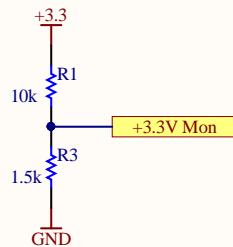
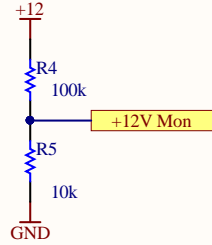


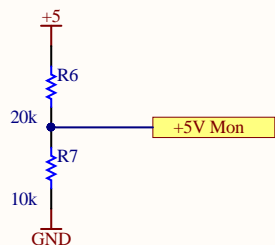
A



B



C

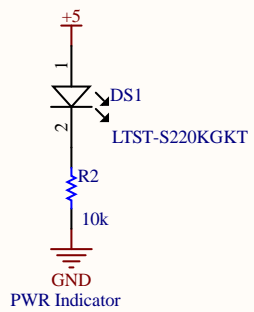


D

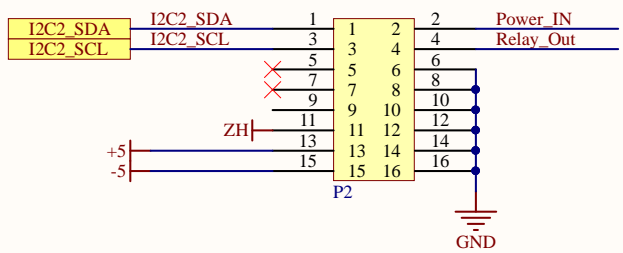
BATTERY CONNECTIONS  
P1 BATTERY  
2 A - NEGATIVE  
3 B - TEMPERATURE  
4 C - DATA  
5 D - CLOCK  
1 E - POSITIVE  
N/C F - KEY

Mating Pigtail: LIKE MMSST-02-20-F-12.00-S-K

2



3

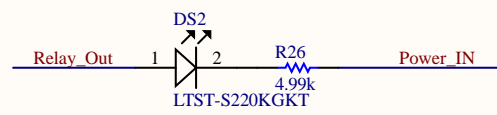
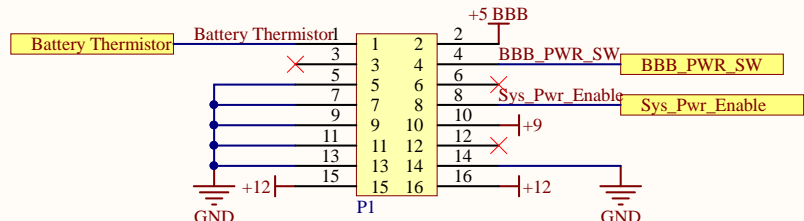



A

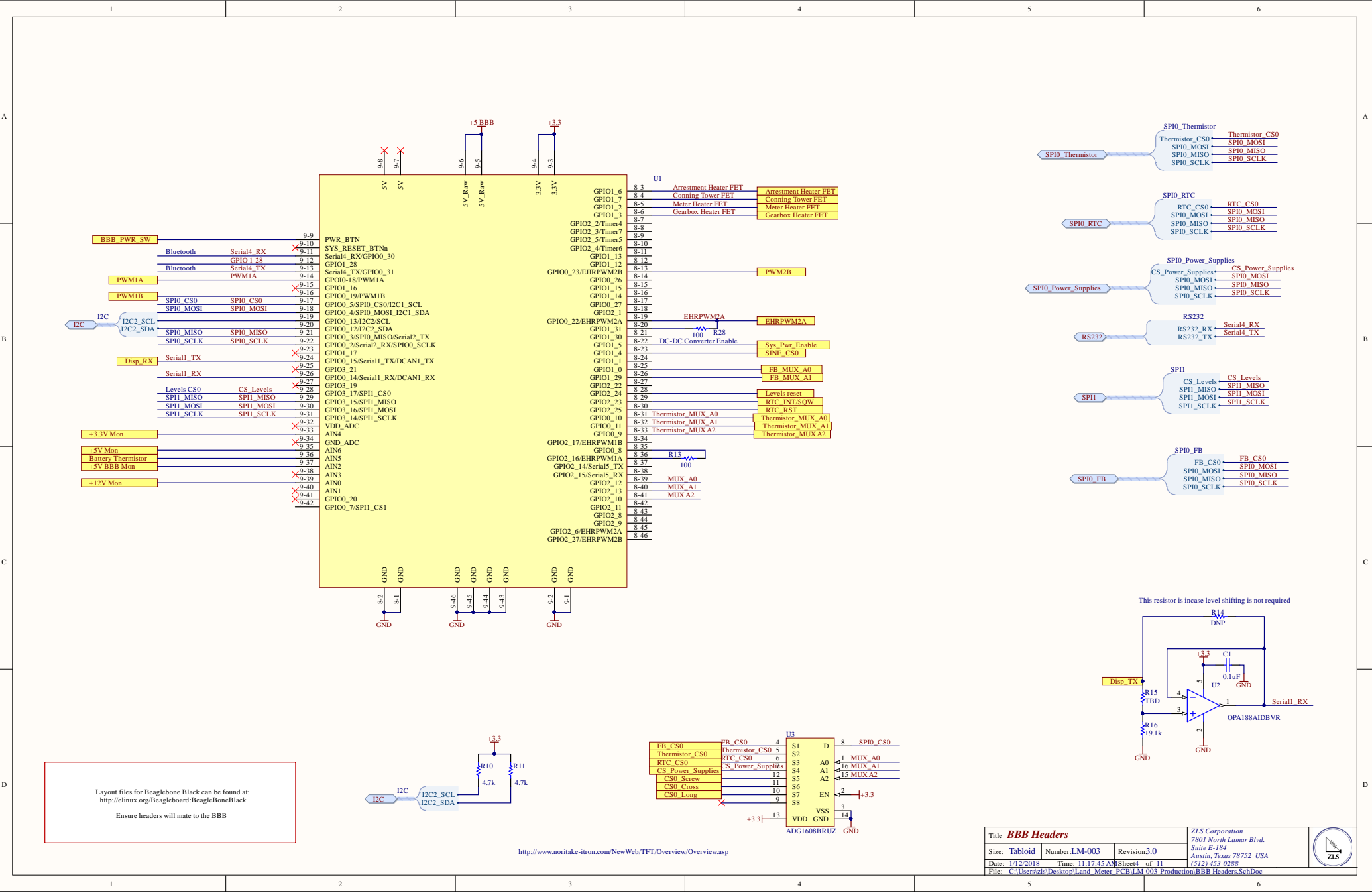
B

C

D



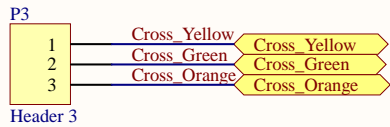
Title <b>Power</b>			ZLS Corporation 7801 North Lamar Blvd. Suite E-184 Austin, Texas 78752 USA (512) 453-0288	
Size: <b>Orcad A</b>	Number: <b>LM-003</b>	Revision: <b>3.0</b>		
Date: <b>1/12/2018</b>	Time: <b>11:17:45 AM</b>	Sheet <b>1</b> of <b>11</b>		
File: <b>C:\Users\zls\Desktop\Land_Meter_PCB\LM-003-Production\Power.SchDoc</b>				



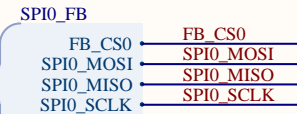
Title <b>BBB Headers</b>			ZLS Corporation
Size: <b>Tabletoid</b>			7801 North Lamar Blvd.
Number: <b>LM-003</b>			Suite E-184
Revision: <b>3.0</b>			Austin, Texas 78752 USA
Date: 1/12/2018	Time: 11:17:45 AM	Sheet 4 of 11	(512) 453-0288
File: C:\Users\zls\Desktop\Land_Meter_PCB\LM-003-Production\BBB Headers_SchDoc			



A



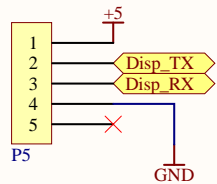
SPI0\_FB



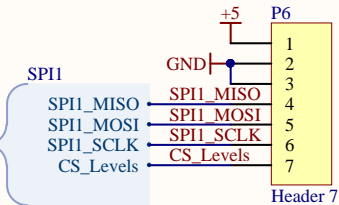
$$f(x) = 94974.5413538519 - 4696.967283124496x + 129.82663269538722x^2 - 2.618627915229906x^3 + 0.042544388235024x^4 - 0.0005976238111017604x^5 + 0.00000781963813533688x^6 - 9.536309770896e-8x^7 + 9.6915670491e-10x^8 - 7.19177773e-12x^9 + 3.497936e-14x^{10} - 9.821e-17x^{11} + 1.2e-19x^{12}$$

Thermistor Temperature Calculation

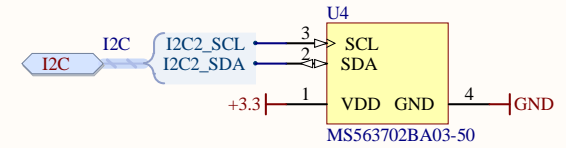
B



SPI1



Level Comms

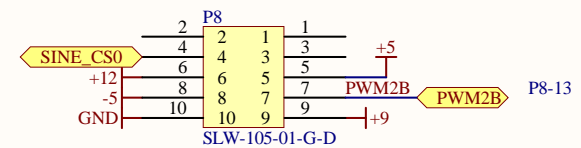
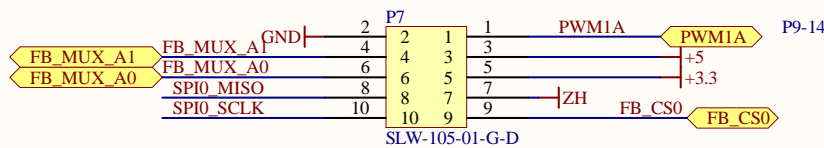


A

B

C

## Feedback Board



C

D

Mating Pigtail: MMSST-04-28-F-12.00-S-K

Title **Connectors**

Size: Orcad A Number: LM-003 Revision: 3.0

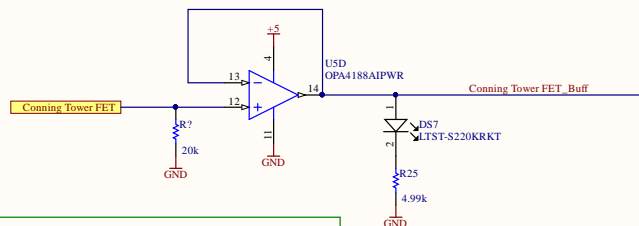
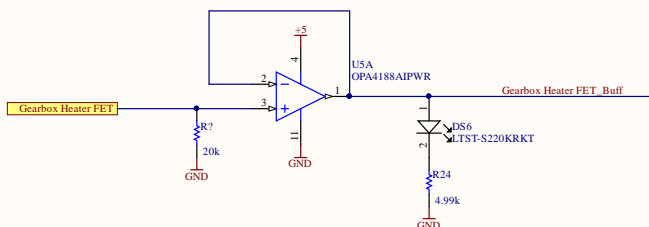
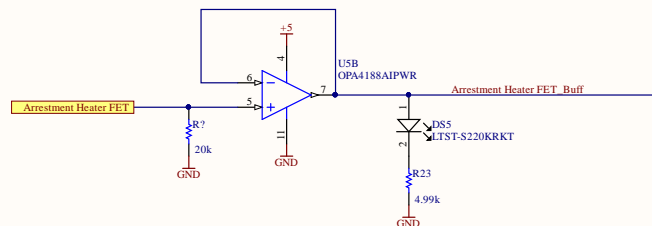
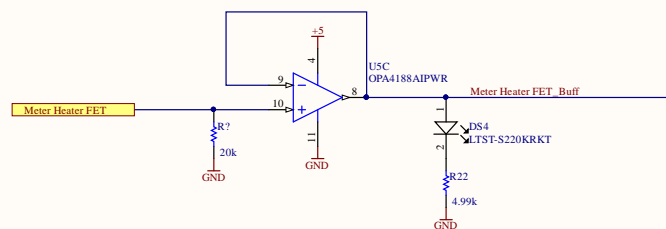
Date: 1/12/2018 Time: 11:17:45 AM Sheet 5 of 11

File: C:\Users\zls\Desktop\Land\_Meter\_PCB\LM-003-Production\Connectors.SchDoc

ZLS Corporation  
7801 North Lamar Blvd  
Suite E-184  
Austin, TX 78752  
Phone: (512) 453-0288

Cannot open  
file  
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On My  
Mac\Documents  
\Misc

D

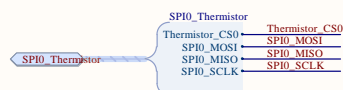


@ 12V	
Arrestment Heater	2.8W
Conning Tower Heater	2.8W
Gearbox Heater	2.8W
Meter Heater	6W
IC Heater	2.8W
<hr/>	
Total	16.2W

## Heater Board

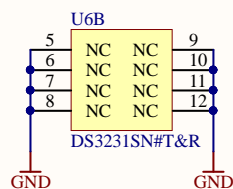
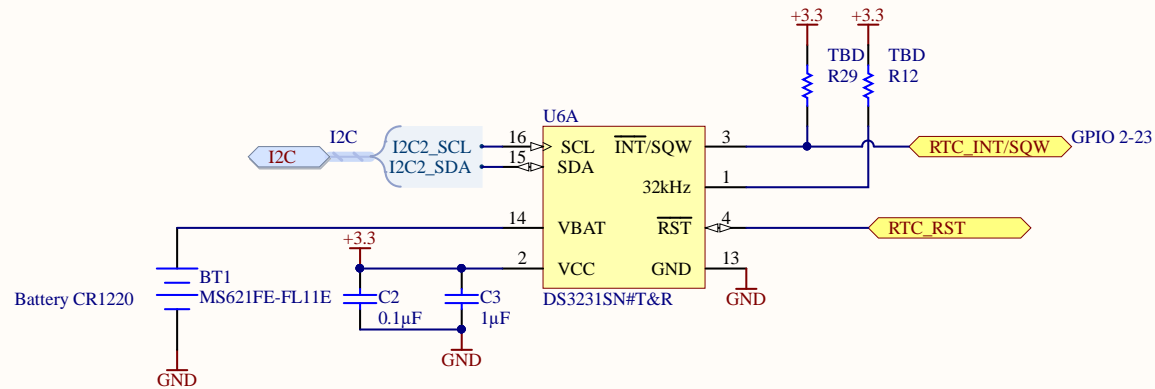
		P11			
Cross_Orange	Cross_Orange	1	2	Long_Orange	Long_Orange
Cross_Green	Cross_Green	3	4	Long_Green	Long_Green
Cross_Yellow	Cross_Yellow	5	6	Long_Yellow	Long_Yellow
Cross_Yellow	SP10_MISO	7	8	Thermistor_MUX_A0	Thermistor_MUX_A0
	Thermistor_CS0	9	10	SP10_SCLCK	
Thermistor_MUX_A1	Thermistor_MUX_A1	11	12	Thermistor_MUX_A2	Thermistor_MUX_A2
	Meter Heater FET_Buff	13	14	Cooling Tower FET_Buff	
	Gearbox Heater FET_Buff	15	16	Arrestment Heater FET_Buff	
	+5	17	18	+3.3	
	GND	21	20	GND	
	+12	23	22	+12	
	GND	23	24	GND	

IPL1-112-01-F-S-K



Title <b>Heater Control</b>			ZLS Corporation 7801 North Lamar Blvd. Suite E-184 Austin, Texas 78752 USA (512) 453-0288
Size: <b>Tabloid</b>	Number: <b>LM-003</b>	Revision: <b>3.0</b>	
Date: <b>1/12/2018</b>	Time: <b>11:17:45 AM</b>	Sheet: <b>6</b> of <b>11</b>	
File: <b>C:\Users\zls\Desktop\Land Meter PCB\LM-003-Production\heater_control.SchDoc</b>			





<https://learn.adafruit.com/adafruit-ds3231-precision-rtc-breakout/overview>

Title <i><b>Real Time Clock</b></i>			ZLS Corporation 7801 North Lamar Blvd Suite E-184 Austin, TX 78752 Phone: (512) 453-0288	Cannot open file Z:\jackwalker On My Mac\Documents \Misc
Size: <b>Orcad A</b>	Number: <b>LM-003</b>	Revision: <b>3.0</b>		
Date: 1/12/2018	Time: 11:17:45 AM Sheet 8 of 11			
File: C:\Users\zls\Desktop\Land_Meter_PCB\LM-003-Production\Real Time Clock.SchDoc				

A

B

C

D

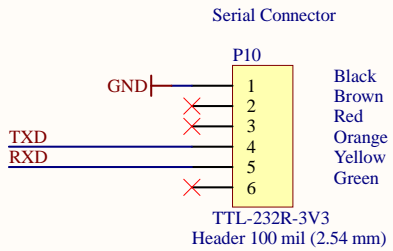
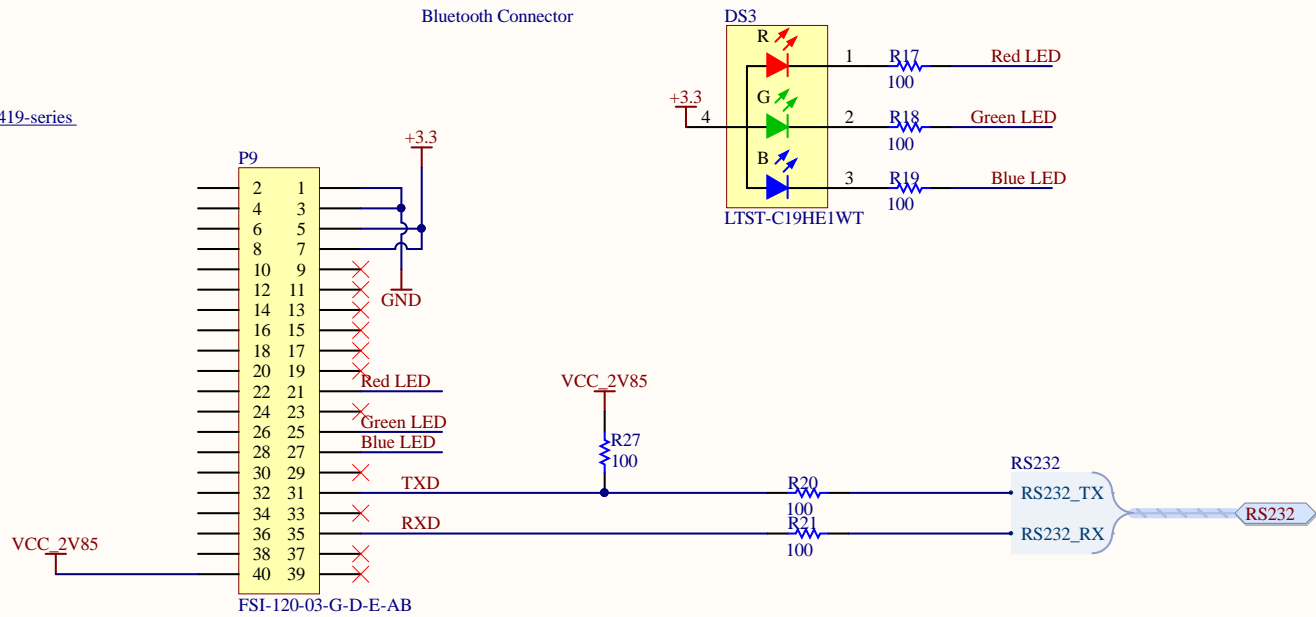
A

B

C

D

CB-OBS418i-4  
<https://www.u-blox.com/en/product/obs418-obs419-series>



Title <b>RS232</b>			ZLS Corporation 7801 North Lamar Blvd Suite E-184 Austin, TX 78752 Phone: (512) 453-0288	Cannot open file Z:\jackwalker On My Mac\Documents \Misc
Size: <b>Orcad A</b>	Number: <b>LM-003</b>	Revision: <b>3.0</b>		
Date: 1/12/2018	Time: 11:17:45 AM Sheet 9 of 11			
File: C:\Users\zls\Desktop\Land_Meter_PCB\LM-003-Production\RS232.SchDoc				

