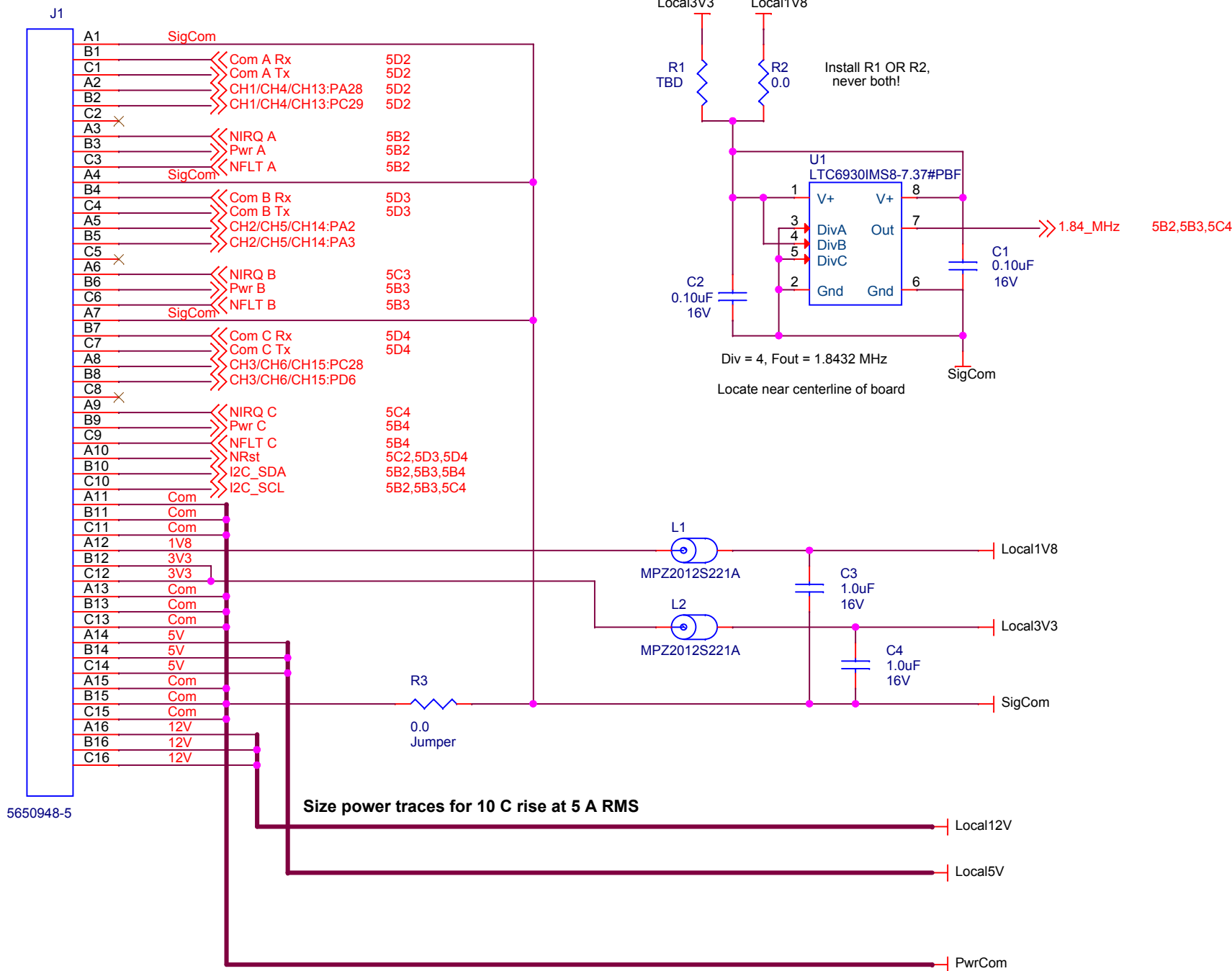




D	24 Aug 2016	ECM	Correct separation of Com and SigCom nets
C	26 May 2016	ECM	Change J1 signal names to match .XLS sheet 13 (18 Apr 16)
B	12 Feb 2016	ECM	Fix NIRQ and NFLT signal names; add 1.8V/3.3V option for oscillator
A	4 Feb 2016	ECM	Initial release for review



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Title Schematic, Bus Interface, Power Switch Board, Coastal Profiling Float			Document Number 100221094	Rev D
Size B	Date: Wednesday, July 19, 2017	Engineer Mellinger	Sheet 1	of 5
Design File X:\CPFI\ELECTRICAL ENGR\ORCAD PROJECTS\IED'S STUFF\SCHEMATICS\100221094-CPF-POWERSWITCH.DSN				
Schematic Name 100221094CPF-PwrSwitchSchematic		Page Name 01BusInterface		Layout File <Layout File>

5D1 CH1/CH4/CH13:PA28
5D1 CH1/CH4/CH13:PC29

5D1 Com A Tx
5D1 Com A Rx

Local3V3
Local1V8
Local3V3

R5 TBD
R6 0.0

Install R5 OR R6,
never both!

5C1,5D3,5D4

Local3V3
SigCom

U4
SN74LVC1G04DBVR

Local3V3
SigCom

SB1
SB2
SB3
SB4
SB5
SB6
SB7
SB8

Default
I2C Addr 0x60:
SB3, SB7

5D1 NIRQ A
4A1,5B3,5C4 1.84_MHz
5B3,5C1,5C4 I2C_SCL
5B3,5B4,5C1 I2C_SDA
5D1 NFLT A
5D1 Pwr A

Local12V
Local5V
PwrCom

Voltage Select A
(Must match
output jumper!)

JP1

L4
BNX024H01L

Note -- Alternate parts for 2.5A Current Limit
Q1: IRFR7440TRPBF 40V/ 2.4 mohm
R21: WSL2512R0200FEA 20 mohm
Clearly mark board "2.5A Current Limit"

Q1
IRFR7440TRPBF

DPak

R21 0.04 ±1%

Current Limit
1.25 A

R22 10 1%

U5
LTC4380IMS-3#PBF

Gate
Sns
Out
Vcc
On
Tmr
Sel
Gnd
Fil

0.75 A
Inrush

C14 47,000.0pF 50V
C15 0.10uF 50V
C16 1.0uF 50V

R24 22.1K 1%

15 msec
timeout

R25 33 5%

R26 42.2K 1%

R23 453.0K
453k for 12V config
165k for 5V config

C12 470uF 16V
Hybrid Polymer

For UART Serial
Install XR20M1280, R7, R10
Remove R8, R9

For Native Serial
Install R8, R9
Remove XR20M1280, R7, R10

Local3V3
SigCom

C8 0.22uF
C9 0.22uF
C10 0.22uF

Pwr A
Local3V3
SigCom

R17
R18

Do Not Stuff
Do Not Stuff

Install R17 for manual control
Install R18 for Autoshtutdown

U3

Vcc
V+
V-
Gnd

C1+
C1-
C2+
C2-
C7 0.22uF
C11 0.22uF

T1In
T2In
T3In
R1Out
R2Out
R3Out
R4Out
R5Out
ForceOff
ForceOn
Invalid

14
13
12
19
18
20
17
16
15
22
23

2.56A FS, 625 uA/count

Local3V3
SigCom

C13 0.10uF 50V

SB9
SB10
SB11
SB12

U6
LTC2946CMS#PBF

SENSE+
SENSE-
Vdd
INTVcc
ADRI
ADRO
GND
ADIN
CLKIN
CLKOUT

1
2
14
12
11
13
9
10

12V config: 24.02V FS, 5.865 mV/count
5V config: 10.06V FS, 2.455 mV/count

1.84_MHz

To use with CTD:
remove XR20M1280 and
remove MAX3244E
install 22k pullup
install TVS array

Sea-Bird SBE-41cp CTD

J2

1 Data Request
2 CTD Data Out
3 Mode
4 Commands (Data In)
5 CTD Power
6 CTD Ground
7 Pump Ground
8 Pump Power In
9 Pump Power In
10 Pump Power In

M80-5401042
Datamate J-Tek

1X of this section

Comm and Pwr A

J3

1 232 Tx
2 232 RTS
3 232 Rx
4 232 CTS
5 232 DSR
6 232 CD
7 232 RI
8 Sig Com
9 Sw 12V
10 Sw 5V
11 Pwr Com
12

M80-5401242
Datamate J-Tek

6 1
12 12-way 7
Datamate J-Tek
Pin Arrangement
View into contact face

Voltage Select A
(Must match
input jumper!)

JP2

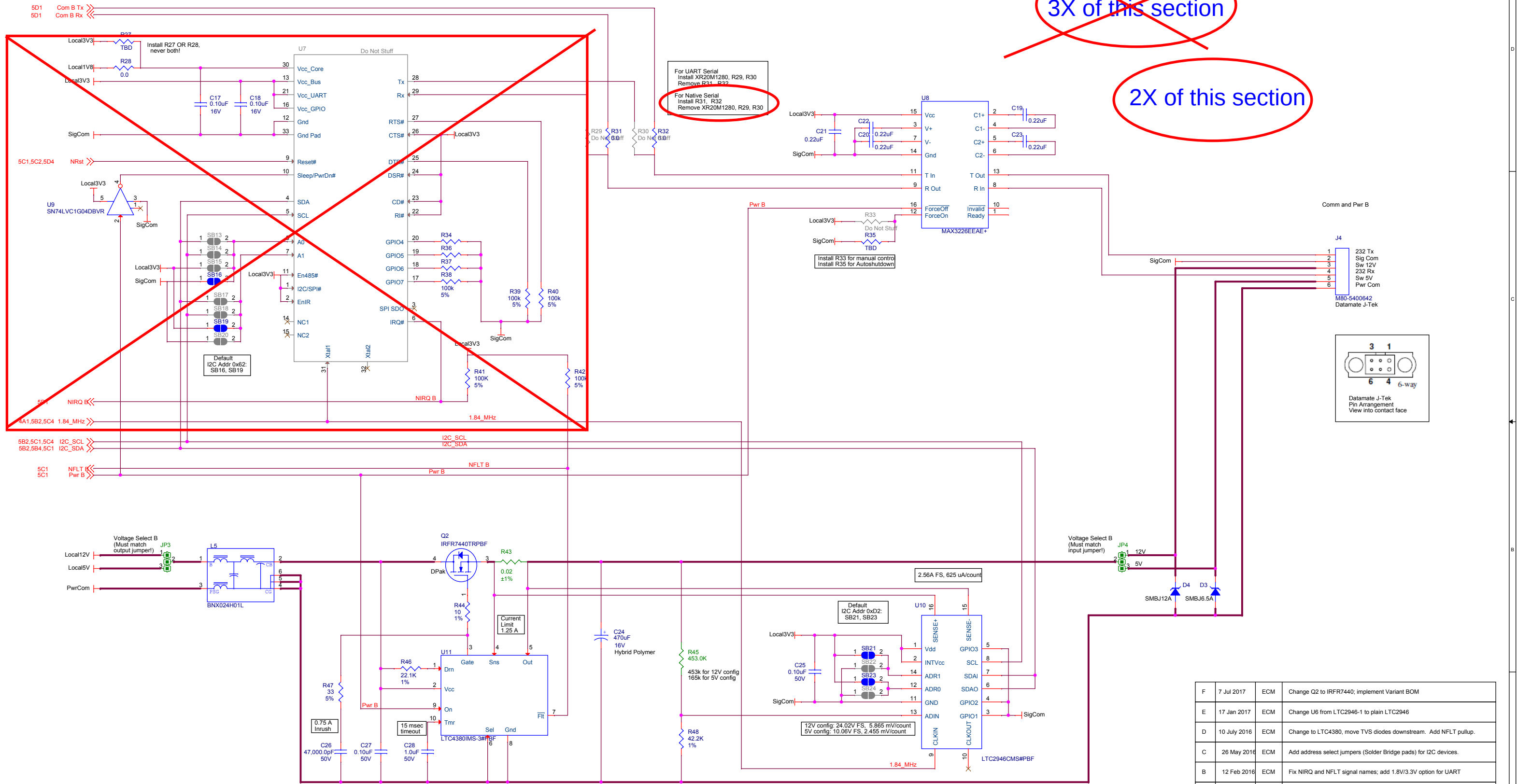
12V
5V

SMBJ12A
SMBJ6.5A

F	7 Jul 2017	ECM	Change Q1 to IRFR7440; implement Variant BOM
E	17 Jan 2017	ECM	Change U6 from LTC2946-1 to plain LTC2946
D	10 July 2016	ECM	Change to LTC4380, move TVS diodes downstream. Add NFLT pullup.
C	26 May 2016	ECM	Add address select jumpers (Solder Bridge pads) for I2C devices.
B	12 Feb 2016	ECM	Fix NIRQ and NFLT signal names; add 1.8V/3.3V option for UART; change pullups to discrete, change TVS to match MoBo.
A	4 Feb 2016	ECM	Initial release for review

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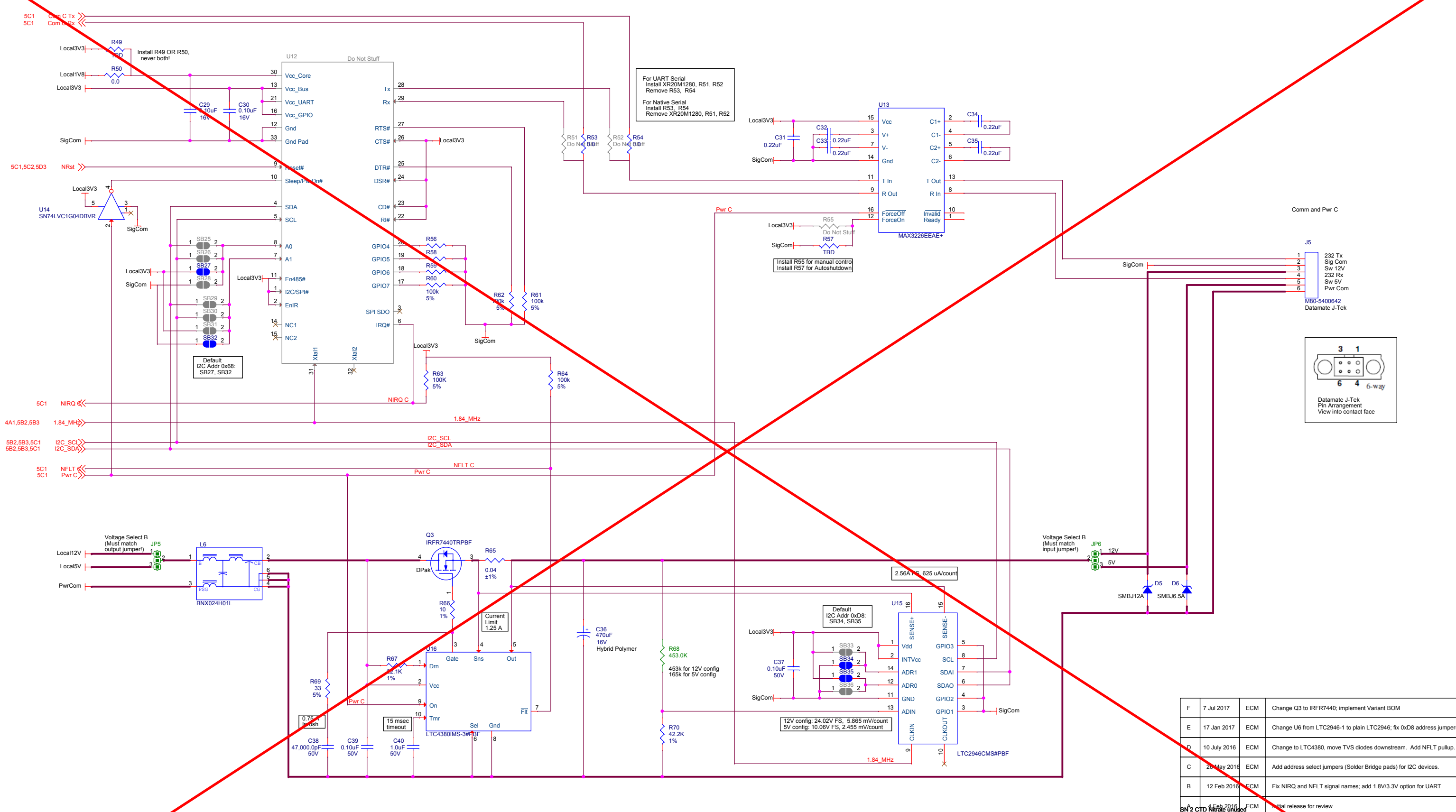
Title Schematic, Channel A, Power Switch Board, Coastal Profiling Float		Document Number 100221094	Rev F
Size Custom		Date: Thursday, July 20, 2017	Engineer Mellinger
Design File X:\CPFELECTRICAL\ENGR\ORCAD PROJECTS\SED'S STUFF\SCHMATIC\100221094-CPF-POWERSWITCH.DSN		Page Name 02ChannelA	Layout File <Layout File>



F	7 Jul 2017	ECM	Change Q2 to IRRFR7440; implement Variant BOM
E	17 Jan 2017	ECM	Change U6 from LTC2946-1 to plain LTC2946
D	10 July 2016	ECM	Change to LTC4380, move TVS diodes downstream. Add NFLT pullup.
C	26 May 2016	ECM	Add address select jumpers (Solder Bridge pads) for I2C devices.
B	12 Feb 2016	ECM	Fix NIRQ and NFLT signal names; add 1.8V/3.3V option for UART
A	4 Feb 2016	ECM	Initial release for review

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Title		Schematic, Channel B, Power Switch Board, Coastal Profiling Float		Document Number	100221094	Rev	F
Size		Date		Engineer	Sheet	of	
Custom		Thursday, July 20, 2017		Mellinger	3	5	
Design File							
X:\CPFELECTRICAL ENGR\ORCAD PROJECTS\ED'S STUFF\SCHMATIC\100221094-CPF-POWERSWITCH.DSN							
Schematic Name		Page Name		Layout File			
100221094-CPF-PwrSwitchSchematic		BChannelB		<Layout File>			



F	7 Jul 2017	ECM	Change Q3 to IRRFR7440; implement Variant BOM
E	17 Jan 2017	ECM	Change U6 from LTC2946-1 to plain LTC2946; fix 0xD8 address jumpers
D	10 July 2016	ECM	Change to LTC4380, move TVS diodes downstream. Add NFLT pullup.
C	26 May 2016	ECM	Add address select jumpers (Solder Bridge pads) for I2C devices.
B	12 Feb 2016	ECM	Fix NIRQ and NFLT signal names; add 1.8V/3.3V option for UART
A	1 Feb 2016	ECM	Initial release for review



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Title		Schematic, Channel C, Power Switch Board, Coastal Profiling Float		Document Number	100221094	Rev	F
Size	Custom	Date	Wednesday, July 19, 2017	Engineer	Mellinger	Sheet	4 of 5
Design File							
X:\CPPIELECTRICAL\ENGR\ORCAD PROJECTS\EDS STUFF\SCHEMATICS\100221094-CPF-POWER SWITCH1.DSN							
Schematic Name		Page Name		Layout File			
100221094-CPF-PwrSwitchSchematic		04ChannelC		<Layout File>			

