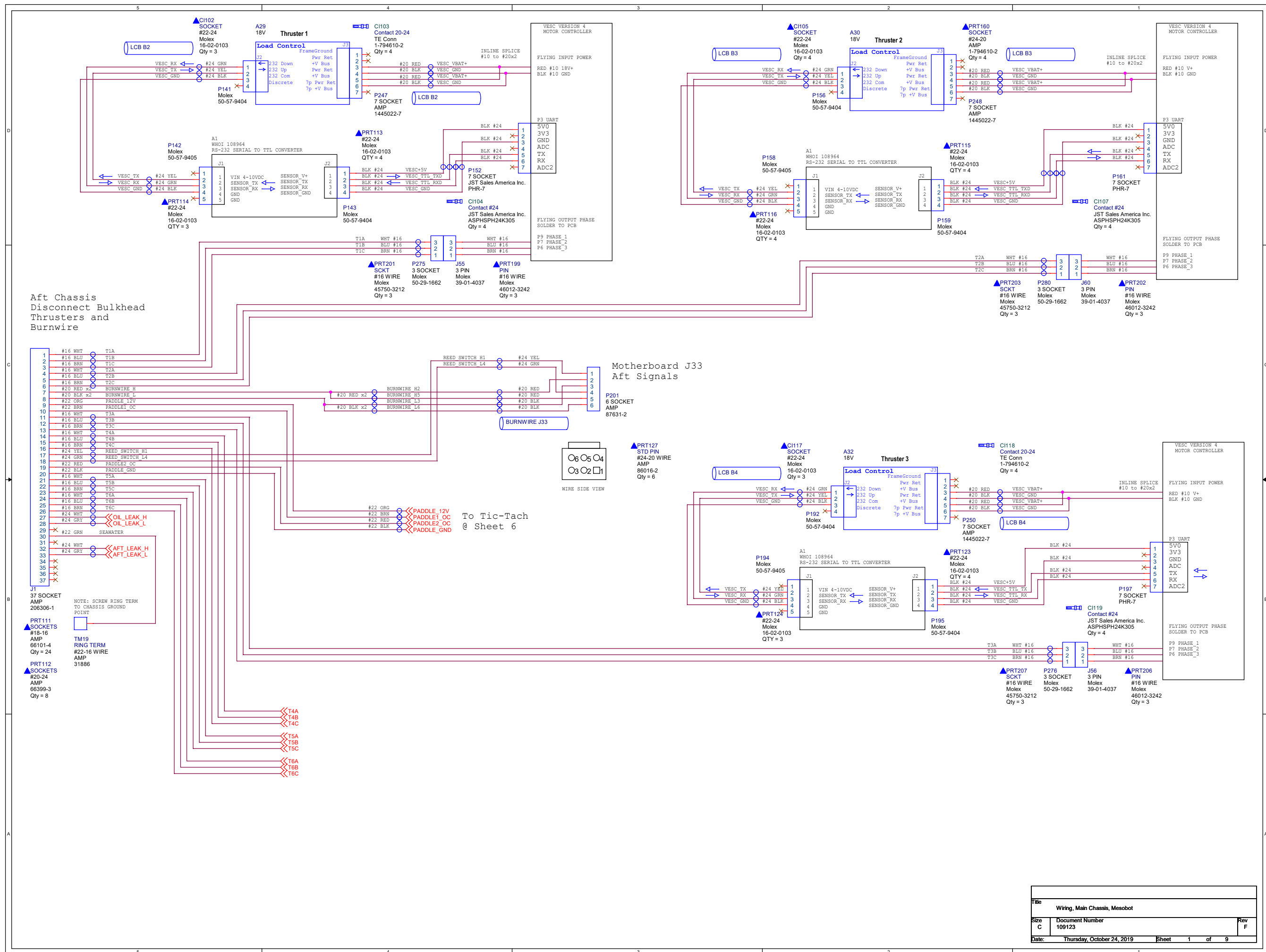
Aft Charger CPC

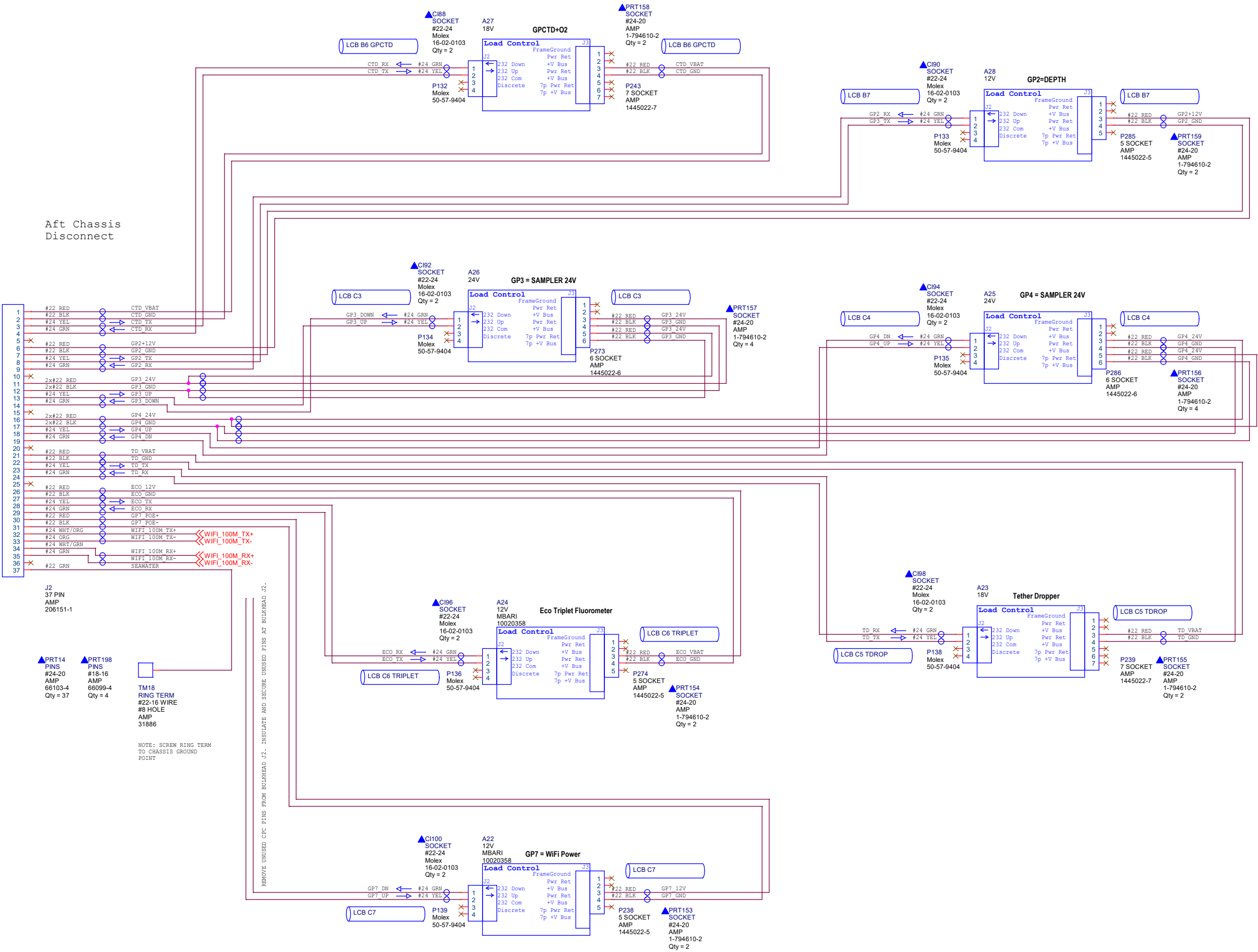
PRT90
▲ SOCKETS
#18-16
AMP
66101-4
Qty = 24

Title			
Wiring, Aft Endcap, Mesobot			
Size	Document Number		Rev
C	109122		E
Date:	Thursday, October 24, 2019	Sheet	3 of 4



Title		
Wiring, Aft Endcap, Mesobot		
Size	Document Number	Rev
C	109122	E
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Aft Charger CPC

CRIMP 2x#20 INTO EACH #16 PIN

1	2x#20 YEL	CHG1_VBAT
2	2x#20 BLK	CHG1_GND
3	2x#20 YEL	CHG2_VBAT
4	2x#20 BLK	CHG2_GND
5	2x#20 YEL	CHG3_VBAT
6	2x#20 BLK	CHG3_GND
7	2x#20 YEL	CHG4_VBAT
8	2x#20 BLK	CHG4_GND
9	2x#20 YEL	CHG5_VBAT
10	2x#20 BLK	CHG5_GND
11	2x#20 YEL	CHG11_VBAT
12	2x#20 BLK	CHG11_GND
13	2x#20 YEL	CHG6_VBAT
14	2x#20 BLK	CHG6_GND
15	2x#20 YEL	CHG7_VBAT
16	2x#20 BLK	CHG7_GND
17	2x#20 YEL	CHG8_VBAT
18	2x#20 BLK	CHG8_GND
19	2x#20 YEL	CHG9_VBAT
20	2x#20 BLK	CHG9_GND
21	2x#20 YEL	CHG10_VBAT
22	2x#20 BLK	CHG10_GND
23	2x#20 YEL	CHG12_VBAT
24	2x#20 BLK	CHG12_GND

J3
24 PIN
AMP
206838-1

PRT92
PINS
#18-16
AMP
66099-4
Qty = 0

PRT105
PINS
#14-18
AMP
66361-3
Qty = 24

1	CHARGE-
2	DISCHARGE-
3	DISCHARGE+
4	BAT_TX
5	CHARGE+
6	CHARGE-
7	DISCHARGE-
8	DISCHARGE+
9	BAT_RX
10	CHARGE+

WHOI 108858
Mesobot 4P Battery Backplane

PRT104
SOCKET
#24-20
Molex
43030-0009
Qty = 10

BLK #20
BLK #20
ORG #20
YEL #24
BLK #20
BLK #20
ORG #20
BAT_RX
ORG #20
GRN #24
YEL #20

J1
10 SOCKET
Molex
43025-1000

1	CHARGE-
2	DISCHARGE-
3	DISCHARGE+
4	BAT_TX
5	CHARGE+
6	CHARGE-
7	DISCHARGE-
8	DISCHARGE+
9	BAT_RX
10	CHARGE+

WHOI 108858
Mesobot 4P Battery Backplane

PRT103
SOCKET
#24-20
Molex
43030-0009
Qty = 10

1	CHARGE-
2	DISCHARGE-
3	DISCHARGE+
4	BAT_TX
5	CHARGE+
6	CHARGE-
7	DISCHARGE-
8	DISCHARGE+
9	BAT_RX
10	CHARGE+

WHOI 108858
Mesobot 4P Battery Backplane

PRT102
SOCKET
#24-20
Molex
43030-0009
Qty = 10

1	CHARGE-
2	DISCHARGE-
3	DISCHARGE+
4	BAT_TX
5	CHARGE+
6	CHARGE-
7	DISCHARGE-
8	DISCHARGE+
9	BAT_RX
10	CHARGE+

WHOI 108858
Mesobot 4P Battery Backplane

PRT101
SOCKET
#24-20
Molex
43030-0009
Qty = 10

1	CHARGE-
2	DISCHARGE-
3	DISCHARGE+
4	BAT_TX
5	CHARGE+
6	CHARGE-
7	DISCHARGE-
8	DISCHARGE+
9	BAT_RX
10	CHARGE+

WHOI 108858
Mesobot 4P Battery Backplane

PRT100
SOCKET
#24-20
Molex
43030-0009
Qty = 10

1	CHARGE-
2	DISCHARGE-
3	DISCHARGE+
4	BAT_TX
5	CHARGE+
6	CHARGE-
7	DISCHARGE-
8	DISCHARGE+
9	BAT_RX
10	CHARGE+

WHOI 108858
Mesobot 4P Battery Backplane

PRT99
SOCKET
#24-20
Molex
43030-0009
Qty = 10

J29
10 SOCKET
Molex
43025-1000

PRT30
JUMPER
Altech
CA727/2
Qty = 2

PRT93
SOCKET
#18-16
Hirose
MDF6-1618SC
Qty = 4

ORG 5x#20
ORG 5x#20
BLK 5x#20
BLK 5x#20

P123
Hirose
MDF6-4DS-3.5C

CRIMP FIVE #20 INTO EACH #12 FERRULE

PRT187
FERRULE
12 AWG X 12mm
Altech
2402.0
Qty = 4

PRT190
FERRULE
16 AWG
Altech
2204.0
Qty = 4

PRT186
END PIECES
Altech
EPCMB4
Qty = 2

PRT189
FERRULE
24 AWG
Altech
2621.0
Qty = 2

GRN 6x#24 *INLINE SOLDER SPLICE* BAT_RX
YEL 6x#24 *INLINE SOLDER SPLICE* BAT_TX

FWD_BAT_RX
FWD_BAT_TX

P121
Molex
50-57-9404

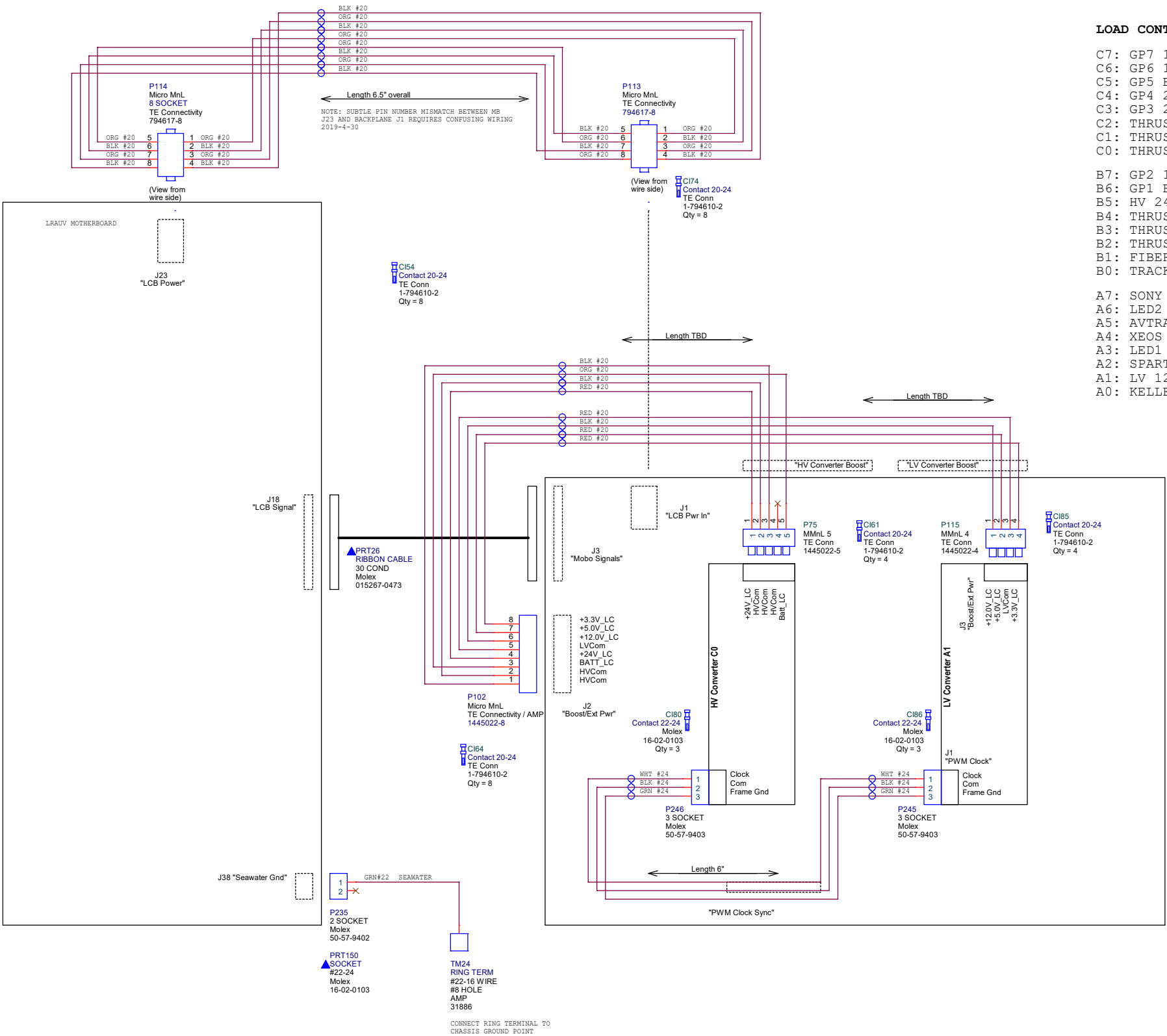
C187
Contact 22-24
Molex
16-02-0103
Qty = 2

DISCHG+	ORG #20
DISCHG+	ORG #20
GND	BLK #20
GND	BLK #20

P130
Hirose
MDF6-4DS-3.5C

PRT195
SOCKET
#20-22
Hirose
MDF6-2022SC
Qty = 4

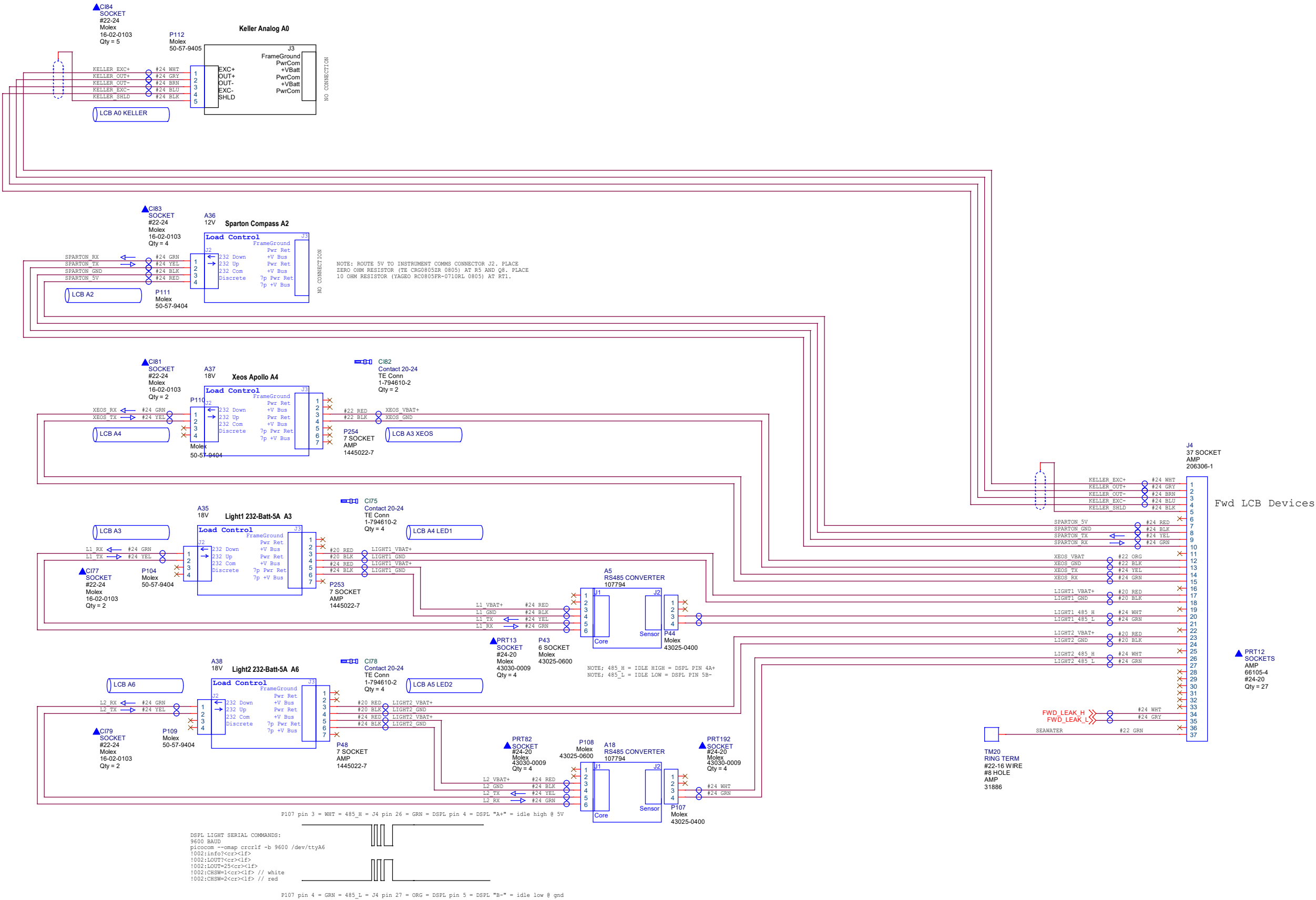
Title		
Wiring, Main Chassis, Mesobot		
Size	Document Number	Rev
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LOAD CONTROL BACKPLANE SLOT MAP

- C7: GP7 12V WiFi BULLET
C6: GP6 12V ECO TRIPLET
C5: GP5 BATV TETHER DROPPER
C4: GP4 24V SAMPLER 2
C3: GP3 24V SAMPLER 1
C2: THRUSTER 6 BATV
C1: THRUSTER 5 BATV
C0: THRUSTER 4 BATV
- B7: GP2 12V IMPACT DEPTH
B6: GP1 BATV GPCTD
B5: HV 24V CONVERTER
B4: THRUSTER 3 BATV
B3: THRUSTER 2 BATV
B2: THRUSTER 1 BATV
B1: FIBER XCVR 12V
B0: TRACKING 12V : TX2 & STEREO CAMERAS & TACH
- A7: SONY CAMERA 12V
A6: LED2 BATV
A5: AVTRAK USBL BATV
A4: XEOS BATV
A3: LED1 BATV
A2: SPARTON 12V : USES 5V VIA GPIO
A1: LV 12V CONVERTER
A0: KELLER DEPTH ANALOG

Title		
Wiring, Main Chassis, Mesobot		
Size	Document Number	Rev
C	109123	F
Date:	Thursday, October 24, 2019	Sheet 4 of 9

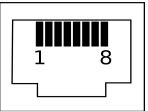


Title		
Wiring, Main Chassis, Mesobot		
Size	Document Number	Rev
C	109123	F
Date:	Thursday, October 24, 2019	Sheet 5 of 9

NOTE: Ubiquiti ER-X-SFP is specified for 24V but can run on 12 or 24 or battery voltage. Choose 12V so that we can add an optional fan.

NOTE: Nonstandard colors

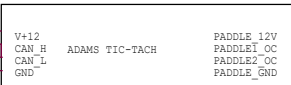
THIS PICTURE IS FOR REFERENCE ONLY :)



TETHER SM FIBER PATCH CABLE LC-ST TO ENDCAP LANCER CONNECTOR

FiberCablesDirect
0.5M OS2 LC ST Fiber Patch Cable PVC OFNR
9/125 LC to ST Singlemode Jumper 0.5 Meter (1.64ft)

SFP MODULES
EOPOLINK
EOLS-B11612-33PMDIL (Tx 1510 nm, Blue Ball, Topside)
EOLS-B11612-33PMDIL (Tx 1570 nm, Violet Ball, Vehicle)



TO PADDLEWHEELS 8 SHEET 1

NOTE: TX2 GROUND IS TIED TO CANBUS GROUND AT TICTACH FERRULE, BUT NOT ON COGSWELL

CONNECT CANBUS TO VESC TRAY

TO SCIENCE CAMERA VIA ENDCAP

TO LEFT CAMERA VIA ENDCAP

TO RIGHT CAMERA VIA ENDCAP

TO SHORE COMMS CABLE VIA ENDCAP

J6
19 SOCKET
AMP
211773-1

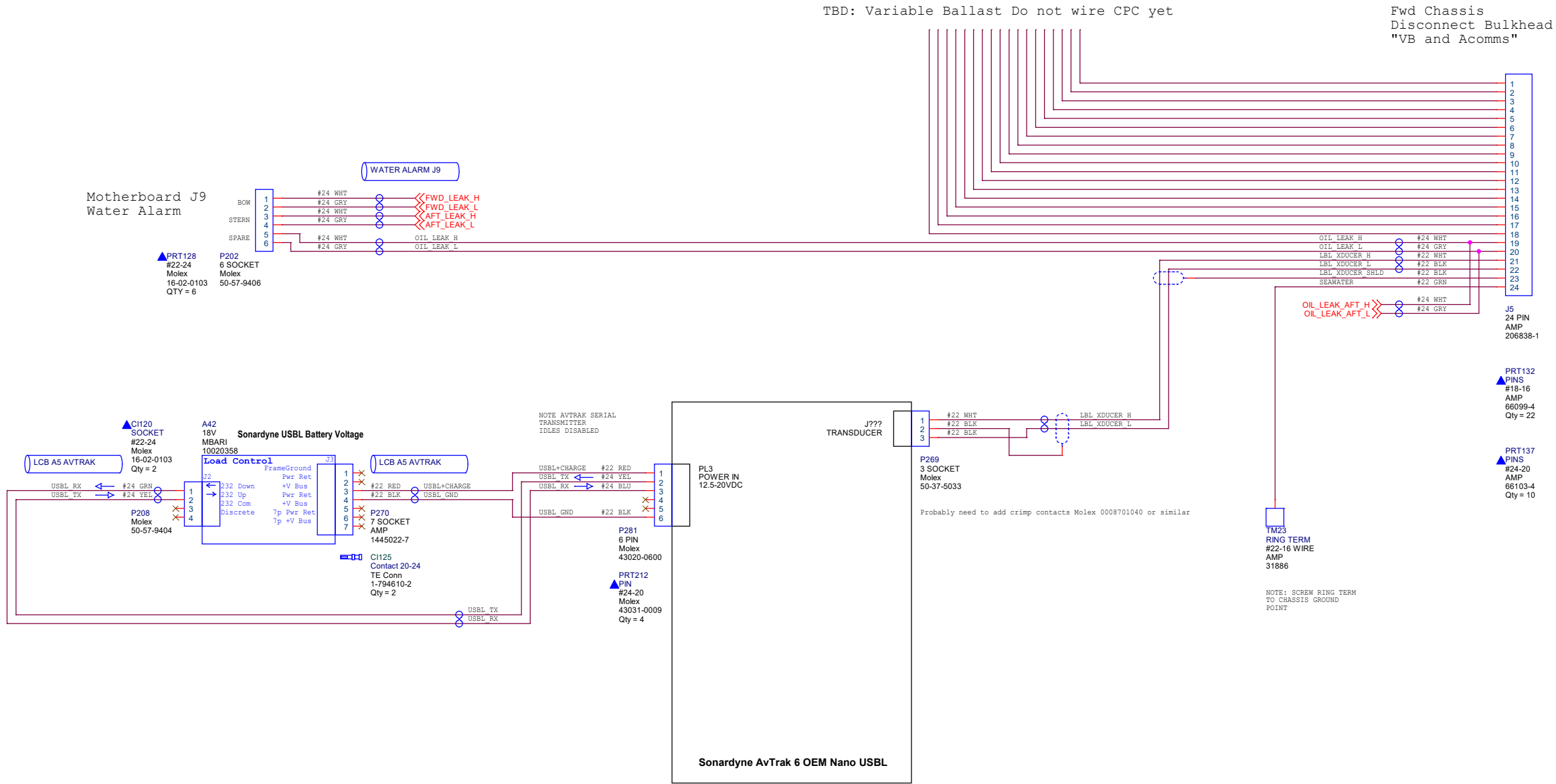
PRT143
SOCKETS
#24-20
AMP
66105-4
Qty = 8

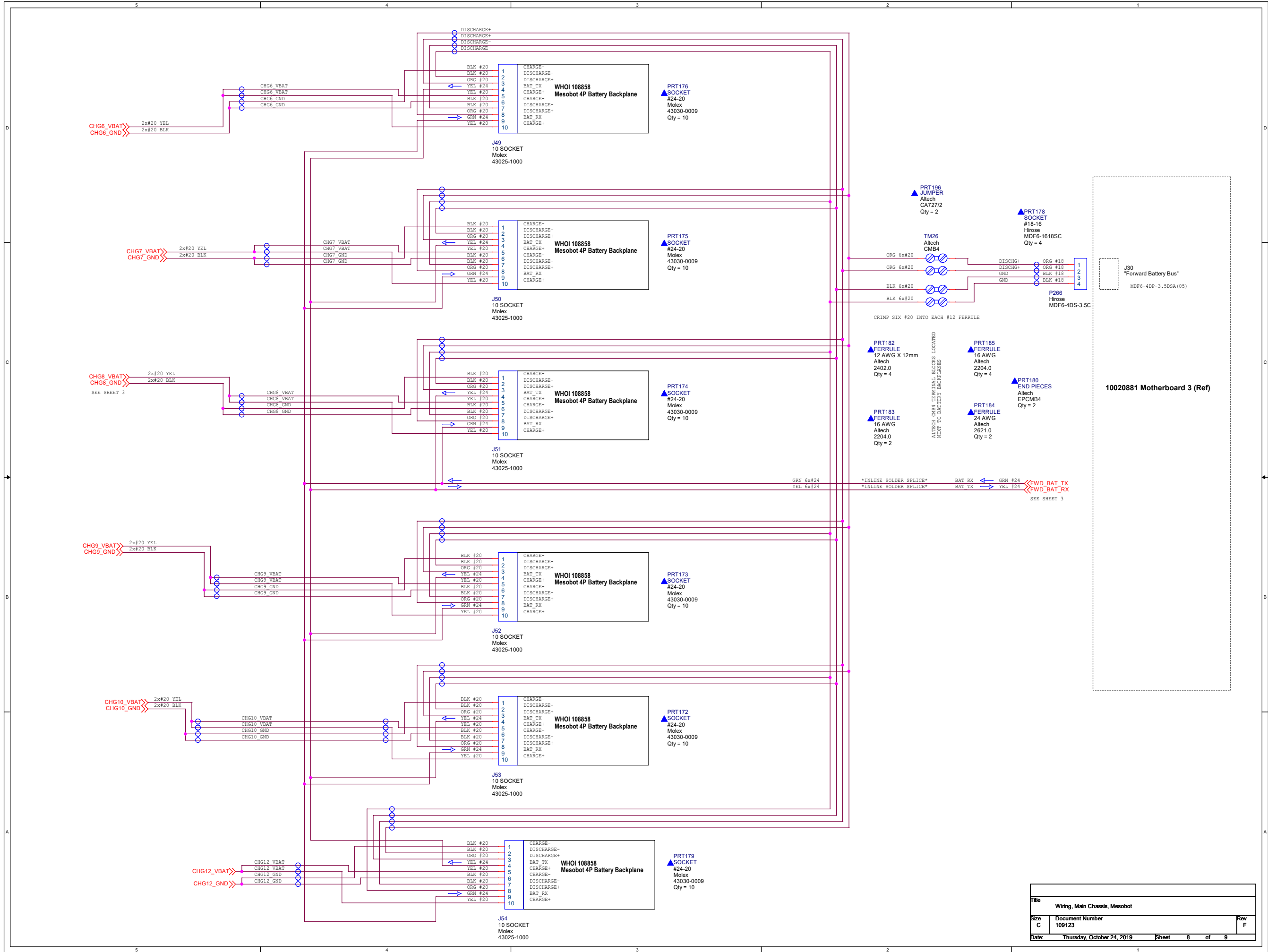
PRT142
SOCKETS
#18-16
AMP
66101-4
Qty = 6

PRT141
SOCKETS
#14-18
AMP
66360-3
Qty = 0

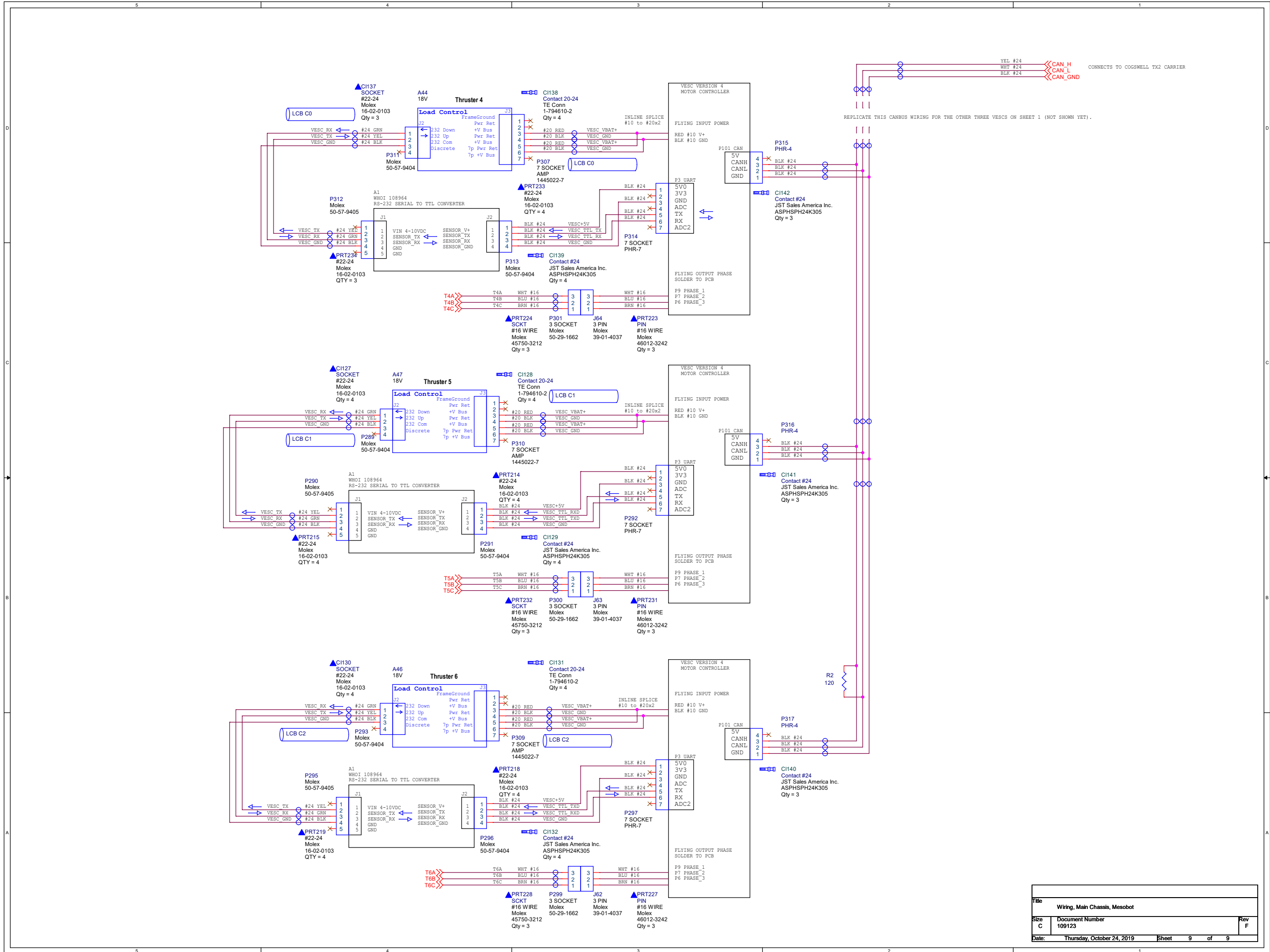
NOTE: DOUBLE CRIMP RING LUG
SCREW RING TERM TO CHASSIS GROUND
POINT

Title		
Wiring, Main Chassis, Mesobot		
Size	Document Number	Rev
C	109123	F
Date:	Thursday, October 24, 2019	Sheet 6 of 9





Title		
Wiring, Main Chassis, Mesobot		
Size	Document Number	Rev
C	109123	F
Date:	Thursday, October 24, 2019	Sheet 8 of 9

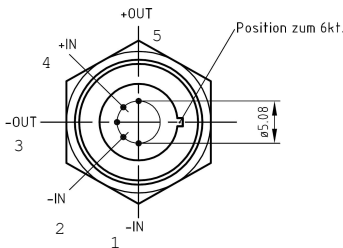


Title		
Wiring, Main Chassis, Mesobot		
Size	Document Number	Rev
C	109123	F
Date:	Thursday, October 24, 2019	Sheet 9 of 9

<----- SERVICE LOOP REACHES 16 INCHES FROM ENDCAP ----->

KELLER PA6-ST
Anschlusschema

Ansicht von unten



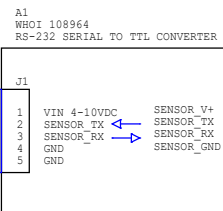
PRT89
PINS
#24-20
AMP
66103-4
Qty = 25

P4
37 PIN
AMP
206305-1



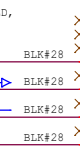
P118
Molex
50-57-9405

PRT87
#22-24
Molex
16-02-0103
QTY = 4



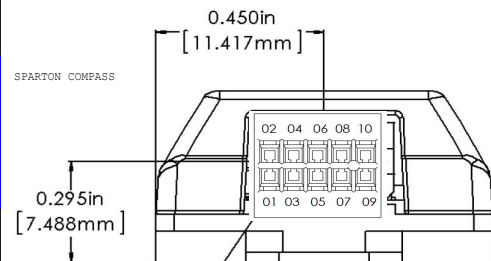
PRT86
#22-24
Molex
16-02-0103
QTY = 4

NOTE: ISDF-05-D-L WIRE IS #28 AWG, XLPE INSULATED,
CNC TECH 10368-28-1-0500-001-1-TS.



PRT151
SOCKET
#30-28
Samtec
CC03R-2830-01-GF
Qty = 4

ILLUSTRATION SHOWS PIN LOCATIONS ON SPARTON AHR5-M2 AND SAMTEC ISDF-05-D-L

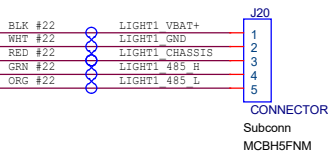


Manual Checkout Quickstart:
RS-232 115200 baud N81
VERSION di.
REVISION di.
compass_mask d.cn
compass_mask d.off

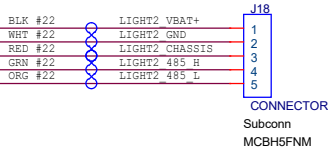
XEOS



LIGHT1



LIGHT2



TM24
RING TERM
#22-16 WIRE
AMP
31886

A20
LEAK DETECTOR
109038

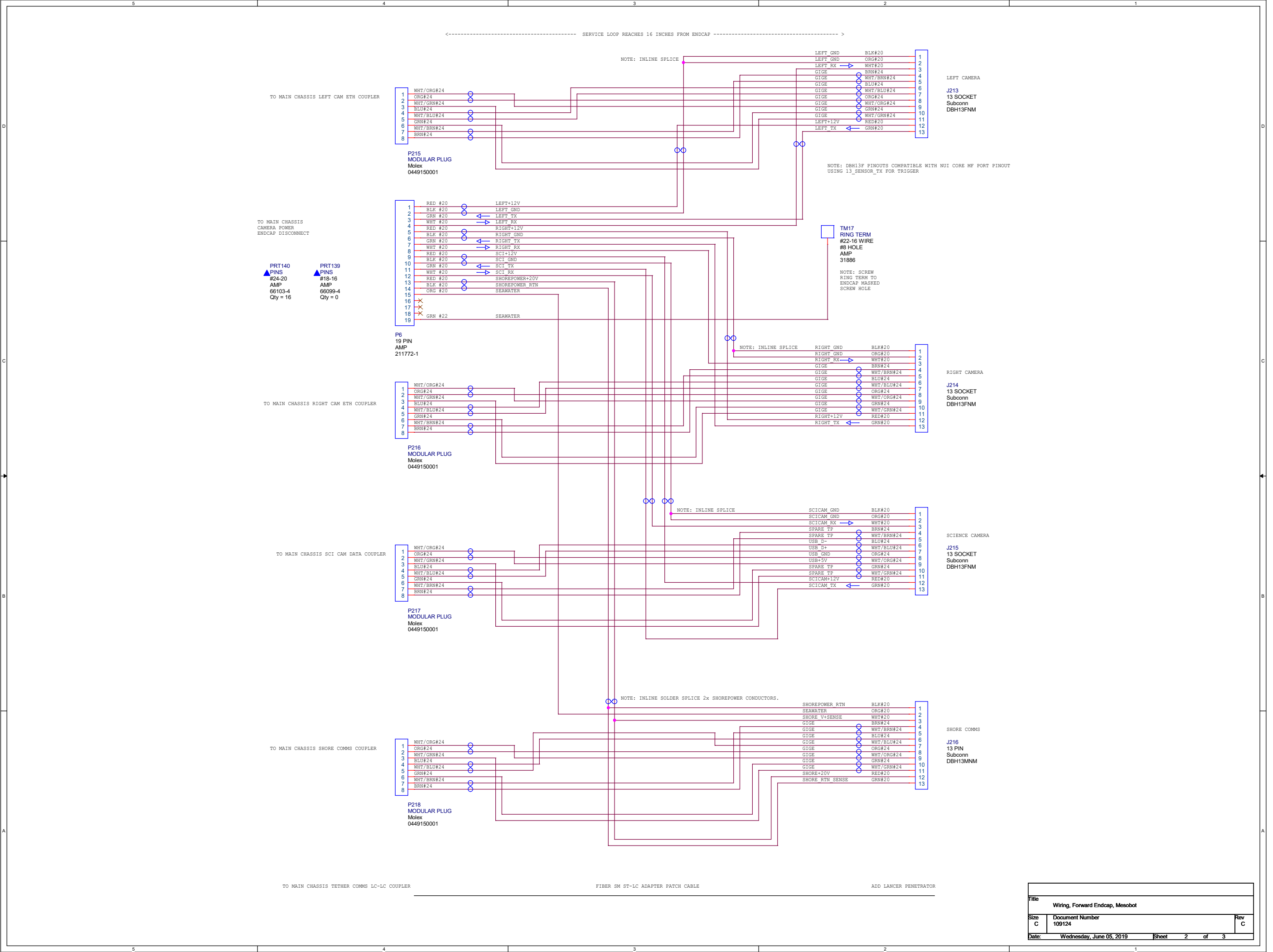
NOTE:SOLDER WIRES TO LEAK PCB. MOUNT LEAK
DETECT PCB AT BOTTOM OF ENDCAP.

CONNECT ALL RING TERMS TO ENDCAP

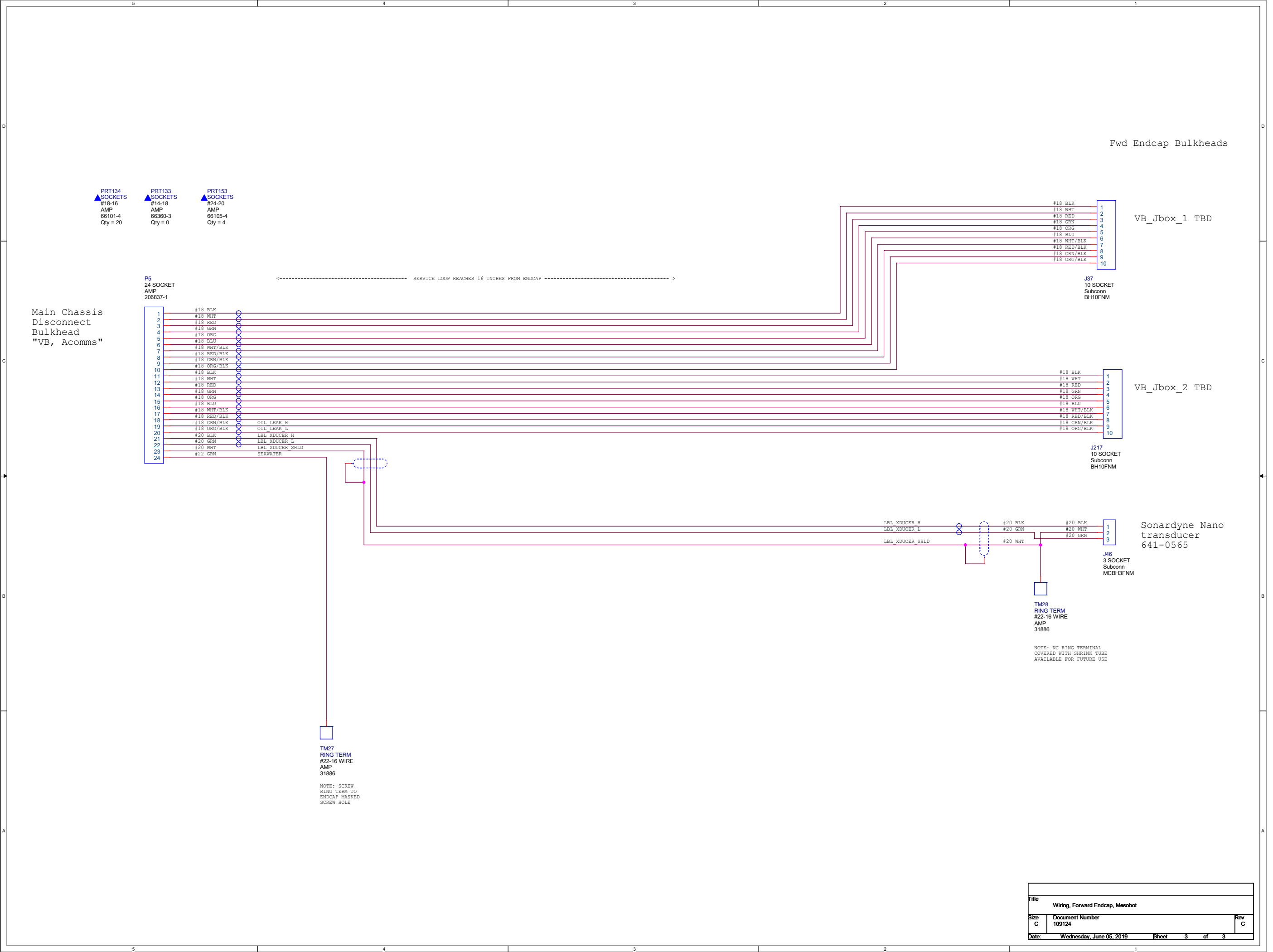
TM25
RING TERM
#22-16 WIRE
AMP
31886

TM26
RING TERM
#22-16 WIRE
AMP
31886

Daniel Gomez-Ibanez		
Title		
Wiring, Forward Endcap, Mesobot		
Size	Document Number	Rev
C	109124	C
Date:	Wednesday, June 05, 2019	Sheet 1 of 3



Title		
Wiring, Forward Endcap, Mesobot		
Size	Document Number	Rev
C	109124	C
Date:	Wednesday, June 05, 2019	Sheet 2 of 3



D

C

B

A

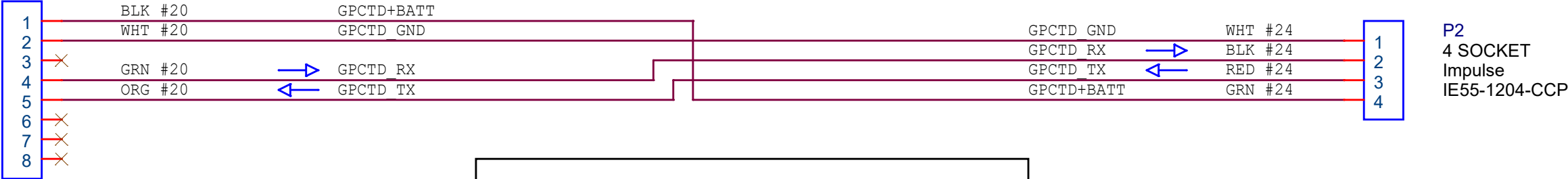
D

C

B

A

TOTAL LENGTH 6 ft = 72"



P1
Subconn
MCIL8M + MCDLS-F



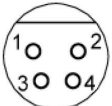
POTTED SPLICE

Use Scotchcast 82-F1 splice kit.

GPCTD VOLTAGE LIMITS 8-20VDC

IE55-1204-CCP

Power, Data I/O



Pin	Description
1	Common
2	RS-232 data receive
3	RS-232 data transmit
4	8 - 20 VDC external power

Daniel Gomez-Ibanez

Title

Wiring GPCTD Cable, Mesobot

Size

A

Document Number
109247

Rev

A

Date:

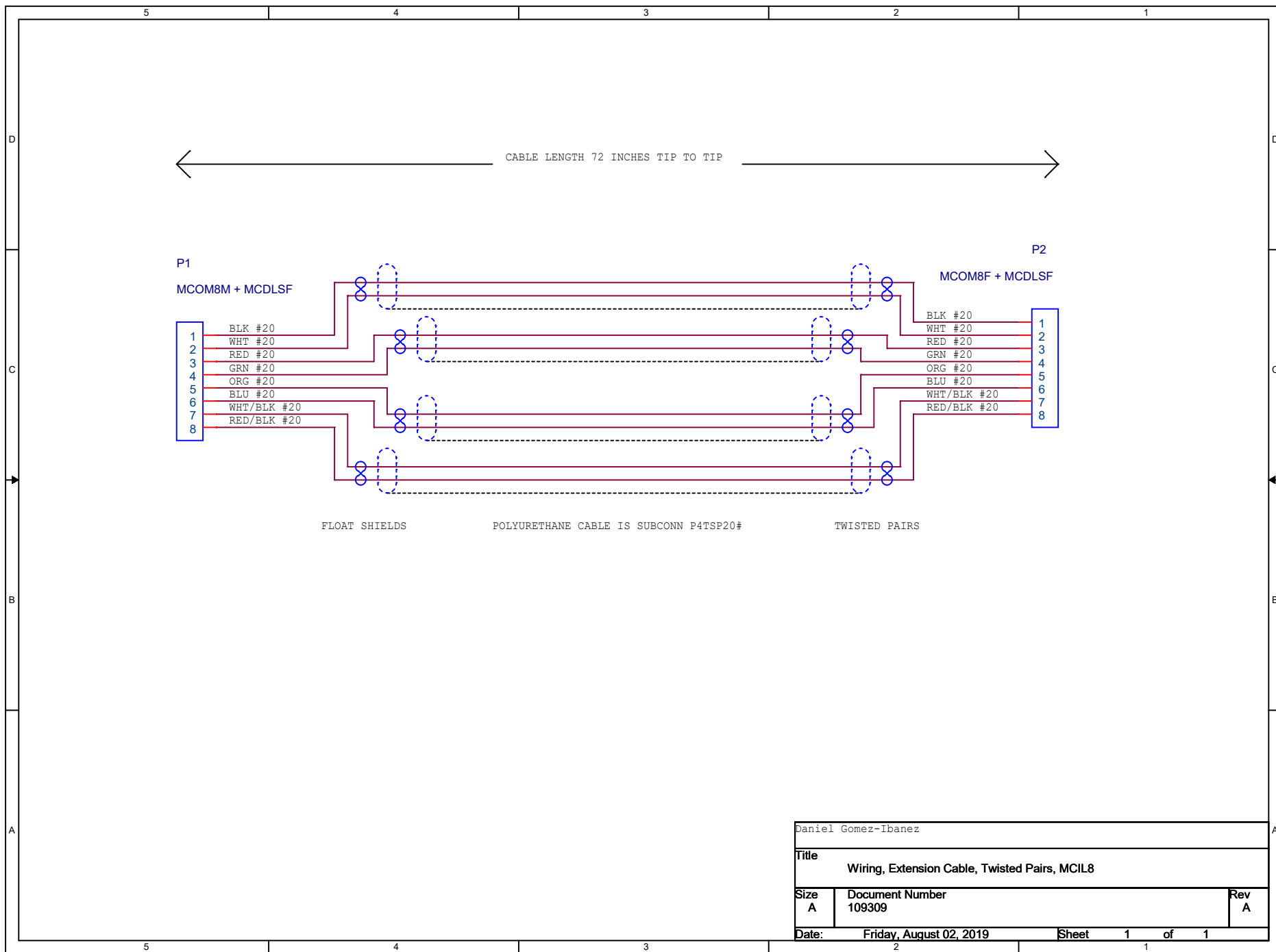
Wednesday, June 05, 2019

Sheet

1

of

1



D

C

B

A

5

4

3

2

1

D

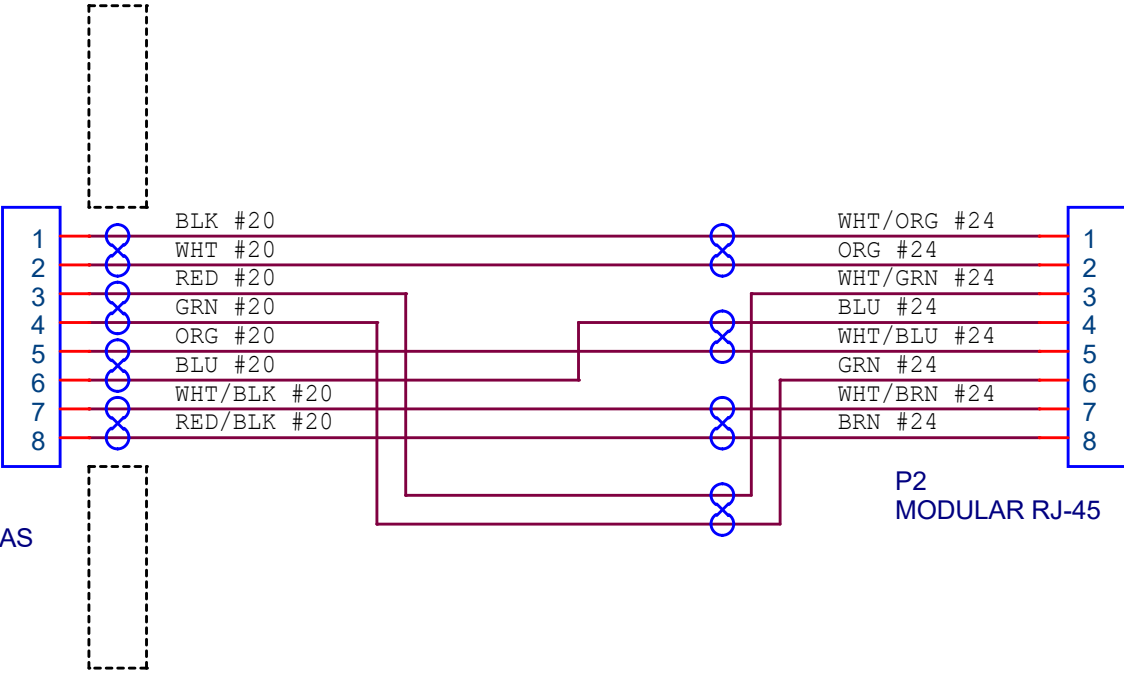
C

B

A

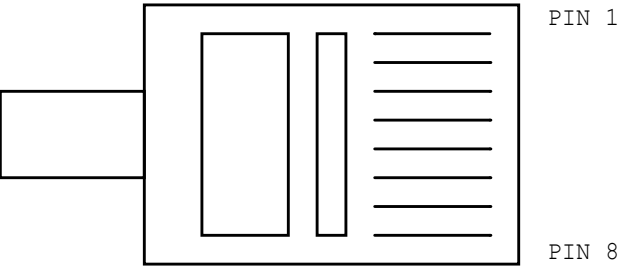
ALUMINUM ENDCAP

J1
SUBCONN
MCBH8MAS



UBIQUITI BULLET M2HP

LAIRD TRA24003P



Daniel Gomez-Ibanez			
Title			
Wiring, Bullet WiFi Housing			
Size	Document Number		Rev
A	109310		B
Date:	Thursday, October 24, 2019	Sheet	1 of 1

D

C

B

A

D

C

B

A

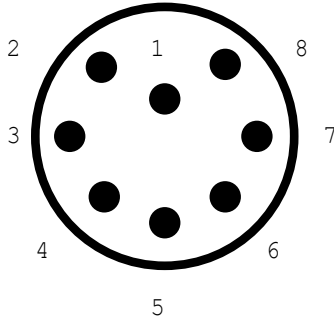
TOTAL LENGTH 6 ft = 72"

SAMPLER+24V
SAMPLER_GND
RESERVED_NC
SAMPLER_TX
SAMPLER_RX
RESERVED_NC
RESERVED_NC
RESERVED_NC
RESERVED_NC

1
2
3
4
5
6
7
8

BLK #20
WHT #20
GRN #20
ORG #20

J1
Subconn
MCIL8F + MCDLS-M



BLK #20
WHT #20
GRN #20
ORG #20

BLK #18
WHT #18
RED #18
GRN #18

POTTED SPLICE

Use Scotchcast 82-F1 splice kit.

BLK #18
WHT #18
RED #18
GRN #18

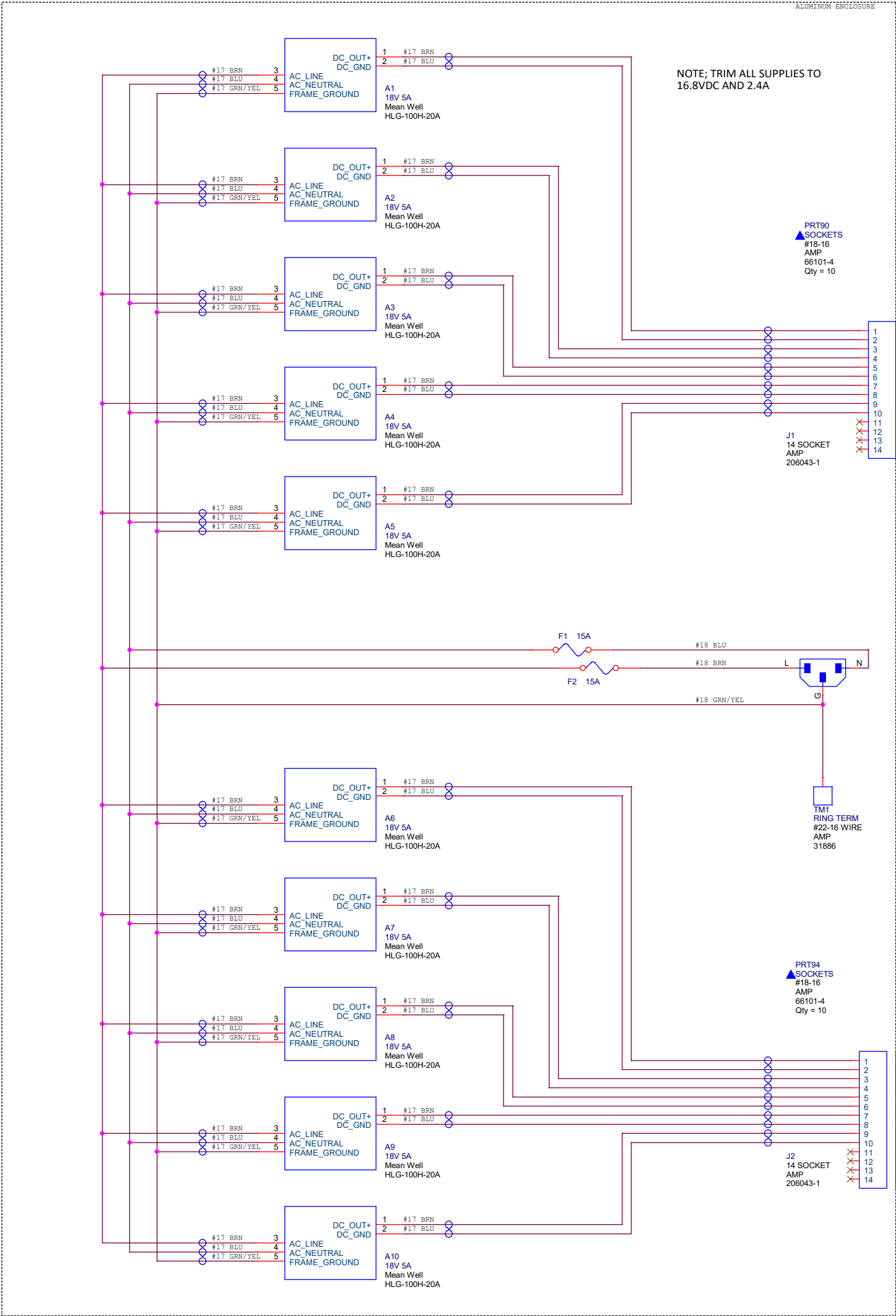
1
2
3
4

GUEST_24V
GUEST_GND
GUEST_UP
GUEST_DOWN

P2
4 PIN
Subconn
MCIL4M + MCDLS-F



Daniel Gomez-Ibanez			
Title			
Wiring, Cable Splice, eDNA Sampler			
Size	Document Number		Rev
A	109342		B
Date:	Thursday, October 24, 2019	Sheet	1 of 1

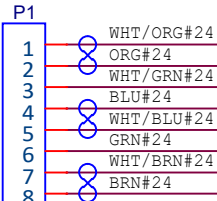


Title		
Wiring, Battery Charger, Mesobot		
Size	Document Number	Rev
C	109240	A
Date:	Wednesday, June 05, 2019	Sheet 1 of 1

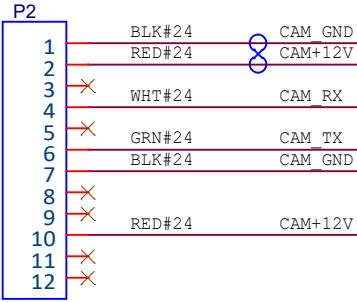
▲PRT3
Lens
SCHNEIDER OPTICS
21-1055691
CINEGON 2.1/6-0901

▲PRT1
Allied Vision
Manta G-319

Ethernet

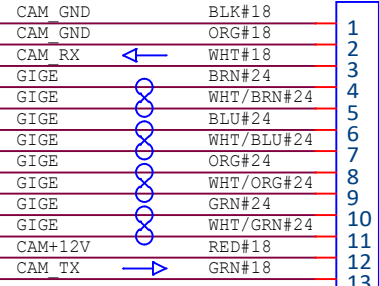


AMP
5-558530-4



Hirose
HR10A-10P-12S

R2 10K



J2
13 PIN
Subconn
DBH13MNM

2019-3-21: FORKED FROM DRAWING 108242C.
2019-4-4: AS WIRED.

Daniel Gomez-Ibanez		
Title		
WIRING, TRACKING CAMERA, MESOBOT		
Size	Document Number	Rev
B	109192	C
Date:	Friday, April 05, 2019	Sheet 1 of 1

▲PRT3
Lens
SONY
FE 90mm
F 2.8 Macro G OSS
SEL90M28G

CAMERA

▲PRT1
Sony
S3CA

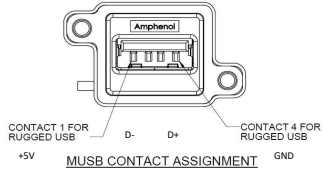
USB 2.0

POWER 12V

SD CARD

P3
CUI
PP-015

RIGHT ANGLE USB CABLE
Permanent Industry
10cm MicroUSB 2 to USB-A



1
2
3
4

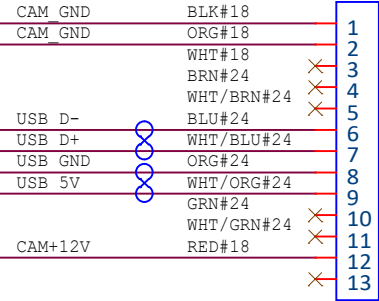
WHT/ORG#24 USB+5V
BLU#24 USB D-
WHT/BLU#24 USB D+
ORG#24 USB_GND

J231
USB A
Amphenol ICC
MUSBAA1130

INSTALL INLINE DISCONNECT: MOLEX 03-06-1023



NOTE: INSTALL SD EXTENSION CABLE AMAZON WINTERSWEET K25SD-SD AND ALIGN WITH HOUSING ENDCAP WINDOW



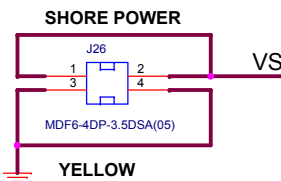
1
2
3
4
5
6
7
8
9
10
11
12
13

J2
13 PIN
Subconn
DBH13MNM

Daniel Gomez-Ibanez			
Title			
WIRING, SONY S3CA CAMERA, MESOBOT			
Size	Document Number		Rev
B	109239		B
Date:	Wednesday, June 05, 2019	Sheet	1 of 1

SWITCH TO SHORE POWER VS = 14.5V OR VS>V1
SWITCH BACK TO MAIN BATTERY VS < 12.0V

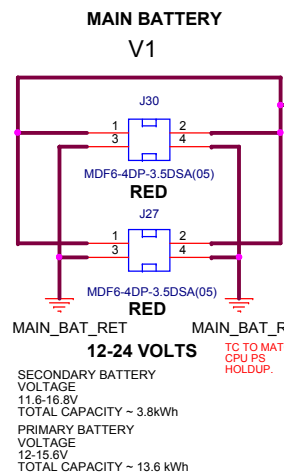
MAXIMUM VOLTAGE: 24V



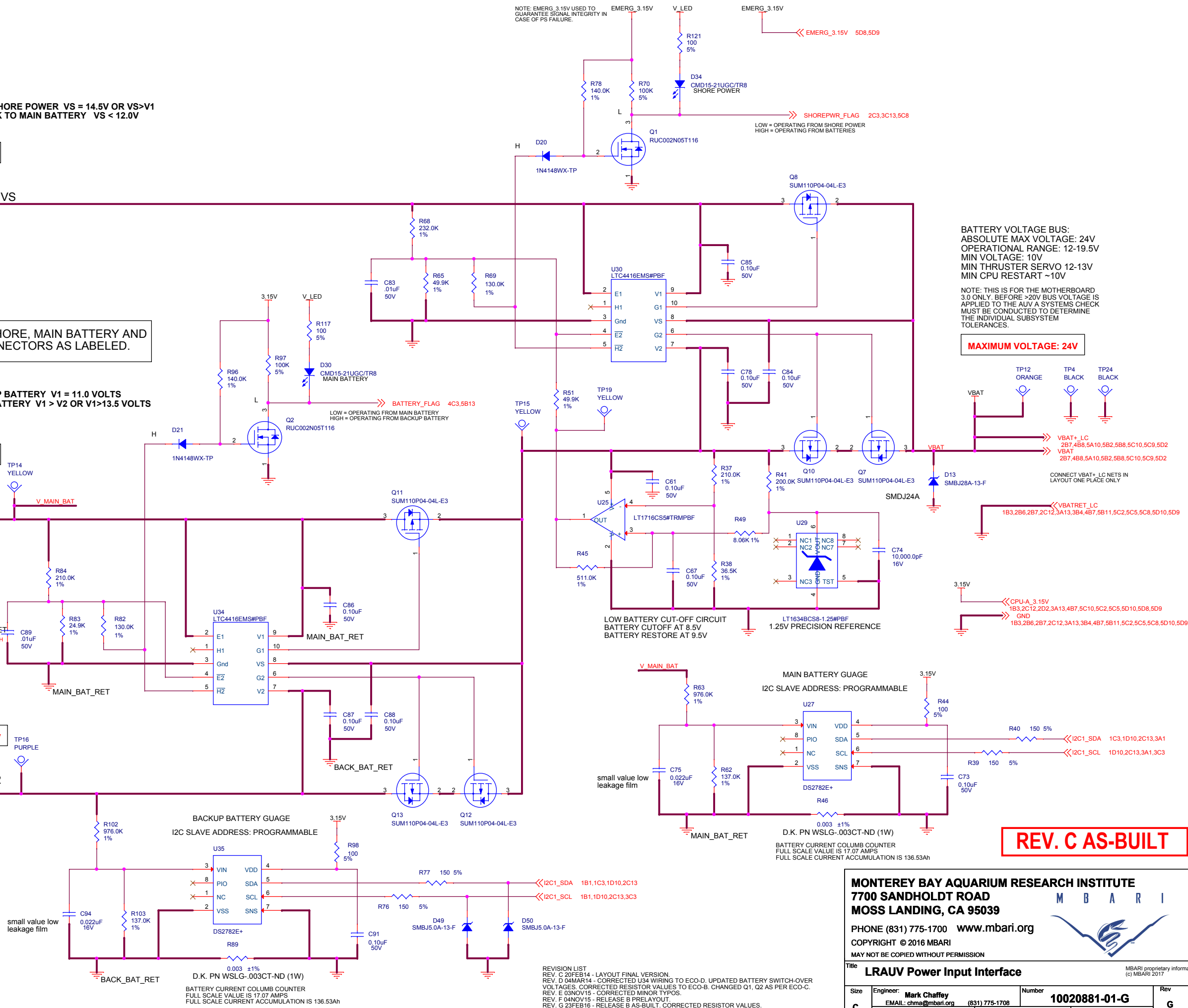
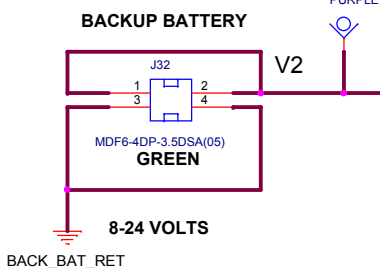
NOTE!: COLOR CODE SHORE, MAIN BATTERY AND BACKUP BATTERY CONNECTORS AS LABELED.

SWITCH TO BACKUP BATTERY V1 = 11.0 VOLTS
SWITCH TO MAIN BATTERY V1 > V2 OR V1>13.5 VOLTS

MAXIMUM VOLTAGE: 24V



MAXIMUM VOLTAGE: 24V



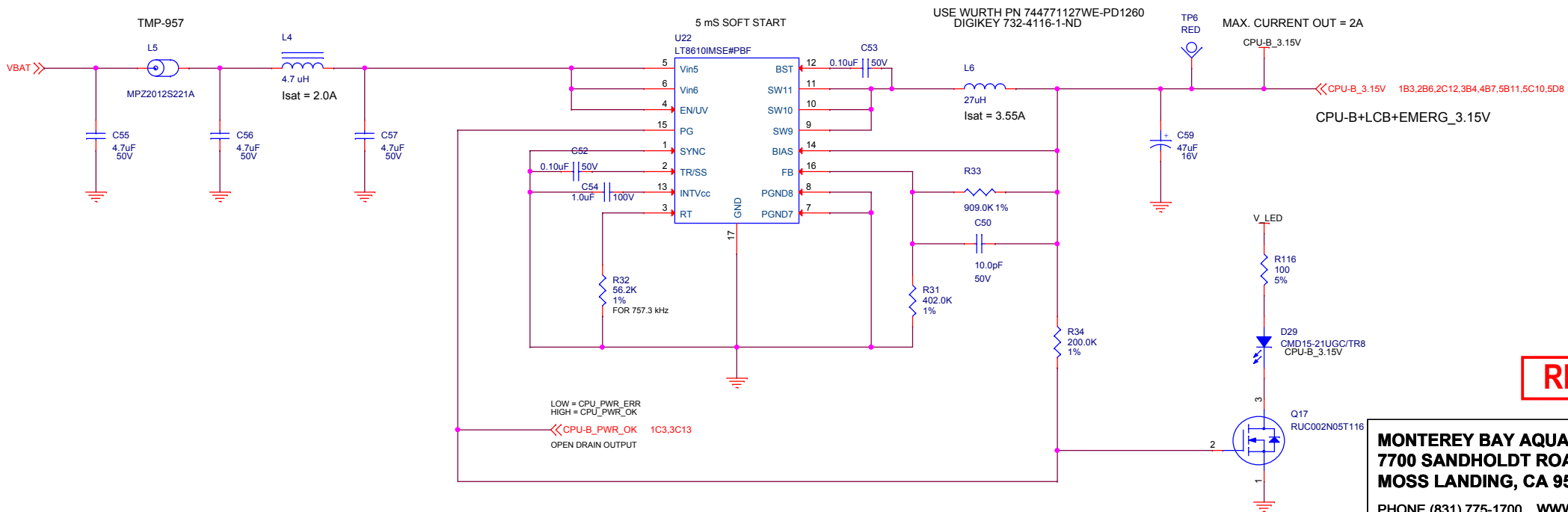
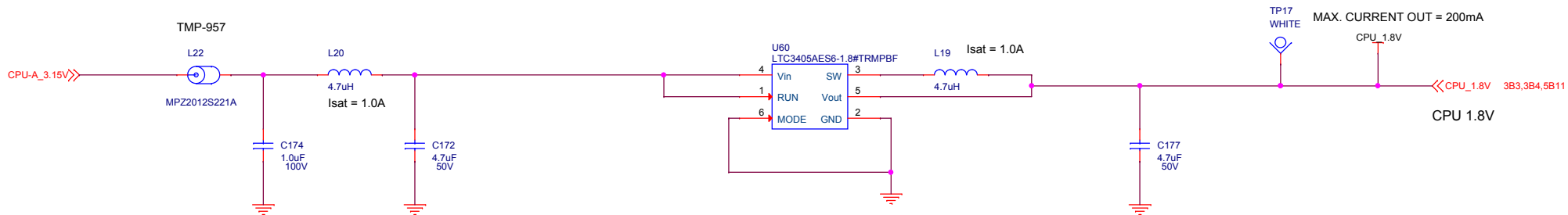
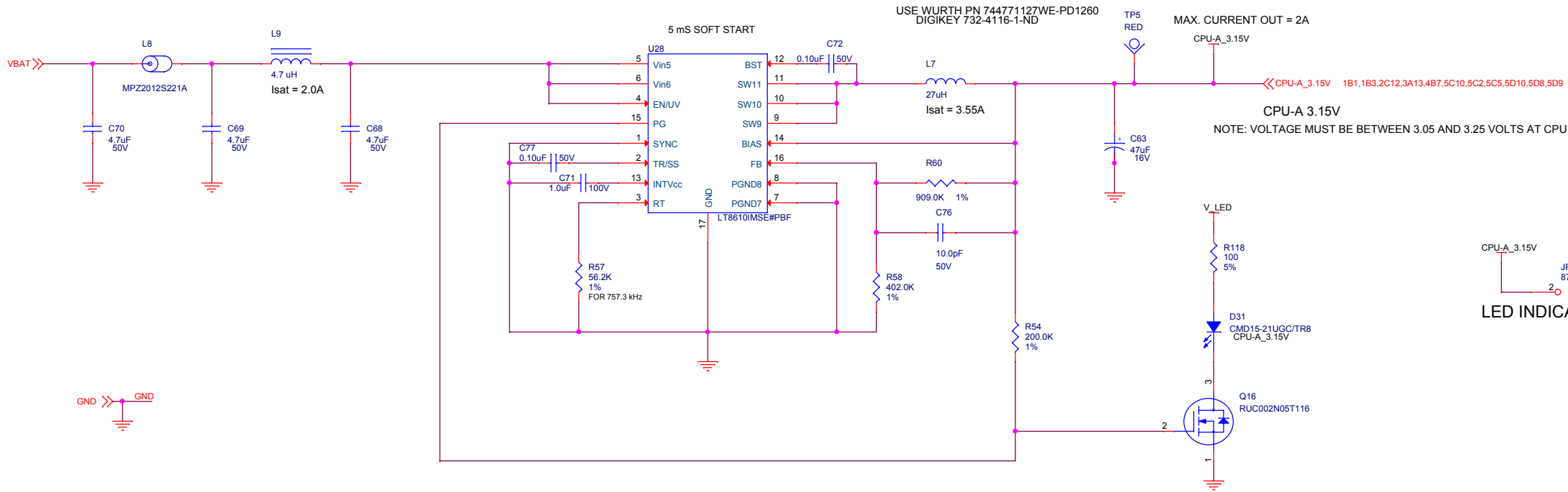
REVISION LIST
REV. C 20FEB14 - LAYOUT FINAL VERSION.
REV. D 04MAR14 - CORRECTED U34 WIRING TO ECO-D. UPDATED BATTERY SWITCH-OVER VOLTAGES. CORRECTED RESISTOR VALUES TO ECO-B. CHANGED Q1, Q2 AS PER ECO-C.
REV. E 03NOV15 - CORRECTED MINOR TYPES.
REV. F 04NOV15 - RELEASE B PRELAYOUT.
REV. G 23FEB16 - RELEASE B AS-BUILT. CORRECTED RESISTOR VALUES.

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Title LRAUV Power Input Interface
Size Engineer: Mark Chaffey
Email: chma@mbari.org (831) 775-1708
Date: Tuesday, July 25, 2017
Number 10020881-01-G
Filename 10020881-A_LRAUVMotherBoard
Sheet 1 of 13
Rev G

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REV. C AS-BUILT

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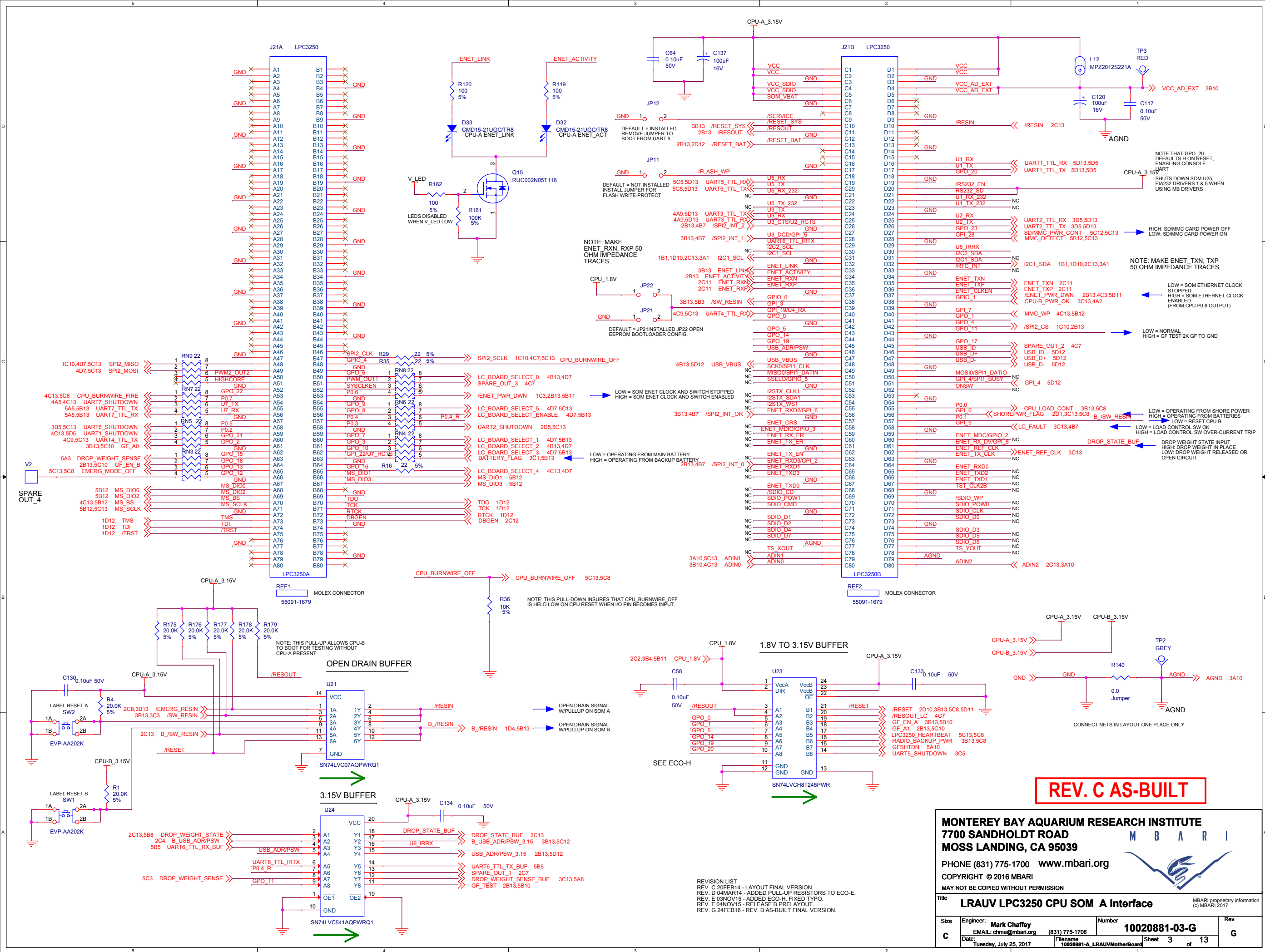
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Title LRAUV Local Power Conversion

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Size	Engineer: Mark Chaffey EMAIL: chma@mbari.org	Number	10020881-02-G	Rev	G
C	Date: Tuesday, July 25, 2017	Filename	10020881-A_LRAUVMotherBoard	Sheet	2 of 13

REVISION LIST
REV. D 16JAN14 - LAYOUT FINAL VERSION.
REV. E 05MAR14 - AS-BUILT FINAL VERSION.
REV. F 04NOV15 - RELEASE B PRELAYOUT.
REV. G 23FEB16 - RELEASE B AS-BUILT, CORRECTED RESISTOR VALUES.



REV. C AS-BUILT

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LRAUV LPC3250 CPU SOM A Interface

Size: C Engineer: Mark Chaffey EMAIL: mchaffey@mbari.org (831) 775-1708 Date: Tuesday, July 25, 2017 Number: 10020881-03-G Sheet 3 of 13 Rev: G



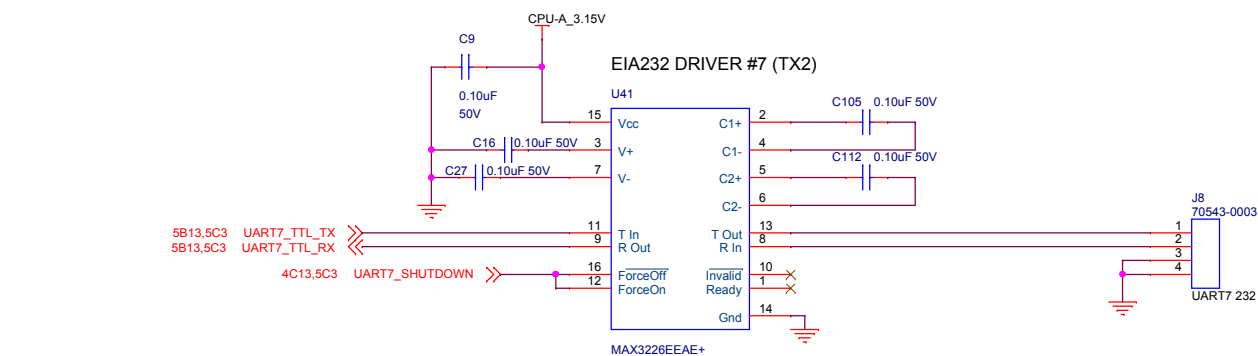
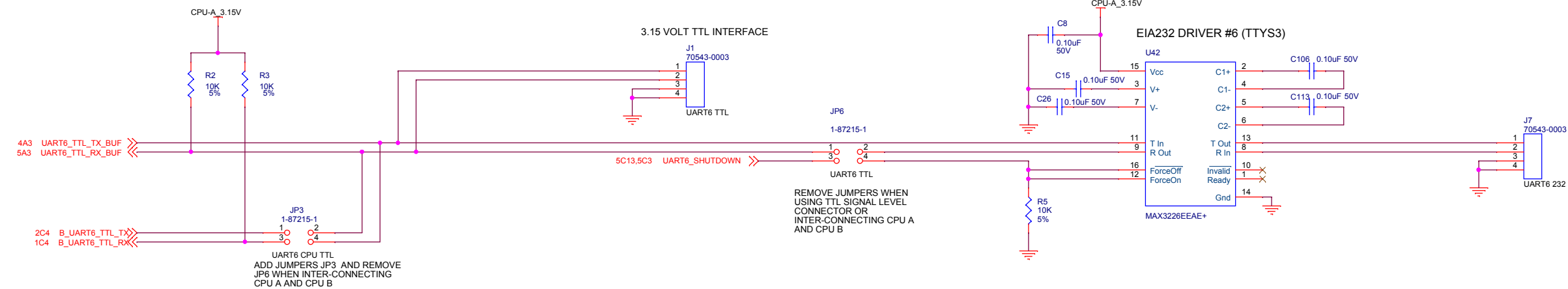
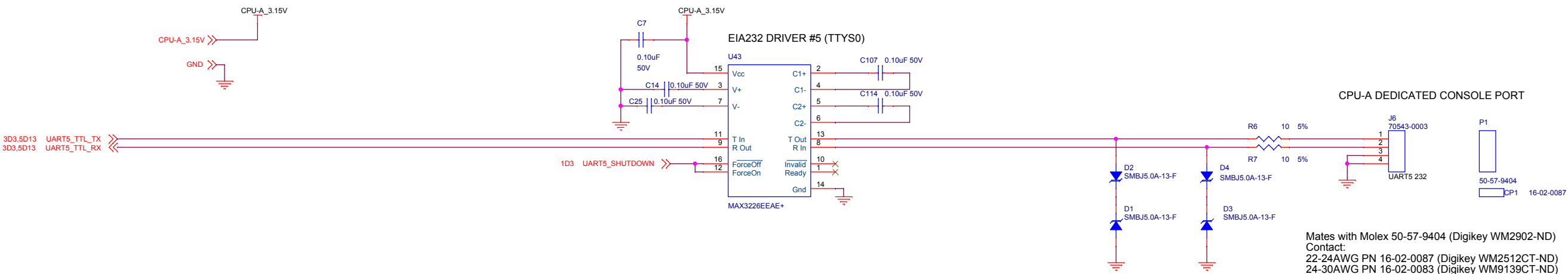
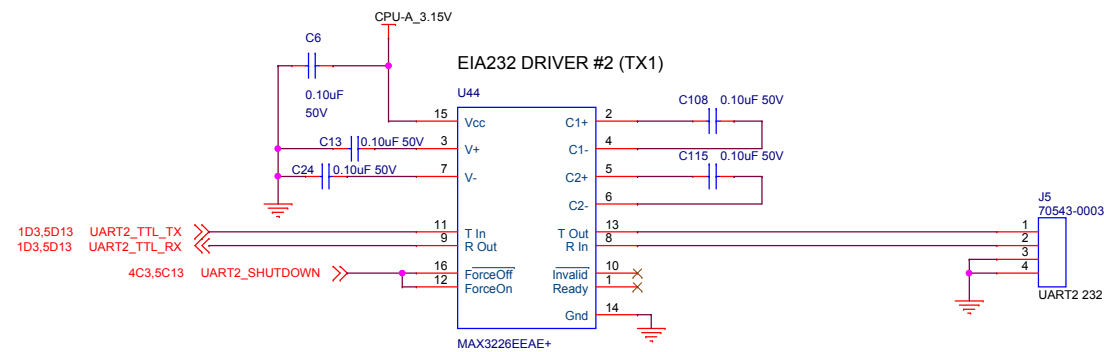
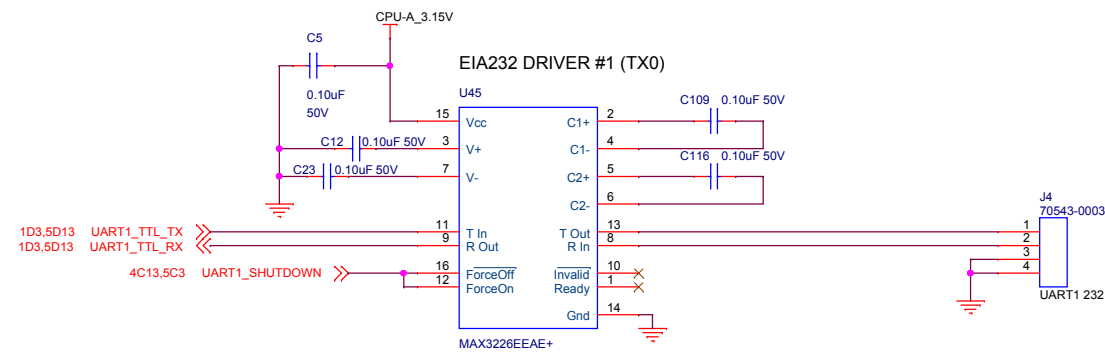
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REVISION LIST
REV. C 20FEB14 - LAYOUT FINAL VERSION.
REV. D 03NOV15 - FIXED TYPO.
REV. E 04NOV15 - RELEASE B PRELAYOUT.
REV. G 24FEB16 - REV. B AS-BUILT FINAL VERSION.



REV. C AS-BUILT

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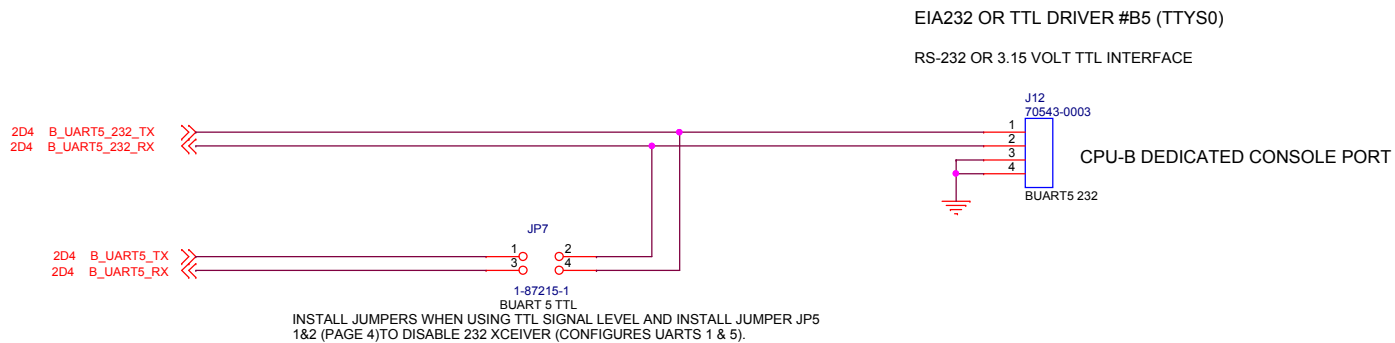
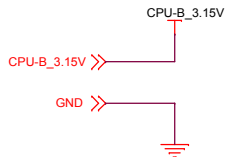
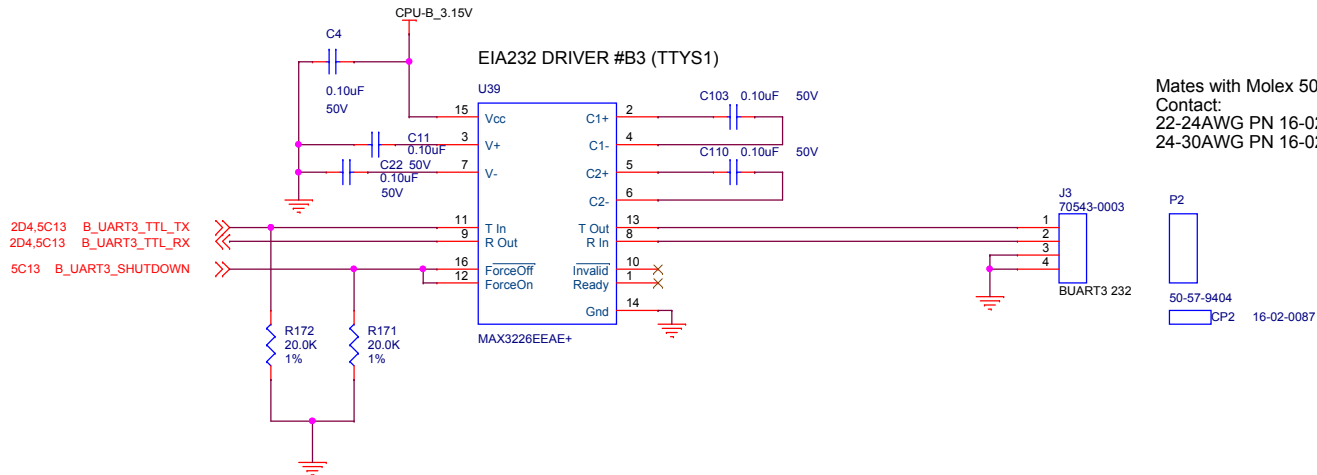
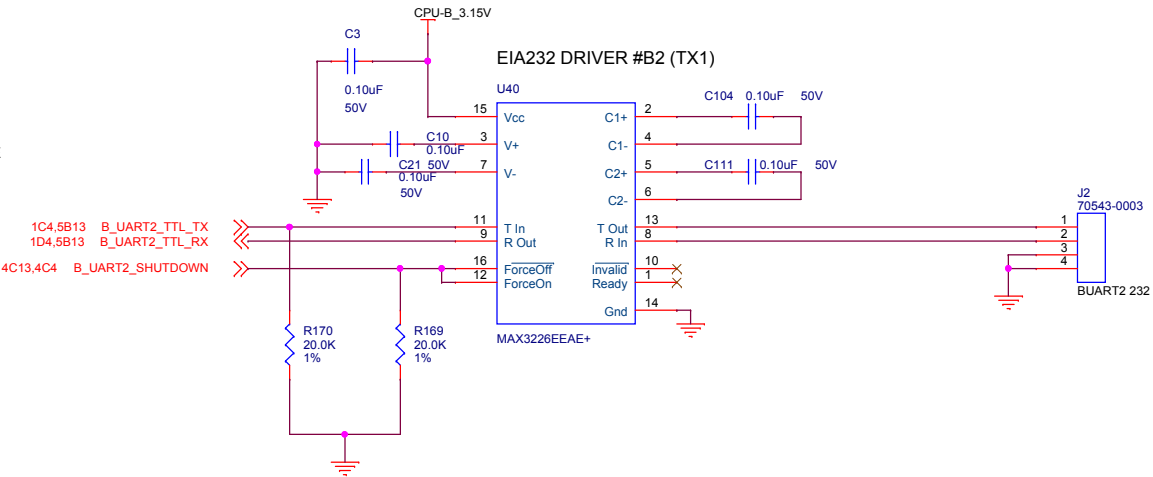
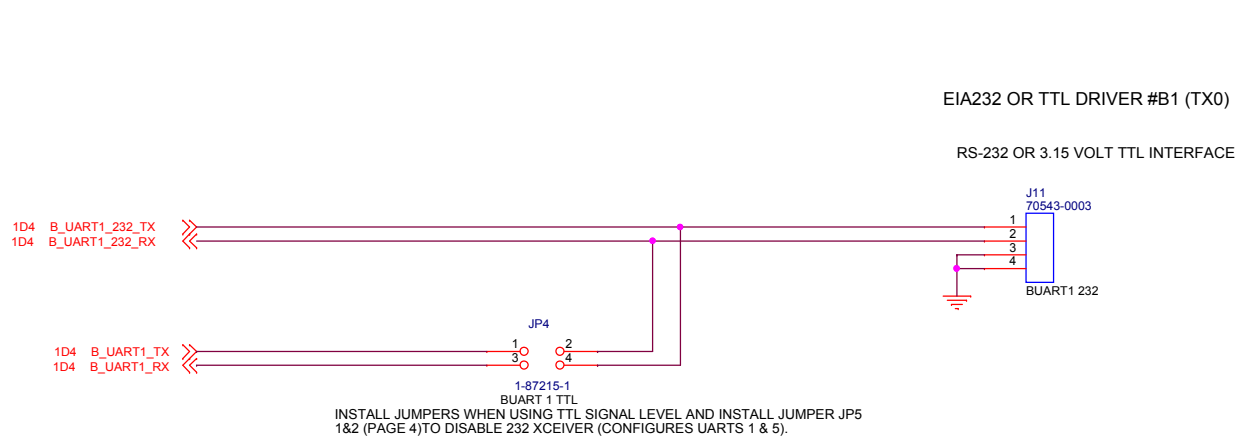
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Title LRAUV EIA232 CPU-A Serial Communications Interface

Size	Engineer: Mark Chaffey EMAIL: chma@mbari.org	Number	10020881-05-G	Rev	G
C	Date: Tuesday, July 25, 2017	Filename	10020881-A_LRAUVMotherBoard	Sheet	5 of 13

REVISION LIST
REV. C 20FEB14 - LAYOUT FINAL VERSION.
REV. D 03MAR14 - AS-BUILT FINAL.
REV. E 04NOV15 - RELEASE B PRELAYOUT.
REV. G 24FEB16 - REV. B AS-BUILT FINAL VERSION.



REV. C AS-BUILT

REVISION LIST
REV. C 20FEB14 - LAYOUT FINAL VERSION.
REV. D 04MAR14 - ADDED PULL-DOWN RESISTORS TO ECO-E.
REV. E 03NOV15 - CORRECTED MINOR TYPO. AS BUILT FINAL.
REV. F 04NOV15 - RELEASE B PRELAYOUT.
REV. G 24FEB16 - REV. B AS-BUILT FINAL VERSION.

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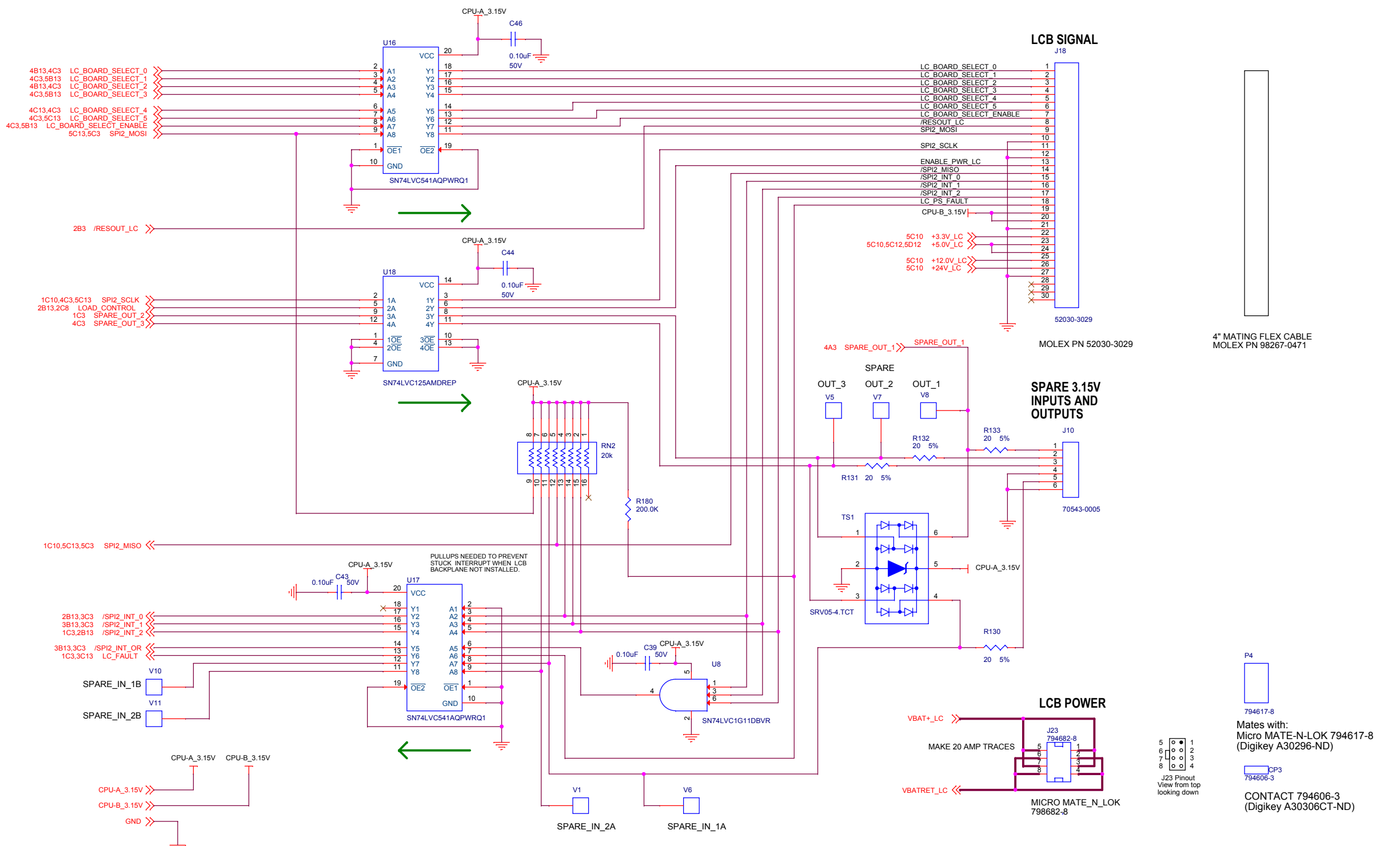
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Title: **LRAUV EIA232 CPU-B Serial Communications Interface**

Size: C	Engineer: Mark Chaffey EMAIL: chma@mbari.org	Number: 10020881-06-G	Rev: G
Date: Tuesday, July 25, 2017	Filename: 10020881-A_LRAUVMotherBoard	Sheet: 6	of: 13



REV. C AS-BUILT

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LRAUV Load Control Board Interface

Title

Engineer: **Mark Chaffey**
EMAIL: chma@mbari.org (831) 775-1708

Date: Tuesday, July 25, 2017

Number

10020881-07-J

Filename: 10020881-A_LRAUVMotherBoard

Rev

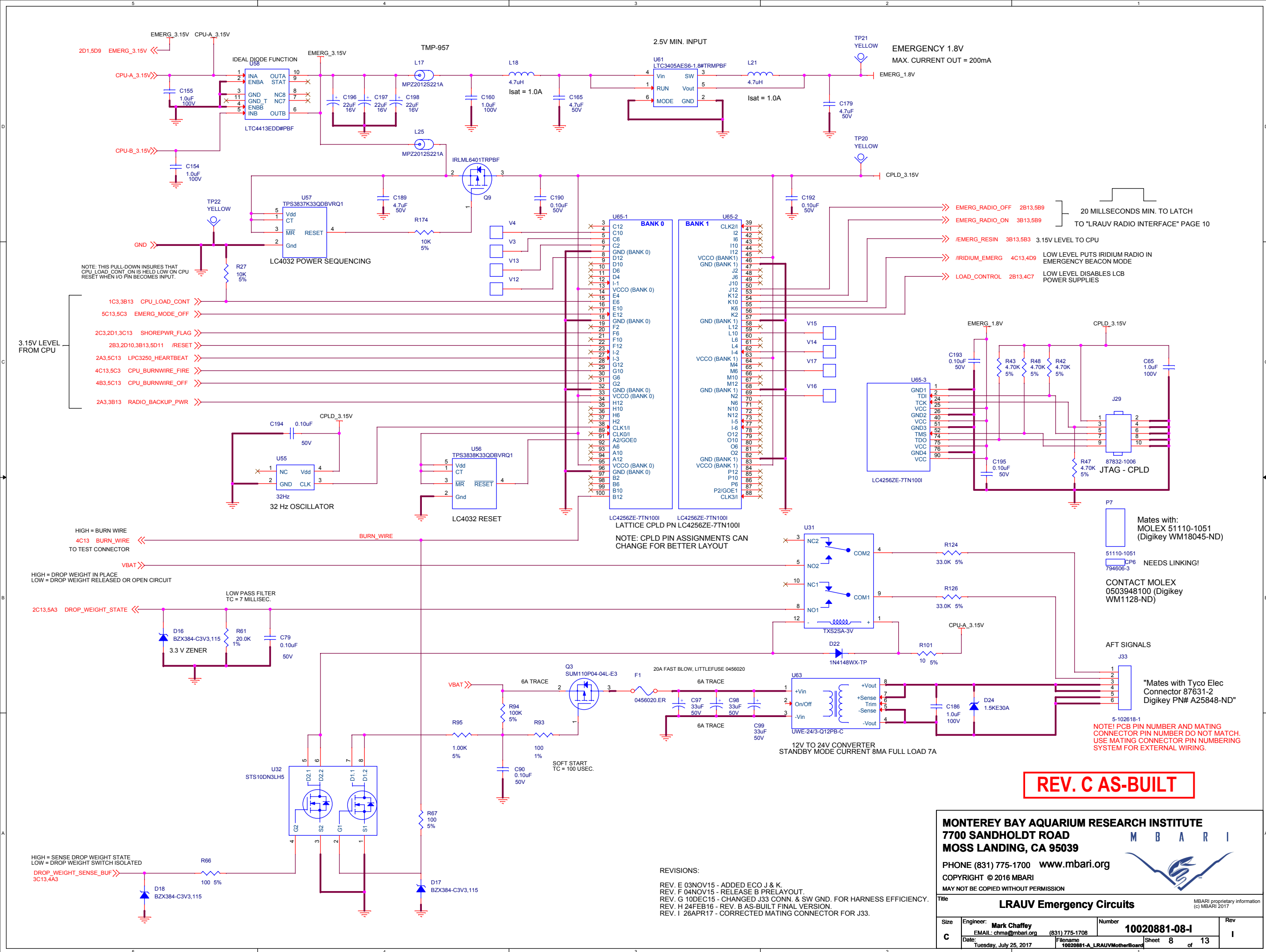
J

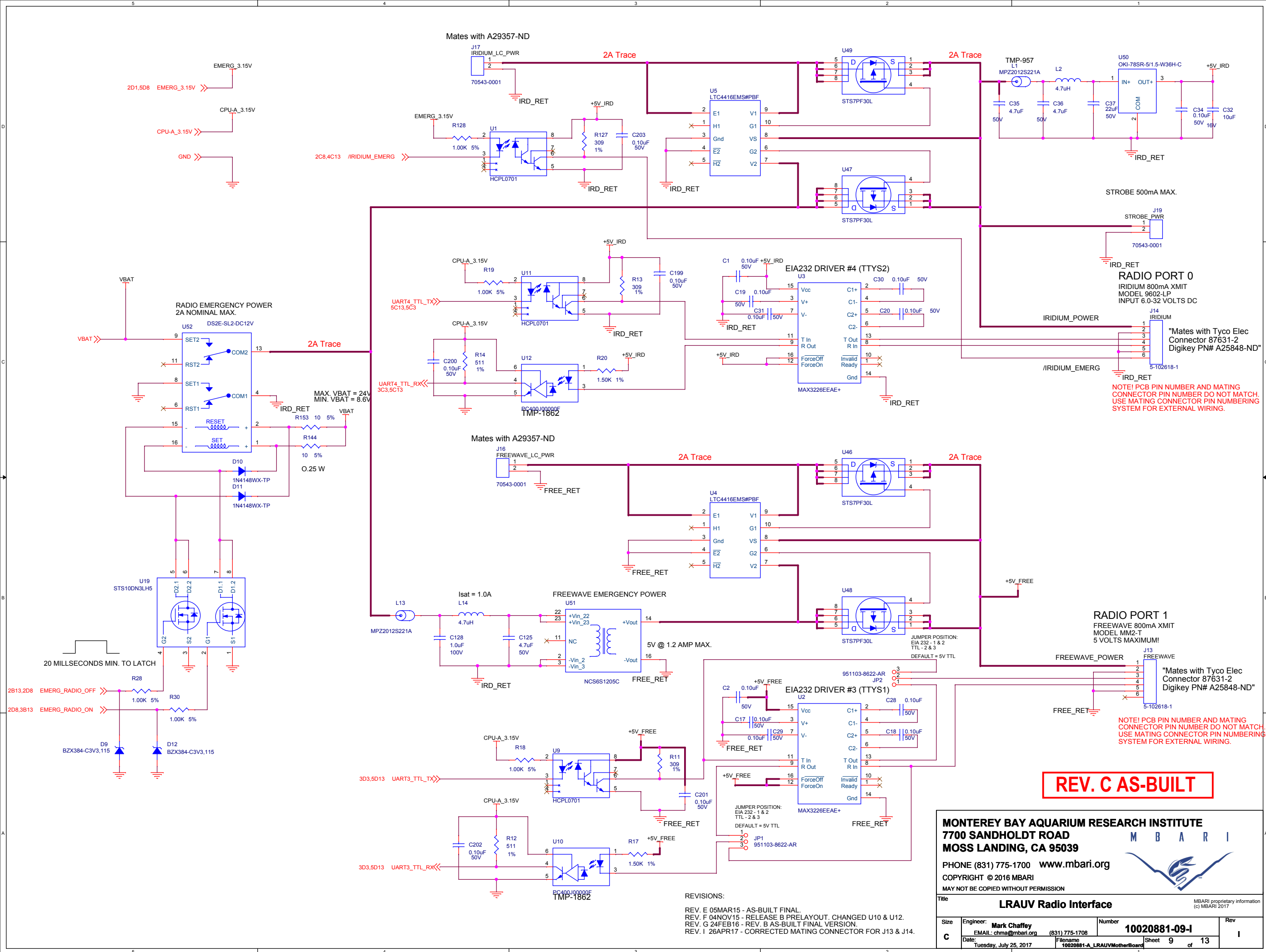
Sheet 7 of 13

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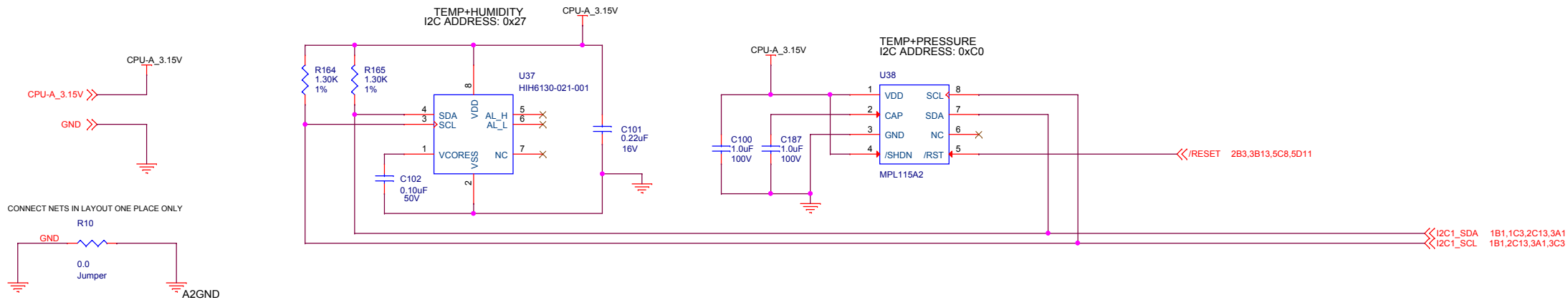
REVISIONS:

REV. D 08JAN15 - ADDED ECO H
REV. E 04NOV15 - RELEASE B PRELAYOUT. MODIFIED J23 TO MATCH LCB PIN-OUT.
REV. G 24FEB16 - REV. B AS-BUILT FINAL VERSION.
REV. H 22APR16 - ADDED ECO A.
REV. I 25APR16 - CHANGED ECO A TO 200K OHMS.
REV. J 25MAY17 - INCORPORATED ECO A INTO SCHEMATIC.

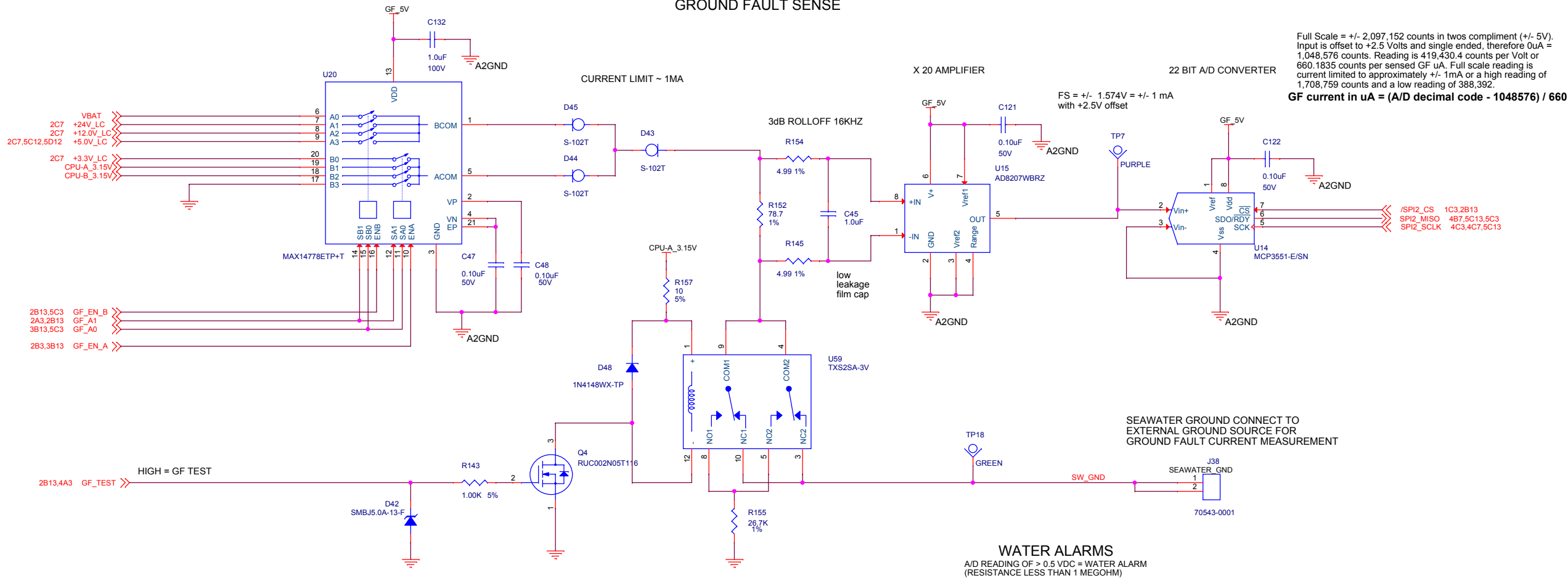




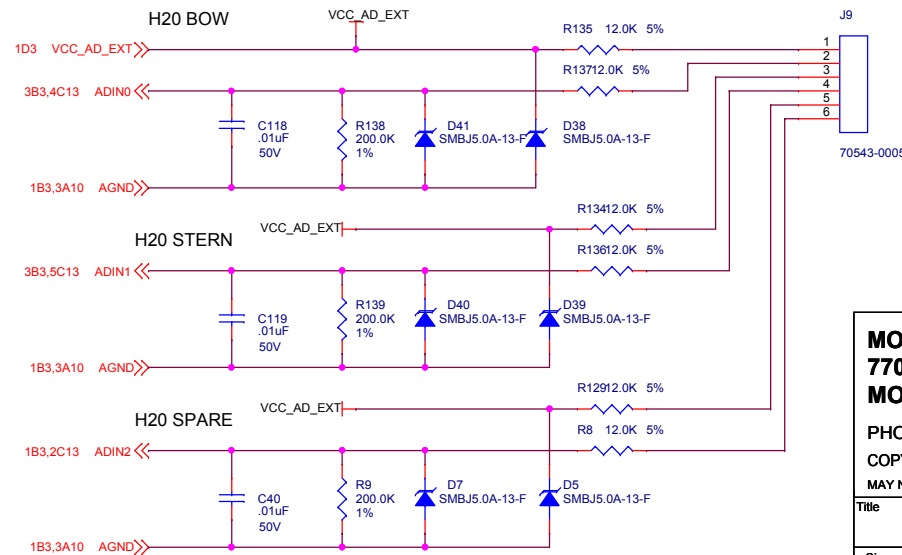
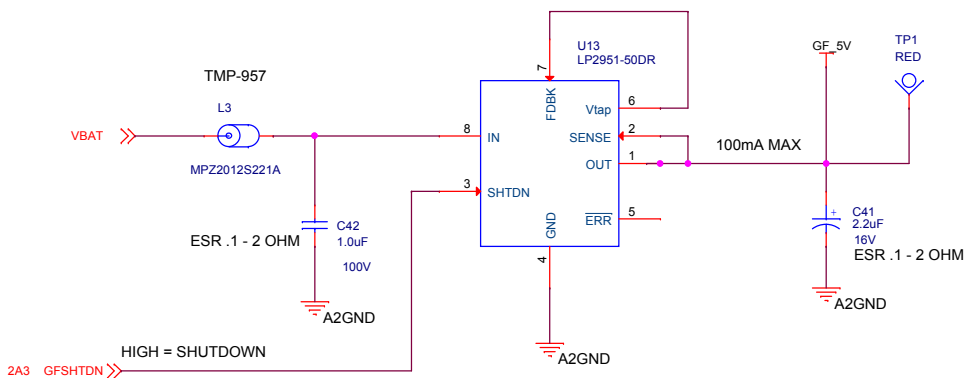
TEMPERATURE HUMIDITY AND PRESSURE SENSE



GROUND FAULT SENSE



LOCAL POWER SUPPLY



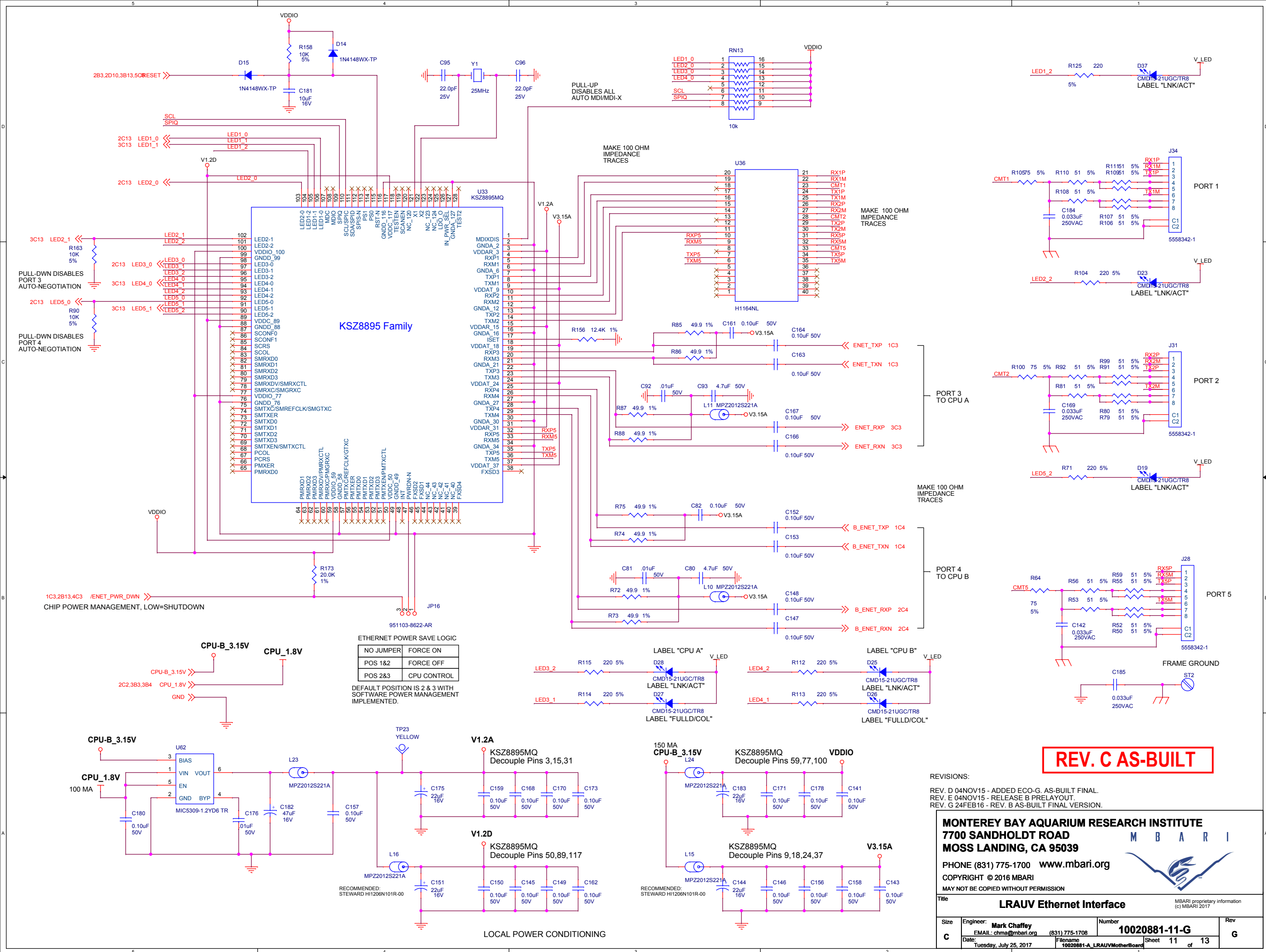
REV. C AS-BUILT

REVISIONS:
REV. E 05MAR15 - AS-BUILT FINAL.
REV. F 04NOV15 - CHANGED R164 & R165. CORRECTED MINOR TYPO.
REV. G 05NOV15 - RELEASE B PRELAYOUT.
REV. H 10DEC15 - ADDED J38 FOR SEAWATER GND FOR HARNESS EFFICIENCY.
REV. I 24FEB16 - REV. B AS-BUILT FINAL VERSION.
REV. J 22APR16 - CORRECTED A/D CONVERSION VALUES & U38 ADDRESS.
REV. K 23JAN17 - ADDED ECO B TO U15.
REV. L 25MAY17 - INCORPORATED ECO B INTO SCHEMATIC.

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LRAUV Internal Sensor Interfaces

Size: Engineer: **Mark Chaffey** Number: **10020881-10-L** Rev: **L**
C: EMAIL: chma@mbari.org (831) 775-1708
Date: Tuesday, July 25, 2017 Filename: 10020881-A_LRAUVMotherBoard Sheet 10 of 13



REV. C AS-BUILT

REVISIONS:

REV. D 04NOV15 - ADDED ECO-G. AS-BUILT FINAL.
REV. E 04NOV15 - RELEASE B PRELAYOUT.
REV. G 24FEB16 - REV. B AS-BUILT FINAL VERSION.

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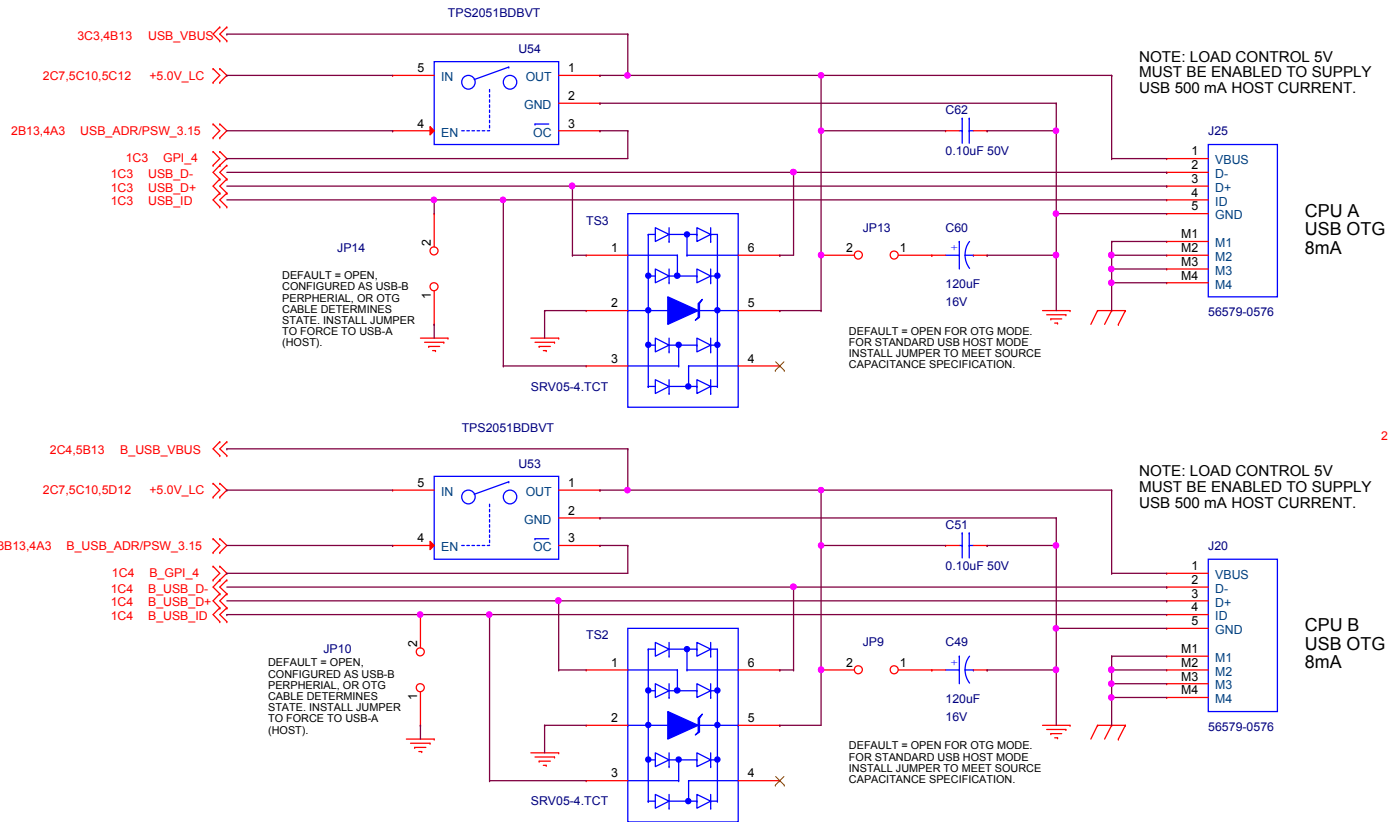
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Title	LRAUV Ethernet Interface
-------	---------------------------------

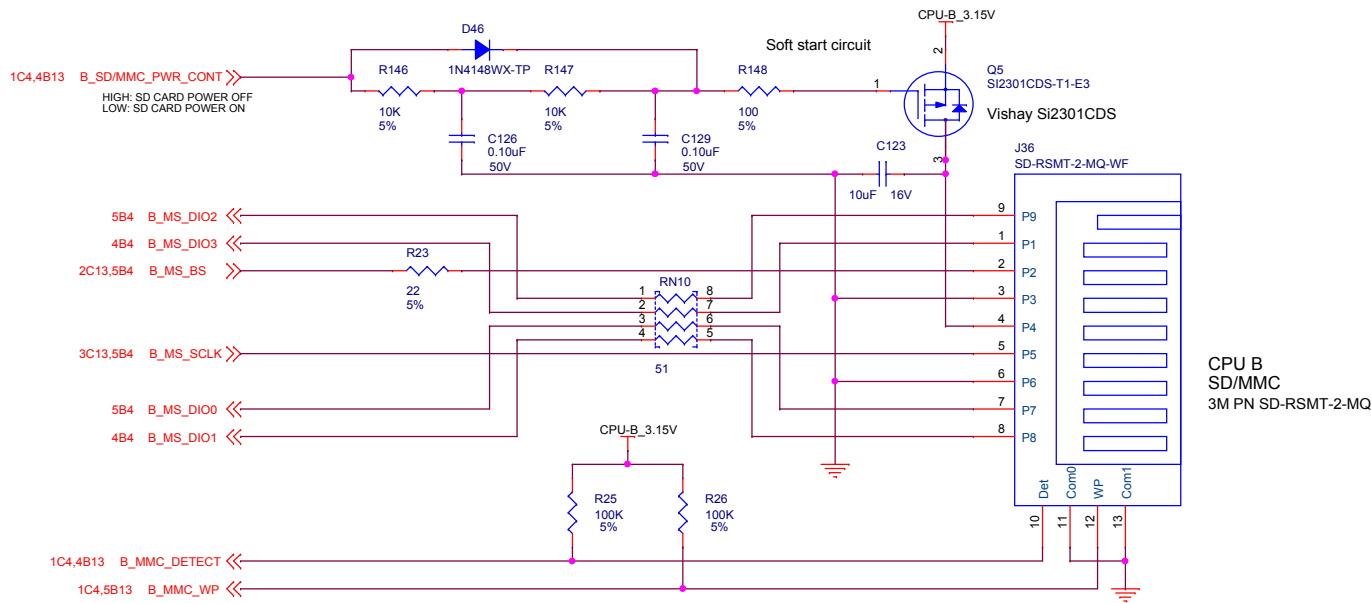
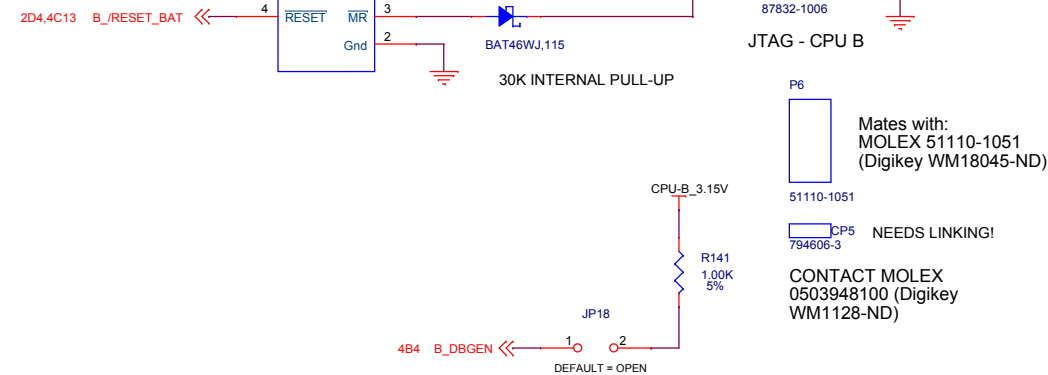
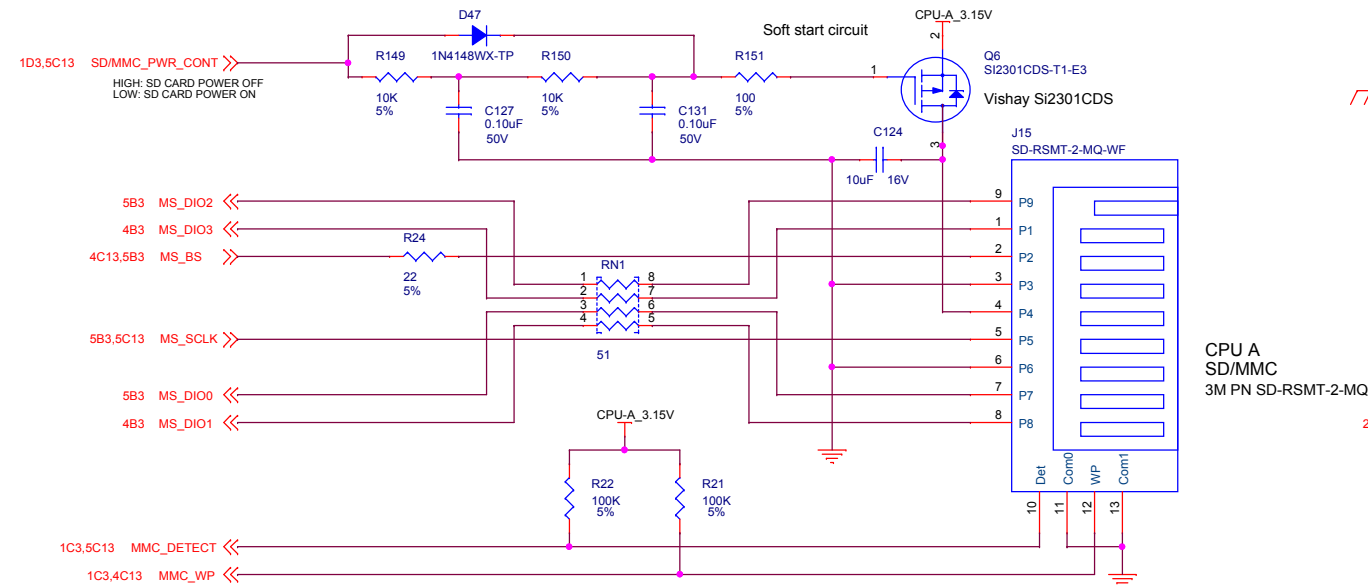
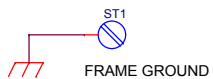
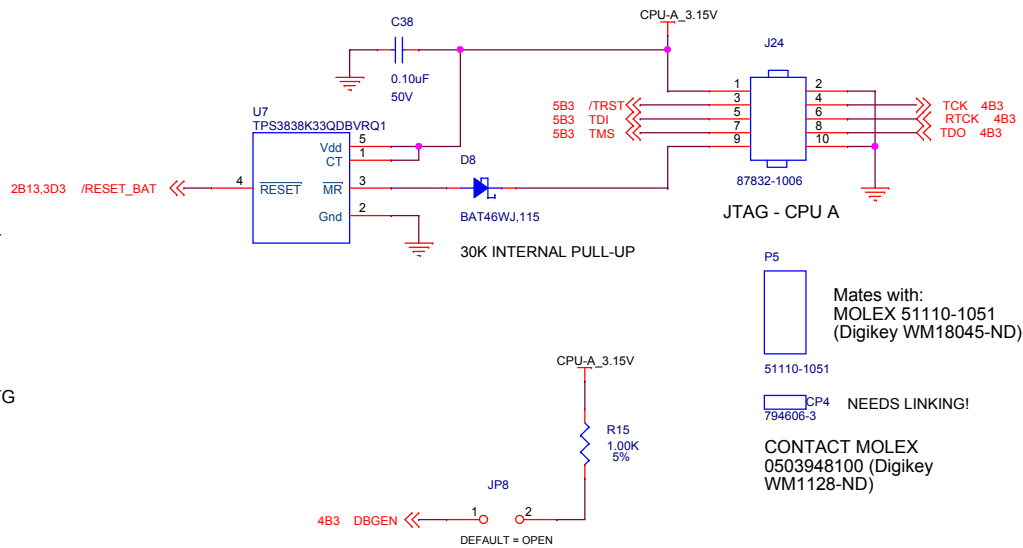
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Size C	Engineer: Mark Chaffey EMAIL: chma@cmbart.org (831) 775-1708	Number 10020881-11-G	Rev G
	Date: Tuesday, July 25, 2017	Filename 10020881-A_LRAUVMotherBoard	Sheet 11 of 13



USB PORTS SUPPORT IN-HOUSING USE ONLY. FOR OUT-OF-HOUSING USE, ISOLATION MUST BE PROVIDED BY POWERING DEVICE FROM A LOAD CONTROL BOARD (LCB) AND ROUTING USB DIFFERENTIAL PAIR THROUGH ISOLATION CIRCUIT.



REV. C AS-BUILT

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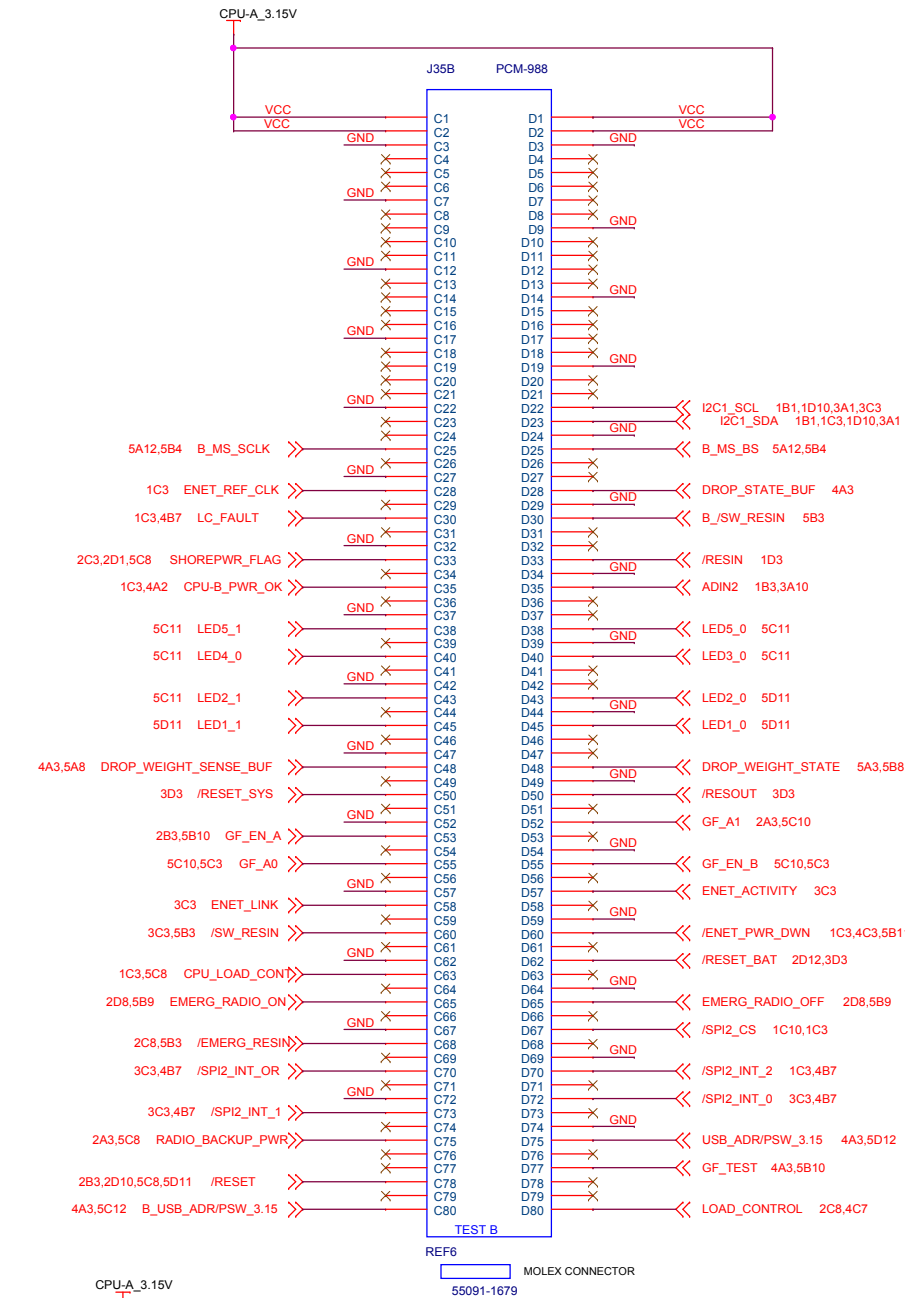
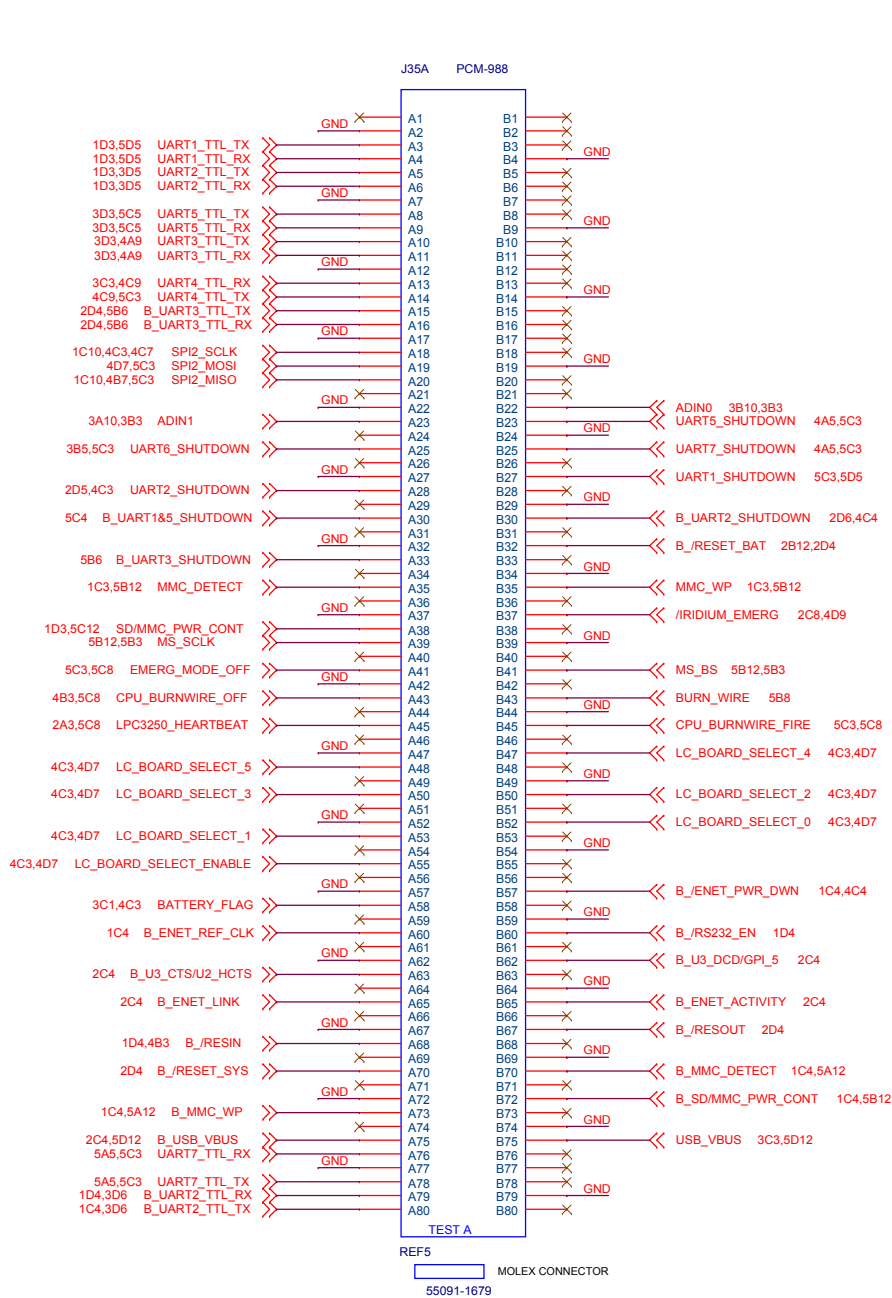
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Title				MBARI proprietary information (c) MBARI 2017	
LRAUV SD and JTAG Interfaces					
Size	Engineer: Mark Chaffey EMAIL: chma@mbari.org	Number	10020881-12-G	Rev	
C	Date: Tuesday, July 25, 2017	Filename	10020881-A_LRAUVMotherBoard	Sheet	12 of 13

REVISION LIST
REV. C 20FEB14 - LAYOUT FINAL VERSION.
REV. D 27JAN15 - CORRECTED MINOR TYPO ON USB PORT.
REV. E 09NOV15 - RELEASE B PRE-LAYOUT.
REV. G 24FEB16 - REV. B AS-BUILT FINAL VERSION.



MATING CONNECTOR AND
BREAKOUT
PHYTEC PN PCM988

NOTES:

1. SPACE CONNECTORS ON EDGE OF MOTHERBOARD TO MATCH PHYTEC BREAKOUT PN PCM988.
2. CONNECTOR PIN ASSIGNMENT CAN BE CHANGED TO IMPROVE LAYOUT EXCEPT FOR POWER AND GND PINS.

REVISION LIST
REV. C - 05MAR14 - LAYOUT FINAL VERSION.
REV. G - 24FEB16 - REV. B AS-BUILT FINAL VERSION.

REV. C AS-BUILT

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Title

LRAUV Test Connector Interface

Size

C

Engineer:

Mark Chaffey

EMAIL:

chma@mbari.org

Date:

Tuesday, July 25, 2017

Number

10020881-13-G

Rev

G

Filename

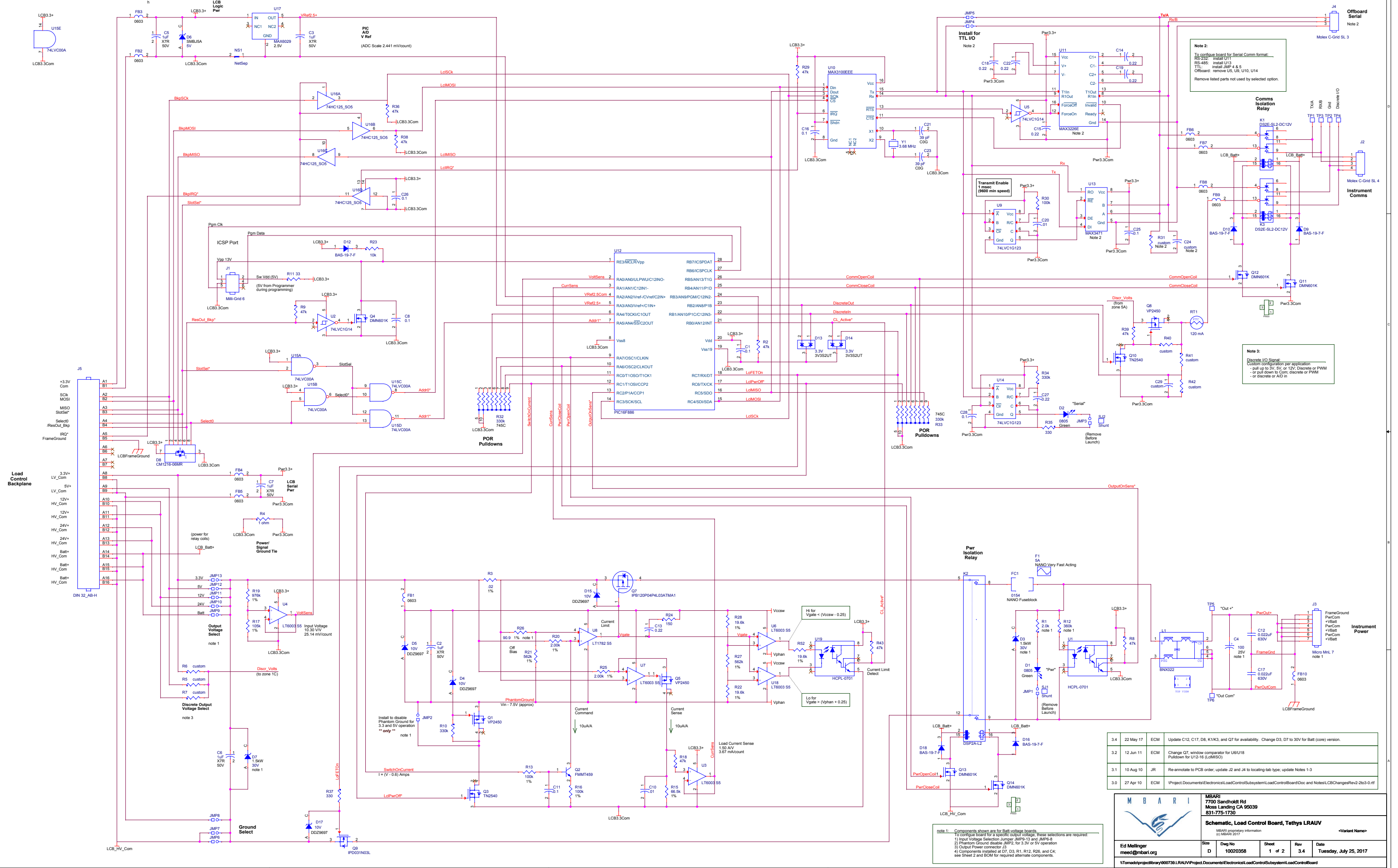
10020881-A_LRAUVMotherBoard

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Note 2:
To configure board for Serial Comm format:
RS-232: install U11
RS-485: install U13
TTL: install JMP 4 & 5
Offboard: remove U5, U10, U10, U14
Remove listed parts not used by selected option.

Note 3:
Discrete I/O Signal
Custom configuration per application
- pull up to 3V, 5V, or 12V. Discrete or PWM
or pull down to Com. discrete or PWM
- or discrete or A/D in

3.4	22 May 17	ECM	Update C12, C17, D8, K1/K3, and Q7 for availability. Change D3, D7 to 30V for Batt (core) version.
3.2	12 Jun 11	ECM	Change Q7, window comparator for U6/U18 Pull-down for U12-16 (LdMISO)
3.1	10 Aug 10	JR	Re-annotate to PCB order; update J2 and J4 to locating-tab type; update Notes 1-3
3.0	27 Apr 10	ECM	VProject Documents\Electronic\LoadControlSubsystem\LoadControlBoard\Doc and Notes\LCBChangesRev2-2to3-0.rtf



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Schematic, Load Control Board, Tethys LRAUV

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<Variant Name>

Ed Mellinger meed@mbari.org	Size D	Dwg No 10020358	Sheet 1 of 2	Rev 3.4	Date Tuesday, July 25, 2017
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