



GRAND-DUCHÉ DE LUXEMBOURG

Ministère du Développement durable
et des Infrastructures
Département des Transports

L-2938 Luxembourg

SOCIÉTÉ NATIONALE DE
CERTIFICATION ET D'HOMOLOGATION

s.à r.l.

Registre de Commerce: B 27180



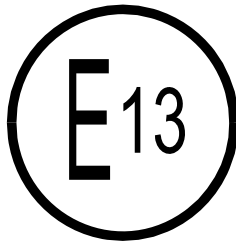
L-5201 Sandweiler

Référence: E13*10R00*10R05*13936*00

Annexes: - Rapport Technique
- Fiche de Renseignements du constructeur

Sandweiler, le 12 mai 2016

Communication concernant:⁽²⁾
Communication concerning:




- la délivrance d'une homologation
approval granted
- l'extension d'homologation
approval extended
- le refus d'homologation
approval refused
- le retrait d'homologation
approval withdrawn
- l'arrêt définitif de la production
production definitely discontinued

d'un type de sous-ensemble électrique/électronique⁽²⁾ en ce qui concerne le Règlement N° 10
of a type of electrical/electronic sub-assembly with regard to Regulation N° 10

Numéro d'homologation par type:
Approval number:

E13*10R00*10R05*13936*00

Marque d'homologation:
Approval mark:

 10R - 05 13936

1. Fabricant: (marque commerciale du constructeur):
Make (trade name of manufacturer):

AAEON

2. Type:
Type:

VPC-3300S-I4-A10-W1

Dénomination(s) commerciale(s) générale(s):
General commercial description(s):

Embedded vehicle controller

Version(s)/Variante(s):
Version(s)/Variant(s):

Not applicable

3. **Moyens d'identification du type, s'ils sont marqués sur le véhicule / composant / entité technique⁽²⁾:**
Means of identification of type, if marked on the vehicle / component / separate technical unit: ?VPC-3300S?
- 3.1. **Emplacement de ce marquage:**
Location of that marking: On the bottom of the main unit
4. **Catégorie du véhicule:**
Category of vehicle: Not applicable
5. **Nom et adresse du constructeur:**
Name and address of manufacturer: AAEON Technology Inc.
5F, No. 135, Lane 235, Pao Chiao Road,
Hsin-Tien Dist., New Taipei City,
Taiwan, R.O.C.
6. **Dans le cas de composants ou d'entités techniques, emplacement et procédé de fixation de la marque de réception CEE:**
In the case of components and separate technical units, location and method of affixing of the ECE approval mark: Label fixed on the bottom of the main unit
7. **Adresse(s) de l' (des) usine(s) d'assemblage:**
Address(es) of assembly plant(s): AAEON Technology Inc.
5F, No. 135, Lane 235, Pao Chiao Road,
Hsin-Tien Dist., New Taipei City,
Taiwan, R.O.C.
8. **Informations supplémentaires (s'il y a lieu):**
Additional informations (where applicable): See appendix below
9. **Autorité déléguée:**
Assigned authority: *Société Nationale de Certification et d'Homologation*
L-5201 Sandweiler
- Service technique responsable de l'exécution des essais:**
Technical service responsible for carrying out the tests: TÜV Rheinland Luxemburg GmbH
2a, Kalchesbruck
L-1852 Luxembourg
10. **Date du rapport d'essai:**
Date of test report: 04.05.2016
11. **Numéro du rapport d'essai:**
Number of test report: 84-R10-00439/16-00
12. **Remarques (s'il y a lieu):**
Remarks (if any): See appendix below

13. **Lieu:** Sandweiler
Place:

14. **Date:** 12 mai 2016
Date:

15. **Signature:**
Signature:

Pour le Département des Transports

Pour la SNCH



Marco FELTES
Inspecteur Principal 1^{er} en rang



Claude LIESCH
Directeur



16. **L'index de l'ensemble des renseignements déposé chez l'autorité de réception, qui peut être obtenu sur demande, est joint.**

The index to the information package lodged with the approval authority, which may be obtained on request, is attached.

See index to type-approval report

17. **Raison(s) de l'extension:** Not applicable
Reason(s) for extension:

² **Biffer la mention inutile**
Strike out what does not apply

Appendice

Appendix

au certificat d'homologation par type N° E13*10R00*10R05*13936*00

to type-approval certificate N° E13*10R00*10R05*13936*00

concernant l'homologation par type d'un sous ensemble électrique/électronique selon le Règlement N° 10.

concerning the type-approval of an electrical/electronic sub-assembly under Regulation N° 10.

- | | | |
|---------------|--|---|
| 1. | Informations supplémentaires.
Additional information. | |
| 1.1. | Tension nominale du système électrique [V]:
Electrical system rated voltage [V]: | 12/24V DC |
| | Masse:
Ground: | Negative / Positive ⁽²⁾ |
| 1.2. | Ce SEEE peut être utilisé sur n'importe quel type de véhicule avec les restrictions suivantes:
This ESA can be used on any vehicle type with the following restrictions: | Operating temperature: -20°C to 70°C |
| 1.2.1. | Conditions d'installation, s'il y a lieu:
Installation conditions, if any: | Not applicable |
| 1.3. | CE SEEE peut seulement être utilisé sur les types de véhicules suivants:
This ESA can be used only on the following vehicle types: | Not applicable |
| 1.3.1. | Conditions d'installation, s'il y a lieu:
Installation conditions, if any: | Not applicable |
| 1.4. | La (les) méthode(s) spécifique(s) d'essais utilisée(s) et les bandes de fréquences couvertes pour déterminer l'immunité étai(ent): (indiquez s'il vous plaît à partir de l'annexe 9 la méthode précise utilisée).
The specific test method(s) used and the frequency ranges covered to determine immunity were: (Please specify precise method used from annex 9). | Not applicable |
| 1.5. | Laboratoire accrédité au titre de la norme ISO 17025 et reconnu par l'autorité d'homologation chargé d'effectuer les essais:
Laboratory accredited to ISO 17025 and recognized by the Approval Authority responsible for carrying out the tests: | Not applicable |
| 2. | Commentaires:
Remarks: | Not applicable |



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Registre de Commerce: B 27180



L-5201 Sandweiler

Référence: E13*10R00*10R05*13936*00

Annexes: - Rapport Technique
- Fiche de Renseignements du constructeur

Sandweiler, le 12 mai 2016

Index du dossier d'homologation

Index to type-approval report

	Numéro d'homologation: Approval number:	E13*10R00*10R05*13936*00
	Révision: Revision:	00
	Marque de fabrique ou de commerce: Trade name or mark:	AAEON
	Type: Type:	VPC-3300S-I4-A10-W1
1.	Procès-verbal d'essai: Test report:	N° 84-R10-00439/16-00
	- Test report:	Page 1 to 8
	- Technical information:	Appendix L - Page 9 & 10
	- List of modifications:	Appendix 0 - Page 11
2.	Dossier du constructeur: Report of the manufacturer:	N° VPC-3300S-I4-A10-W1-00
	- Information document:	Page 1 & 2
	- List of Annexes:	Page 2
	- Annexes:	Refer to Page 2
3.	Autres documents annexés: Other documents annexed:	Not applicable
4.	Date de délivrance de l'homologation initiale: Date of issue of initial type approval:	12.05.2016
5.	Date de la dernière délivrance de pages révisées: Date of last issue of revised pages:	Not applicable
6.	Date de la dernière délivrance d'une homologation révisée: Date of last extension:	Not applicable

Type : VPC-3300S-I4-A10-W1
Manufacturer : AAEON Technology Inc.

TEST REPORT

according to ECE-Regulation

Uniform provisions concerning the approval of vehicles with regard to electromagnetic compatibility

No.: **ECE-R10**

including

No.: **05 series of amendments**

Approval Status
ECE-type approval : E13*10R00*10R05*13936*00 (reserved)

Structure of report:

0. General information
1. Test object(s) and general test information
2. Test minutes
3. Remark concerning tested object(s)
4. Appendices
5. Statement of conformity

The Test Report shall be reproduced and published in full by the client only. It shall however be reproduced partially with the written permission of the Testing Laboratory only.

Type : VPC-3300S-I4-A10-W1
Manufacturer : AAEON Technology Inc.

0. General information

- 0.1. Trade mark or trade name of type : AAEON
- 0.2. Manufacturer's name for the type of the ESA : VPC-3300S-I4-A10-W1
Version(s) : Not applicable
- 0.3. Name and address of manufacturer : AAEON Technology Inc.
5F, No. 135, Lane 235, Pao Chiao Road,
Hsin-Tien Dist., New Taipei City,
Taiwan, R.O.C.
- 0.4. Name and address of authorised representative, if any : Not applicable
- 0.5. No. of information document : VPC-3300S-I4-A10-W1-00
date of issue : April 12, 2016
date of last amendment : --

Type : VPC-3300S-I4-A10-W1
Manufacturer : AAEON Technology Inc.

1. Test object(s) and general test information

1.1. Test object(s)

Identification no. : Not applicable
Model : VPC-3300S-I4-A10-W1
Remark : Embedded vehicle controller

1.2. General test information

1.2.1 Order issued by : --
(if different from manufacturer)
1.2.2 Test object received on : --
1.2.3 Test date : April 6 to 11, 2016
1.2.4 Test site : Compliance Certification Services Inc., Wugu, Taiwan
1.2.5 Remark : The results of the test refer exclusively to the objects mentioned under point 1.1. of this report.

Type : VPC-3300S-I4-A10-W1
 Manufacturer : AAEON Technology Inc.

2. Test minutes

- 2.1. Test facilities** : The measurement equipment used was in compliance with the test requirements.
- 2.2. Test data for the tested ESA** : See Appendix L
- 2.3. Type approval tests conducted** : Radiated narrowband electromagnetic emissions
 Radiated broadband electromagnetic emissions
~~Immunity to electromagnetic radiation~~
 Immunity to transient disturbances
 Emission of transient conducted disturbances
- 2.4. Test results** : ~~The type has been examined according to the amendments mentioned in appendix O.~~
 The performance of the ESA has been tested under 12V and 24V input modes.
- 2.4.1. Radiated narrowband electromagnetic emissions : Antenna position horizontal and vertical (Average detector)

(12V)

No.	frequency [MHz]		measured data [dB(μV)]		correction factor [dB(1/m)]		corrected data [dBμV/m]		limit value [dB(μV/m)]	
	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.
1	32.5	32.6	53.5	74.2	-37.0	-37.0	16.5	37.2	51.1	51.1
2	39.7	37.5	46.9	71.3	-36.9	-36.9	10.0	34.4	48.9	49.6
3	55.9	54.7	66.7	68.1	-37.3	-37.2	29.4	30.9	45.2	45.4
4	77.6	78.0	62.8	73.0	-38.0	-38.0	24.8	35.0	42.2	42.3
5	98.9	88.5	57.8	65.1	-37.3	-37.7	20.5	27.4	43.8	43.1
6	107.3	102.2	59.8	69.8	-36.4	-37.0	23.4	32.8	44.4	44.0
7	144.9	130.0	53.9	68.8	-34.8	-35.2	19.1	33.6	46.3	45.6
8	187.5	195.1	63.7	59.4	-32.6	-33.6	31.1	25.8	48.0	48.3
9	259.6	259.6	65.1	63.3	-32.8	-32.8	32.3	30.5	50.2	50.2
10	335.8	324.7	64.1	53.4	-30.8	-31.0	33.3	22.4	51.9	51.6
11	454.5	432.4	47.1	47.6	-28.0	-28.5	19.1	19.1	53.0	53.0
12	663.4	666.6	45.3	55.5	-23.3	-23.2	22.0	32.3	53.0	53.0
13	798.3	828.4	38.4	48.8	-21.7	-21.5	16.7	27.3	53.0	53.0
14	1000.0	974.6	43.6	53.1	-19.8	-20.0	23.8	33.1	53.0	53.0

Type : VPC-3300S-I4-A10-W1
 Manufacturer : AAEON Technology Inc.

(24V)

No.	frequency [MHz]		measured data[dB(μV)]		correction factor[dB(1/m)]		corrected data[dBμV/m]		limit value [dB(μV/m)]	
	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.
1	33.4	32.5	56.6	72.3	-37.0	-37.0	19.6	35.3	50.8	51.1
2	43.3	35.3	52.8	73.0	-36.9	-36.9	15.9	36.1	48.0	50.2
3	54.3	55.8	67.5	67.1	-37.2	-37.3	30.3	29.8	45.5	45.2
4	77.9	79.1	62.4	71.6	-38.0	-38.0	24.4	33.6	42.2	42.3
5	99.1	90.8	58.9	65.5	-37.3	-37.6	21.6	27.9	43.8	43.3
6	118.3	103.2	57.3	71.8	-35.5	-36.9	21.8	34.9	45.0	44.1
7	150.8	130.0	65.4	69.1	-34.5	-35.2	30.9	33.9	46.6	45.6
8	179.5	159.9	55.7	56.9	-32.9	-34.0	22.8	22.9	47.7	47.0
9	259.6	259.6	63.8	62.1	-32.8	-32.8	31.0	29.3	50.2	50.2
10	335.8	365.1	64.5	55.7	-30.8	-30.1	33.7	25.6	51.9	52.4
11	454.5	489.4	47.9	50.2	-28.0	-27.3	19.9	22.9	53.0	53.0
12	664.4	666.6	47.3	53.2	-23.3	-23.2	24.0	30.0	53.0	53.0
13	819.1	832.4	41.0	50.0	-21.5	-21.4	19.5	28.6	53.0	53.0
14	909.4	974.6	47.0	53.0	-20.6	-20.0	26.4	33.0	53.0	53.0

2.4.2. Radiated broadband electromagnetic emissions : Antenna position horizontal and vertical (Quasi-peak detector)

(12V)

No.	frequency [MHz]		measured data[dB(μV)]		correction factor[dB(1/m)]		corrected data[dBμV/m]		limit value [dB(μV/m)]	
	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.
1	32.5	32.6	58.8	80.1	-37.0	-37.0	21.8	43.1	61.1	61.1
2	39.7	37.5	53.7	76.8	-36.9	-36.9	16.8	39.9	58.9	59.6
3	55.9	54.7	72.5	73.7	-37.3	-37.2	35.2	36.5	55.2	55.4
4	77.6	78.0	69.2	79.6	-38.0	-38.0	31.2	41.6	52.2	52.3
5	98.9	88.5	67.3	71.3	-37.3	-37.7	30.0	33.6	53.8	53.1
6	107.3	102.2	69.1	79.3	-36.4	-37.0	32.7	42.3	54.4	54.0
7	144.9	130.0	60.8	75.5	-34.8	-35.2	26.0	40.3	56.3	55.6
8	187.5	195.1	68.6	66.5	-32.6	-33.6	36.0	32.9	58.0	58.3
9	259.6	259.6	75.9	66.9	-32.8	-32.8	43.1	34.1	60.2	60.2
10	335.8	324.7	66.7	64.0	-30.8	-31.0	35.9	33.0	61.9	61.6
11	454.5	432.4	54.4	55.6	-28.0	-28.5	26.4	27.1	63.0	63.0
12	663.4	666.6	54.7	62.3	-23.3	-23.2	31.4	39.1	63.0	63.0
13	798.3	828.4	46.7	58.1	-21.7	-21.5	25.0	36.6	63.0	63.0
14	1000.0	974.6	49.9	58.3	-19.8	-20.0	30.1	38.3	63.0	63.0

Type : VPC-3300S-I4-A10-W1
 Manufacturer : AAEON Technology Inc.

(24V)

No.	frequency [MHz]		measured data[dB(μV)]		correction factor[dB(1/m)]		corrected data[dBμV/m]		limit value [dB(μV/m)]	
	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.
1	33.4	32.5	62.1	77.4	-37.0	-37.0	25.1	40.4	60.8	61.1
2	43.3	35.3	59.3	78.7	-36.9	-36.9	22.4	41.8	58.0	60.2
3	54.3	55.8	72.9	73.2	-37.2	-37.3	35.7	35.9	55.5	55.2
4	77.9	79.1	69.0	78.8	-38.0	-38.0	31.0	40.8	52.2	52.3
5	99.1	90.8	68.7	72.1	-37.3	-37.6	31.4	34.5	53.8	53.3
6	118.3	103.2	66.1	82.1	-35.5	-36.9	30.6	45.2	55.0	54.1
7	150.8	130.0	67.8	74.4	-34.5	-35.2	33.3	39.2	56.6	55.6
8	179.5	159.9	62.1	64.0	-32.9	-34.0	29.2	30.0	57.7	57.0
9	259.6	259.6	70.5	71.5	-32.8	-32.8	37.7	38.7	60.2	60.2
10	335.8	365.1	65.2	64.7	-30.8	-30.1	34.4	34.6	61.9	62.4
11	454.5	489.4	54.9	58.0	-28.0	-27.3	26.9	30.7	63.0	63.0
12	664.4	666.6	56.5	61.3	-23.3	-23.2	33.2	38.1	63.0	63.0
13	819.1	832.4	50.4	61.0	-21.5	-21.4	28.9	39.6	63.0	63.0
14	909.4	974.6	51.7	63.0	-20.6	-20.0	31.1	43.0	63.0	63.0

2.4.3. Immunity Test

: Not applicable. The ESA is an embedded vehicle controller which has no functions related to vehicle direct control and vehicle data bus communication which blocks other immunity related functions, it belongs to the non- immunity related functions device (para 2.12).

Test method : ~~Absorber chamber test~~

Specified frequency range : ~~20 – 2000 MHz~~

Tested frequency points : ~~27/45/65/90/120/150/190/230/280/380/450/600/750/900 /1300/1800 MHz~~

Field strength : ~~30 V/m~~

~~At the above mentioned frequency points the ESA did not exhibit any malfunction which would cause any degradation of performance which could cause confusion to other road users or any degradation in the driver's direct control of a vehicle fitted with the system which could be observed by the driver or other road user.~~

Type : VPC-3300S-I4-A10-W1
 Manufacturer : AAEON Technology Inc.

- 2.4.4. Immunity to transient disturbances : The tests were conducted by the method according to ISO 7637-2 as described in Annex 10, and the functional status of the ESA after the tests complied with the levels shown in Table 2 of Paragraph 6.

Test pulse number	Immunity test level	Functional status for systems			
		Related to immunity-related functions	Not related to immunity-related functions	Test results	
				12V	24V
1	III	€	D	D	D
2a	III	B	D	A	A
2b	III	€	D	D	D
3a	III	A	D	A	A
3b	III	A	D	A	A
4	III	€	D	D	A

- 2.4.5. Emission of transient conducted disturbances : The tests were conducted by the method according to ISO 7637-2 as described in Annex 10, and the pulse amplitudes were within the limits specified in Table 1 of Paragraph 6.

Polarity of pulse amplitude	Maximum allowed pulse amplitude for vehicles with systems		Test results			
			Slow pulses		Fast pulses	
	12V	24V	12V	24V	12V	24V
Positive	+75	+150	9.3	22.3	9.0	24.1
Negative	-100	-450	-16.5	-29.5	-16.5	-28.9

- 2.4.6. Markings : The approval mark is marked clearly legible and indelible on the bottom of the main unit.

2.5. Variants and components : Not applicable

Type : VPC-3300S-I4-A10-W1
Manufacturer : AAEON Technology Inc.

3. Remark concerning tested object(s)

All versions of the ESA type as stated in the information document are covered with the tested version(s) and test object(s) respectively.

4. Appendices

- L** **Technical information about the separate technical unit (ESA) according to Annex 3B of the communication concerning the ECE-type approval**
 - 0** **List of modifications**
- Information folder No.** : VPC-3300S-I4-A10-W1-00 (2 pages)
(excluding apps.)

5. Statement of conformity

The above mentioned information folder and the type described in that comply with the requirements mentioned on page 1.

Shanghai, May 04, 2016
KWU/JYW



Kevin Wu
Expert Technical Service

Type : VPC-3300S-I4-A10-W1
 Manufacturer : AAEON Technology Inc.

Technical information about the separate technical unit (ESA) according to Annex 3B of the communication concerning the ECE-type approval

Appendix L

1. **Make (trade name of manufacturer)** : AAEON
2. **Type and general commercial description(s)** : VPC-3300S-I4-A10-W1
Embedded vehicle controller
version(s) : Not applicable
3. **Means of identification of type, if marked on the component/separate technical unit** : ?VPC-3300S?
 - 3.1. Location of that marking : On the bottom of the main unit
4. **Category of vehicle** : Not applicable
5. **Name and address of manufacturer** : AAEON Technology Inc.
5F, No. 135, Lane 235, Pao Chiao Road,
Hsin-Tien Dist., New Taipei City,
Taiwan, R.O.C.
Name and address of authorized representative, if any : Not applicable
6. **In the case of components and separate technical units, location and method of affixing of the approval mark** : Label fixed on the bottom of the main unit
7. **Address(es) of the assembly plant(s)** : AAEON Technology Inc.
5F, No. 135, Lane 235, Pao Chiao Road,
Hsin-Tien Dist., New Taipei City,
Taiwan, R.O.C.
8. **Additional information** : See appendix below
9. **Technical Service responsible for carrying out the tests** : TÜV Rheinland Luxemburg GmbH
2a, Kalchesbruck
L-1852 Luxemburg
10. **Date of test report** : May 04, 2016

Type : VPC-3300S-I4-A10-W1
Manufacturer : AAEON Technology Inc.

11. No. of test report : 84-R10-00439/16-00
12. Remarks (if any) : See appendix below
16. The index to the information package lodged with the Approval authority, which may be obtained on request, is attached : Not applicable
17. Reasons for extension : Not applicable

Appendix to type-approval communication form No. E13*10R00*10R05*13936*00 concerning the type-approval of an electrical/electronic sub-assembly under Regulation No. 10

1. Additional information

- 1.1. Electrical system rated voltage : 12-24V DC. pøs/neg ground
- 1.2. This ESA can be used on any vehicle type with the following restrictions : Operating temperature: -20°C to 70°C
- 1.2.1. Installation conditions, if any : Not applicable.
- 1.3. This ESA can be used only on the following vehicle types : Not applicable
- 1.3.1. Installation conditions, if any : Not applicable
- 1.4. The specific test method(s) used and the frequency ranges covered to determine immunity were (please specify precise method used from Annex 9) : Not applicable
- 1.5. Approved/recognised laboratory (for the purpose of this Regulation) responsible for carrying out the test : Not applicable
2. Remarks : Not applicable

Type : VPC-3300S-I4-A10-W1
Manufacturer : AAEON Technology Inc.

List of modifications

Appendix 0

Correction of : --

Modification of : --

Addition of : --

Deletion of : --

for type approval of an ESA with respect to
electromagnetic compatibility according to
the ECE Regulation R10,05 series of amendments

Date: April 12, 2016

1. Make (trade name of manufacturer) : AAEON
2. Type : VPC-3300S-I4-A10-W1
Version : Not applicable
3. Means of identification of type, if marked on the component / ~~separate technical unit~~ : ?VPC-3300S?
(?- where "?" may be any combination of alphanumeric character or "-" or blank for marketing purpose)
- 3.1. Location of that marking : On the bottom of the main unit
4. Name and address of manufacturer : AAEON Technology Inc.
5F, No. 135, Lane 235, Pao Chiao Road,
Hsin-Tien Dist., New Taipei City,
Taiwan, R.O.C.

Name and Address of authorized representative, if any : Not applicable
5. In the case of components and separate technical units, location and method of affixing of the approval mark : Label fixed on the bottom of the main unit
6. Address(es) of the assembly plant(s) : AAEON Technology Inc.
5F, No. 135, Lane 235, Pao Chiao Road,
Hsin-Tien Dist., New Taipei City,
Taiwan, R.O.C.
7. This ESA shall be approved as a : Component/ ~~STU~~
8. Any restrictions of use and conditions for fitting : Not applicable
9. Electrical system rated voltage : 12-24V DC, ~~positive~~ negative ground

Only applicable for charging systems:

10. Charger: on board / external : Not applicable

- 11. Charging current : Not applicable
- 12. Maximal nominal current (in each mode if necessary) : Not applicable
- 13. Nominal Charging voltage : Not applicable
- 14. Basic ESA interface functions : Not applicable
- 15. Minimum R_{sce} value (see paragraph 7.11. of this Regulation) : Not applicable

List of Annexes

Annex	Page
A Drawing or photo of the ESA	A1 ~ A2
B Specification	B1 ~ B4
C System layout and block diagram	C1 ~ C27

ESA Photo





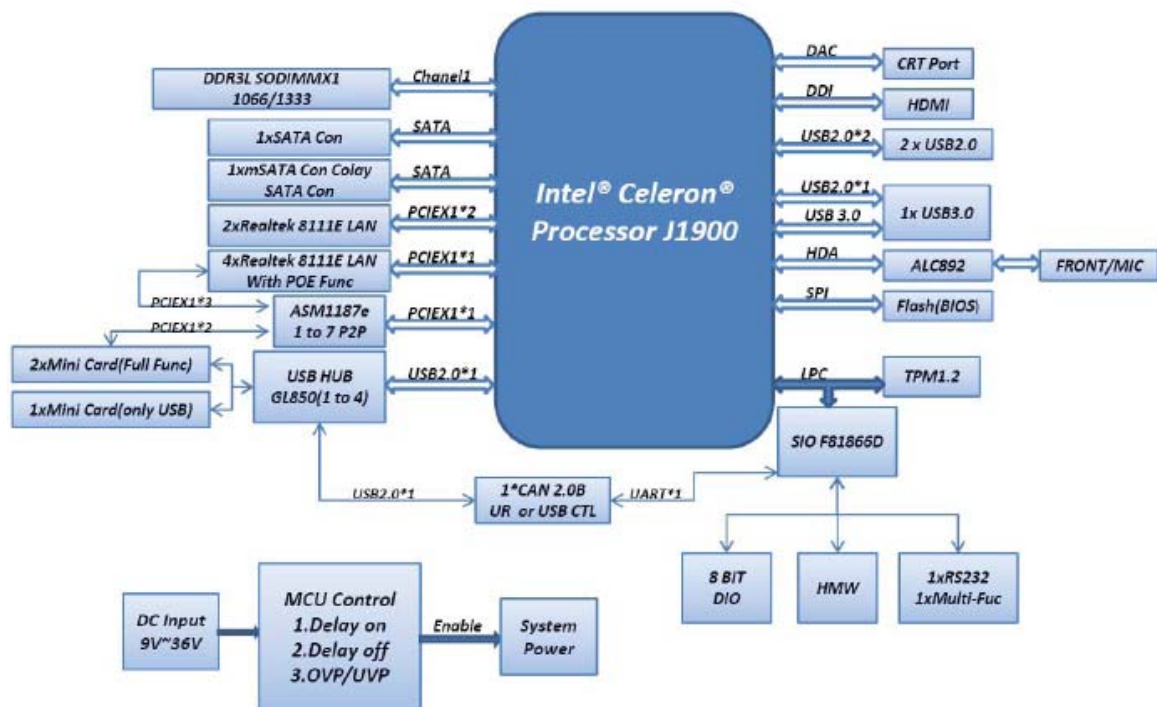
Label

AAEON [®] <i>an ASUS ASSOC. CO.</i>	 10R-05 13936	 CAN ICES-3A/NMB-3A
NVR VPC-3300S-I4-A10-W1		
INPUT:  12Vdc, 12A 24Vdc, 6A		Made In Taiwan

1. Feature

- In-Vehicle Based Chassis.
- Onboard Intel® 22nm Bay Trail J1900(4C, 2M Cache, up to 2.42GHz) Quad Core SoC, up to 10W Max
- * ● 1 x 204-pin Dual Channel DDR3L 1333 MHz SO-DIMM, non ECC, up to 8GB (*Remark: Only 4GB is applicable for E-mark approval.)
- Intel® Integrated Graphics Engine supports dual independent display by VGA x 1,HDMI x 1
- Realtek® Ethernet Connection x 6 w/4 POE
- 1 x 2.5" internal SSD tray (option HDD and SSD install), 1 x mSATA colay with 1 x 2.5 internal SSD
- 1 x USB 3.0, 2 x USB 2.0, 2 x COM ports **
- ** ● 3 x Mini-PCIe socket for 3G, 4G, BT, WIFI Module (2 full size w/ USB 2.0+ PCIe, 1 half size w/ USB) On board GPS (*Remark: The function of COM ports, 3G, 4G, BT and WIFI are not applicable for E-mark approval.)
- Built-in CAN 2.0B. Optional OBDII function (SAE J1939/J1708)(usb interface)
- Dimension: TBD

2. Product Overview



3. SPECIFICATIONS

Main System	
Form Factor	In-Vehicle Based Chassis
Main Board	VPC-3300
CPU	Onboard Intel® 22nm Bay Trail-I J1900 (4C, 2M Cache, up to 2.42GHz) Quad Core SoC, up to 10W Max

VPC-3300S Specification

* System Memory	1 x 204-pin Dual Channel DDR3L 1333 MHz SO-DIMM up to 8GB
Ethernet	Realtek RTL8111E Ethernet Connection x 6, support PoE (4 port 802.3af)
BIOS	AMI BIOS 64Mbit SPI ROM
I/O Chip	Fintek F81866
Storage	1 x 2.5" internal SSD slot (option HDD and SSD install) and 1 x Msata(default) colay with 1 x 2.5" internal SSD tray(optional)
LED	Indicators for 1 x Power, 1 x HDD/SSD in front panel
Audio	HD Audio Realtek ALC 892 Codec
GPS	On Board(reserve 1 hole on chassis for GPS) **
TPM	V1.2, Infineon SLB9635TT1.2(Optional)
Expansion	2 x full size Mini-PCle socket (USB 2.0+ PCIe, SIM SLOT) (reserve 2 hole on chassis for 3G/4G) ** 1 x half size Mini-PCle socket (USB 2.0, SIM SLOT) (reserve 1 hole on chassis for WIFI) ** Built-in CAN 2.0B. Optional OBDII function (SAE J1939/J1708)
Watchdog Timer	0~255 step by software programming
H/W Status Monitor	Monitoring CPU temperature, voltage (TBA), reserve 1 pinhead for system temp. monitor
Power Supply	<ul style="list-style-type: none"> - AT / ATX mode - Power Input Voltage: DC min.9V ~ Max. 36 V(OVP:36.7V, UVP:8.4V), with Ignition Pin - Power connector: 3 pin Terminal Block (9~36V, GND) - 2x7 pin dip switch for delay start Delay on:5sec, 10sec, 30sec, 5 min Delay off:3min, 5min, 15min, 30min
Weight	TBD
Chassis Color	Black
Dimension (W x H x D)	MB:170X170MM, Chassis: 200 mm (W) x 174 mm (D) x 60 mm (H)
Display	
CPU	Intel® HD Graphics (Gfx frequency 688/854 (turbo) MHz / DX11.1)
Resolution	Up to 2560 x 1600 / 60Hz for CRT Up to 1920 x 1080 / 60Hz, for HDMI Two display pipes, Pipe A and B support the dual independent displays
External I/O	
Front I/O	
LED	Power x1, HDD/SSD x 2, Wifi x 3 **
CAB BUS	CAB BUS 2.0 (2 PIN terminal block)
POWER INPUT	1 x Power connector, 1x remote power connecto r(3 pin Terminal Block)
GPIO	8bit GPIO with isolation (10 pin terminal block)
Fuse	9V/20A, 12V/15A, 36V/5A, Max. 60A
SIM Card	SIM Card slot x 2 **
Power Button	Standard power button x1
Rear I/O	
Audio	2 x Audio Jack (Mic-in, Line-out)
Display	1 x HDMI, 1 x VGA

VPC-3300S Specification

Ethernet	6 x RJ45 w/ LED
Software Programmable button	Software Programmable button x1
Universal Serial Bus	1 x USB 3.0, 2 x USB 2.0
Internal I/O	
Serial Port	1 x RS-232/422/485, 1 x RS-232 **
Environment	
Operating Temperature	-20°C to 70°C
Storage Temperature	-40°C ~ +85°C
Storage Humidity	10~80%, non-condensing
Certification	CE & FCC Class A, EMARK, ISO 7637
Anti-Vibration	Operating : MIL-STD-810G, Method 514.6, Category 4, common carrier US highway truck vibration exposure Storage : MIL-STD-810G, Method 514.6, Category 24, minimum integrity test
Anti-Shock	Operating : MIL-STD-810G, Method 516.6, Procedure I, functional shock=20g Non-operating : MIL-STD-810G, Method 516.6, Procedure V, crash hazard shock test=75g

(**Remark: The functions of Serial Port are **not** applicable for E-mark approval.)

4. OS Support

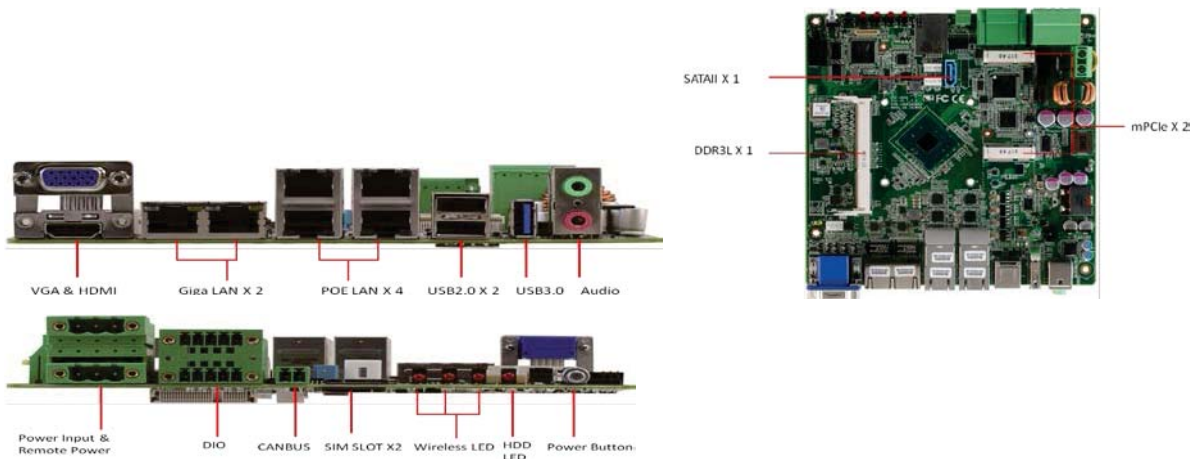
Operation System	VGA	Chipset	LAN	Audio	Notes
DOS (Include graphic and texture mode)					
Windows XP Pro, 32bit / 64bit					
Linux kernel 2.6.x or above	V	V	V	V	
Windows 7, 32bit / 64bit	V	V	V	V	
Windows 8.1, 32bit / 64bit	V	V	V	V	

5. BIOS Request

Manufacturer	AMI BIOS					
Core Revision	UEFI					
Chipset Name	Intel® J1900					
Super I/O Chipset	Fintech F81866		COM1-2	Address: As Standard		
				IRQ: As Standard		
Video Memory Size	Shared memory Max. 1748MB					
Graphic option	CRT @75MHz	■1024x768	■1280x1024	■1920x1080	■1920x1200	■2560x1600
	HDMI @60MHz	■1024x768	■1280x1024	■1920x1080		
		■CRT	■HDMI	■CRT&HDMI		
Ethernet	Boot from LAN		<input type="checkbox"/> RPL ROM		<input type="checkbox"/> PXE ROM	
	Wake on LAN		<input type="checkbox"/> Yes		<input type="checkbox"/> No	
Audio	Mic-in / Line-out					

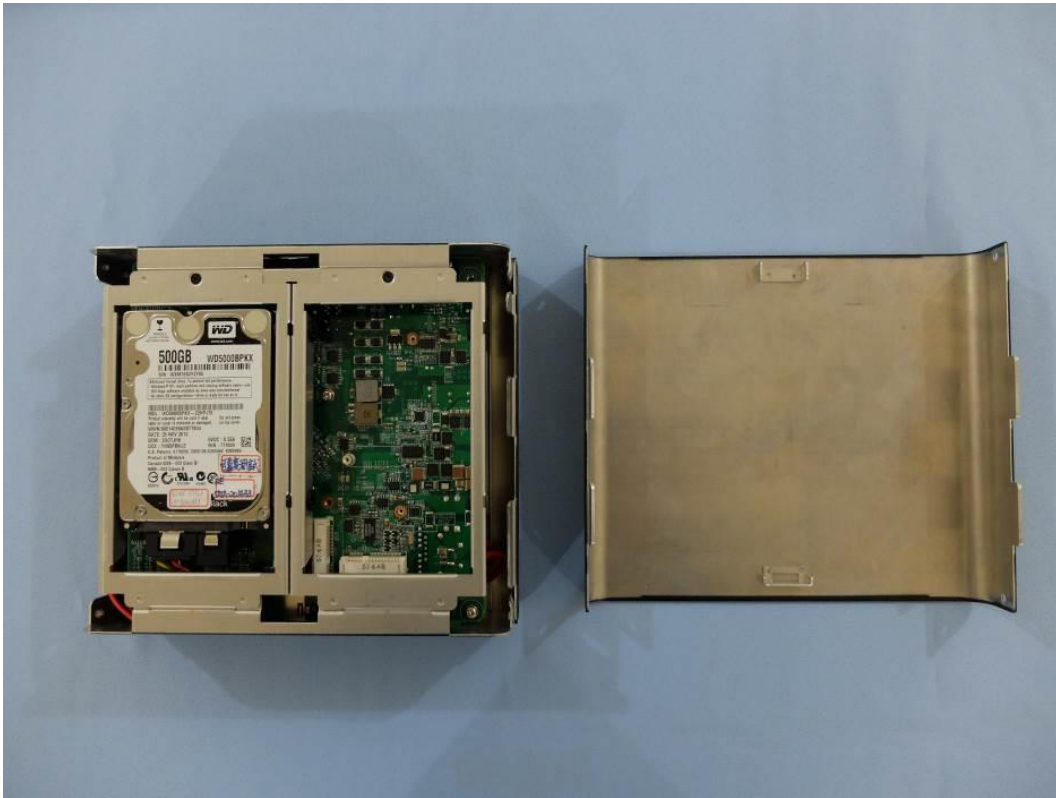
Power Supply Type	2 x SATA power with 4-pin wafer			
Power Management	<input type="checkbox"/> APM, Rev: __	<input checked="" type="checkbox"/> ACPI, Rev: <u>3.0b</u>		
Floppy Device	N/A			
ATAPI Device	N/A			
Hardware Monitor	Voltage	Same as Standard		
	<input checked="" type="checkbox"/> FAN	<input checked="" type="checkbox"/> CPU	<input checked="" type="checkbox"/> System	
Watchdog Timer	Minimum Unit	1 sec		
	Maximum Unit	255 sec		
	255 level and can be set by software			
Boot Device Optional	<input type="checkbox"/> FDD	<input checked="" type="checkbox"/> HDD/SSD	<input checked="" type="checkbox"/> CD-ROM	<input checked="" type="checkbox"/> Pen Drive
	<input checked="" type="checkbox"/> USB-FDD	<input checked="" type="checkbox"/> USB-HDD	<input checked="" type="checkbox"/> USB-CD	<input type="checkbox"/> m-SATA
Other Features	Power on after power fail			

6. Product Image

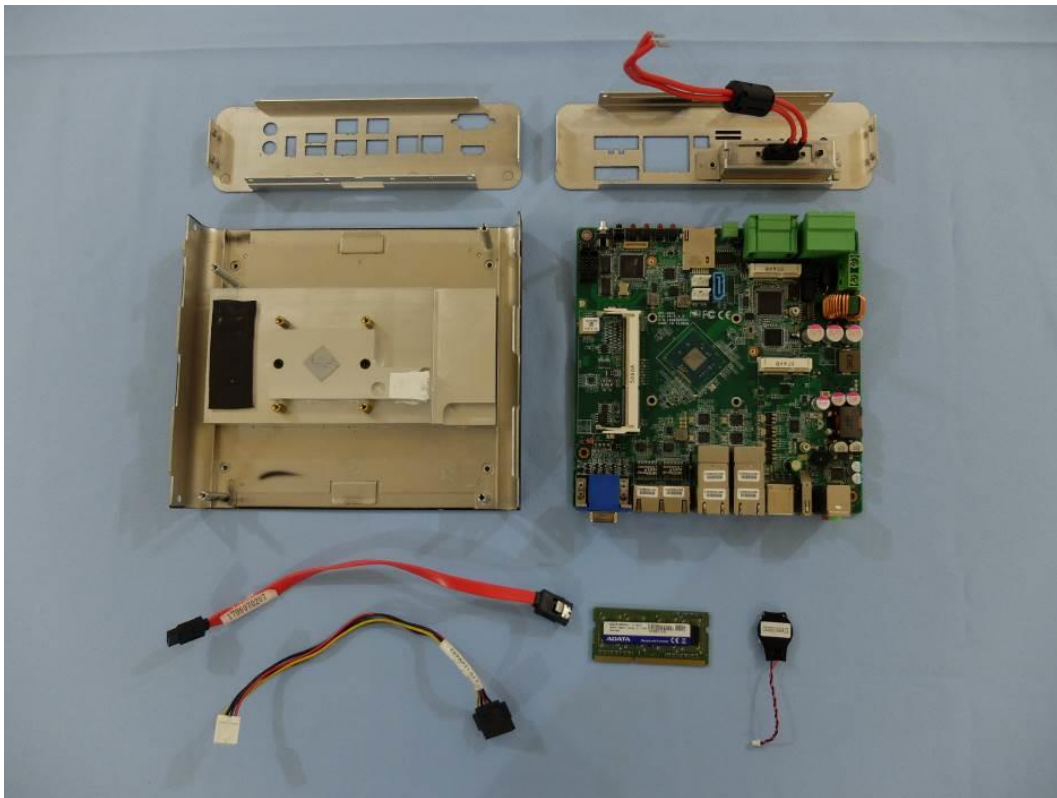


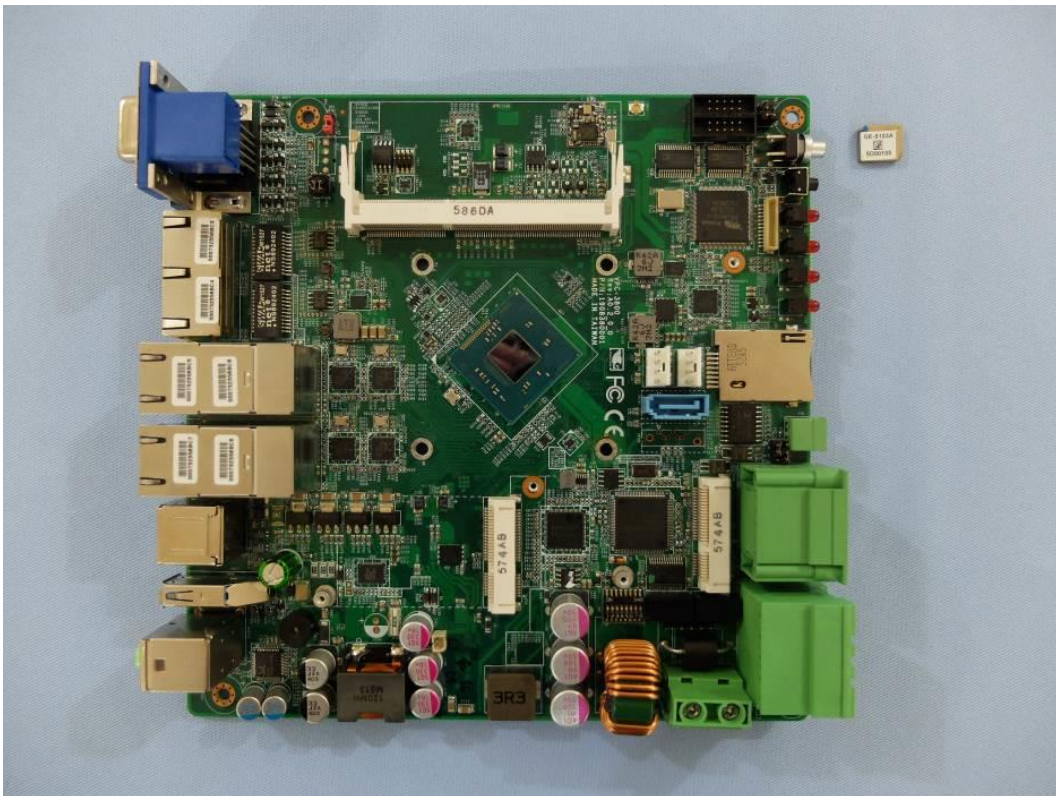
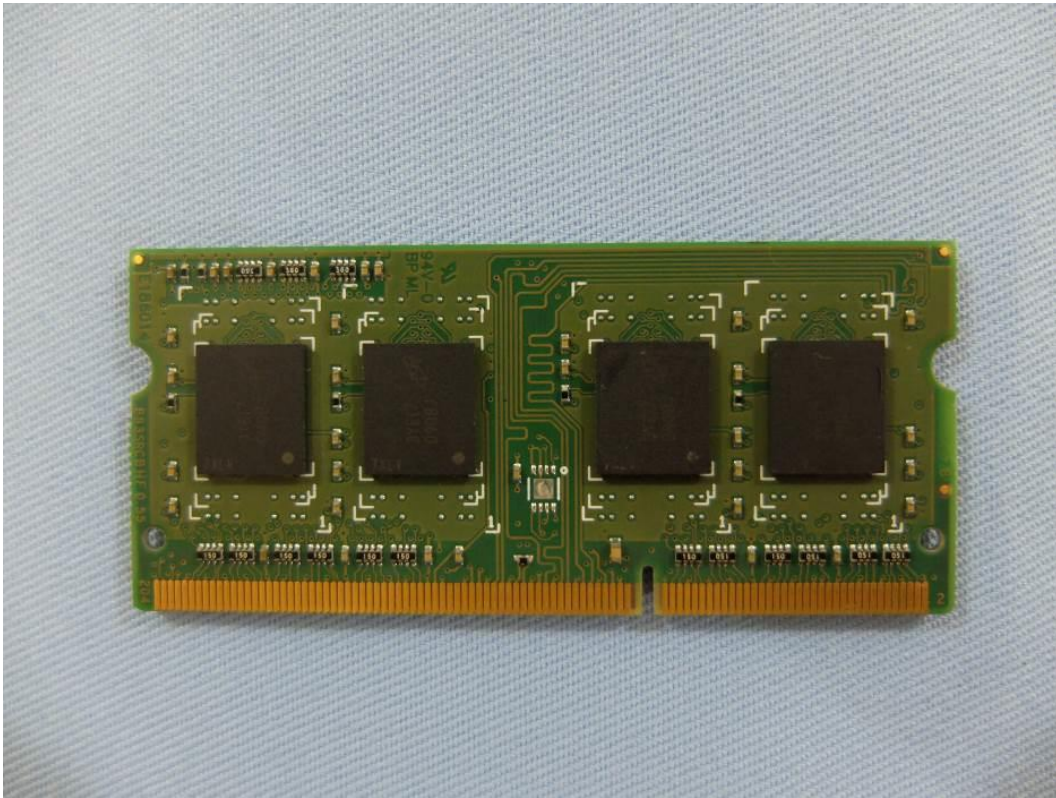
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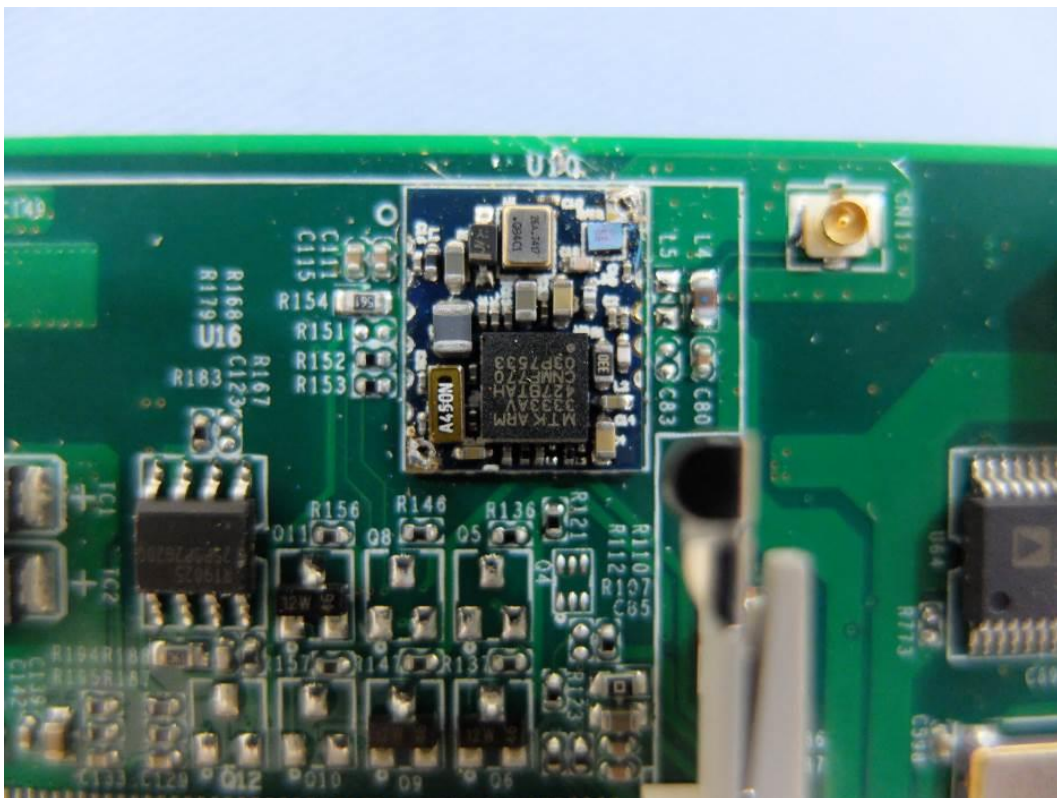
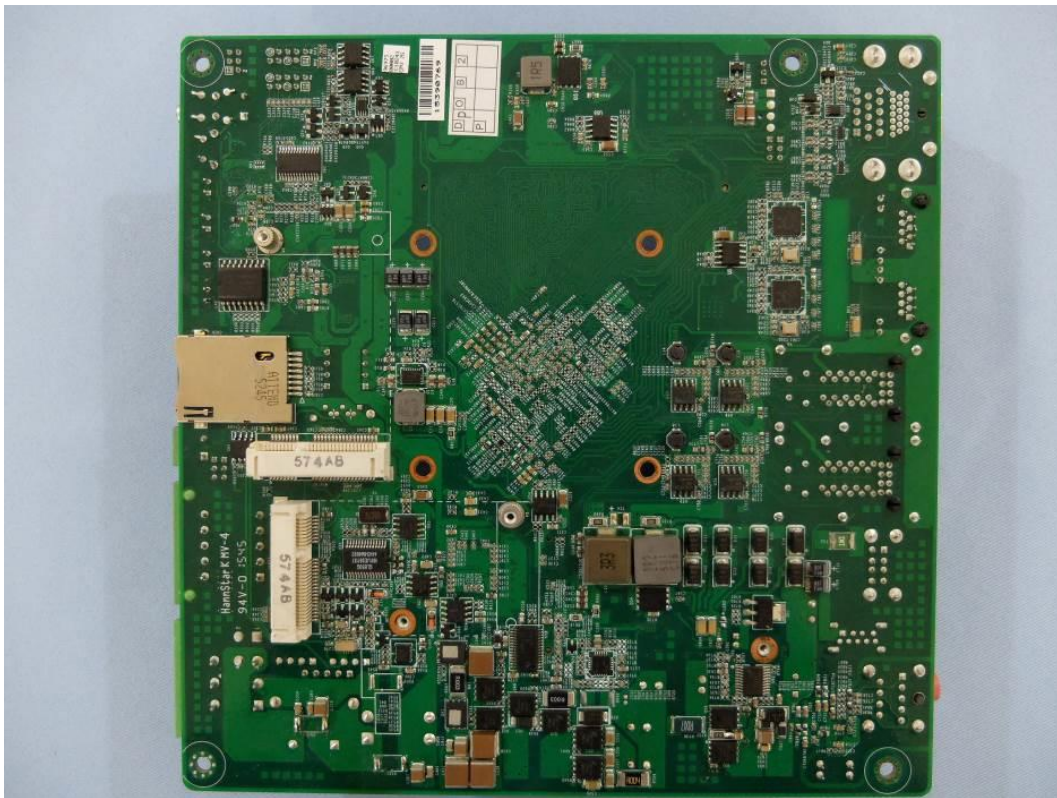
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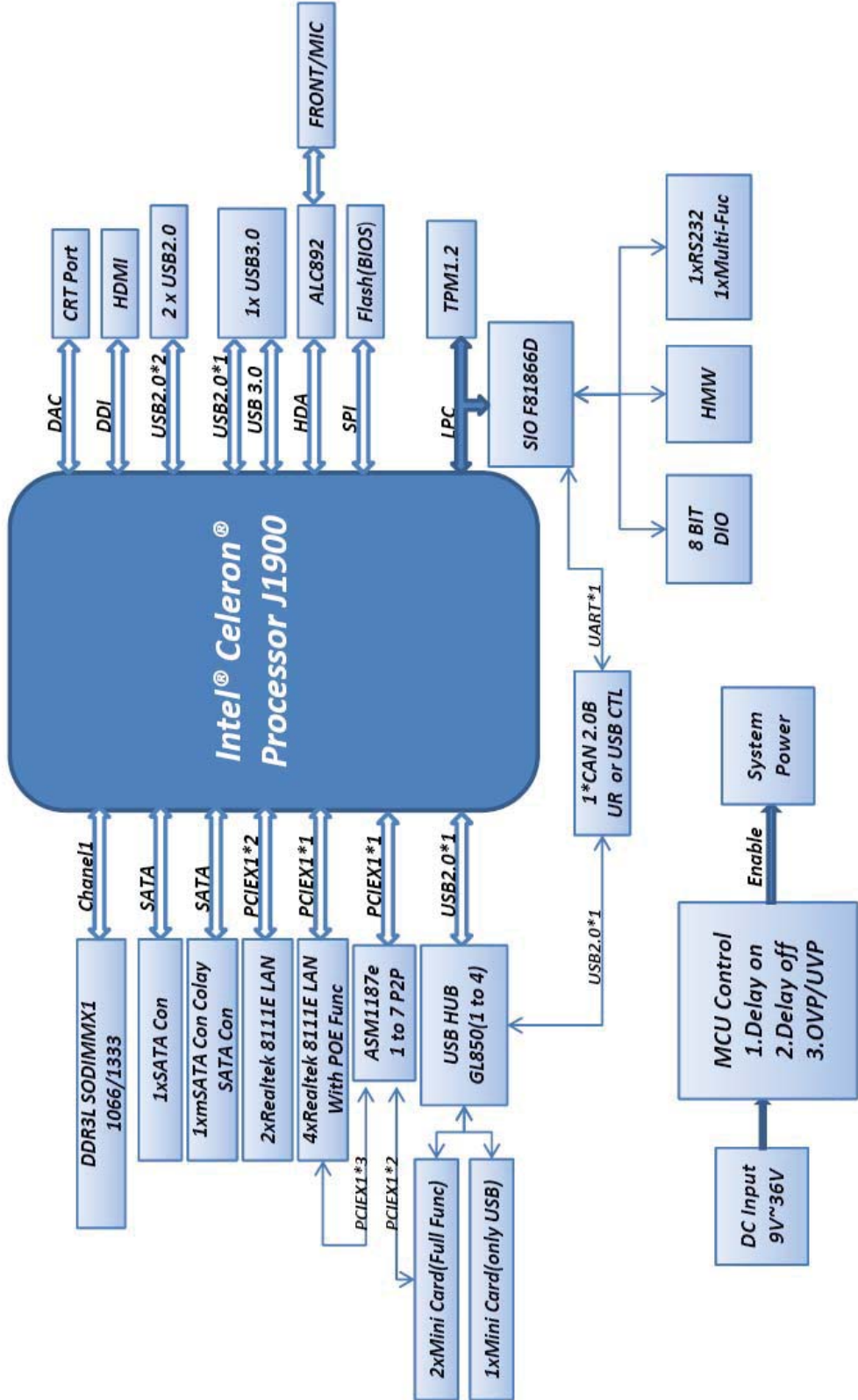


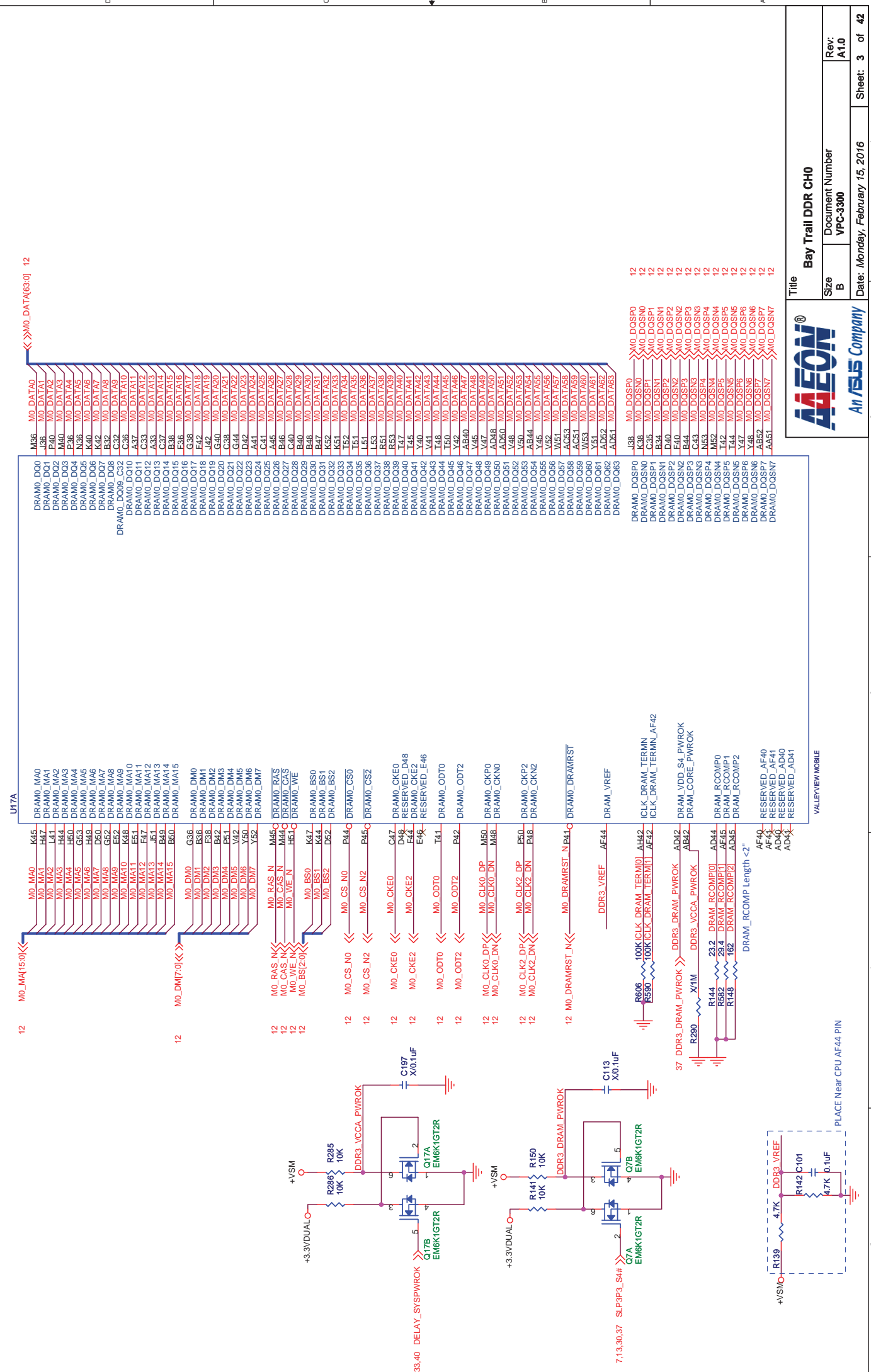












12 M0_MA[15:0] <<< <<< M0_MA[15:0] 12

12 M0_DM[7:0] <<< <<< M0_DM[7:0] 12

12 M0_CS_N, M0_CS_N2, M0_CKE0, M0_CKE2, M0_ODT0, M0_ODT2, M0_CLK0_DP, M0_CLK0_DN, M0_CLK2_DP, M0_CLK2_DN, M0_DRAMRST_N, DDR3_VREF, AF44, DDR3_DRAM_PWROK, DDR3_VCCA_PWROK, R606, R580, R285, R141, R142, R144, R552, R148, R162, R285, R144, R552, R148, R162, AF40, AF44, AD40, AD44, VALLEYVIEW MOBILE

12 M0_RAS_N, M0_CAS_N, M0_WE_N, M0_BS[2:0], M0_BSO, M0_BS1, M0_BS2, M0_CS_N0, M0_CS_N2, M0_CKE0, M0_CKE2, M0_ODT0, M0_ODT2, M0_CLK0_DP, M0_CLK0_DN, M0_CLK2_DP, M0_CLK2_DN, M0_DRAMRST_N, DDR3_VREF, AF44, ICLK_DRAM_TERMIN, ICLK_DRAM_TERMIN_AF42, DRAM_VDD_S4_PWROK, DRAM_CORE_PWROK, DRAM_RCOMP0, DRAM_RCOMP1, DRAM_RCOMP2, RESERVED_AF40, RESERVED_AF41, RESERVED_AD40, RESERVED_AD41

12 M0_MA0, M0_MA1, M0_MA2, M0_MA3, M0_MA4, M0_MA5, M0_MA6, M0_MA7, M0_MA8, M0_MA9, M0_MA10, M0_MA11, M0_MA12, M0_MA13, M0_MA14, M0_MA15, M0_DM0, M0_DM1, M0_DM2, M0_DM3, M0_DM4, M0_DM5, M0_DM6, M0_DM7, M0_RAS_N, M0_CAS_N, M0_WE_N, M0_BS[2:0], M0_BSO, M0_BS1, M0_BS2, M0_CS_N0, M0_CS_N2, M0_CKE0, M0_CKE2, M0_ODT0, M0_ODT2, M0_CLK0_DP, M0_CLK0_DN, M0_CLK2_DP, M0_CLK2_DN, M0_DRAMRST_N, DDR3_VREF, AF44, ICLK_DRAM_TERMIN, ICLK_DRAM_TERMIN_AF42, DRAM_VDD_S4_PWROK, DRAM_CORE_PWROK, DRAM_RCOMP0, DRAM_RCOMP1, DRAM_RCOMP2, RESERVED_AF40, RESERVED_AF41, RESERVED_AD40, RESERVED_AD41

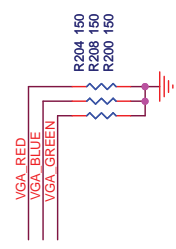
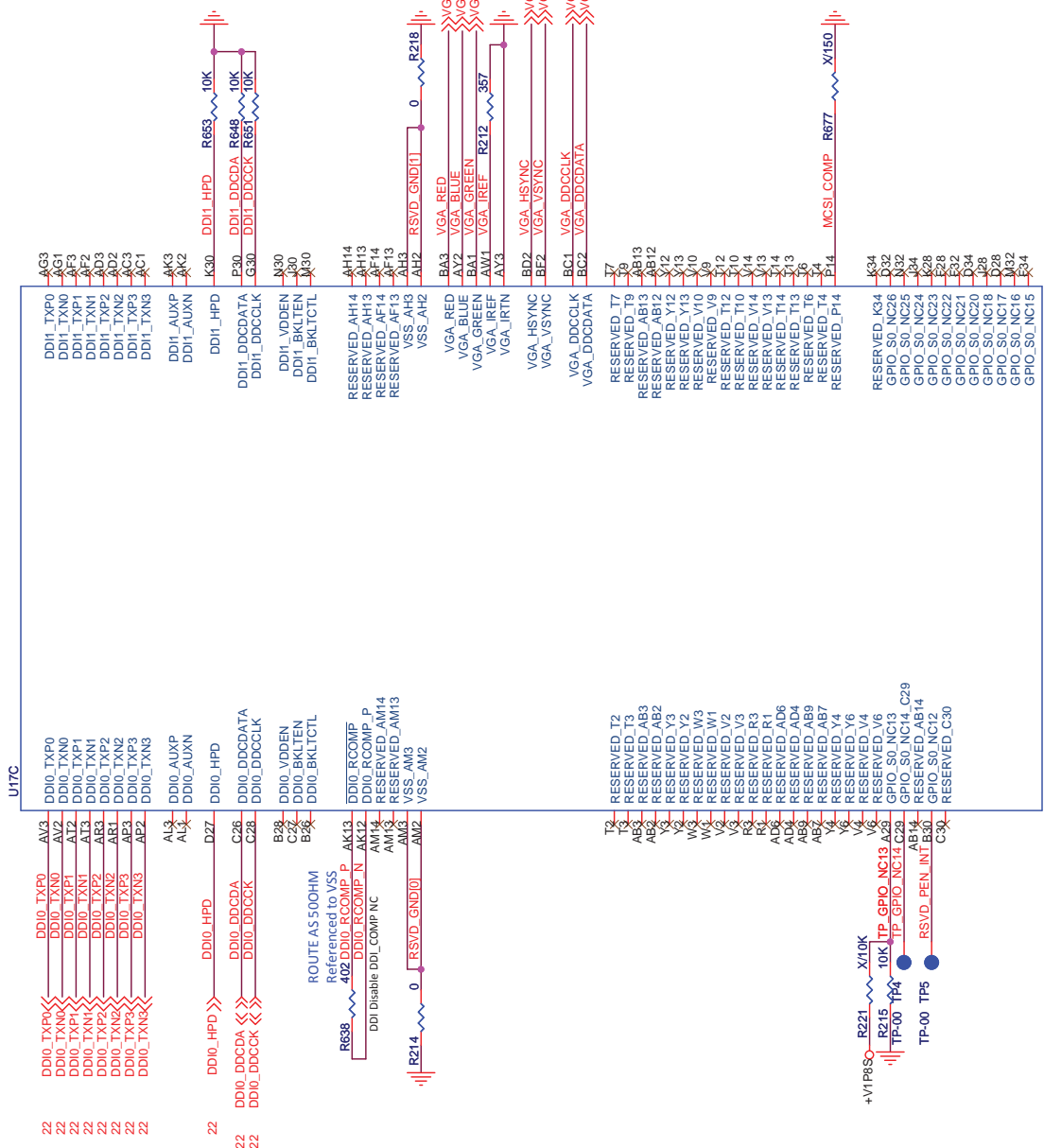
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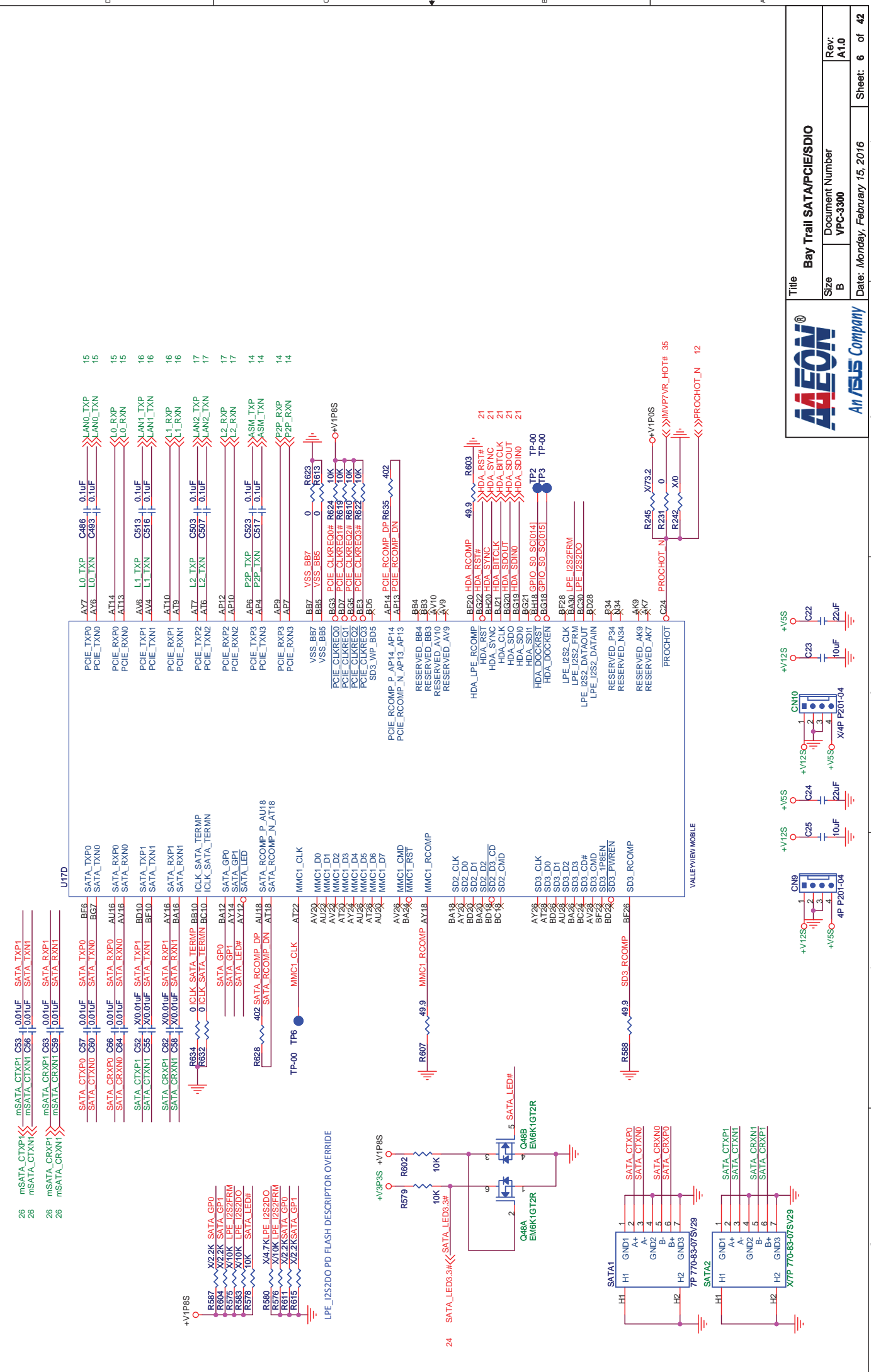
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MCSI1_CLKP/N	No connect
MCSI1_DP/N[3:0]	No connect
MCSI2_CLKP/N	No connect
MCSI2_DP/N[0]	No connect
MCSI3_CLKP/N	No connect
Mcsi_rcomp	No connect



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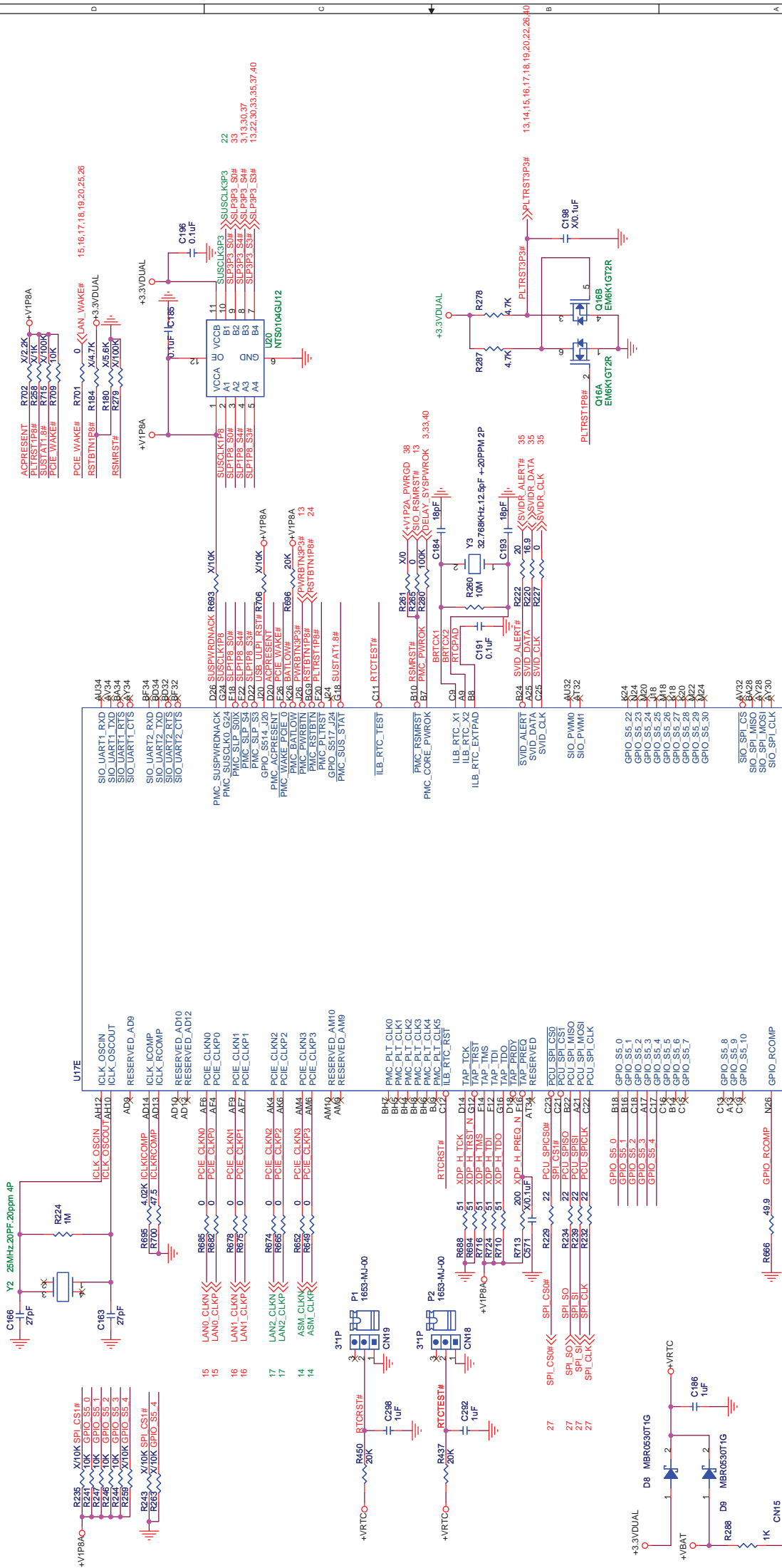
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Document Number: VPC-3300
Date: Monday, February 15, 2016
Rev: A1.0
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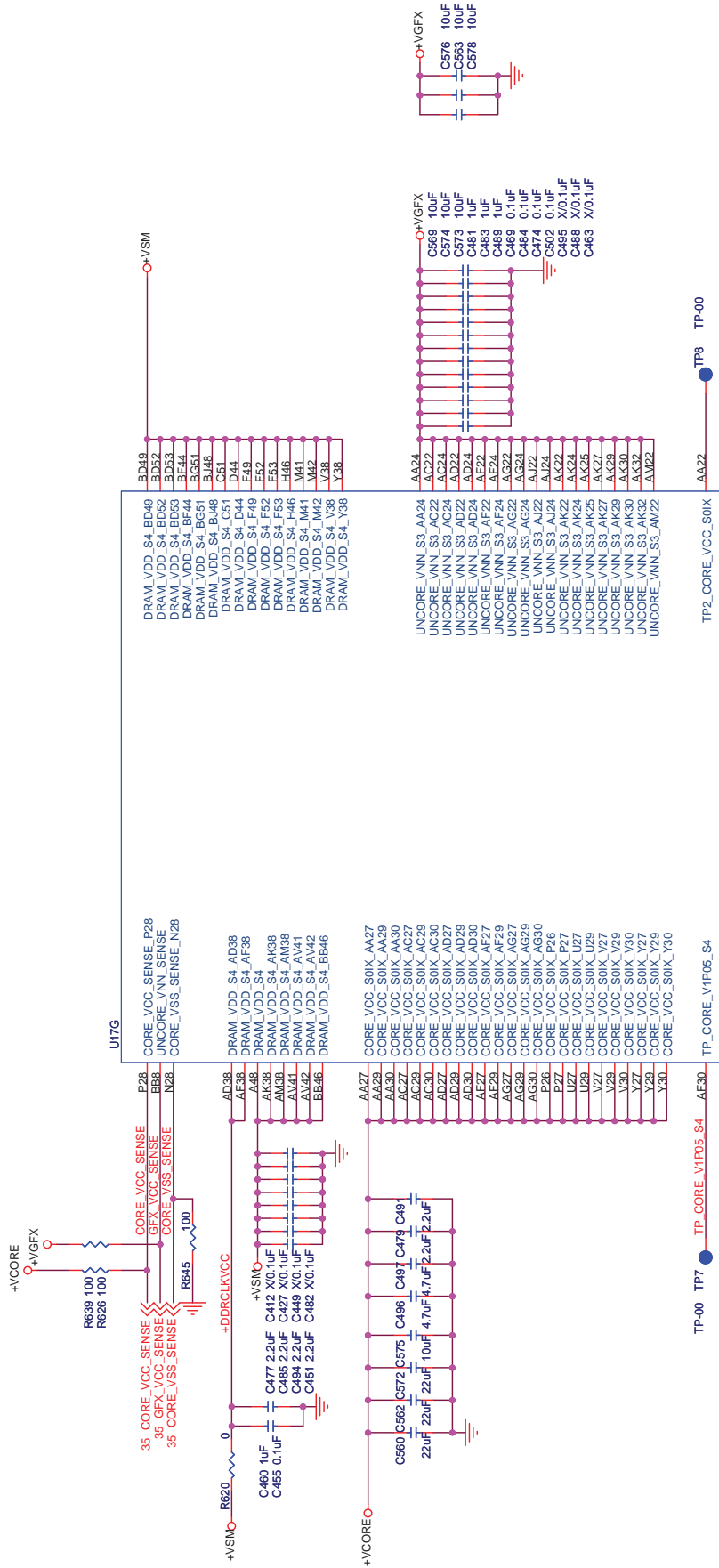
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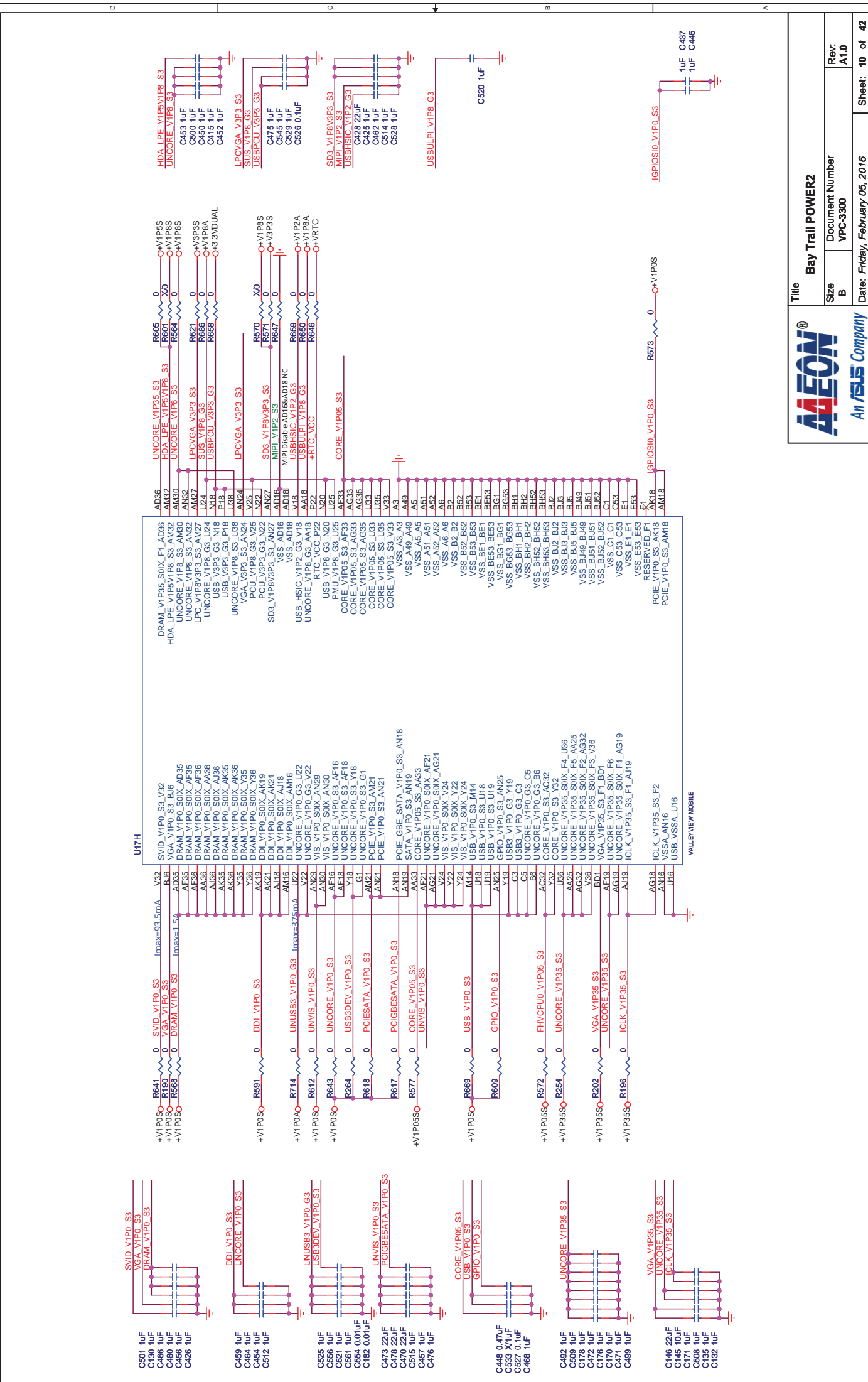
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Title Bay Trail PMIC/CLOCK
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Date Monday, February 15, 2016
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Pin	Function	Value	Pin	Function	Value
15	LAN0_CLKN	0	16	LAN1_CLKN	0
16	LAN1_CLKP	0	17	LAN2_CLKN	0
17	LAN2_CLKP	0	14	ASML_CLKN	0
14	ASML_CLKP	0	AM10	RESERVED_AM10	
AM10	RESERVED_AM10		AM9	RESERVED_AM9	
BH2	PMIC_PLT_CLK0		BH4	PMIC_PLT_CLK1	
BH4	PMIC_PLT_CLK1		BH6	PMIC_PLT_CLK3	
BH6	PMIC_PLT_CLK3		B8	PMIC_PLT_CLK5	
B8	PMIC_PLT_CLK5		C10	PMIC_RTC_RST	
D14	TAP_TCK		G12	XDP_H_TRST_N	
G12	XDP_H_TRST_N		F14	TAP_TMS	
F14	TAP_TMS		E12	XDP_H_TDI	
E12	XDP_H_TDI		G16	XDP_H_TDO	
G16	XDP_H_TDO		F16	TAP_TDO	
F16	TAP_TDO		F18	XDP_H_PREQ_N	
F18	XDP_H_PREQ_N		F18	TAP_PREQ	
F18	TAP_PREQ		AT34	RESERVED	
C22	PCU_SPI_CS0#		C20	PCU_SPI_CS1	
C20	PCU_SPI_CS1		C21	PCU_SPI_MISO	
C21	PCU_SPI_MISO		A21	PCU_SPI_MOSI	
A21	PCU_SPI_MOSI		C22	PCU_SPL_CLK	
C22	PCU_SPL_CLK		B18	GPIO_S5.0	
B18	GPIO_S5.0		B16	GPIO_S5.1	
B16	GPIO_S5.1		A17	GPIO_S5.2	
A17	GPIO_S5.2		C17	GPIO_S5.3	
C17	GPIO_S5.3		B19	GPIO_S5.4	
B19	GPIO_S5.4		C18	GPIO_S5.5	
C18	GPIO_S5.5		B19	GPIO_S5.6	
B19	GPIO_S5.6		C19	GPIO_S5.7	
C19	GPIO_S5.7		C13	GPIO_S5.8	
C13	GPIO_S5.8		A13	GPIO_S5.9	
A13	GPIO_S5.9		C19	GPIO_S5.10	
C19	GPIO_S5.10		N26	GPIO_ROMP	
N26	GPIO_ROMP				



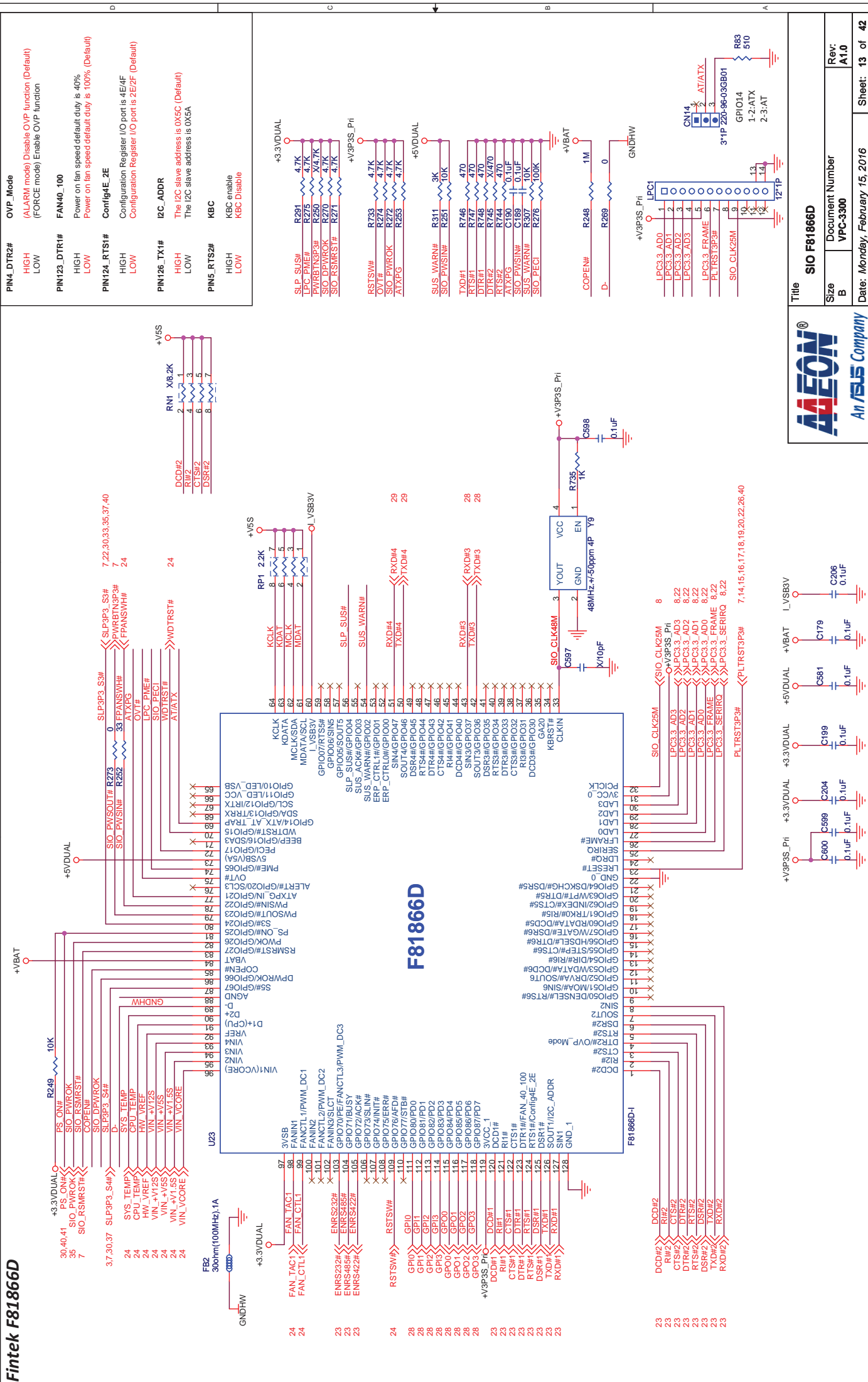
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Bay Trail POWER2

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F81866D

PIN4_DTR#	OVP_Mode
HIGH	(ALARM mode) Disable OVP function (Default)
LOW	(FORCE mode) Enable OVP function
PIN123_DTR#	FAN40_100
HIGH	Power on fan speed default duty is 40%
LOW	Power on fan speed default duty is 100% (Default)
PIN124_RTS#	Config4E_2E
HIGH	Configuration Register I/O port is 4E/4F
LOW	Configuration Register I/O port is 2E/2F (Default)
PIN126_TX#	I2C_ADDR
HIGH	The I2C slave address is 0X5C (Default)
LOW	The I2C slave address is 0X5A
PIN5_RTS#	KBC
HIGH	KBC enable
LOW	KBC Disable

Title SIO F81866D

Size B

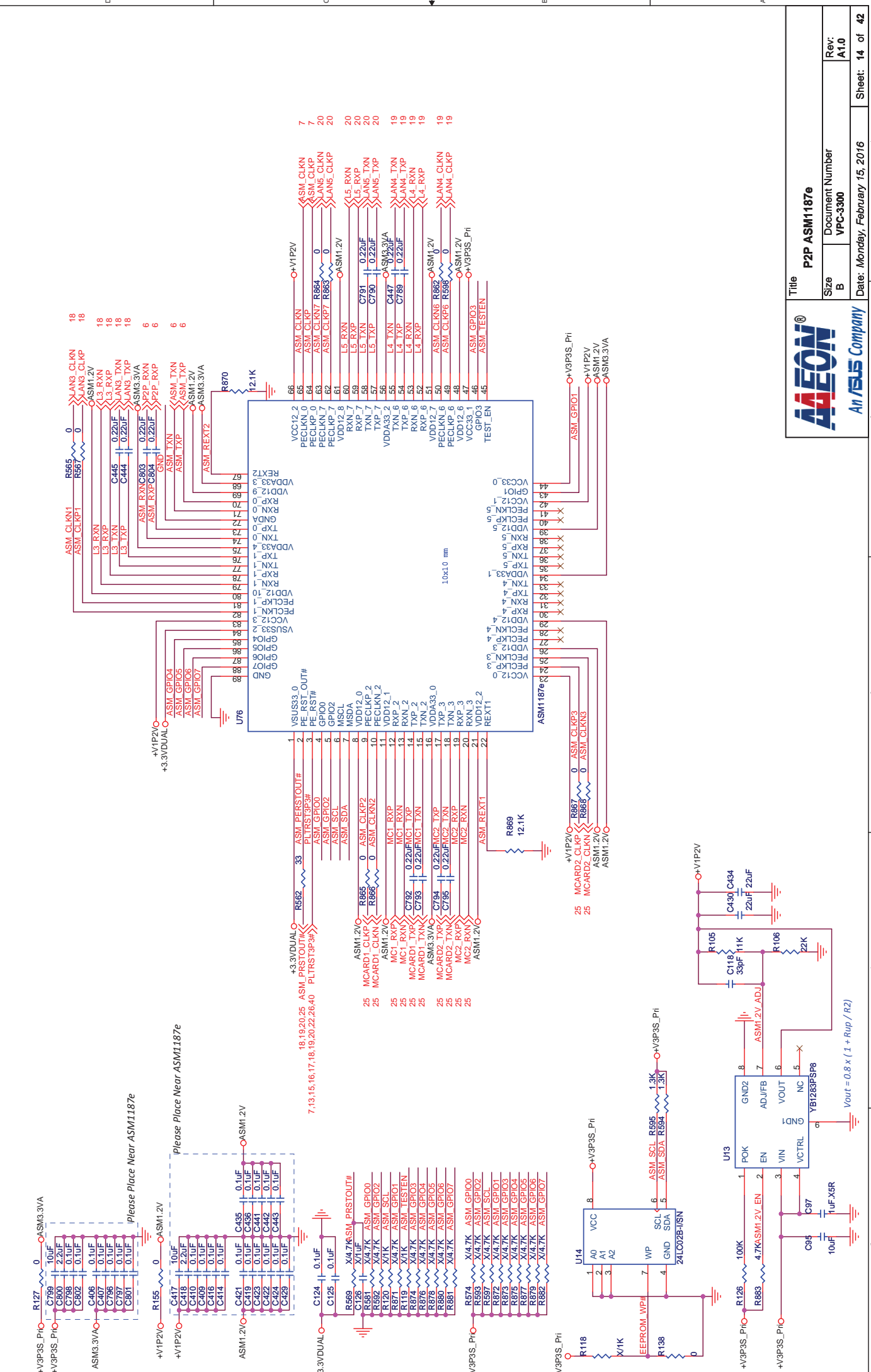
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Rev:	A1.0
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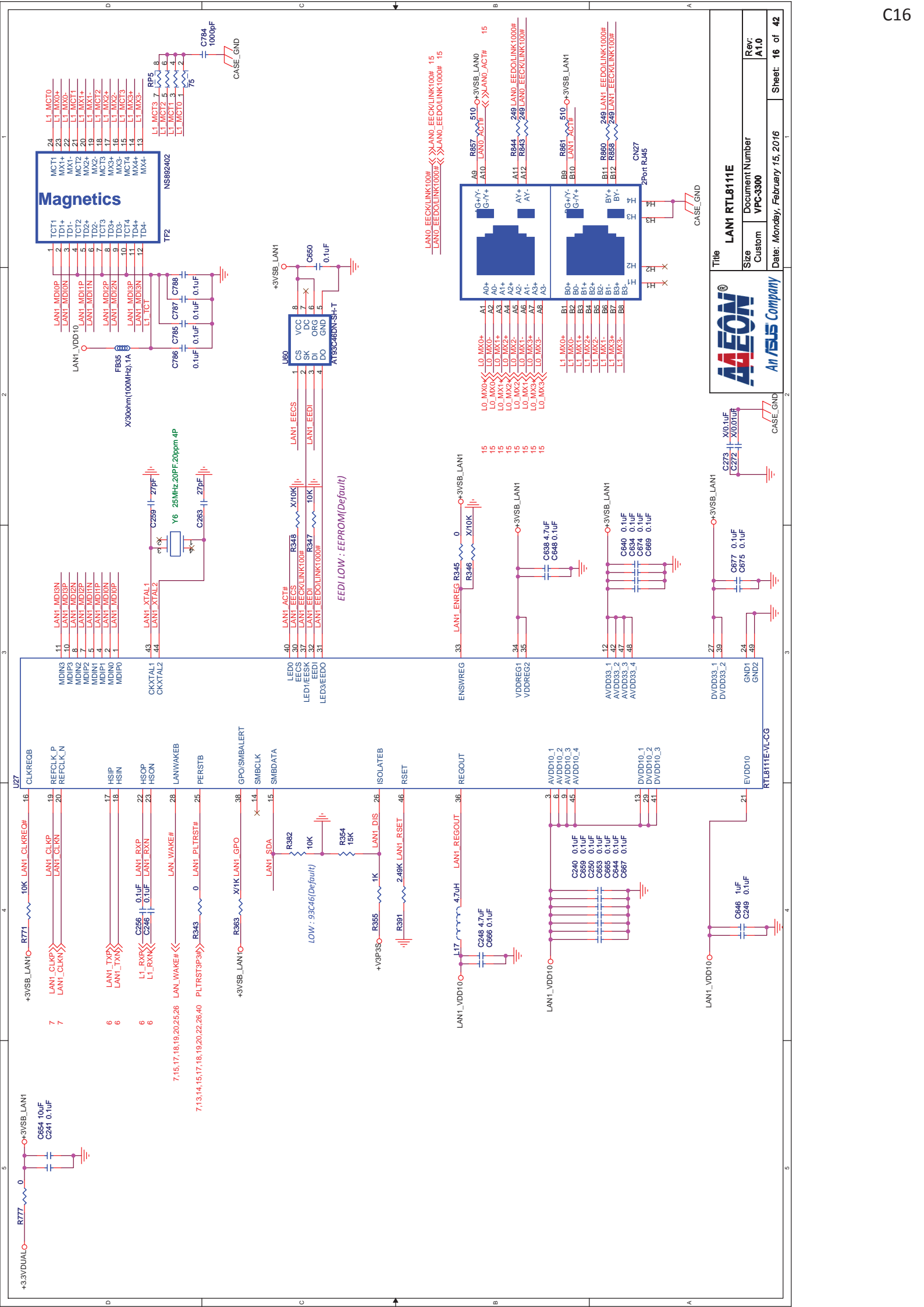


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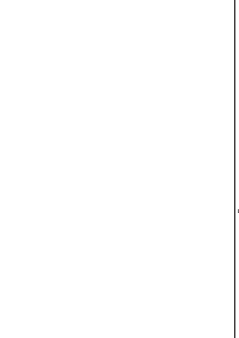
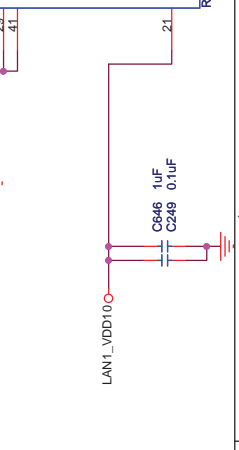
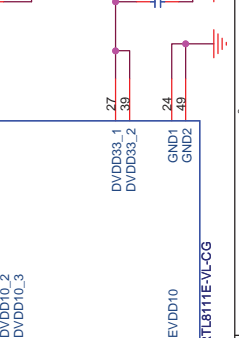
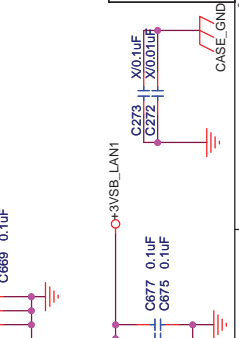
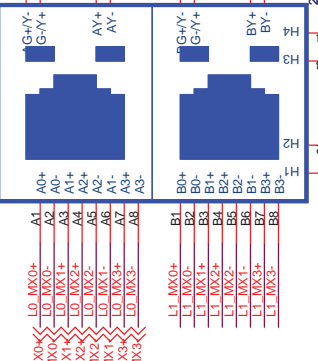
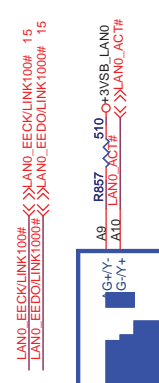
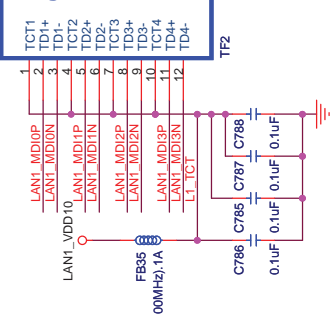
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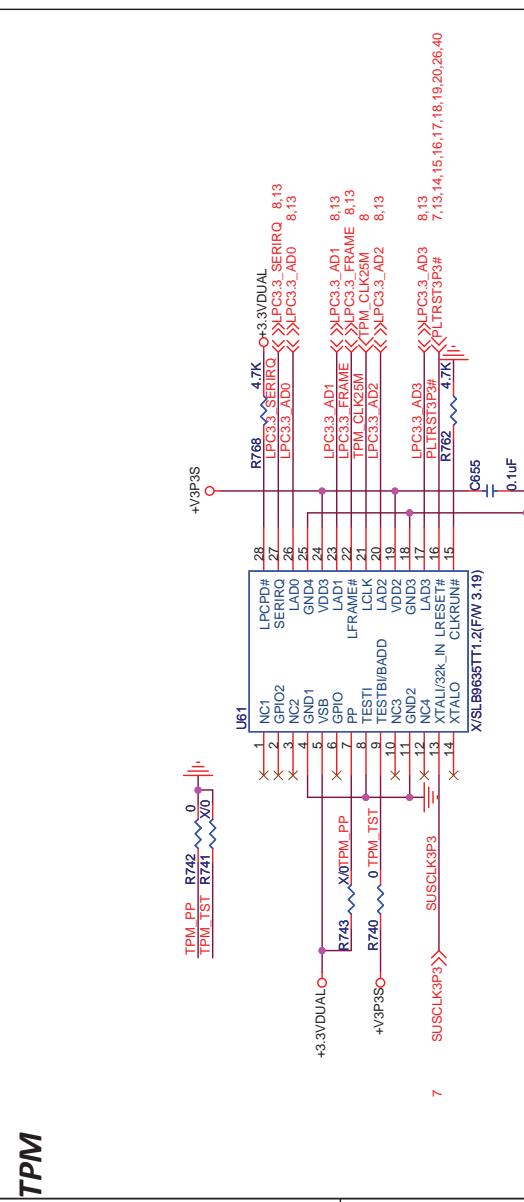
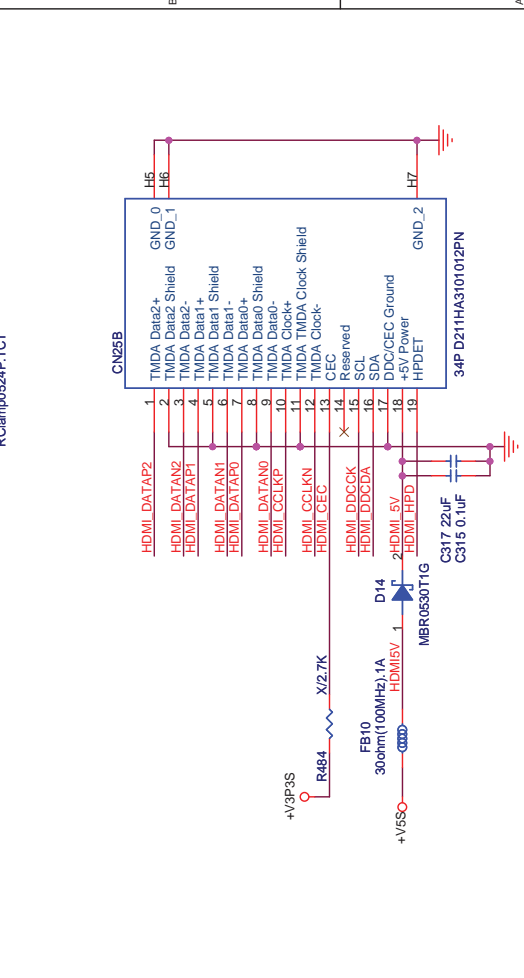
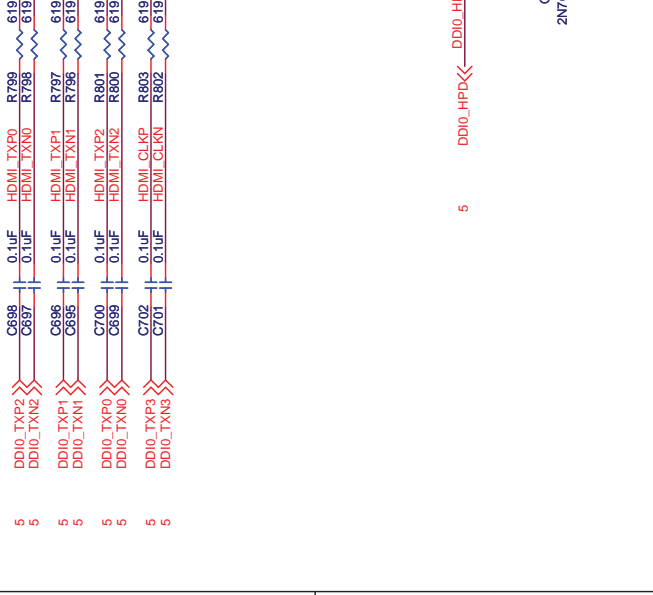
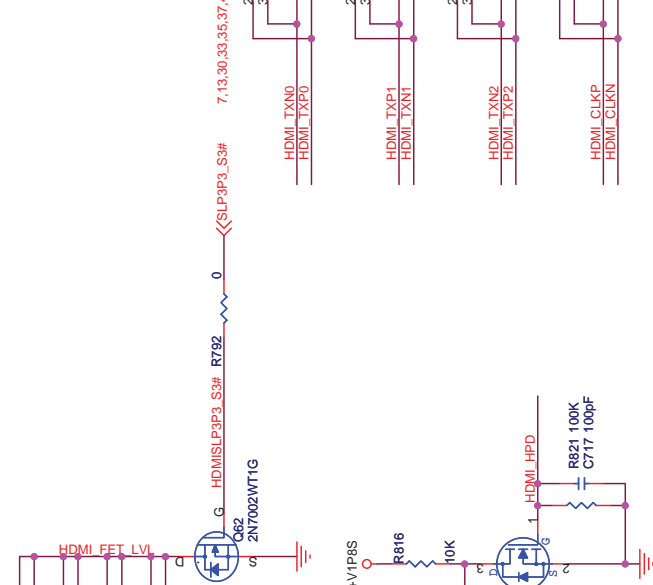
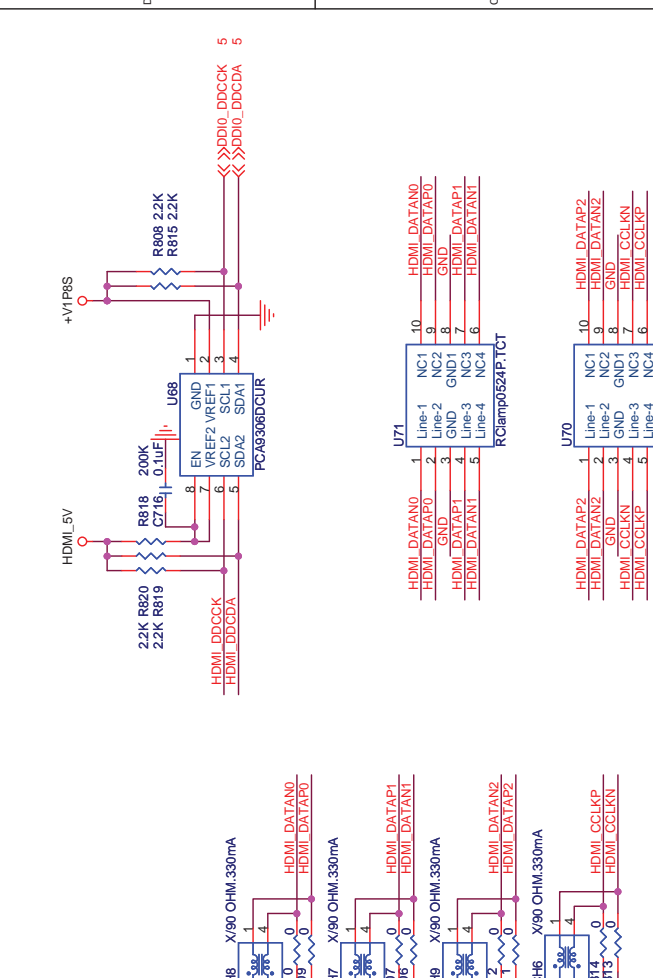


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Magnetics





TPM+HDMI

Size B Document Number VPC-3300 Rev: A1.0

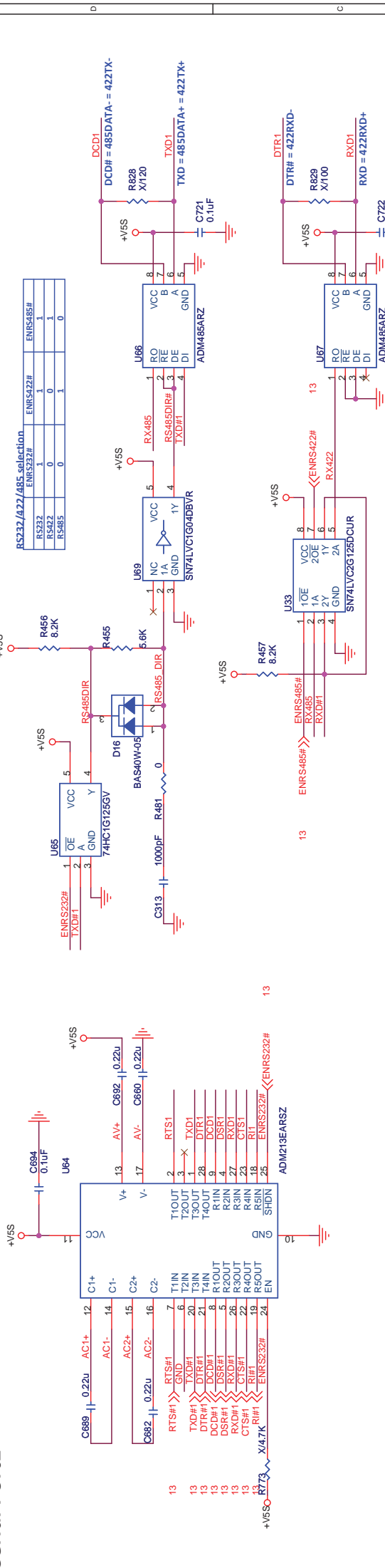
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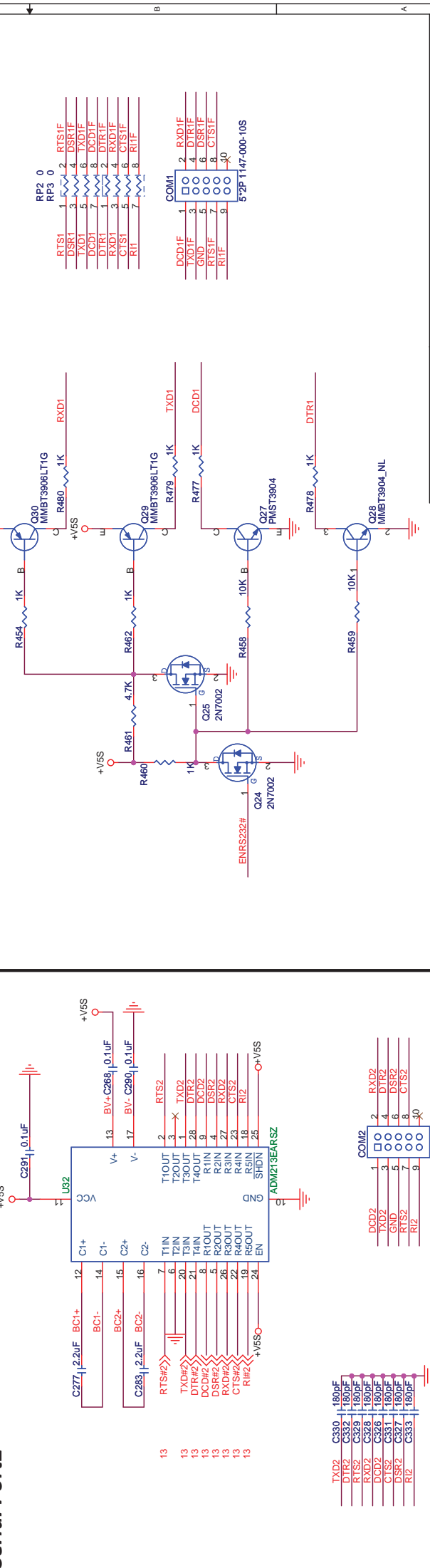
TPM

TESTB = High, Addr = 4EH / 4FH (Default)
TESTB = Low, Addr = 2EH / 2FH

Serial Port1



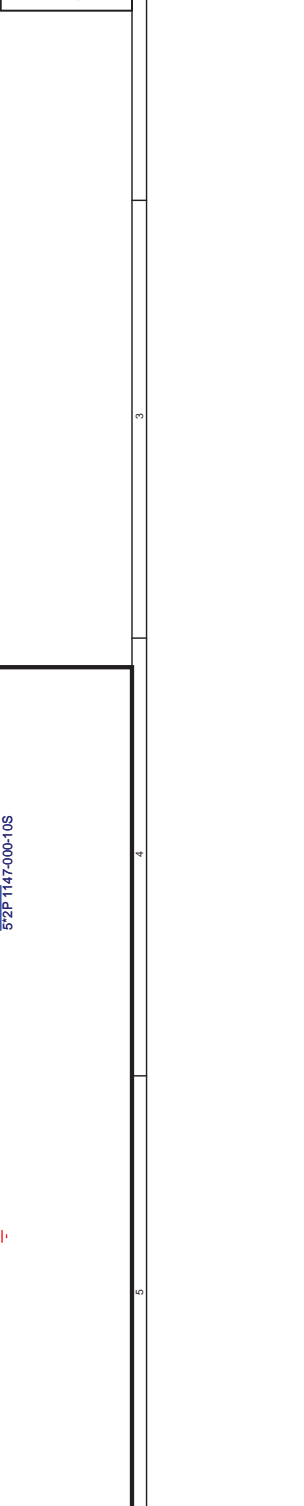
Serial Port2



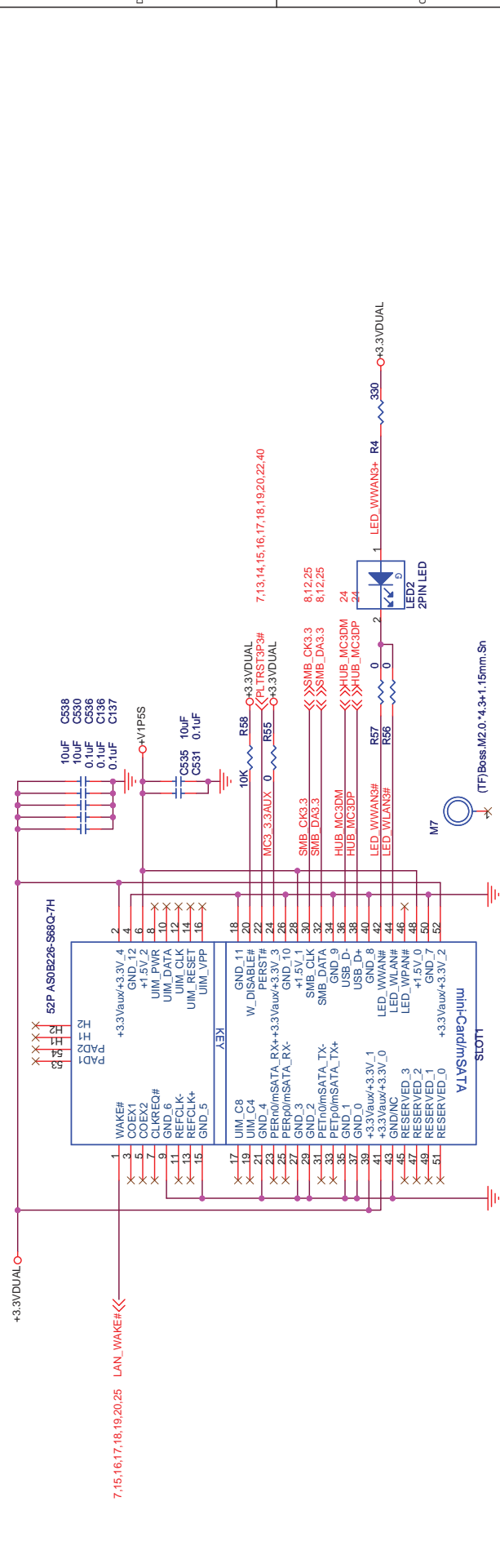
COM1.2

Size	B
Document Number	VPC-3300
Rev:	A1.0

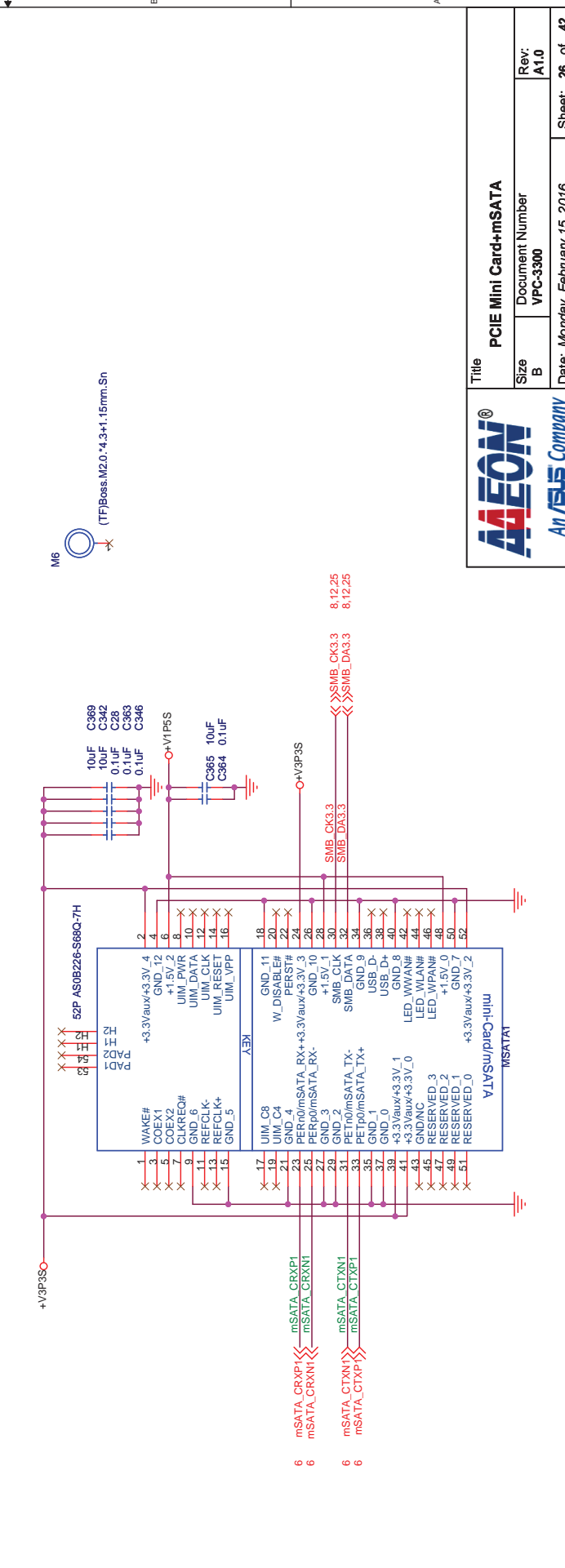
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PCIe Mini Card(USB)



mSATA



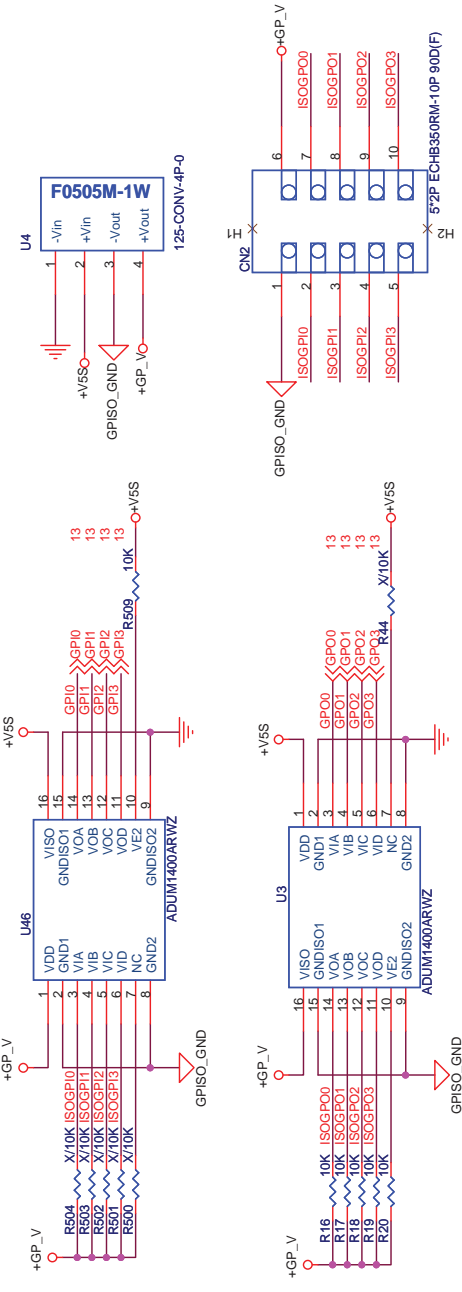
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Title: **PCIe Mini Card+mSATA**

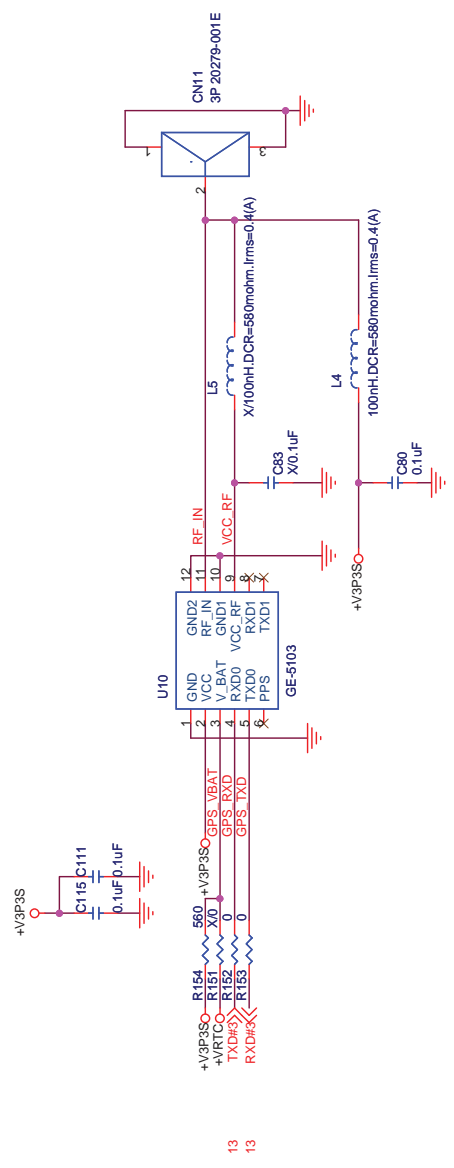
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Digital IO

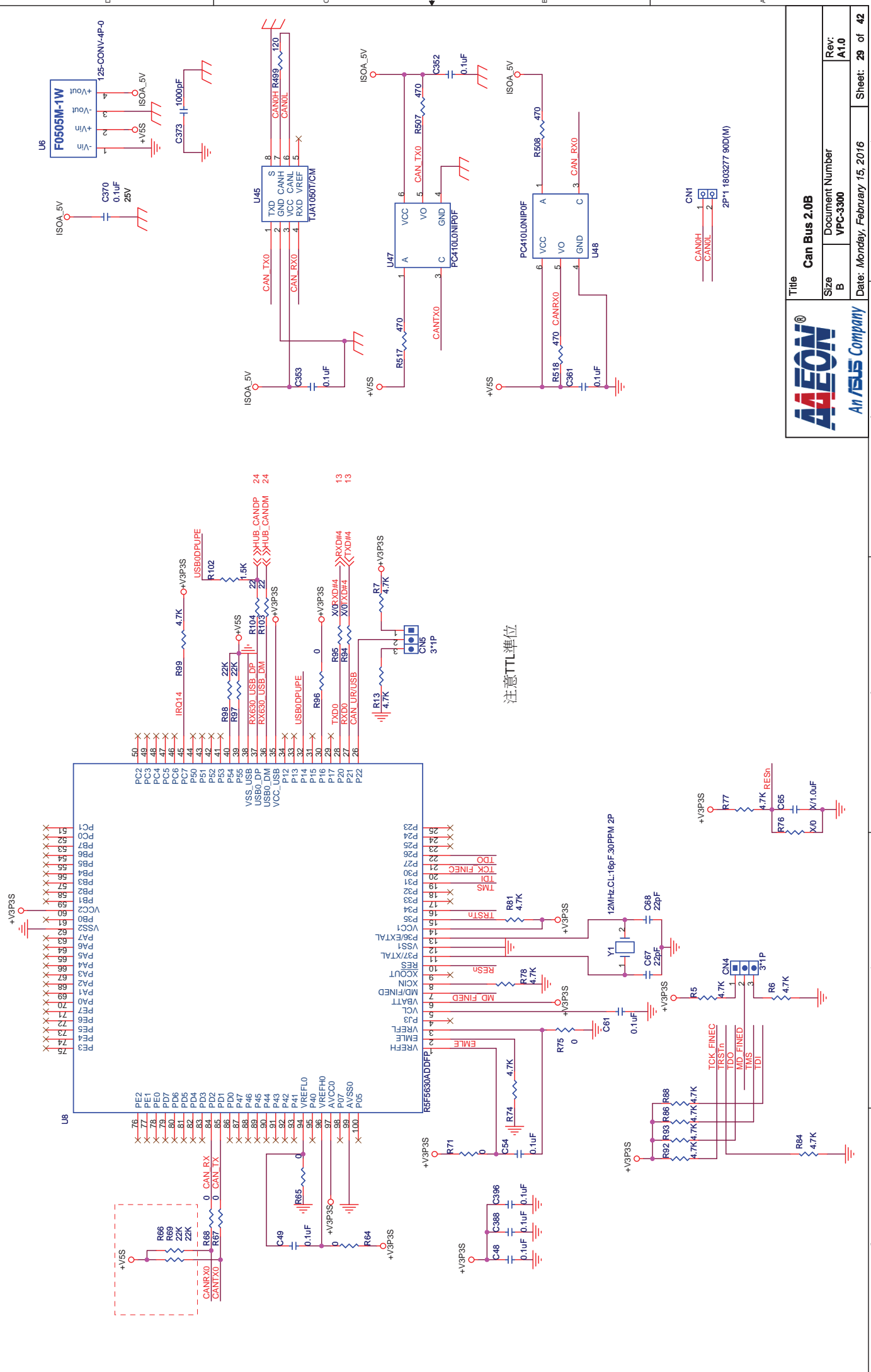


GPS



Title		Digital IO+GPS	
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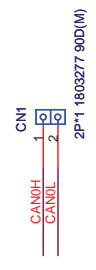
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Size: **B**

Document Number: **VPC-3300**

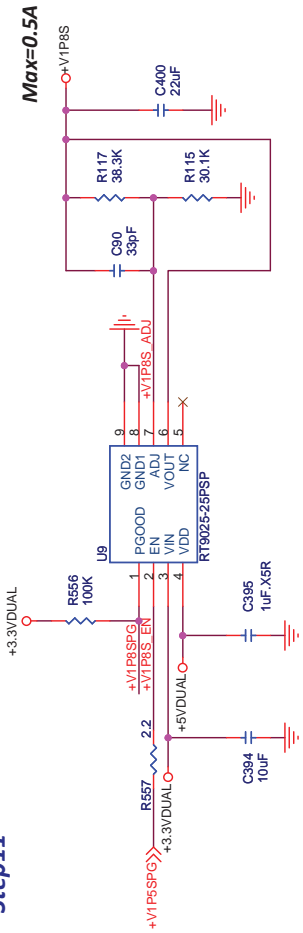
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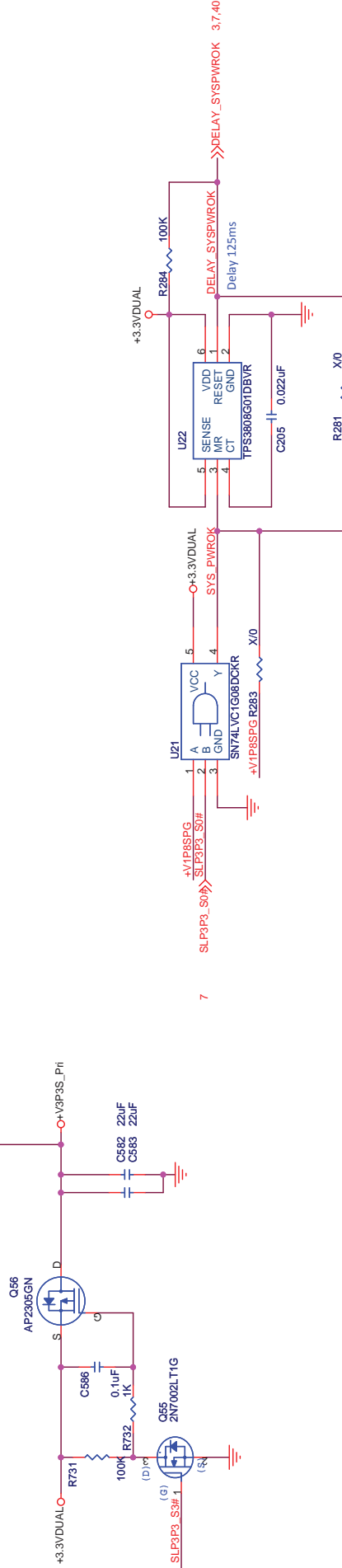
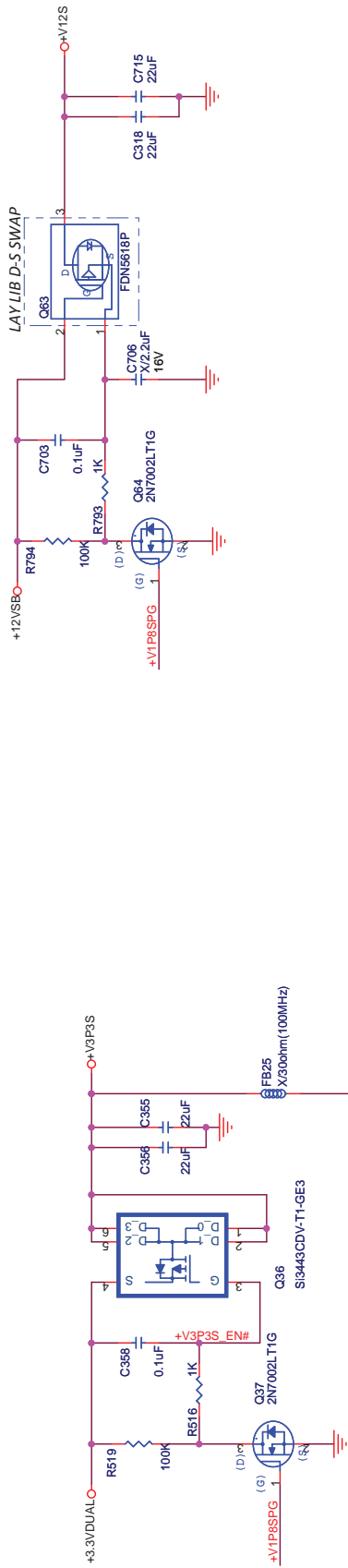
注意TTL單位

Step11



$$V_{out} = 0.8 \times (1 + R_{up} / R_2)$$

Step12



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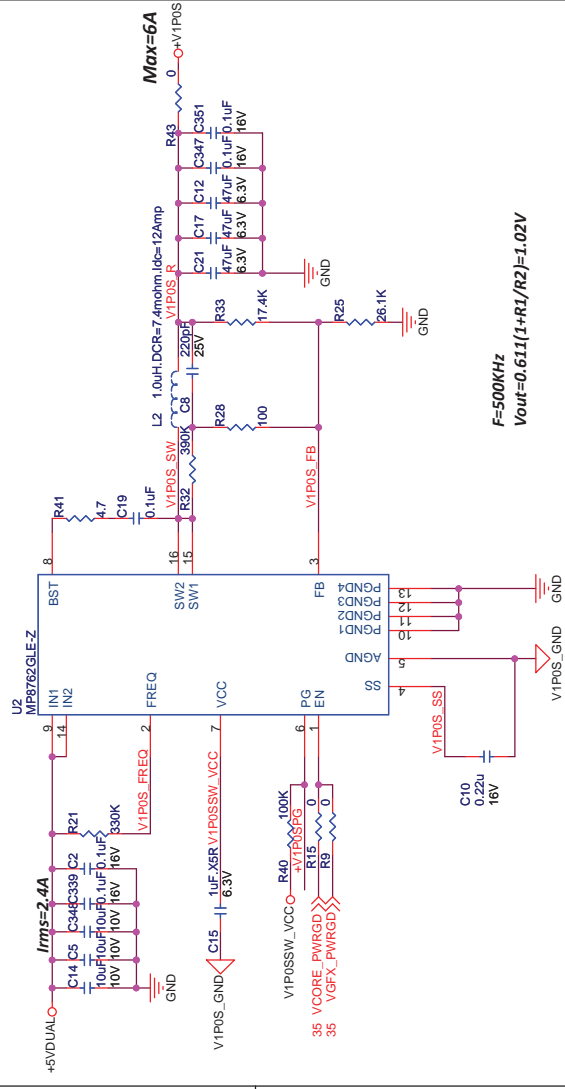
Title SOC Power1

Size B
Document Number VPC-3300

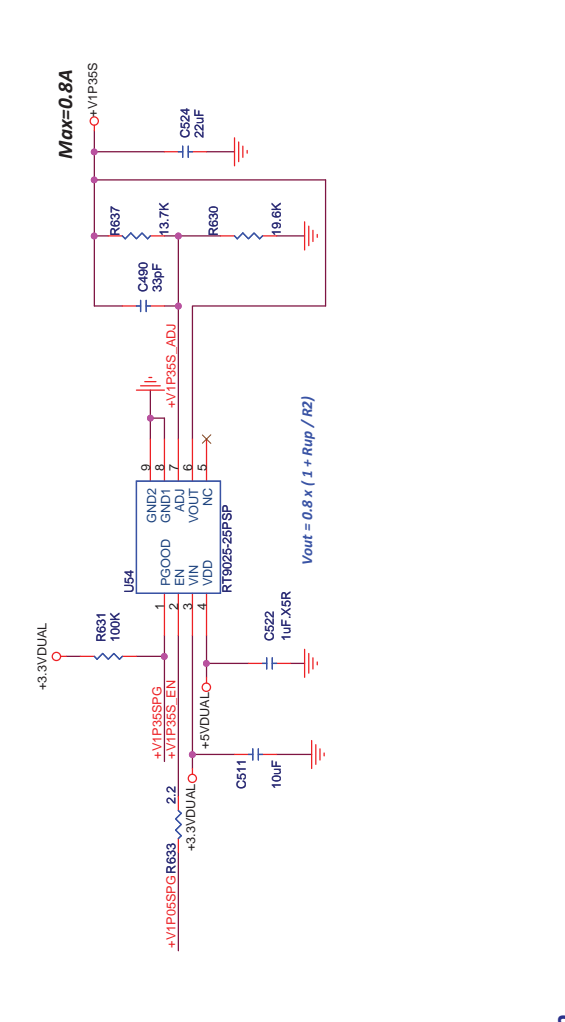
Date: Monday, February 15, 2016

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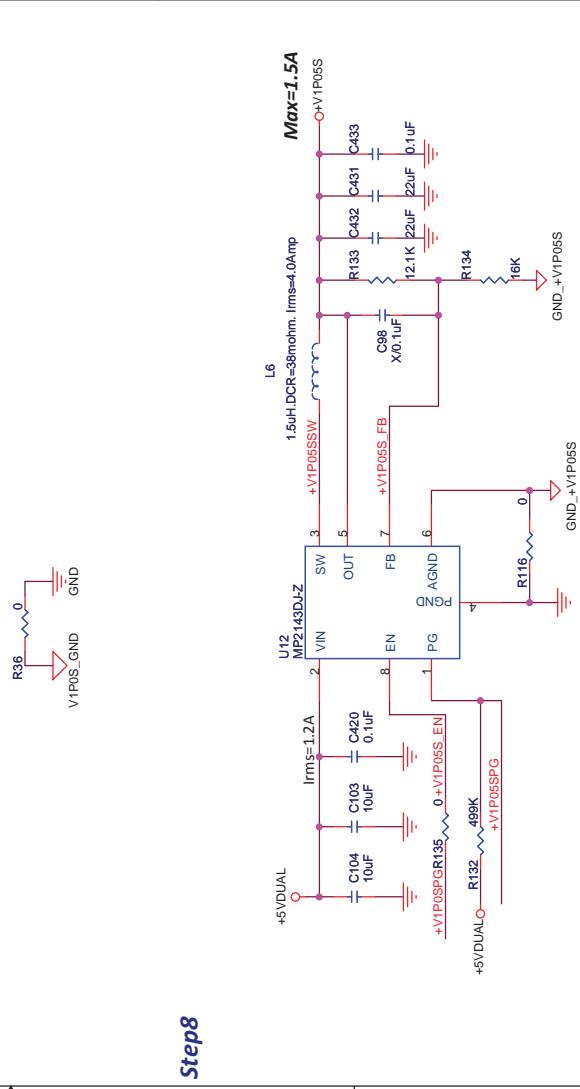
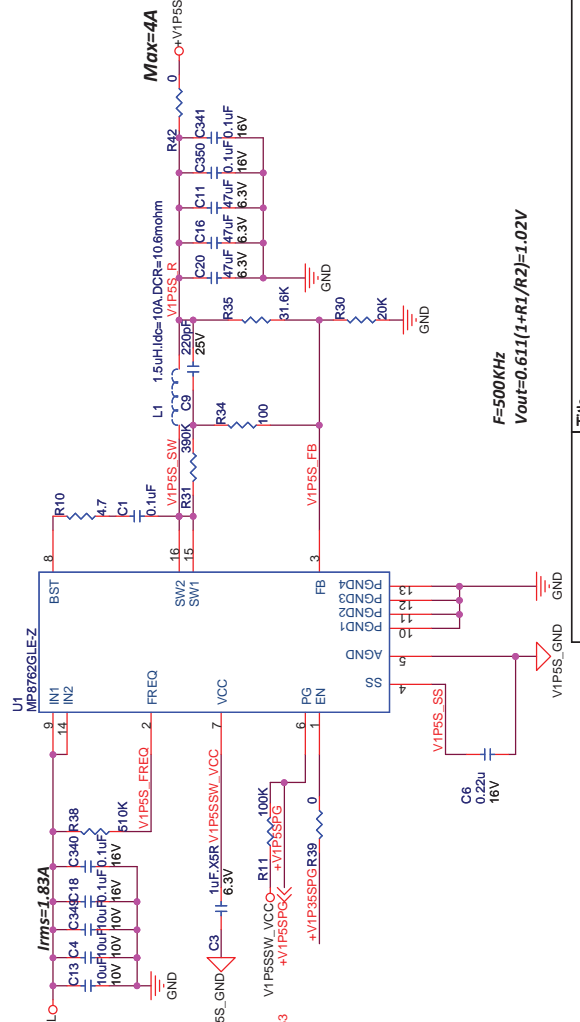
Step7



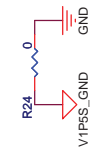
Step9

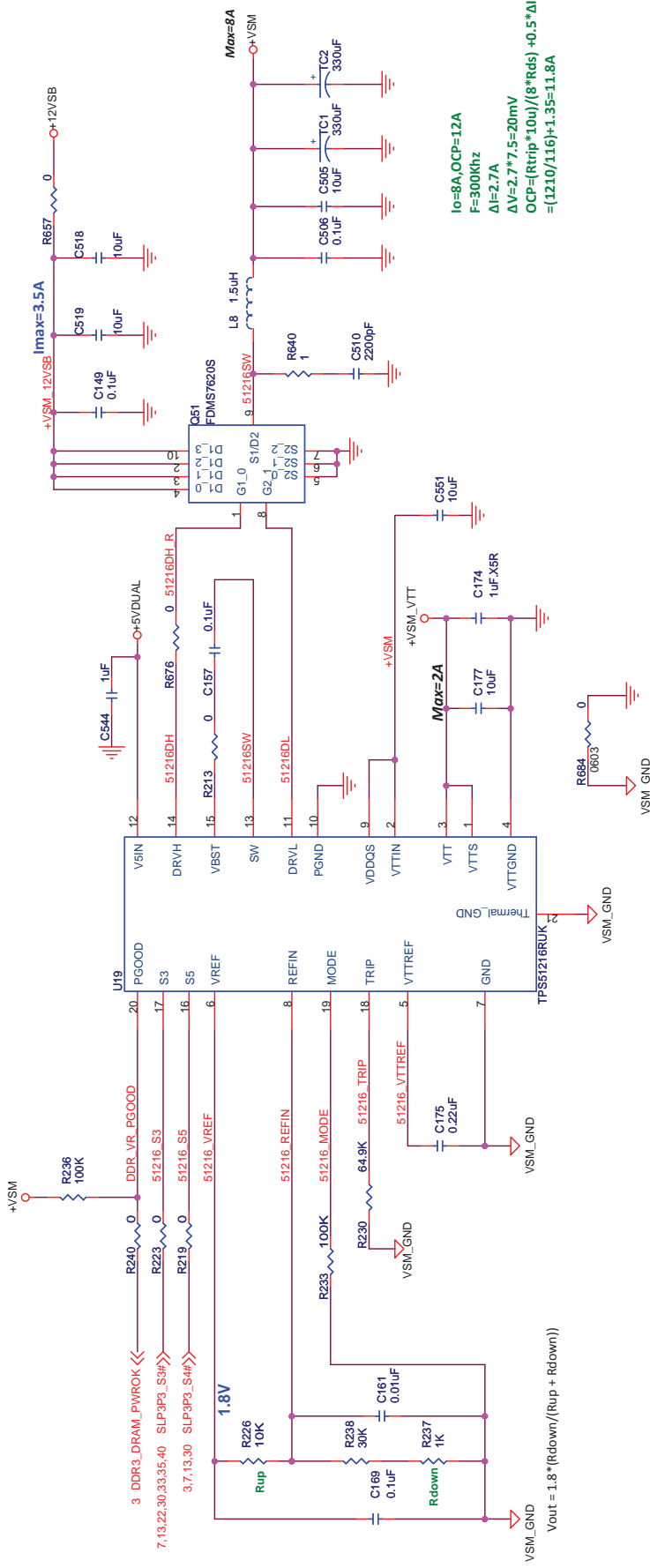


Step10



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MODE Selection

Resistance(K ohm)	SW Frequency(kHz)	Discharge Mode
200	400	Tracking
100	300	Tracking
68	300	Non-tracking
47	400	Non-tracking

S3/S5 Power State Control

STATE	S3	S5	VREF	VDDQ	VTTREF	VTT
S0	HI	HI	ON	ON	ON	ON
S3	LO	HI	ON	ON	ON	OFF
S4/S5	LO	LO	OFF	OFF	OFF	OFF



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Title: VSM+VTT

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