MS-7176

Version 0A

CPU:

Intel Prescott (L2=2MB) - 3.4G & Above
Intel Cendar Mill (65nm) - 3.73G & Above
Intel Smithfield (90nm Dual core)

System Chipset:

Intel Lakeport - GMCH (North Bridge)
Intel ICH7R (South Bridge)

On Board Chipset:

BIOS -- FWH EEPROM
Aliza Codec -- ALC882
LPC Super I/O -- W83627THF
LAN-- Intel Tekoa(82573)/EKronR(82562)
CLOCK -- ICS954519
1394 Controller -- VT6307 2pots
IDE RAID Controller -- VT6410

Main Memory:

DDR II * 4 (Max 4GB)

Expansion Slots:

PCI2.3 SLOT * 3
PCI EXPRESS X1 SLOT * 2
PCI EXPRESS X16 SLOT

RickTek PWM:

Controller: RT8804 5 Phases

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Title	COVER SHEET	
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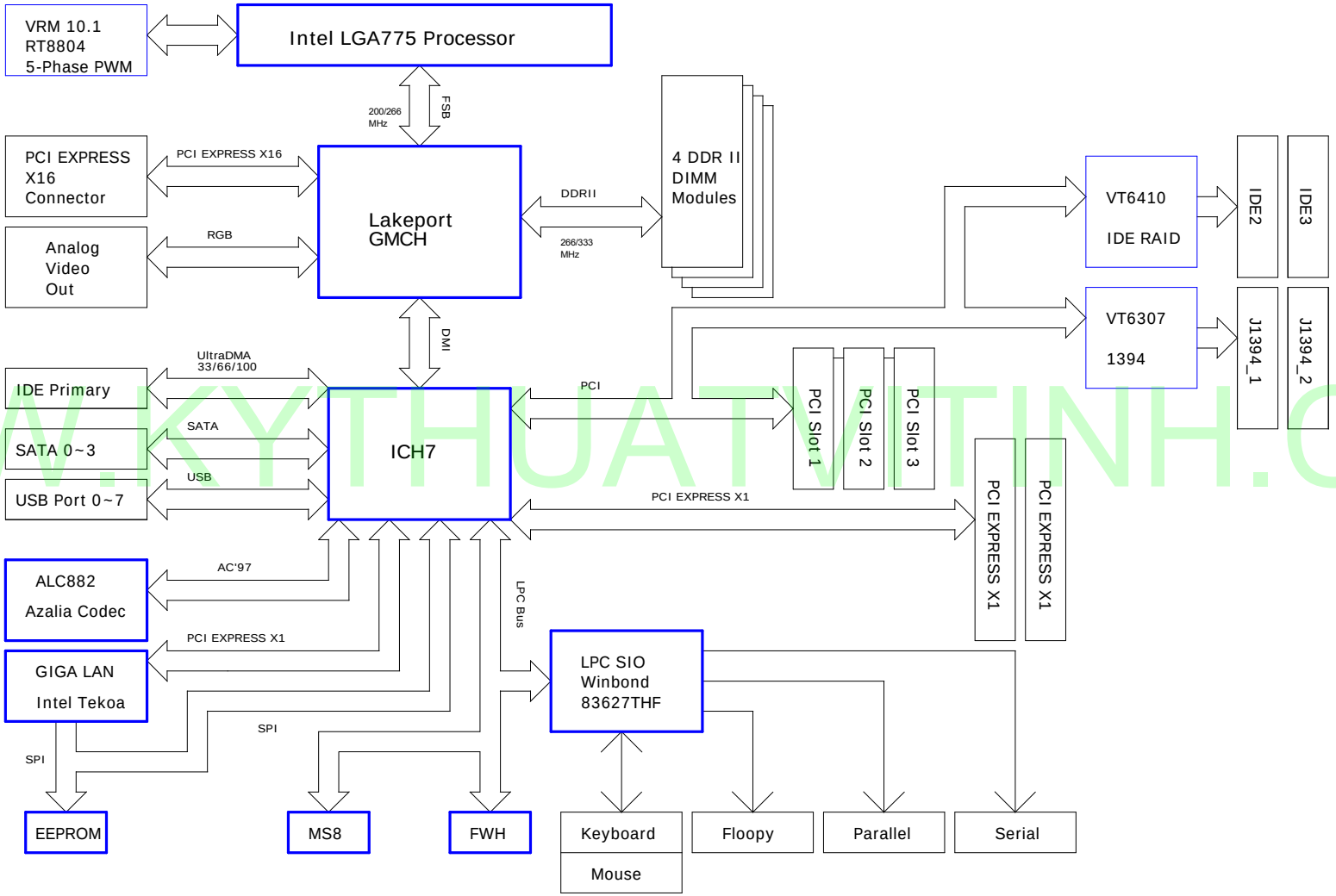
Block Diagram



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Title	BLOCK DIAGRAM
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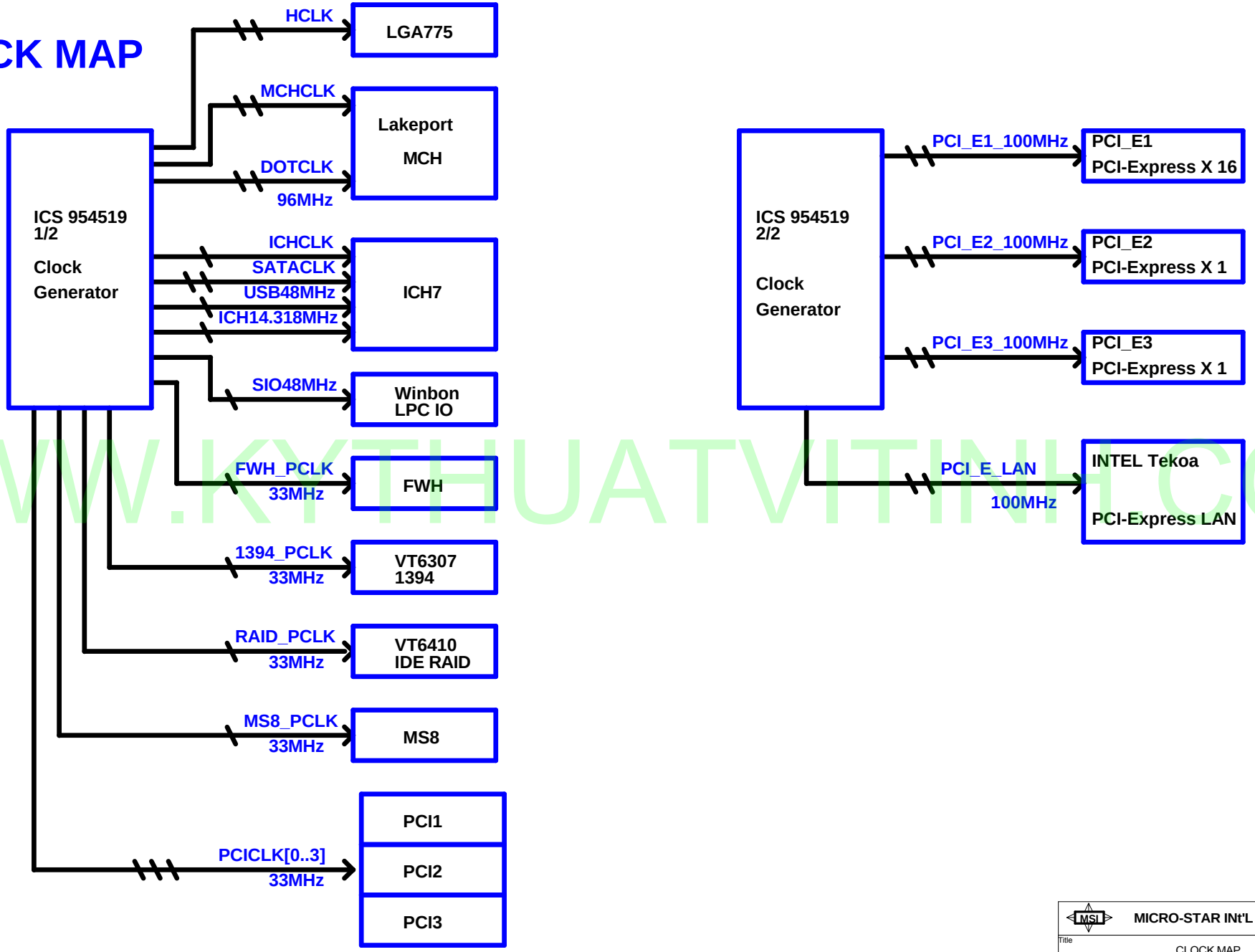
CLOCK MAP



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Title	CLOCK MAP	
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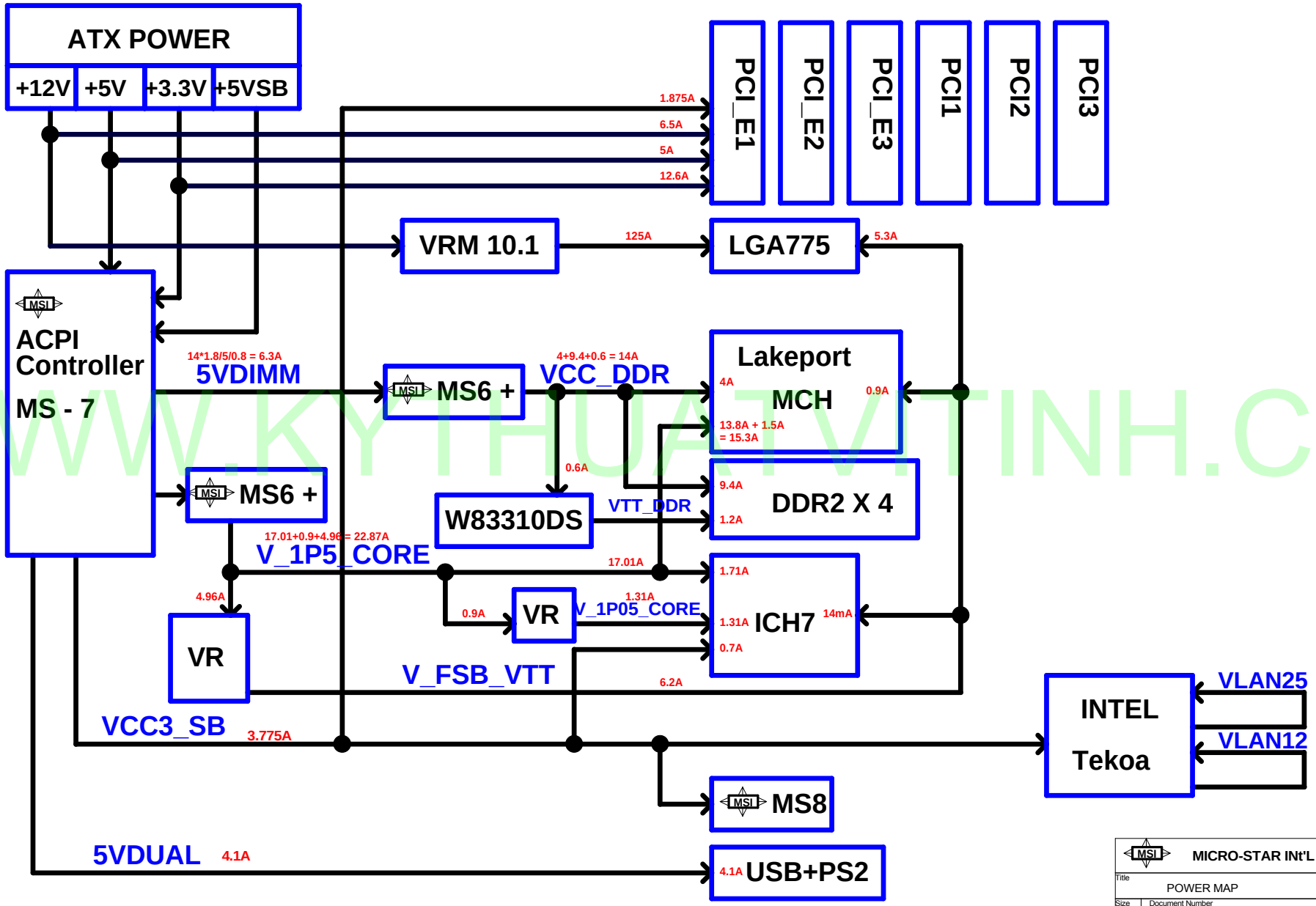
POWER MAP



MSI	MICRO-STAR INt'L CO., LTD.	
Title	POWER MAP	
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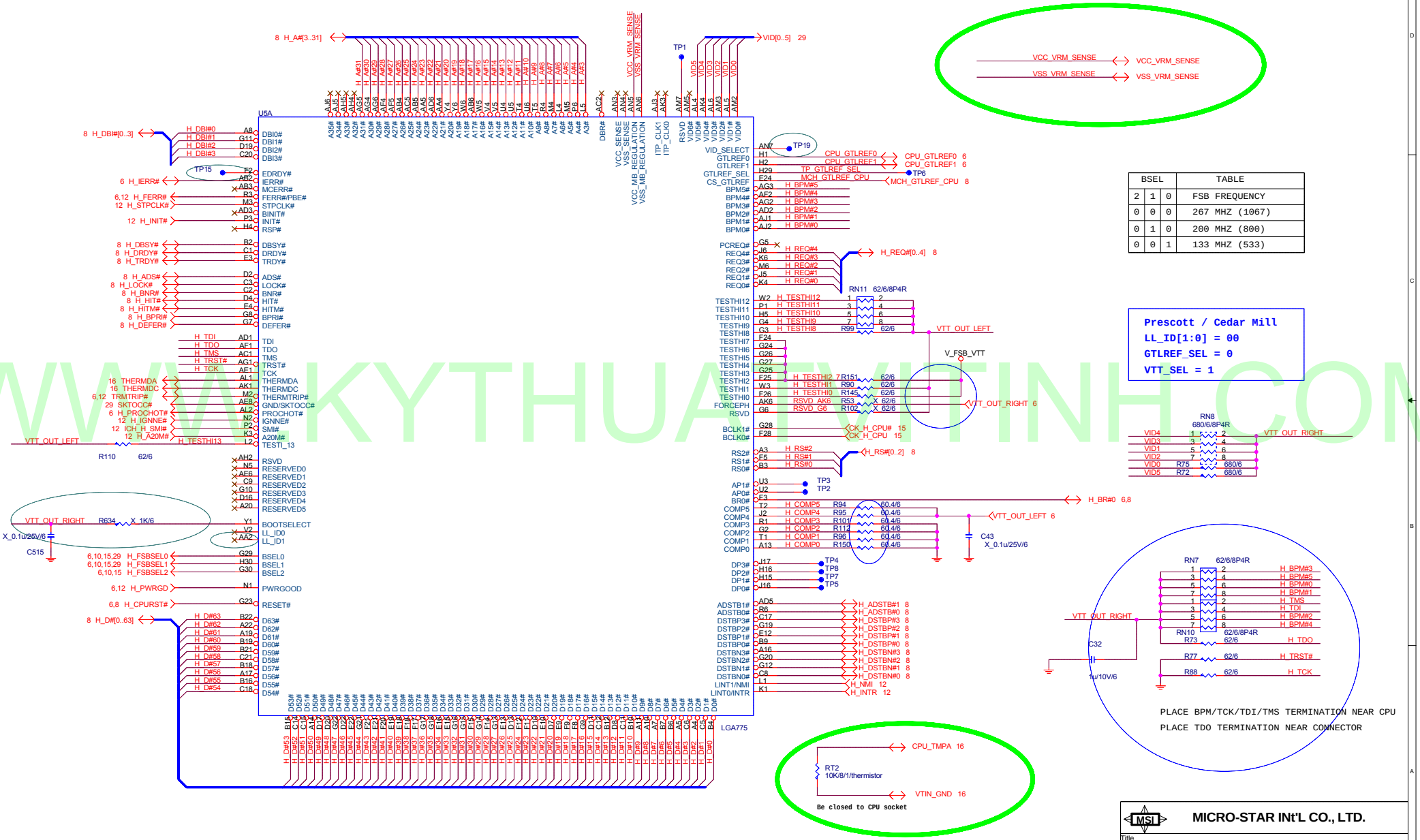
CPU SIGNAL BLOCK



BSEL			TABLE
2	1	0	FSB FREQUENCY
0	0	0	267 MHZ (1067)
0	1	0	200 MHZ (800)
0	0	1	133 MHZ (533)

Prescott / Cedar Mill
LL_ID[1:0] = 00
GTLREF_SEL = 0
VTT_SEL = 1

PLACE BPM/TCK/TDI/TMS TERMINATION NEAR CPU
PLACE TDO TERMINATION NEAR CONNECTOR

MICRO-STAR INt'L CO., LTD.

Title: Intel LGA775 CPU - Signals

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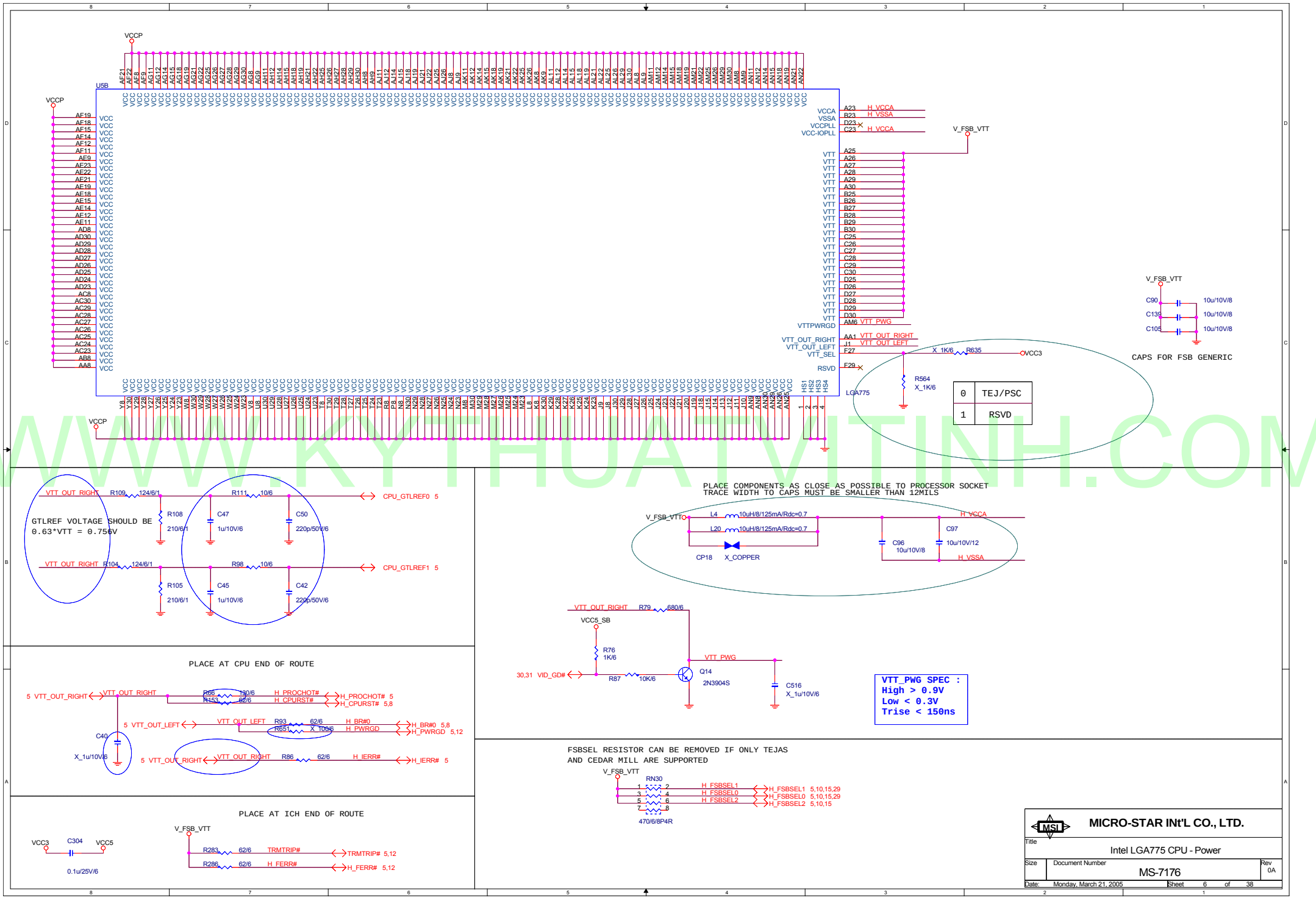

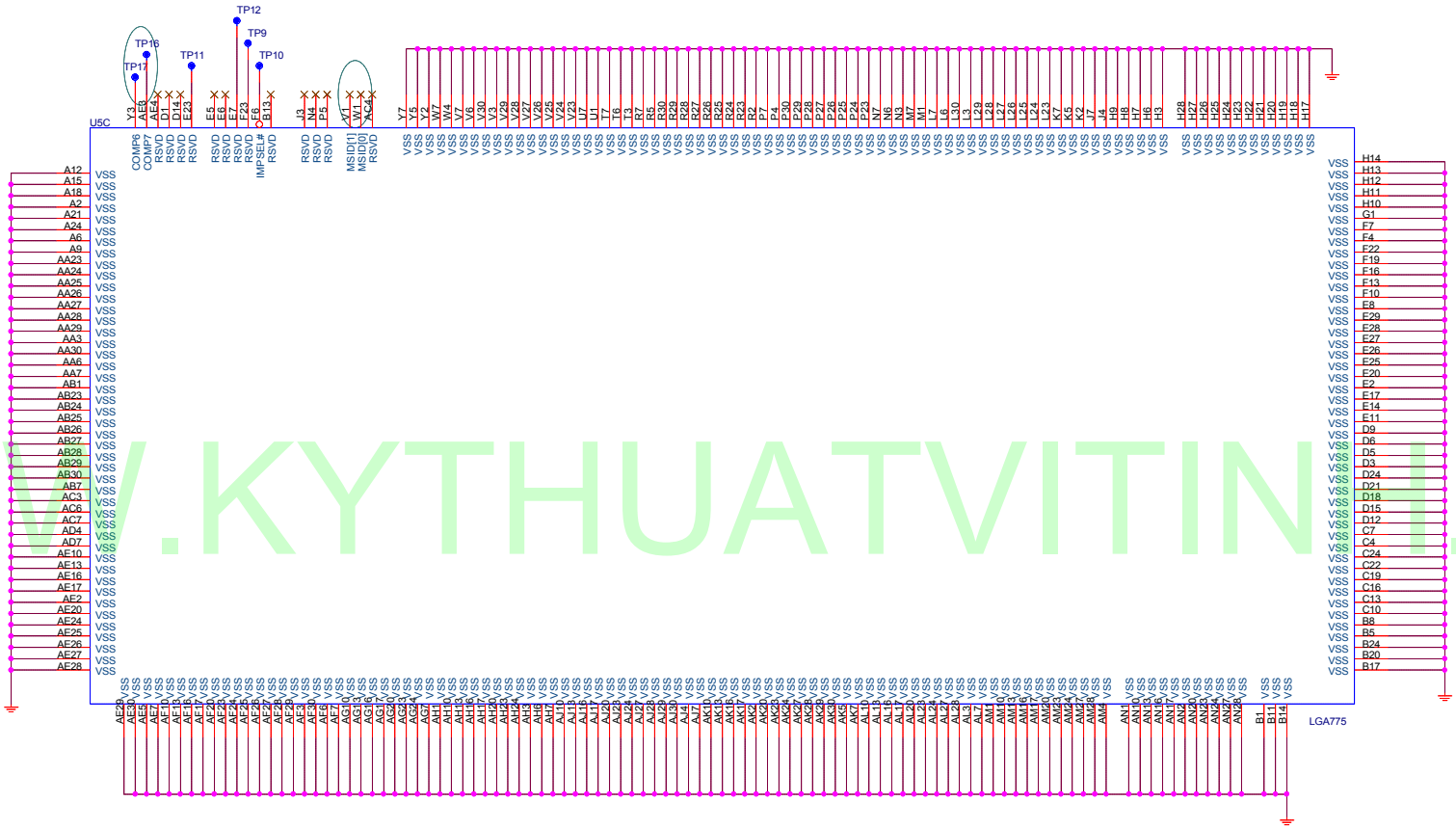

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Title	Intel LGA775 CPU - GND		
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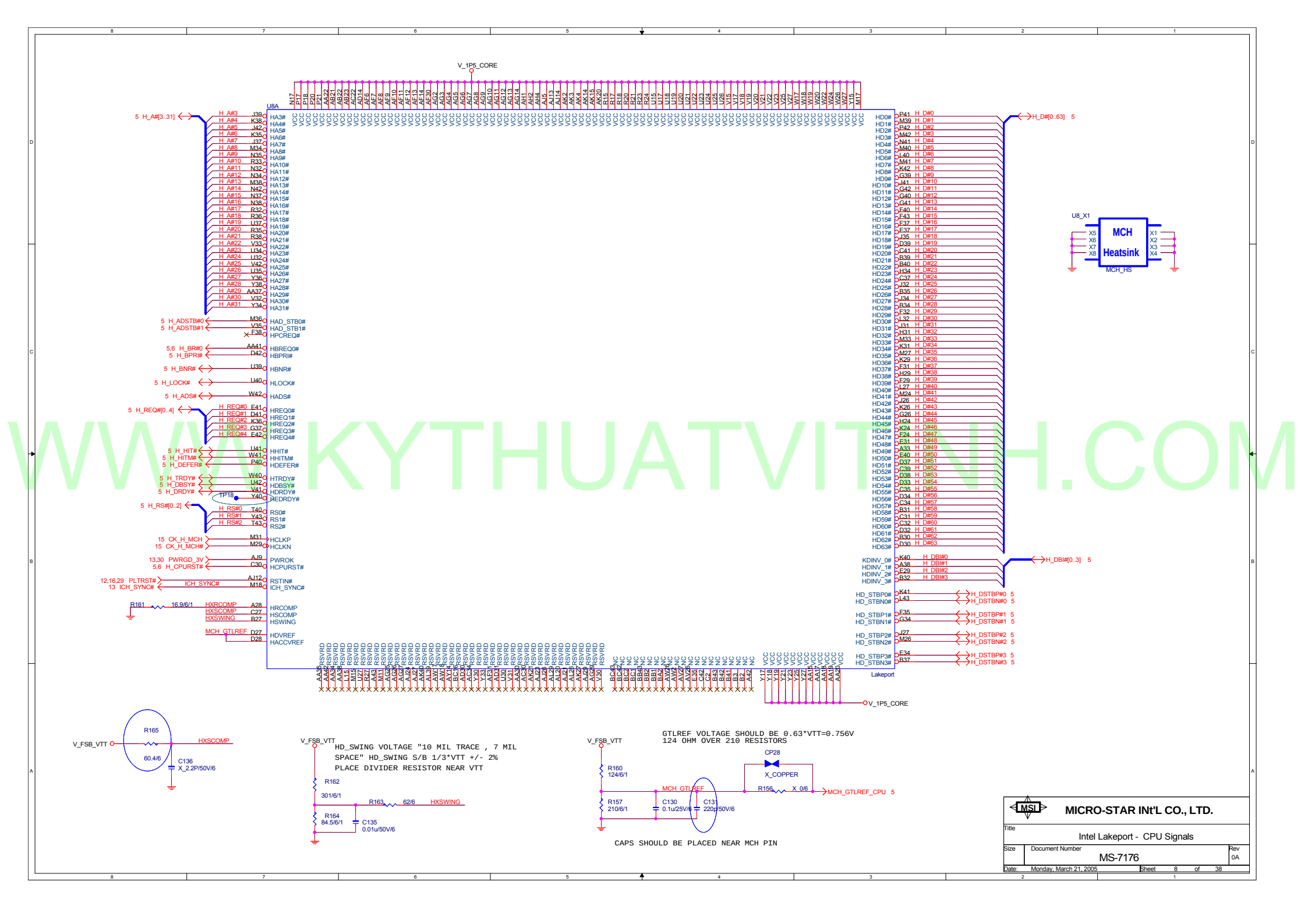

MICRO-STAR INt'L CO., LTD.

Title: Intel Lakeport - CPU Signals

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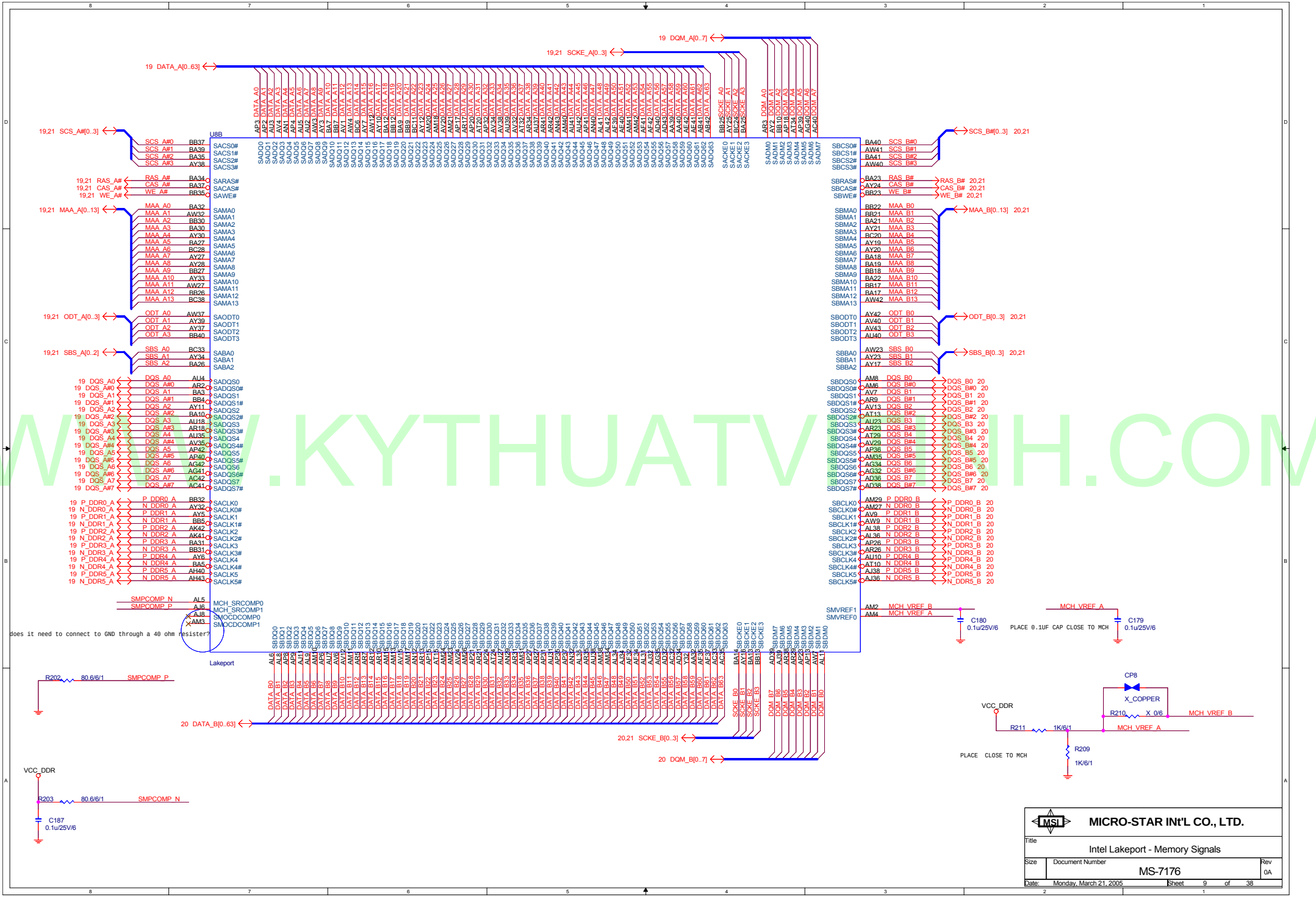

MSI MICRO-STAR INt'L CO., LTD.

Title: Intel Lakeport - Memory Signals

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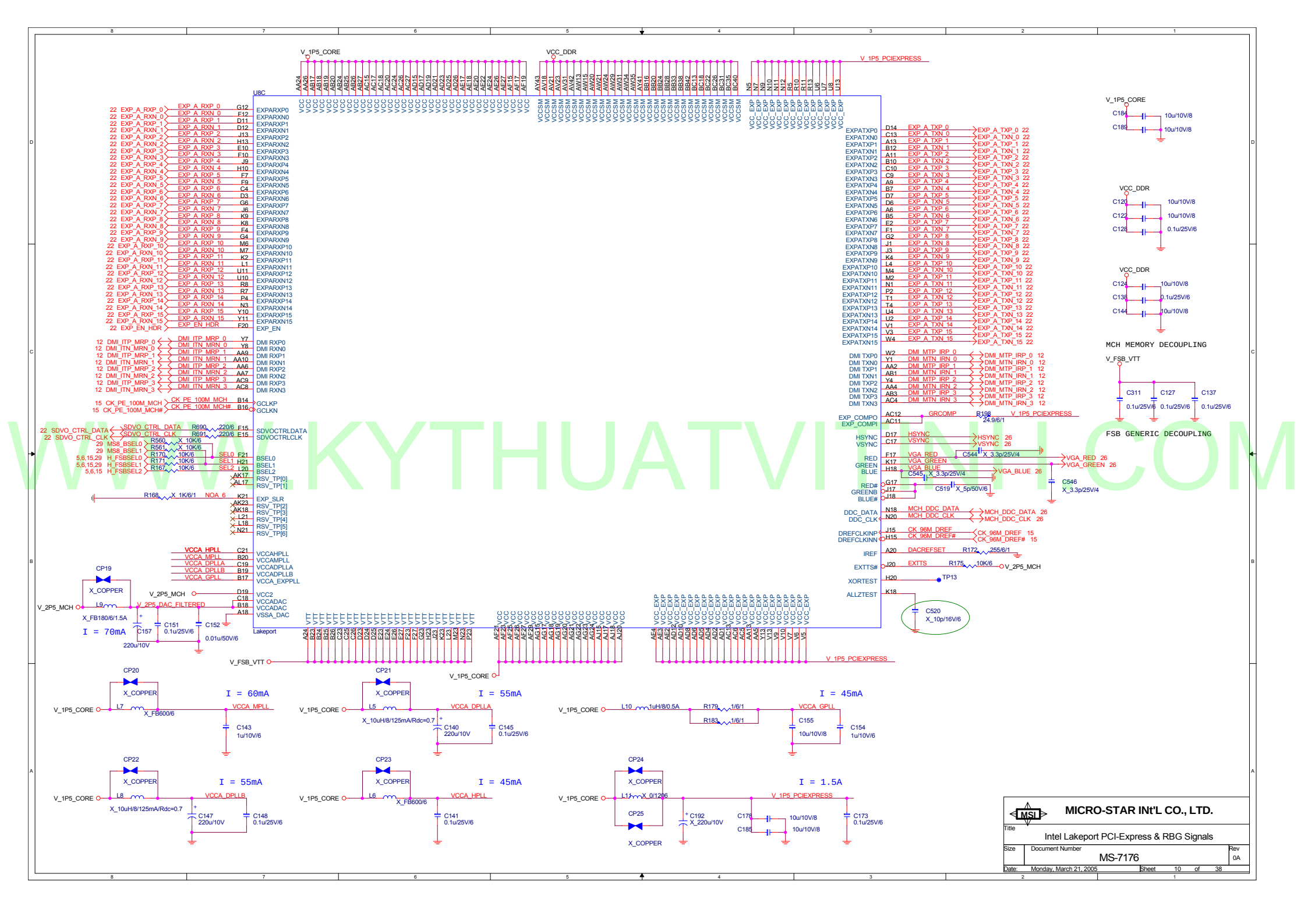

MSI MICRO-STAR INt'L CO., LTD.

Title: Intel Lakeport - GND

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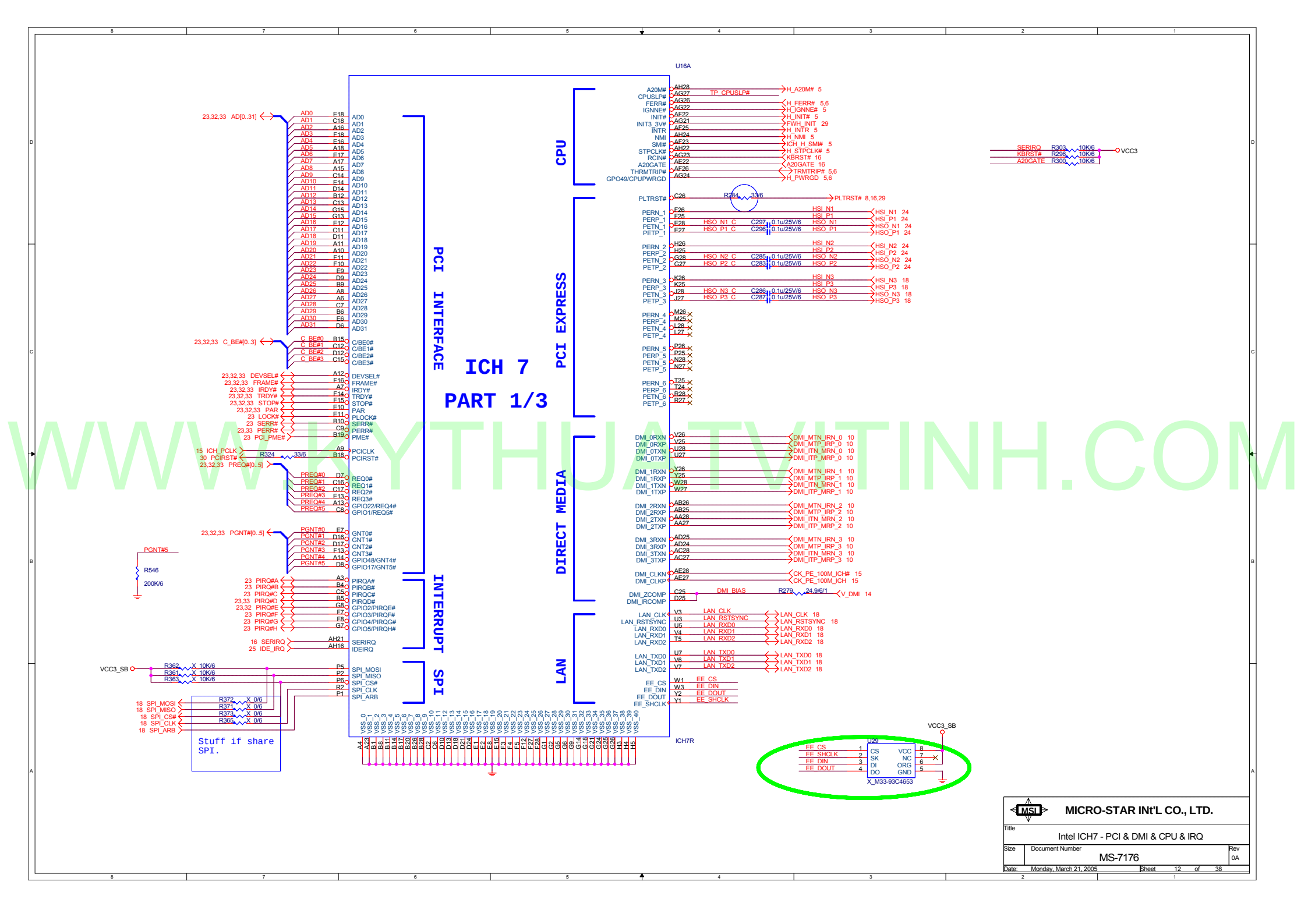
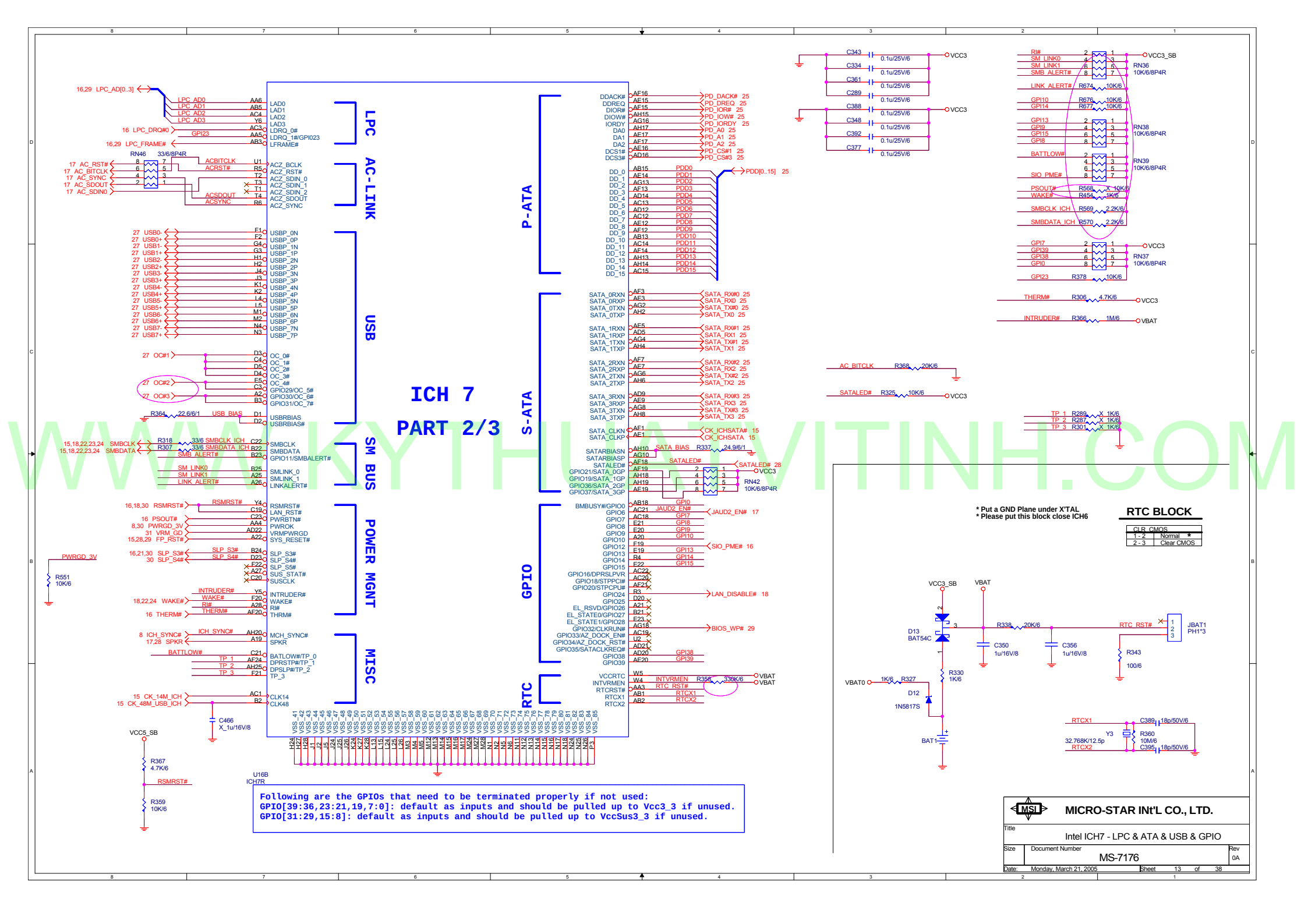
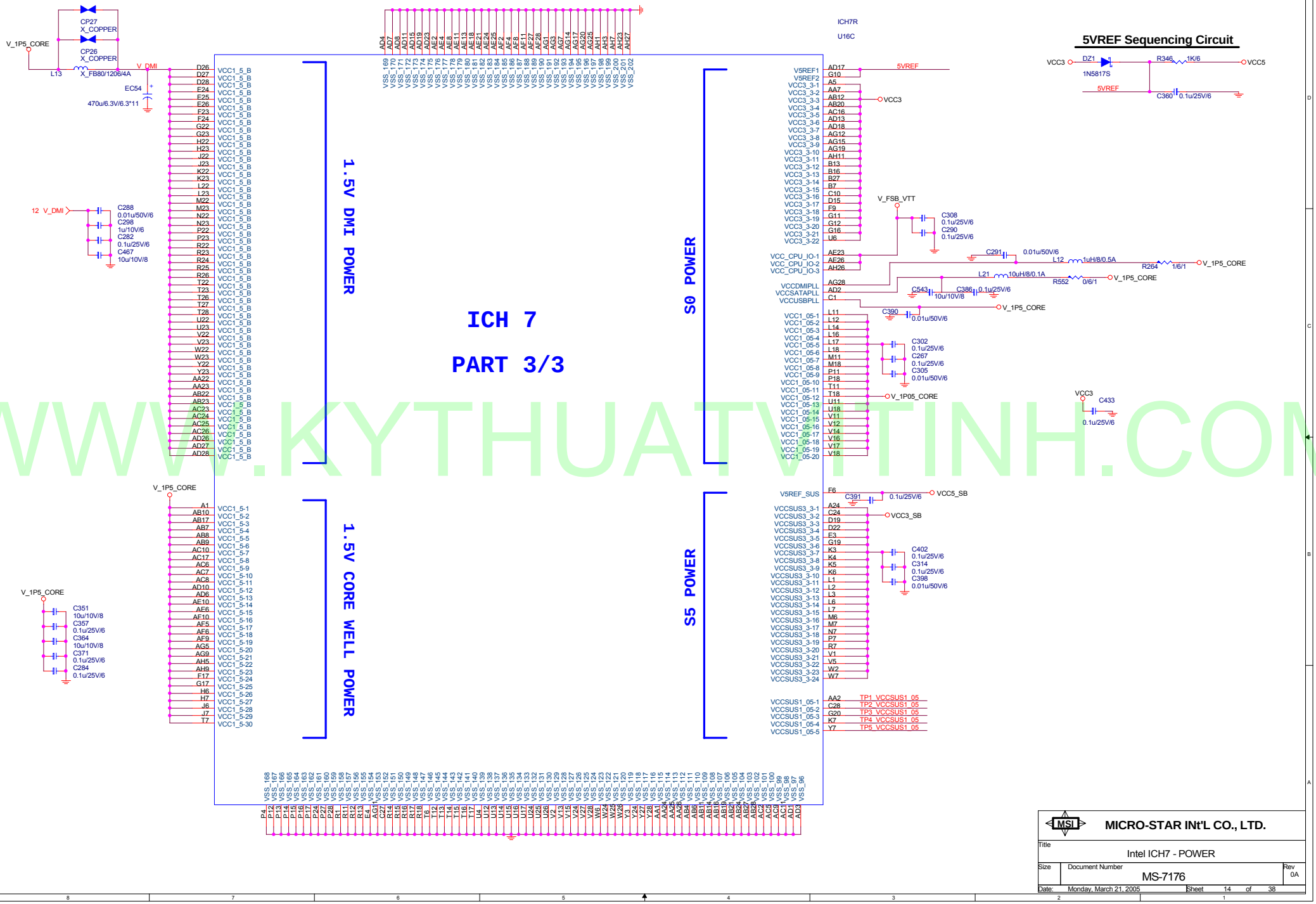
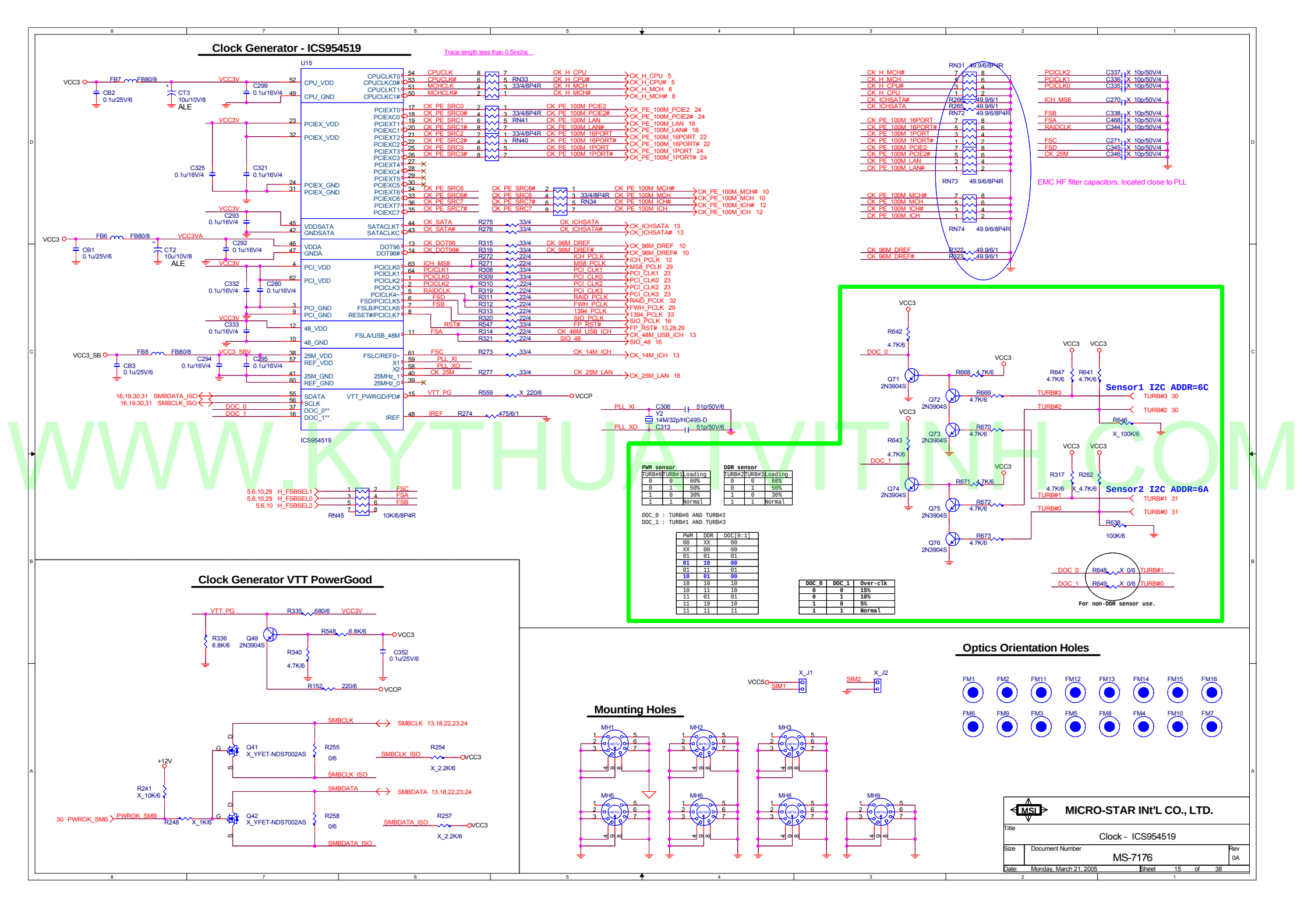
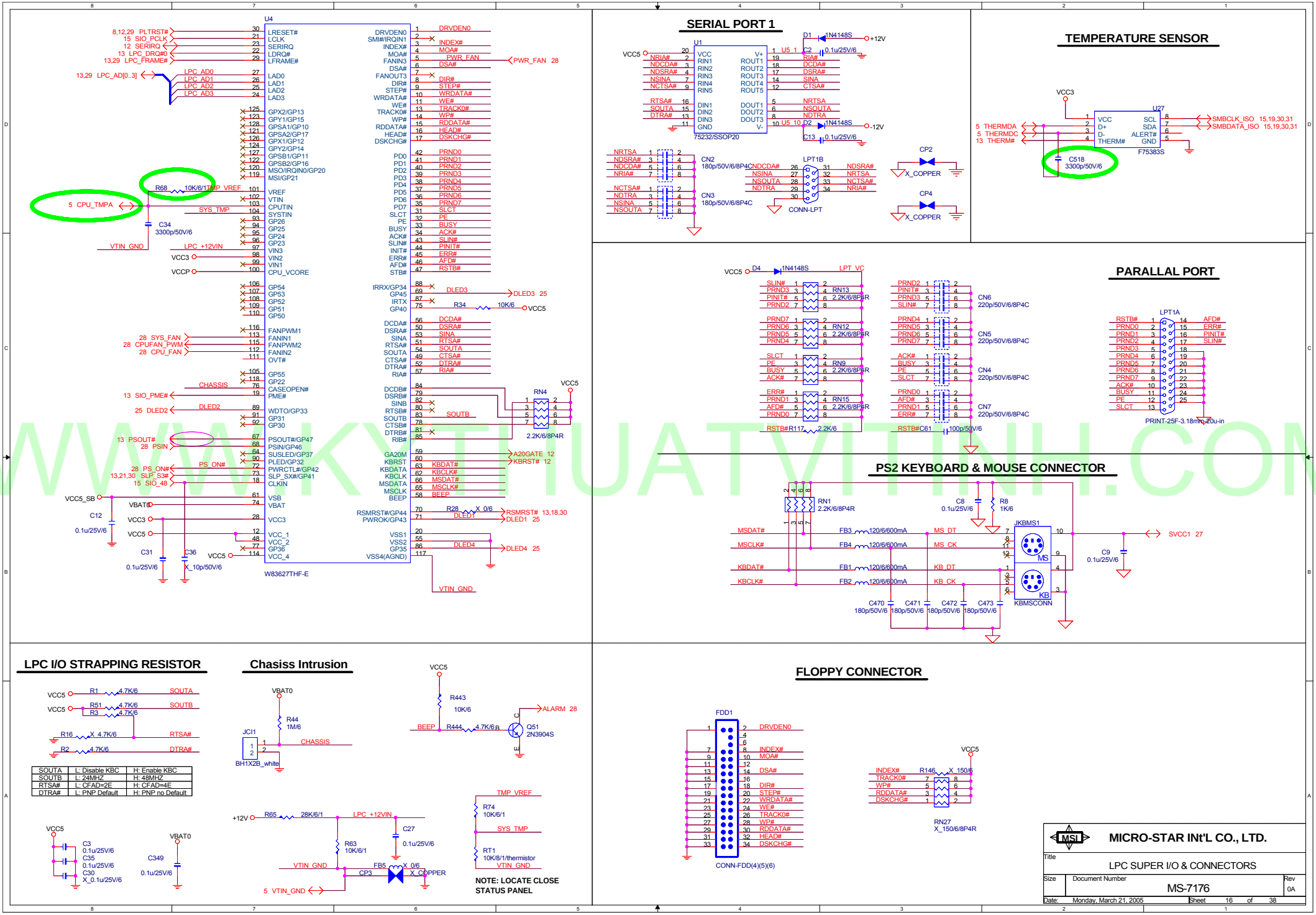
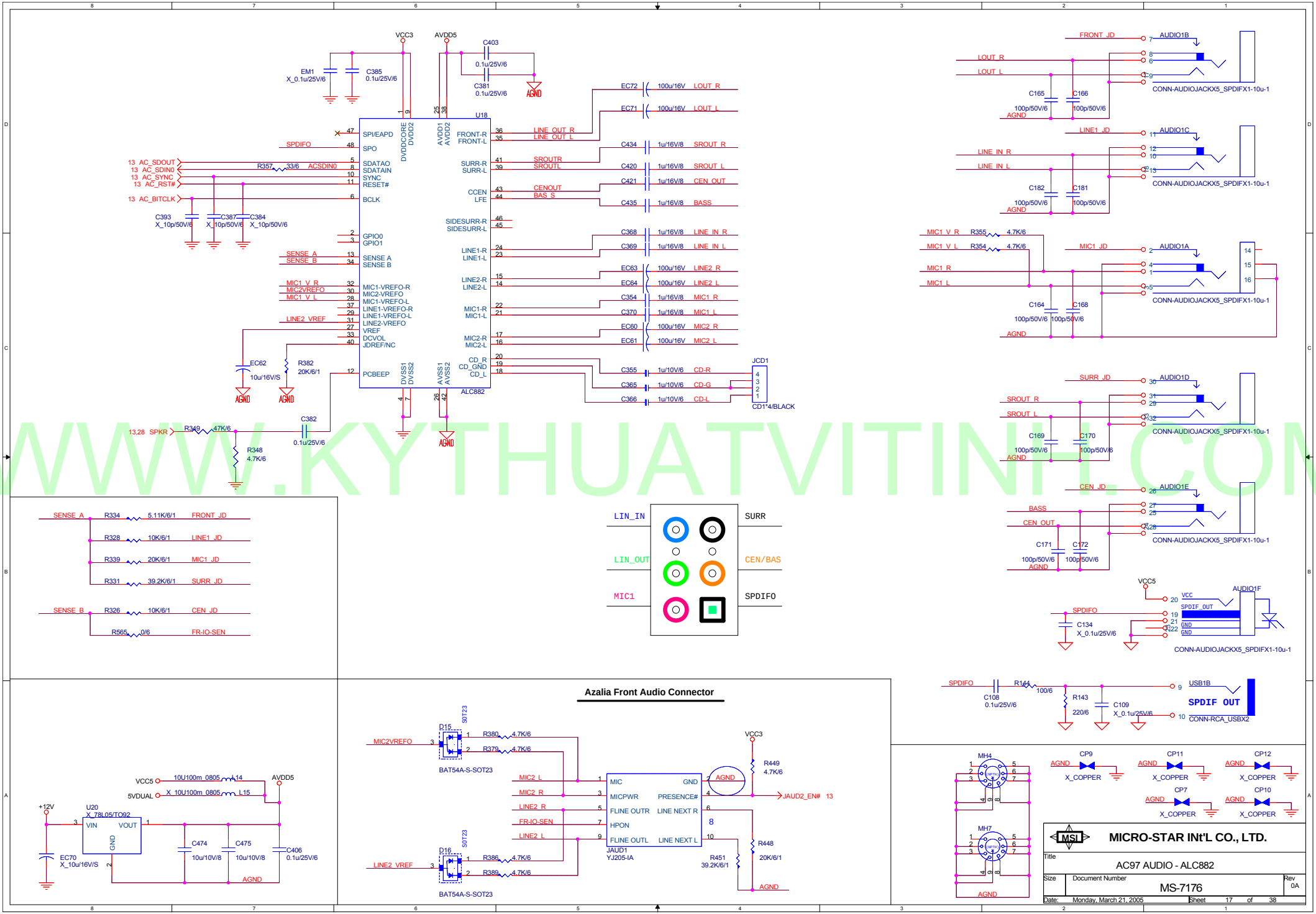




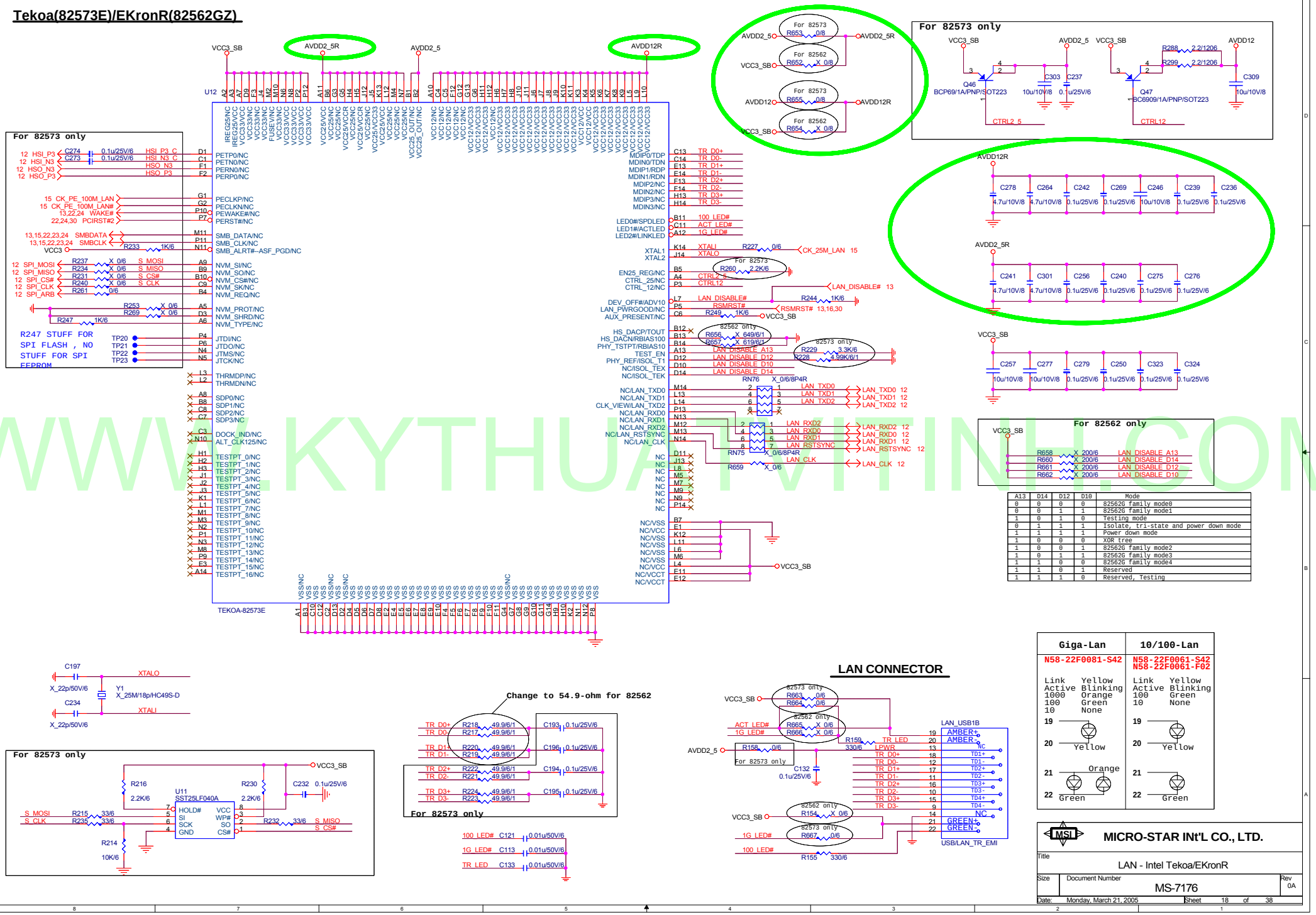




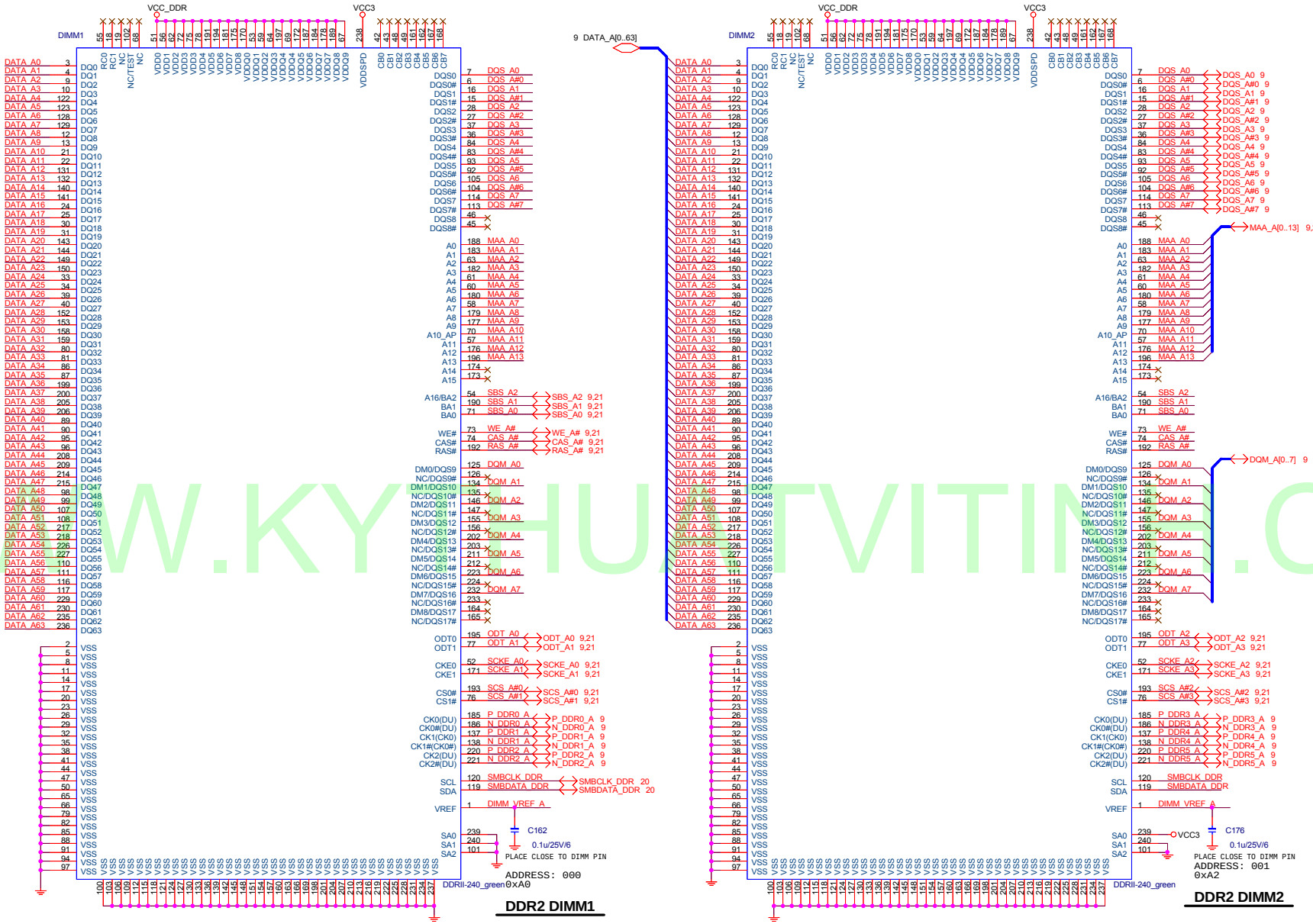




Tekoa(82573E)/EKronR(82562GZ)



A13	D14	D12	D10	Mode
0	0	0	0	82562G family mode0
0	0	1	1	82562G family mode1
1	0	1	0	Testing mode
0	1	1	1	Isolate, tri-state and power down mode
1	1	1	1	Power down mode
1	0	0	0	XOR tree
1	0	0	1	82562G family mode2
1	0	1	1	82562G family mode3
1	1	0	0	82562G family mode4
1	1	0	1	Reserved
1	1	1	0	Reserved, Testing



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Title	DDR II DIMM 1 & 2	
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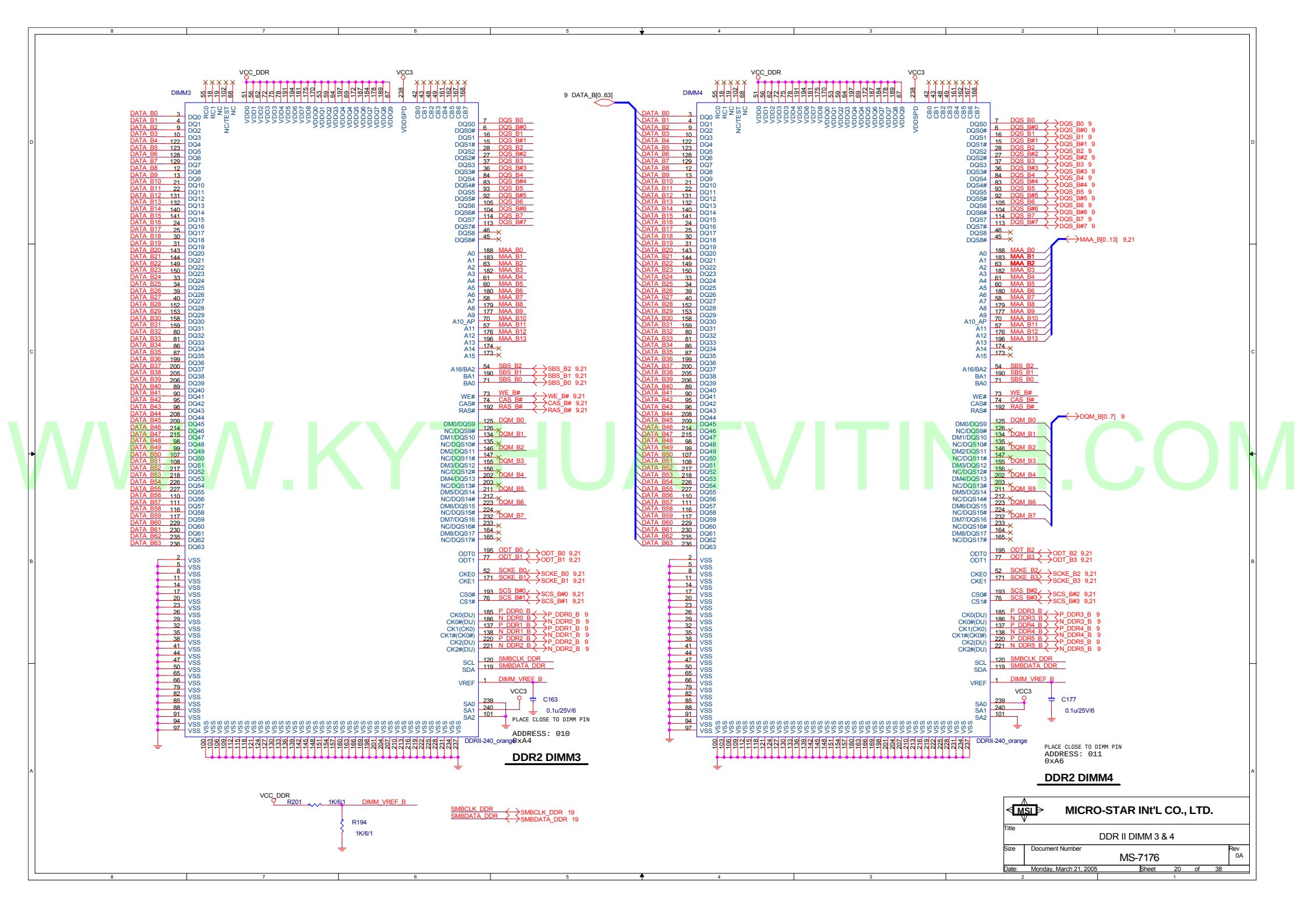

MICRO-STAR INt'L CO., LTD.

Title: DDR II DIMM 3 & 4

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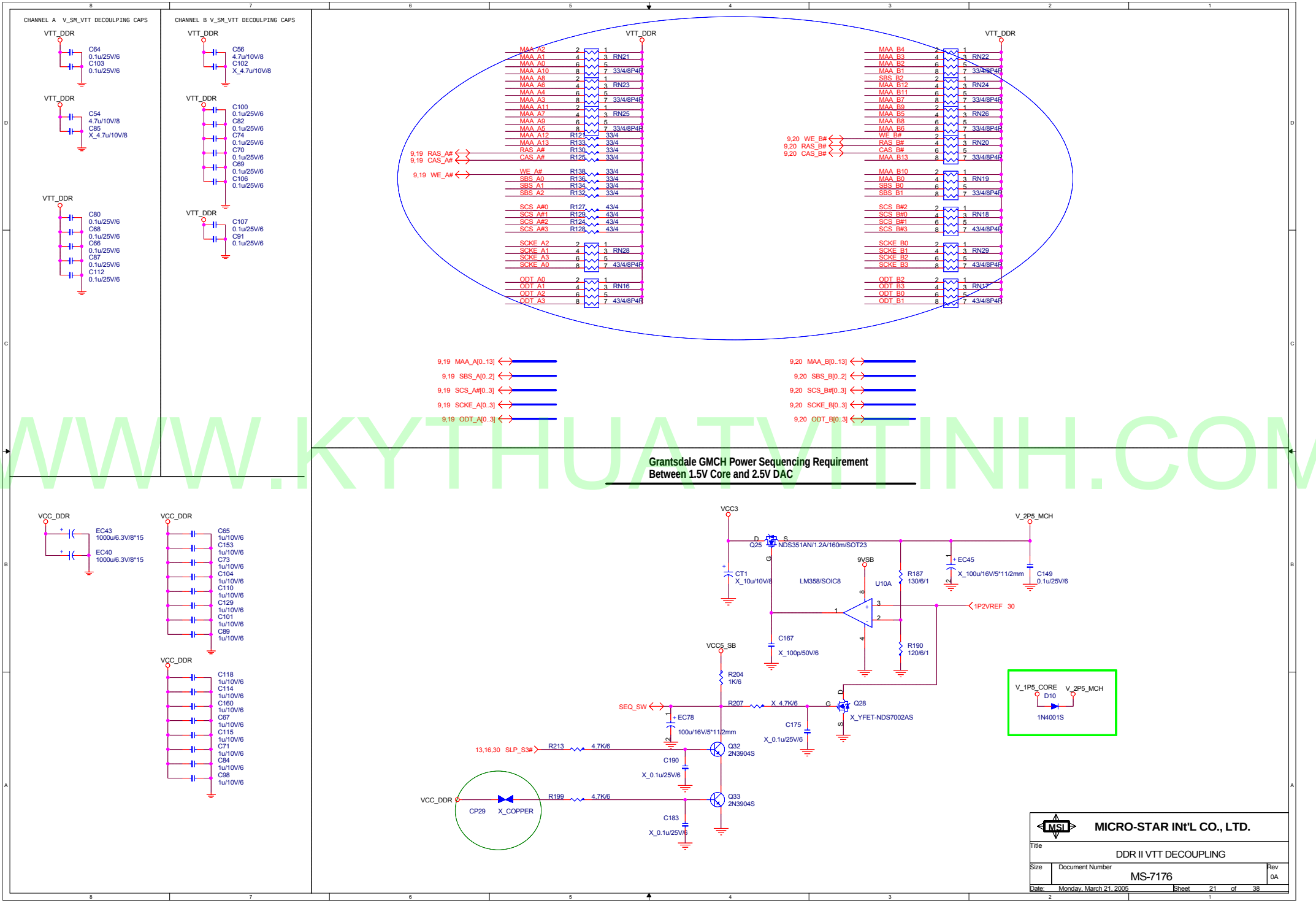

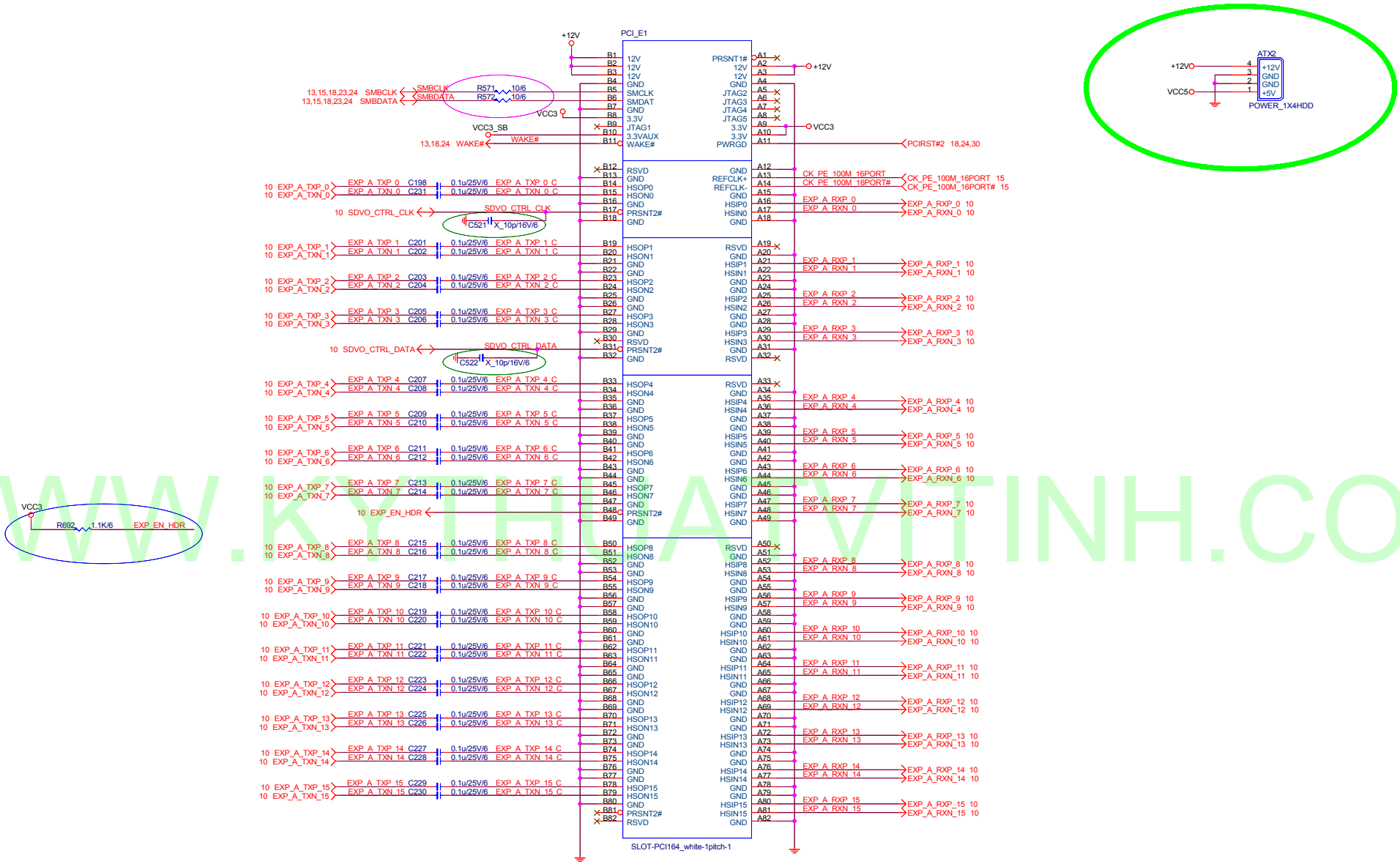

MSI	MICRO-STAR INt'L CO., LTD.
Title	PCI EXPRESS 16 PORT
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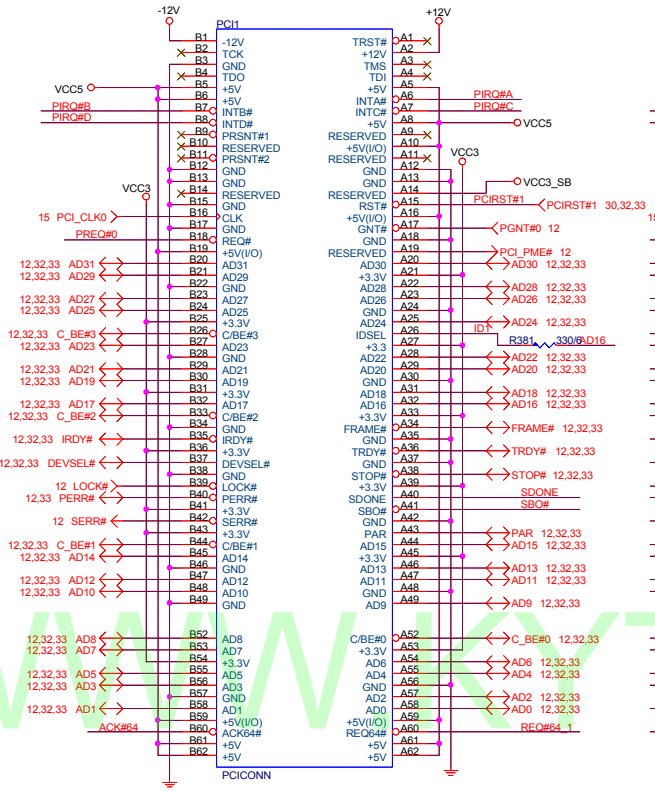
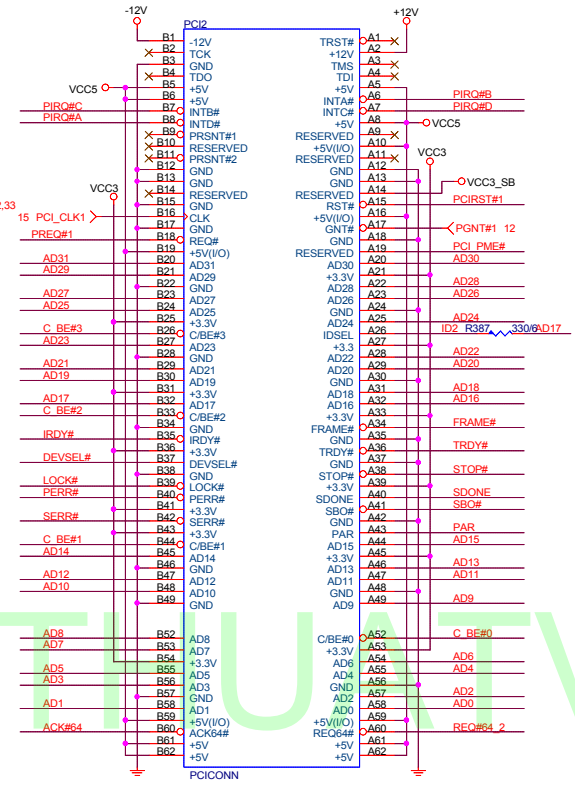
PCI SLOT 1 (PCI VER: 2.2 COMPLY)



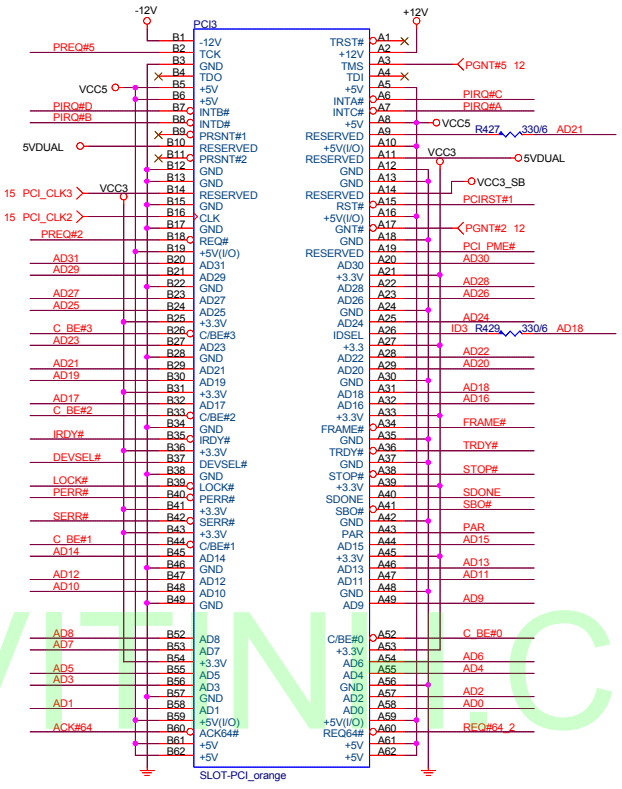
IDSEL = AD16
MASTER = PREQ#0
PIRQ#A

PCI SLOT 2 (PCI VER: 2.2 COMPLY)



IDSEL = AD17
MASTER = PREQ#1
PIRQ#B

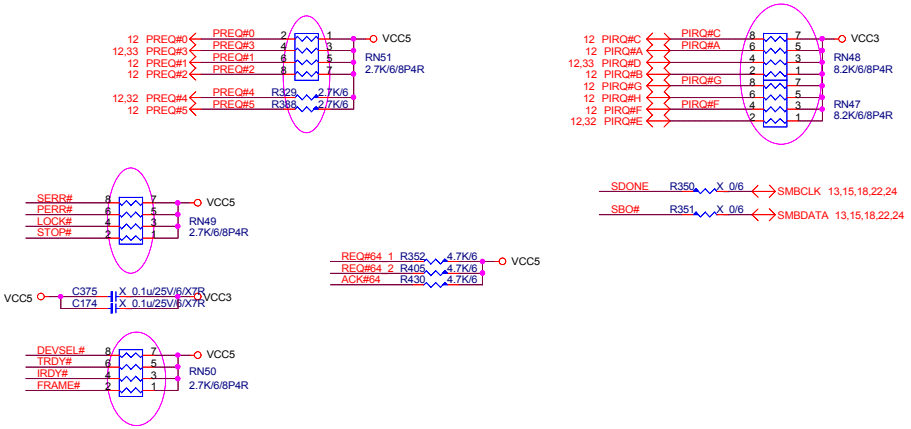
PCI SLOT 2 (PCI VER: 2.2 COMPLY)



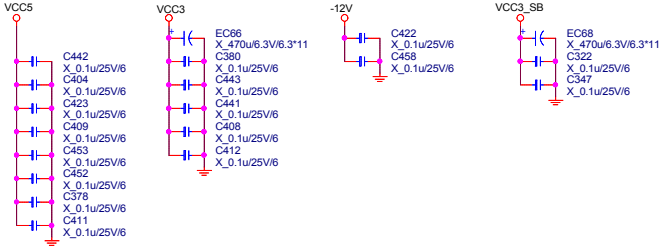
IDSEL = AD18
MASTER = PREQ#2
PIRQ#C

IDSEL = AD21
MASTER = PREQ#5

PCI PULL-UP / DOWN RESISTORS



PCI SLOT DECOUPLING CAPACITORS



MICRO-STAR INT'L CO., LTD.

Title: PCI 1~ 3 Slots

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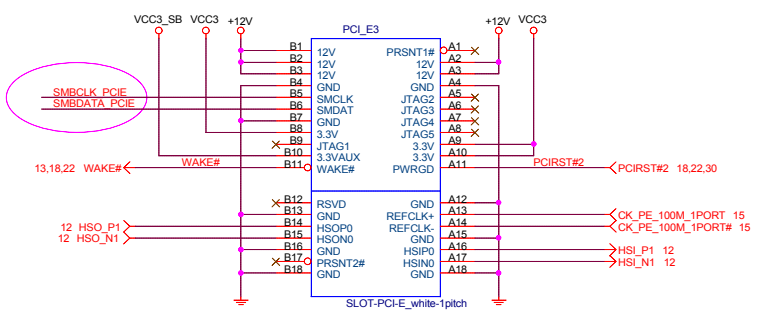
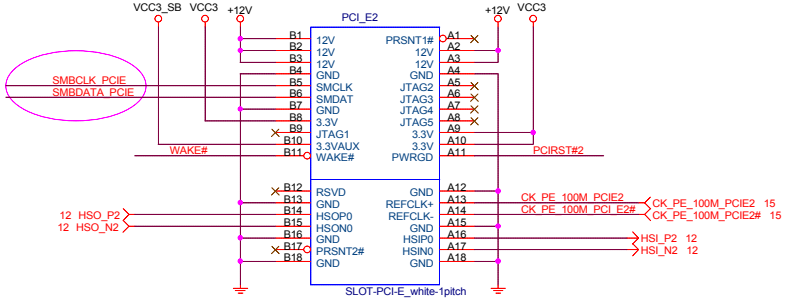
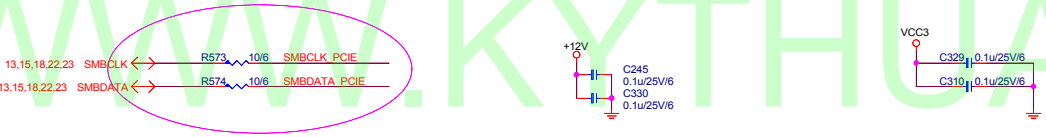
PCI EXPRESS 1-PORT







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Title	PCI EXPRESS X1	
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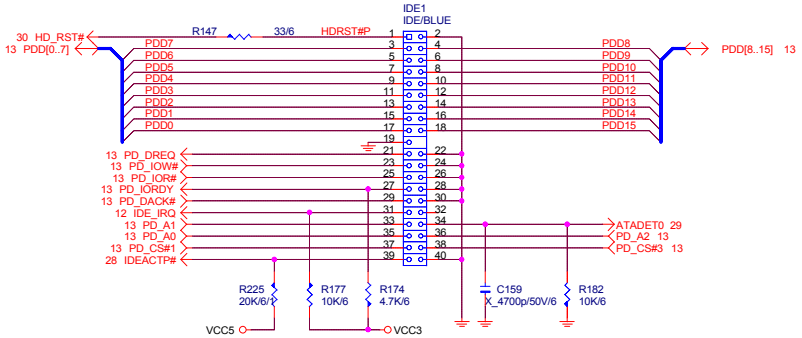
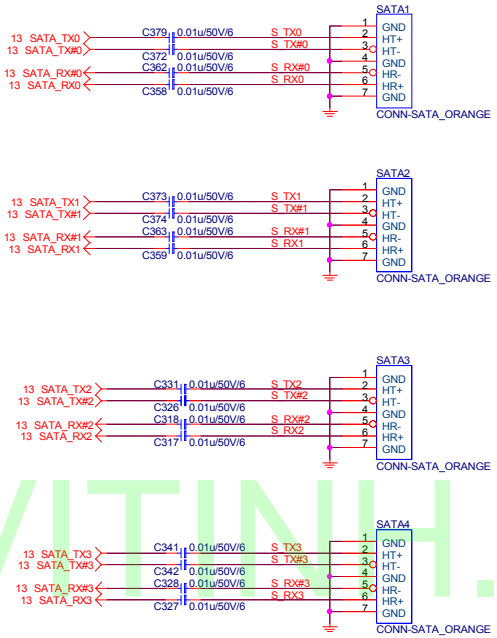
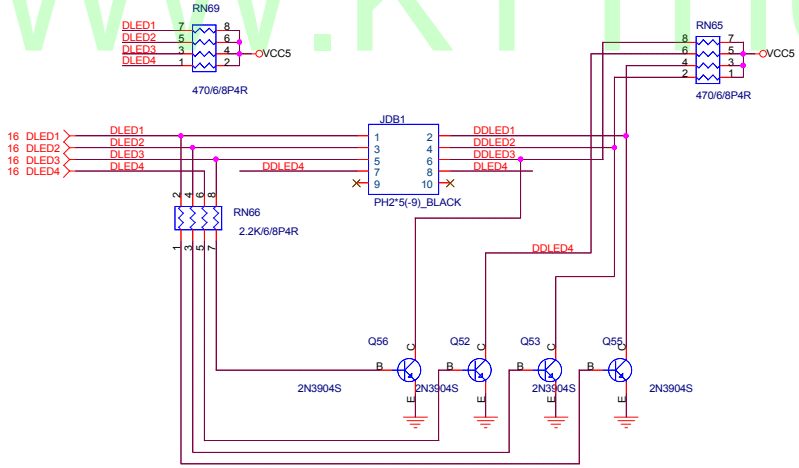
ATA 33/66/100 IDE Connectors



SERIAL ATA CONNECTOR BLOCK



Diag LED Pin Header



MSI MICRO-STAR INt'L CO., LTD.

Title: ATA33/66/100 IDE & SATA Connectors

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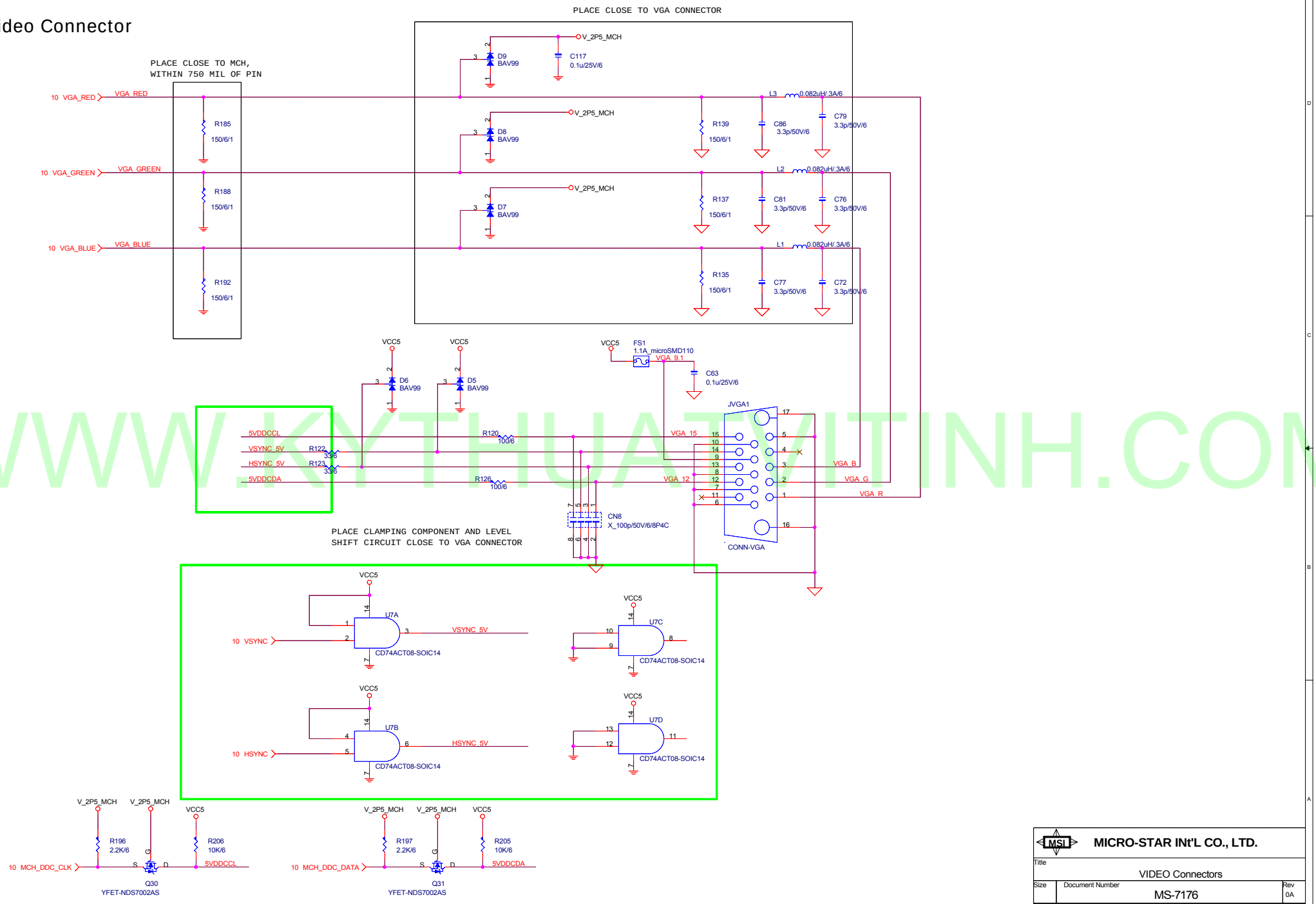
Video Connector



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Title	VIDEO Connectors	
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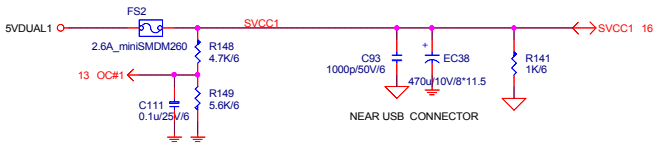
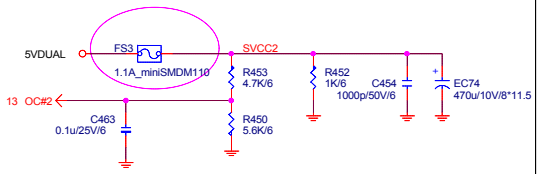
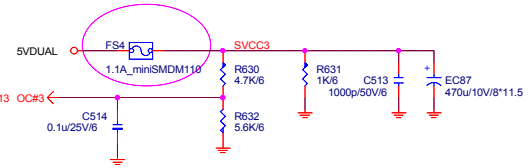
POWER CIRCUIT FOR USB PORT 0,1,2,3 (REAR)



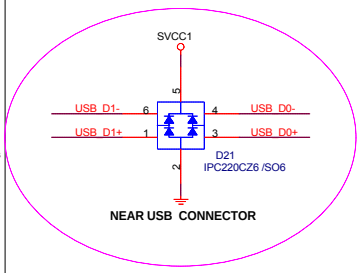
POWER CIRCUIT FOR USB PORT 4,5 (FRONT)

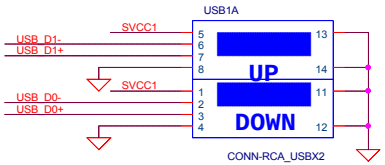


POWER CIRCUIT FOR USB PORT 6,7 (FRONT)

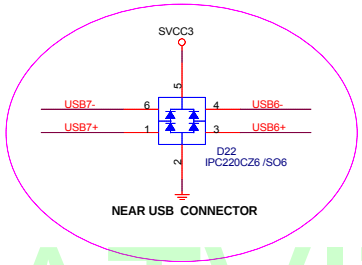


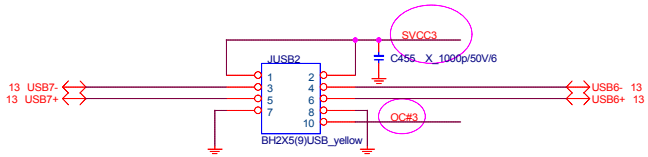
REAR PANEL USB CONNECTOR FOR USB PORT 0,1



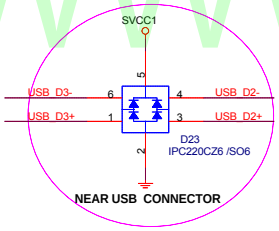


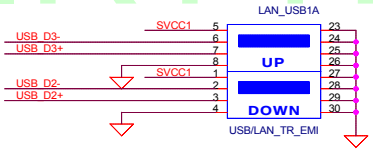
FRONT PANEL USB CONNECTOR FOR USB PORT 6,7

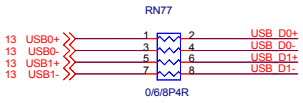


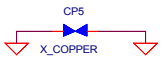


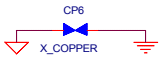
REAR PANEL USB CONNECTOR FOR USB PORT 2,3

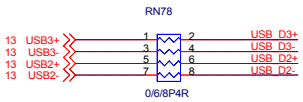




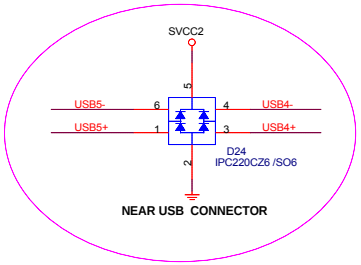


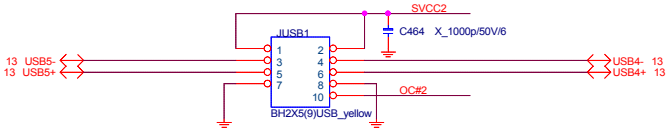






FRONT PANEL USB CONNECTOR FOR USB PORT 4,5





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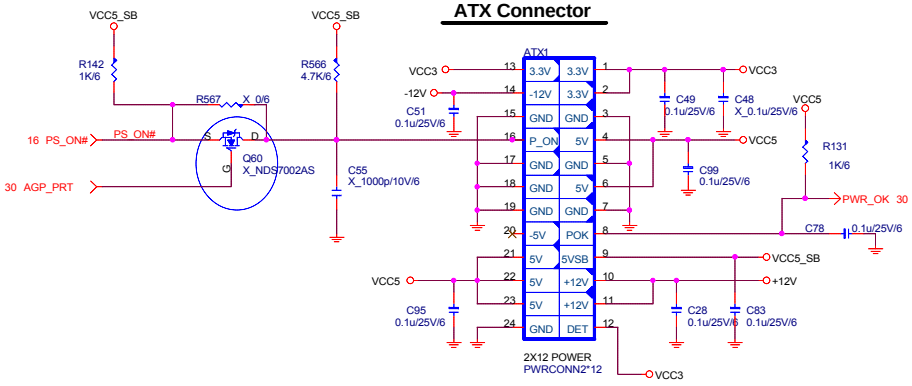
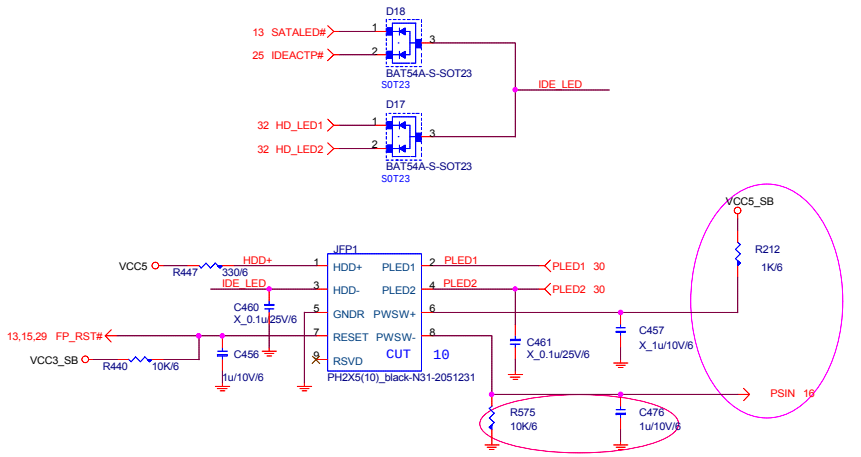
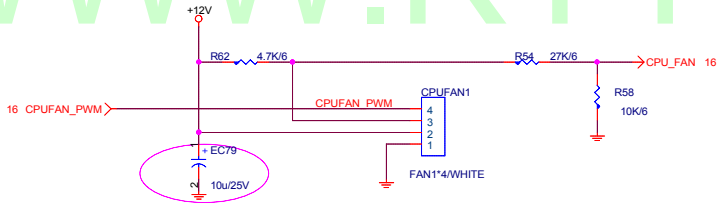
ATX Connector



INTEL/PB Front Panel Connector



CPU FAN



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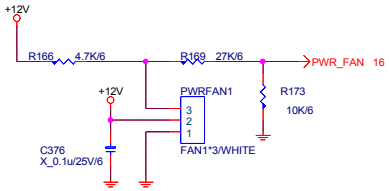
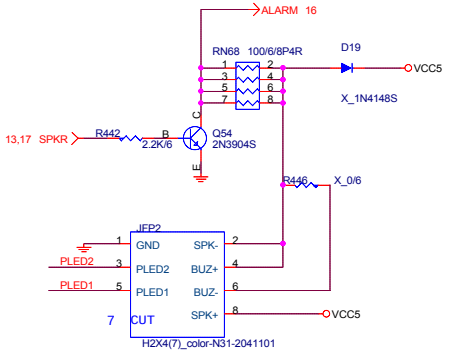
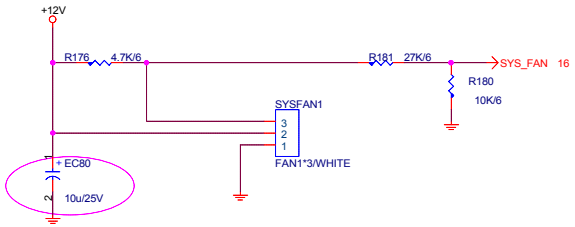


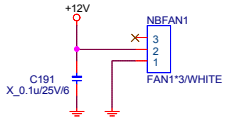
MSI Front Panel Connector



SYSTEM FAN



NB FAN



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Title	ATX Connector & Front Panel
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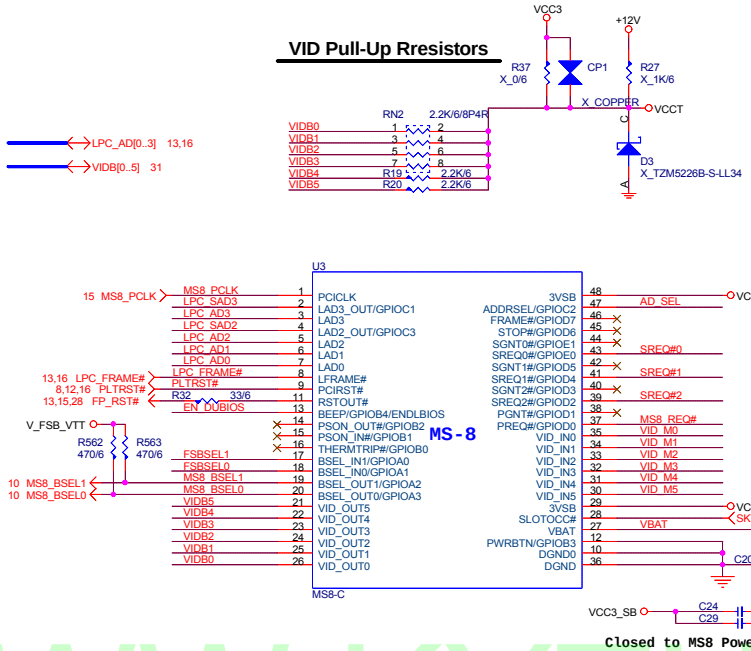

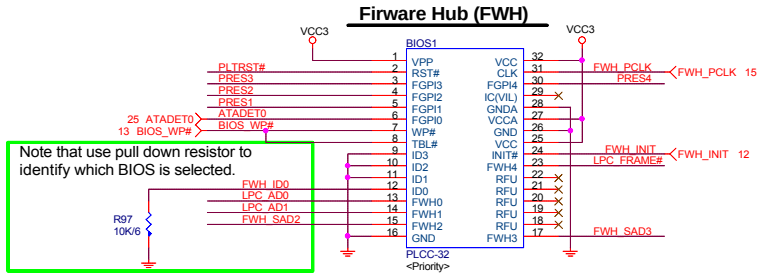

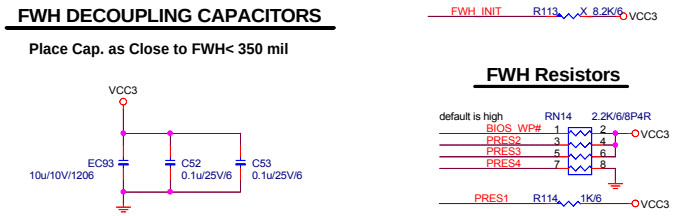

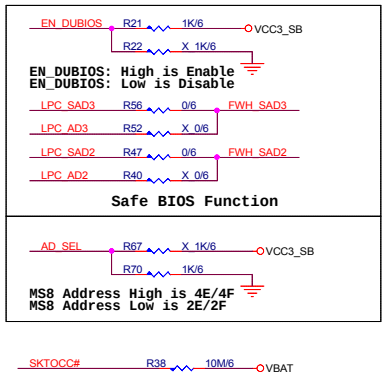

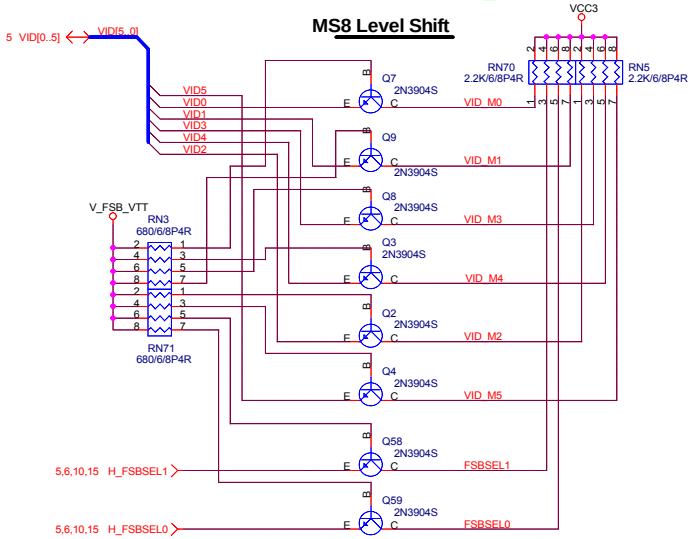

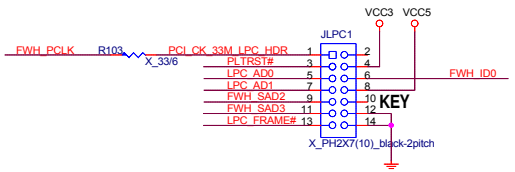

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Title: MS8 & FWH & LPC Debug Port

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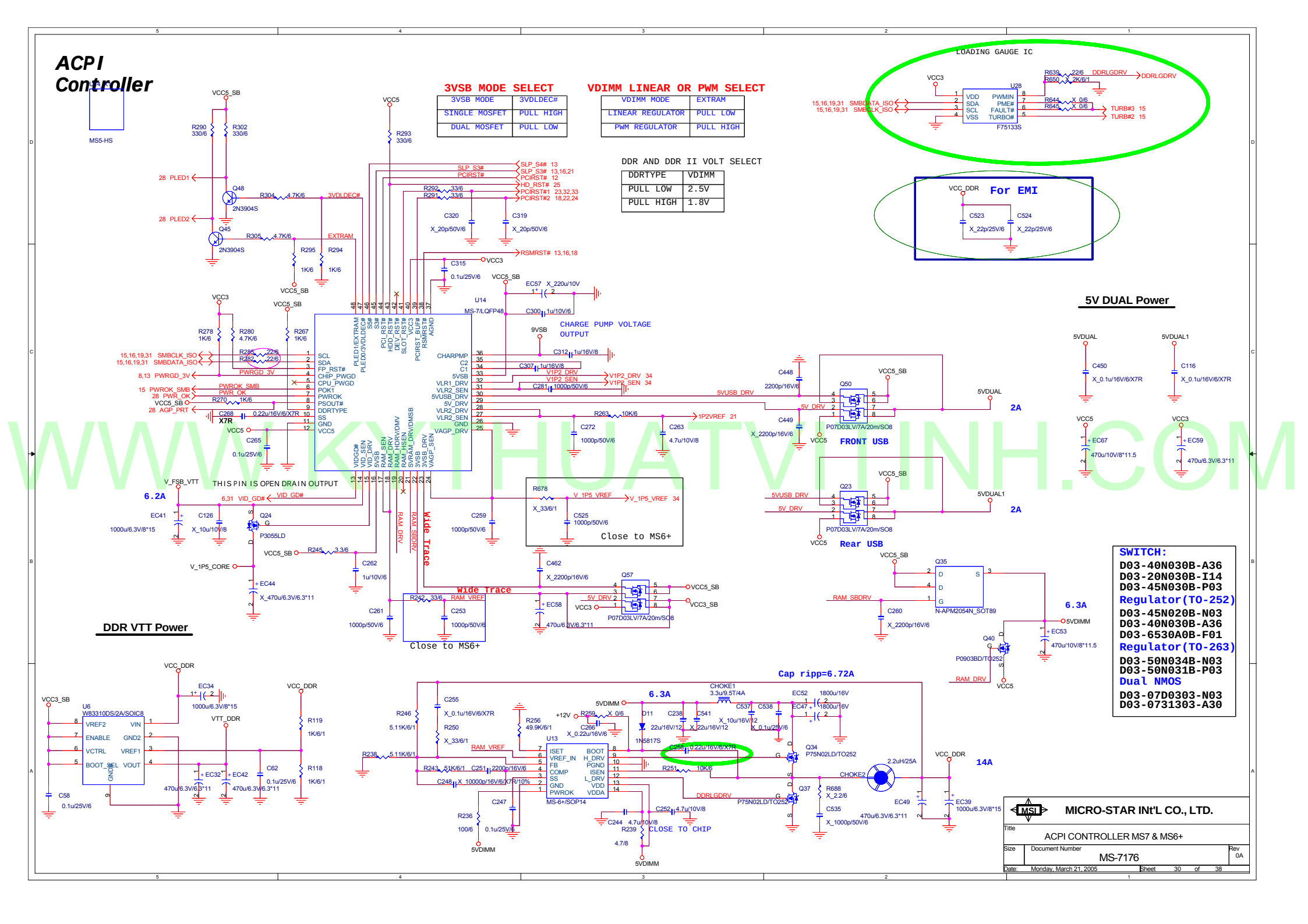
ACPI Controller



MICRO-STAR INt'L CO., LTD.

Title: ACPI CONTROLLER MS7 & MS6+

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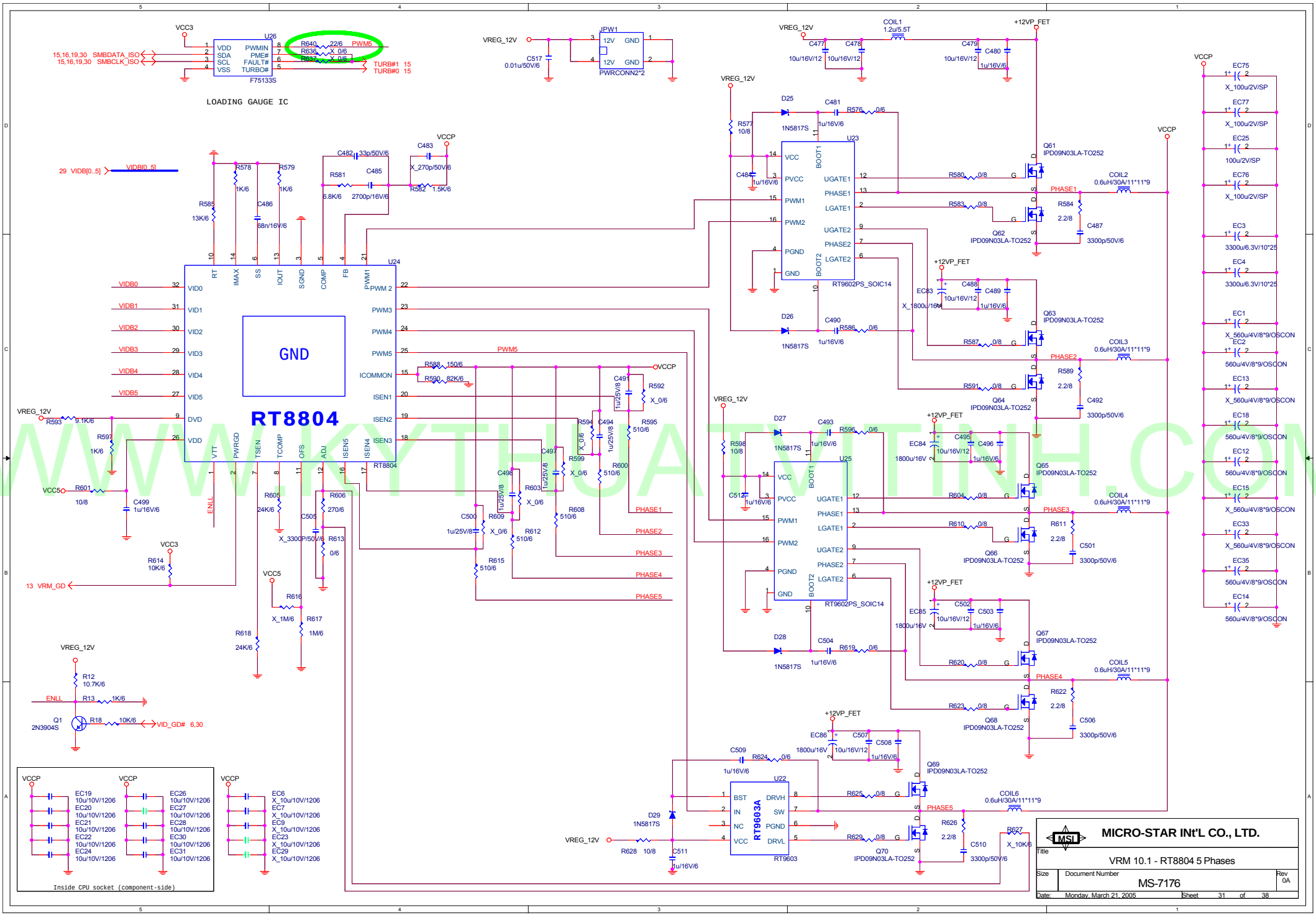

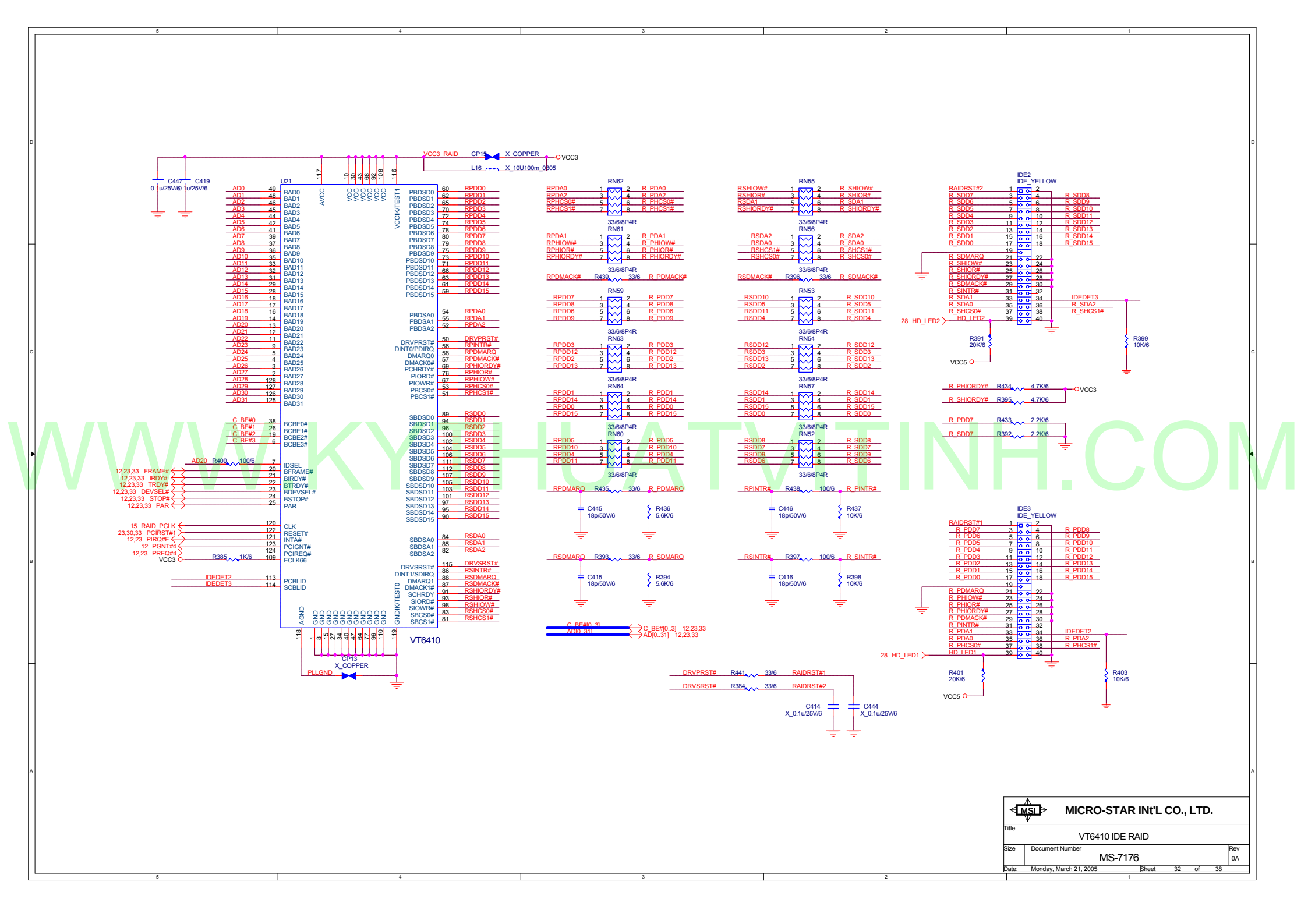

MSI MICRO-STAR INt'L CO., LTD.

Title	VT6410 IDE RAID	
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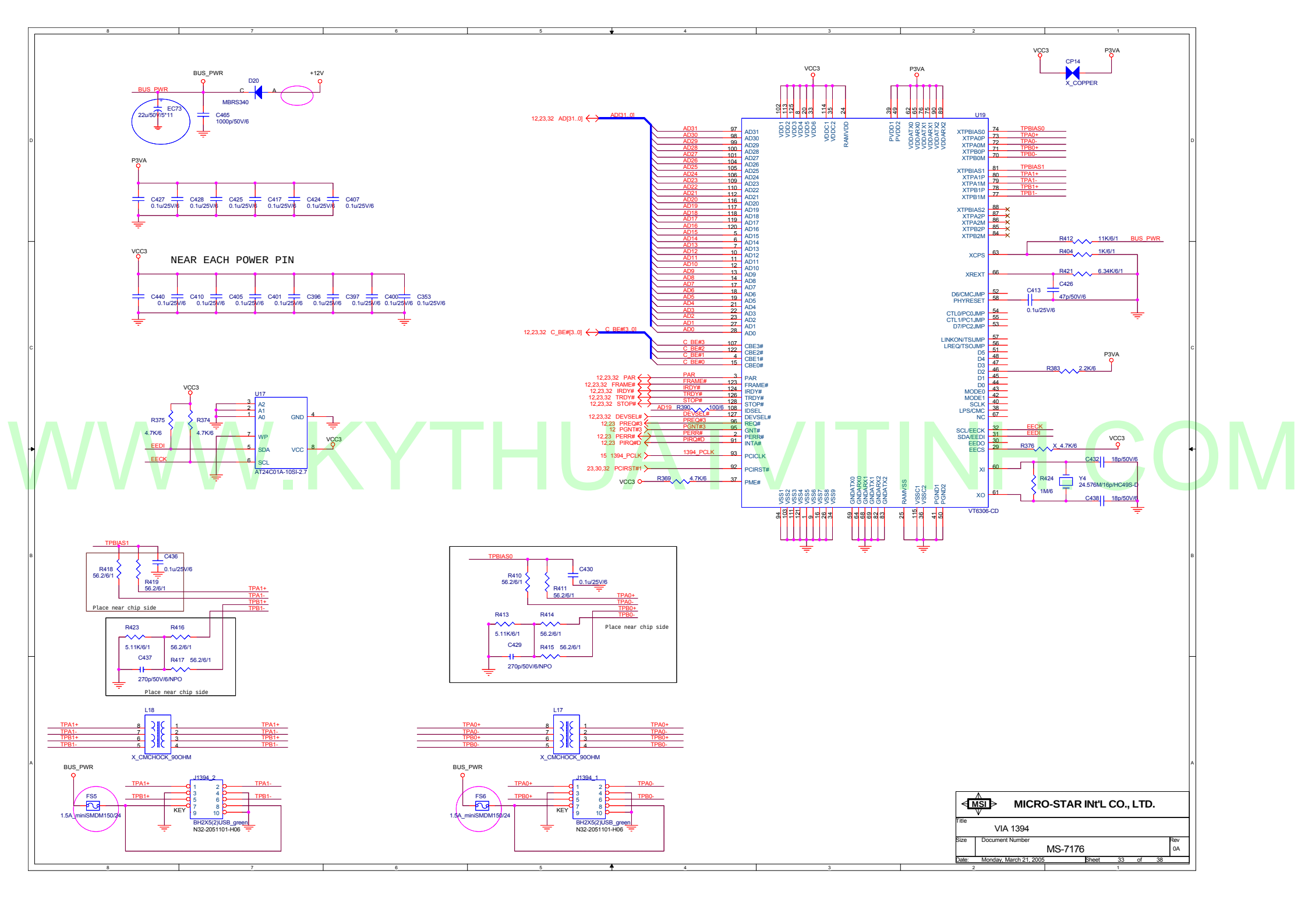

MSI	MICRO-STAR INt'L CO., LTD.	
Title	VIA 1394	
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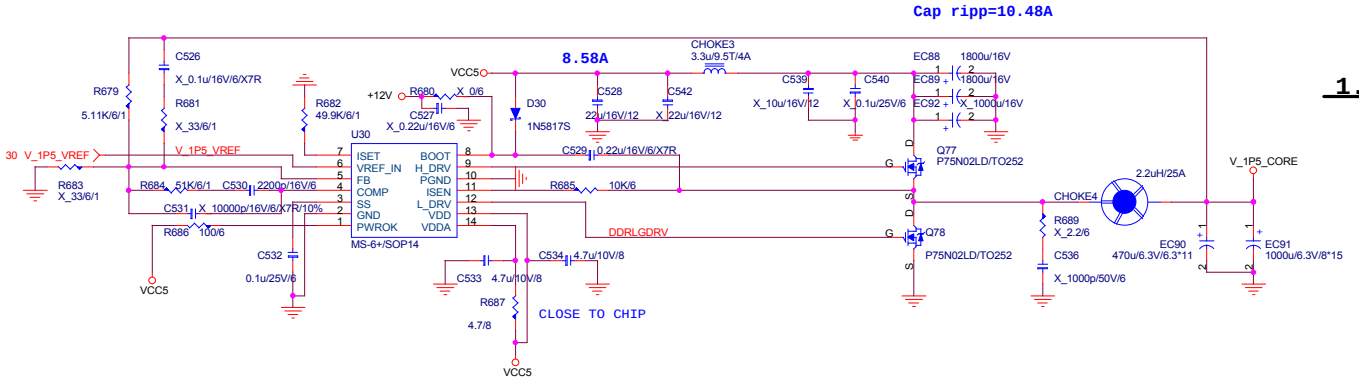

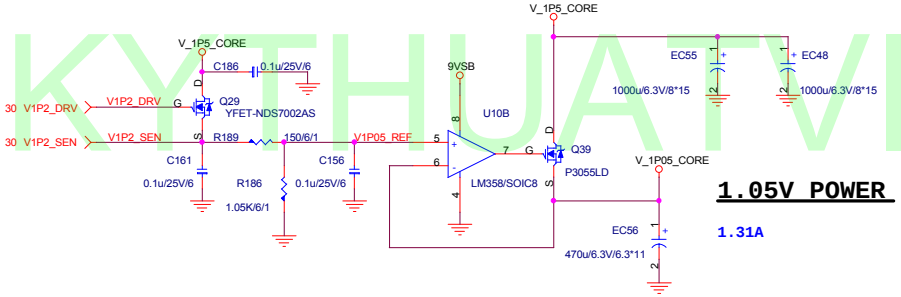

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Title	GMCH VCORE	
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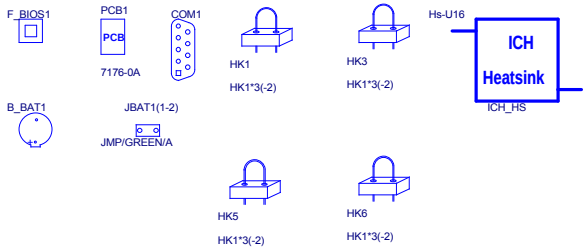
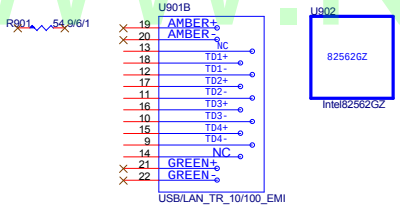
Auto-BOM Manual Parts



Auto-BOM Option Parts



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ICH7

GPIO	Alt Func	Pin	I/O/NC	Power	PU	SMI	Tol	Default	Signal Name
GPIO[0]	BM_BUSY#	AB18	I/O	Vcc3p3	N	Y	5	Input	strapped
GPIO[1]	PCIREQ[5]#	C8	I/O	V5REF	N	Y	5	Input	PREQ#5
GPIO[2]	PIRQE#	G8	I/OD	V5REF	N	Y	5	Input	PIRQ#E
GPIO[3]	PIRQF#	F7	I/OD	V5REF	N	Y	5	Input	PIRQ#F
GPIO[4]	PIRQG#	F8	I/OD	V5REF	N	Y	5	Input	PIRQ#G
GPIO[5]	PIRQH#	G7	I/OD	V5REF	N	Y	5	Input	PIRQ#H
GPIO[6]	unmuxed	AC21	I/O	Vcc3p3	N	Y	3.3	Input	JAUD2_EN
GPIO[7]	unmuxed	AC18	I/O	Vcc3p3	N	Y	3.3	Input	strapped hi
GPIO[8]	unmuxed	E21	I/O	VccSus3p3	N	Y	3.3	Input	strapped
GPIO[9]	unmuxed	E20	I/O	VccSus3p3	N	Y	3.3	Input	strapped hi
GPIO[10]	unmuxed	A20	I/O	VccSus3p3	N	Y	3.3	Input	strapped
GPIO[11]	SMBALERT#	B23	I/O	VccSus3p3	N	Y	3.3	Input	SMB_ALERT#
GPIO[12]	unmuxed	F19	I/O	VccSus3p3	N	Y	3.3	Input	SIO_PME#
GPIO[13]	unmuxed	E19	I/O	VccSus3p3	N	Y	3.3	Input	strapped hi
GPIO[14]	unmuxed	R4	I/O	VccSus3p3	N	Y	3.3	Input	strapped hi
GPIO[15]	unmuxed	E22	I/O	VccSus3p3	N	Y	3.3	Input	strapped hi
GPIO[16]	unmuxed	AC22	I/O	Vcc3p3	N	N	3.3	0	NC
GPIO[17]	PCIGNT[5]#	D8	I/O	Vcc3p3	N	N	3.3	N/A	PGNT#5
GPIO[18]	unmuxed	AC20	I/O	Vcc3p3	N	N	3.3	1	NC
GPIO[19]	SATA1GP	AH18	I/O	Vcc3p3	N	N	3.3	Input	strapped hi
GPIO[20]	unmuxed	AF21	I/O	Vcc3p3	N	N	3.3	1	NC
GPIO[21]	SATA0GP	AF19	I/O	Vcc3p3	N	N	3.3	Input	strapped hi
GPIO[22]	PCIREQ[4]#	A13	I/O	Vcc3p3	N	N	3.3	Input	PREQ#4
GPIO[23]	LDRQ1#	AA5	I/O	Vcc3p3	N	N	3.3	Input	strapped hi
GPIO[24]	unmuxed	R3	I/O	VccSus3p3	N	N	3.3	No Change	LAN_DISABLE#
GPIO[25]	unmuxed	D20	I/O	VccSus3p3	Y	N	3.3	1	NC
GPIO[26]	unmuxed	A21	I/O	VccSus3p3	N	N	3.3	0	NC
GPIO[27]	unmuxed	B21	I/O	VccSus3p3	N	N	3.3	0	NC
GPIO[28]	unmuxed	E23	I/O	VccSus3p3	N	N	3.3	0	NC
GPIO[29]	OC5#	C3	I/O	VccSus3p3	N	N	3.3	Input	OC#2
GPIO[30]	OC6#	A2	I/O	VccSus3p3	N	N	3.3	Input	OC#3
GPIO[31]	OC7#	B3	I/O	VccSus3p3	N	N	3.3	Input	OC#3
GPIO[32]	unmuxed	AG18	I/O	Vcc3p3	N	N	3.3	1	BIOS_WP#
GPIO[33]	unmuxed	AC19	I/O	Vcc3p3	N	N	3.3	1	NC
GPIO[34]	unmuxed	U2	I/O	Vcc3p3	N	N	3.3	0	NC
GPIO[35]	unmuxed	AD21	I/O	Vcc3p3	N	N	3.3	1	NC
GPIO[36]	SATA2GP	AH19	I/O	Vcc3p3	N	N	3.3	Input	strapped hi
GPIO[37]	SATA3GP	AE19	I/O	Vcc3p3	N	N	3.3	Input	strapped hi
GPIO[38]	unmuxed	AD20	I/O	Vcc3p3	N	N	3.3	Input	strapped hi
GPIO[39]	unmuxed	AE20	I/O	Vcc3p3	N	N	3.3	Input	strapped hi
GPIO[48]	GNT4#	A14	I/O	Vcc3p3	N	N	3.3	N/A	PGNT#4
GPIO[49]	CPUPWRGD	AG24	I/O	V_CPU_IO	N	N	CPU	N/A	H_PWRGD

Following are the GPIOs that need to be terminated properly if not used:
GPIO[39:36,23:21,19,7:0]: default as inputs and should be pulled up to Vcc3_3 if unused.
GPIO[31:29,15:8]: default as inputs and should be pulled up to VccSus3_3 if unused.

SIO W83627THF

PIN NAME	PIN#	USAGE	Input/Output	NOTES
GP43	71	DLED1	OUTPUT OD	Diag LED Output
GP33	89	DLED2	OUTPUT OD	Diag LED Output
GP45	69	DLED3	OUTPUT OD	Diag LED Output
GP35	86	DLED4	OUTPUT OD	Diag LED Output

FWH Note: FWH GPs should only be used for static options, do not put dynamic nets on these

GPIO	Pin#	Power	Tol	Signal Name
FPGI[0]	6	Main	3.3	ATADET0
FPGI[1]	5	Main	3.3	pull-up
FPGI[2]	4	Main	3.3	pull-up
FPGI[3]	3	Main	3.3	
FPGI[4]	30	Main	3.3	pull-down

PCI Config.

DEVICE	MCP1 INT Pin	REQ#/GNT#	IDSEL	CLOCK
1394	PIRQ#D	PREQ#3 PGNT#3	AD19	1394_PCLK
IDE RAID	PIRQ#E	PREQ#4 PGNT#4	AD20	RAID_PCLK
PCI1	PIRQ#A PIRQ#B PIRQ#C PIRQ#D	PREQ#0 PGNT#0	AD16	PCI_CLK0
PCI2	PIRQ#B PIRQ#C PIRQ#D PIRQ#A	PREQ#1 PGNT#1	AD17	PCI_CLK1
PCI3	PIRQ#C PIRQ#D PIRQ#A PIRQ#B	PREQ#2 PGNT#2 PREQ#5 PGNT#5	AD18 AD21	PCI_CLK2 PCI_CLK3

DDRII DIMM Config.

DEVICE	ADDRESS	CLOCK
DIMM 1	A0H	MCLK_A0/MCLK_A#0 MCLK_A1/MCLK_A#1 MCLK_A2/MCLK_A#2
DIMM 2	A2H	MCLK_A3/MCLK_A#3 MCLK_A4/MCLK_A#4 MCLK_A5/MCLK_A#5
DIMM 3	A4H	MCLK_B0/MCLK_B#0 MCLK_B1/MCLK_B#1 MCLK_B2/MCLK_B#2
DIMM 4	A6H	MCLK_B3/MCLK_B#3 MCLK_B4/MCLK_B#4 MCLK_B5/MCLK_B#5

JUMPER SETTING

JBAT1	(1-2)NORMAL	(2-3)CLEAR

JCI1	Chassis Intrision
Open	Normal
(1-2)	Chassis Open

MICRO-STAR INt'L CO., LTD.

Title: GPIO MAP & JUMPER SETTING

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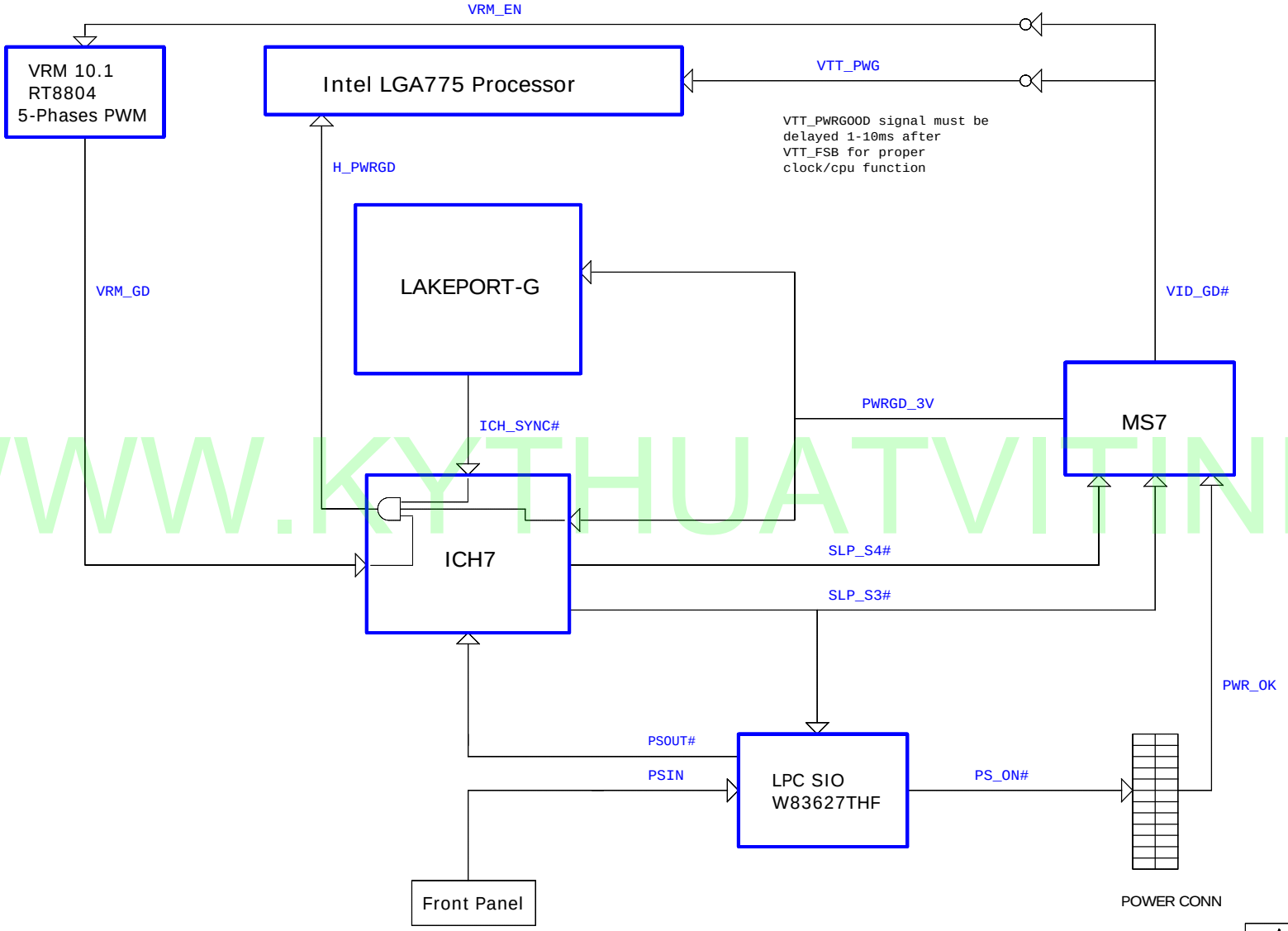
PWROK MAP



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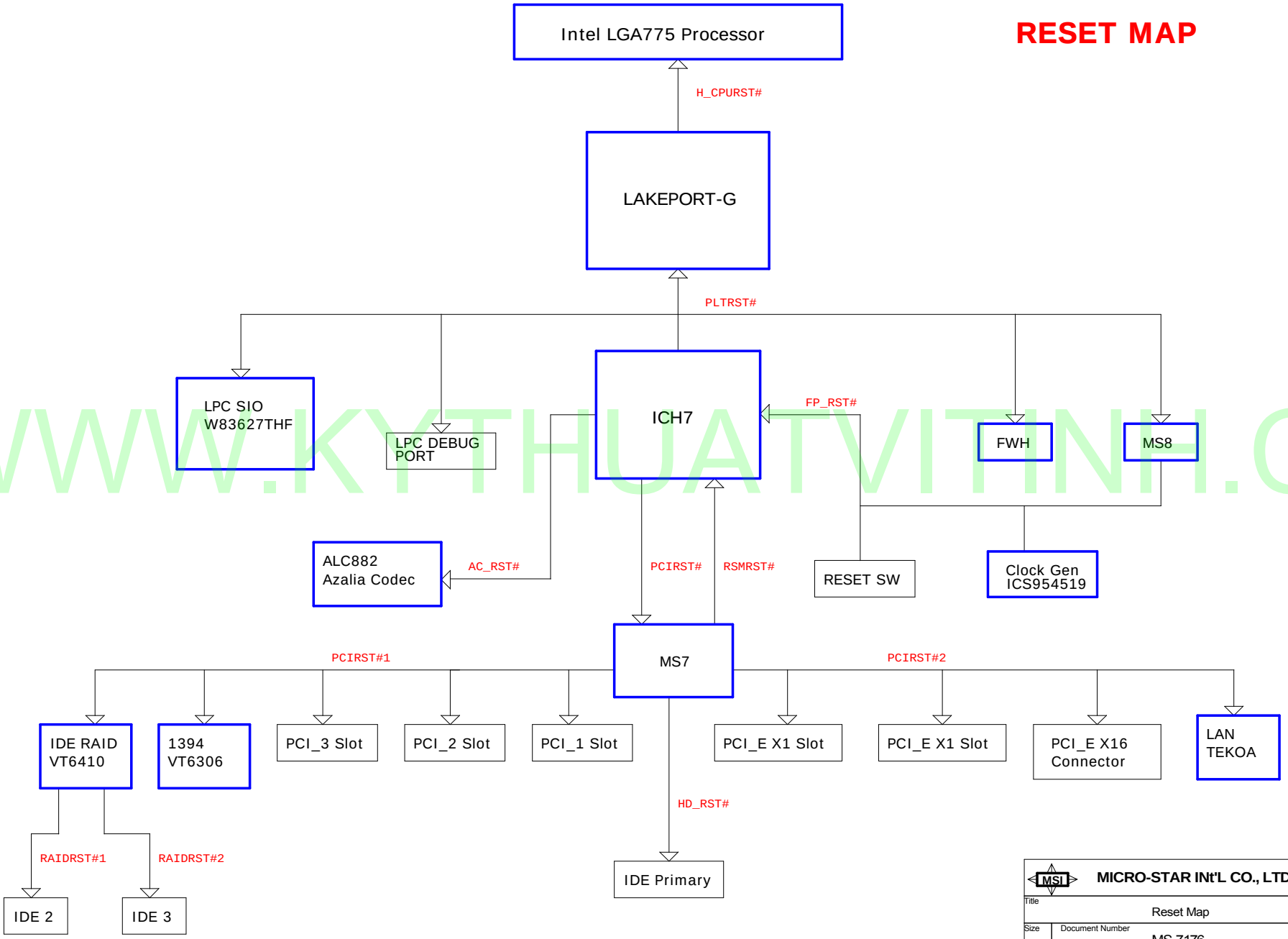
RESET MAP



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