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*10R04*13131*00

Annexes: - Rapport Technique
- Fiche de Renseignements du constructeur

Sandweiler, le 19 novembre 2013

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  ~~approval withdrawn~~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 definitively 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*10R04*13131*00

Marque d'homologation:
Approval mark: E13 10R - 04 13131

1. **Fabricant (marque commerciale du constructeur):**
Make (trade name of manufacturer): Ninova, Saphire

2. **Type:**
Type: NV-1000 INCL. 7″ TABLET PC (NV-6810) & 10″ TABLET PC (NV6820), HUB (NV-5000), SERVER (NV-2000) & CONVERTER

Dénomination(s) commerciale(s) générale(s):
General commercial description(s): BUS ENTERTAINMENT SYSTEM

Variante(s)/Version(s):
Variant(s)/Version(s): *None*

3. **Moyens d'identification du type, s'ils sont marqués sur le composant / ~~entité technique~~ [2]:**
Means of identification of type, if marked on the component / ~~separate technical unit~~: See item 6.

3.1. **Emplacement de ce marquage:**
Location of that marking: See item 6.

4.	**Catégorie du véhicule:** Category of vehicle:	Not applicable
5.	**Nom et adresse du constructeur:** Name and address of manufacturer:	MERPA BILGI ISLEM LIMITED SIRKETI ALTINTEPSI MH. OZTEKIN CD. N.26/1 GIRIS KAT BAYRAMPASA ISTANBUL TURKEY
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:	Stick on label at the housing of the ESA
7.	**Adresse(s) de l' (des) usine(s) d'assemblage:** Address(es) of assembly plant(s):	MERPA BILGI ISLEM LIMITED SIRKETI ALTINTEPSI MH. OZTEKIN CD. N.26/1 GIRIS KAT BAYRAMPASA ISTANBUL TURKEY
8.	**Informations supplémentaires (s'il y a lieu):** Additional informations (where applicable):	See appendix
9.	**Service technique responsable de l'exécution des essais:** Technical service responsible for carrying out the tests:	Société Nationale de Certification et d'Homologation 11, rue de Luxembourg L-5230 Sandweiler
10.	**Date du rapport d'essai:** Date of test report:	12.11.2013
11.	**Numéro du rapport d'essai:** Number of test report:	A-9057-4872-00 SP
12.	**Remarques (s'il y a lieu):** Remarks (if any):	None

13. **Lieu:** Sandweiler
Place:

14. **Date:** 19 novembre 2013
Date:

15. **Signature:**
Signature:

Pour le Département des Transports

Marco FELTES
Inspecteur Principal 1er en rang

Pour la SNCH

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*10R04*13131*00
to type-approval certificate N° E13*10R00*10R04*13131*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]:	24 V/DC
	Masse: Ground:	~~Positive~~/Negative [(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:	Supply voltage 24 V/DC
1.2.1.	**Conditions d'installation, s'il y a lieu:** Installation conditions, if any:	See user manual
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 chargée d'effectuer les essais:** Laboratory accredited to ISO 17025 and recognized by the Approval Authority responsible for carrying out the tests:	emitel GmbH Ohmstrasse 1 D-94342 Strasskirchen
2.	**Commentaires:** Remarks:	None

[(2)] **Biffer la mention inutile**
Strike out what does not apply

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L-5201 Sandweiler

Référence: E13*10R00*10R04*13131*00

Annexes: - Rapport Technique
- Fiche de Renseignements du constructeur

Sandweiler, le 19 novembre 2013

Index du dossier d'homologation

Index to type-approval report

	Numéro d'homologation: Approval number:	E13*10R00*10R04*13131*00
	Révision: Revision:	00
	Marque de fabrique ou de commerce: *Trade name or mark:*	*Ninova, Saphire*
	Type: *Type:*	*NV-1000 INCL. 7˝ TABLET PC (NV-6810) & 10˝ TABLET PC (NV6820), HUB (NV-5000), SERVER (NV-2000) & CONVERTER*
1.	**Procès-verbal d'essai:** Test report:	N° A-9057-4872-00 SP
	- Test report:	Page 1 to 25.
2.	**Dossier du constructeur:** Report of the manufacturer:	---
	- Content:	Refer to Page 1 and 2 in information document.
3.	**Autres documents annexés:** Other documents annexed:	Not applicable
4.	**Date de délivrance de l'homologation initiale:** Date of issue of initial type approval:	19.11.2013
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

Typ / *Type*	:	NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter
Hersteller / *Manufacturer*	:	MERPA BILGI ISLEM LIMITED SIRKETI

Prüfbericht
Test Report

A-9057-4872-00 SP

Agreement
Concerning the adoption of uniform technical prescriptions
for wheeled vehicles, equipment and parts which can be fitted and/or
be used on wheeled vehicles and the conditions for reciprocal recognition
of approvals granted on the basis of these prescriptions.
Addendum 9: Regulation No. 10
Uniform provisions concerning the approval of vehicles with regard to electromagnetic compatibility
Regulation No. 10 revision 04 series of amendments
Supplement 2 to the 04 series of amendments - Date of entry into force: 15 July 2013

Genehmigungsstand *Approval status*	
ECE	Genehmigungsnummer *Number of approval*
	--

Prüfergebnis: POSITIV
Test result: POSITIVE

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Société Nationale de Certification et d'Homologation
L-5201 SANDWEILER (Luxembourg)
Organisme accrédité OLAS EN 45011
Accréditation N° 5/001 (Portée communiquée sur demande)

PRÜFLABORATORIUM / *TEST LABORATORY*
emitel GmbH
SNCH-Registrier-Nr./SNCH-*registration number*: SNCH 001/2005

Typ / *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Hersteller / *Manufacturer* : MERPA BILGI ISLEM LIMITED SIRKETI

INHALTSVERZEICHNIS
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Société Nationale de Certification et d'Homologation
L-5201 SANDWEILER (Luxembourg)
Organisme accrédité OLAS EN 45011
Accréditation N° 5/001 (Portée communiquée sur demande)

Typ / *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Hersteller / *Manufacturer* : MERPA BILGI ISLEM LIMITED SIRKETI

0. Allgemeine Angaben / *General*

0.1. Fabrikmarke (Firmenname des Herstellers) *Make (trade name of manufacturer)* : Ninova

Varianten *Variants* : Saphire

0.2. Typ *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Varianten *Variants* : Keine *None*

0.3. Merkmal zur Typidentifizierung; Anbringungsstelle *Means of identification of type; Location of that marking* : Klebeschild auf dem Gehäuse der EUB *Stick on label at the housing of the ESA*

0.4. Name und Anschrift des Herstellers *Manufacturer's name and address* : MERPA BILGI ISLEM LIMITED SIRKETI
ALTINTEPSI MH. OZTEKİN CD. N.26/1 GIRIS KAT BAYRAMPASA
ISTANBUL
TURKEY

0.5. Beschreibungsmappe *Information folder*

Nr. *No.* : A-9057-4872

Ausgabedatum Date of issue : 2013-11-08

Letztes Änderungsdatum Date of last change : 2013-11-08

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Organisme accrédité OLAS EN 45011
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Typ / *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Hersteller / *Manufacturer* : MERPA BILGI ISLEM LIMITED SIRKETI

1. Prüfobjekt(e) / *Test object(s)*

1.1. Repräsentative EUB / *Representative ESA* : ja / *yes*

Entwicklungsstand / *Development status* : Seriengerät / *Serial unit*

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Fotodokumentation des Prüfmusters
Photo documentation of the test sample

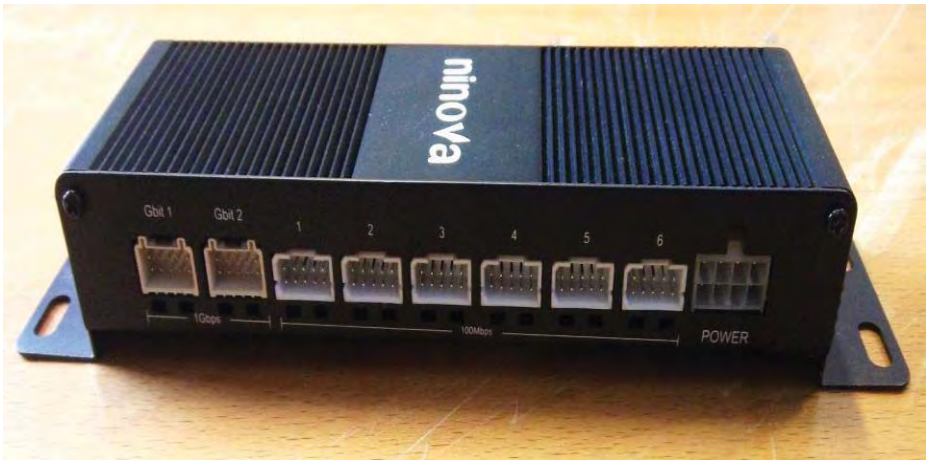
,
Bus entertainment system

Converter

PRÜFLABORATORIUM / *TEST LABORATORY*
emitel GmbH
SNCH-Registrier-Nr./SNCH-*registration number*: SNCH 001/2005

Typ / *Type*	:	NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter
Hersteller / *Manufacturer*	:	MERPA BILGI ISLEM LIMITED SIRKETI

Server NV-2000



Hub NV-5000

Typ / *Type*	:	NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter
Hersteller / *Manufacturer*	:	MERPA BILGI ISLEM LIMITED SIRKETI

Tablet PC 7“ NV-6810

Tablet PC 10“ NV-6820

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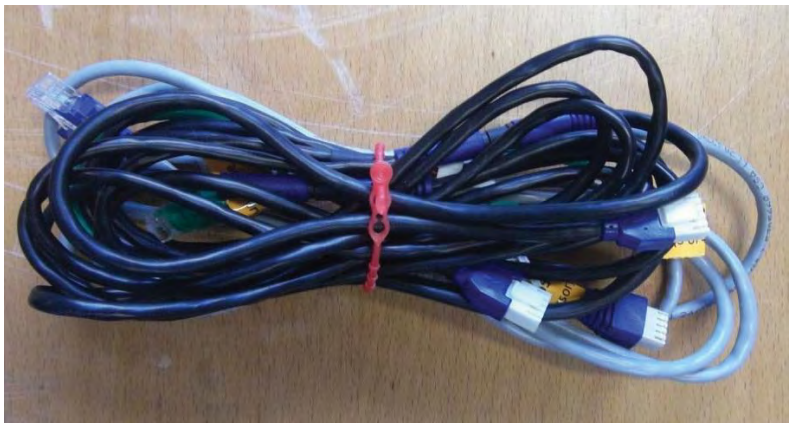
PRÜFLABORATORIUM / *TEST LABORATORY*
emitel GmbH
SNCH-Registrier-Nr./SNCH-*registration number*: SNCH 001/2005

Typ / *Type*	:	NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter
Hersteller / *Manufacturer*	:	MERPA BILGI ISLEM LIMITED SIRKETI



Wiring harness

Router

Typ / *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Hersteller / *Manufacturer* : MERPA BILGI ISLEM LIMITED SIRKETI

1.2. Beschreibung dieser EUB : Bus entertainment system
Description of the ESA

Prüflingskurzbeschreibung : Siehe Anlage: Bericht des Herstellers
Short description of the ESA *See attachment: Report of the manufacturer*

Stromversorgung : 24 V/DC
Rated voltage

Prüfobjektkonfiguration :
Test sample configuration

Die Prüfung wurde in folgendem Betriebszustand durchgeführt:
The unit was tested in the following modes:

- DuT versorgt mit 24 V/DC. Displays über Hub und Switch mit dem Server verbunden. Die Displays zeigen jeweils einen Film aus der Serverdatenbank.
- DuT supplied with 24 V/DC. Displays via hub and switch connected to server. Each display plays a video from the server database.

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Am Prüfobjekt angeschlossene Leitungen:
Connected lines to the test sample:

Pos. *Pos.*	Leitung *Line*	Länge *Length* [m]	Typ *Type*	Leitung *Line*		Leitungsabschluß *Line termination*
				geschirmt *shielded*	ungeschirmt *unshielded*	
1	Versorgung *power line*	2	2-adrig *2-wires*	☐	☒	Netznachbildung, Pulsgenerator *artificial network, pulse generator*
2	LAN data cable (green)	0.5	8-adrig *8-wires*	☐	☒	Server *Server*
3	Gigabit LAN data cable	2.5	8-adrig *8-wires*	☐	☒	Router router
4	Data Cable For Tablet PC 7”	2.0	7-adrig *7-wires*	☐	☒	Hub *Hub*
5	Data Cable For Tablet PC 10”	2.0	7-adrig *7-wires*	☐	☒	Hub *Hub*

Peripherie : Router
Periphery router

1.3. Bemerkungen : Zu dem Systemaufbau mit Konverter, Server NV-2000, Hub NV-5000, Tablet PC 7“ sowie Tablet PC 10“ wurde noch ein Router hinzugefügt.
Additional to the system setup which includes converter, server NV-2000, hub NV-5000, tablet PC 7“ and tablet PC 10” a router was installed.

Typ / *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Hersteller / *Manufacturer* : MERPA BILGI ISLEM LIMITED SIRKETI

2. Prüfprotokoll / *Test record*

2.1. Messung von gestrahlten breitbandigen Störungen nach Anhang 7
(CISPR 25 : 2. Aufl. 2002 + Verbesserung 2004)
Measurement of radiated broadband emissions according to annex 7
(CISPR 25 : 2. Ed. 2002 + Corr. 2004)

2.1.1. Angaben zur Prüfung
Details of the test

Die EUB wurde in 5 cm Höhe isolierend über der Bezugsmasseplatte angeordnet und hatte keine leitende Verbindung zur Bezugsmasseplatte. Im späteren Einsatz ist die EUB isolierend zum Fahrzeugchassis montiert.
The ESA was placed in a height of 5 cm, isolated to the ground plane. There was no connection to the ground plane. The ESA has to be installed isolated from the vehicle ground.

Leitungen, die länger als 2 m waren, wurden mäanderförmig auf eine effektive Länge von 2 m zusammengefasst.
Cables which are longer than 2m have been bundled to a length of 2 m.

Verwendete Prüfmittel : siehe verwendete Messgeräte (ARE)
Used test equipment *see used test equipment (ARE)*

Typ / *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Hersteller / *Manufacturer* : MERPA BILGI ISLEM LIMITED SIRKETI

2.1.2. Prüfergebnisse / *Test results* :

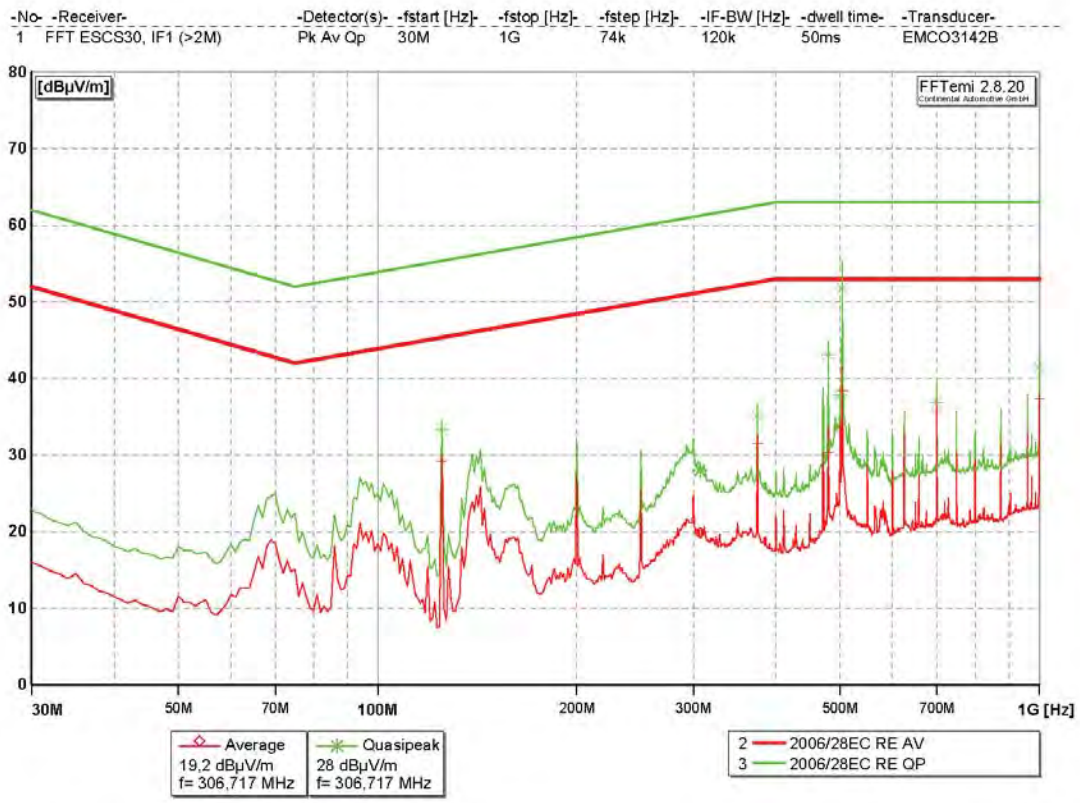
Typ / *Type*	:	NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter
Hersteller / *Manufacturer*	:	MERPA BILGI ISLEM LIMITED SIRKETI
Seriennummer / *Serial number*	:	--
Betriebszustand / *Operation mode*	:	DuT versorgt mit 24 V/DC. Displays über Hub und Switch mit dem Server verbunden. Die Displays zeigen jeweils einen Film aus der Serverdatenbank. *DuT supplied with 24 V/DC. Displays via hub and switch connected to server. Each display plays a video from the server database.*
Antennenpolarisation / *Antenna polarisation*	:	Vertikal / *Vertical*
Bemerkungen / *Remarks*	:	Frequenzen, welche nicht aufgeführt sind haben einen Grenzwertabstand größer 5 dB. *Frequencies, which are not listed, have a margin more than 5 dB.*
Prüfergebnis / *Test result*	:	

Breitband / *Broadband*	bestanden / *passed*	Schmalband / *Narrowband*	bestanden / *passed*

Typ / *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Hersteller / *Manufacturer* : MERPA BILGI ISLEM LIMITED SIRKETI

Scanergebnis :
Scan result



Endergebnis :
Final result

Tabelle :
Table

Peaks at acceptance limit (CISPR-Receiver final measurement)

No.	Freq [Hz]	Peak	Avg	CISPR-QP	-	Type	Limit1 -	Limit2 a 120k	Limit3 q 120k	Limit4 -
1	124,94M	36	30 (29,2)	34,5 (33,3)	-	NB	-	45,4	55,4	-
1	375,089M	40	32,7 (31,5)	36,7 (35,1)	-	BB	-	52,6	62,6	-
1	479,94M	47,2	33,6 (30,4)	44,8 (43,1)	-	BB	-	53	63	-
1	500,014M	43,3	34,4 (33,1)	39 (37,8)	-	BB	-	53	63	-
1	503,94M	59,1	41,5 (38,4)	55,3 (51,8)	-	BB	-	53	63	-
1	699,865M	41,1	37,5 (35,8)	39,4 (36,9)	-	NB	-	53	63	-
1	999,94M	45,1	37,9 (37,3)	42,6 (41,5)	-	BB	-	53	63	-

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Typ / *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Hersteller / *Manufacturer* : MERPA BILGI ISLEM LIMITED SIRKETI

Typ *Type*	:	NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter
Hersteller *Manufacturer*	:	MERPA BILGI ISLEM LIMITED SIRKETI
Seriennummer *Serial number*	:	--
Betriebszustand *Operation mode*	:	DuT versorgt mit 24 V/DC. Displays über Hub und Switch mit dem Server verbunden. Die Displays zeigen jeweils einen Film aus der Serverdatenbank. *DuT supplied with 24 V/DC. Displays via hub and switch connected to server. Each display plays a video from the server database.*
Antennenpolarisation *Antenna polarisation*	:	Horizontal *Horizontal*
Bemerkungen *Remarks*	:	Frequenzen, welche nicht aufgeführt sind haben einen Grenzwertabstand größer 5 dB. *Frequencies, which are not listed, have a margin more than 5 dB.*
Prüfergebnis *Test result*	:	

Breitband *Broadband*	bestanden *passed*	Schmalband *Narrowband*	bestanden *passed*

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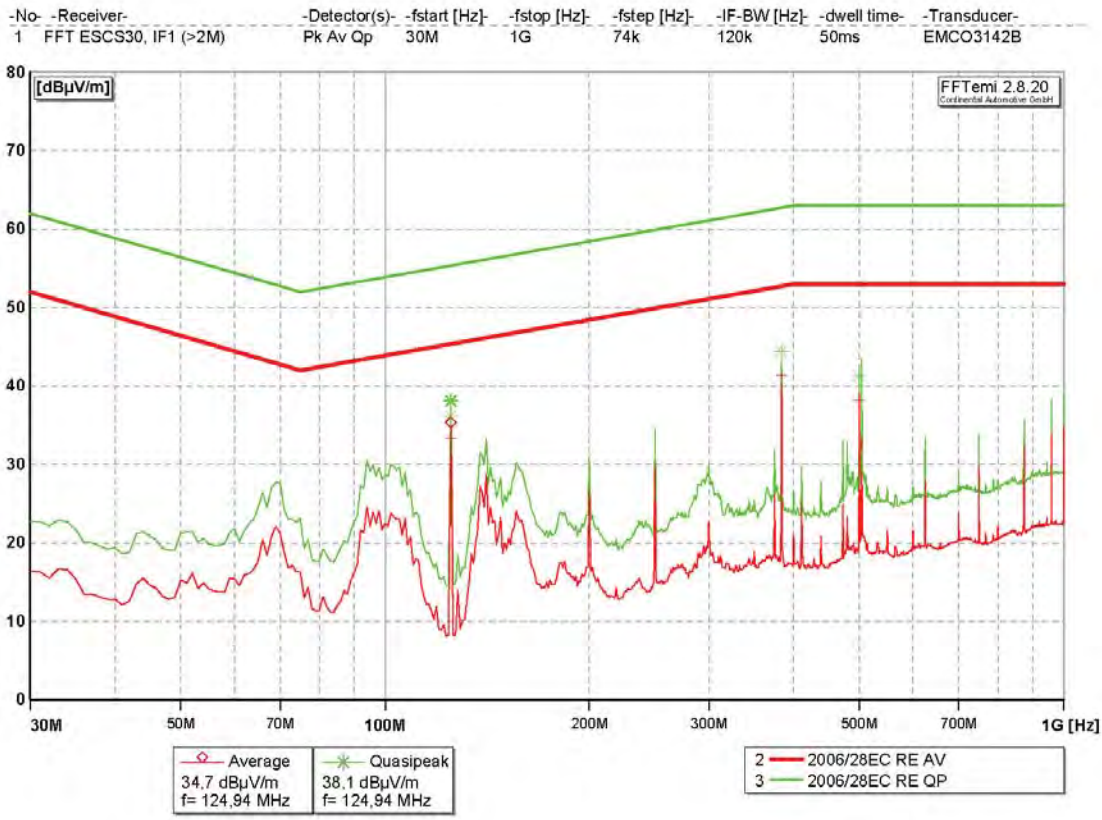
Typ / *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Hersteller / *Manufacturer* : MERPA BILGI ISLEM LIMITED SIRKETI

Scanergebnis :
Scan result



Endergebnis :
Final result

Tabelle :
Table

Peaks at acceptance limit (CISPR-Receiver final measurement)

No.	Freq [Hz]	Peak	Avg	CISPR-QP	-	Type	Limit1 -	Limit2 a 120k	Limit3 q 120k	Limit4 -
1	124,94M	39,3	34,7 (33,3)	38,1 (36,2)	-	NB	-	45,4	55,4	-
1	383,94M	44,6	40,4 (41,4)	43,2 (44,4)	-	NB	-	52,7	62,7	-
1	499,94M	44,9	39,1 (38,2)	42,5 (41,3)	-	NB	-	53	63	-

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Organisme accrédité OLAS EN 45011
Accréditation N° 5/001 (Portée communiquée sur demande)

PRÜFLABORATORIUM / *TEST LABORATORY*
emitel GmbH
SNCH-Registrier-Nr./SNCH-*registration number*: SNCH 001/2005

Typ / *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Hersteller / *Manufacturer* : MERPA BILGI ISLEM LIMITED SIRKETI

2.2. Messung von gestrahlten schmalbandigen Störungen nach Anhang 8
(CISPR 25 : 2. Aufl. 2002 + Verbesserung 2004)
Measurement of radiated narrowband emissions according to annex 8
(CISPR 25 : 2. Ed. 2002 + Corr. 2004)

2.2.1. Angaben zur Prüfung
Details of the test

Siehe Angaben zur Prüfung unter Punkt 2.1.1
Refer to item 2.1.1

2.2.2. Prüfergebnisse :
Test results

Siehe Prüfergebnisse unter Punkt 2.1.2
Refer to item 2.1.2

2.3. Prüfung der Störfestigkeit gegenüber eingestrahlten Feldern nach Anhang 9
Test of the immunity against radiated electromagnetic fields according to annex 9

Die EUB hat keine Funktion in Zusammenhang mit der Störfestigkeit. (Punkt 6.10.3.)
The ESA has no Immunity-related function. (Subclass 6.10.3.)

Typ / *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Hersteller / *Manufacturer* : MERPA BILGI ISLEM LIMITED SIRKETI

2.4. Prüfung der Störfestigkeit gegenüber leitungsgeführte transiente Störungen nach Anhang 10 (ISO 7637-2 : 2004 + Änderung 1 2008)
Test of the immunity against transient disturbances conducted along supply lines according to annex 10 (ISO 7637-2 : 2004 + Amd. 1 2008)

2.4.1. Messverfahren
Testing procedure

2.4.1.1. Angaben zur Prüfung
Details of the test

Prüfimpulsnummer *Test pulse number*	Testwerte Störfestigkeit *Immunity test level*	Funktionsstatus des Systems *Functional status for systems*	
		Zusammenhang mit Funktionen der Störfestigkeit *Related to immunity-related functions*	Kein Zusammenhang mit Funktionen der Störfestigkeit *Not related to immunity-related functions*
1	III	C	D
2a	III	B	D
2b	III	C	D
3a	III	A	D
3b	III	A	D
4	III	B für EUBs die während der Motorstartphase in Betreib sein müssen *for ESA which must be operational during engine start phases* oder *or* C	D

Typ / *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Hersteller / *Manufacturer* : MERPA BILGI ISLEM LIMITED SIRKETI

Betriebszustand
Operation mode : - DuT versorgt mit 24 V/DC. Displays über Hub und Switch mit dem Server verbunden. Die Displays zeigen jeweils einen Film aus der Serverdatenbank.
- DuT supplied with 24 V/DC. Displays via hub and switch connected to server. Each display plays a video from the server database.

Verwendete Prüfmittel
Used test equipment : siehe verwendete Messgeräte (APU)
see used test equipment (APU)

2.4.1.2. Prüfergebnisse
Test result

Prüfimpulsnummer *Test pulse number*	Prüfspannung *Test voltage*	Anzahl der Pulse / Dauer *Number of pulses / duration*	einzuhaltender Funktionssatus *required functional status*	Funktionsstatus des Systems während der Prüfung *functional status of the systems during the test*
1 (24V)	-450 V	5000	D	**C**
2a (24V)	+37 V	5000	D	**A**
2b (24V)	+20 V	10	D	**C**
3a (24V)	-150 V	1 h	D	**A**
3b (24V)	+150 V	1 h	D	**A**
4 (24V)	-12 V	1	D	**A**

Funktionsstatus C / *functional status C:*

Puls 1 / Puls 2b: Während der Spannungsabschaltung des Generators schaltet das Prüfmuster ab.
Pulse 1 / Pulse 2b: During the voltage drop of the power supply the DuT switches off.

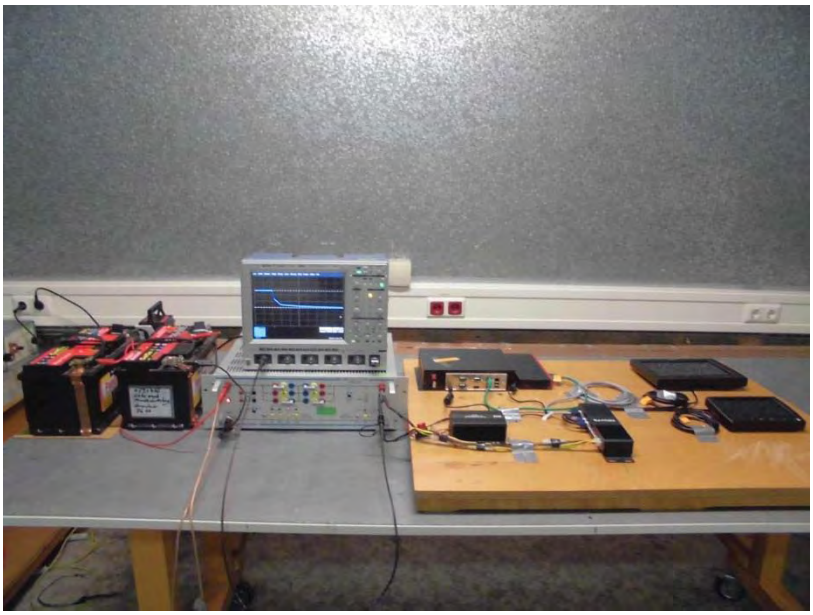
Typ / *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Hersteller / *Manufacturer* : MERPA BILGI ISLEM LIMITED SIRKETI

2.5. Prüfung der leitungsgeführte Störgrößen nach Anhang 10 (ISO 7637-2 : 2004 + Änderung 1 2008)
Test of the emission of conducted disturbances according to annex 10 (ISO 7637-2 : 2004 + Amd. 1 2008)

2.5.1. Messverfahren
Testing procedure

2.5.1.1. Angaben zur Prüfung
Details of the test



Polarität der Impuls-Amplitude *Polarity of pulse amplitude*	Höchstzulässige Impuls-Amplitude für *Maximum allowed pulse amplitude for*	
	Fahrzeuge mit 12 V – Systemen *Vehicles with 12 V – system*	Fahrzeuge mit 24 V – Systemen *Vehicles with 24 V – system*
Positiv *Positive*	+ 75	+ 150
Negativ *Negative*	- 100	- 450

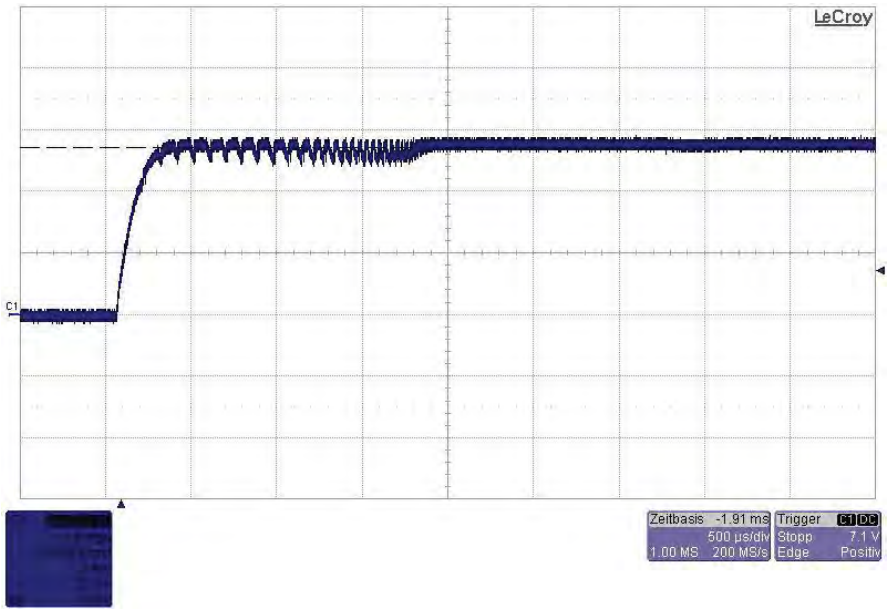
Betriebszustand *Operation mode* : - DuT versorgt mit 24 V/DC. Displays über Hub und Switch mit dem Server verbunden. Die Displays zeigen jeweils einen Film aus der Serverdatenbank.
- DuT supplied with 24 V/DC. Displays via hub and switch connected to server. Each display plays a video from the server database.

Verwendete Prüfmittel *Used test equipment* : siehe Verwendete Messgeräte (AES)
see Used test equipment (AES)

Typ / *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Hersteller / *Manufacturer* : MERPA BILGI ISLEM LIMITED SIRKETI

2.5.1.2. Prüfergebnisse
Test result

Polarität der Impuls-Amplitude *Polarity of pulse amplitude*		Gemessene Impuls-Amplitude (24 V System) *Measured pulse amplitude (24 V system)*
Maximale positive Amplitude *Maximum positive amplitude*	:	0 V
Diagramm *Diagram*	:	

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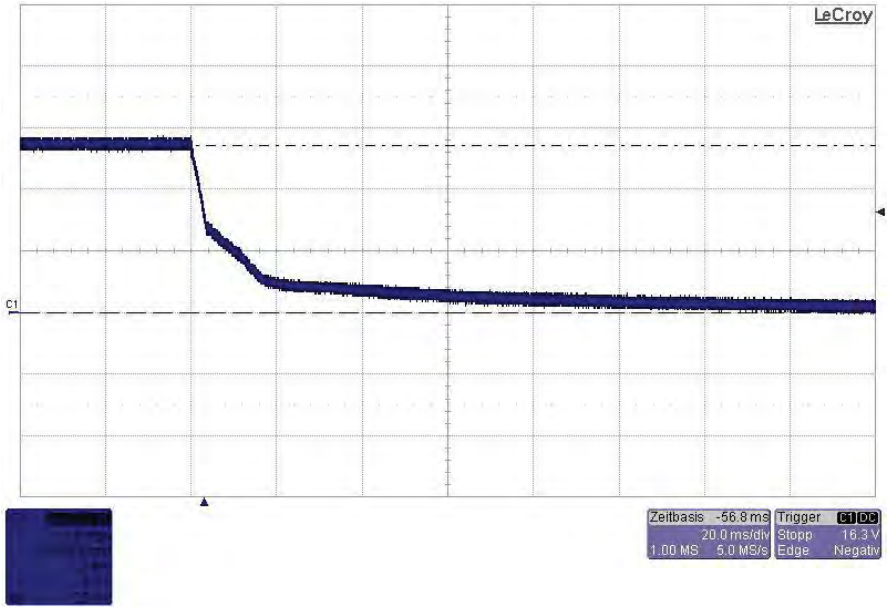
Organisme accrédité OLAS EN 45011
Accréditation N° 5/001 (Portée communiquée sur demande)

Typ / *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Hersteller / *Manufacturer* : MERPA BILGI ISLEM LIMITED SIRKETI

Maximale negative Amplitude
Maximum negative amplitude : - 27 V

Diagramm
Diagram :



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Typ / *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Hersteller / *Manufacturer* : MERPA BILGI ISLEM LIMITED SIRKETI

2.6. Allgemeine Angaben
Other information

Ort der Prüfung : Strasskirchen
Place of testing

Datum der Prüfung : 2013-04-17 – 2013-04-22
Date of testing

2.7. Bemerkungen : Keine
Remarks *None*

3. <u>Anlagen / *Appendices*</u> :

3.1. Beschreibung der repräsentativen EUB gem. Anhang 2B Anlage I
Description of the representative ESA according to Annex 2B Attachment I

Siehe Bericht des Herstellers
See Report of the manufacturer

3.2. Auflistung der ggf. zur Verfügung gestellten Prüfberichte gem. Anhang 2B Anlage II
List of the provided test reports according to Annex 2B Attachment II

Keine
None

3.3. Zusätzliche Anlagen
Additional Attachments

Keine
None

Typ / *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Hersteller / *Manufacturer* : MERPA BILGI ISLEM LIMITED SIRKETI

3.4. Technische Informationen
Technical Information

1.	**Fabricant: (marque commerciale du constructeur):** Make (trade name of manufacturer):	Ninova, Saphire
2.	**Type:** Type:	NV-1000 INCL. 7" TABLET PC (NV-6810) & 10" TABLET PC (NV-6820), HUB (NV-5000), SERVER (NV-2000) & CONVERTER
	Dénomination(s) commerciale(s) générale(s): General commercial description(s):	Bus Entertainment System
	Version(s)/Variante(s): *Version(s)/Variant(s):*	None
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:~~	see item 6
3.1.	**Emplacement de ce marquage:** Location of that marking:	see item 6
4.	**Catégorie du véhicule:** Category of vehicle:	Nicht zutreffend *Not applicable*
5.	**Nom et adresse du constructeur:** Name and address of manufacturer:	MERPA BILGI ISLEM LIMITED SIRKETI ALTINTEPSI MH. OZTEKİN CD. N.26/1 GIRIS KAT BAYRAMPASA ISTANBUL TURKEY
6.	**Dans le cas de composants et 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 EEC approval mark:	Klebeschild auf dem Gehäuse der EUB *Stick on label at the housing of the ESA*
7.	**Adresse(s) de l' (des) usine(s) d'assemblage:** Address(es) of assembly plant(s):	MERPA BILGI ISLEM LIMITED SIRKETI ALTINTEPSI MH. OZTEKİN CD. N.26/1 GIRIS KAT BAYRAMPASA ISTANBUL TURKEY
8.	**Informations supplémentaires (s'il y a lieu):**	Not applicable

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Typ / *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Hersteller / *Manufacturer* : MERPA BILGI ISLEM LIMITED SIRKETI

9.	***Autorité déléguée:*** *Assigned authority:*	Société Nationale de Certification et d'Homologation L-5201 Sandweiler
	Service technique chargé des essais d'homologation: Technical service responsible for conducting approval tests:	Société Nationale de Certification et d'Homologation 11, route de Luxembourg L-5230 Sandweiler
10.	**Date du rapport d'essai:** Date of test report:	2013-11-12
11.	**Numéro du rapport d'essai:** Number of test report:	A-9057-4872-00 SP
12.	**Remarques (s'il y a lieu):** Remarks (if any):	None

Appendice
Appendix

1.	**Informations supplémentaires:** Additional informations:	See report of the manufacturer
1.1.	**Tension nominale du système électrique [V]:** Electrical system rated voltage [V]:	24 V/DC
	Masse: Ground:	Negative
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:	Supply voltage 24 V/DC
1.2.1.	**Conditions d'installation, s'il y a lieu:** Installation conditions, if any:	See user manual
1.3.	**CE SEEE peut seulement être utilisé sur les types de véhicules suivantes:** 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

Typ / *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Hersteller / *Manufacturer* : MERPA BILGI ISLEM LIMITED SIRKETI

1.4.	**La (les) méthode(s) spécifique(s) d'essais utilisée(s) et les bandes de fréquences couvertes pour déterminer l'immunité étai(ent):** The specific test method(s) used and the frequency ranges covered to determine immunity were:	Not applicable
1.5.	**Laboratoire approuvé/accrédité responsable de l'exécution des essais:** Approved/accreditated laboratory responsible for carrying out the test:	emitel GmbH Ohmstr. 1 94342 Straßkirchen Germany
2.	**Commentaires:** Remarks:	None

Index du dossier d'homologation

Index to type-approval

1.	**Procès-verbal d'essai:** Test report:	A-9057-4872-00 SP
2.	**Dossier du constructeur:** Report of the manufacturer:	- User Manual - Technical documents of the Unit
3.	**Autres documents annexés:** Other documents annexed:	None

Typ / *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Hersteller / *Manufacturer* : MERPA BILGI ISLEM LIMITED SIRKETI

3.5. *Liste der Änderungen*
List of modification

Keine
None

4. Schlussbescheinigung / *Statement of conformity*

Die unter Nr. 0.5. angegebene Beschreibungsmappe und der darin beschriebene Typ – e n t s p r e c h e n – der o. a. Prüfspezifikation.

The information folder as mentioned under No. 0.5. and the type described therein are – i n c o m p l i a n c e – with the Test Specification mentioned above.

Dieser Prüfbericht umfasst die Seiten 1 bis 25.
Eine auszugsweise Vervielfältigung und Veröffentlichung des Prüfberichtes ist nur nach schriftlicher Genehmigung des Prüflaboratoriums zulässig.

This report includes pages 1 to 25.
Duplication and publishing in extracts of the Test Report is allowed only by written permission of the Test Laboratory.

PRÜFLABORATORIUM
TEST LABORATORY
Akkreditiert von der Akkreditierungsstelle des Société Nationale de Certification et d`Homologation,
accredited by accreditation authority of Société Nationale de Certification et d`Homologation,
Luxemburg
Luxemburg

Strasskirchen, den (Ort) *(Place)* 2013-11-12 (Datum) *(Date)*

Überprüft von / *checked by*:

Digital unterschrieben von Martin Stern
DN: cn=Martin Stern, o=emitel AG, ou, email=martin.stern@emitel.de, c=DE
Datum: 2013.11.12 08:27:25 +01'00'

Martin Stern
Dipl. Ing.(FH)
Manager Automotive Group

Geprüft von / *tested by*:

Fabian Spannfellner 2013.11.12 08:10:38 +01'00'

Fabian Spannfellner

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Typ / *Type* : NV-1000 incl. 7" tablet PC (NV-6810) & 10" tablet PC (NV-6820), HUB (NV-5000), server (NV-2000) & converter

Hersteller / *Manufacturer* : MERPA BILGI ISLEM LIMITED SIRKETI

5. Verwendete Messgerät und Zubehör / *Used test equipment and accessories*

Alle benutzten Messgeräte und Zubehör werden regelmäßig kalibriert und verifiziert.
All test instruments used, in addition to the test accessories, are calibrated and verified regularly.

Test ID *Test ID*	**Model / Typ** *Model / Type*	**Geräteart** *Kind of Equipment*	**Hersteller** *Manufacturer*	**Gerätenummer** *Equipment No.*
AES	Waverunner 204XI	Oscilloscope	LeCroy Europe GmbH	01-02/13-07-001
	ES 35/300V3	Electronic Switch	SBF electronic	01-02/20-07-001
APU	NSG 5600	µs Pulse Generator	Schaffner Elektrotest GmbH	01-02/09-06-001
	FT 5530	Burst Generator	WEETECH GmbH	01-02/09-07-001
	MT 5511	Micro Transient Generator	WEETECH GmbH	01-02/09-07-002
	Waverunner 204XI	Oscilloscope	LeCroy Europe GmbH	01-02/13-07-001
	PA 5840-150	Power Amplifier 60 V / 15	WEETECH GmbH	01-02/17-07-001
	Auto Star Version 5.00	Software	Schaffner Elektrotest GmbH	01-02/68-09-004
ARE	ESCS 30	EMI Test Receiver	Rohde & Schwarz München	01-02/03-04-003
	ESH3-Z6	Artificial Network	Rohde & Schwarz München	01-02/20-09-001
	ESH3-Z6	Artificial Network	Rohde & Schwarz München	01-02/20-09-002
	3142B	Antenna	ETS EMC Systems LP	01-02/24-01-010
	N-3000-N	RF Cable	emitel AG	01-02/50-05-122
	N-6000-N	RF Cable	emitel AG	01-02/50-05-125
	FFTEMI Version 2.7.48	Software	EMC-Service Regensburg	01-02/68-10-001

Bericht des Herstellers
Report of the manufacturer

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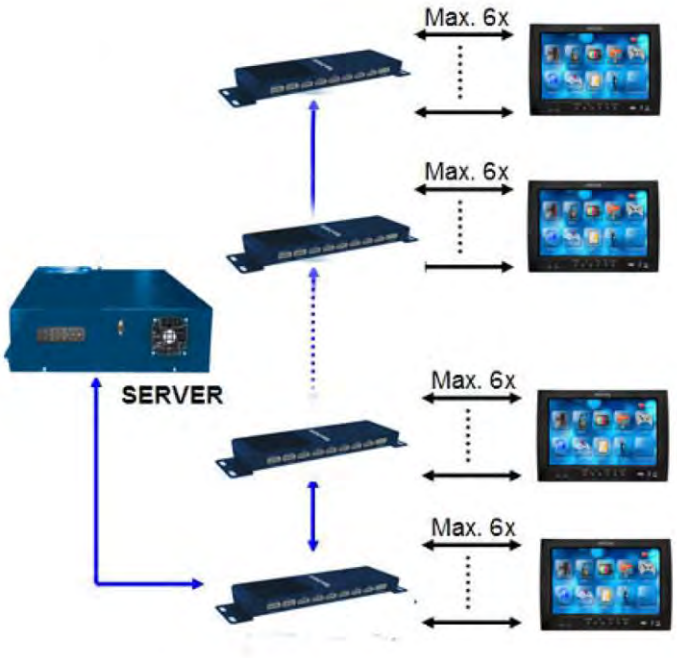
INHALTSVERZEICHNIS
INDEX

1 Systemaufbau / system setup:

ninova

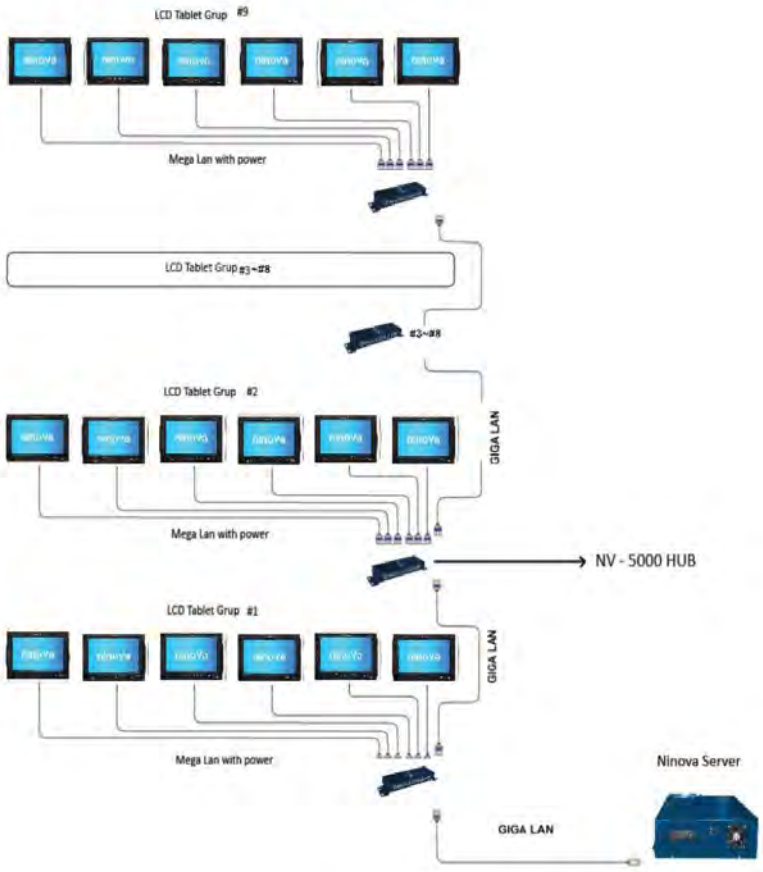


Using a Server , HUBs and Tablet pcs a network can be created.

1. General Description

Ninova System and product design for user. This system using Android 4.0 and have HD quality.

System Architechure



Ninova System Architecture

2. Product's Specifications

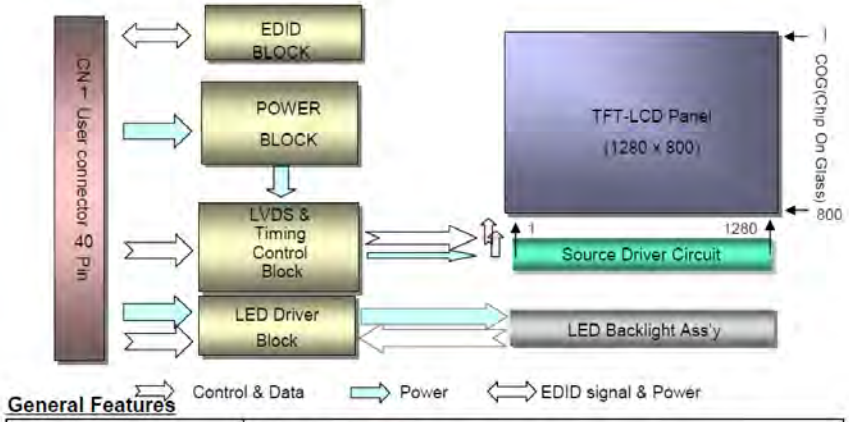
2.1 NV-6820 NINOVA TABLET PC

1.1.A .) NV-6820 10'' & NV NV6810 Tablet Pc

- Android 4.03 operating system.
- Amlogic 2726 Processor ,
- 1GB DDR3 Ram ,
- High performance 4 Gb NAND Flash
- Touch panel (1280x800) 10 " digital screen
- Keypad
- Support 12 & 36V
- System operating temperature range: -20~+60

2.1.1 LCD Screen

The LP101WX1 is a Color Active Matrix Liquid Crystal Display with an integral LED backlight system. The matrix employs a-Si Thin Film Transistor as the active element. It is a transmissive type display operating in the normally white mode. This TFT-LCD has 10.1inches diagonally measured active display area with HD resolution(1280 horizontal by 800 vertical pixel array). Each pixel is divided into Red, Green and Blue subpixels or dots which are arranged in vertical stripes. Gray scale or the brightness of the sub-pixel color is determined with a 6-bit gray scale signal for each dot, thus, presenting a palette of more than 262,144 colors.



General Features

Active Screen Size	10.1 inches diagonal
Outline Dimension	229.46(H) × 149.2(V)x5.2(D,Max.) [mm]
Pixel Pitch	0.1695mm × 0.1695 mm
Pixel Format	1280 horiz. By 800 vert. Pixels RGB strip arrangement
Color Depth	6-bit, 262,144 colors
Luminance, White	400 cd/m^2(Typ.5 point)
Power Consumption	Total 3.72 W(Typ.) (Logic : 1.15 W (max.@ White), B/L : 2.57W (max.@ VLED 12V))
Weight	160g (Max.)
Display Operating Mode	Transmissive mode, normally Black
Surface Treatment	Glare treatment of the front polarizer
RoHS Compliance	Yes
BFR / PVC / As Free	Yes for all

2.1.2 Audio System

On the Tablet PC Audio (+) ~ (-) or to change the volume on the screen moves up and down to

Dual Headphone feature from the NV-6820 Tablet Pc, provided the benefit of two people at the same time.

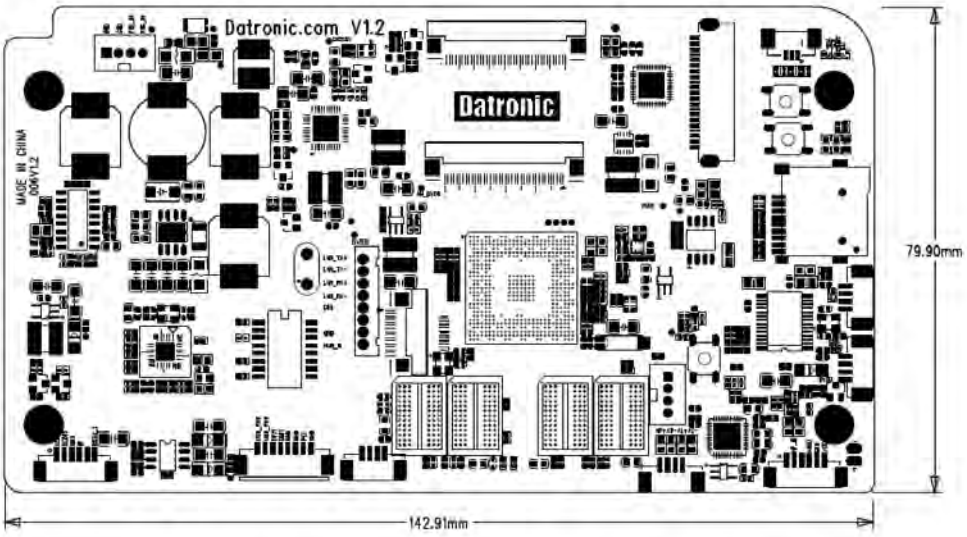
2.1.3 Power system

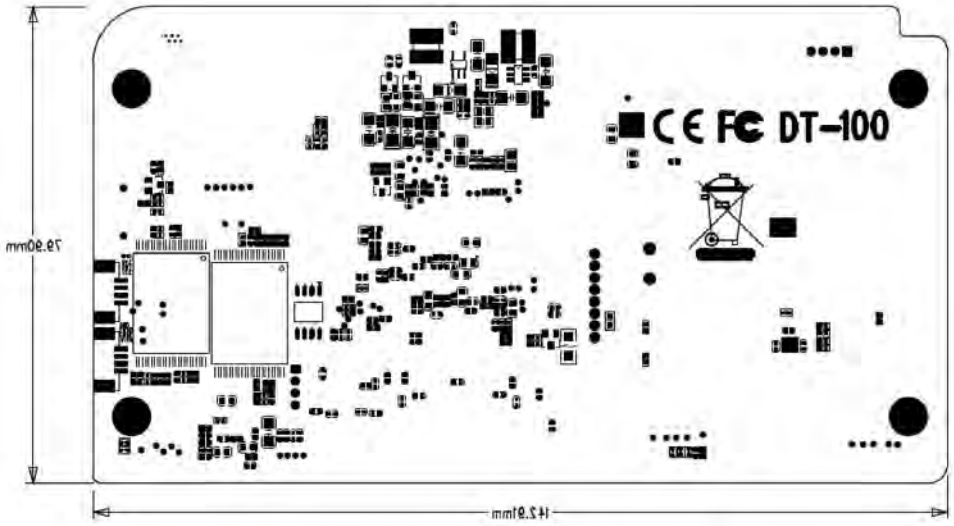
NV-6820 supports 9V – 36V wide voltage range , The power consumption is 0.55A/24

2.1.3 Multimedia Supports

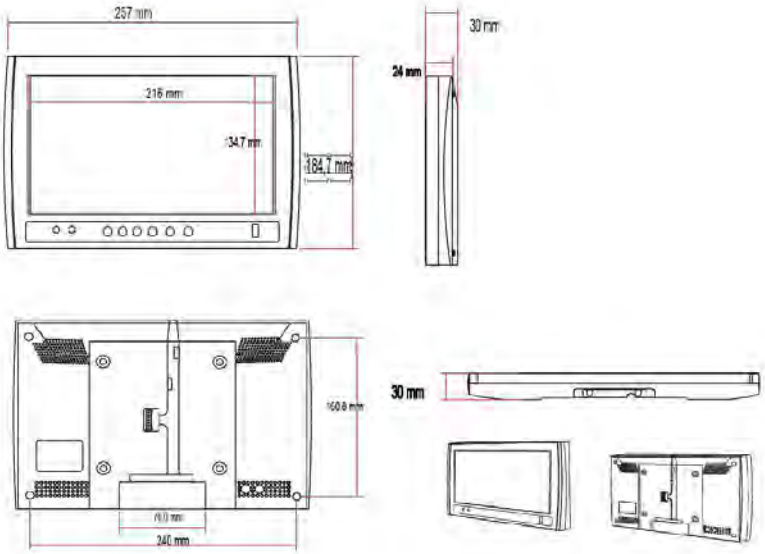
Video formats: MPEG4. Audio support: MP3.
Bitmap: JPEG, Bitmap, GIF, PNG

2.1.4 NV-6820 Pcb Layouts





2.1.5 Main body of NV-6820

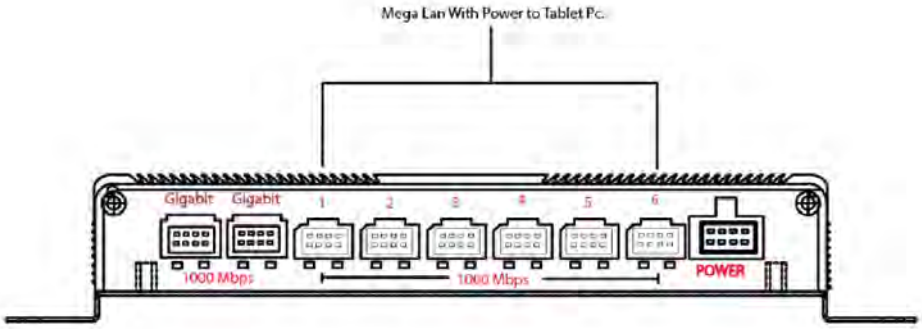


2.2 NV-5000 HUB

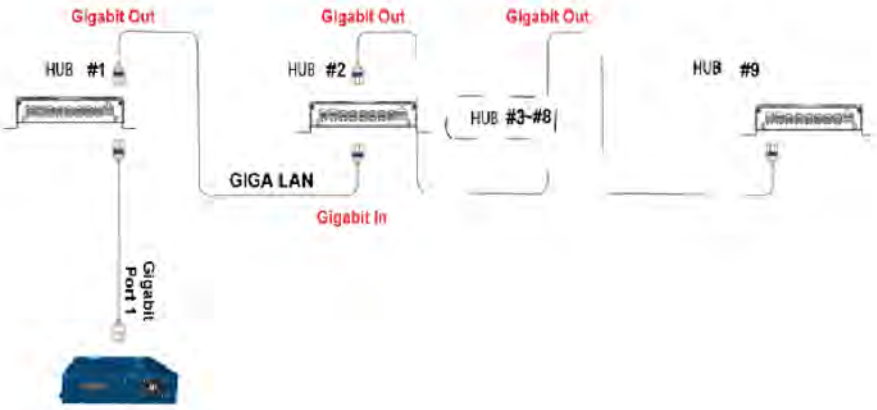
NV-5000 is used to create a network , a NV-5000 HUB sharing for next hub & NV-6820 (tablet Pc). Are You want reproduce and distribute the data to ? There is now NV-5000 have answer for you.

HUB's Port is distribute of 1000 Mbps. Have eight ports on HUB. Two is In/Out , other six ports for tabler pc.

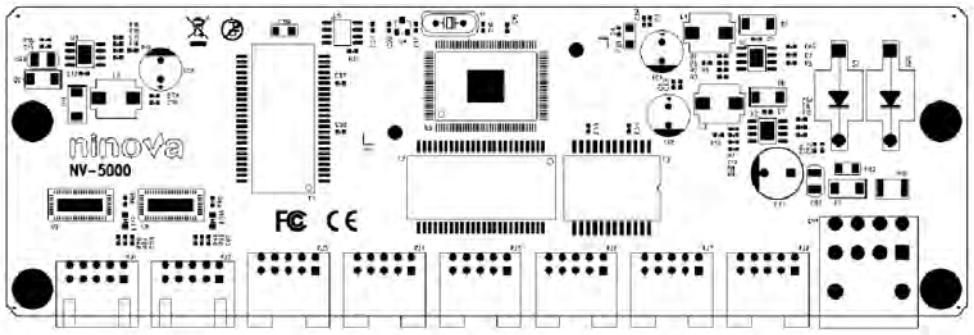
2.2.1 General definition



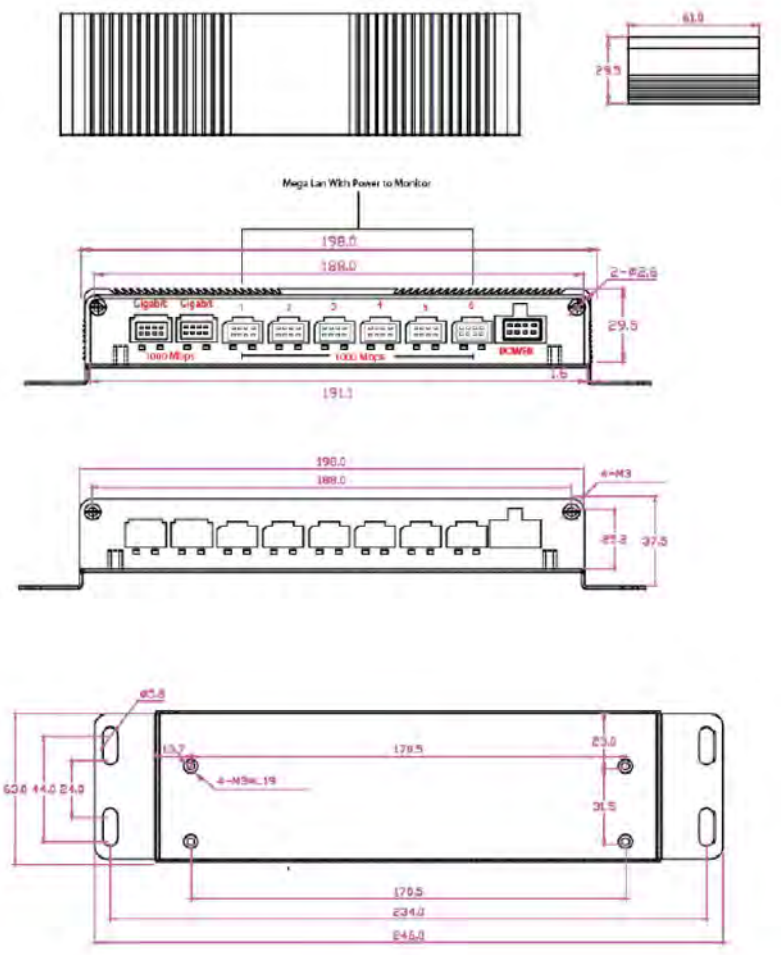
2.2.2 HUBs gigabit port connect definition



2.2.3 Hub's Pcb Layout



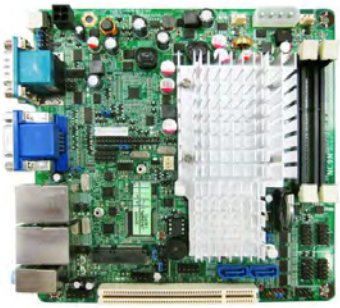
2.2.4 HUB Dimension

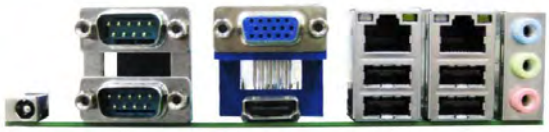


2.2.5 View Picture

2.3 NNVSR100 SERVER

2.3.1 General Futures





-SSD DISK 120GB KINGSTON V300

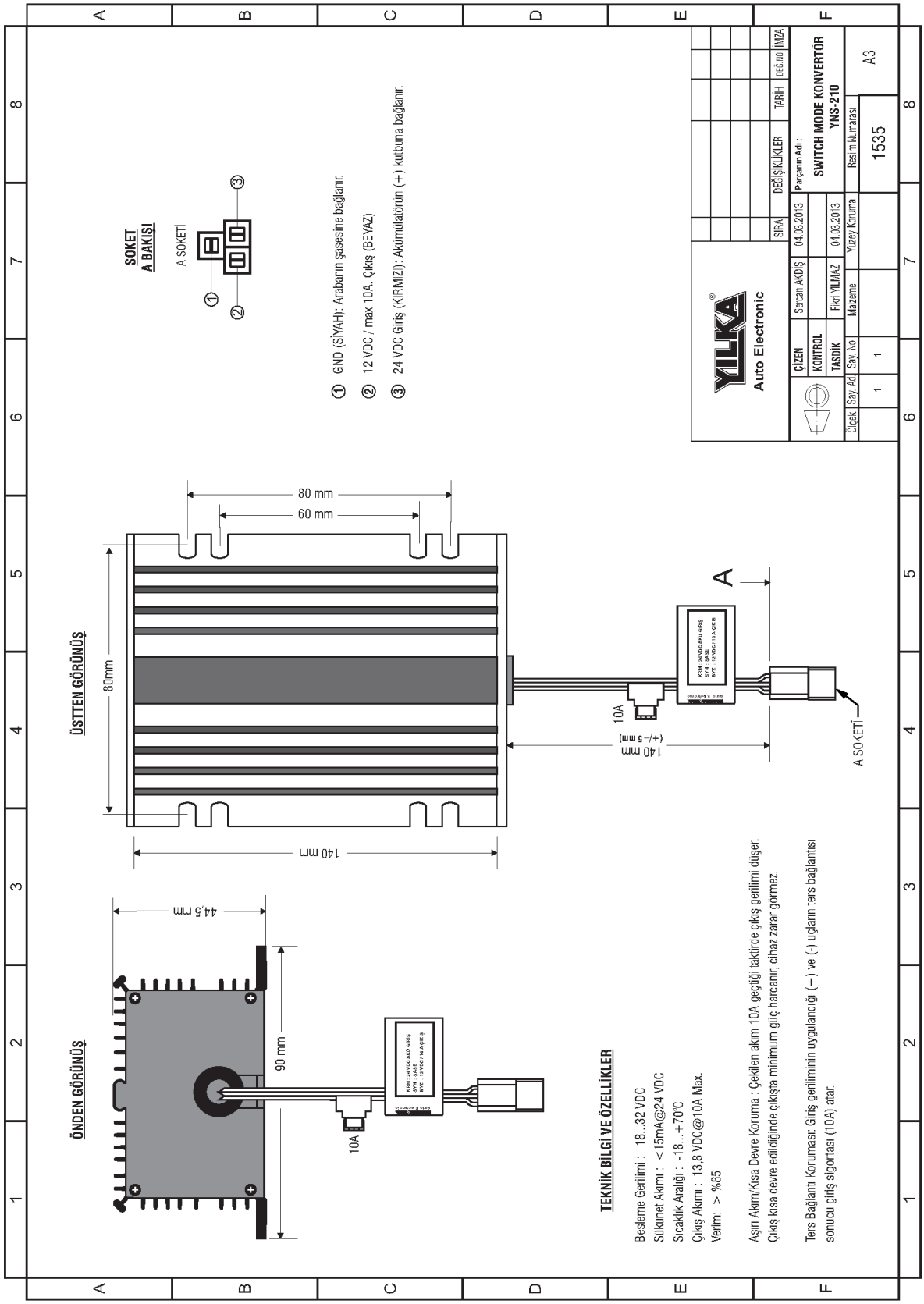
-2 GB 1333MHZ KINGSTON RAM

-MOREX 5677 Case

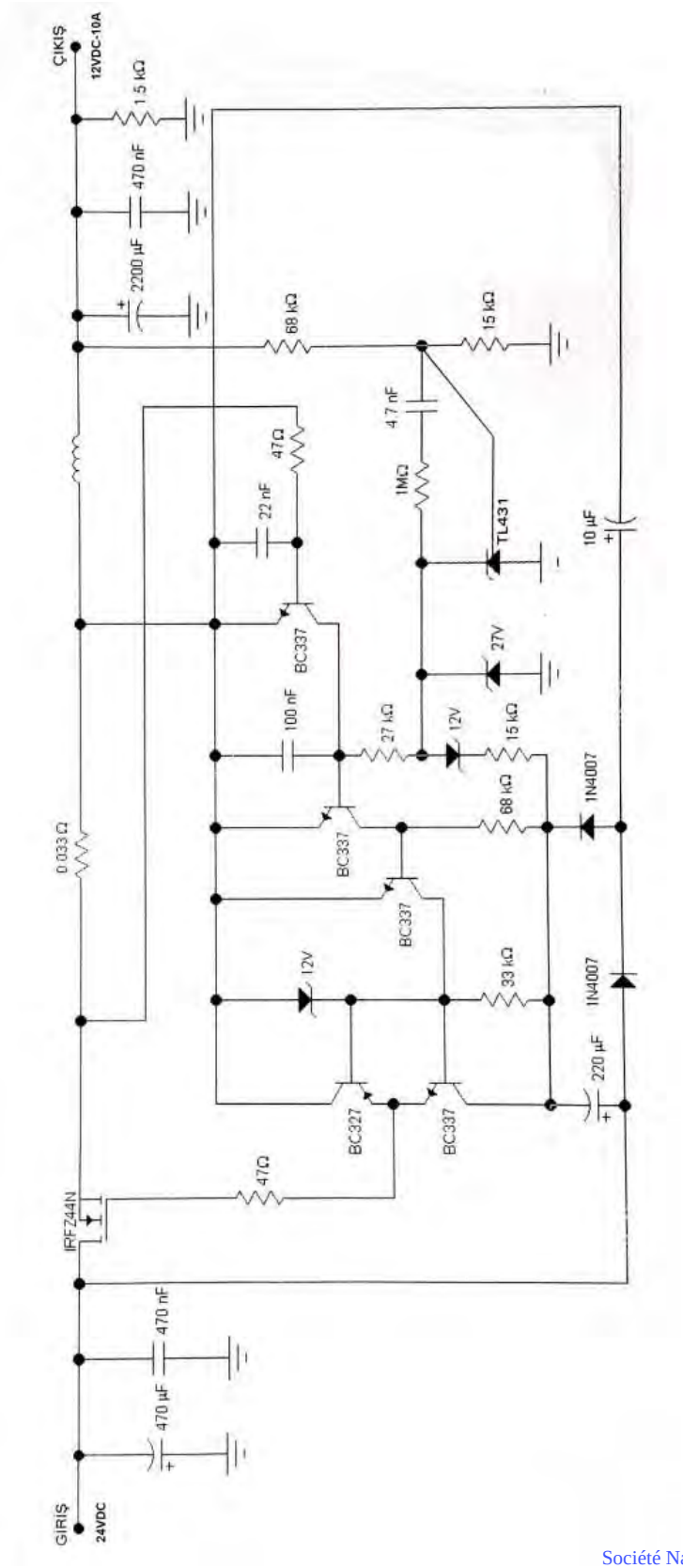
-JETWAY IPC Mini-ITX NC9N-2550 Board

IPC Mini-ITX NC9N-2550 Board	
CPU	INTEL® Cedar Trail-D Processor D2550 CPU (1.86GHz)
Chipset	INTEL®NM10 Express chipset
Memory	2 * 240 pin 1333/1066 DDR3 Ram (so-dimm) Maximum : Support 4 GB
Expansion Slots	1 * PCI 1 * Mini PCI-E socket
Storage	2 * Serial ATA2 3Gb/s connectors
Audio	Realtek ALC662 6-Channel HD Audio
Ethernet LAN	2 * RTL8111EVL PCI-E Gigabit LAN
USB	Embedded 7 * USB 2.0/1.1
LVDS	Onboard 24-bits single channel connector
Rear Panel I / O	4 * USB 2.0/1.1 ports 2 * RJ-45 port 3 * Audio I/O ports (Line-in, MIC and Line-out) 1 * VGA port 1 * HDMI port 2 * COM ports (COM2 for RS232/422/485) 1 * +12V DC-in jack
Internal I / O	2 * USB 2.0/1.1 headers for 3 USB 2.0 ports 1 * PS/2 Mouse & 1 * Keyboard header 2 * NB / Chassis Fan connectors; 1 * LVDS header/1 * Inverter header 1 * AUDIO header 4* RS232 headers
BIOS	AMI 16MB UEFI DIP Flash ROM
Form Factor	Mini-ITX Form Factor (170mm x 170mm)
Certificate	CE, FCC, RoHS
Temperature	Operating within 0~60 centigrade Storage within -20-85 centigrade

2 Bedienungsanleitung Konverter / *User manual converter*:



3 Schaltplan Konverter / *Circuit diagrams converter*:



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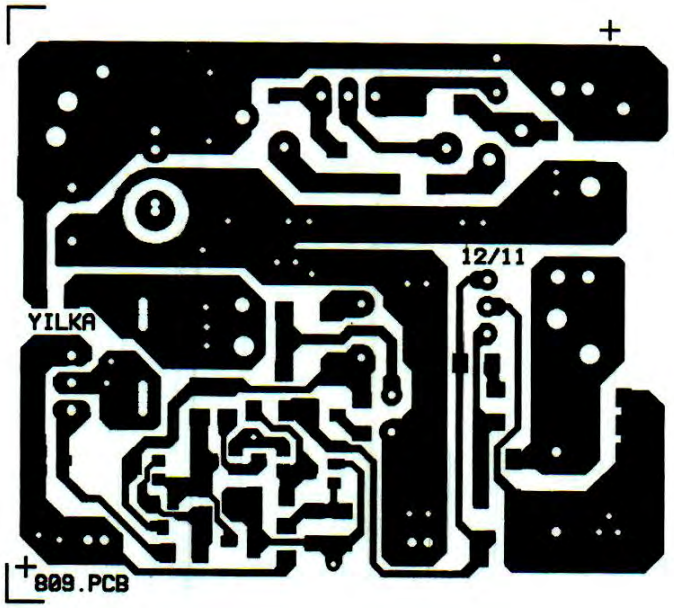
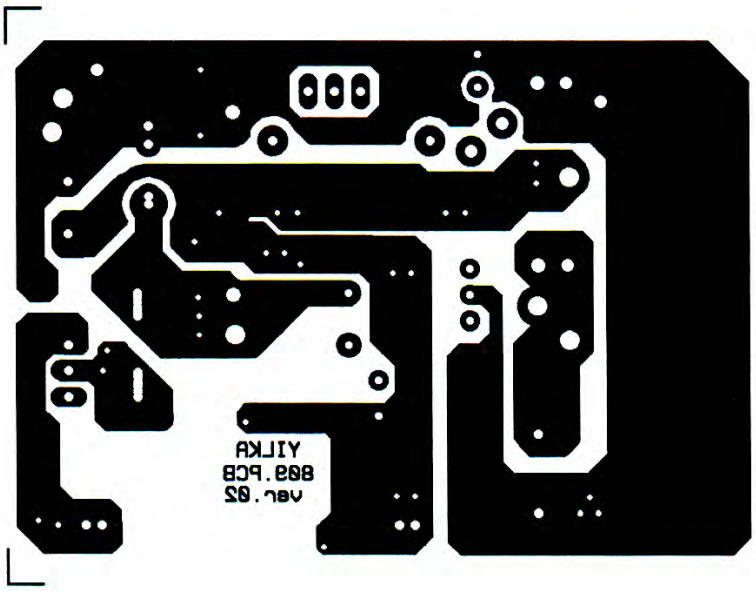
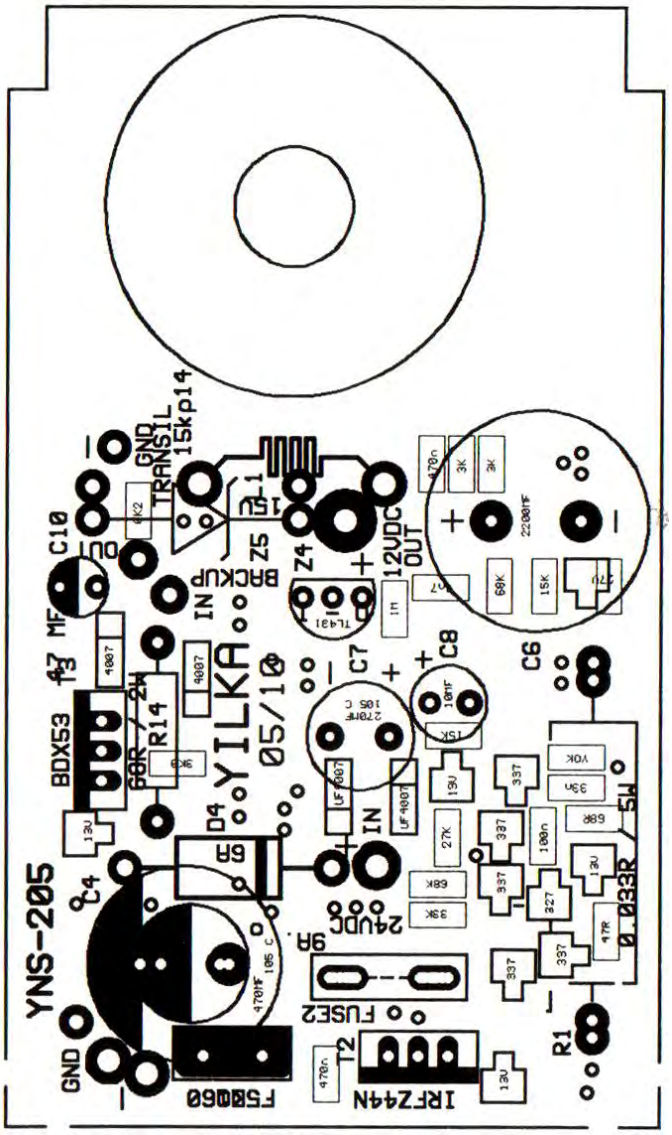
4 Layout Konverter / *Layout converter*:





5 Bestückungsplan Konverter / *Part Layout converter*:

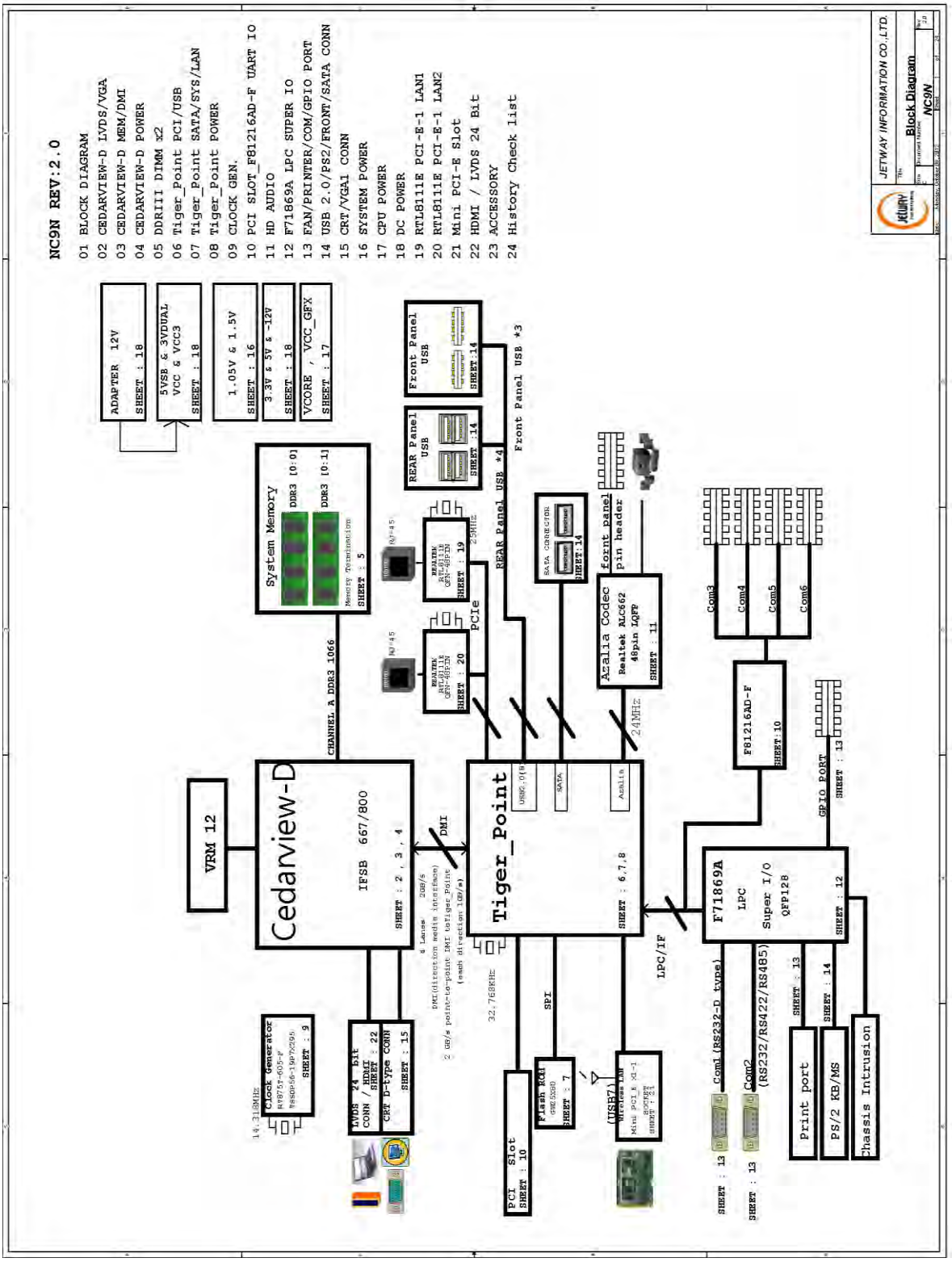


6 Stückliste Konverter / *Component List converter*:

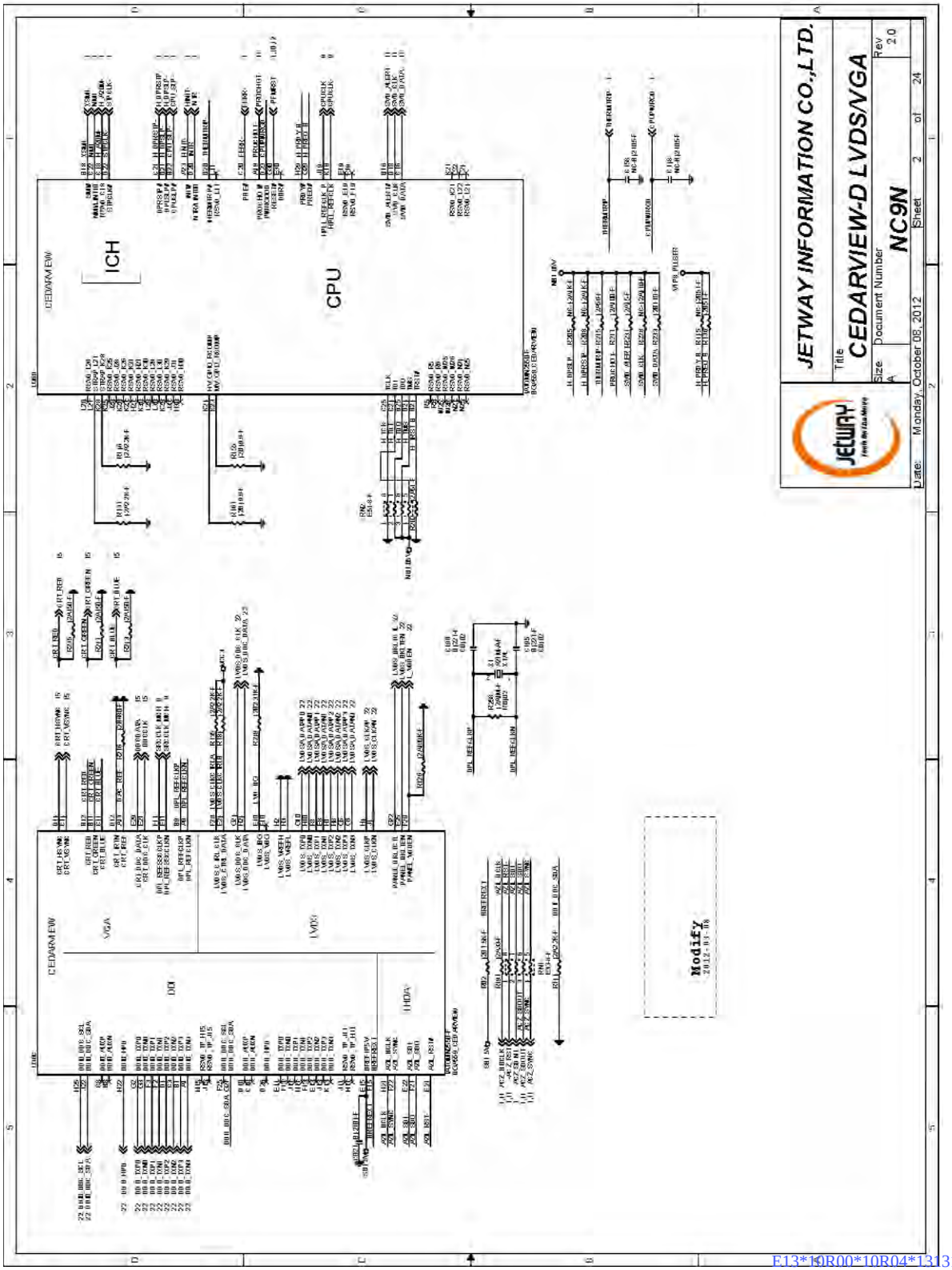
	YNS 210 24 VDC~12VDC 10A PWM KONVERTÖR		
SN	Tanım	Miktar	Birim
1	0R033 TAŞ DİRENÇ 5W (%5)	1	ADET
2	MPM6A-10 DİYOT (6A DİYOT) SILICON RECTIFIER	1	ADET
3	F5KQ60 DİOD (TO220)	1	ADET
4	15V TRANSİL (1,5KE15A-E3)	1	ADET
5	10uF 100V 105C KONDANSATÖR 5mm(ŞERİT) ELEKTROLİTK Ø=6.3x11mm	1	ADET
6	220uF 35V 105C KONDANSATÖR 5mm(ŞERİT) ELEKTROLİ (Ø=8x14,5mm)	1	ADET
7	470uF 35V 105C KONDANSATÖR 5mm(ŞERİT) ELEKTROLİT (Ø=10x16mm)	1	ADET
8	2200uF 35V 105C KONDANSATÖR 7,5mm ELEKTROLİTİK DÖKME 16x26mm	1	ADET
9	TL431 PROGRAMMABLE PRECISION REFERENCES	1	ADET
10	IRFZ44N MOSFET(TO-220AB)	1	ADET
11	TOROİD KÖMÜRÜ T106 26K 26,9x14.5x11.1mm RSM	1	ADET
12	1,50mm gri BAKIR TEL (350gr MAKARA)	11,6	GR
13	809.PCB VER.2	1	ADET
14	27K SMD 1206 DİRENÇ (%5)	1	ADET
15	15K SMD 1206 DİRENÇ (%5)	2	ADET
16	3K3 SMD 1206 DİRENÇ (%5)	1	ADET
17	6K2 SMD 1206 DİRENÇ (%5)	1	ADET
18	33K SMD 1206 DİRENÇ (%5)	1	ADET
19	68K SMD 1206 DİRENÇ (%5)	2	ADET
20	33nF 50V SMD 1206 KONDANSATÖR	1	ADET
21	470nF 50V SMD 1206 KONDANSATÖR	2	ADET
22	1M SMD 1206 DİRENÇ (%5)	1	ADET
23	100nF 50V 1206 SMD KONDANSATÖR	1	ADET
24	47R SMD 1206 DİRENÇ (%5)	1	ADET
25	3K SMD 1206 DİRENÇ (%5)	2	ADET
26	27V SMD (SOT-23) ZENER DİYOT	1	ADET
27	4,7nF 50V SMD 1206 KONDANSATÖR	1	ADET
28	M7 (GS1M) SMD DİYOT (1N 4007)	2	ADET
29	UF 4007 (US1M) SMD DİYOT	2	ADET
30	13V SMD (SOT-23) ZENER DİYOT	4	ADET
31	BC 807-40 SMD (SOT-23) TRANSİSTÖR (KÜÇÜK MAKARA)	1	ADET
32	BC 817-40 SMD (SOT-23) TRANSİSTÖR (KÜÇÜK MAKARA)	5	ADET

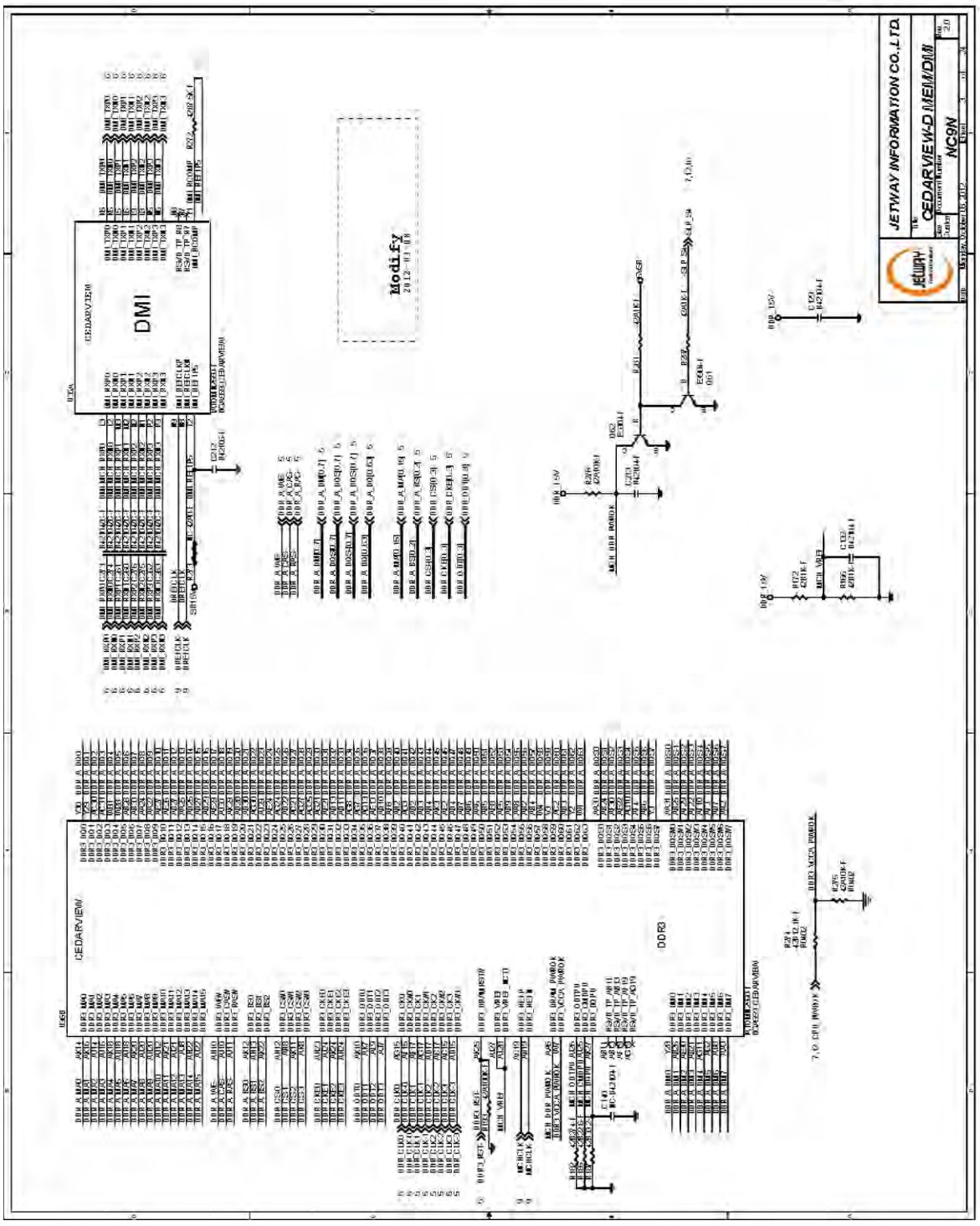
SN	Tanım	Miktar	Birim
33	68R SMD 1206 DİRENÇ (%5)	1	ADET
34	KONVERTÖR DELİKLİ YAN KAPAK (SİYAH)	1	ADET
35	Kesilmiş 10A Konvertör soğ profili (114mm)	1	ADET
36	KONVERTÖR DELİKSİZ YAN KAPAK (SİYAH)	1	ADET
37	UZUN ERKEK TERMİNAL KALAYLI RULO PAKET TE2308-RPK	3	ADET
38	BAYRAK TERMİNAL 6.3 RULO PAKET	2	ADET
39	SİGORTA YUVASI	1	ADET
40	TIRNAKLI DİŞİ FİŞ 6.3 DÖKME PAKET TD 2114-DPK	3	ADET
41	1 NOLU KABLO UCU 4.2 RULO PAKET TŞ 2406-RPK	2	ADET
42	3'LÜ DİŞİ KONNEKTÖR-KD-3105	1	ADET
43	1,5mm BEYAZ KABLO (NYAF)	280	MM
44	1,5mm SİYAH KABLO (NYAF)	235	MM
45	1,5mm KIRMIZI KABLO (NYAF)	250	MM
46	8mm PVC MAKARON	70	MM
47	0,35mm SİLİKONLU KABLO (NYAF)	75	MM
48	0,70mm SİLİKONLU BEZ MAKARON (SRG-502)	62	MM
49	METRİK VİDA 3x12 YHB (OXİT KAPLI)	1	ADET
50	SAC VİDASI 2,9x6,5 YSB (OXIT KAPLI)	8	ADET
51	3'LÜ ERKEK KONNEKTÖR-V0	1	ADET
52	CONTA KABLO GEÇİŞ-11	1	ADET
53	PİYASA KONVERTÖR BAYRAK ETİKETİ	1	ADET
54	CB 100x2,5 KABLO BAĞI	1	ADET
55	KELEBEK	1	ADET
56	10A KONVERTÖR KUTUSU	1	ADET
57	AMBALAJ POŞETİ (7,5x13cm)	0,0012	KG
58	MİNİ 7,5A OTO SİGORTA	1	ADET
59	10A OTO SİGORTA	1	ADET

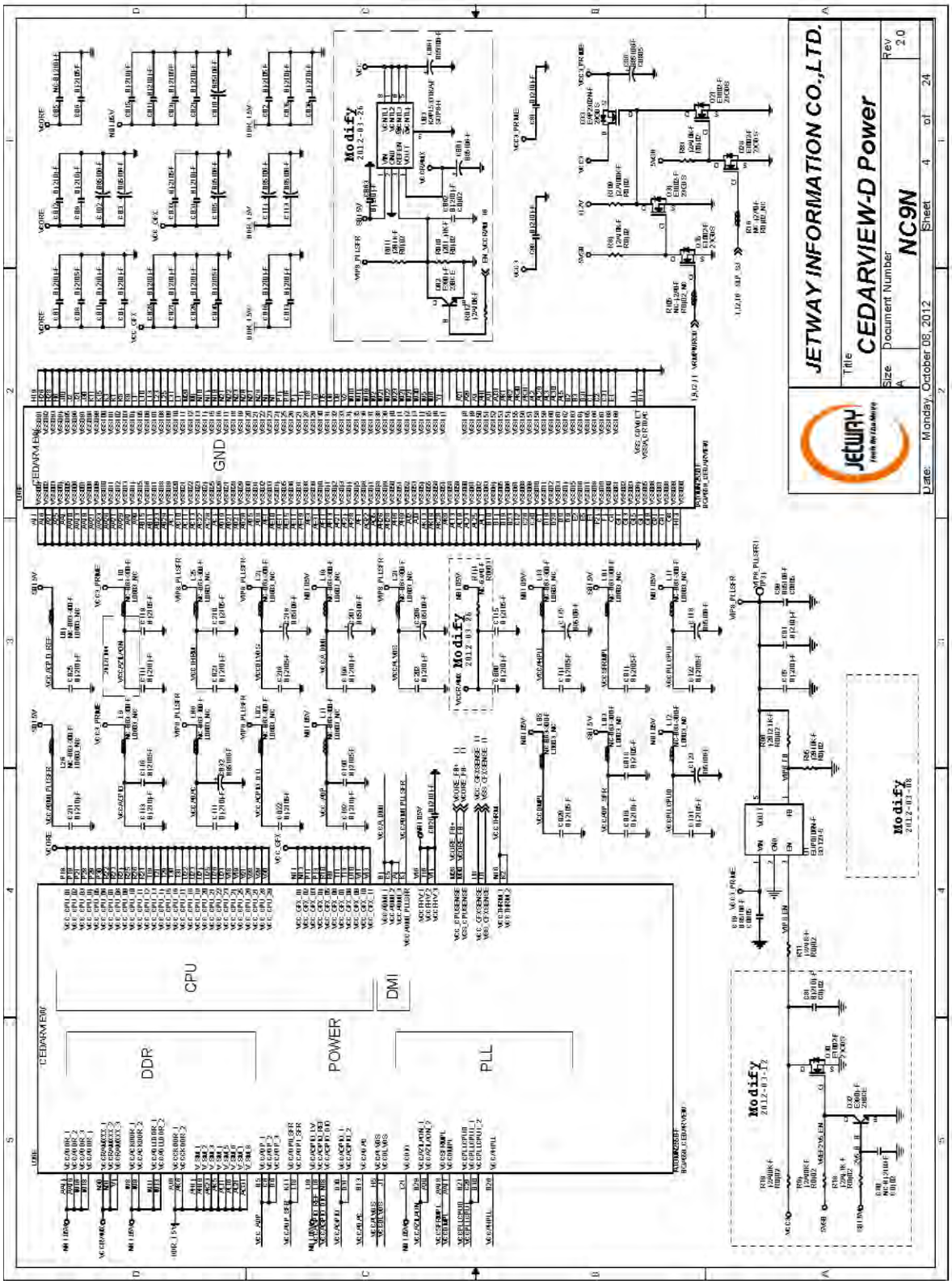
7 Blockdiagramm NV2000 / *Block diagram NV2000*:



8 Schaltplan NV2000 / *Circuit diagrams NV2000*:




JETWAY INFORMATION CO.,LTD.
CEDARVIEW-D MEMDMI
NC9N
DMI
CEDARVIEW
DDR3
Modify



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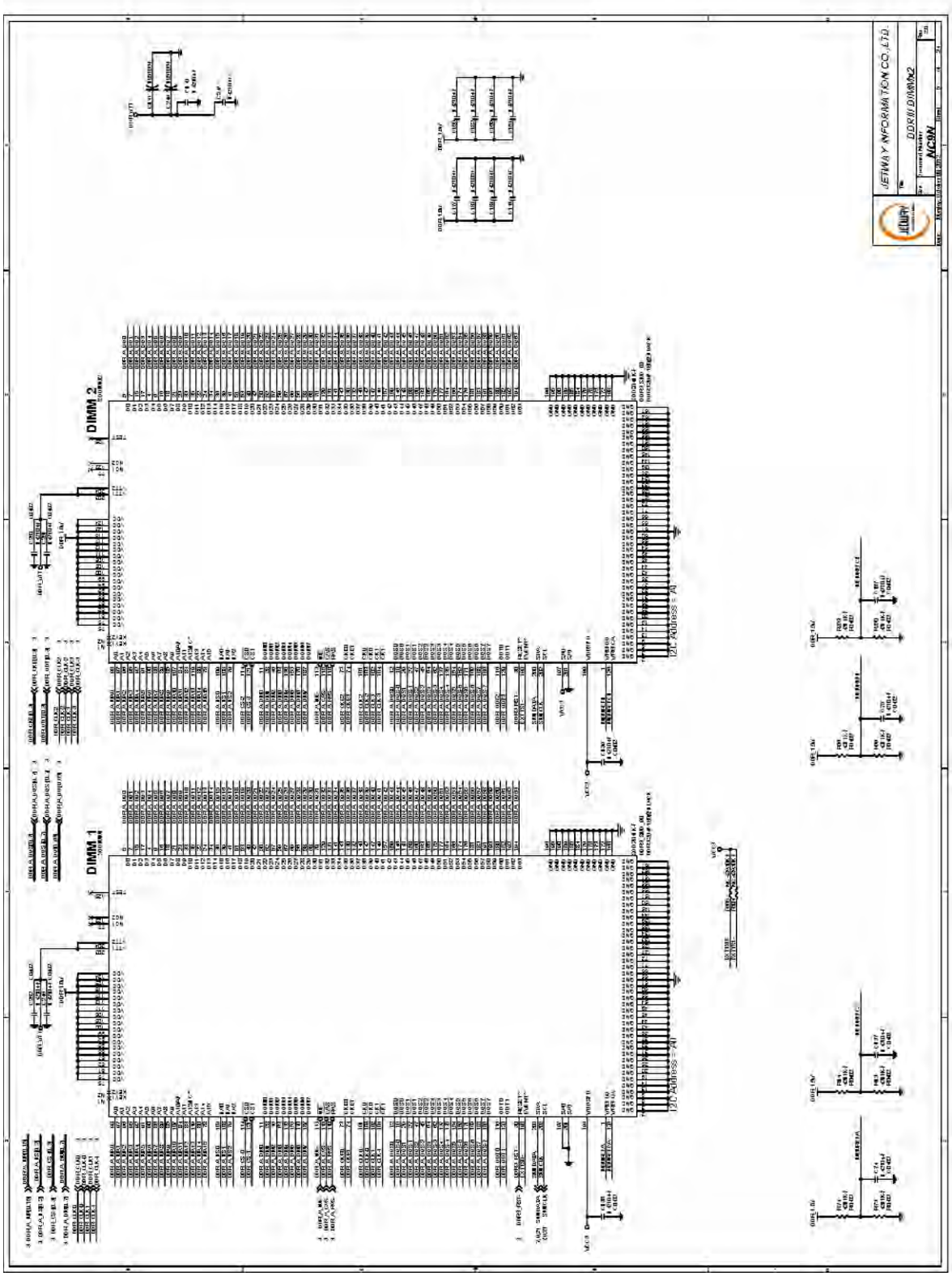
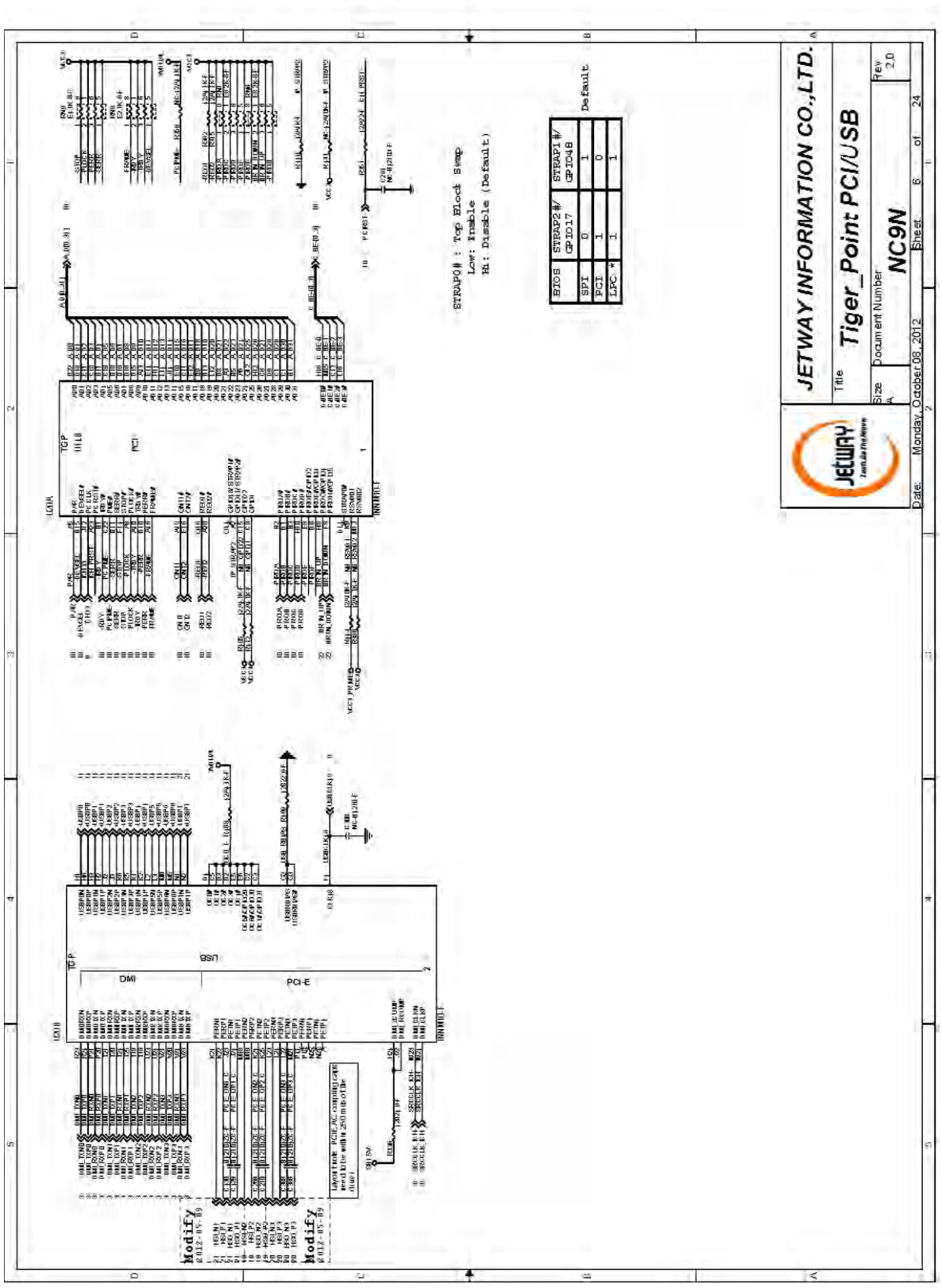
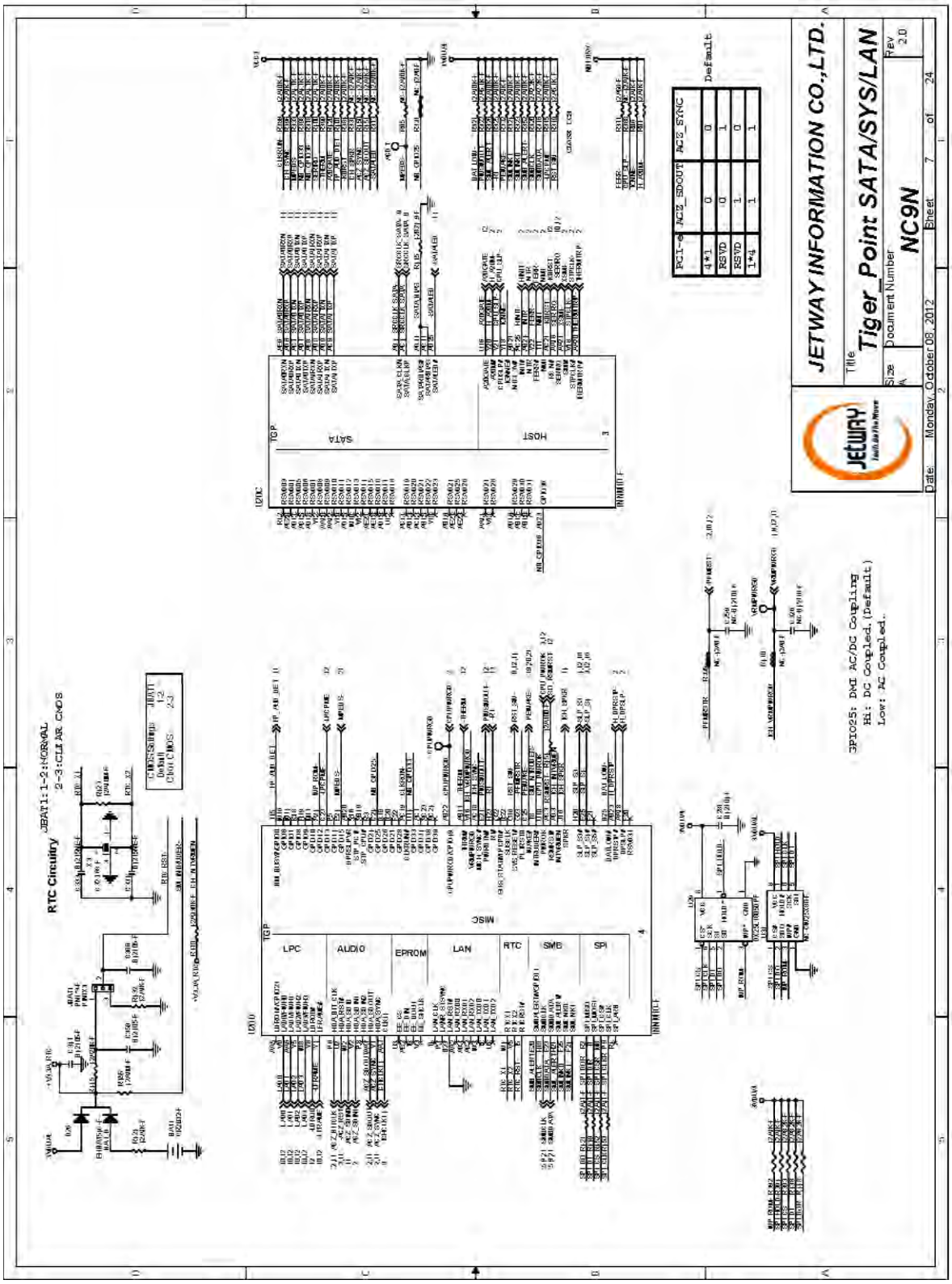

DIMM 1
DIMM 2
JETWAY INFORMATION CO.,LTD.
DDRII DIMMx2
NC99N


JETWAY INFORMATION CO.,LTD.
Tiger_Point PCI/USB
NC9N
Monday, October 08, 2012
DMI
PCI-E
USB
STRAP0# : Top Block Swap
Low: Enable
Hi: Disable (Default)
BIOS
STRAP2#/GPIO17
STRAP1#/GPIO48
SPI
PCI
LPC *
Default



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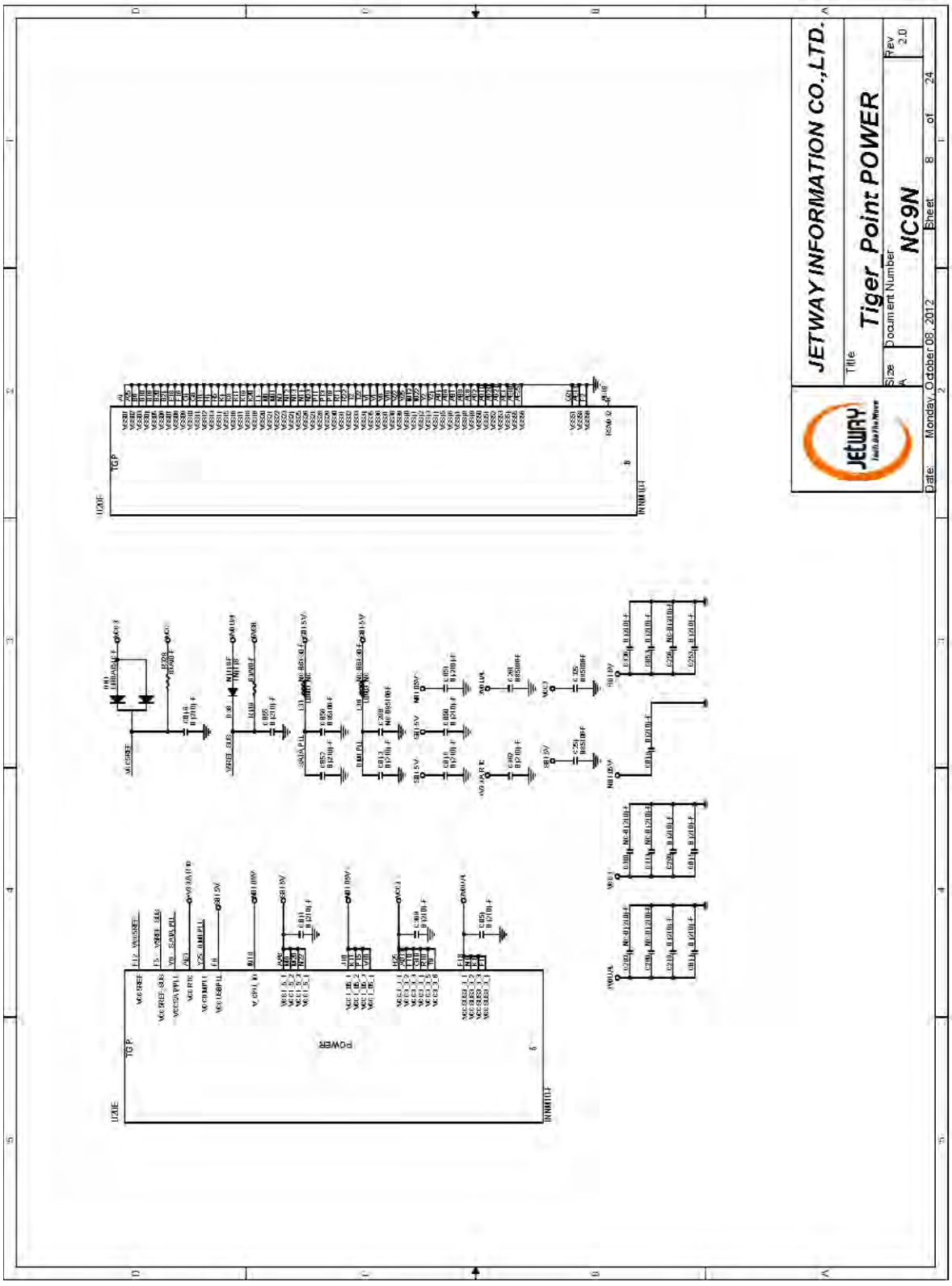

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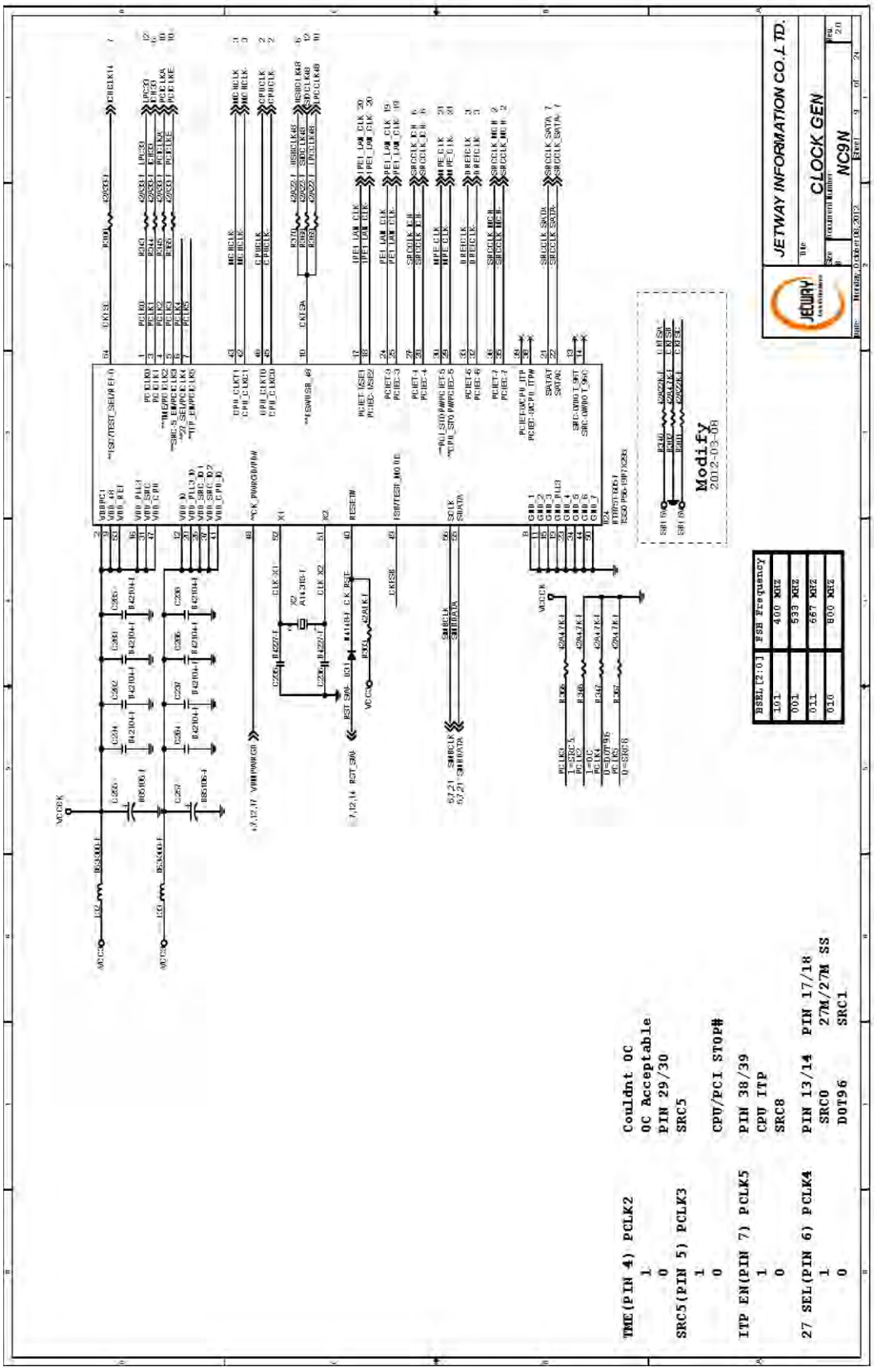
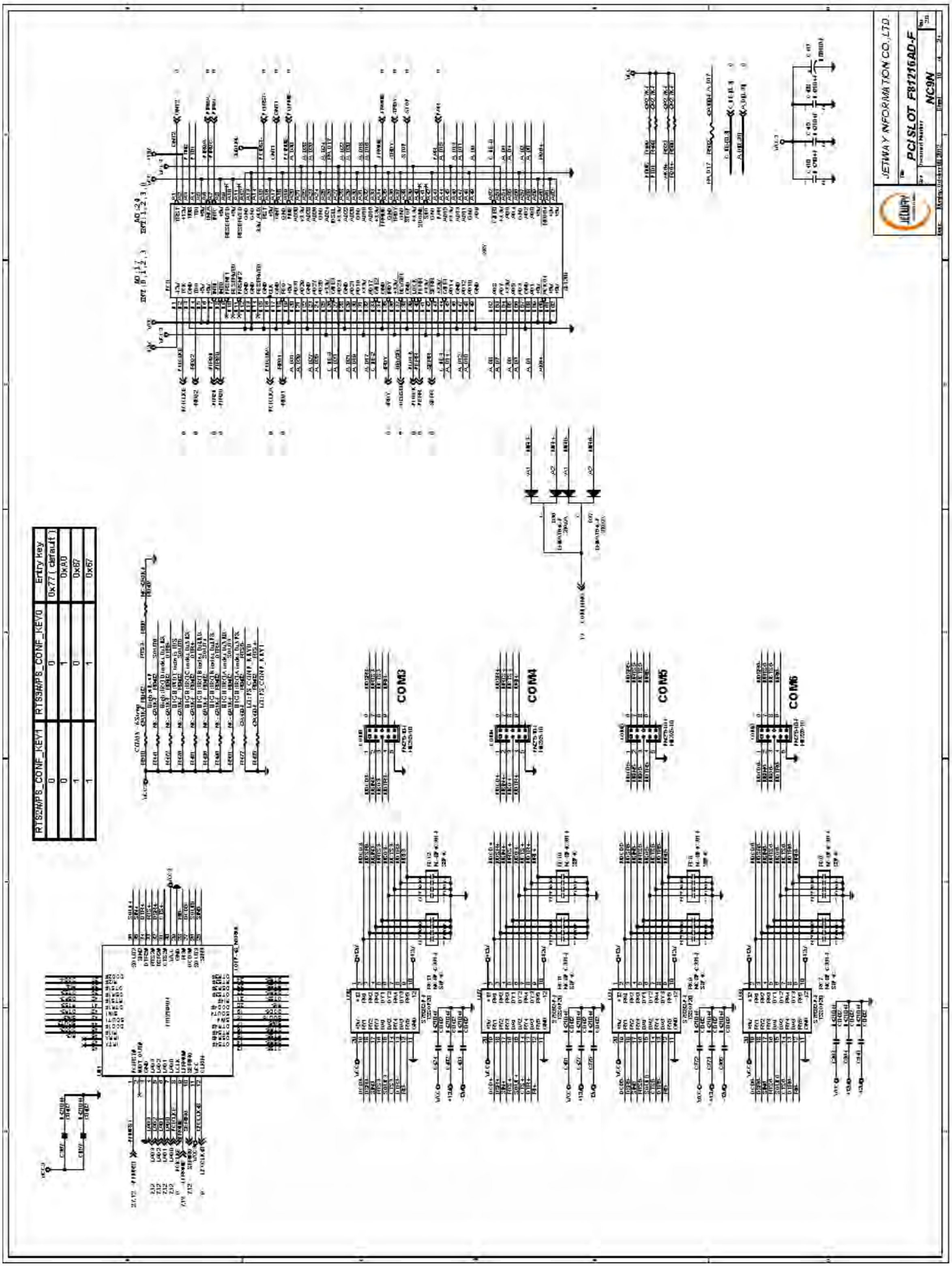
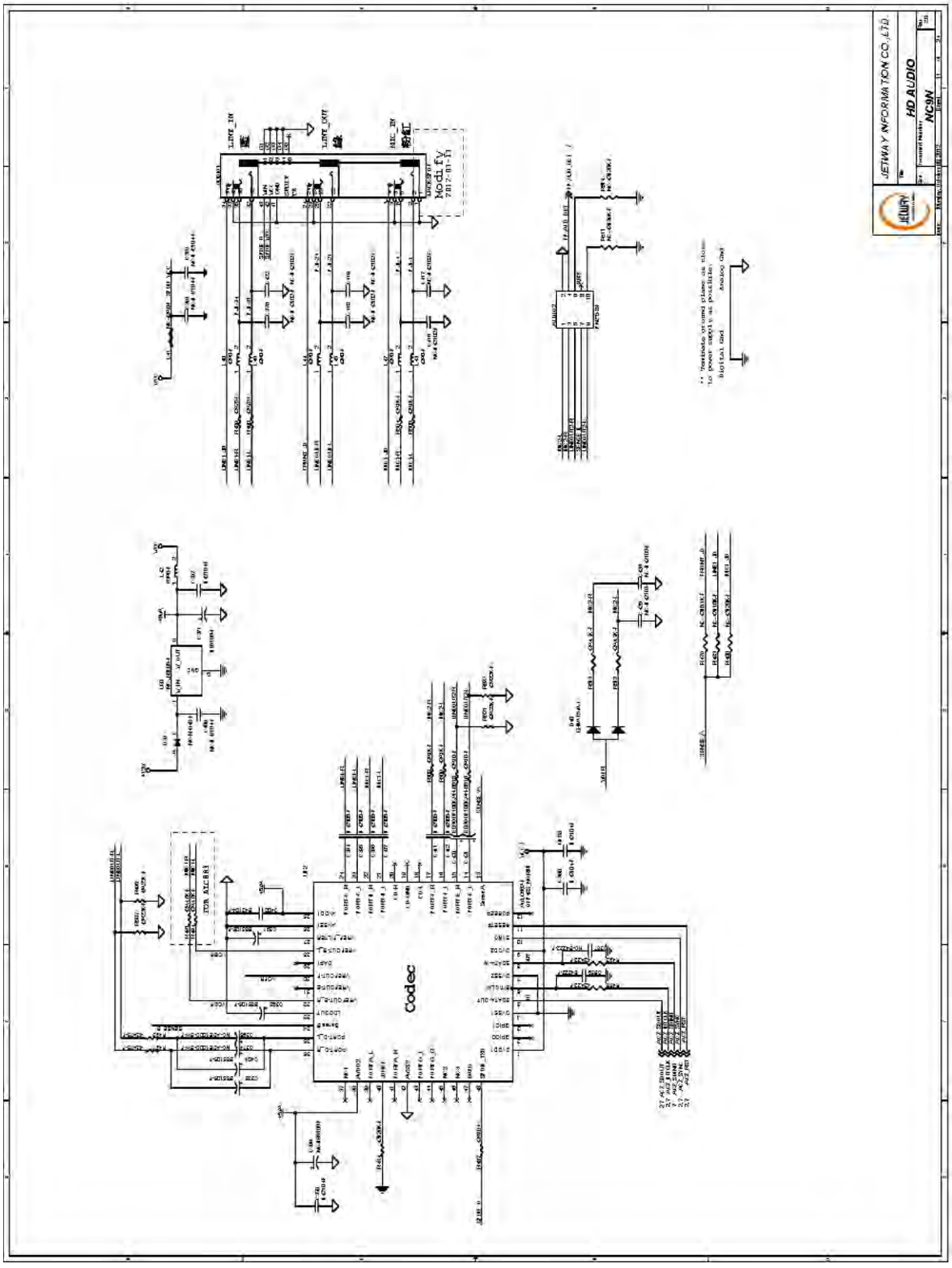
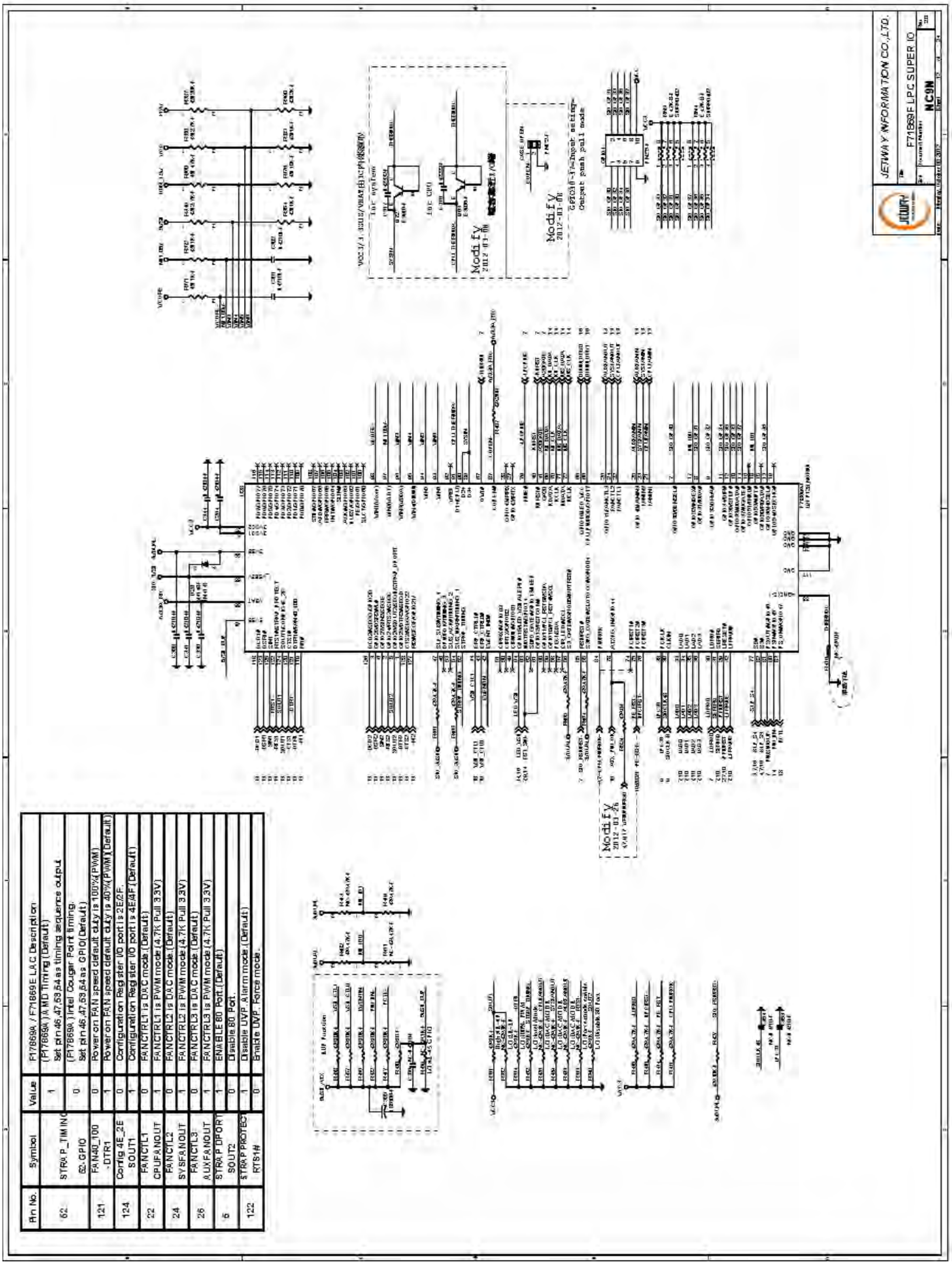
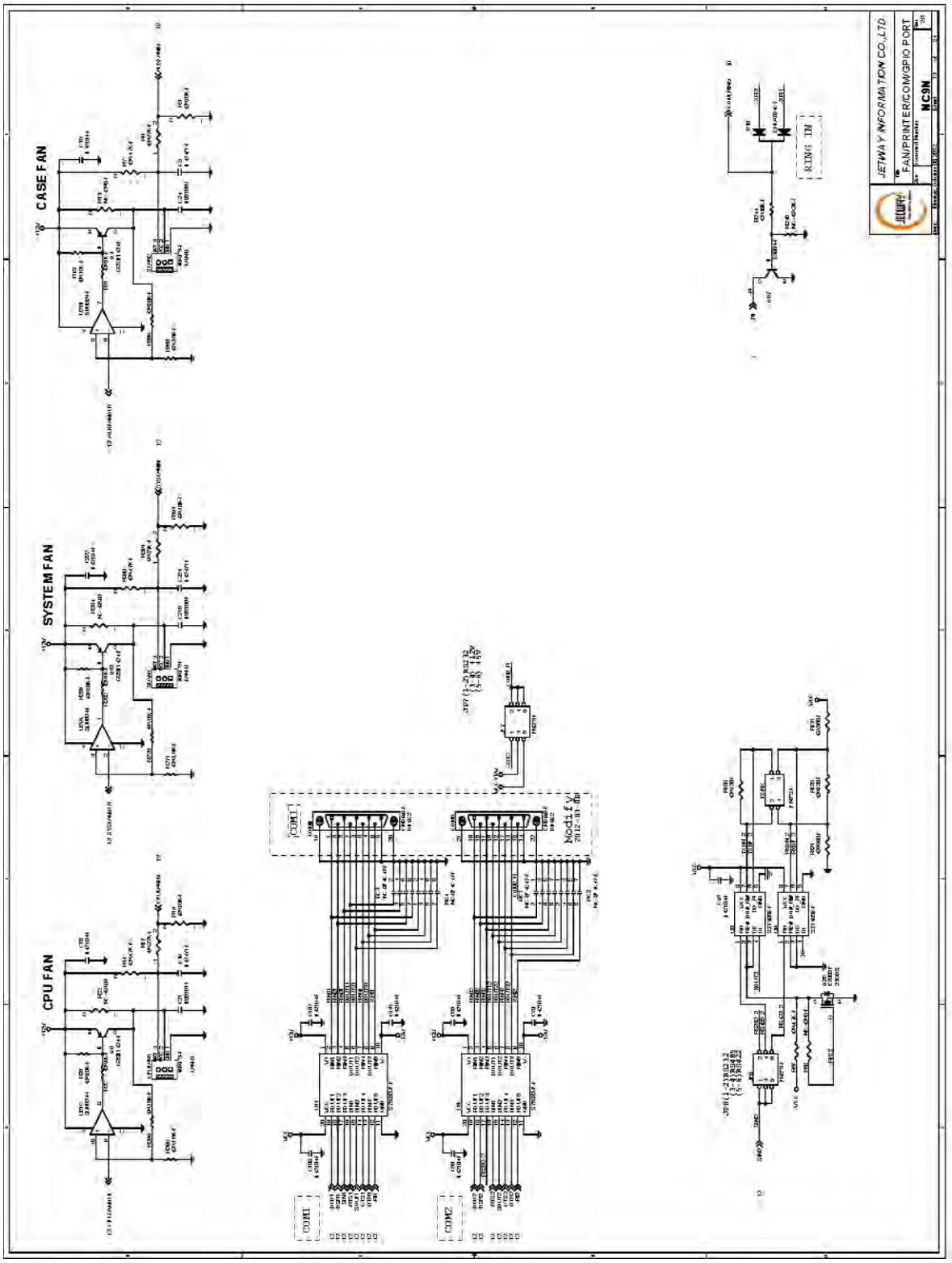
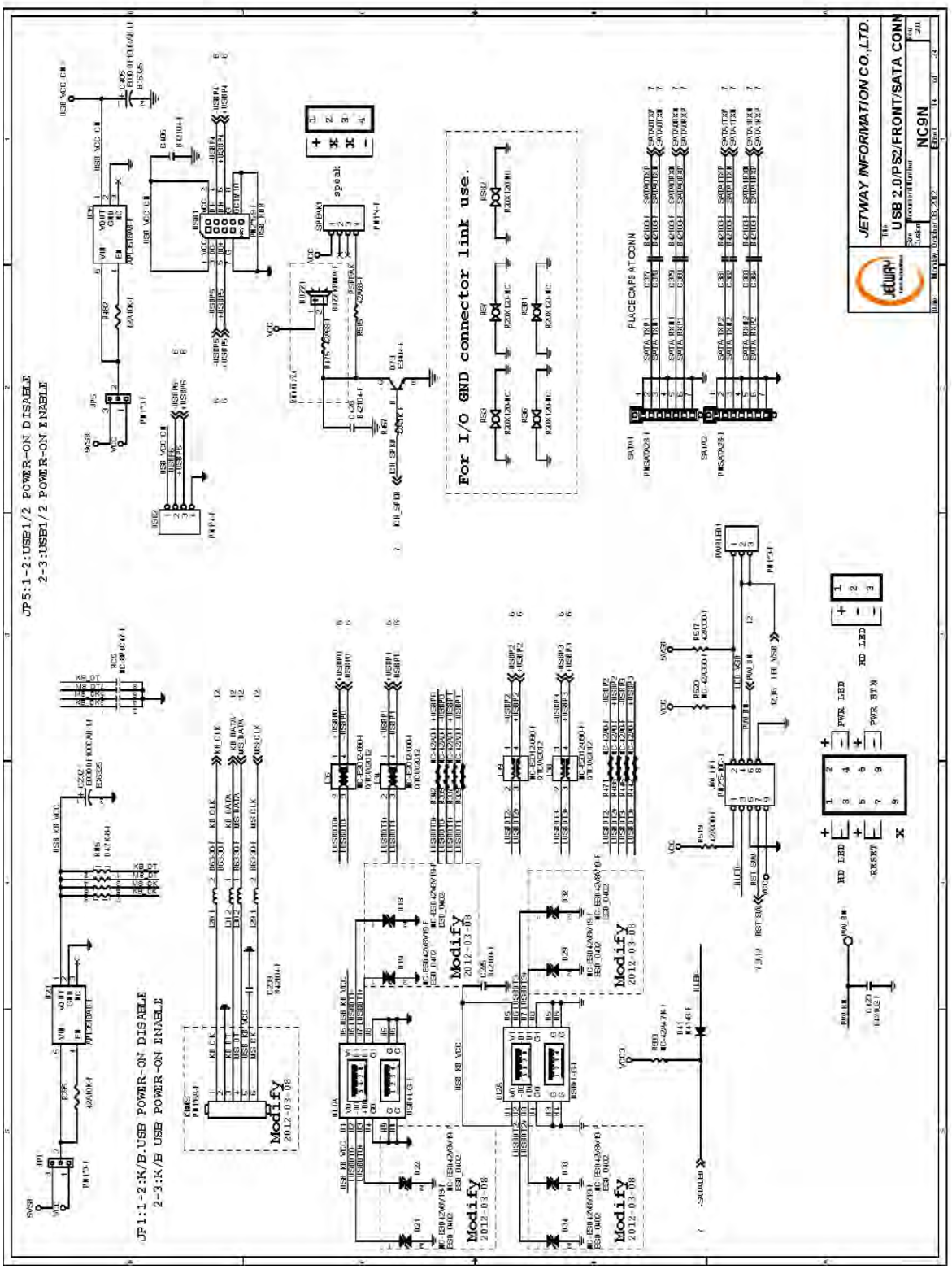


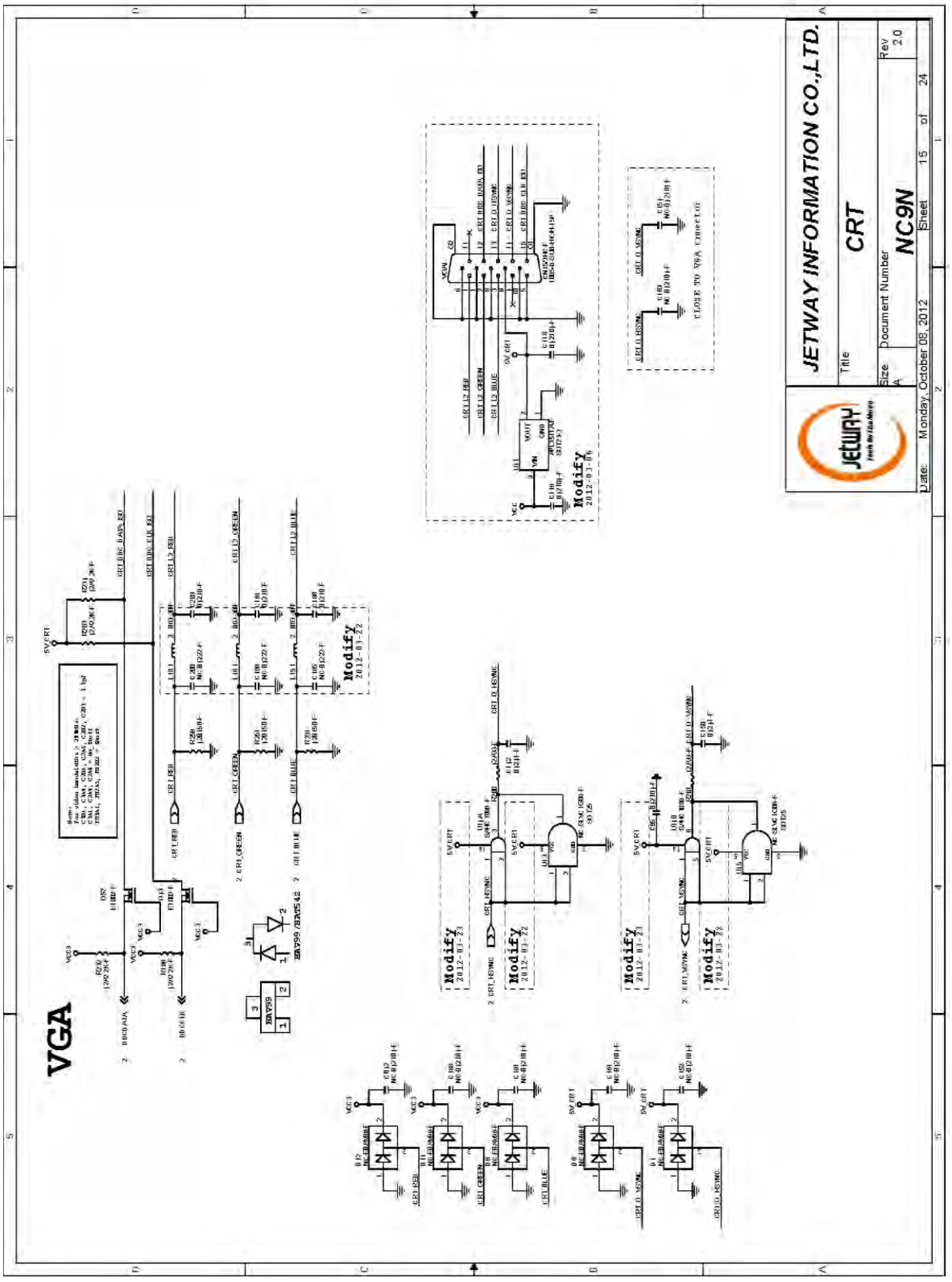


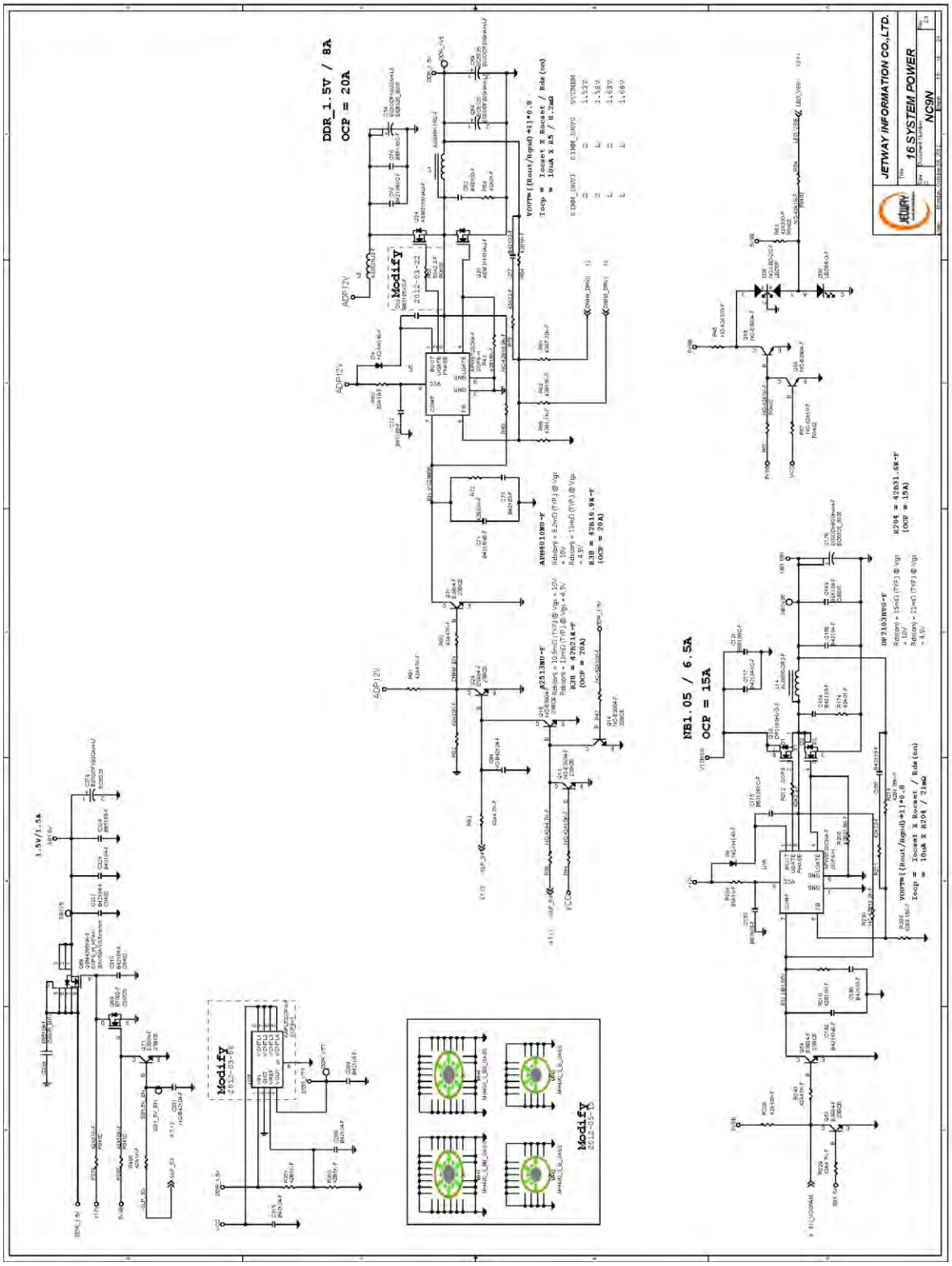

JETWAY INFORMATION CO.,LTD.
HD AUDIO
NC9N
Codec

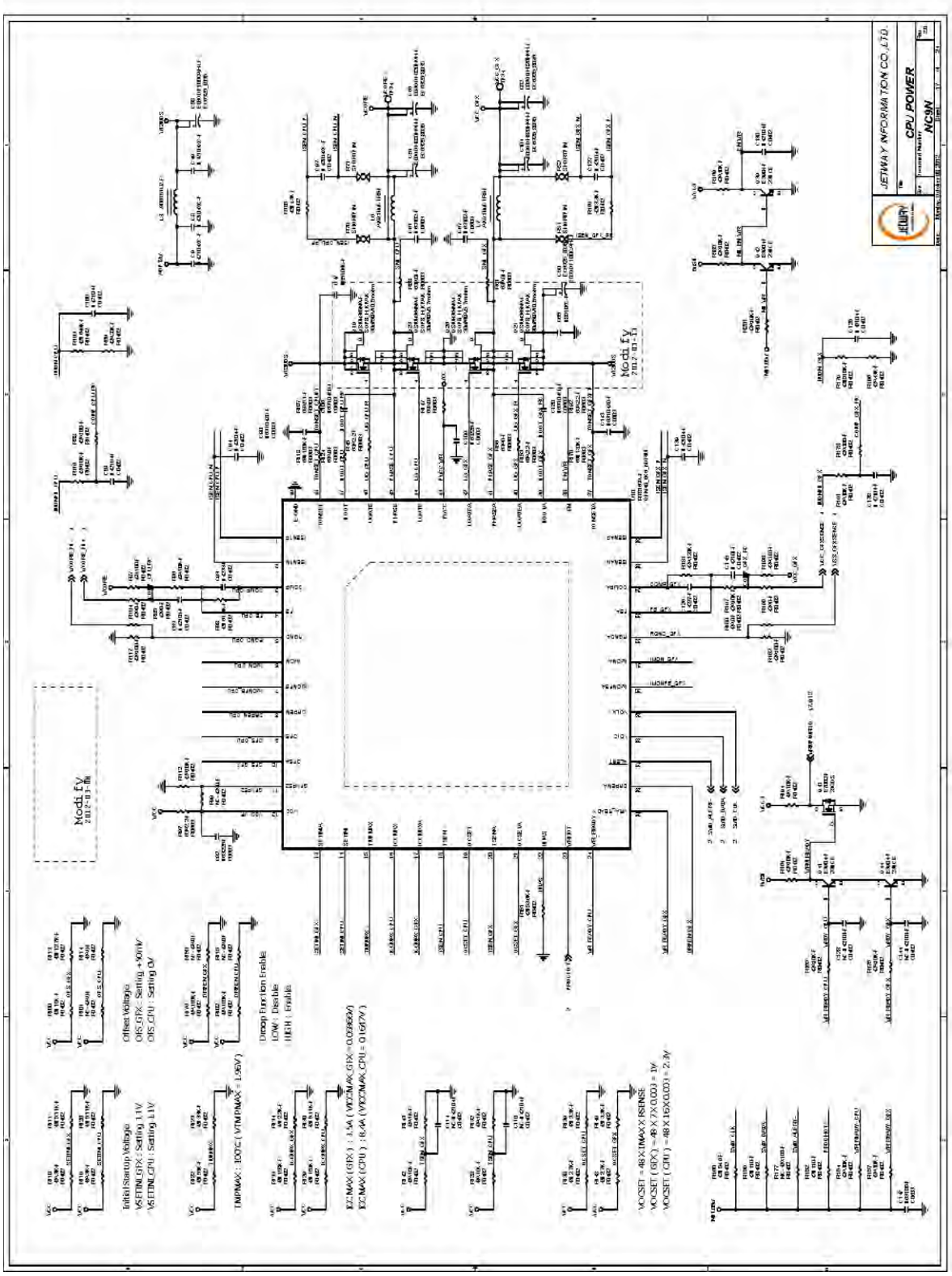


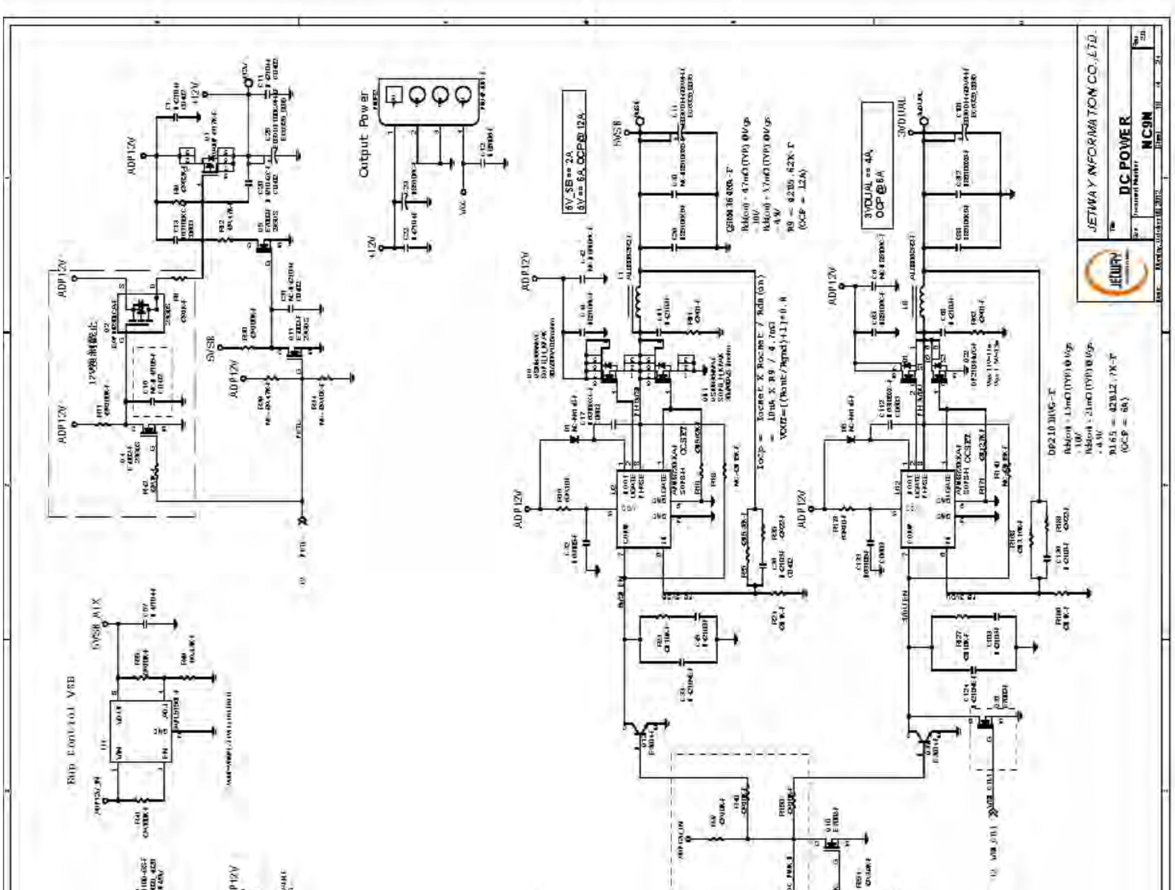

CASE FAN
SYSTEM FAN
CPU FAN
COM1
COM2
RING IN
JETWAY INFORMATION CO.,LTD.
FAN/PRINTER/COM/GPIO PORT
MC9M

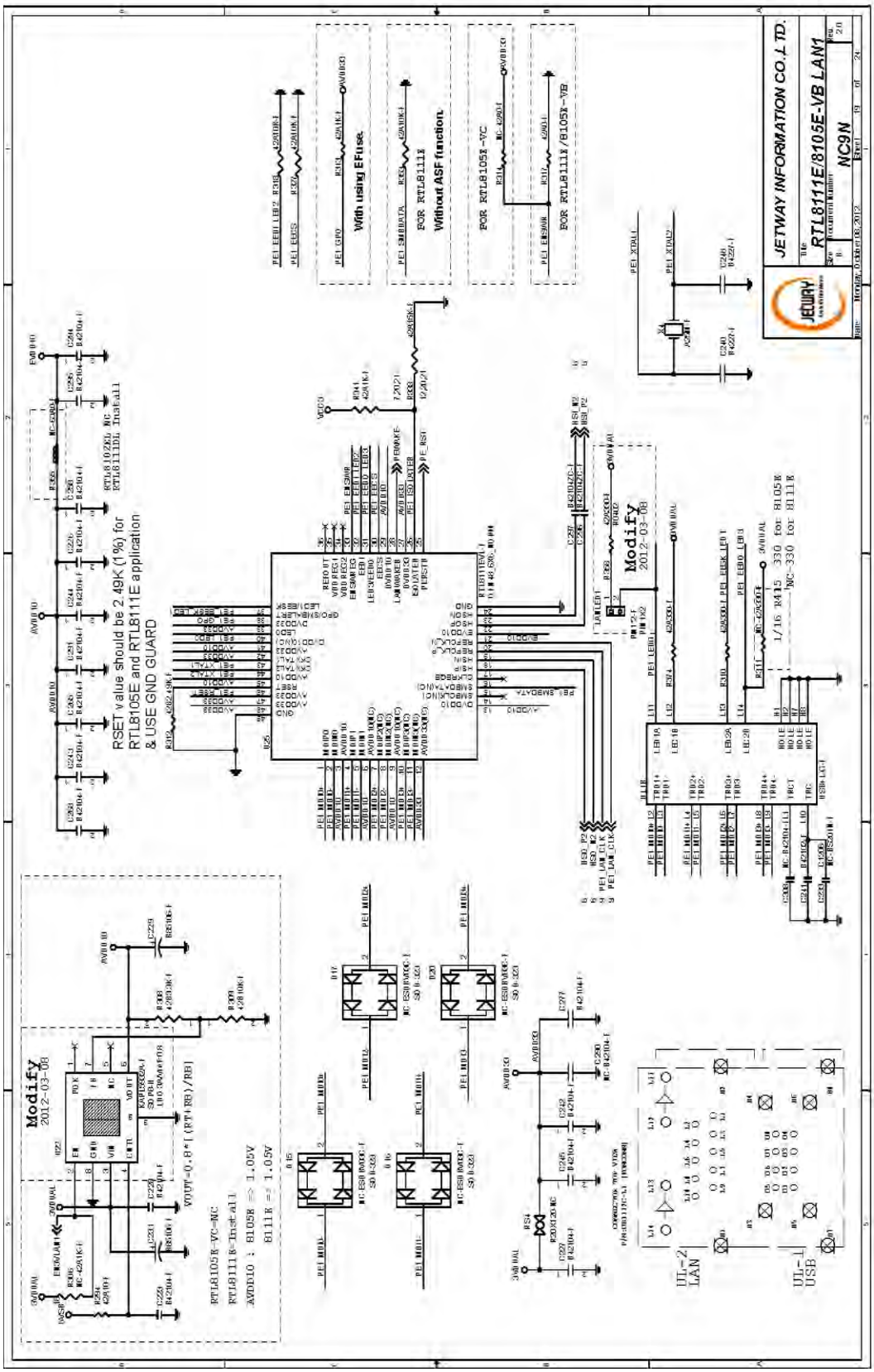

JP5:1-2:USB1/2 POWER-ON DISABLE
2-3:USB1/2 POWER-ON ENABLE
JP1:1-2:K/B USB POWER-ON DISABLE
2-3:K/B USB POWER-ON ENABLE
For I/O GND connector link use.
JETWAY INFORMATION CO.,LTD.
USB 2.0/PS2/FRONT/SATA CONN
NC9N
Modify
2012-03-08


VGA
JETWAY INFORMATION CO.,LTD.
Title
CRT
Size
A
Document Number
NC9N
Rev
2.0
Date:
Monday, October 08, 2012
Sheet
15
of
24
Modify
2012-03-22


DDR_1.5V / 8A
OCP = 20A
NB1.05 / 6.5A
OCP = 15A
1.5V/1.5A
JETWAY INFORMATION CO.,LTD.
16 SYSTEM POWER
NC9N
Modify


JETWAY INFORMATION CO.,LTD.
CPU POWER
NC9N
Modify
Offset Voltage
Initial Startup Voltage
Drop Function Enable
LOW : Disable
HIGH : Enable





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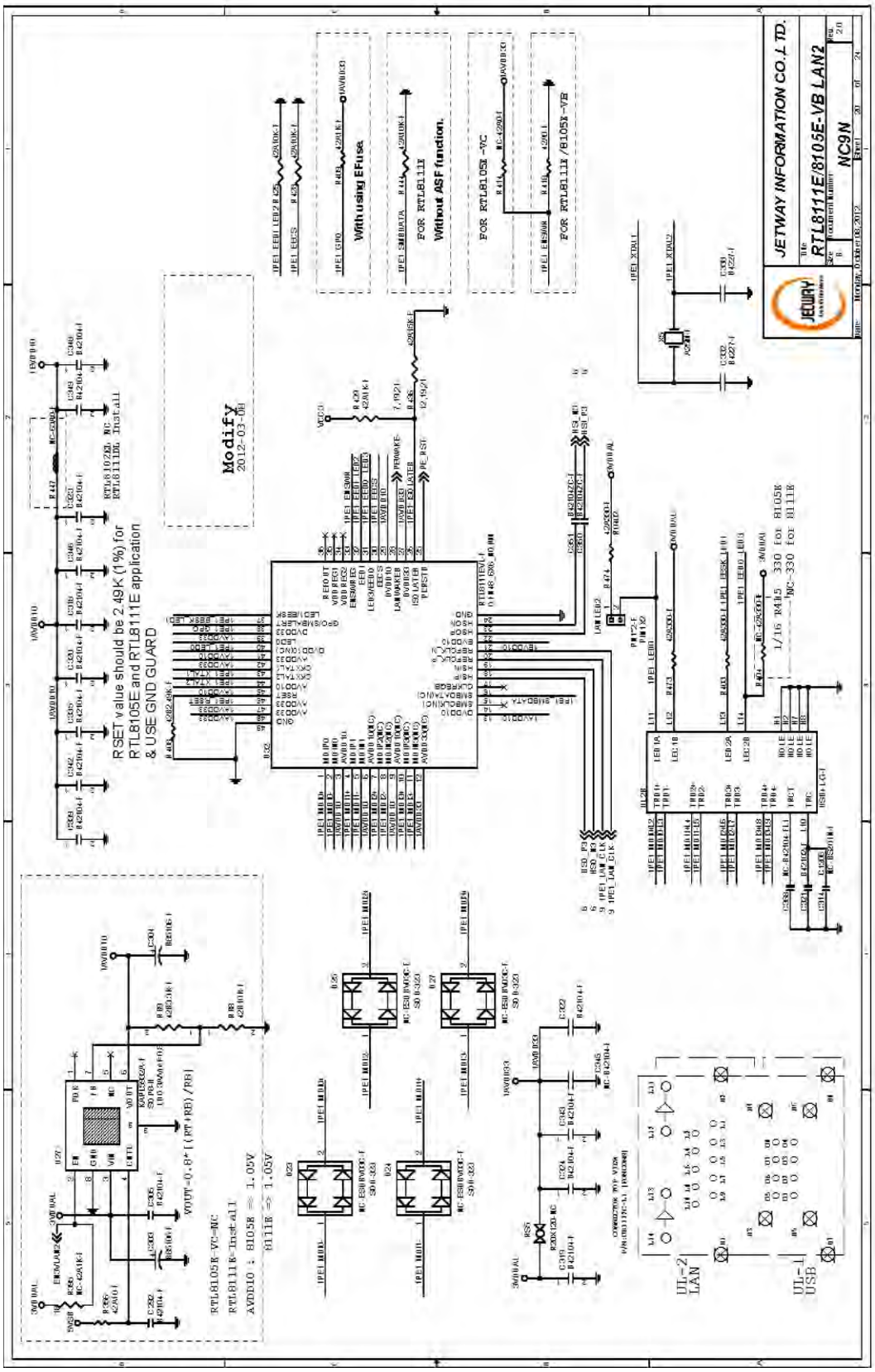

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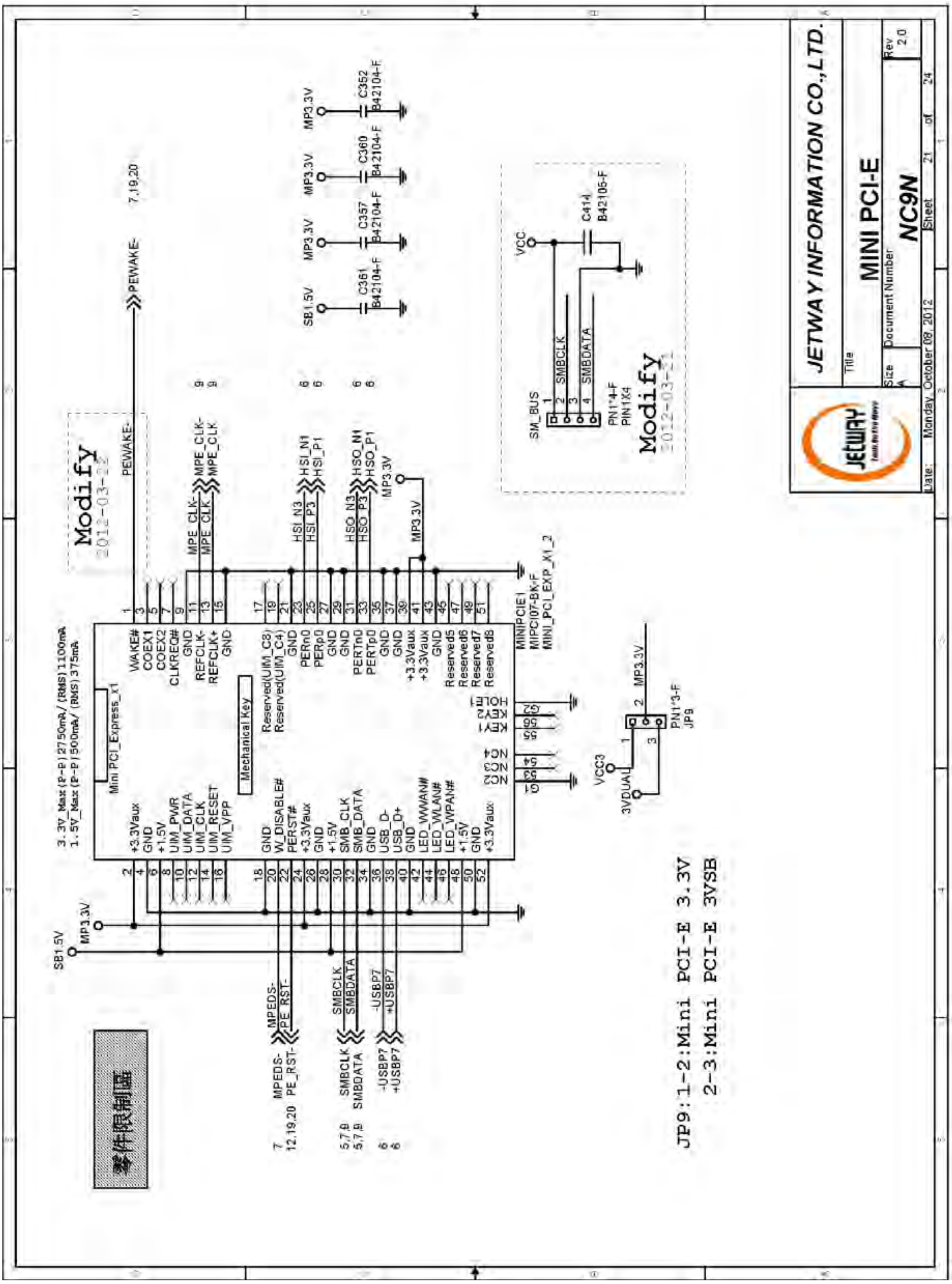
Organisme accrédité OLAS EN 45011
Accréditation N° 5/001 (Portée communiquée sur demande)



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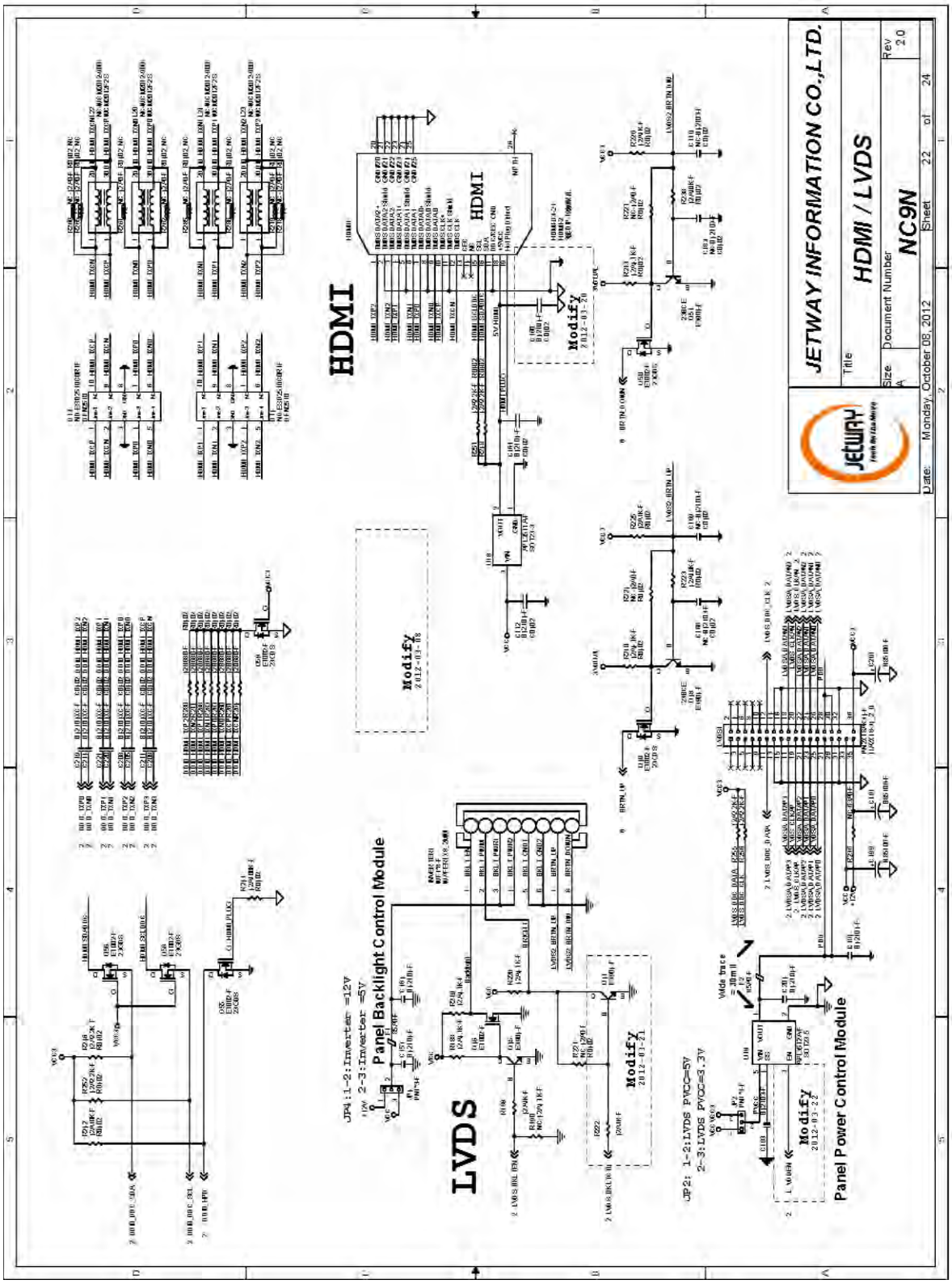
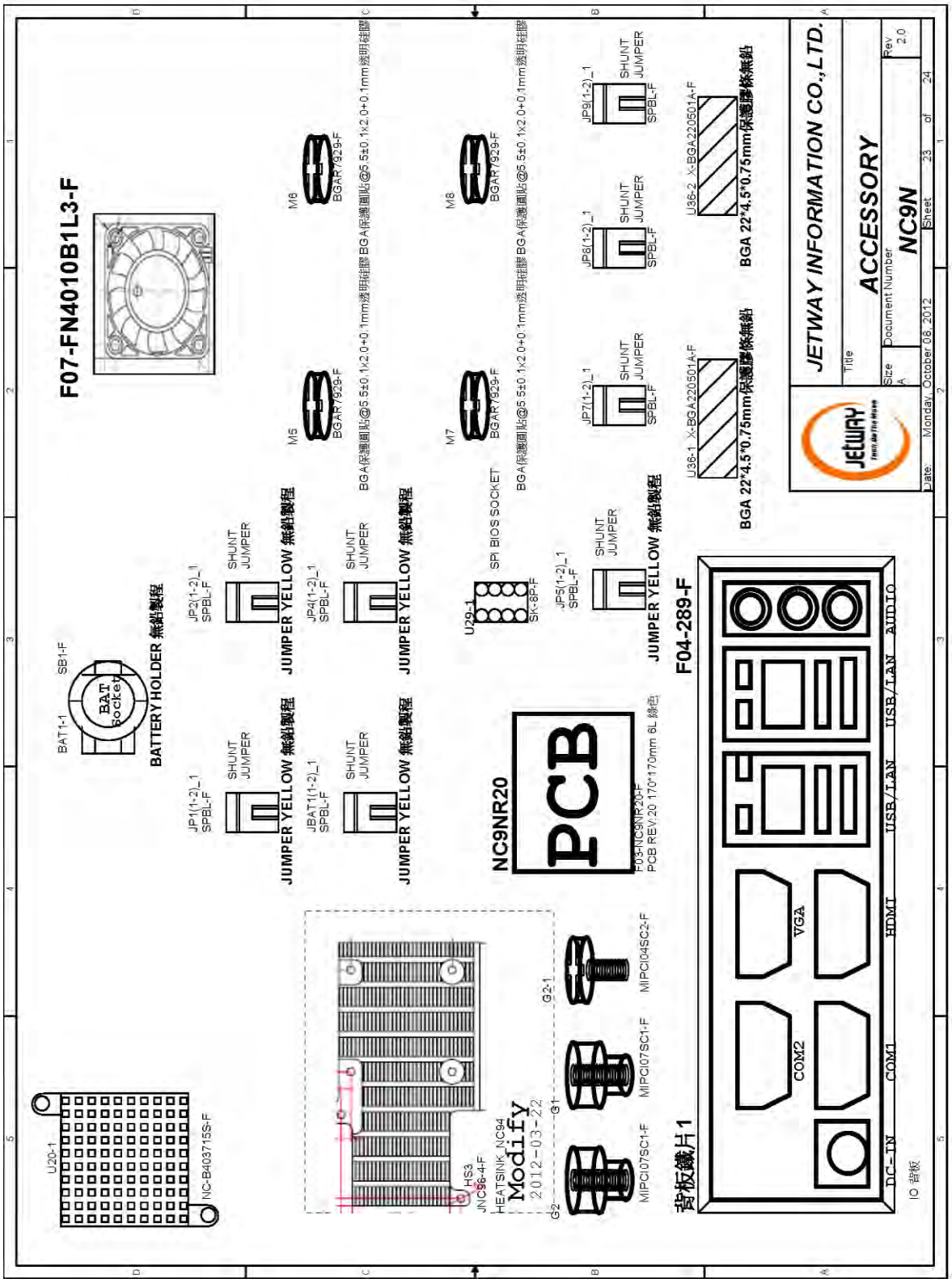
Organisme accrédité OLAS EN 45011
Accréditation N° 5/001 (Portée communiquée sur demande)


HDMI
LVDS
Panel Backlight Control Module
Panel Power Control Module
JETWAY INFORMATION CO.,LTD.
HDMI / LVDS
NC9N
Modify



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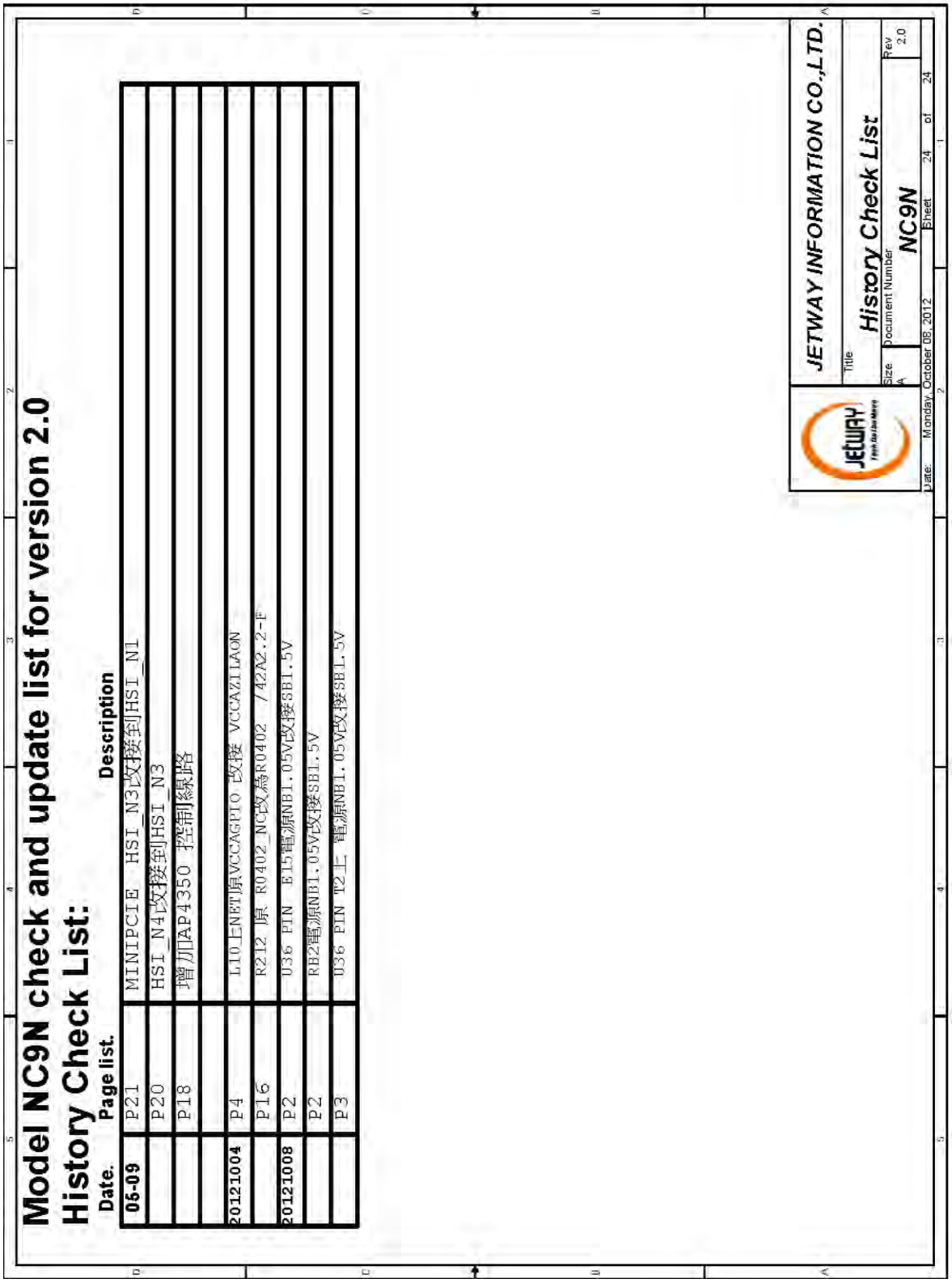


Model NC9N check and update list for version 2.0

History Check List:

Date.	Page list.	Description
06-09	P21	MINIPCIE HSI N3改接到HSI_N1
	P20	HSI_N4改接到HSI_N3
	P18	增加AP4350 控制線路
20121004	P4	L10上NET1原VCCAGPIO 改接 VCCAZ1LAON
	P16	R212 原 R0402_NC改為R0402 /42A2.2-F
20121008	P2	U36 PIN E15電源NB1.05V改接SB1.5V
	P2	RB2電源NB1.05V改接SB1.5V
	P3	U36 PIN T21 電源NB1.05V改接SB1.5V

JETWAY INFORMATION CO.,LTD.

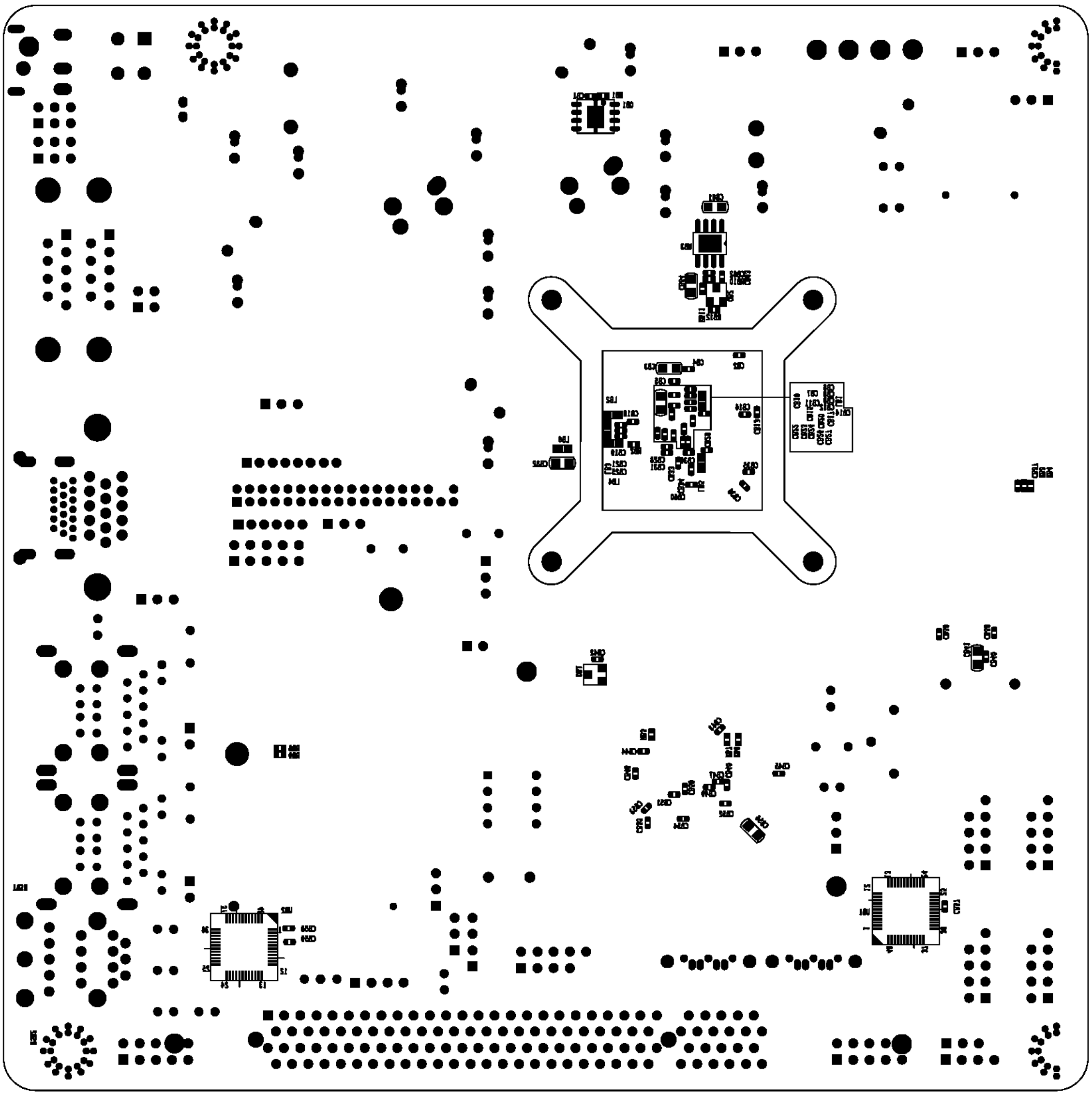
Title: History Check List

Size: A | Document Number: NC9N | Rev: 2.0

Date: Monday, October 08, 2012 | Sheet 24 of 24

9 Layout NV2000 / *Layout NV2000*:

CAM350 V 9.0 : Mon Oct 08 21:44:47 2012 - (Untitled)



JW Jetway Information Co.Ltd			
Model name	NC9N	Rev	2.0
Date	2012/10/08	SIZE	170X170
Layer	SOLDERMASKFORSOLDER		

E13*10R00*10R04*13131*00
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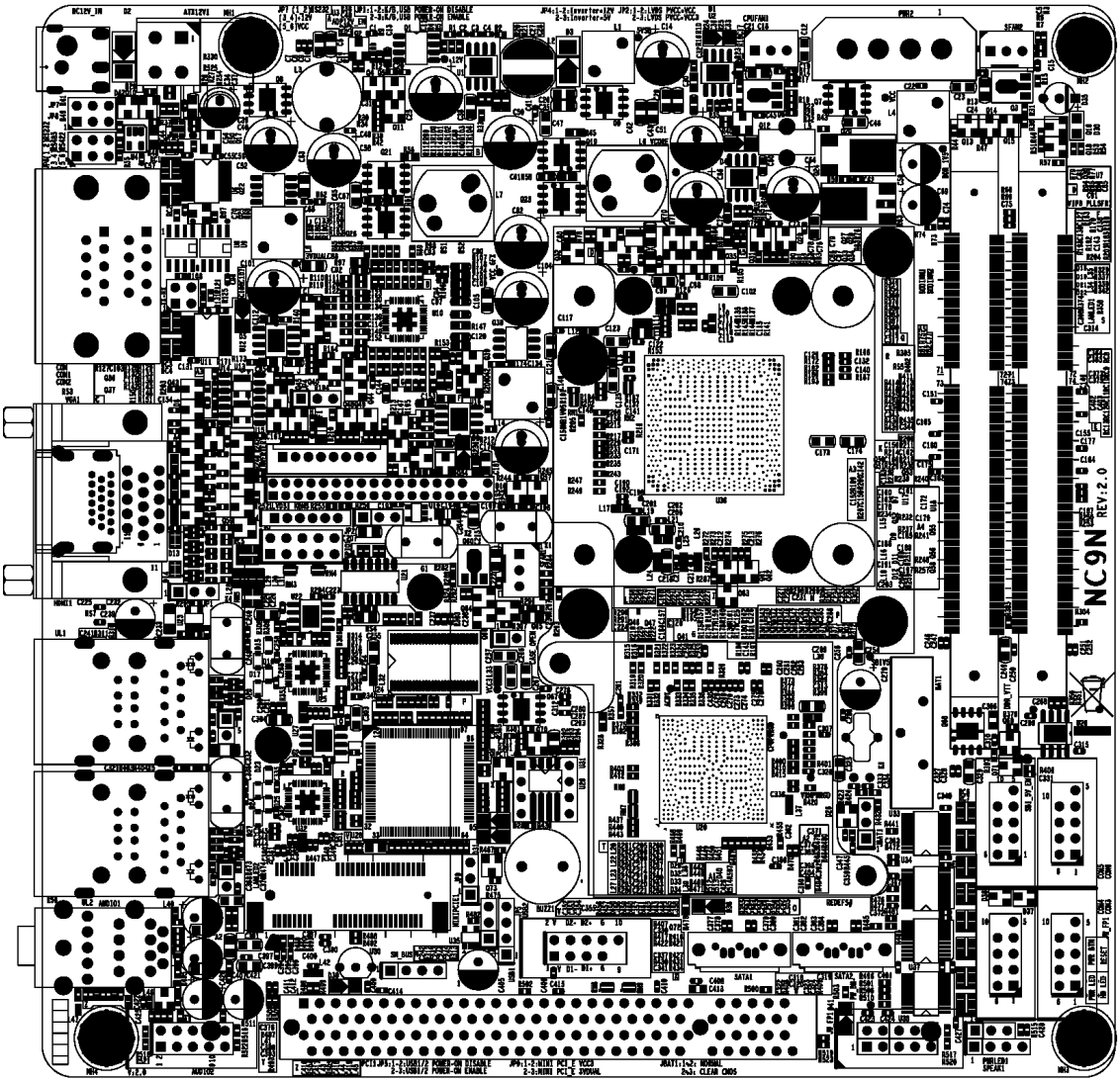
Organisme accrédité OLAS EN 45011
Accréditation N° 5/001 (Portée communiquée sur demande)

10 Bestückungsplan NV2000 / *Part Layout NV2000*:

CAM350 V 9.0 : Mon Oct 08 21:46:33 2012 - (Untitled)



JW Jetway Information Co.Ltd			
Model name	NC9N	Rev	2.0
Date	2012/10/08	SIZE	170X170
Layer	SOLDERMASKFORCOMP		

11 Stückliste NV2000 / *Component List NV2000*:

Model Name: J2NC9NDLR20-2550
Document No.: BOM-JNC9NDLR20-2550-05

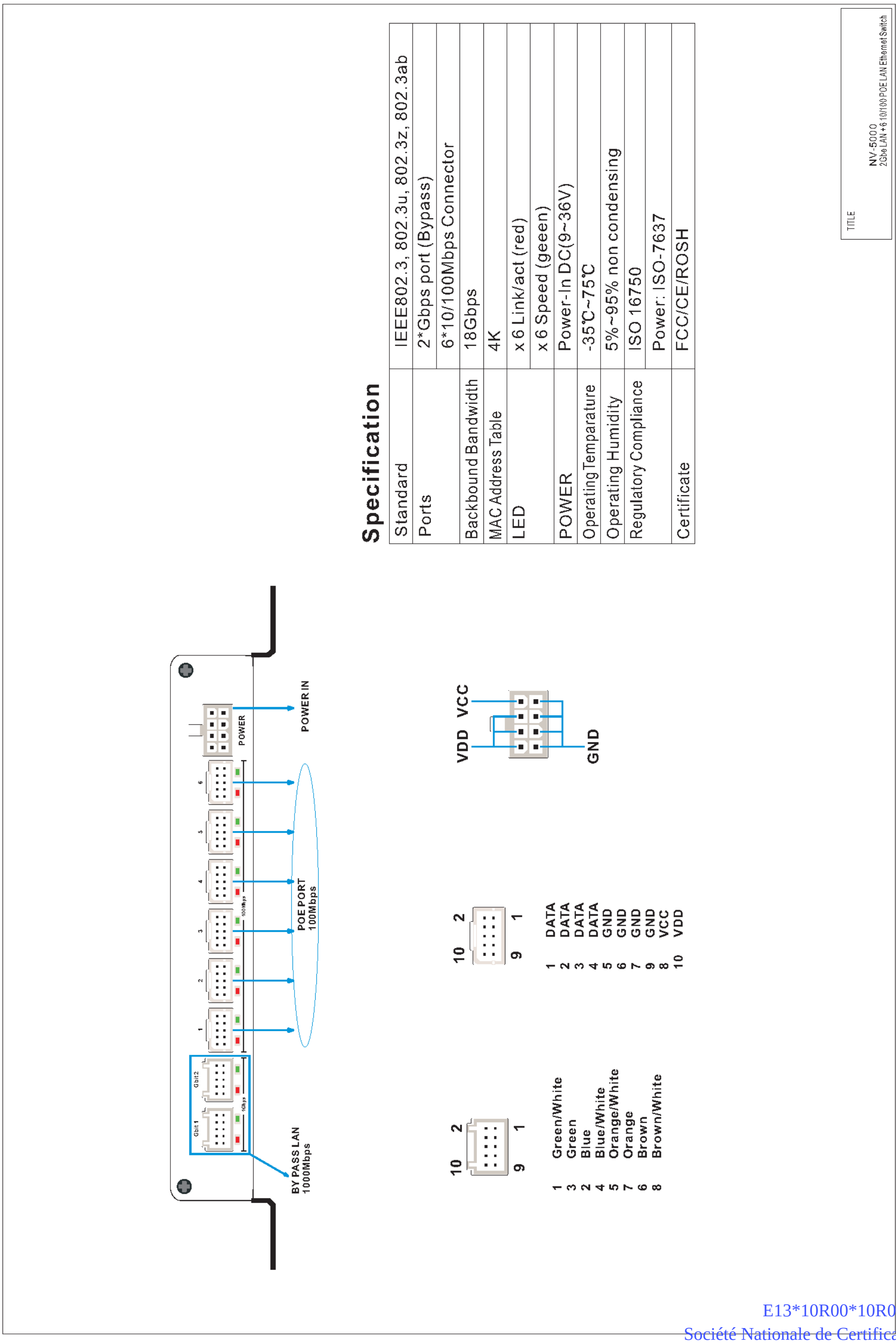
Part Name	Description	Q'ty
A01-AVLC662-F	RealTek ALC662-GR 6Ch. LQFP48	1
A01-F71869A-F	FINTEK F71869A I/O+HW Monitor LQFP128	1
A01-F81216AD-F	FINTEK F81216AD 4xUART LQFP48	1
A01-F81485S-F	FINTEK F81485S RS485 Transceiver SO-8	2
A01-INNM10-F	INTEL NM10 TigerPoint BGA360	1
A01-RTL8111EVL-F	RTL8111E-VL-CG PCIe G-Lan QFN48	2
A03-IATOMD2550-F	INTEL ATOM D2550 1.86G/10W u-FCBGA11-559	1
B01-APL3512A-F	ANPEC APL3512ABI-TRG Power SW SOT23-5	1
B01-APL3517A-F	ANPEC APL3517AI PowerSW ActiveHigh SOT23	2
B01-APL3518AB-F	APL3518AB1 USB POWER SW SOT23-5	2
B01-APL3540QB-F	ANPEC APL3540QB PWM TDFN-8	1
B01-APW7080-F	ANPEC APW7080KA ITRL V-ConvSO8	1
B01-RT8120D-F	RT8120DGSP Vf=0.8V 1Ph. Syn.Buck PWM SO8	4
B01-RT8167A-F	RT8167AGQW Dual 1-PHASE PWM QFN48	1
B02-S75232-P-F	I.C. UTC75232-P20 TSSOP-20P	6
B02-SAHCT08D-F	#TTL 74AHCT08D SO-14	1
B02-SLM324-F	I.C.LM324DR 12V (SMT)	1
B03-RT875T-605-F	#RTM875T-605-VD CLK.GEN TSSOP56	1
B05-A14.318-F	CRYSTAL 14.318MHz (49US)	1
B05-A25M-F	CRYSTAL 25.000MHz (49US)	2
B05-A27M-A-F	CRY. 27.000MHz (49US)20PPM	1
B05-C32.768-F	CRYSTAL 32.768KHz	1
B06-CR2032-S-F	BATTERY BUTTON LITHIUM SONY CR2032 3V	1
C01-E3904-F	TRAN. 2N3904 (SMT)	22
C01-E3906-F	TRAN. 2N3906 (SMT)	2
C01-E7002-F	TRAN. 2N7002 (SMT)	26
C01-G2SB1424-F	2SB1424T100R LowVce SOT-89	3
C02-EHBAT54A-F	SOCKY DIODE HBAT54A L42	1
C02-EHBAT54C-F	SOCKY DIODE HBAT54C L43	6
C02-LED85-G-F	LED SMT 0805 GREEN	1
C02-N4148-F	DIODE 1N4148 (SMT)	4
C02-NB120-F	DIODE 1NB120 (SMT)LeadFree	1
C03-EAPL5156B-F	#ANPEC LDO APL5156B Adj. 150mA SOT23-5	1
C03-EUP0106N-F	LDO. UP0106NMT5-00 Adj.700mA SOT23-5	1
C03-KAPL5337KA-F	ANPEC LDO APL5337KA 0.9/0.75V/2A SO-8	2
C03-KAPL5932A-F	ANPEC LDO APL5932AKA 3A/Vref=0.8 SO8	2
C04-ASM3119NAU-F	MOSF.SM3119NAU 30V/50A/10.5m^ N-ChTO252	2
C04-DAPM4317K-F	MOSFET P-Ch APM4317KC SO8 16m^	1
C04-DP2103HVG-F	NIKO P2103HVG Dual N-Ch 30V/21m^ SO-8	2
C04-EAPM2300CA-F	ANPEC APM2300CA N-ch 20V/6A SOT23	1
C04-EAPM2301CA-F	ANPEC APM2301CAC PCh.56m^SOT23	1
C04-QSM4364NA-F	SINO SM4364NAKP N-Ch 30V/60A/5.7m^ KPAK	4
C04-QSM4365NA-F	SINO SM4365NAKP N-Ch 30V/50A/10.5m^ KPAK	6
D03-DGD25Q16BP-F	GigaDevice GD25Q16BPIG 16Mb SPI DIP8	1
E01-42A01-F	Resistor 0402 1^ 5% LeadFree	4
E01-42A0-F	Resistor 0402 0 OHM 5% LeadFree	13
E01-42A100-F	Resistor 0402 100^5% LeadFree	9
E01-42A100K-F	Resistor 0402 100K^ 5%LeadFree	13
E01-42A10-F	Resistor 0402 10 OHM 5% LeadFree	6
E01-42A10K-F	Resistor 0402 10K^ 5%LeadFree	74
E01-42A10M-F	Resistor 0402 10M^ 5%LeadFree	1
E01-42A120-F	Resistor 0402 120^5% LeadFree	2
E01-42A120K-F	RES SCD 0402 120K 5% 1/16W LeadFree	1
E01-42A150-F	Resistor 0402 150^5% LeadFree	3
E01-42A15K-F	RES SCD 0402 15K 5% 1/16W LeadFree	2
E01-42A1K-F	Resistor 0402 1K^ 5% LeadFree	39
E01-42A1M-F	Resistor 0402 1M^ 5% LeadFree	2
E01-42A2.2-F	Resistor 0402 2.2^ 5% LeadFree	1
E01-42A2.2K-F	Resistor 0402 2.2K^ 5% LeadFree	17
E01-42A2.7K-F	Resistor 0402 2.7K^ 5% LeadFree	4
E01-42A20K-F	Resistor 0402 20K^ 5% LeadFree	2

E01-42A22-F	Resistor 0402 22^ 5% LeadFree	10
E01-42A22K-F	Resistor 0402 22K^ 5%LeadFree	6
E01-42A27K-F	RES SCD 0402 27K 5% 1/16W LeadFree	4
E01-42A2M-F	Resistor 0402 2M^ 5% LeadFree	1
E01-42A3.3K-F	Resistor 0402 3.3K^ 5%LeadFree	1
E01-42A3.6K-F	Resistor 0402 3.6K^ 5%LeadFree	4
E01-42A3.9K-F	Resistor 0402 3.9K^ 5%LeadFree	1
E01-42A330-F	Resistor 0402 330^ 5% LeadFree	9
E01-42A330K-F	Resistor 0402 330K 5% LeadFree	1
E01-42A33-F	Resistor 0402 33^ 5%LeadFree	8
E01-42A33K-F	Resistor 0402 33K 5%LeadFree	1
E01-42A3K-F	Resistor 0402 3K^ 5% LeadFree	2
E01-42A4.7K-F	Resistor 0402 4.7K^ 5%LeadFree	42
E01-42A43K-F	Resistor 0402 43K^ 5%LeadFree	1
E01-42A470-F	Resistor 0402 470^ 5% LeadFree	2
E01-42A47-F	Resistor 0402 47^ 5% LeadFree	4
E01-42A47K-F	Resistor 0402 47K^ 5% LeadFree	3
E01-42A5.1K-F	Resistor 0402 5.1K^ 5%LeadFree	2
E01-42A51-F	Resistor 0402 51^ 5%LeadFree	1
E01-42A51K-F	Resistor 0402 51K^ 5%LeadFree	1
E01-42A560-F	Resistor 0402 560^ 5% LeadFree	2
E01-42A56-F	Resistor 0402 56^ 5% LeadFree	2
E01-42A68-F	Resistor 0402 68^ 5%LeadFree	2
E01-42A75-F	Resistor 0402 75^ 5% LeadFree	5
E01-42A8.2K-F	Resistor 0402 8.2K^ 5%LeadFree	3
E01-42A82K-F	Resistor 0402 82K^ 5% LeadFree	1
E01-42B1.05K-F	RES SCD 0402 1.05K 1% 1/16W LeadFree	1
E01-42B1.1K-F	Resistor 0402 1.1K^ 1%LeadFree	1
E01-42B1.47K-F	Resistor 0402 1.47K^ 1% LeadFree	1
E01-42B100K-F	Resistor 0402 100K^ 1%LeadFree	1
E01-42B10K-F	Resistor 0402 10K^ 1% LeadFree	9
E01-42B110-F	Resistor 0402 110^ 1%LeadFree	3
E01-42B12.1K-F	Resistor 0402 12.1K^ 1%LeadFree	1
E01-42B12.7K-F	Resistor 0402 12.7K^ 1%LeadFree	3
E01-42B13K-F	RES SCD 0402 13K 1% 1/16W LeadFree	1
E01-42B14.3K-F	RES SCD 0402 14.3K 1% 1/16W LeadFree	1
E01-42B140K-F	Resistor 0402 140K^ 1%LeadFree	1
E01-42B150-F	Resistor 0402 150^ 1% LeadFree	3
E01-42B150K-F	Resistor 0402 150K^ 1% LeadFree	1
E01-42B158K-F	Resistor 0402 158K^ 1%LeadFree	1
E01-42B15K-F	RES SCD 0402 15K 1% 1/16WLeadFree	2
E01-42B1K-F	Resistor 0402 1K^ 1% LeadFree	20
E01-42B2.2K-F	Resistor 0402 2.2K^ 1%LeadFree	1
E01-42B2.37K-F	Resistor 0402 2.37K^ 1%LeadFree	1
E01-42B2.49K-F	RES SCD 0402 2.49K 1% 1/16W LeadFree	2
E01-42B2.7K-F	Resistor 0402 2.7K^ 1%LeadFree	4
E01-42B20K-F	Resistor 0402 20K^ 1% LeadFree	2
E01-42B22.6-F	Resistor 0402 22.6^ 1%LeadFree	2
E01-42B24.9-F	Resistor 0402 24.9^ 1%LeadFree	2
E01-42B274-F	Resistor SCD EC07 0402 274^ 1% 1/16W LeadFree	1
E01-42B2K-F	Resistor 0402 2K^ 1% LeadFree	2
E01-42B3.16K-F	Resistor 0402 3.16K^ 1%LeadFree	2
E01-42B3.3K-F	Resistor 0402 3.3K^ 1%LeadFree	5
E01-42B33.2-F	Resistor0402 33.2^ 1% LeadFree	1
E01-42B33K-F	Resistor 0402 33K^ 1%LeadFree	1
E01-42B4.3K-F	Resistor 0402 4.3K^ 1% LeadFree	1
E01-42B4.7K-F	Resistor 0402 4.7K^ 1%LeadFree	1
E01-42B49.9-F	Resistor 0402 49.9^ 1% LeadFree	2
E01-42B5.11K-F	Resistor 0402 5.11K^ 1%LeadFree	3
E01-42B5.36K-F	Resistor 0402 5.36K^ 1% LeadFree	1
E01-42B5.62K-F	Resistor 0402 5.62K 1%LeadFree	1
E01-42B510K-F	Resistor 0402 510K^ 1%LeadFree	1
E01-42B51-F	RES SCD 0402 51 1% 1/16WLeadFree	1
E01-42B51K-F	Resistor 0402 51K^ 1%LeadFree	1
E01-42B53.6K-F	Resistor 0402 53.6K^ 1%LeadFree	1
E01-42B54.9-F	RES SCD 0402 54.9 1% 1/16WLeadFree	1

E01-42B61.9K-F	Resistor 0402 61.9K^ 1% LeadFree	1
E01-42B649K-F	Resistor 0402 649K^ 1%LeadFree	1
E01-42B680-F	Resistor 0402 680^ 1% LeadFree	9
E01-42B7.32K-F	Resistor 0402 7.32K^ 1%LeadFree	1
E01-42B7.5K-F	Resistor 0402 7.5K^ 1%LeadFree	2
E01-63A01-F	Resistor 0603 1^ 5% LeadFree	2
E01-63A0-F	Resistor 0603 0^ 5% LeadFree	4
E01-63A10-F	Resistor 0603 10^ 5% LeadFree	6
E01-63A2.2-F	Resistor 0603 2.2^ 5%LeadFree	5
E01-63A5.1-F	Resistor 0603 5.1^ 5%LeadFree	1
E01-63B130K-F	Resistor 0603 130K^ 1%LeadFree	1
E01-63B150K-F	Resistor 0603 150K^ 1%LeadFree	1
E01-85A0-F	Resistor 0805 0^ 5% LeadFree	2
E01-85A10-F	Resistor 0805 10^ 5% LeadFree	1
E02-D4.7K-8-F	R-Array 0603 4.7K/8P4RLeadFree	1
E02-E2.7K-8-F	R-Array 0402 2.7K^/8P4R 5%LeadFree	1
E02-E33-8-F	R-Array 0402 33^/8P4R 5% LeadFree	1
E02-E4.7K-8-F	R-Array 0402 4.7K/8P4R 5%LeadFree	3
E02-E51-8-F	R-Array 0402 51^/8P4R 5%LeadFree	1
E02-E8.2K-8-F	R-Array 0402 8.2K^/8P4R 5% LeadFree	2
E03-8P4C101-F	Capacitor Arry 100P/50V LeadFree	12
E03-ADB10D-GS-F	Cap. 10UF/25V (4*7) KM2101GC07MBVE	1
E03-B42101-F	Capacitor 0402 100PF LeadFree	4
E03-B42102-F	Capacitor 0402 102PF LeadFree	4
E03-B42103-F	Capacitor 0402 103PF X7R/16V LeadFree	23
E03-B42104-F	Capacitor 0402 104PF LeadFree	194
E03-B42104XC-F	Cap. 0402 104PF X5R 16VLeadFree	14
E03-B42104ZC-F	Cap. 0402 104PF X7R 16VLeadFree	19
E03-B42105-F	Capacitor 0402 105PFLeadFree	31
E03-B4210-F	Capacitor 0402 10PF LeadFree	4
E03-B4215NE-F	Cap. 0402 15PF NPO 50VLeadFree	6
E03-B42222-F	Capacitor 0402 222PFLeadFree	1
E03-B42224-F	Cap. 0402 224PF Y5V 16V LeadFree	1
E03-B4222-F	Capacitor 0402 22PF LeadFree	1
E03-B4227-F	Capacitor 0402 27PF LeadFree	9
E03-B42332-F	Cap.0402 3300PF X7R 50VLeadFree	1
E03-B4233-F	Cap. 0402 33PF NPO 50VLeadFree	2
E03-B42471-F	Capacitor 0402 470PF LeadFree	3
E03-B42473-F	Capacitor 0402 473PF LeadFree	1
E03-B4247-F	Capacitor 0402 47PF LeadFree	2
E03-B63102-F	Capacitor 0603 102PF LeadFree	2
E03-B63104ZD-F	Cap. 0603 104PF X7R 25V LeadFree	4
E03-B63105-F	Capacitor 0603 105PF LeadFree	5
E03-B63105XC-F	Cap. 0603 105PF X5R 16VLeadFree	7
E03-B63225-F	Capacitor 0603 225PF LeadFree	2
E03-B85106C-F	Cap. 0805 106PF/16V Y5V+80-20%	11
E03-B85106-F	Capacitor 0805 106PF/10VLeadFree	50
E03-B85106X5-F	Cap. 0805 106PF X5R 6V3 LeadFree	3
E03ODF100CAH-LF	AIHUA 100uF/16V/25m^ @6.3*9mm	10
E03ODF820HAH-LF	AIHUA 820uF/2.5V/7m^ @6.3*9mm	2
E03ODH470AAH-F	AIHUA 470uF/6.3V/8m^ @8*9mm	2
E03ODH820HAH-F	AIHUA 820uF/2.5V/6m^ @8*9mm	5
E04-A06151U2-F	#CHOCK.R0615120106L35 1U2 LeadFree	1
E04-A0806P-1R2-F	CHOKE 1.2U APL0806P-1R2M 4.3m^	1
E04-A30521U2-F	#CHOKE 1.2U M3052 080105Y LeadFree	1
E04-AKQ10VC1R5-F	SUNLEI KQ10VC-1R5M 1.5UH 3.0m^	2
E04-AL0806-2R2-F	CHOKE AKL0806MN-2R2M 2.2uH4.5m	3
E04-B63-300-F	BEAD (SMT) 0603 300^ LeadFree	2
E04-B63-30-F	BEAD (SMT) 0603 30^ LeadFree	7
E04-S705G-22U-F	CHOCK WQPCG0705-220M 22UH/84m^	1
F01-3JACK-SPO-F	3.5@ 3* JACK B(+SPDIF-OUT)-G-P	1
F01-CMD9/2-F	CONNECTOR DUAL 9P/2 DS-MAIL LeadFree	1
F01-CN15/3HC-F	CONN.15P/3S High31.6mm D-S-F	1
F01-HDMI-D3-2-F	HDMI CNN. NTK 3*DIP-19	1
F01-PN1*2-F	HEADER 1*2 2PIN LeadFree	3

F01-PN1*3-F	HEADER 1*3 3PINLeadFree	7
F01-PN1*4-F	HEADER 1*4 4PIN LeadFree	3
F01-PN1*6A-F	HEADER 1*6 6PIN 2.0mmLeadFree	1
F01-PN2*2-F	HEADER 2*2 4PIN K=0 LeadFree	1
F01-PN2*3-F	HEADER 2*3 6PIN K=0 LeadFree	2
F01-PN2*5-10C-F	HEADER 2*5 9P K=10 P2.54 COLOR	1
F01-PN2*5-10-F	HEADER 2*5 9PIN K=10 LeadFree	4
F01-PN2*5-8-F	HEADER 2*5 9PIN K=8 LeadFree	1
F01-PN2*5-9-F	HEADER 2*5 9PIN K=9 LeadFree	1
F01-PN2*5-F	HEADER 2*5 10PIN K=0LeadFree	1
F01-PN2X18AK34-F	HEADER 2*18 36PIN K=34 P=2.0mmH=4.0mm	1
F01-PNSATA2B-F	Serial-ATA 7P DIP LeadFree	2
F01-PW-12V-BK-F	POWER CNN. FOR 12V 4PINLeadFree	1
F01-PW4P-M-1-F	POWER 4P NY-66 5mm180^MALELeadFree	1
F01-PWDCJK-5A9-F	DC PW JK 5.9@10.1x7.2x11.6 D-6	1
F01-SPBL-F	JUMPER BLUE LeadFree	8
F01-USB+L-G-F	U+RJ45 W/TRANS.GIGA Intel LeadFree	2
F01-WA1*3-F	HEADER 2.54 3P-WAFER LeadFree	3
F01-WF1*8-F	HEADER 2.0 WAFER 8P 180D LeadFree	1
F02-MIPCI04SC2-F	KORTAK MiniPCI-E SCREW M2X0.4 L4mm	1
F02-MIPCI07-BK1F	LOTES MiniPCI-Ex1 52P H=9.0mm P=0.8 SMT	1
F02-MIPCI07SC1-F	F02-MIPCI07-xx-F H7.7mmSMT	2
F02-SB1-F	BATTERY HOLDER VERTICALLeadFree	1
F02-SK-8P-F	DIP 8P IC Socket 300mile P2.54	1
F02-SL120-F	PCI SLOT 120PIN LeadFree	1
F02-SOD204BK-F	SO DIMM DDR3 204P 180^ BLACK	2
F03-NC9NR20-LF	NC9N REV:2.0 170*170mm 6L PCB OSP	1
F04-289-F	NC9N DC/RF+2COM+V/HDMI+UL+UL+3JK	1
F05-JNC98-4-F	NC98 106*60*30(F05-JNC98-3-F + FAN	1
F07-BUZZKPMA-F	BUZZ KPM-1205 P6.5 xD12LeadFree	1
X-BGA220501A-F	BGA 22*4.5*0.75mmLeadFree	2
X-BGAR7929-F	BGA @7.92±0.1,H=2.90±0.1LeadFree	4
F07-FN4010BHXH-F	FAN HXH HDB0412MG-F 12V/2BALL P2.54	1
G01-COM9-30A-F	CABLE +COM9 K=10 30cm	4
G01-PW4PS-2S-32F	Y-Power Cab.大4PM/小4P 200mm+2*SATA 320mm	1
G01-SATA-BK-B-F	SATA Cable 45cm BLACK w/LOCK	1
G02-DVD5-F	*ITX INTEL/VIA/NVIDIA Driver	1
G03-NC9N-F	IPC NC9N Manual English LeadFree	1
G06-AMI686EFI-F	AMI 686 UEFI BIOS LABEL	1

12 Spezifikation NV5000 / *Specification NV5000*:



Specification

Standard	IEEE802.3, 802.3u, 802.3z, 802.3ab
Ports	2*Gbps port (Bypass)
	6*10/100Mbps Connector
Backbound Bandwidth	18Gbps
MAC Address Table	4K
LED	x 6 Link/act (red)
	x 6 Speed (geeen)
POWER	Power-In DC(9~36V)
Operating Temparature	-35℃~75℃
Operating Humidity	5%~95% non condensing
Regulatory Compliance	ISO 16750
	Power: ISO-7637
Certificate	FCC/CE/ROSH

E13*10R00*10R04*13131*00
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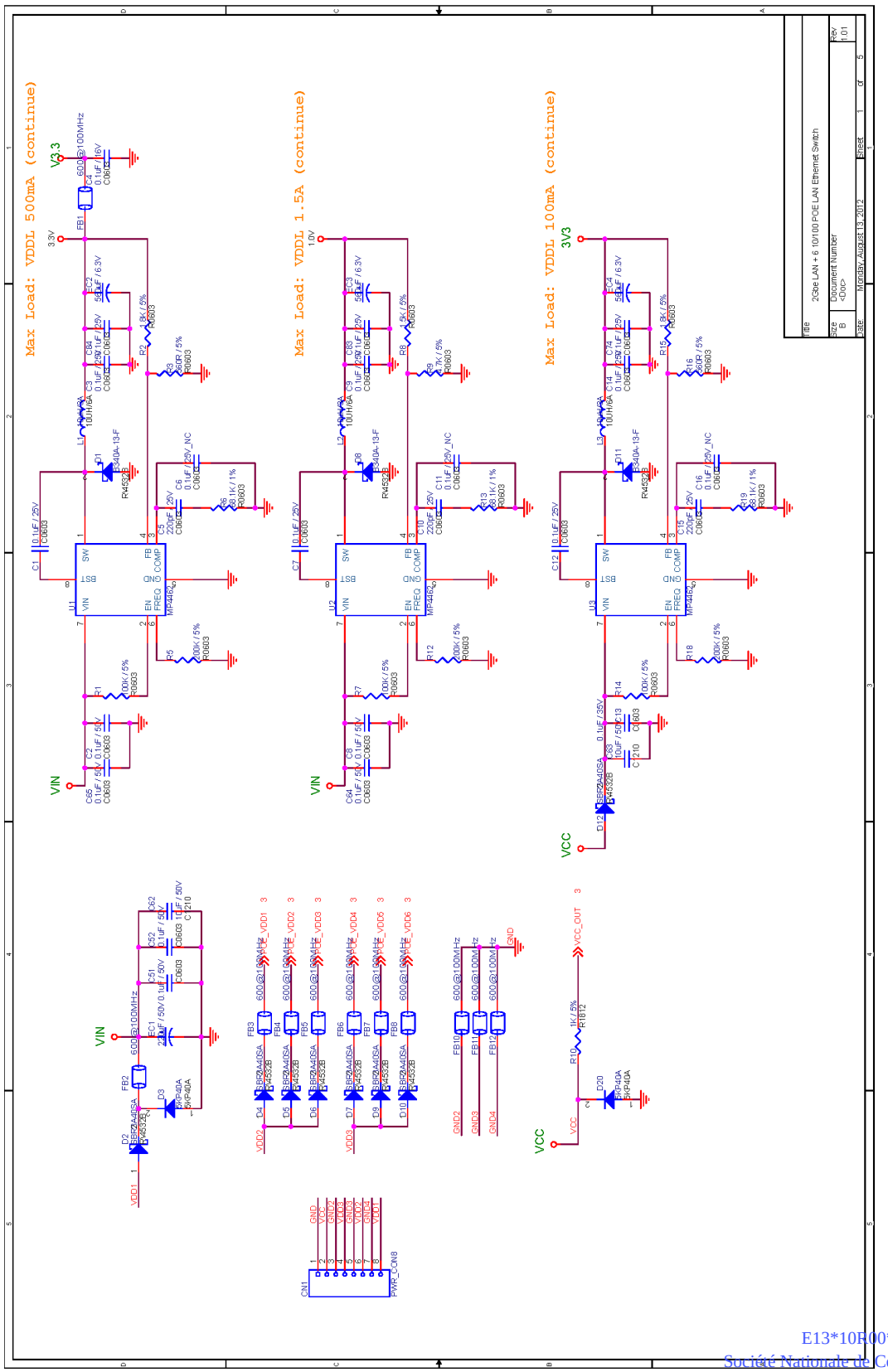
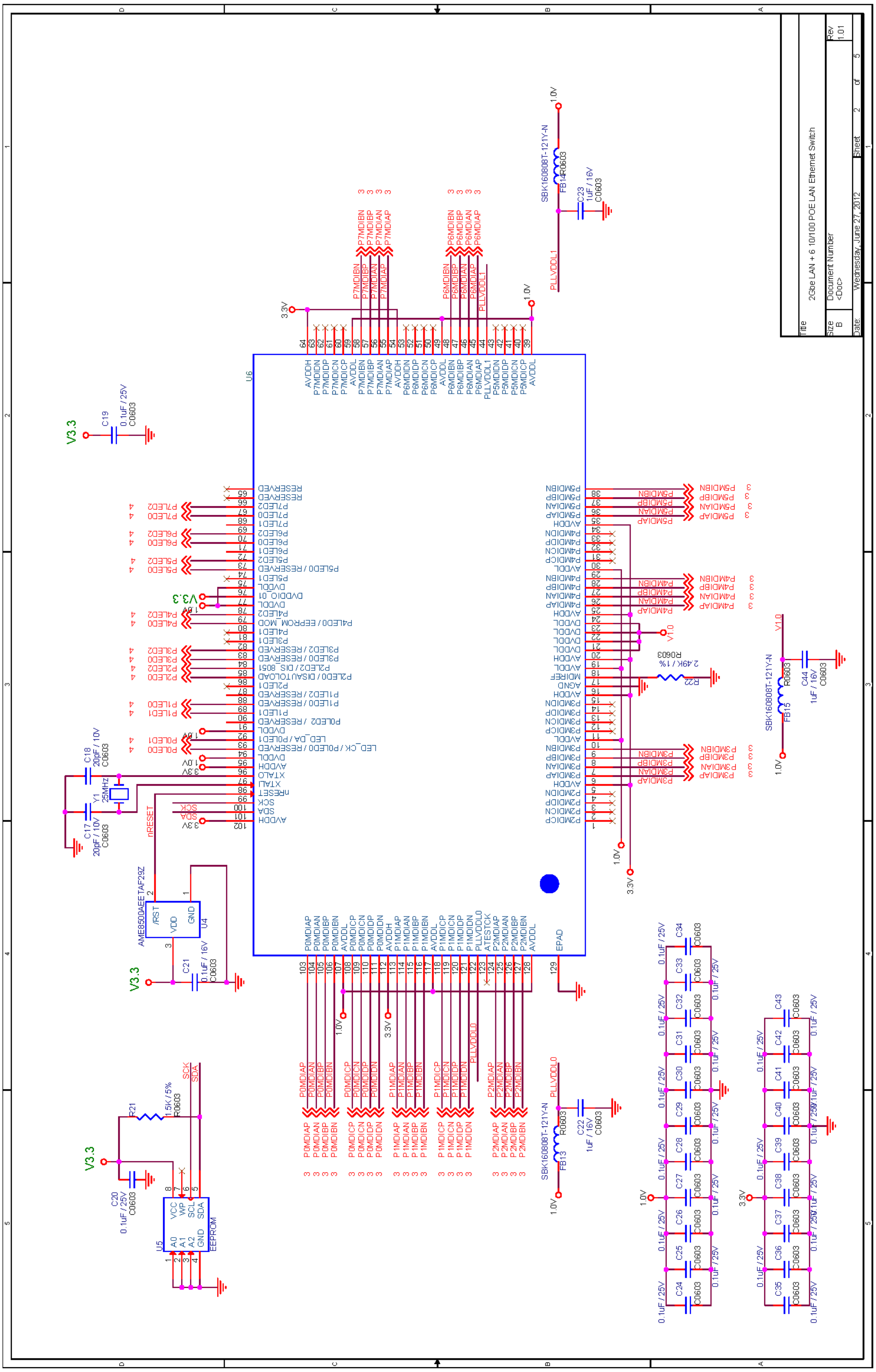
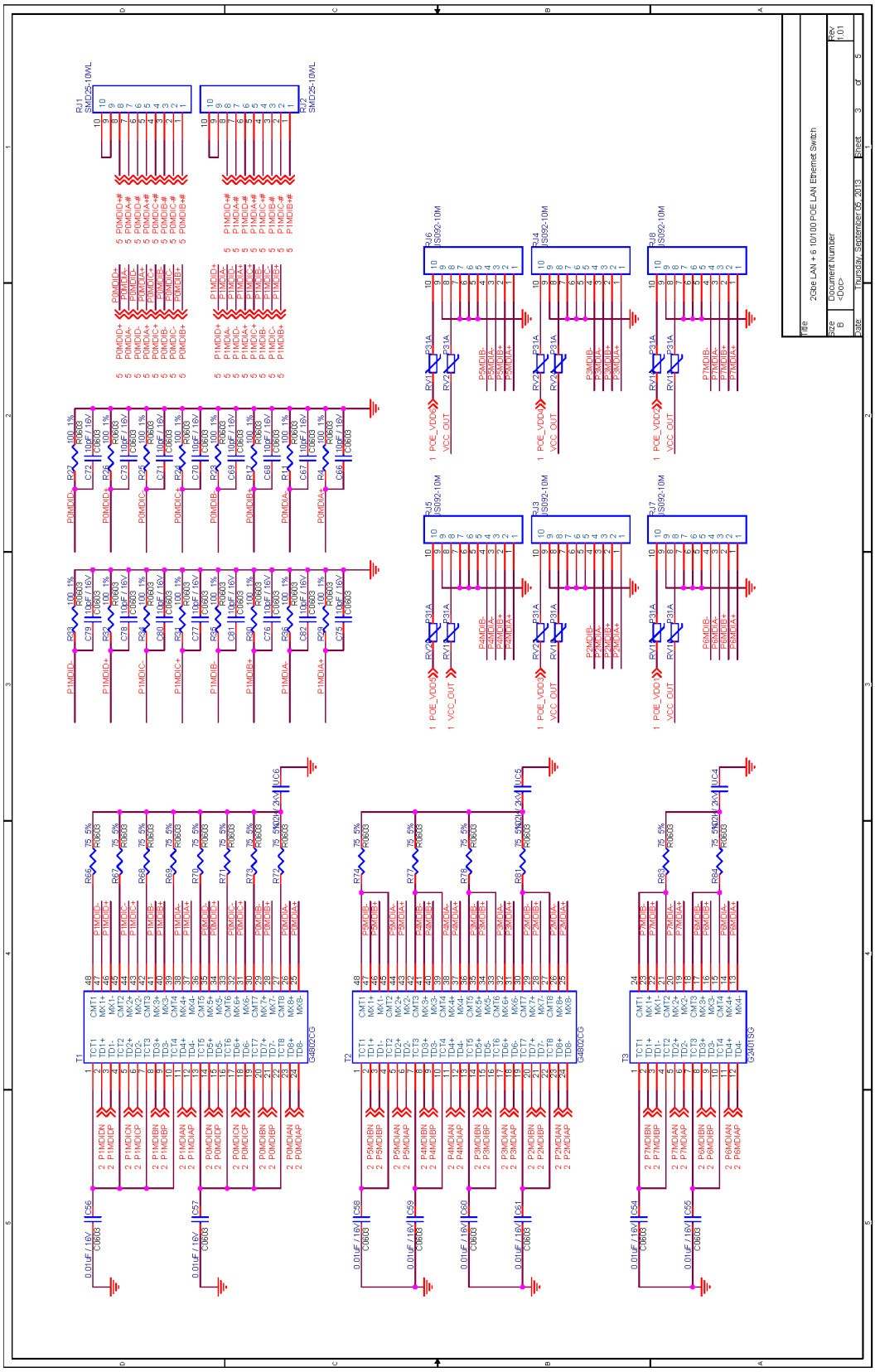
Organisme accrédité OLAS EN 45011
Accréditation N° 5/001 (Portée communiquée sur demande)

13 Schaltplan NV5000 / *Circuit diagrams NV5000*:







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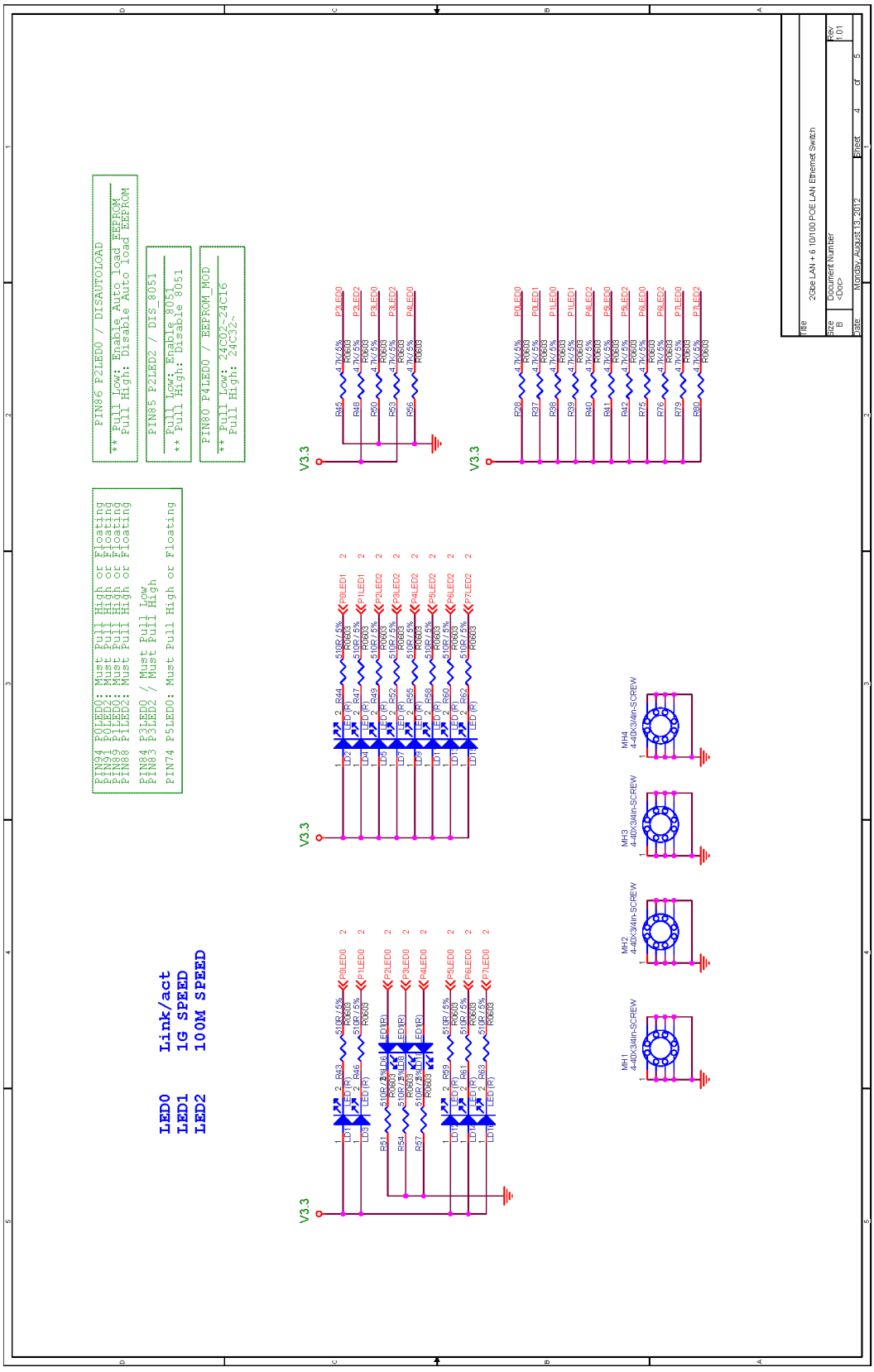
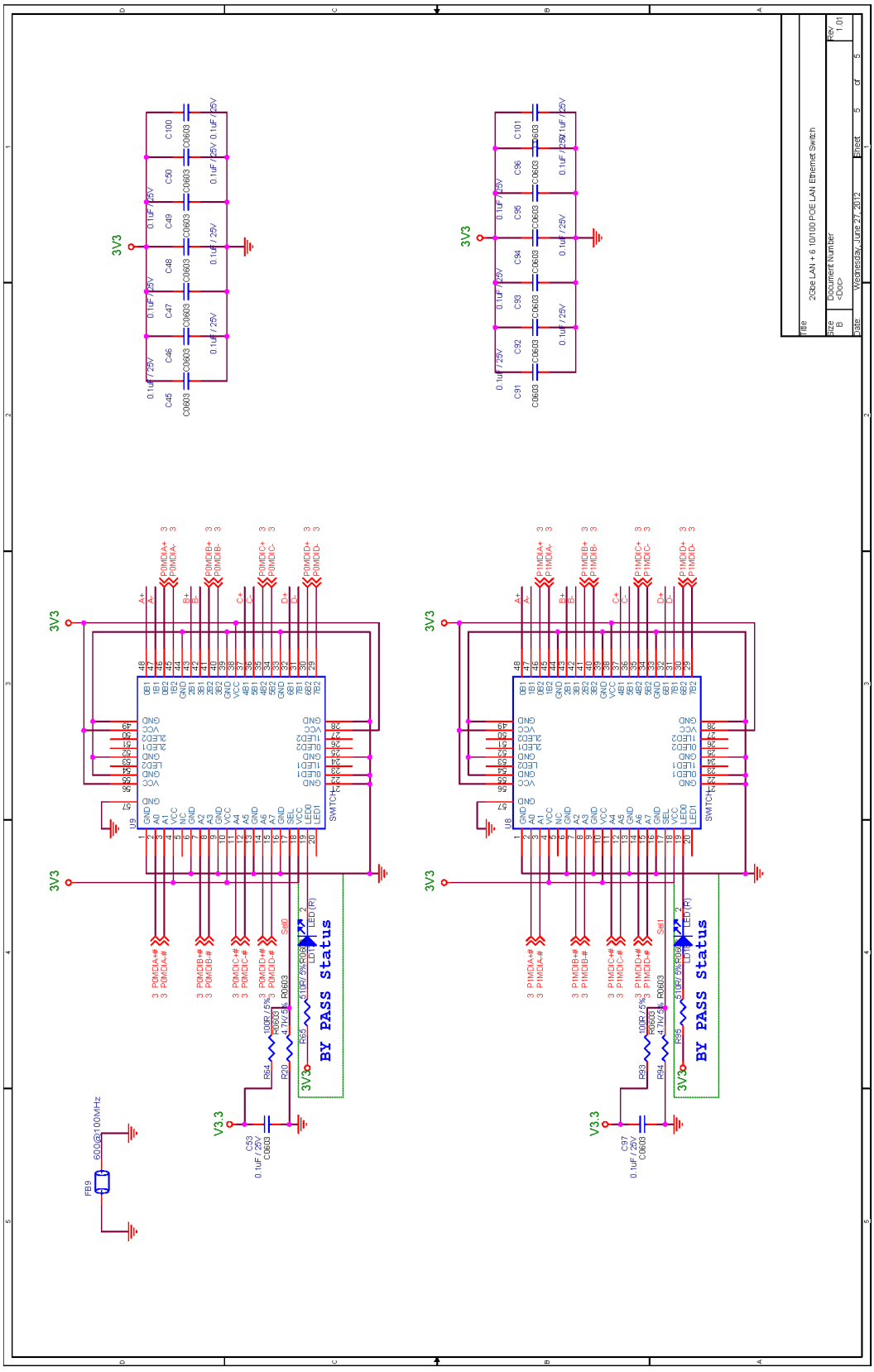

PIN86 P2LED0 / DISAUTOLOAD
** Pull Low: Enable Auto load EEPROM
** Pull High: Disable Auto load EEPROM
PIN85 P2LED2 / DIS_8051
** Pull Low: Enable 8051
** Pull High: Disable 8051
PIN80 P4LED0 / EEPROM_MOD
** Pull Low: 24C02~24C16
** Pull High: 24C32~
PIN94 P0LED0: Must Pull High or Floating
PIN91 P0LED2: Must Pull High or Floating
PIN89 P1LED0: Must Pull High or Floating
PIN88 P1LED2: Must Pull High or Floating
PIN84 P3LED0 / Must Pull Low
PIN83 P3LED2 / Must Pull High
PIN74 P5LED0: Must Pull High or Floating
LED0 Link/act
LED1 1G SPEED
LED2 100M SPEED
V3.3
2Gbe LAN + 6 10/100 POE LAN Ethernet Switch
Monday, August 13, 2012



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Organisme accrédité OLAS EN 45011
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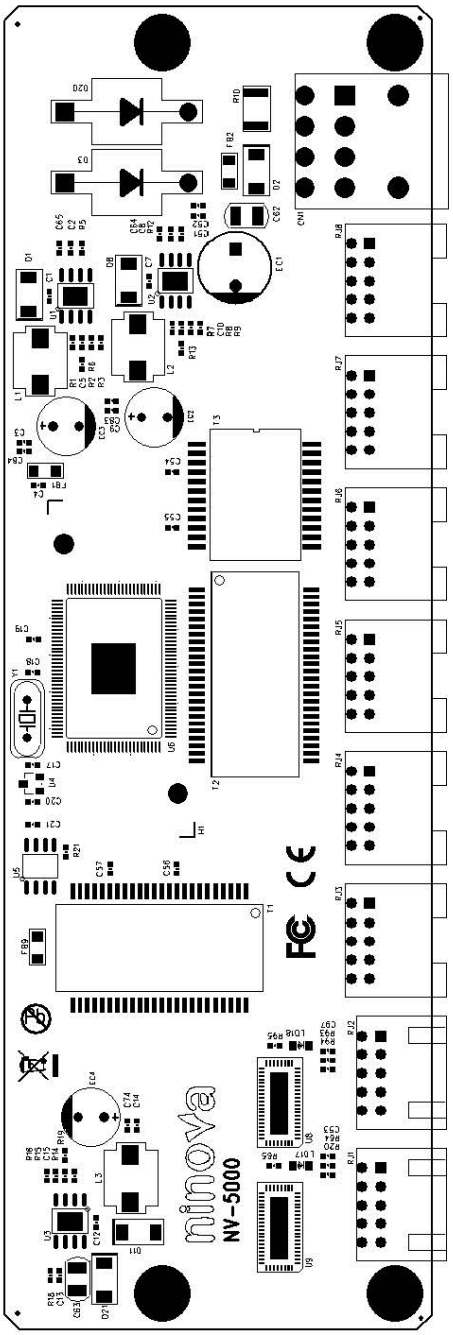
14 Layout NV5000 / *Layout NV5000*:

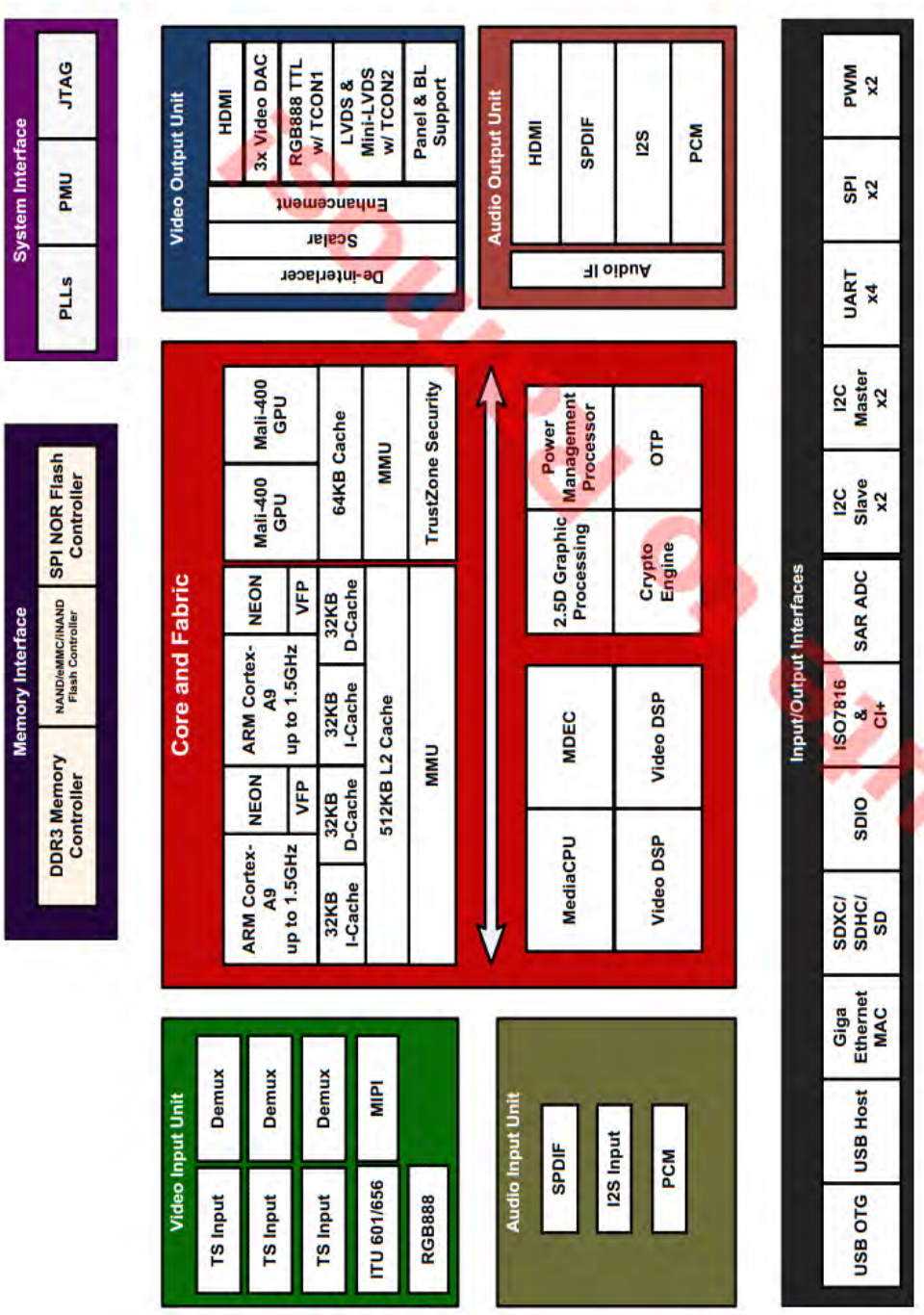


15 Stückliste NV5000 / *Component List NV5000*:

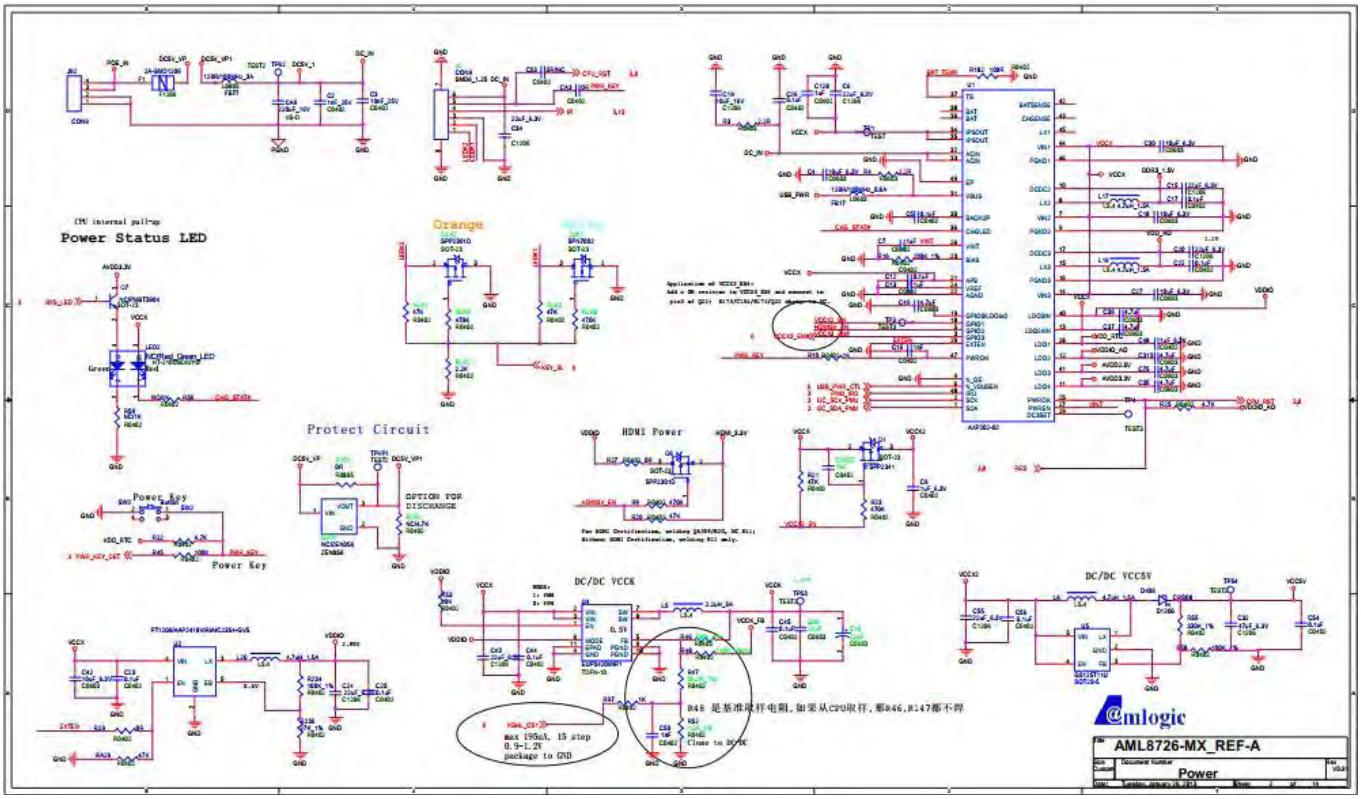
No.	Name	Type	Oty	备注
1	Capacitor	0.1uF/25V ±10%/X7R/0603	49	
2	Capacitor	0.01uF/25V ±10%/X7R/0603	8	
3	Capacitor	10pF/25V ±5%/NPO/0603	16	
4	Capacitor	20pF/25V ±5%/NPO/0603	2	
5	Capacitor	220pF/25V ±10%/X7R/0603	3	
6	Capacitor	1uF/25V ±10%/X7R/0603	3	
7	Capacitor	0.1uF/50V ±10%/X7R/0603	7	
8	Capacitor	10uF/50V ±10%/X7R/1210	2	
9	Capacitor	1000pF/2KV ±10%/X7R/1206	3	
10	Resistor	75Ω1/16W +/-1%/0603	14	
11	Resistor	100Ω1/16W +/-1%/0603	18	
12	Resistor	510Ω1/16W +/-5%/0603	18	
13	Resistor	560Ω1/16W +/-1%/0603	2	
14	Resistor	1.5KΩ1/16W +/-1%/0603	2	
15	Resistor	1.8KΩ1/16W +/-1%/0603	2	
16	Resistor	2.49KΩ1/16W +/-1%/0603	1	
17	Resistor	4.7KΩ1/16W +/-5%/0603	8	
18	Resistor	68.1KΩ1/16W +/-1%/0603	3	
19	Resistor	100KΩ1/16W +/-5%/0603	3	
20	Resistor	200KΩ1/16W +/-5%/0603	3	
21	Resistor	1KΩ1/4W +/-5%/1812	1	
22	Schottky Barr. Rect.	SS24B/DO-214AA	8	
23	Schottky Rectifier	CMSH3-40MA/DO-214AA	3	
24	SMD Coil	33R/3A/1206	12	
25	SMD Coil	31R/0.2A/0603	3	
26	Chip LED	90度,红/1206	8	
27	Chip LED	90度,绿/1206	8	
28	Chip LED	绿/0805	2	
29	Chip Inductor	SLF7045T-3R3M2R5-PF/TDK/SMD7*7mm	1	
30	Chip Inductor	SLF7032T-100M/TDK/SMD7*7mm	2	
31	PTC	SMD2920-125L-33V/2920	12	
32	Filter	G4802CG/SOP48	2	
33	Filter	G2401SG/SOP24	1	
34	IC	AME8500AEETAF29Z/SOT23	1	
35	IC	MP4462DN/SOP8	3	
36	IC	EEPROM/SOP8	1	
37	IC	PI3L500-AZFE/TQFN56	2	
38	IC	MAC/P128QFP_M	1	
39	PCB	四层喷锡板,18*6cm	1	
40	Connector	PWR_CON8, C4201WR-F-2x4P	1	
41	TVS Diode	5KP40A	2	

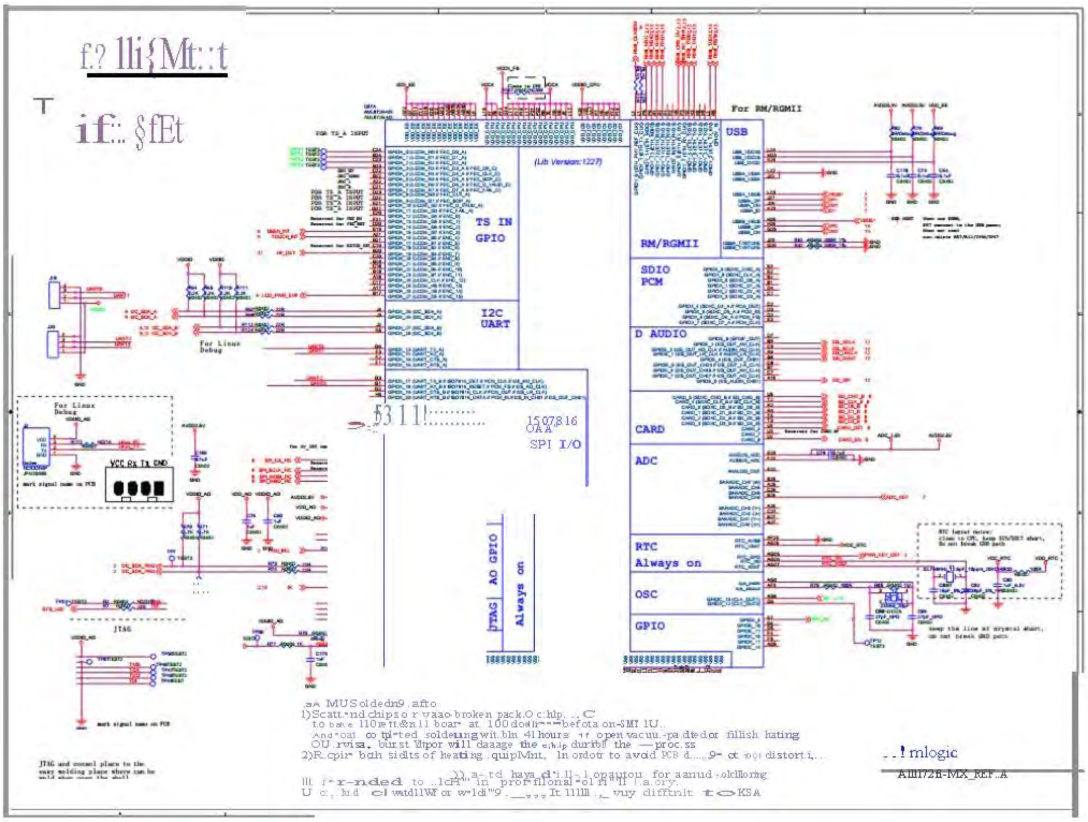
42	Capacitor	560uF/6.3V, 8*8mm	3	
43	Capacitor	220uF/35V, 10*12.5mm	1	
44	Connector	SMD25-10WL	2	
45	JS W Connector	JS092-10M	6	
46	Heat Sink	45*20*10mm, 对角加钉	1	
47	Oscillator	25MHz,49S,+/-20ppm	1	
48	Thermal Pad	KH2612, 导热系数1.2	1	
49	Crust		1	
50	Screw	圆头,3*8mm,黑色,	4	
51	Screw	3*10mm,自带防松垫片,	4	
52	Thermal Pad	KH650D-H25-T1.0, 40*18*0.5mm	1	
53	Recin	10.5*33*0.08 mm	1	
54	Label (CE)		2	
55	Label		2	
56	Label		1/30A	
57	Label		2/30A	
58	Box		1	
59	Label		1/30A	

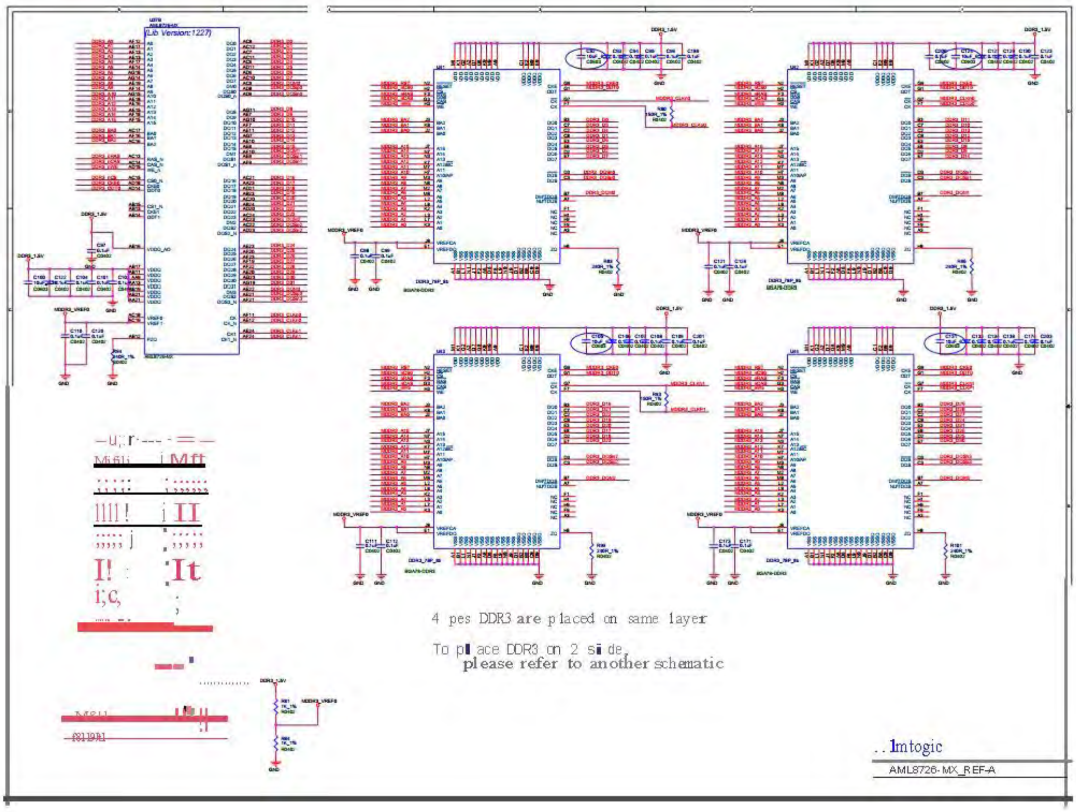
16 Blockdiagramm NV6810 / *Block diagram NV6810*:

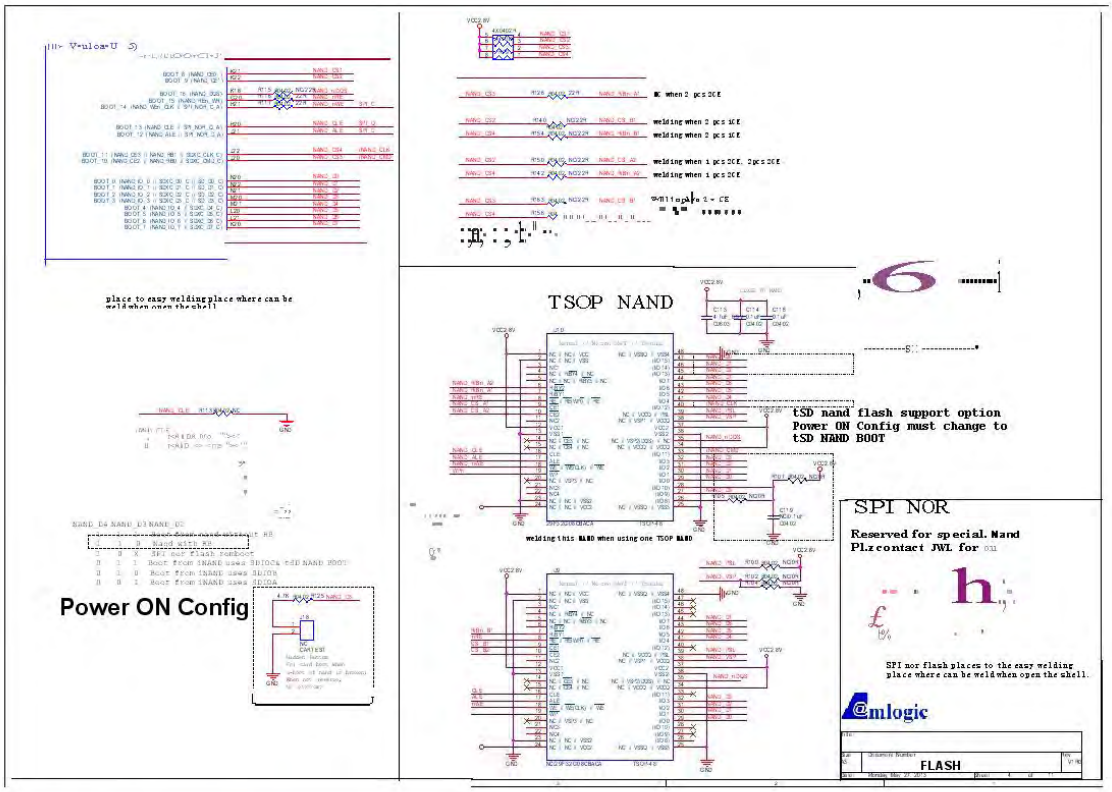


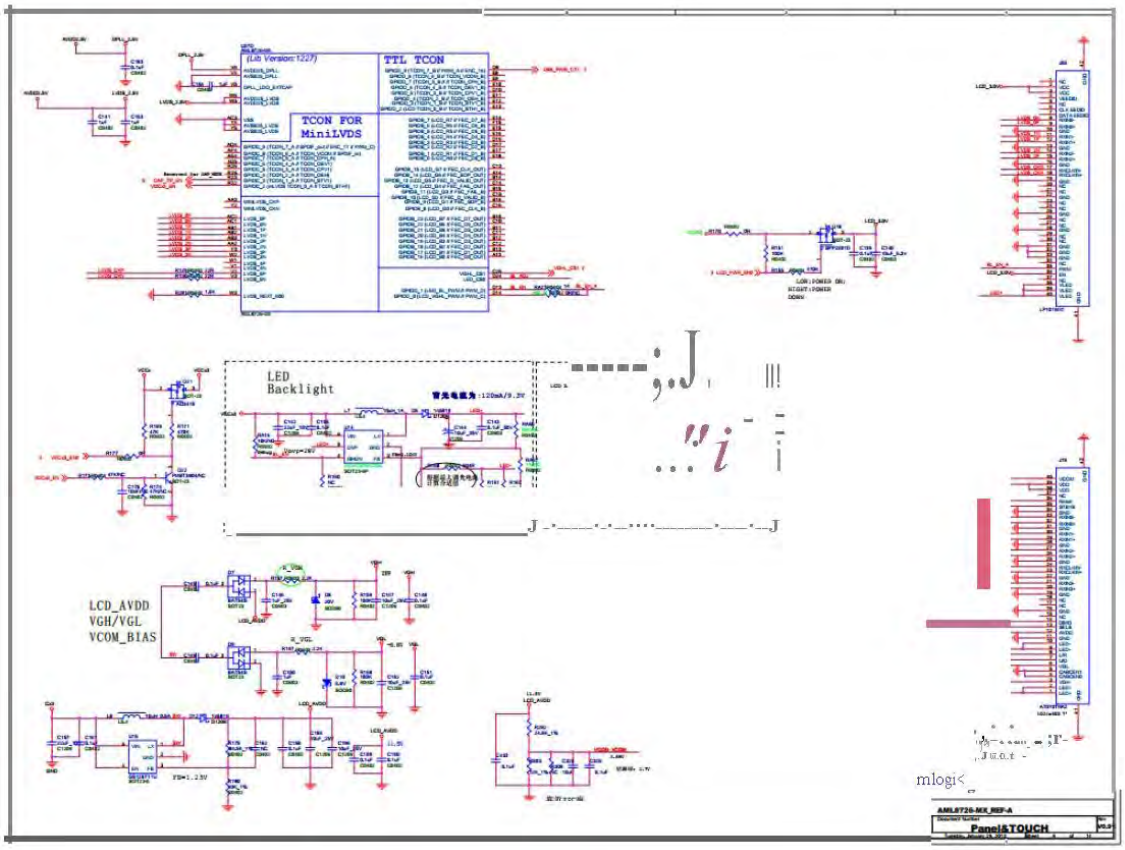
17 Schaltplan NV6810 / *Circuit diagrams* NV6810:











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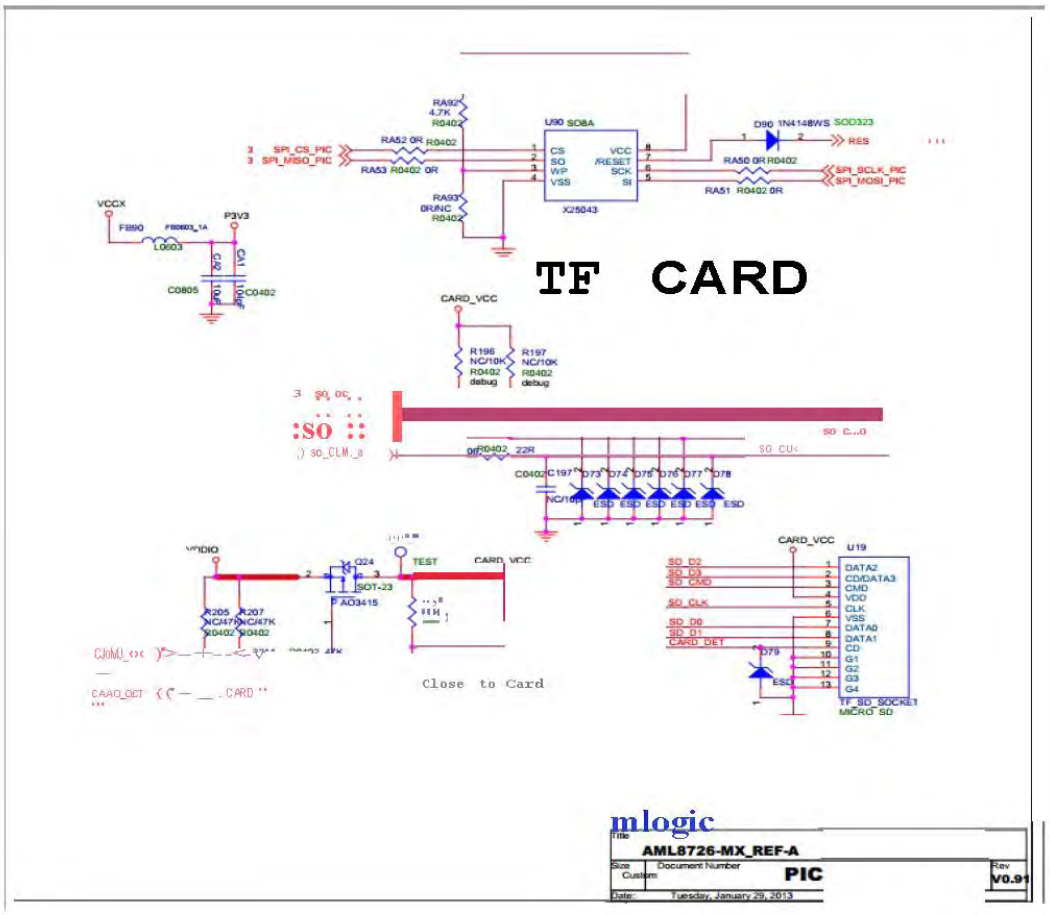

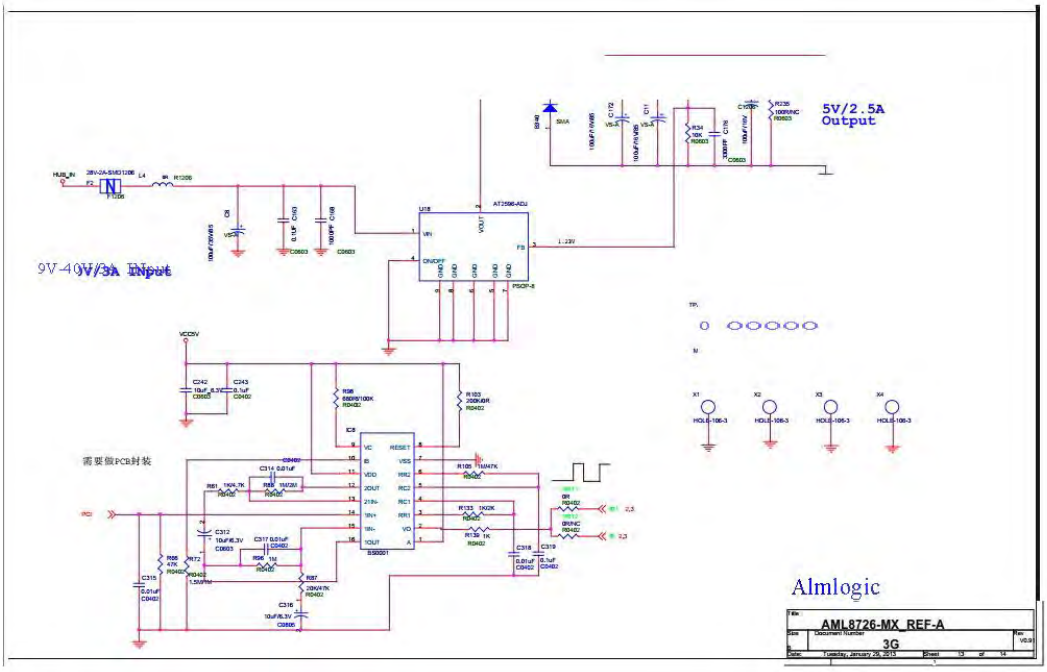

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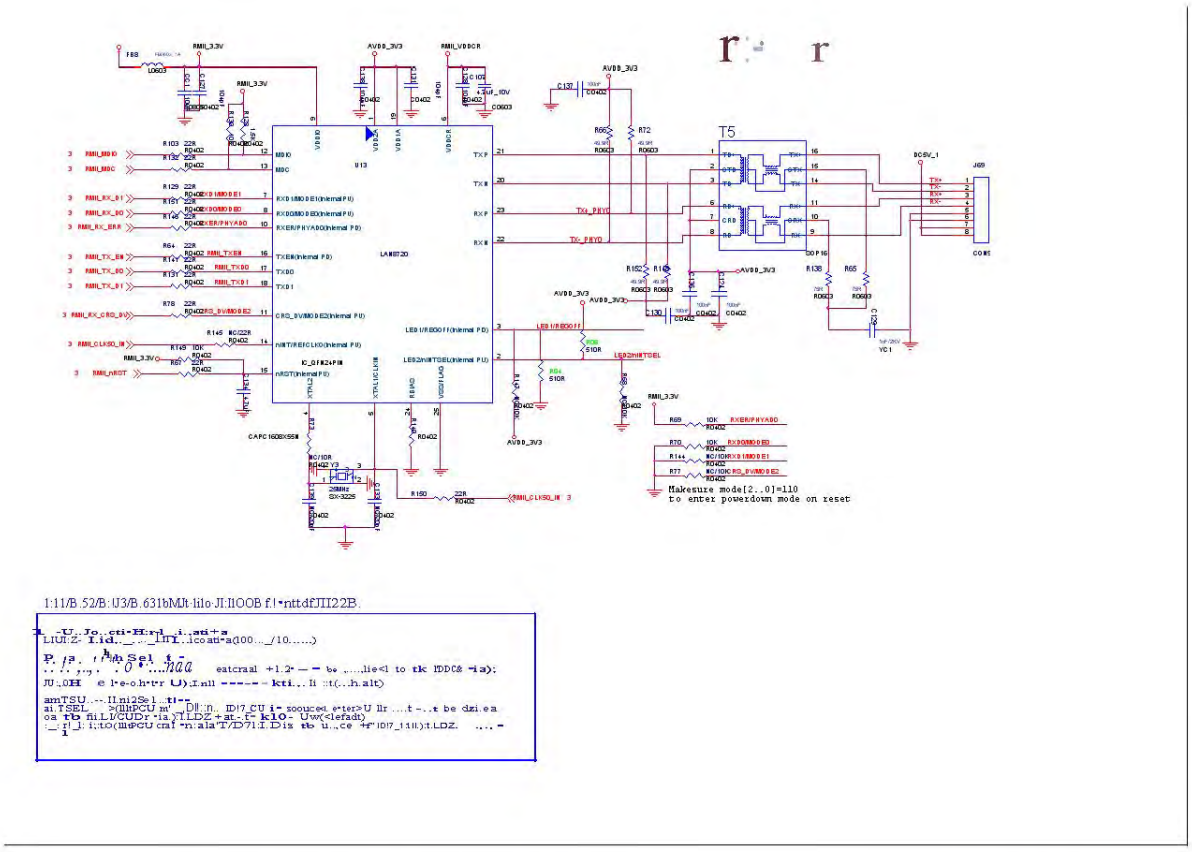
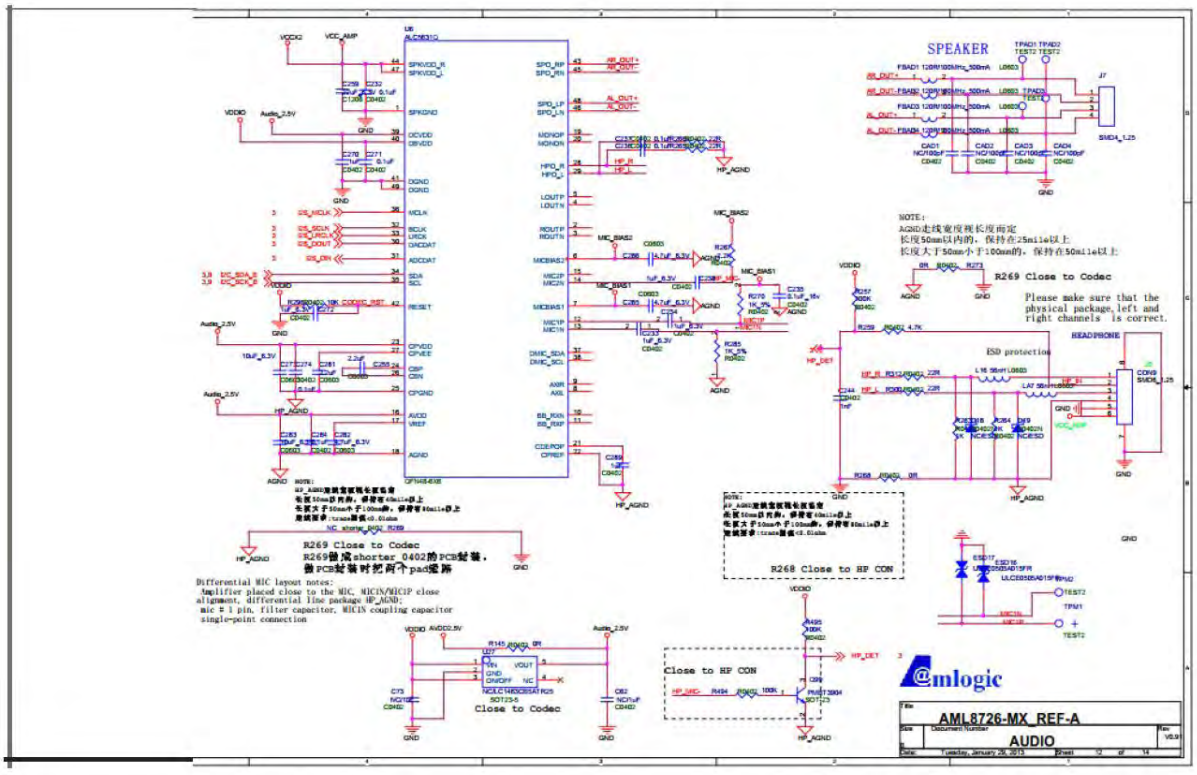
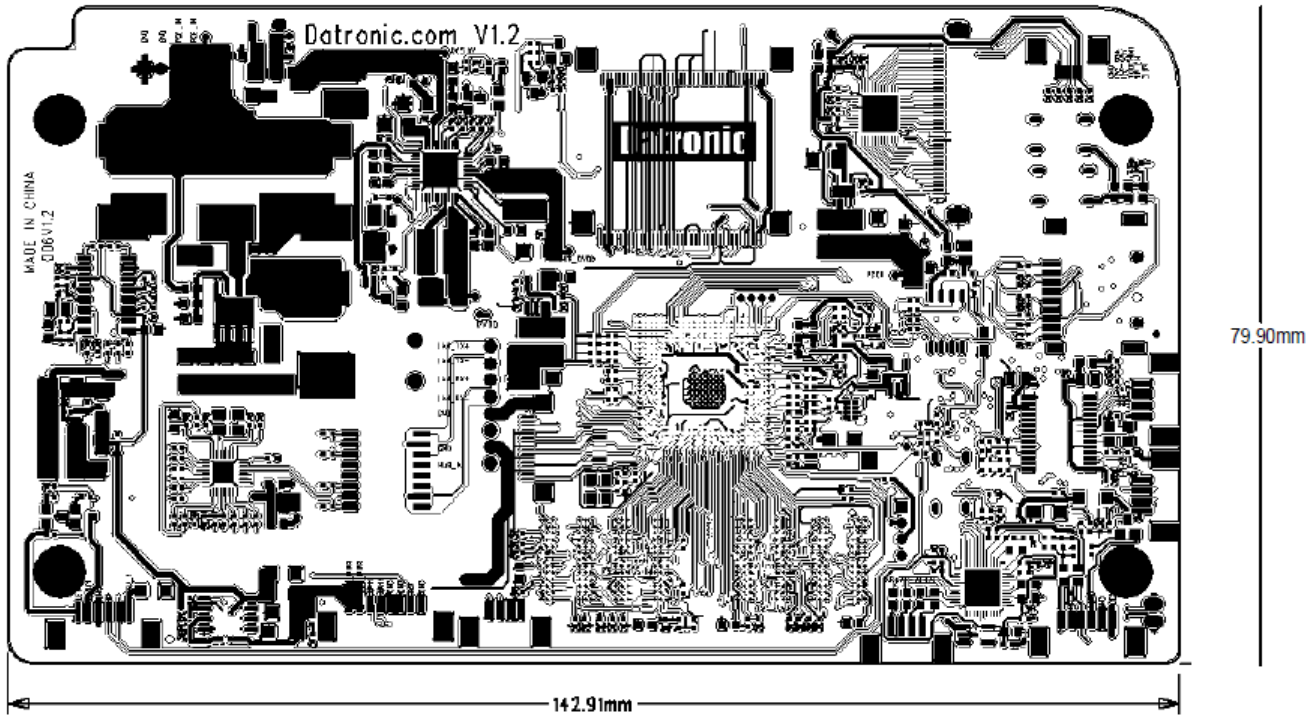
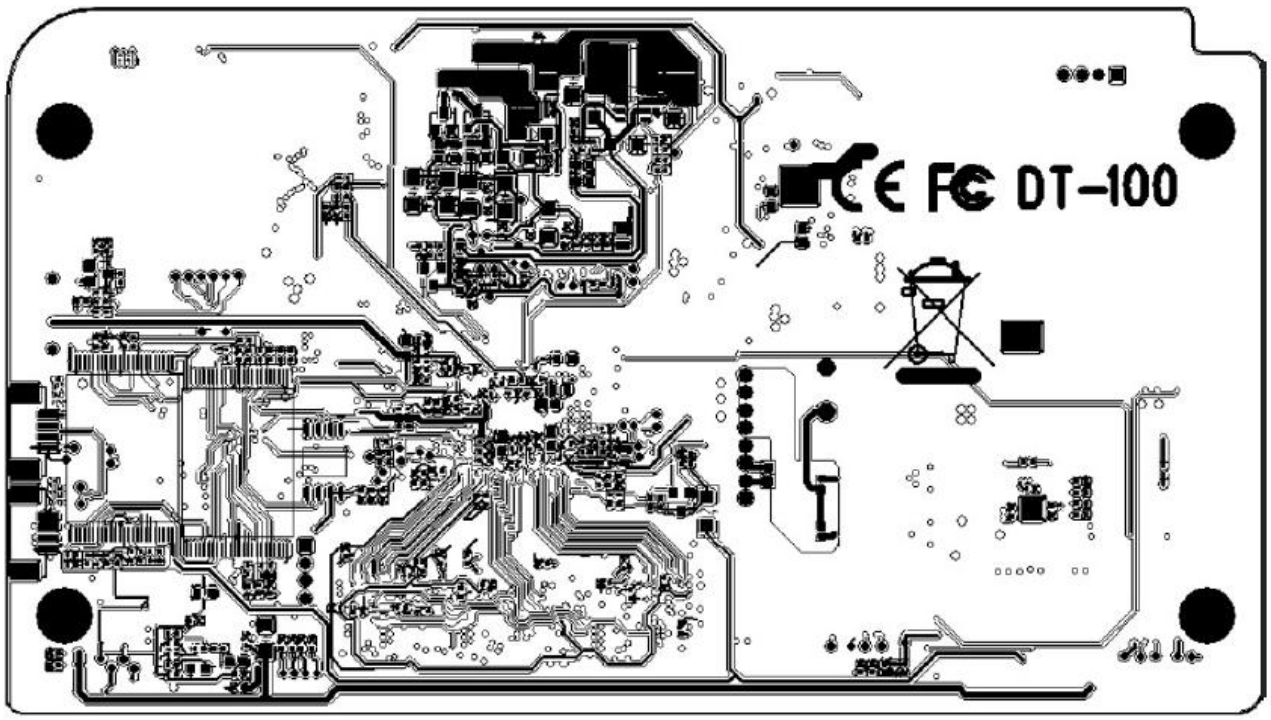

T5
Makesure mode[2..0]=110
to enter powerdown mode on reset


SPEAKER
R269 Close to Codec
Please make sure that the physical package, left and right channels is correct.
R268 Close to HP CON
Close to HP CON
Close to Codec
AML8726-MX_REF-A
AUDIO

18 Layout NV6810 / *Layout* NV6810:





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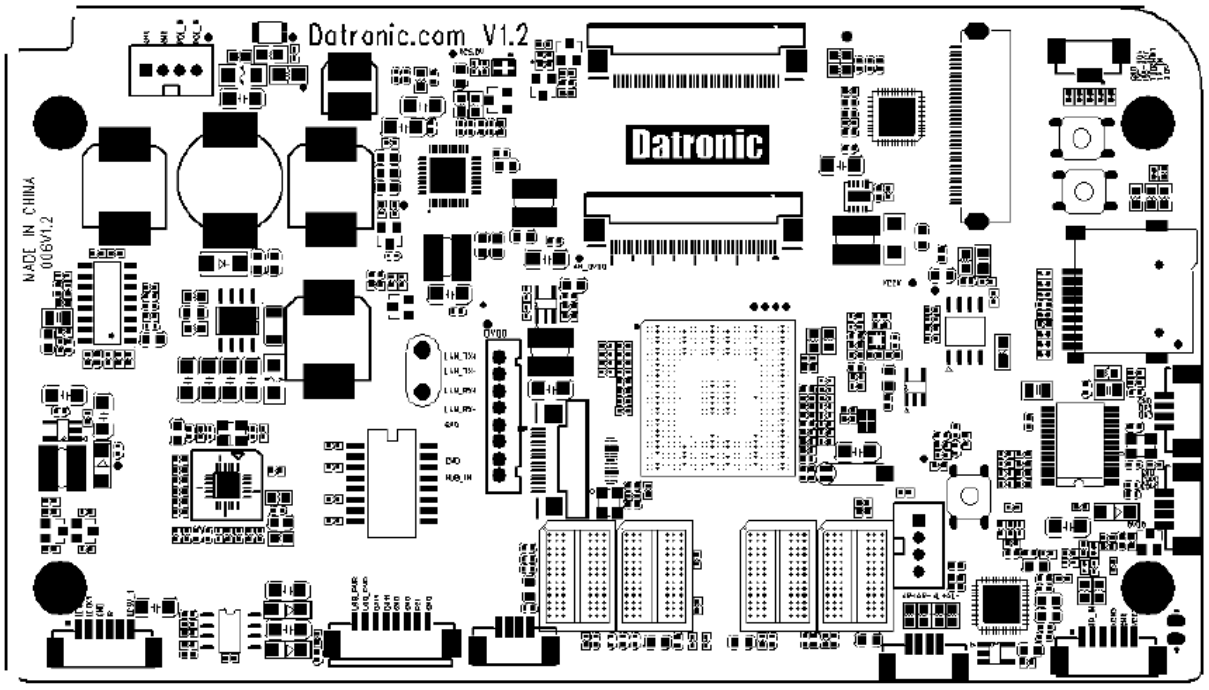
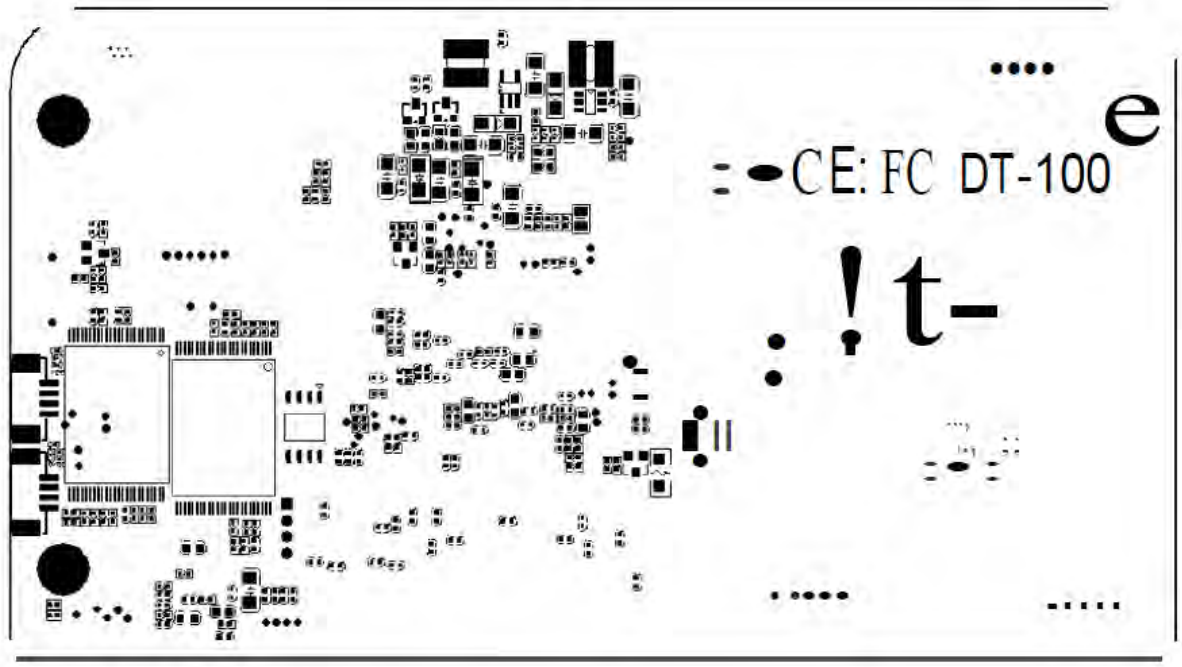
19 Bestückungsplan NV6810/ *Part Layout* NV6810:



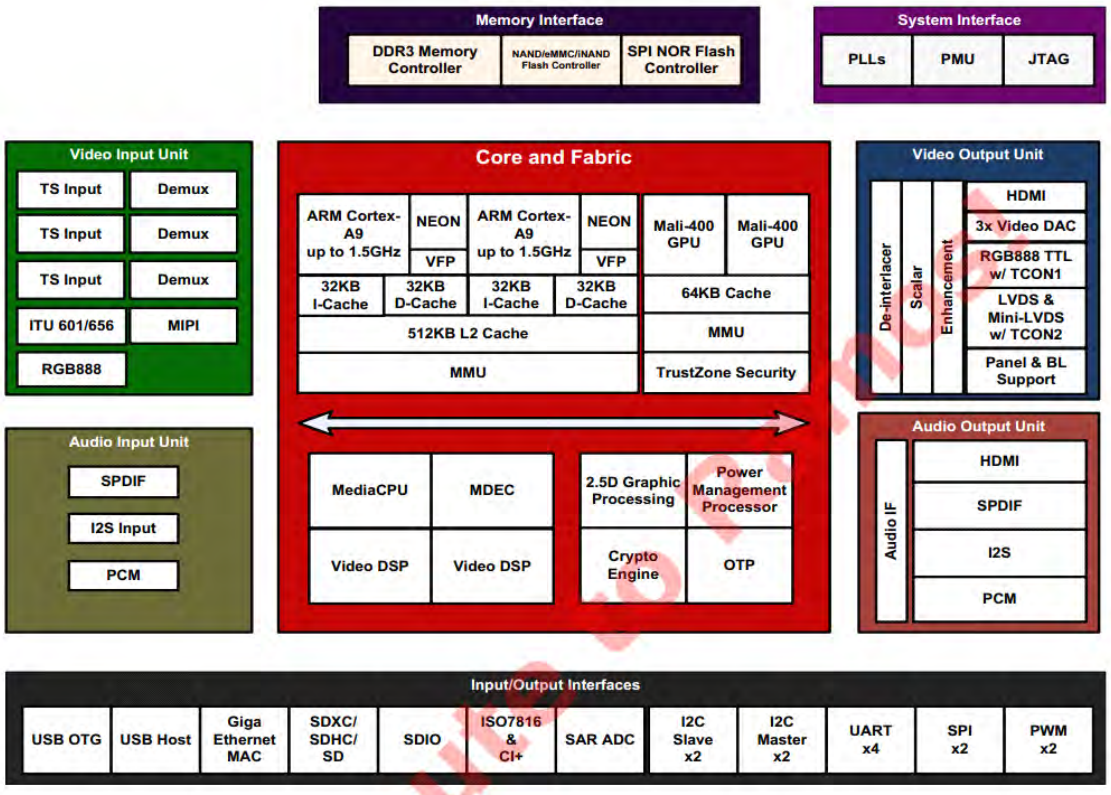


20 Stückliste NV6810 / *Component List* NV6810:

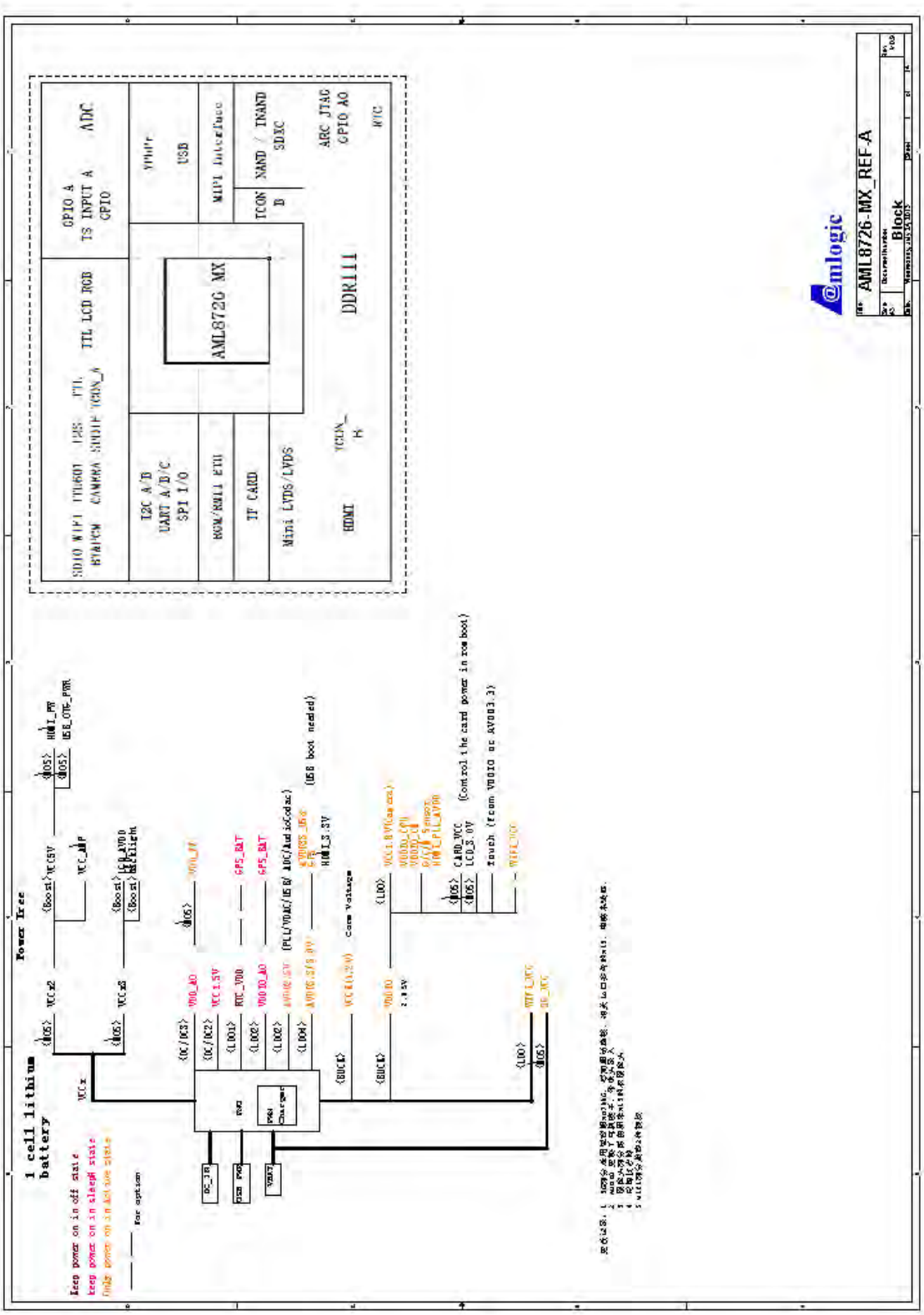
NO.	COIPONENT	LABELS	ABOUT	QUANTITY
1		C176	3.3nF 25V X7R	1
2		,C163	0.1uF 35V X7R	2
3		,C281	2.2uF 6.3V Y5V	2
4		ECLN2,C35,C36,C37,C49, C75 C313 C282 C285 C286	4.7uFF 6.3V Y5V	10
5	CAPACITANCE	C4,C18,C27,C30, C31,C42,C58,C65,C68, C92,C100,C105,C124,C131, C140,C200,C214,C242,C273, ic-28.3...EC.LN. •.C_32	10uF 6.3V Y5V	22
6		C46 C10	22uF 6.3V Y5V	2
7		,CA2,EC6,EC7	10uF 6.3V Y5V	4
8		C19 C196 C191 C144	10uF 35V Y5V	4
9		C142,C6,C15,C20, C21,C24,C34,C43,C55, ,C164,C2!'e,C32	22uF 10V Y5V	13
10		CA100 CA101,CA102 CA103	47uF 6.3V Y5V	4
11		,RLNlO RI.Nll,RLN12	49.9R 1%	4
12		RLN19 RLN18	75R 1%	2
13		,R75,R182	100R 1%	3
14		R93 RB0	150R 1%	2
15		R62 R42	200R 1%	2
16		,R94,R95,R99 R101	240R 1%	5
17		R250	560R 1%	1
18		R36 R98	680R 1%	2
19		R282	806R 1%	1
20		R10,RBL27,R77,R97,R139, R183,R246,R263,R264,R84, ,R61 R133	1K 1%	13
21		R52	1.2K 1%	1
22	RESISTOCE	R281	1.5K 1%	1
23		RLK2,R64,R65,R110,R111,R242,R2 43 R267	2.2K 1%	8
24		RA87,R22,R25,R70,R71, ,R123,R136 R2!'e	4.7K 1%	9
25		RLN6,R3 R53,R86, R127,R128,R137,R138,R178, R185,R187,R188,R189,R210, R247,R251,R296,RLN21, RLN24	10K 1%	19
26		RLN13	12.1K 1%	1
27		R236 RA67	27K 1%	2
28		RLK4,RLK5Jl!!l,R23 R155 R171	470K 1%	6
29	BEAD	FBAD1,FBAD2,FBAD3,FBAD4,FBGE1, FB10,FB11,FBLN1,FBLN2,FB4, ,El17,FB90,FB271	120R 100Jdll= 1A	13

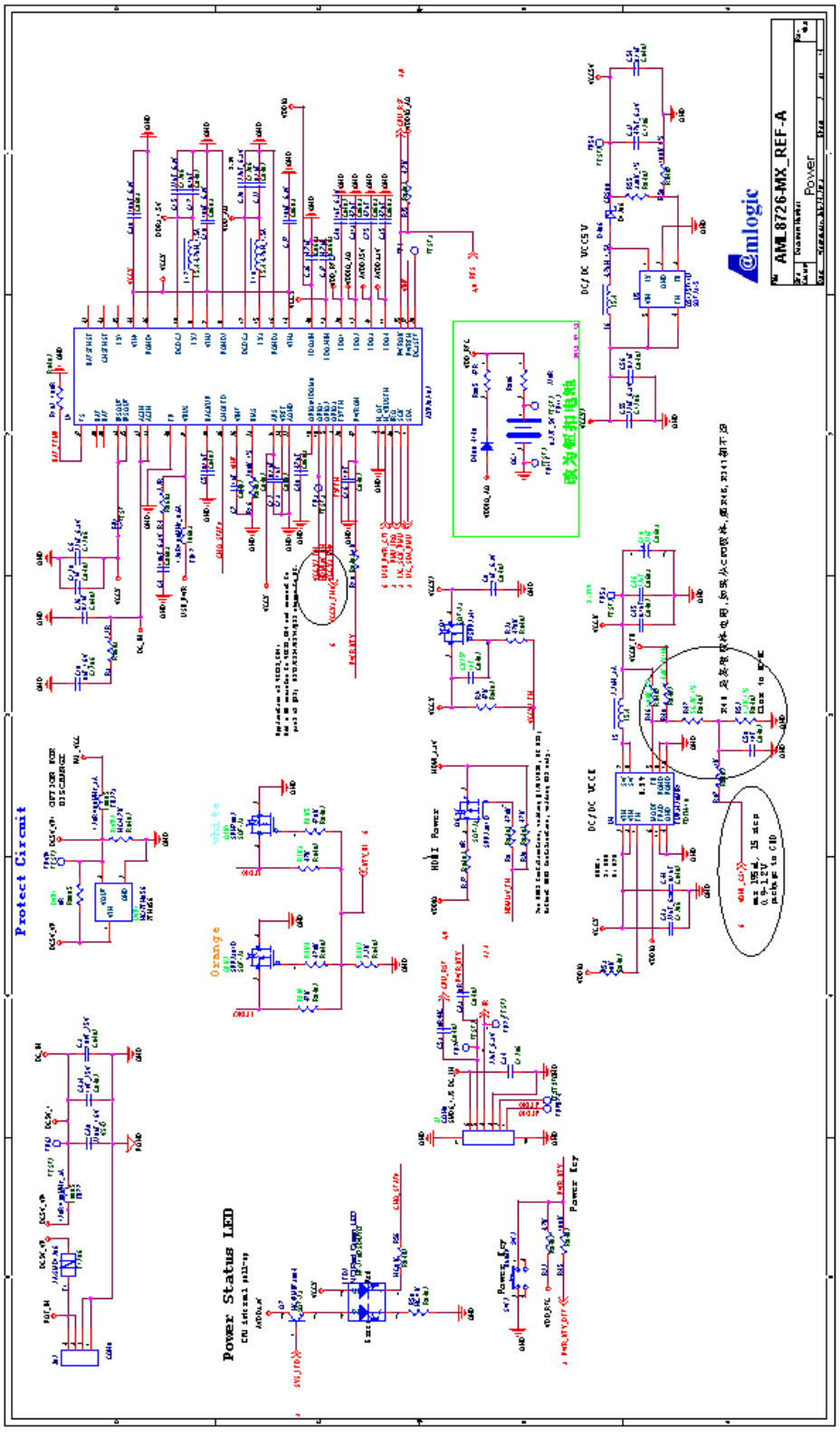
30		FB77	120R lOOJdllz 3A	1
31	DIODE	D4	B3402ss34	1
32		D4C6	CRS0B	1
33		D6	SS14	1
	4	,VI'!	!.N4001	
35		D90	1N4148WS	1
36	VR TUBE	D21	4.3V	1
37	ESD	D15,D57,D58,D59,D60,D61,D73,D74,D75,D76,D77,D78,D79,D88	ESD	14
38	MOSFET	LK1	SPN7002	1
39		QLKDQ,_Q18	SPP2301DLSI2301D	3
40		1	SPP2341li5<!0l	1
41		Q21_Q21	A03415	2
42	FUSE	,F3	6Vi2A	2
43		F2	120R lOOJdllz 3A	1
44	PHY	ULN1	LA.N8720	1
45	REIDTE IC	ICB	BSOOOl	1
46	PMU	U1	AXP202-Q2	1
47	LDO	U2	AAP2418VIRLS 008	1
48	USB HUB	U3	GL850G	1
49	DCDC	U4	EUP3420MIR1	1
50	DCDC	U5	G5125T11U	1
51	Audio CODEC	U6	ALC56310	1
52	NA.ND FL.ISH	UlO	29F32G08CBACA	1
53	DCDC	U14	XR2203	1
54	DCDC	U18	AT2596-ADT	1
55	IC	U37	AML8726-MX	1
56	DDR3	041,042,U43 044	DDR3 78P Bb	4
57	CRYSTAL	Y1	32.768KHz/12.5pF/10PPM	1
58		YLN1	251\lllz/2QRF/20PPM/3'	1
		Y2	241\lllz/2QRF/20PPM/3'	1
		Y4	121\lllz/2QRF/20PPM/3'	1

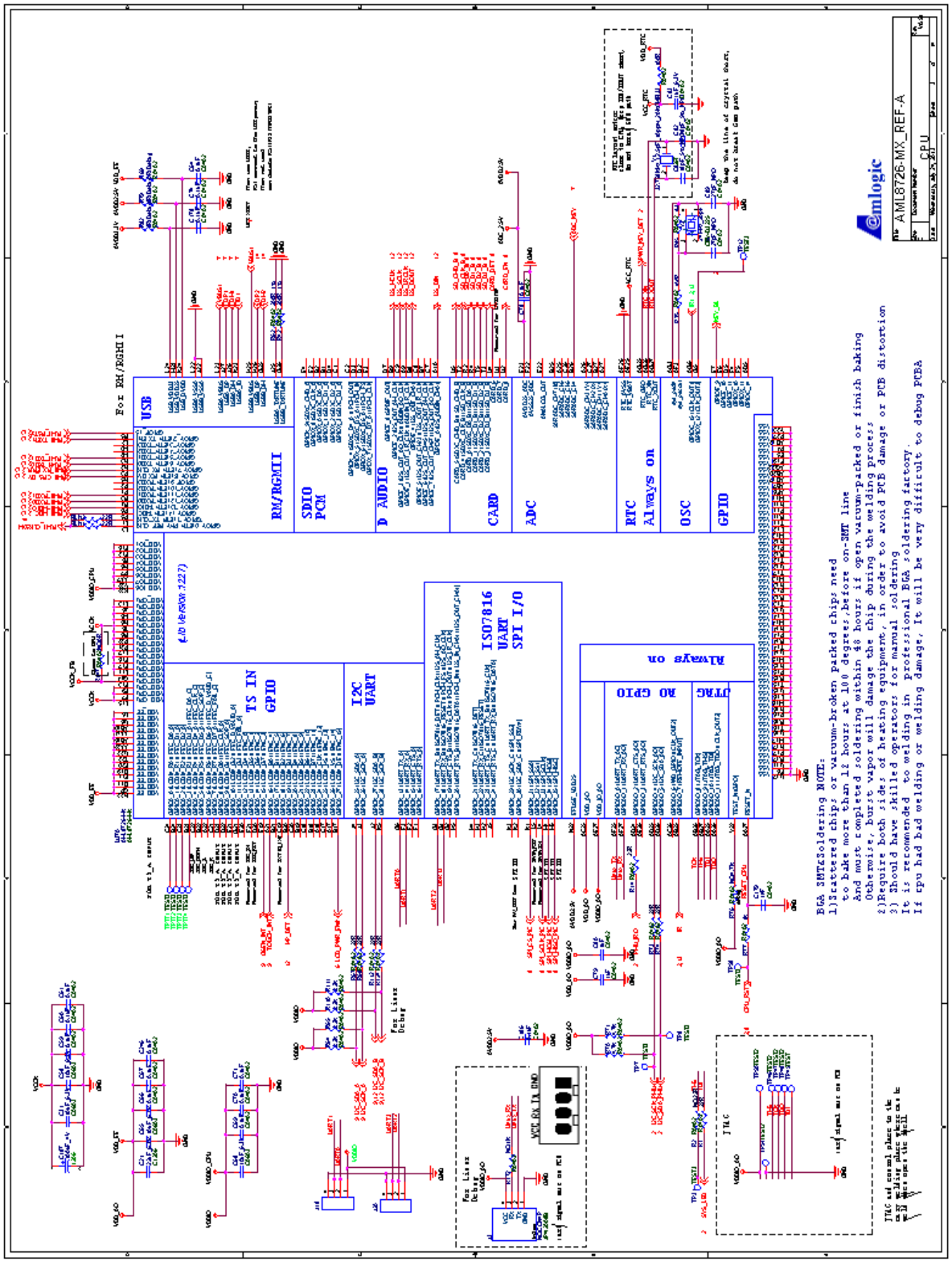
21 Blockdiagramm NV6820 / *Block diagram* NV6810:

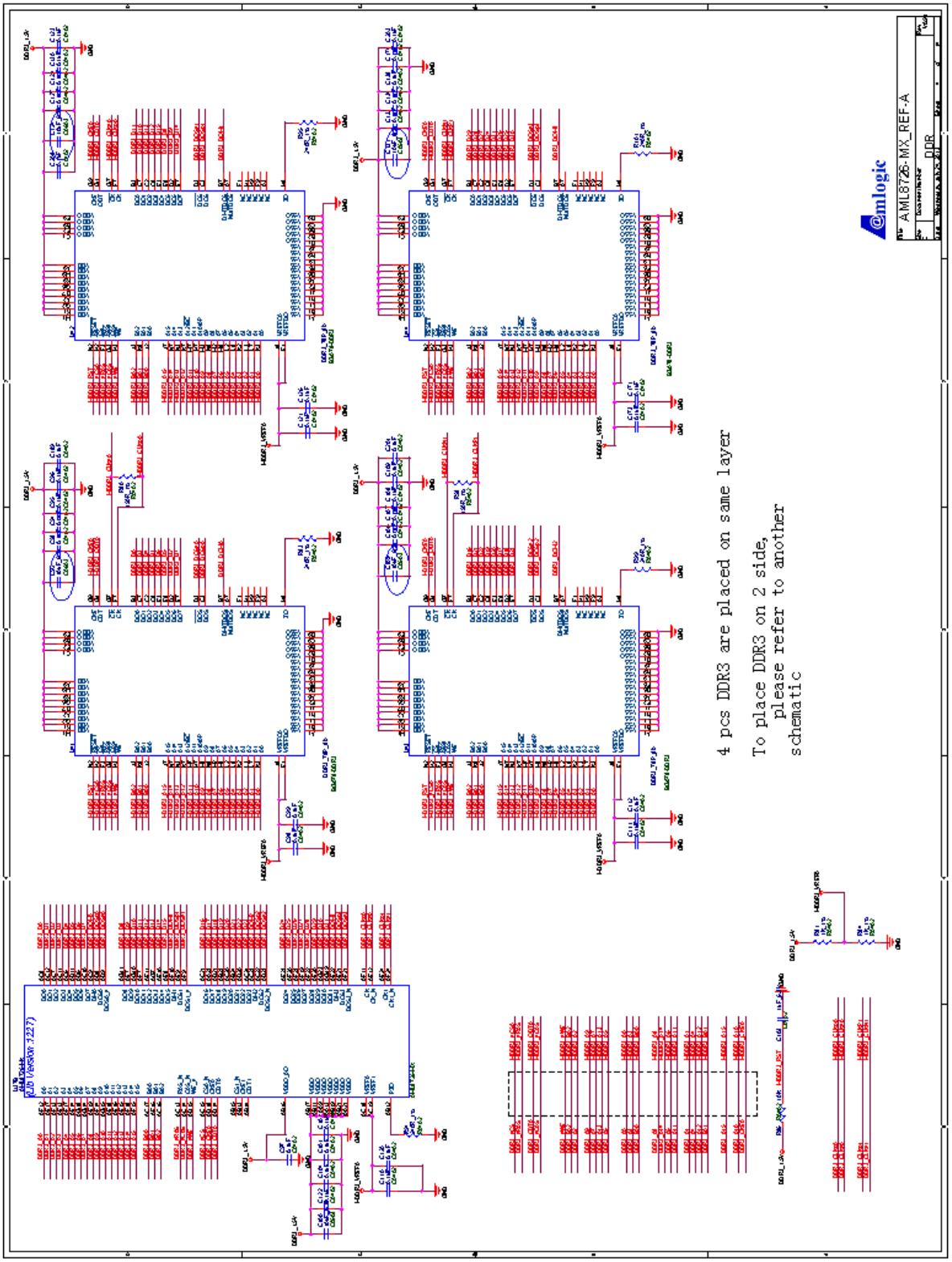


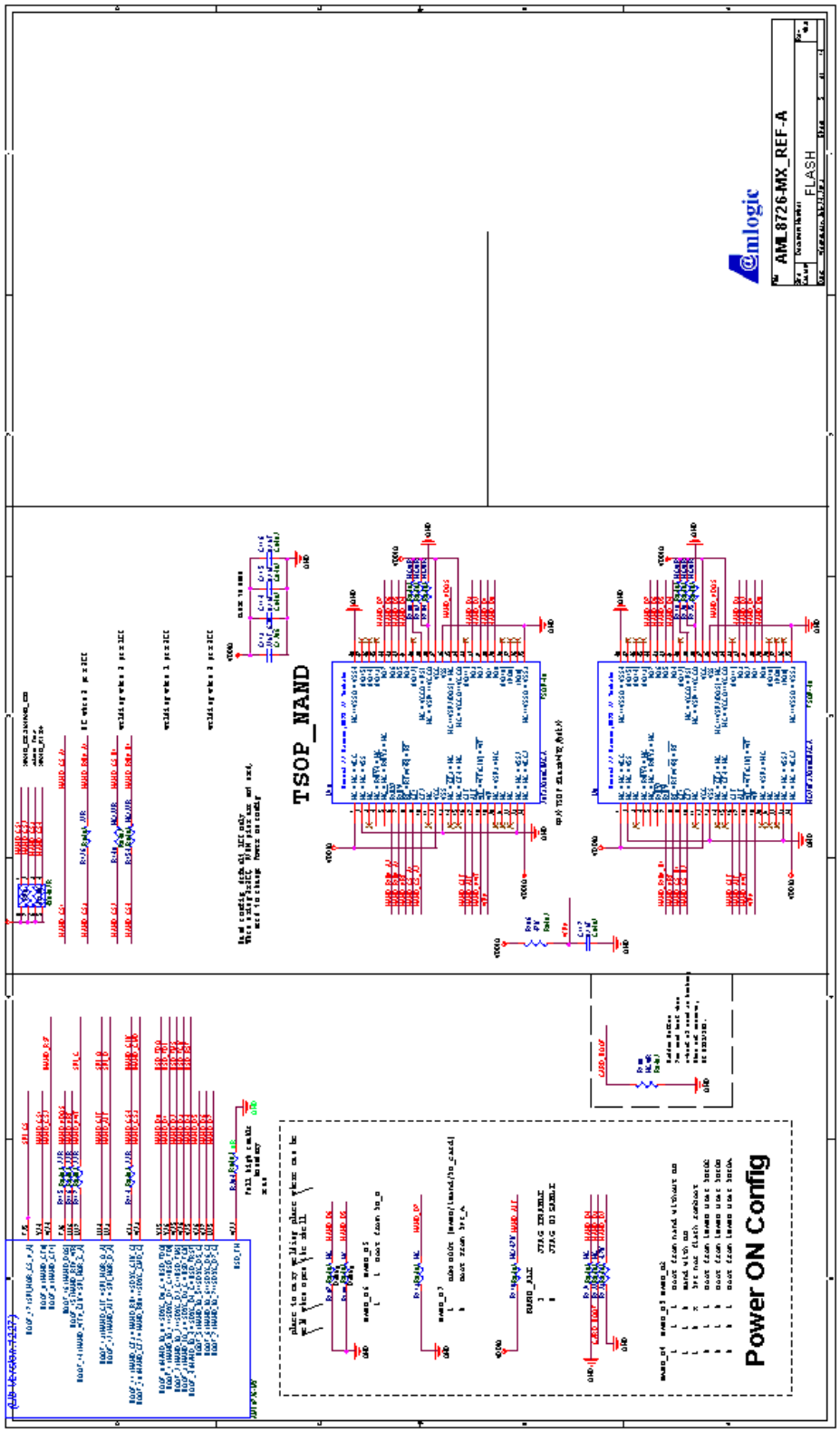
22 Schaltplan NV6810 / *Circuit diagrams* NV6810:

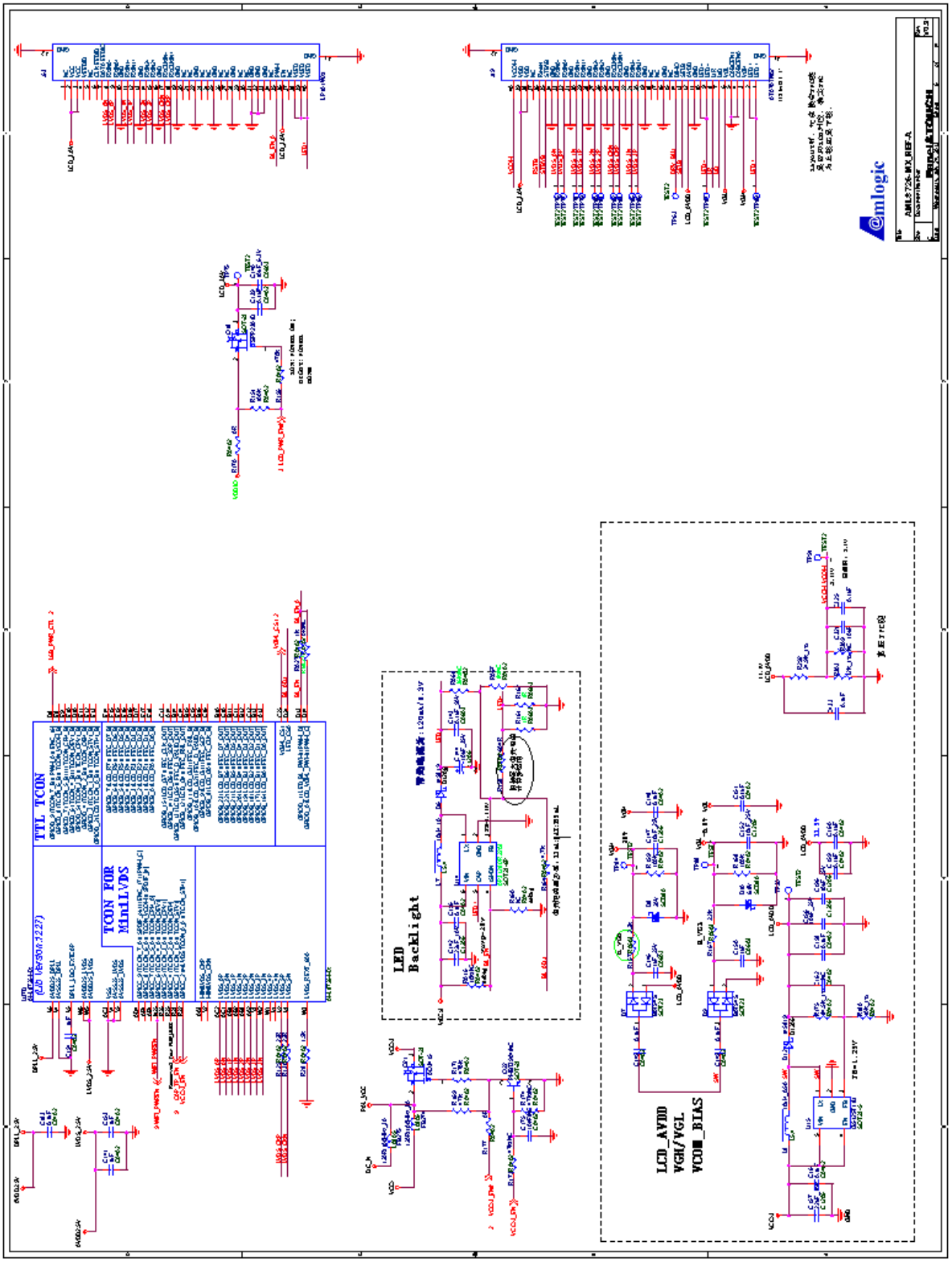


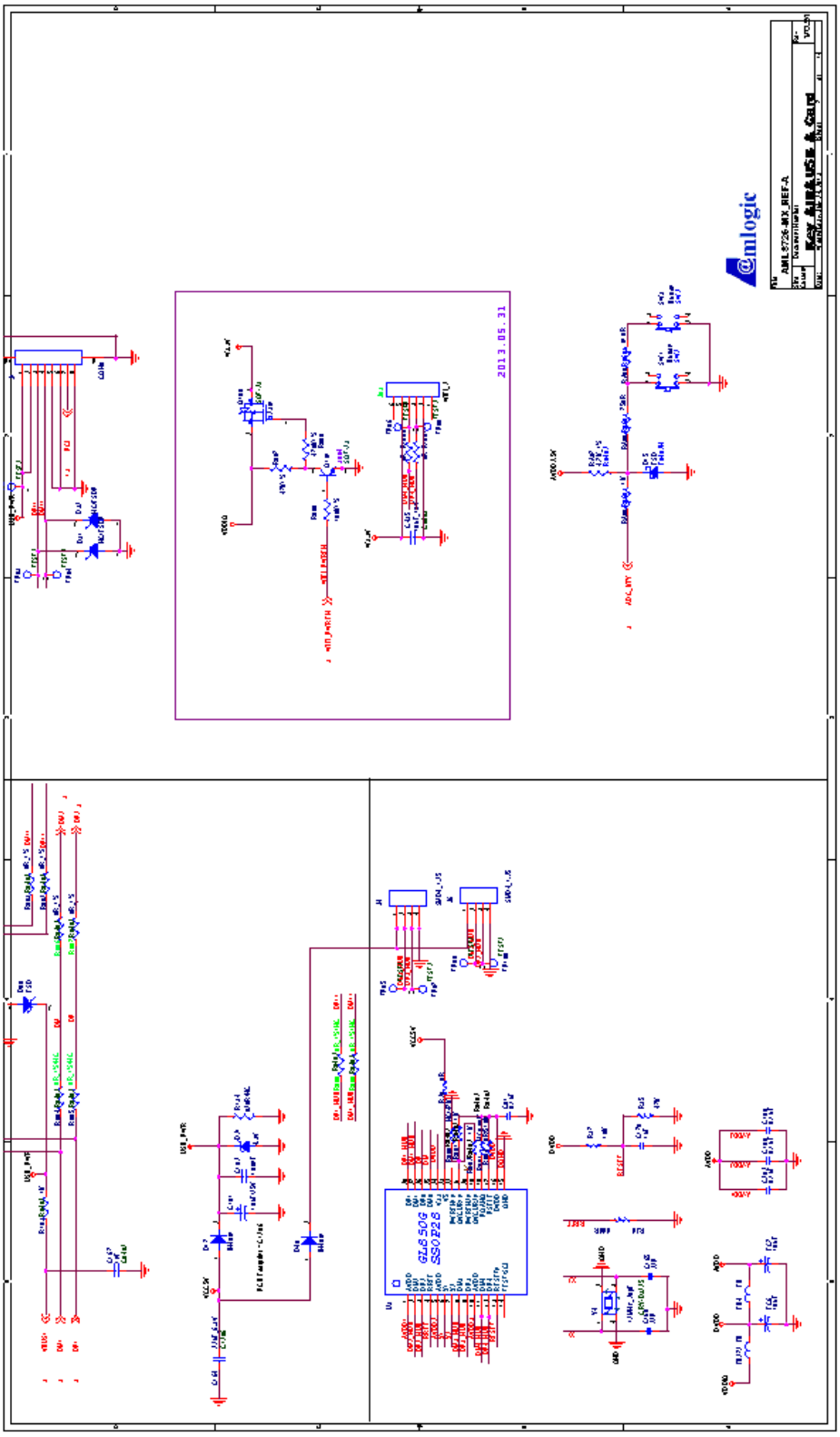

AML8726-MX_REF-A
Power
Protect Circuit
Power Status LED
Power Key
DC/DC VCC5V
DC/DC VCCE
HDMI Power
white
Orange

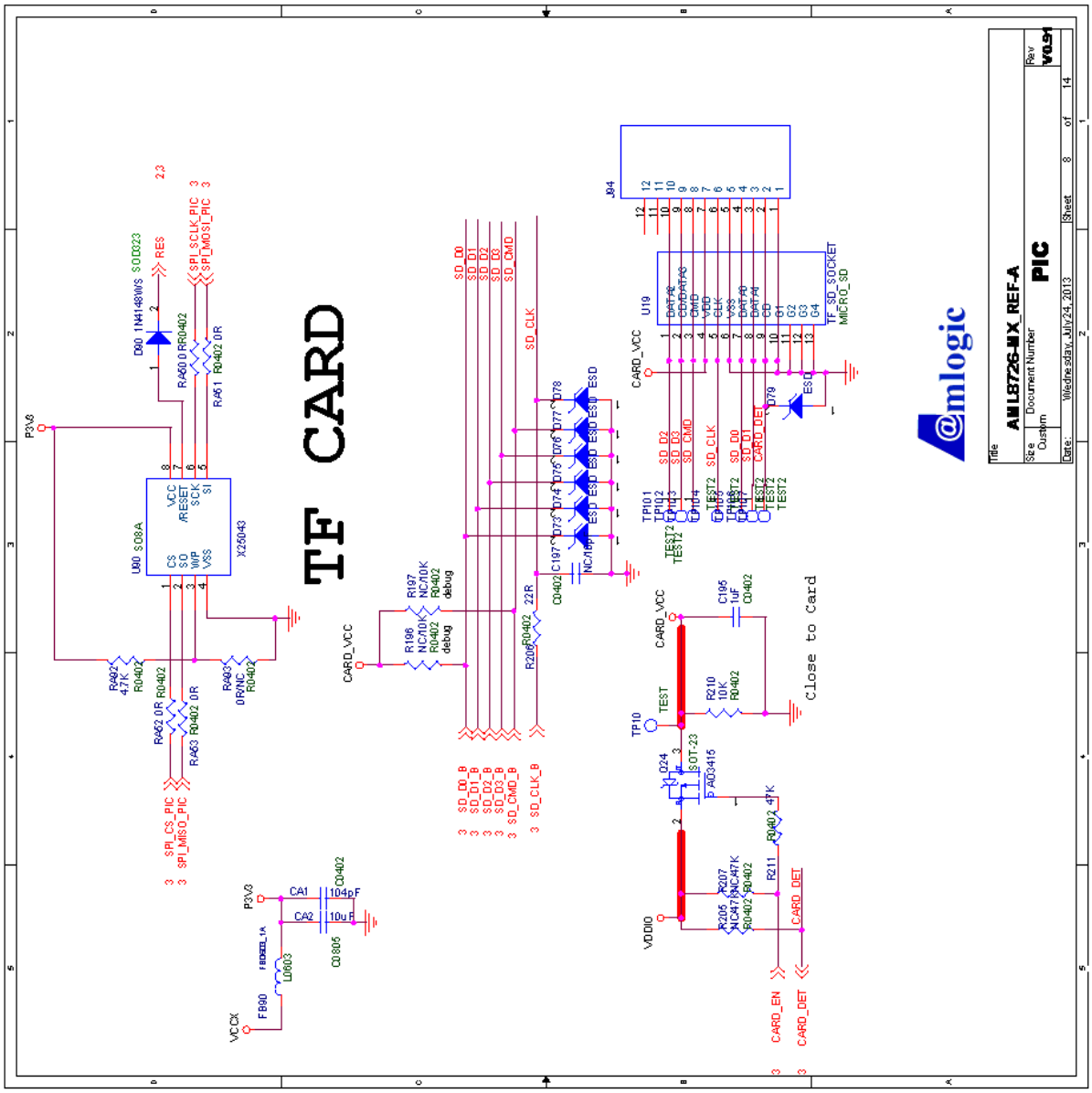



4 pcs DDR3 are placed on same layer
To place DDR3 on 2 side,
please refer to another
schematic
AML8726-MX_REF-A
DDR


TSOP_NAND
Power ON Config
AML8726-MX_REF-A
FLASH


TTL TCON
TCON FOR MiniLVDS
LED Backlight
LCD_AVDD
VGH/VGL
VCOM_BIAS





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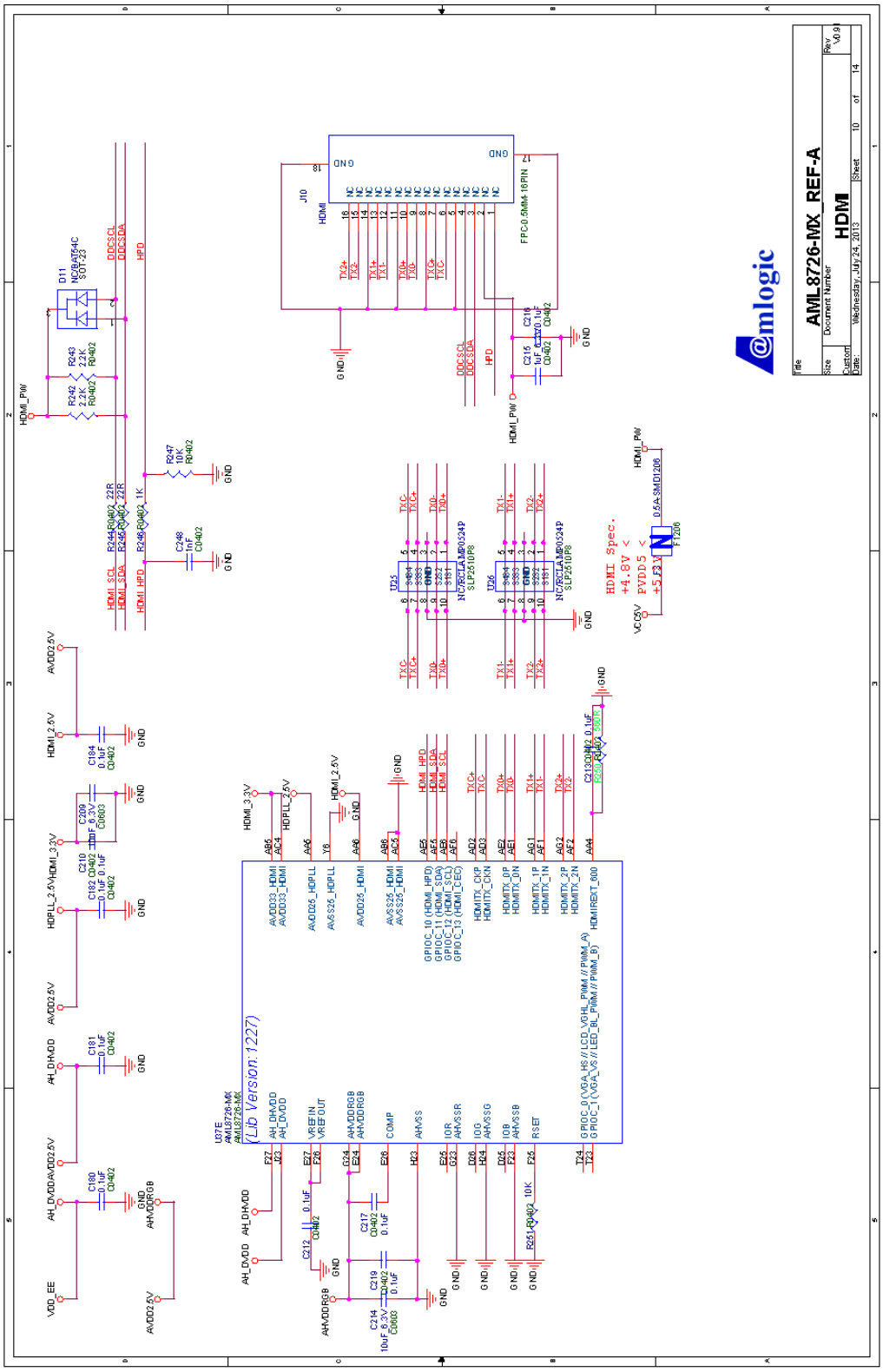

E13*10R00*10R04*13131*00
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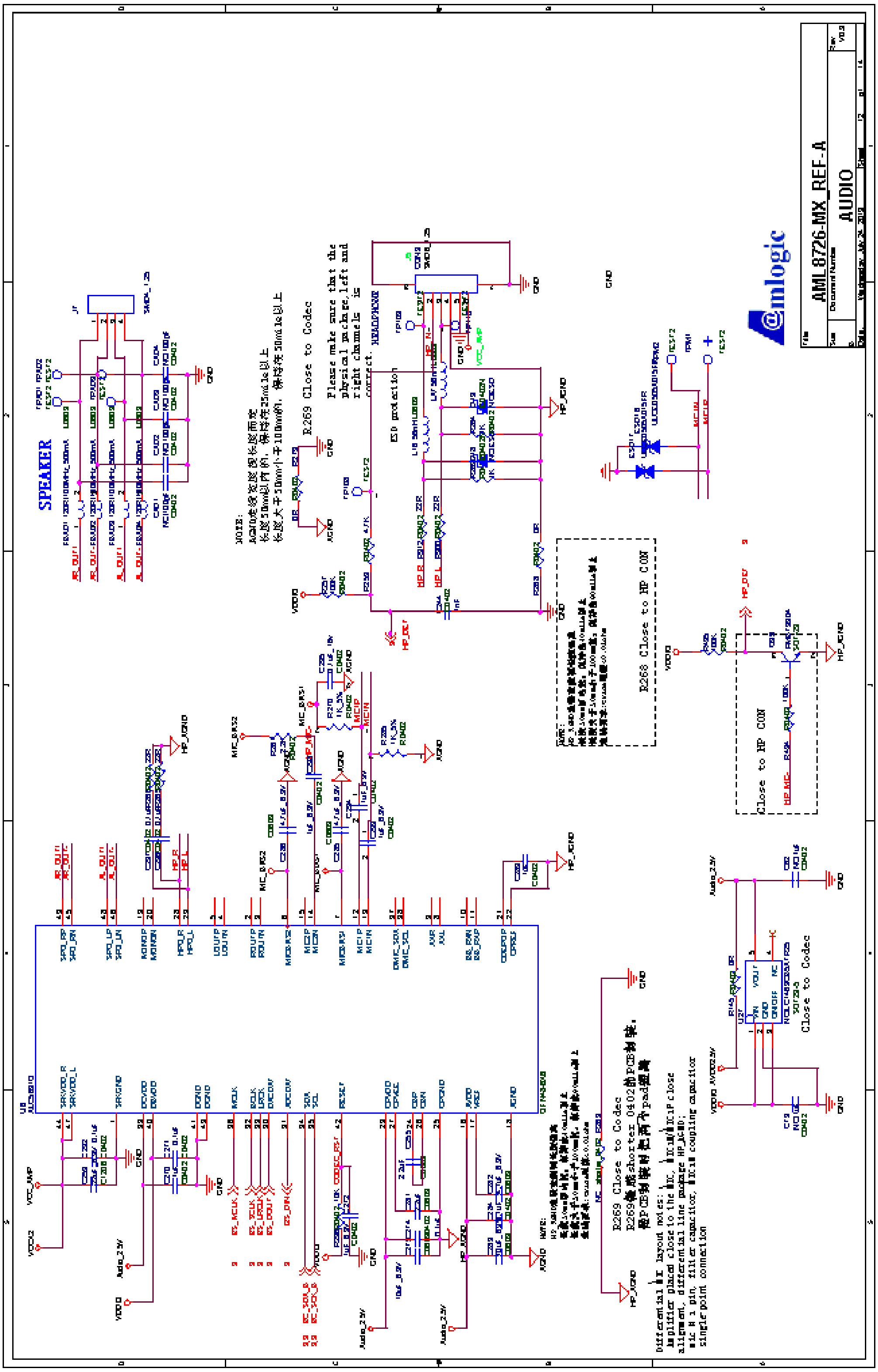

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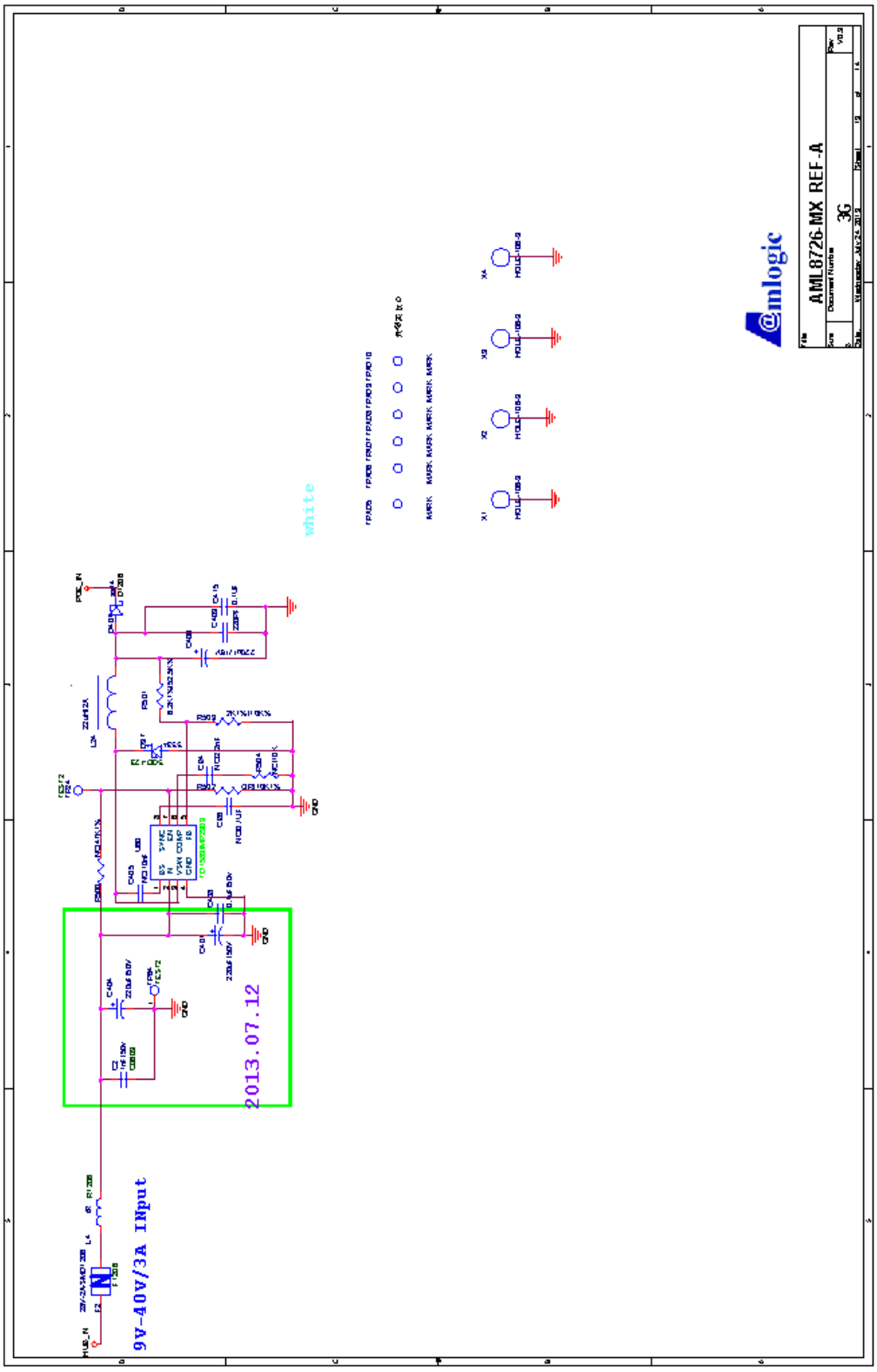
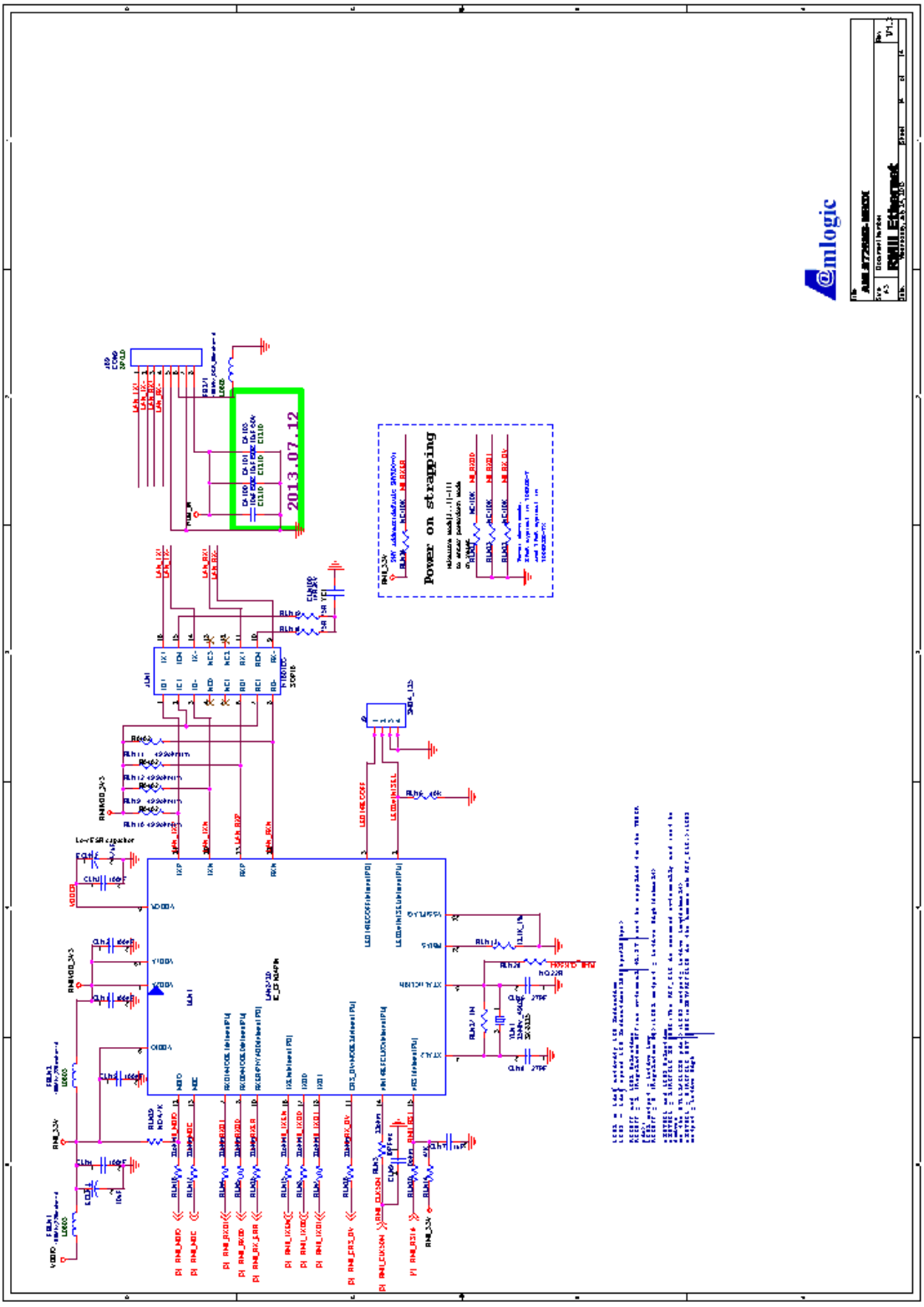

AML8726-MX REF-A
9V-40V/3A INput
2013.07.12



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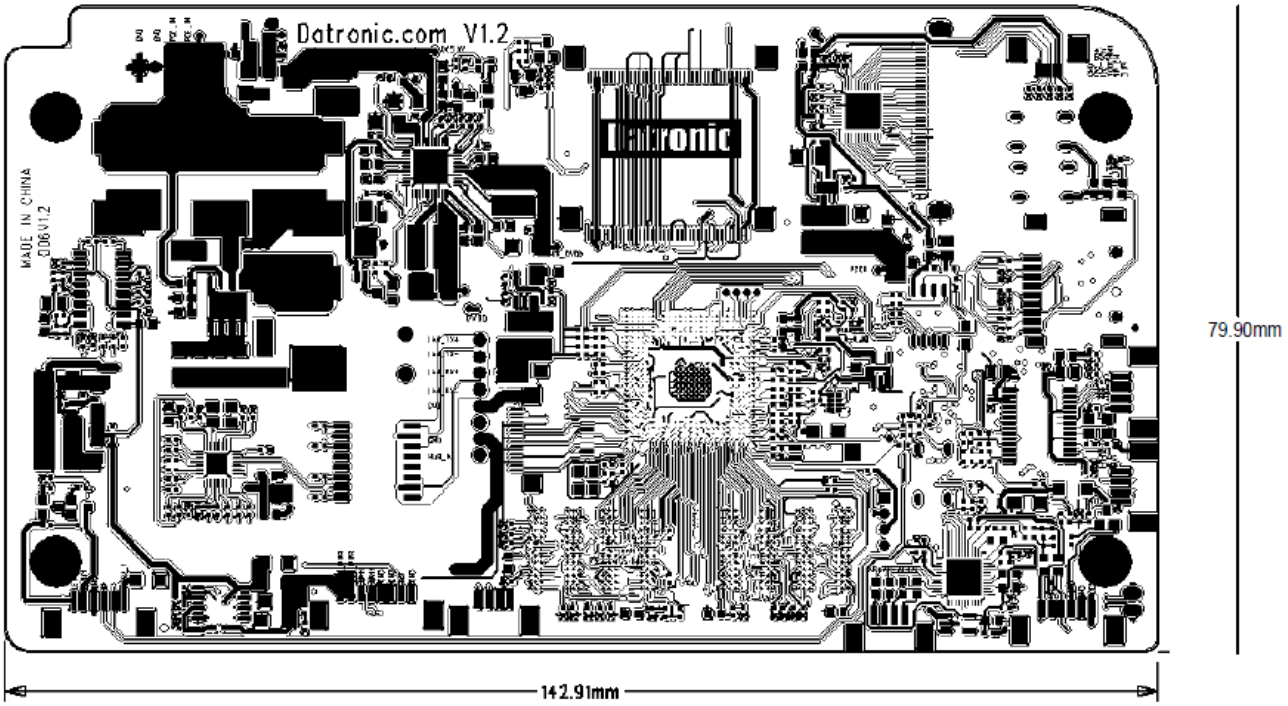
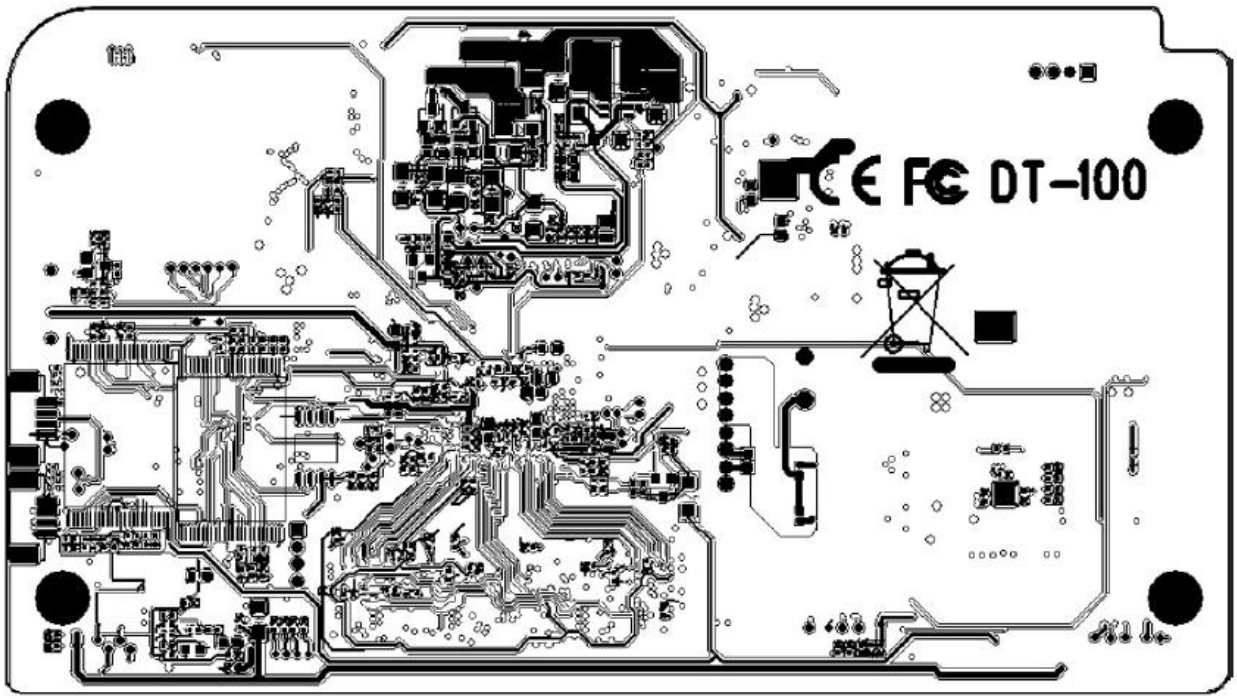
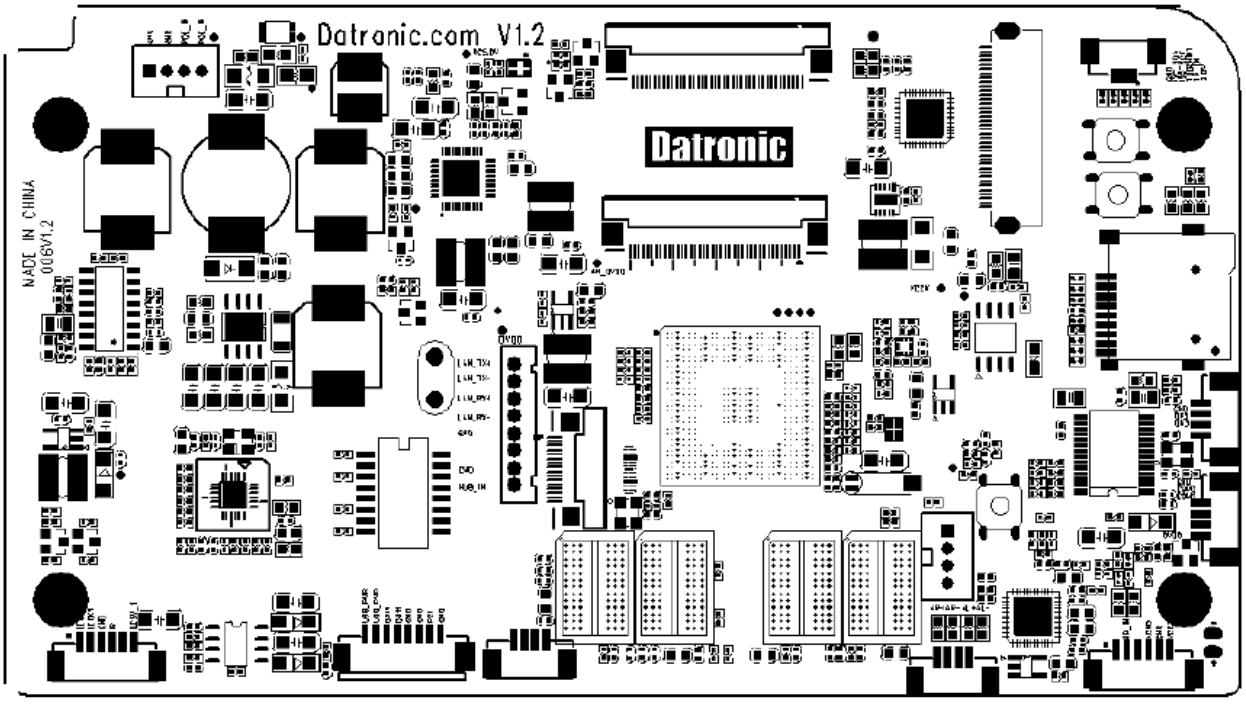
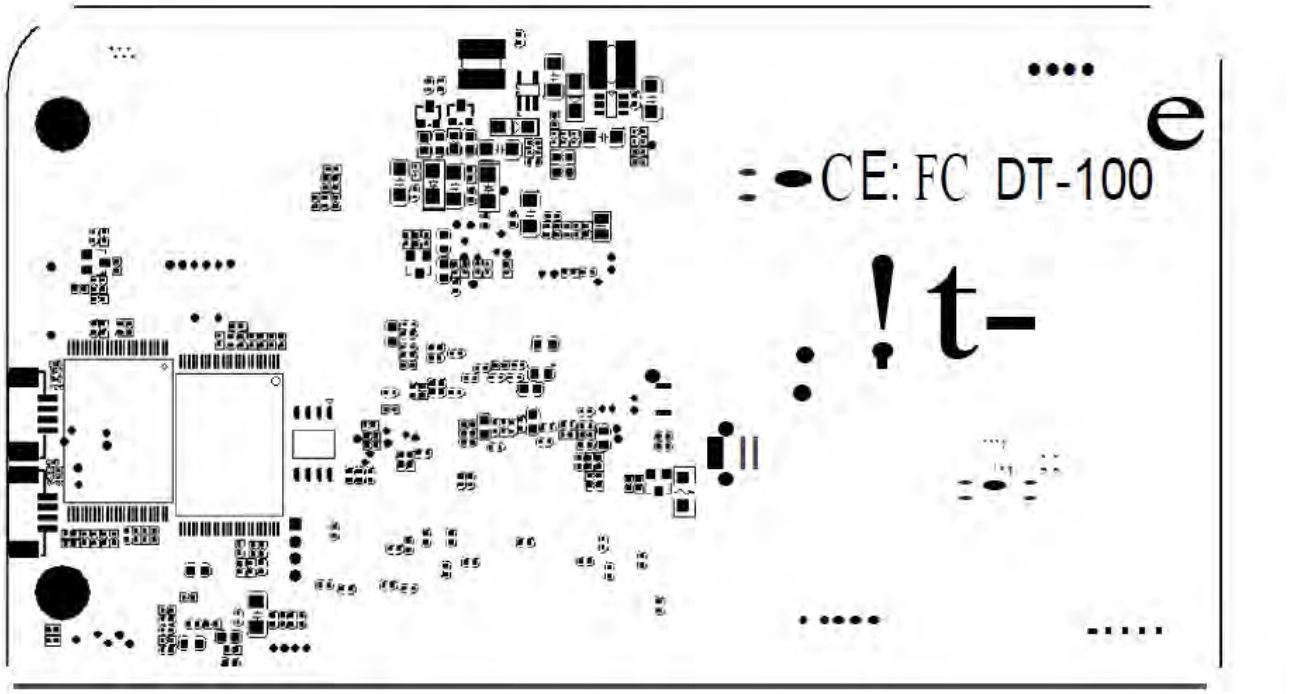
23 Layout NV6810 / *Layout* NV6810:





24 Bestückungsplan NV6810 / *Part Layout* NV6810:





25 Stückliste NV6810 / *Component List* NV6810:

NO.	COIPONENT	LABELS	ABOUT	QUANTITY
1		C176	3.3nF 25V X7R	1
2		,C163	0.1uF 35V X7R	2
3		,C281	2.2uF 6.3V Y5V	2
4		ECLN2,C35,C36,C37,C49, C75 C313 C282 C285 C286	4.7uFF 6.3V Y5V	10
5	CAPACITANCE	C4,C18, C27,C30, C31,C42,C58,C65,C68, C92,C100,C105,C124,C131, C140,C200,C214,C242,C273, ic-28.3...EC.LN. •.C_3[illegible]	10uF 6.3V Y5V	22
6		C46 C10	22uF 6.3V Y5V	2
7		,CA2,EC6,EC7	10uF 6.3V Y5V	4
8		C19 C196 C191 C144	10uF 35V Y5V	4
9		C142,C6,C15,C20, C21,C24,C34,C43,C55, ,C164,C2!'e,C32	22uF 10V Y5V	13
10		CA100 CA101,CA102 CA103	47uF 6.3V Y5V	4
11		,RLNlO RI.Nll,RLN12	49.9R 1%	4
12		RLN19 RLN18	75R 1%	2
13		,R75,R182	100R 1%	3
14		R93 RB0	150R 1%	2
15		R62 R42	200R 1%	2
16		,R94,R95,R99 R101	240R 1%	5
17		R250	560R 1%	1
18		R36 R98	680R 1%	2
19		R282	806R 1%	1
20		R10,RBL27,R77,R97,R139, R183,R246,R263,R264,R84, ,R61 R133	1K 1%	13
21		R52	1.2K 1%	1
22	RESISTOCE	R281	1.5K 1%	1
23		RLK2,R64,R65,R110,R111,R242,R243 R267	2.2K 1%	8
24		RA87,R22,R25,R70,R71, ,R123,R136 R2!'e	4.7K 1%	9
25		RLN6,R3 R53,R86, R127,R128,R137,R138,R178, R185,R187,R188,R189,R210, R247,R251,R296,RLN21, RLN24	10K 1%	19
26		RLN13	12.1K 1%	1
27		R236 RA67	27K 1%	2
28		RLK4,RLK5Jl!!l,R23 R155 R171	470K 1%	6
29	BEAD	FBAD1,FBAD2,FBAD3,FBAD4,FBGE1, FB10,FB11,FBLN1,FBLN2,FB4, ,El17,FB90,FB271	120R 100Jdll= 1A	13

30		FB77	120R lOOJdllz 3A	1
31	DIODE	D4	B3402ss34	1
32		D4C6	CRS0B	1
33		D6	SS14	1
	4	,VI'!	!.N4001	
35		D90	1N4148WS	1
36	VR TUBE	D21	4.3V	1
37	ESD	D15,D57,D58,D59,D60,D61,D73,D74,D75,D76,D77,D78,D79,D88	ESD	14
38	MOSFET	LK1	SPN7002	1
39		QLK2QQ_Q18	SPP2301DLSI2301D	3
40		1	SPP2341li5<!01	1
41		Q21_Q21	A03415	2
42	FUSE	.F3	6Vi2A	2
43		F2	120R lOOJdllz 3A	1
44	PHY	ULN1	LA.N8720	1
45	REIDTE IC	ICB	BSOOOl	1
46	PMU	Ul	AXP202-Q2	1
47	LDO	U2	AAP2418VIRLS 008	1
48	USB HUB	U3	GL850G	1
49	DCDC	U4	EUP3420MIR1	1
50	DCDC	U5	G5125T11U	1
51	Audio CODEC	U6	ALC56310	1
52	NA.ND FL.ISH	UlO	29F32G08CBACA	1
53	DCDC	U14	XR2203	1
54	DCDC	U18	AT2596-ADT	1
55	IC	U37	AML8726-MX	1
56	DDR3	041,042,U43 044	DDR3 78P Bb	4
57	CRYSTAL	Y1	32.768KHz/12.5pF/10PPM	1
58		YLN1	25l\lllz/2QRF/20PPM/3'	1
		Y2	24l\lllz/2QRF/20PPM/3'	1
		Y4	12l\lllz/2QRF/20PPM/3'	1