

A

U[01] - COVER PAGE
[01] - COVER PAGE.SchDocU[02] - BLOCK DIAGRAM
[02] - BLOCK DIAGRAM.SchDocU[03] - MICRO CONTROLLER
[03] - MICRO CONTROLLER.SchDocU[04] - COMe CONNECTOR
[04] - COMe CONNECTOR.SchDocU[05] - POWER
[05] - POWER.SchDocU[06] - MICRO-CONTROLLER CONNECTORS
[06] - MICRO CONTROLLER CONNECTORS.SchDocU[07] - CPU CONNECTORS
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[09] - PCB AND MECHANICALS.SchDocU[10] - DOC REVISION HISTORY
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Notations

Set Project Parameters

Mark Not Fitted Components as
NFMark Zero Resistace
ZR

Net Class Example



Differential signal example

Syncbox

Open Source Radiography Platform

Based on Atom CPU and PIC uController

Schematic Status Explanation

DRAFT - Very early stage of schematic, ignore details.

PRELIMINARY - Close to final schematic.

CHECKED - There should not be any mistakes. Tell the engineer if you find one.

RELEASED - A board with this schematic has been sent to production.

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SYNCBOX

Variant: [No Variations]

12/9/2020
V3I1

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DESIGN CONSIDERATIONS

DESIGN NOTE:
Example text for debug notes.

DESIGN NOTE:
Example text for informational design notes.

DESIGN NOTE:
Example text for critical design notes.

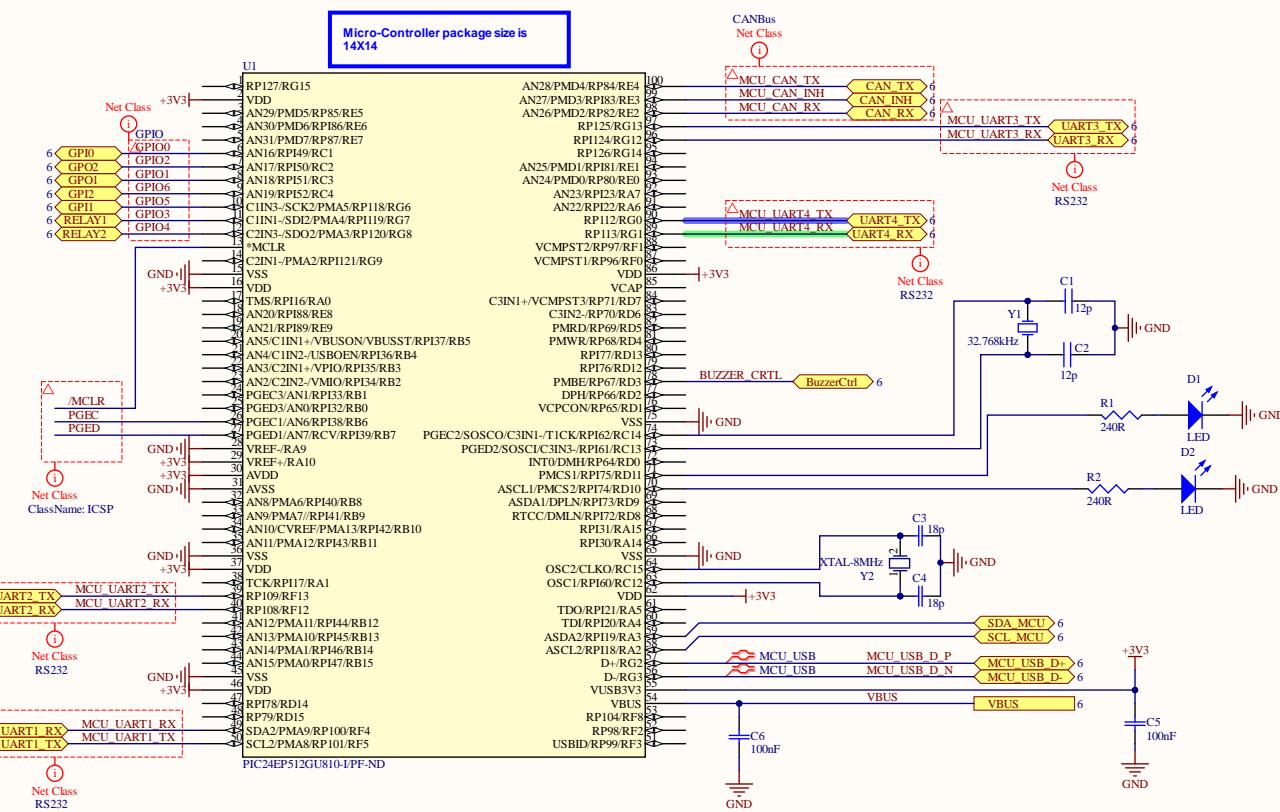
DESIGN NOTE:
Example text for cautionary design notes.

LAYOUT NOTE:
Example text for critical layout guidelines.

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MICRO-CONTROLLER

A



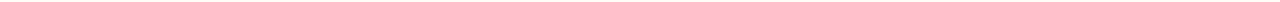
A

B



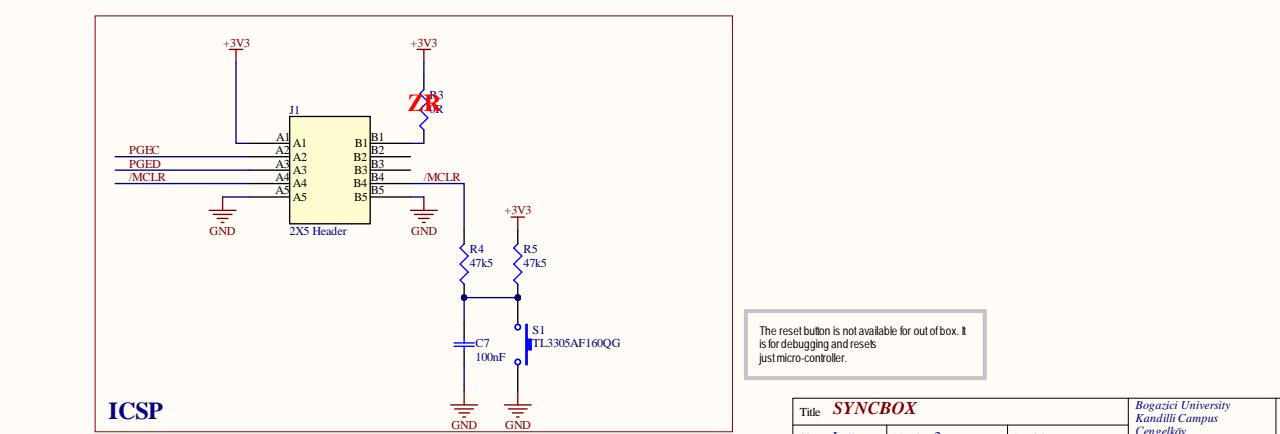
B

C



C

D



D

1

2

3

4

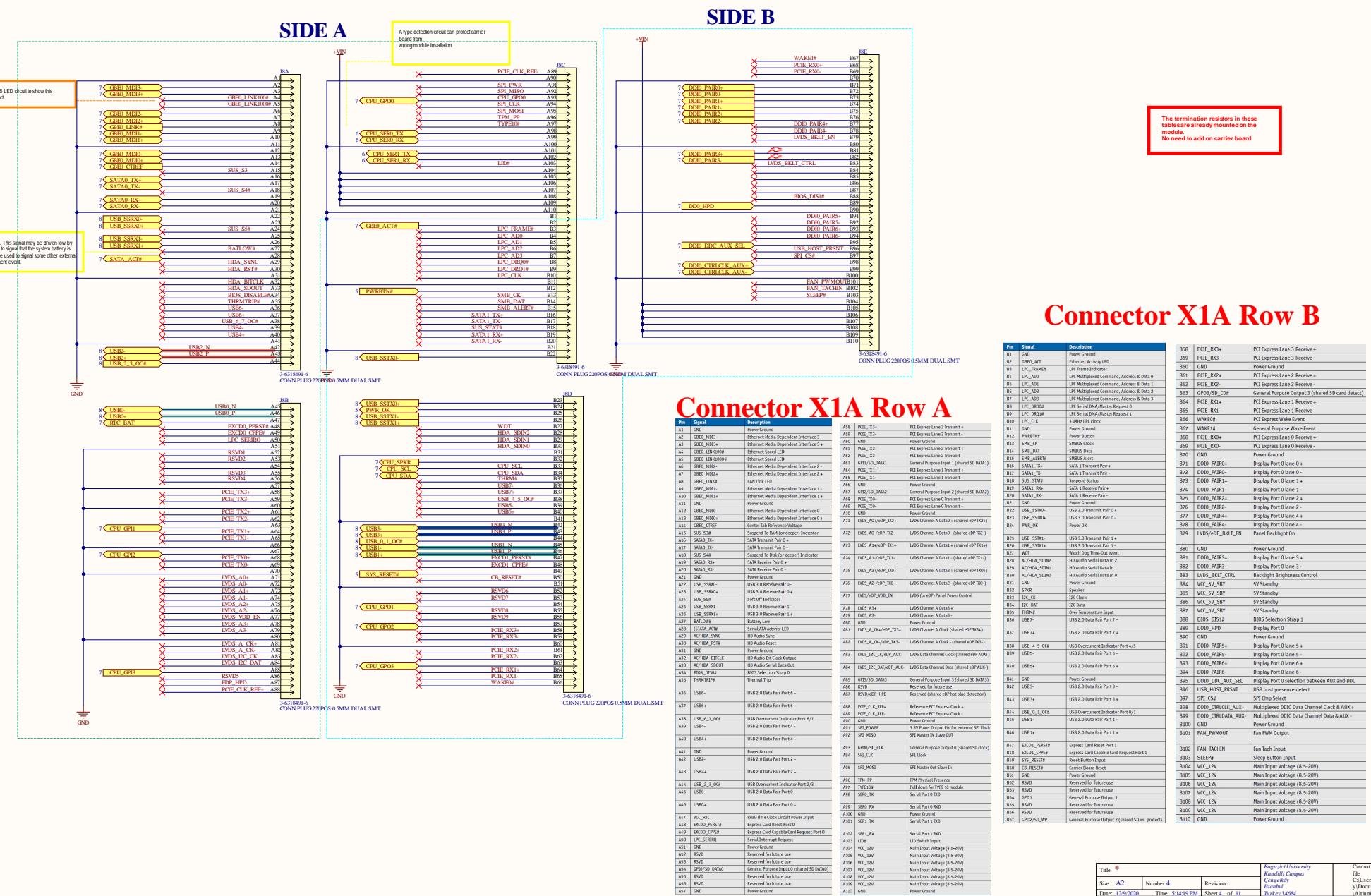
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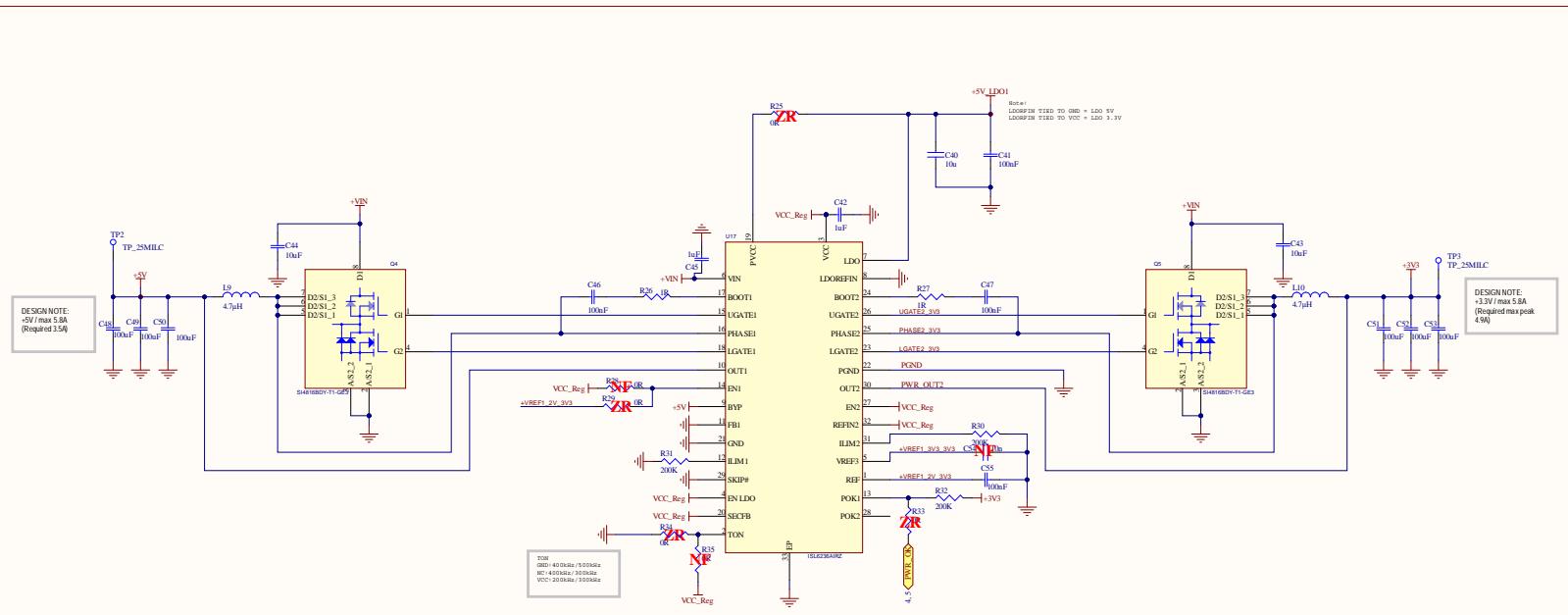
7

8

COM EXPRESS TYPE 10 CONNECTOR

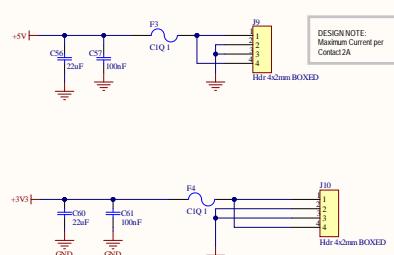


POWER

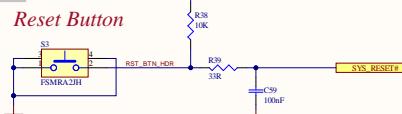


POWER REGULATOR

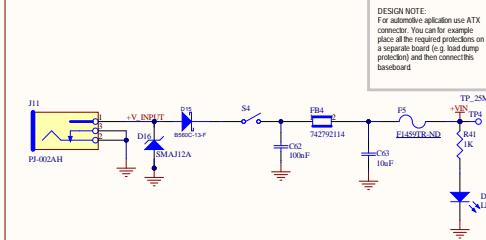
EXTERNAL POWER



Power Button

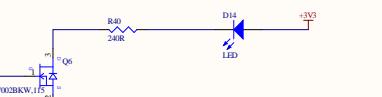


POWER JACK

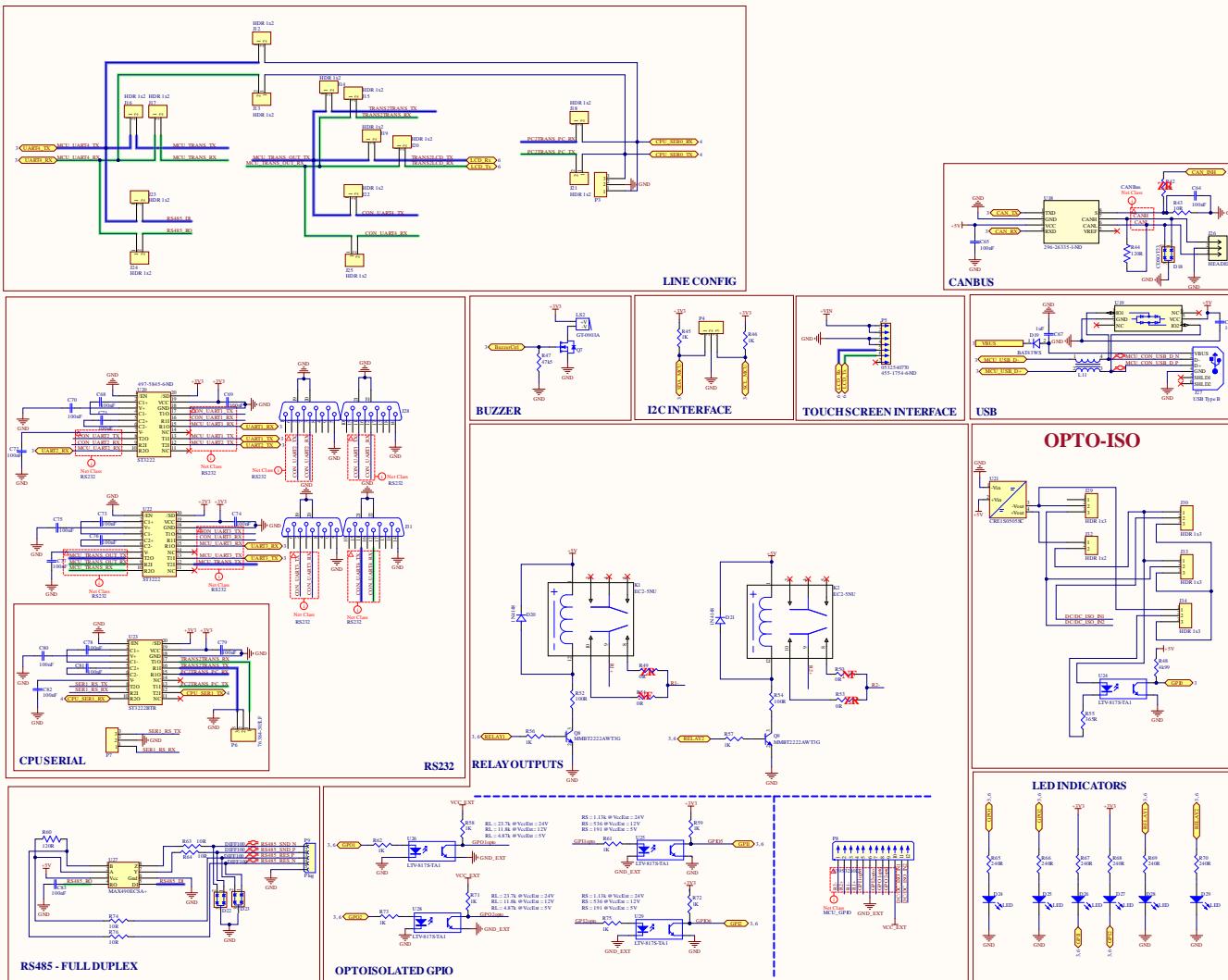


Title: * Bogazici University
for Electrical and Computer
Engineering
Number: 5 Revision:
Date: 12/9/2020 Time: 6:14:20 PM Sheet 3 of 11
File: 1051-POWER SchDoc

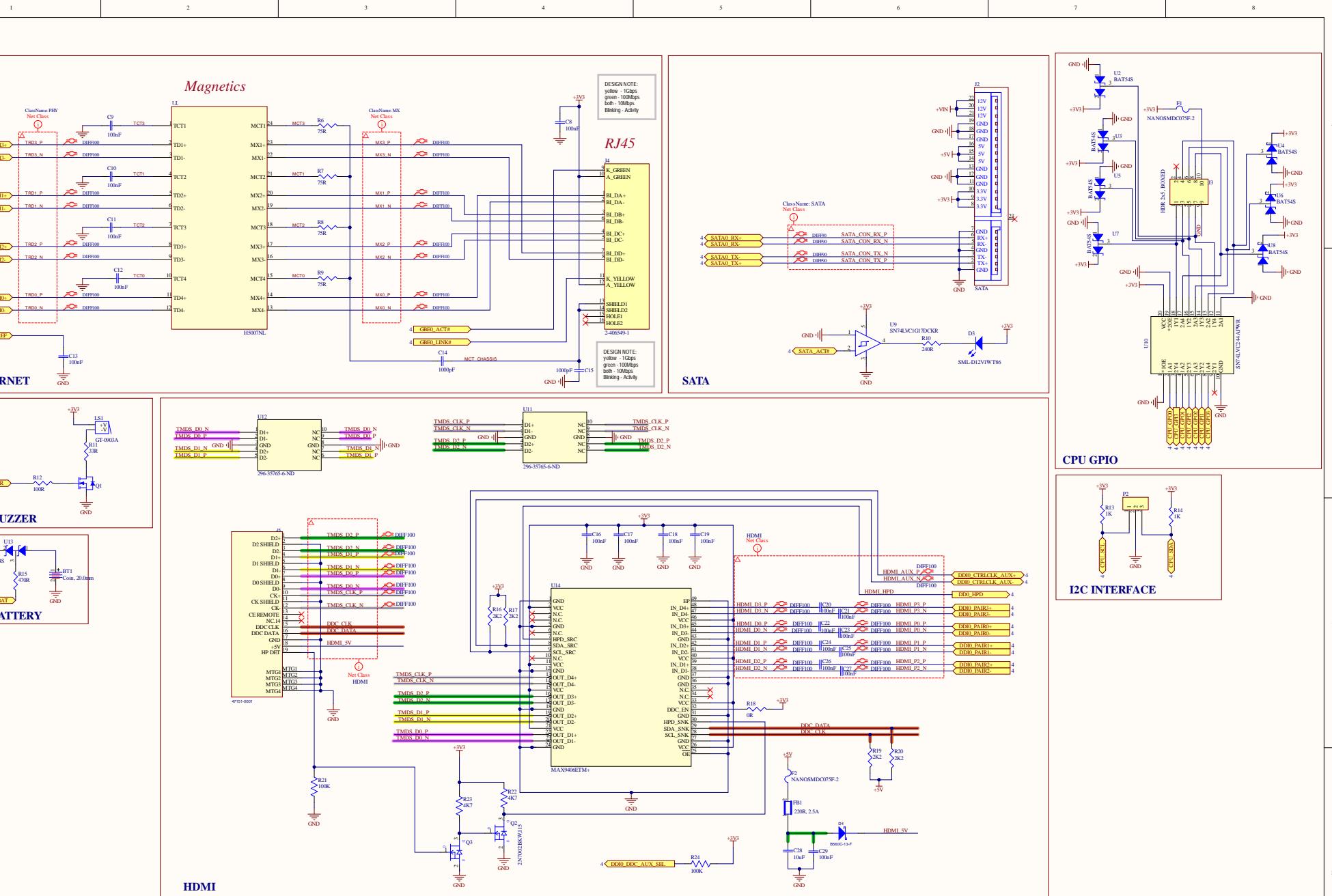
LEDs Power & Use LEDs

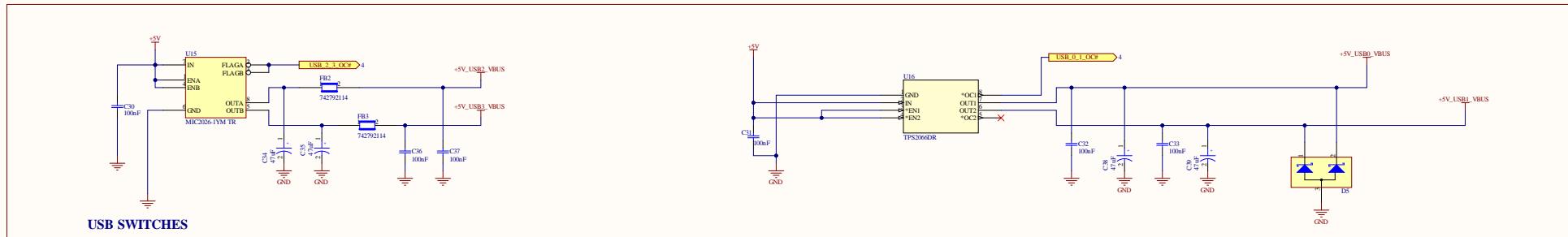
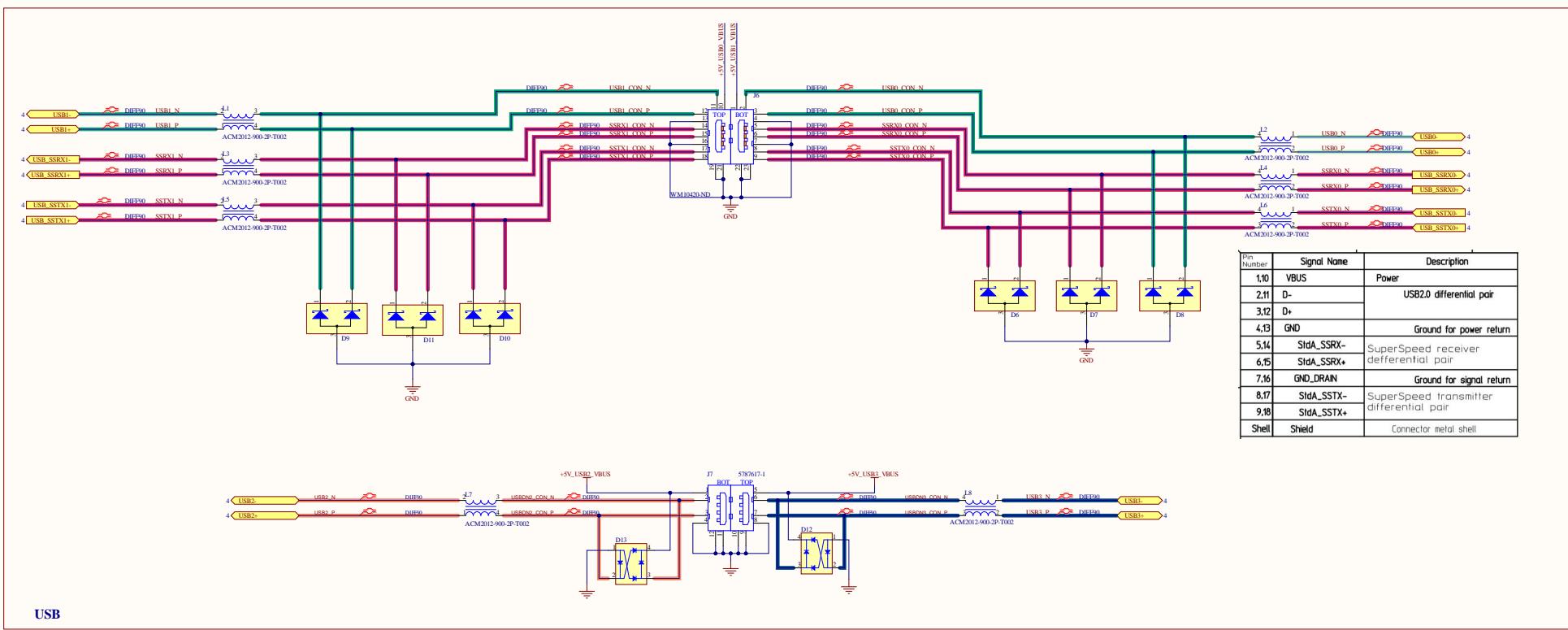


MICRO-CONTROLLER CONNECTIONS



Title	Rev	Engineering Drawing	Current open file
Name	A2	Number 6	Revision
Date	10/20/2014	10/20/2014	File Name
File	100-100-MICRO-CONTROLLER CONNECTIONS	100-100-MICRO-CONTROLLER CONNECTIONS	Alt Name



CPU USB**USB SWITCHES****USB**

PCB AND MECHANICAL

A

A

B

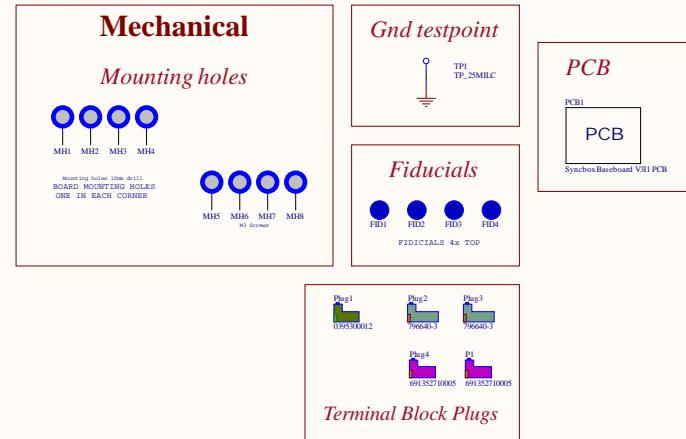
B

C

C

D

D



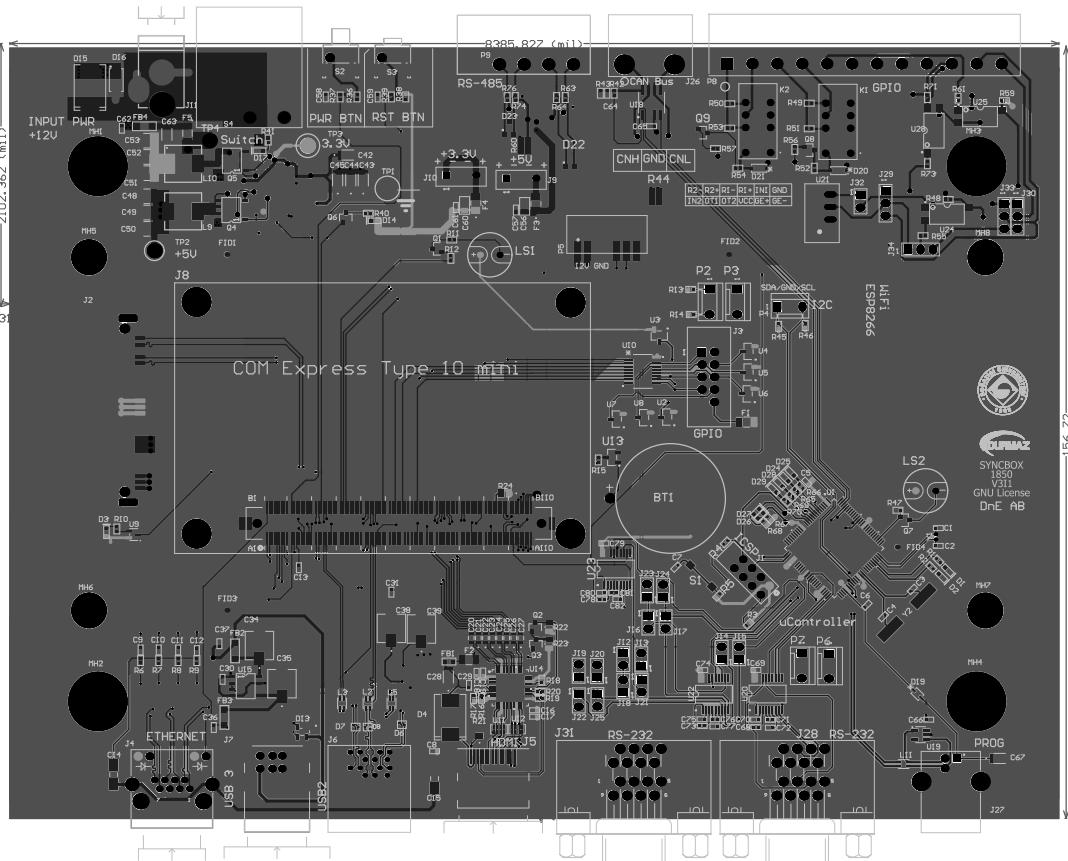
DOC: REVISION HISTORY

Syncbox V3.1 is printed three times: In the first print the COMe module was drawn reversed and blewed the COMe card. In the second print there was a problem with HDMI socket design and HDMI did not work. In the lastest print HDMI and COMe were corrected but USB 3 voltage regulator suffers from serious heat problem.

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SYNCBOX	U3I1
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Contact: altay.bn@yahoo.com	

Mechanical Drawing of SYNCBOX



Board info
Minimum Track: 200um
Minimum Gap: 150um
Minimum Through Hole VIA: 0.45mm (pad) / 0.2mm (drill). Drilling: L1-L6

1. REMOVE ALL NON-FUNCTIONAL INNER LAYER PADS.

2. THIS BOARD CONTAINS IMPEDANCE CONTROLLED TRACKS. TRACK AND GAP SIZES ARE AS FOLLOWS:

Type	Impedance	Layer (Reference)	Width (um)	Gap (um)
DIFF;	90ohm;	L1(L2), L6(L5);	250	200
	90ohm;	L3(L2,L4)	200	250
DIFF;	100ohm;	L1(L2), L6(L5);	250	400
	100ohm;	L3(L2,L4)	200	500
GE;	55ohm;	L1(L2), L6(L5);	250	
	55ohm;	L3(L2,L4)	200	

3. FINISHED PANEL THICKNESS IS NOT CRITICAL; TO BE APPROXIMATELY 1.6MM

4 BOARD FINISH: IMMERSION Au/ELECTROLESS Ni: 0.05-0.12 µm GOLD: 3-6µm NICKEL

5. SOLDER RESIST: APPLY TO BOTH SIDES COLOUR - BLACK

6 COMPONENT IDENT: COLOUR TO BE WHITE

2. PANELIZE THE BOARD (2PCS PER PANEL). PLACE FIDUCIALS ON THE PANEL STRIPS AS FOLLOWS:

- FIDUCIALS ON THE BOARD (2 UPLINK TRACES) HAVE FIDUCIALS ON THE THREE STRIPS TO FOLLOW:
 - FIDUCIAL DIAMETER 1.15MM, SOLDER MASK OPENING AT LEAST 1MM GREATER THAN FIDUCIAL
 - MINIMUM 4MM DISTANCE FROM THE PANEL EDGE
 - 2 FIDUCIALS SHOULD LIE ON TWO LINES THAT INTERSECT AT A RIGHT ANGLE



Board Stack Report