



**HAIDAR TECHNOLOGY, LLC.**  
The Next Generation Of Intelligent Embedded GUI Systems

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**SNT-E640480-104-RT**  
**10.4" VGA TFT with Touch Screen Display Module**  
**Powered By SegeNT embedded GUI Board**  
**Hardware Manual**

**REV 1.0**

Revision 1.0

Issue Date: 03/20/2014

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## 1. Overview:

Haidar Technology SNT-E640480-104-RT is a full color TFT display module with integrated resistive touch screen. It is powered by Haidar's SegeNT GUI Controller board and supported by Haidar's uiLAB GUI Designer software.

**Please, refer to SegeNT hardware and software manuals for more information on how to use the display module and how to integrate it into your design.**

**Please, refer to uiLAB help for more information on how to start designing your GUI.**

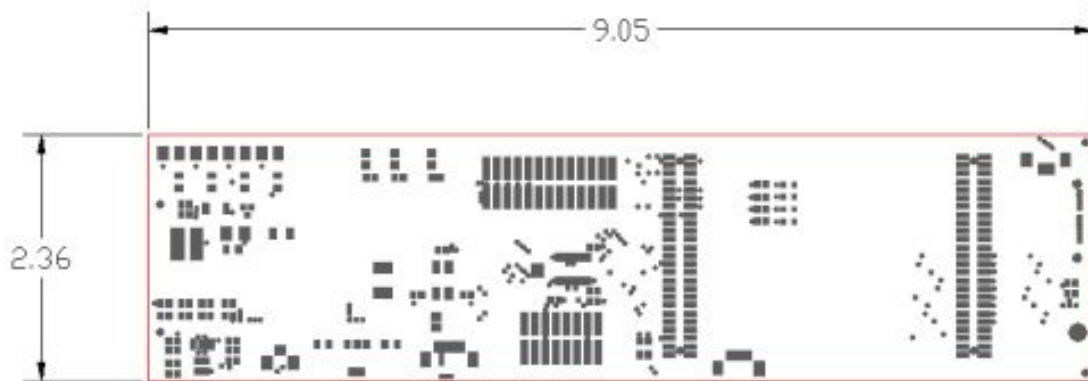
**Please note that SegeNT LCD Timing parameters are hard coded and cannot be changed.**

## 2. Features:

- 10.4" VGA (640X480) TFT Color display. 56K True to life colors.
- NEC NL6448BC33or compatible TFT Display.
- Integrated 4-wire resistive touch screen. Pen and Finger touch.
- Powered by SegeNT embedded controller GUI Board
- Efficient LED backlight driver on board.
- Audio amplifier on board.
- Simple Serial CMOS RS232 interface.
- 3.3V or 5V voltage input. Default is 3.3V
- High brightness (450cd/m<sup>2</sup>)
- Wide viewing angle (-70° to +80°)
- Wide operating temperature (-20°C to +70°C)

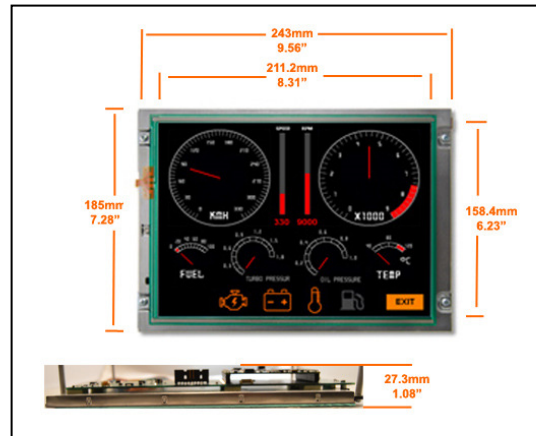


### 3. Carrier Board dimensional drawing:



All dimensions are in inches

### 4. Module Dimensions:



Width	7.28" / 185mm
Length	9.56" / 243mm
Depth	1.08" / 27.3mm
LCD Area Width	6.23" / 158.4mm
LCD Area Length	8.31" / 211.2mm

## 5. Electrical Characteristics:

**SNT-E640480-104-RT requires 3.3VDC (Default) OR 5VDC (Power Select Jumper). Exceeding the supply voltage over the typical value will cause a permanent damage to the board and to the attached LCD and void your warranty.**

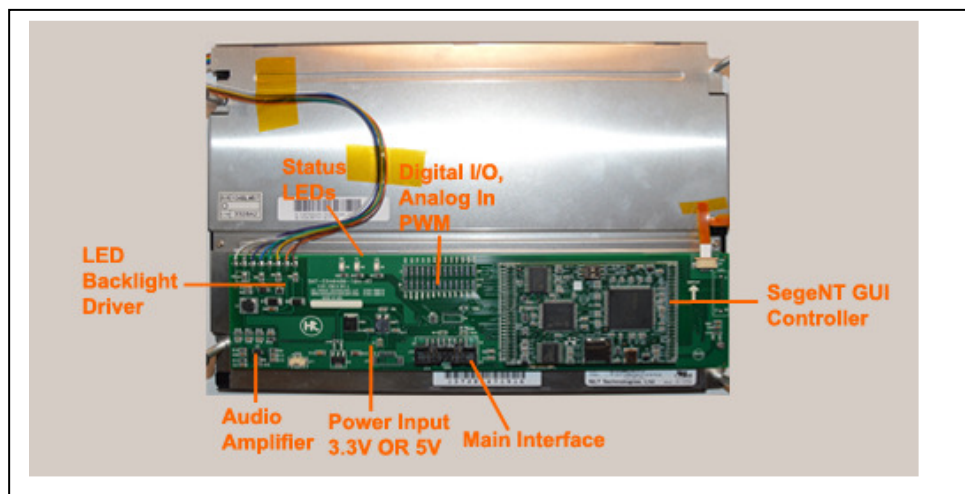
Configuration	Typical Current (A) at 3.3V	Max Current (A) at 3.3V
Back light is OFF	0.52A	1A
Back light is ON	0.78A	1A

## 6. Electrical Specifications:

Parameter	Symbol	Min.	Typ.	Max.	Units
Input Supply Voltage (PWR SELECT Jumper is set to 3.3V). Default settings	VDD	3.1	3.3	3.7	V
Input Supply Voltage (PWR SELECT Jumper is set to 5V)	VCC	4.5	5	6	V
High Level Input Voltage (VDD = 3.3V)	VIH	0.7VDD	-	VDD	V
Low Level Input Voltage (VDD = 3.3V)	VIL	0	-	0.3VDD	V
Digital sink/source current	Id	-	-	25	MA
Analog input voltage	Va	0	-	3.3V	V
RS232 TX/RX		0.7VDD	-	VDD	V

**Warning: RX and TX use a CMOS level of 3.3V. Connecting them to standard (PC) RS232 with +/- 12V or other will damage the controller and void your warranty.**

## 7. Carrier Board Picture:



## 8. Power Input Select Jumper (J10):

This jumper is used to set the voltage input. The default setting is 3.3V. Zero ohm 603 resistor is used to switch between 3.3V or 5V.

## 9. Pin Description (J15):

Main Interface (16Pos, 0.1", IDC connector)

Pin Name	Pin #	Type	Tolerance	Description
VIN	1	PWR	3.3V/5V	Power Supply Input
VIN	2	PWR	3.3V/5V	Power Supply Input
GND	3	PWR	0V	Power Ground
GND	4	PWR	0V	Power Ground
LED_RX	5	DOUT	3.3V	SegeNT RX LED Signal
LED_TX	6	DOUT	3.3V	SegeNT TX LED Signal
RX	7	DIN	3.3V	SegeNT Main UART RX
TX	8	DOUT	3.3V	SegeNT Main UART TX
RS485DE	9	DOUT	3.3V	SegeNT Main RS485 Data Enable
READY/BUSY	10	DOUT	3.3V	SegeNT Ready/Busy signal
NOTIFYHOST	11	DOUT	3.3V	SegeNT NotifyHost signal
BUZZER	12	DOUT	3.3V	SegeNT Buzzer signal
LED_HB	13	DOUT	3.3V	SegeNT HB LED Signal
RESET	14	DIN	3.3V	SegeNT Reset Signal
NC	15			Leave open.
NC	16			Leave open.

## 10. Pin Description (J17):

Auxiliary Main Interface (Molex part # 53261-0671)

Pin Name	Pin #	Type	Tolerance	Description
VIN	1	PWR	3.3V/5V	Power Supply Input
GND	2	PWR	0V	Power Ground
RX	3	DIN	3.3V	SegeNT Main UART RX
TX	4	DOUT	3.3V	SegeNT Main UART TX
READY/BUSY	5	DOUT	3.3V	SegeNT Ready/Busy signal
NOTIFYHOST	6	DOUT	3.3V	SegeNT NotifyHost signal

## 11. Pin Description (J11):

Audio Speaker (Molex part # 53261-0271)

Pin Name	Pin #	Type	Tolerance	Description
Speaker -	1	PWR	3.3V	Connect to 8Ohm, 0.5-1W speaker
Speaker +	2	PWR	3.3V	Connect to 8Ohm, 0.5-1W speaker

## 12. Pin Description (J12):

General Input/Output (26Pos, 0.1" Header)

Pin Name	Pin #	Type	Tolerance	Description
VOUT	1	PWR	3.3V	Power
GND	2	PWR	0V	Power Ground
AUX0	3	DIO	3.3V	Reserved for future use.
I2C_SDA	4	DIO	3.3V	Reserved for future use.
PWM0	5	DOUT	3.3V	PWM0 Output
I2C_SCL	6	DIO	3.3V	Reserved for future use.
PWM0	7	DOUT	3.3V	PWM1 Output
AUX_TX	8	DOUT	3.3V	Reserved for future use.
ADC_VREF	9	AIN	2.5V	ADC 2.5V VREF input.
AUX_RX	10	DIN	3.3V	Reserved for future use.
AN0	11	AIN	3.3V	Analog Input 0
DIO0	12	DIO	3.3V	Digital Input/Output 0
AN1	13	AIN	3.3V	Analog Input 1
DIO1	14	DIO	3.3V	Digital Input/Output 1
AN2	15	AIN	3.3V	Analog Input 2
DIO2	16	DIO	3.3V	Digital Input/Output 2
AN3	17	AIN	3.3V	Analog Input 3
DIO3	18	DIO	3.3V	Digital Input/Output 3
AN4	19	AIN	3.3V	Analog Input 4
DIO4	20	DIO	3.3V	Digital Input/Output 4
AN5	21	AIN	3.3V	Analog Input 5
DIO5	22	DIO	3.3V	Digital Input/Output 5
AN6	23	AIN	3.3V	Analog Input 6
DIO6	24	DIO	3.3V	Digital Input/Output 6
AN7	25	AIN	3.3V	Analog Input 7
DIO7	26	DIO	3.3V	Digital Input/Output 7

### 13. Manual Change History:

Date	Revision	Change
03/20/2014	REV1.0	Initial version of this manual

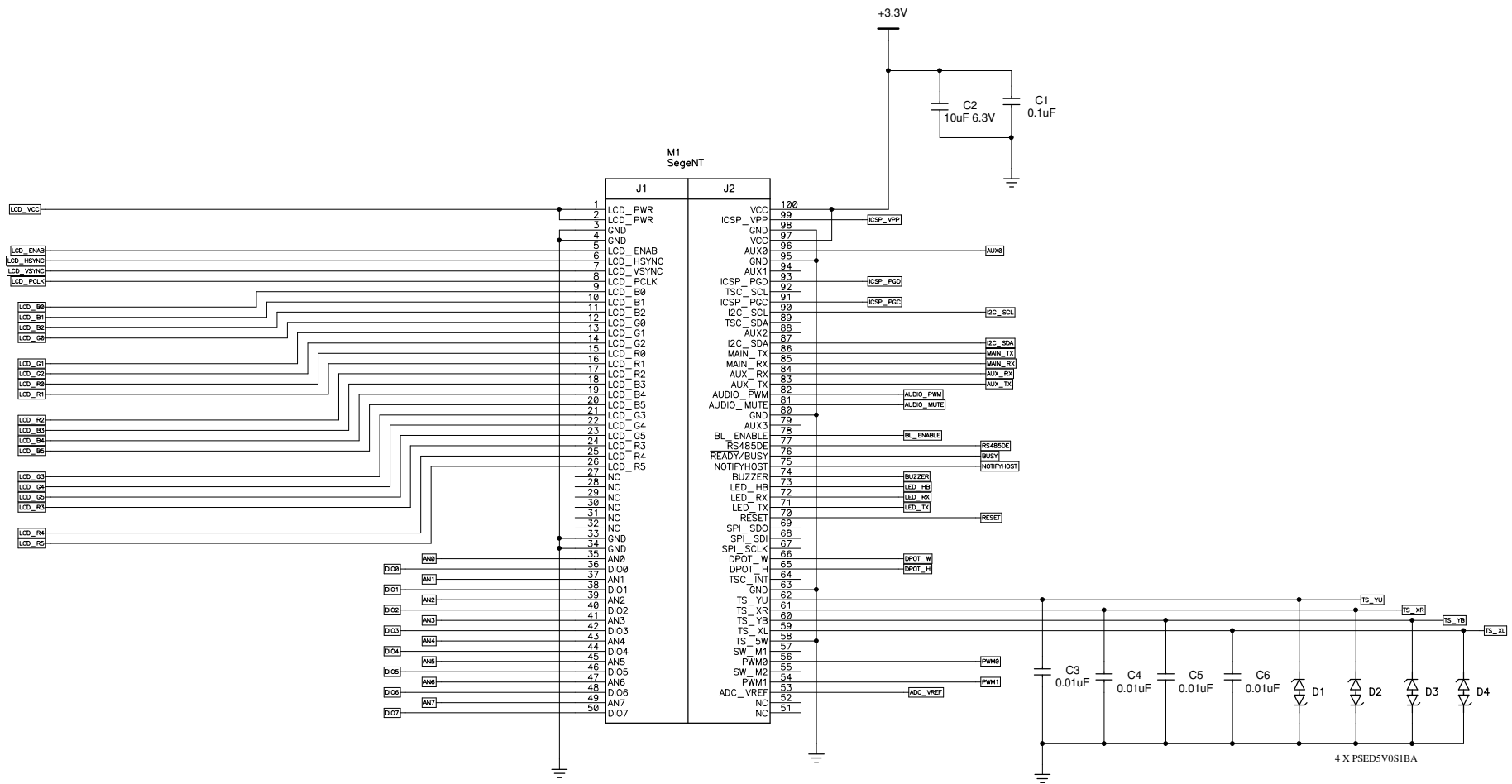
#### Hardware Limited Warranty

Haidar Technology, LLC. Warrants its hardware products to be free from manufacturing defects in materials and workmanship under normal use for a period of one (1) year from the date of purchase from Haidar. This warranty extends to products purchased directly from Haidar or an authorized Haidar distributor. Purchasers should inquire of the distributor regarding the nature and extent of the distributor's warranty, if any. Haidar shall not be liable to honor the terms of this warranty if the product has been used in any application other than that for which it was intended, or if it has been subjected to misuse, accidental damage, modification, or improper installation procedures. Furthermore, this warranty does not cover any product that has had the serial number altered, defaced, or removed. This warranty shall be the sole and exclusive remedy to the original purchaser. In no event shall Haidar be liable for incidental or consequential damages of any kind (property or economic damages inclusive) arising from the sale or use of this equipment. Haidar is not liable for any claim made by a third party or made by the purchaser for a third party. Haidar shall, at its option, repair or replace any product found defective, without charge for parts or labor. Repaired or replaced equipment and parts supplied under this warranty shall be covered only by the unexpired portion of the warranty. Except as expressly set forth in this warranty, Haidar makes no other warranties, expressed or implied, nor authorizes any other party to offer any warranty, including any implied warranties of merchantability or fitness for a particular purpose. Any implied warranties that may be imposed by law are limited to the terms of this limited warranty. This warranty statement supercedes all previous warranties, and covers only the Haidar hardware.

#### Returns and Repair Policy

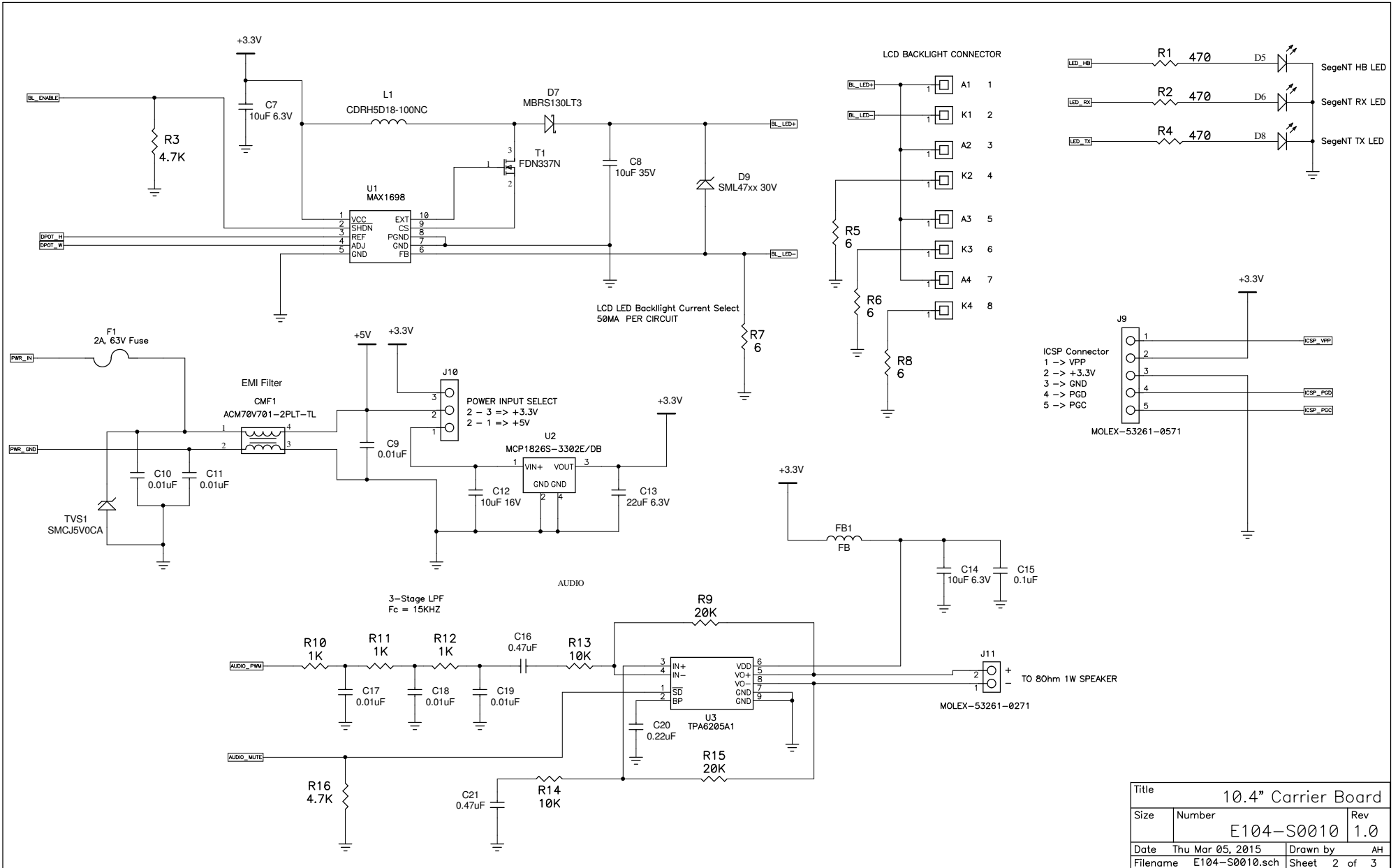
No merchandise may be returned for credit, exchange, or service without prior authorization from. To obtain warranty service, contact the factory and request an RMA (Return Merchandise Authorization) number. Enclose a note specifying the nature of the problem, name and phone number of contact person, RMA number, and return address. Authorized returns must be shipped freight prepaid to Haidar Technology LLC with the RMA number clearly marked on the outside of all cartons. Shipments arriving freight collect or without an RMA number shall be subject to refusal. Haidar reserves the right in its sole and absolute discretion to charge a 15% restocking fee, plus shipping costs, on any products returned with an RMA.

Return freight charges following repair of items under warranty shall be paid by Haidar, shipping by standard ground carrier. In the event repairs are found to be non-warranty, return freight costs shall be paid by the purchaser.

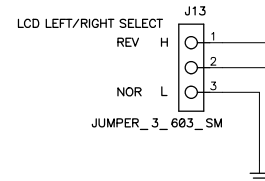
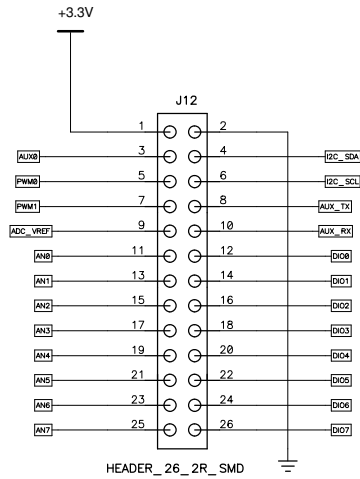


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Size	Number	Rev		1.0	
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Filename	E104-S0010.sch	Sheet	1 of 3		

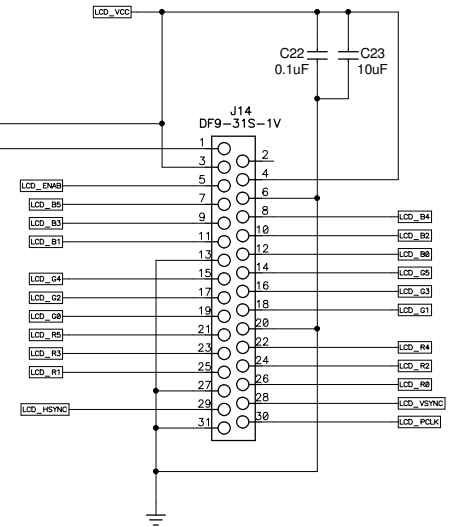




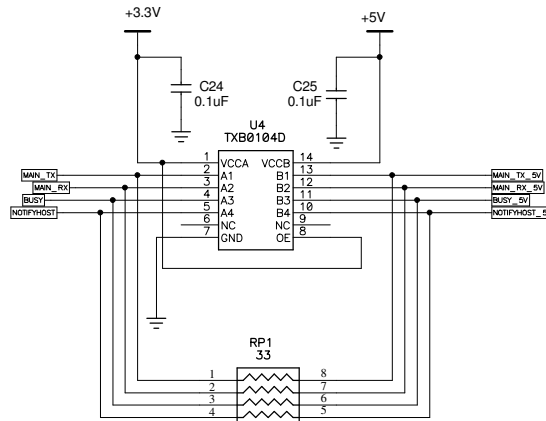
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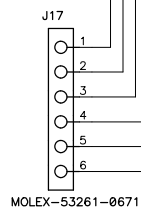
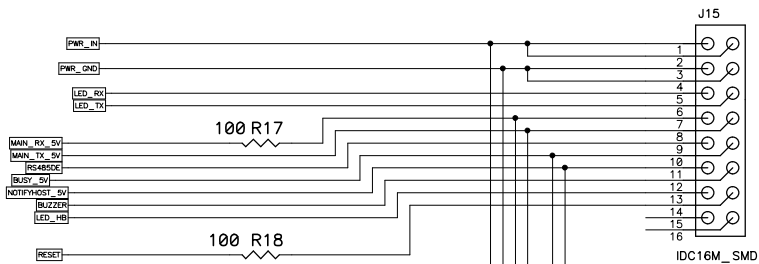
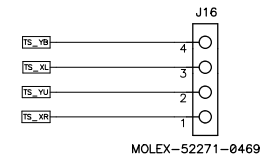
10.4" VGA With Resistive Touch Screen  
NEC Part # NL6448BC33-70C



3.3V TO 5V LEVEL SHIFTING  
MAIN\_RX AND RESET ARE 5V TOLERANT



10.4" 4-WIRE RESISTIVE TP  
FUJITSU # N010-0554-T347



DO NOT ASSEMBLE IF LEVEL SHIFTING IS REQUIRED

Title			10.4" Carrier Board		
Size	Number	Rev		1.0	
Date	Thu Mar 05, 2015	Drawn by	AH		
Filename	E104-S0010.sch	Sheet	3 of 3		