MS-7066

Version 0B
05/05/2004

CPU:

Intel Tejas & Prescott LGA775 Processor

System Chipset:

Intel 915 - GMCH (North Bridge)

Intel ICH6 (South Bridge)

On Board Chipset:

CLOCK -- CY28416
LAN -- Marvell 88E8053
LPC Super I/O -- W83627THF
Azalia CMI 9880
VIA-6307 IEEE1394 Controller
BIOS -- FWH EEPROM

Main Memory:

DDR 2 * 2 (Max 2GB)

Expansion Slots:

PCI EXPRESS X16 SLOT

PCI2.3 SLOT * 3

Intersil PWM:

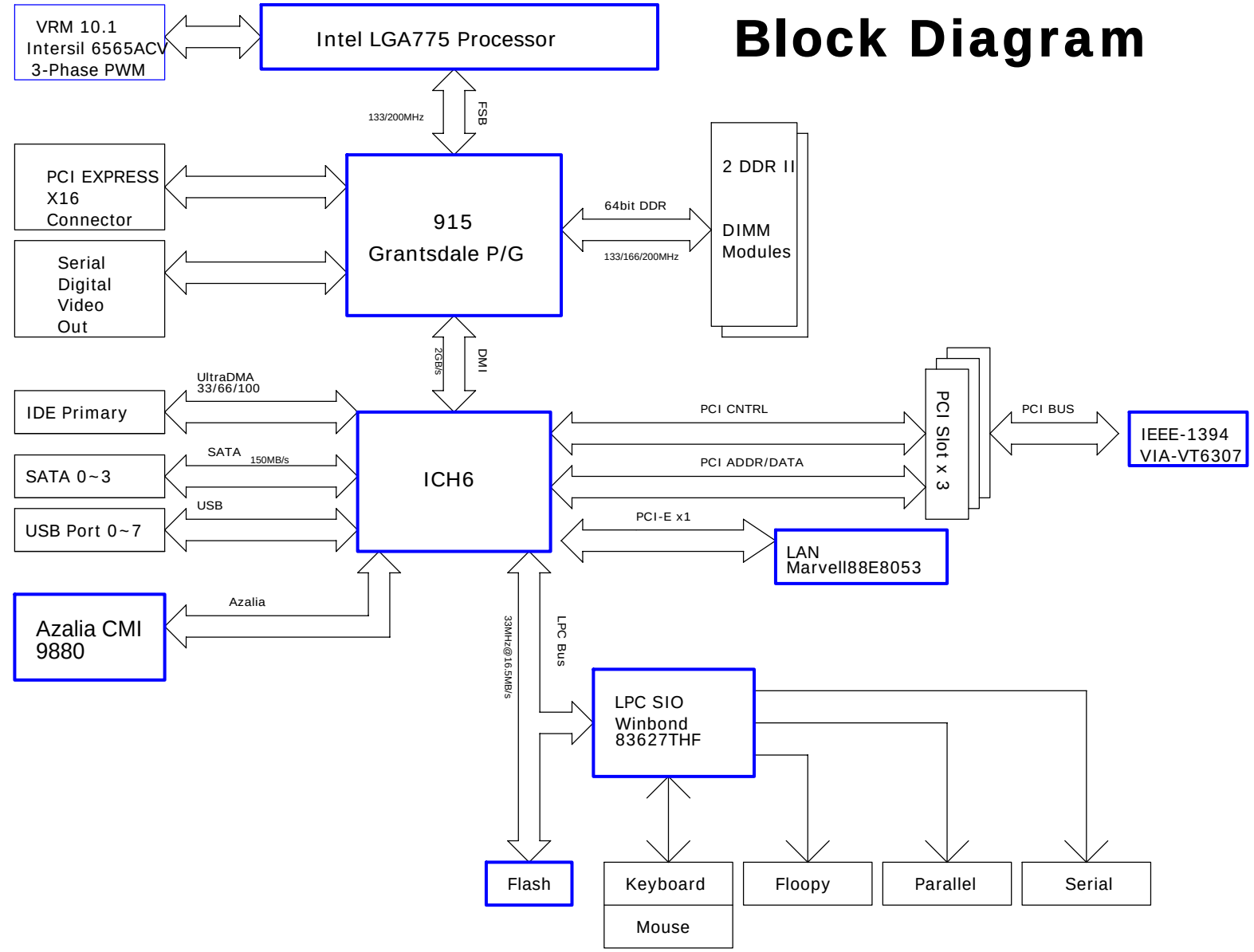
Controller: HIP6565ACV3 Phase
Driver: HIP6602B * 1

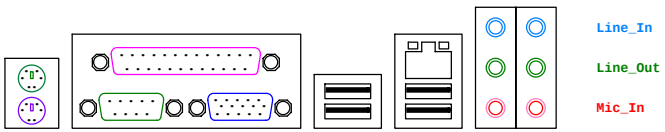
HIP6601B * 1

MICRO-STAR INt'L CO., LTD.

Title	COVER SHEET	
Size	Document Number: MS-7066	Rev: 0B
Date: Friday, July 02, 2004	Sheet 1 of 30	

Block Diagram

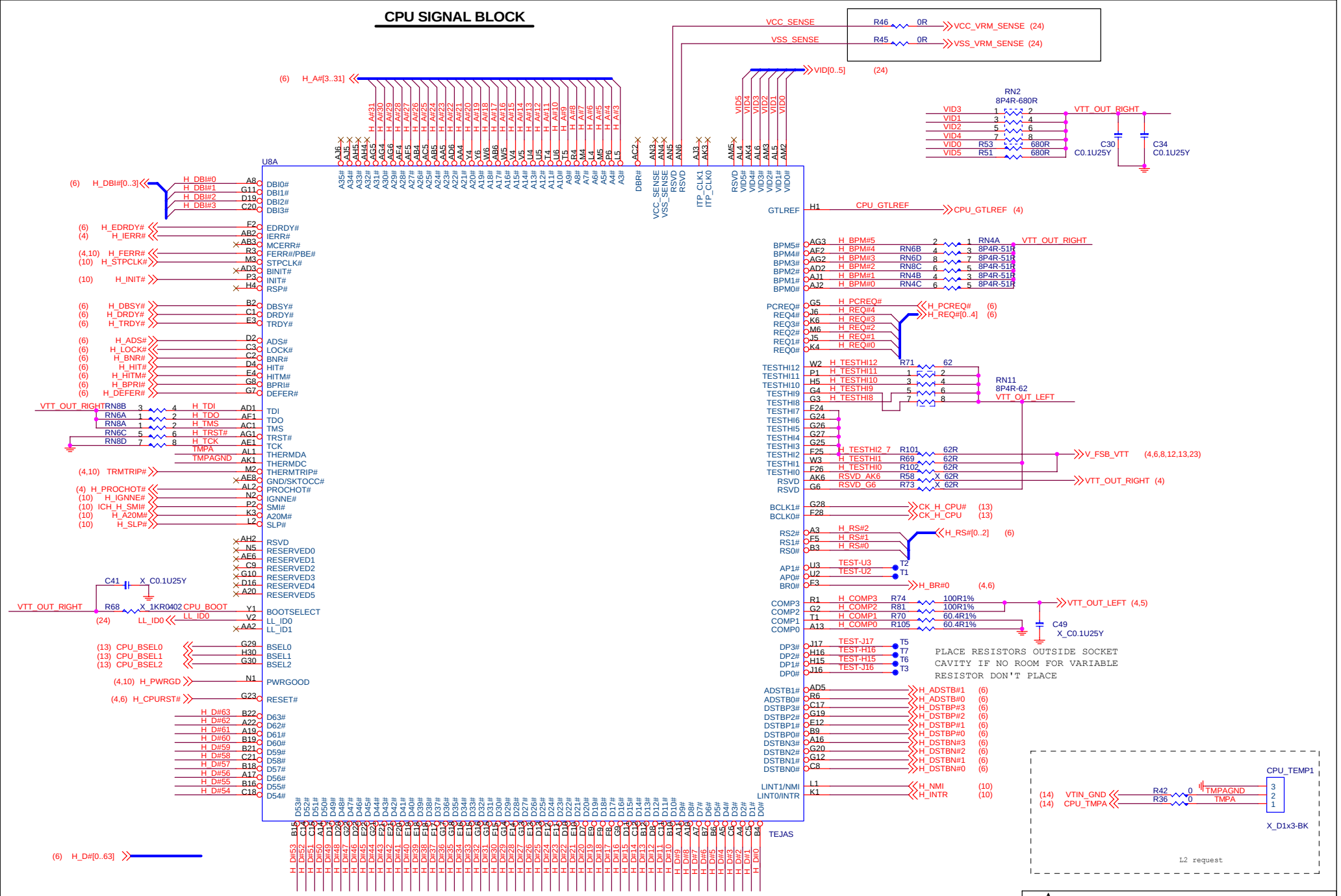




MSI **MICRO-STAR INt'L CO., LTD.**

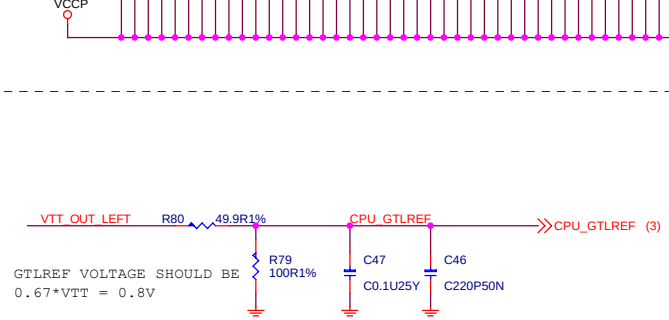
Title	BLOCK DIAGRAM	
Size	Document Number: MS-7066	Rev 0B
Date: Friday, July 02, 2004	Sheet 2 of 30	

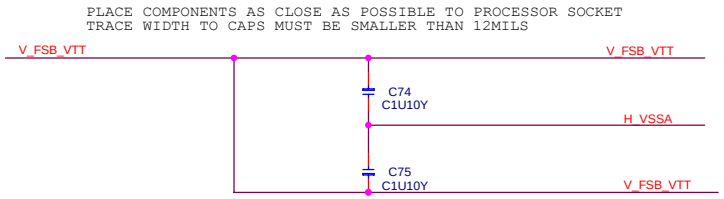
CPU SIGNAL BLOCK

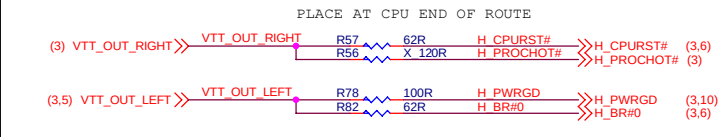


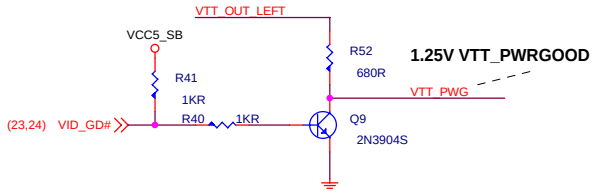
MSI MICRO-STAR INt'L CO., LTD.

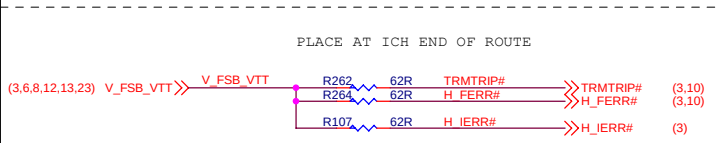
Title	Intel LGA775 CPU - Signals	
Size	Document Number MS-7066	Rev 0B
Date: Friday, July 02, 2004	Sheet 3 of 30	





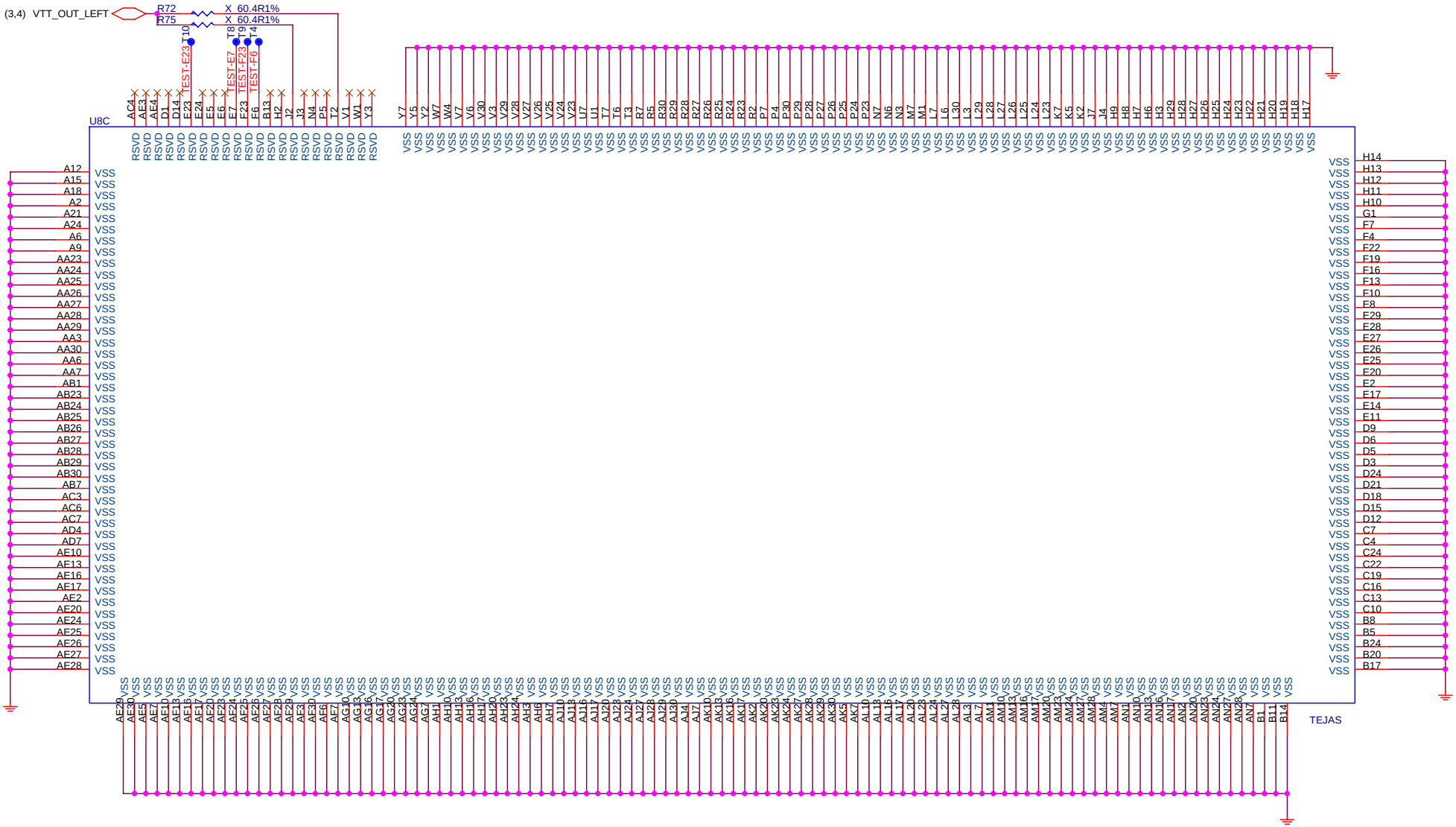






MICRO-STAR INt'L CO., LTD.

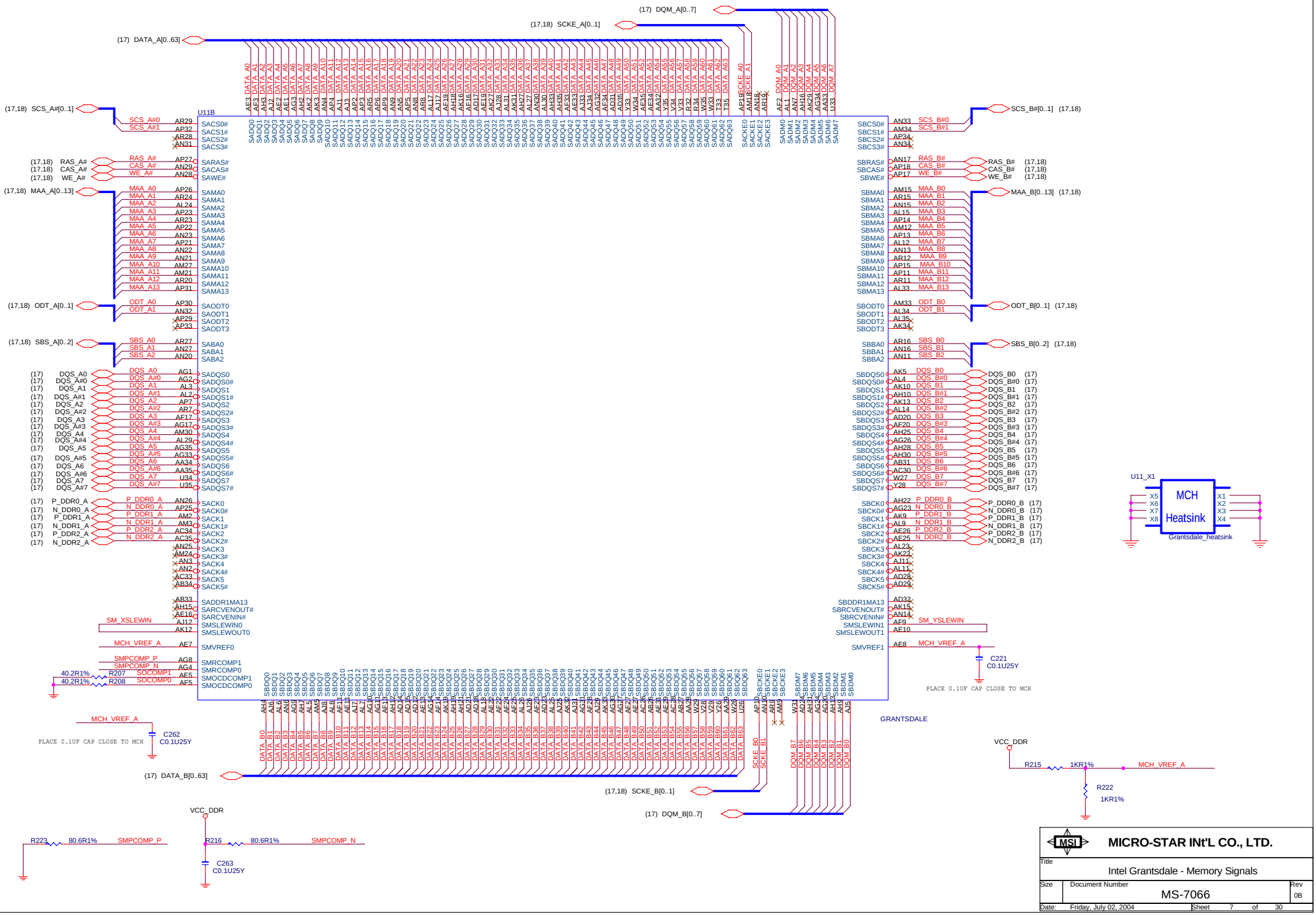
Title	Intel LGA775 CPU - Power	
Size	Document Number: MS-7066	Rev: 0B
Date: Friday, July 02, 2004	Sheet 4 of 30	



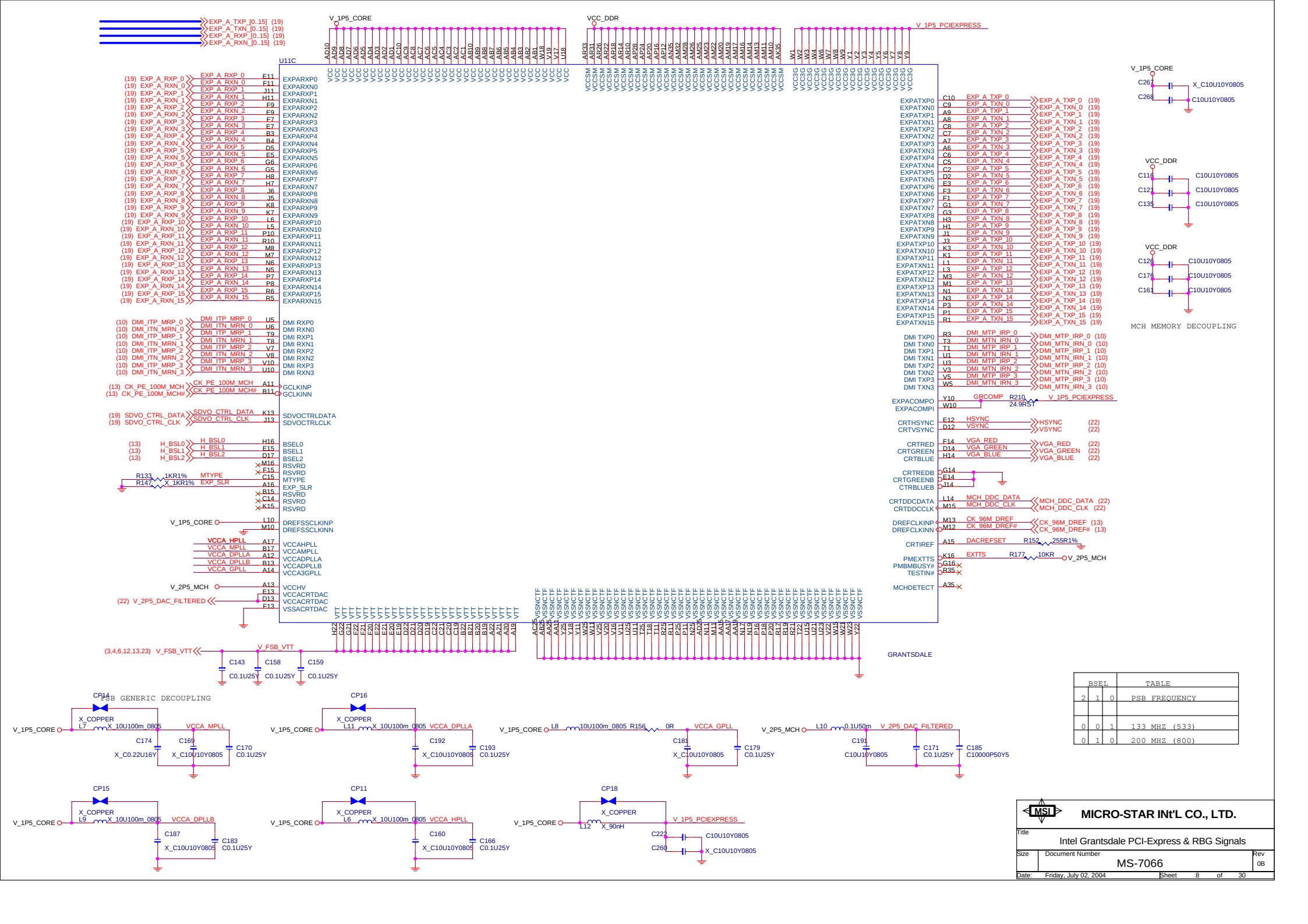
MSI	MICRO-STAR INt'L CO., LTD.		
Title	Intel LGA775 CPU - GND		
Size	Document Number	MS-7066	Rev 0B
Date: Friday, July 02, 2004	Sheet 5 of 30		

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

Title	Intel Grantsdale - CPU Signals	
Size	Document Number MS-7066	Rev 0B
Date: Friday, July 02, 2004	Sheet 6 of 30	

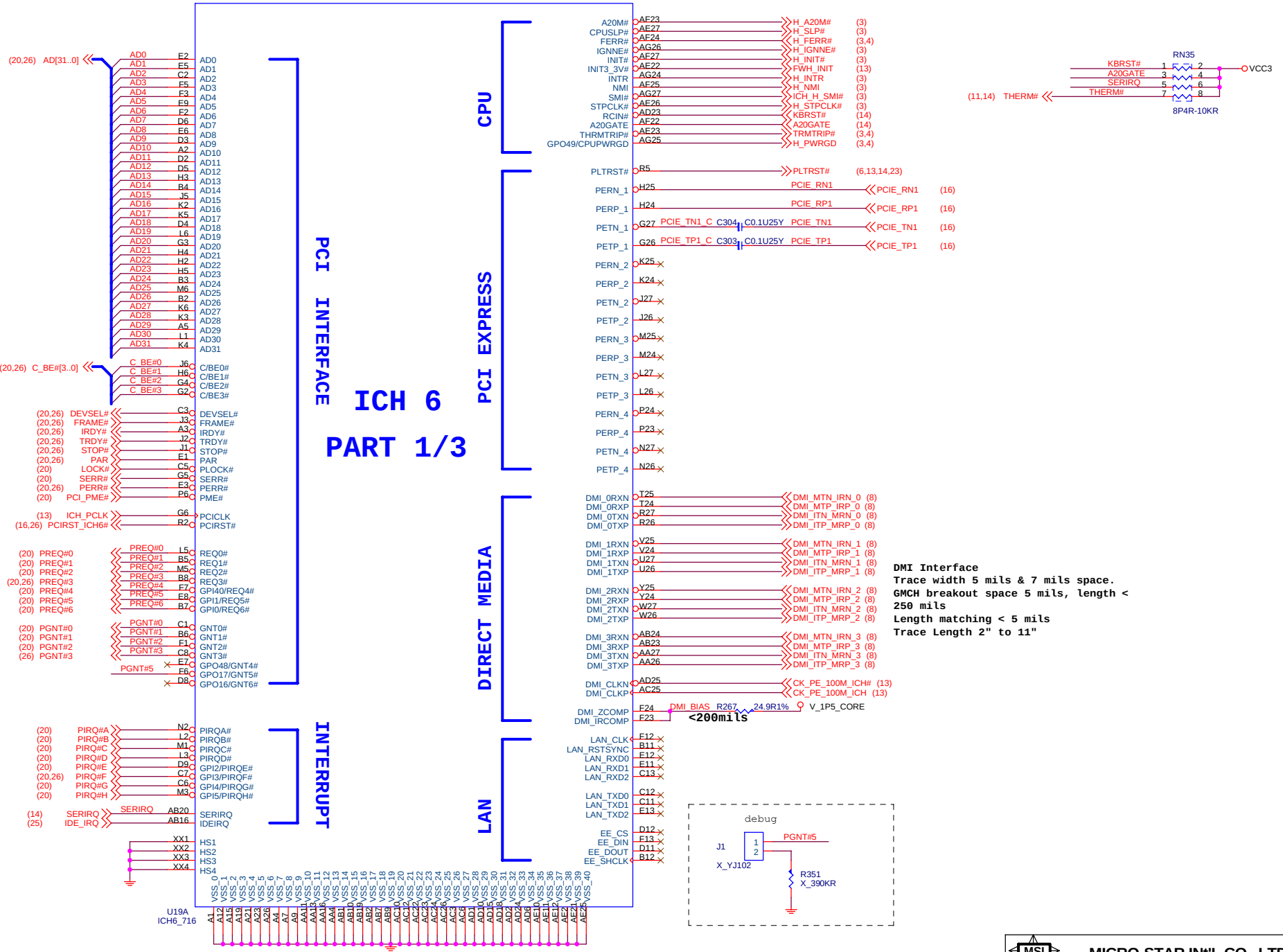


MSI	MICRO-STAR INt'L CO., LTD.	
Title	Intel Grantsdale - Memory Signals	
Size	Document Number MS-7066	Rev 0B
Date: Friday, July 02, 2004	Sheet 7 of 30	


U11C
EXP_A_TXP_[0..15] (19)
EXP_A_TXN_[0..15] (19)
EXP_A_RXP_[0..15] (19)
EXP_A_RXN_[0..15] (19)
V_1P5_CORE
VCC_DDR
V_1P5_PCIEXPRESS
EXPARXP0
EXPARXN0
EXPARXP1
EXPARXN1
EXPARXP2
EXPARXN2
EXPARXP3
EXPARXN3
EXPARXP4
EXPARXN4
EXPARXP5
EXPARXN5
EXPARXP6
EXPARXN6
EXPARXP7
EXPARXN7
EXPARXP8
EXPARXN8
EXPARXP9
EXPARXN9
EXPARXP10
EXPARXN10
EXPARXP11
EXPARXN11
EXPARXP12
EXPARXN12
EXPARXP13
EXPARXN13
EXPARXP14
EXPARXN14
EXPARXP15
EXPARXN15
EXPATXP0
EXPATXN0
EXPATXP1
EXPATXN1
EXPATXP2
EXPATXN2
EXPATXP3
EXPATXN3
EXPATXP4
EXPATXN4
EXPATXP5
EXPATXN5
EXPATXP6
EXPATXN6
EXPATXP7
EXPATXN7
EXPATXP8
EXPATXN8
EXPATXP9
EXPATXN9
EXPATXP10
EXPATXN10
EXPATXP11
EXPATXN11
EXPATXP12
EXPATXN12
EXPATXP13
EXPATXN13
EXPATXP14
EXPATXN14
EXPATXP15
EXPATXN15
DMI RXP0
DMI RXN0
DMI RXP1
DMI RXN1
DMI RXP2
DMI RXN2
DMI RXP3
DMI RXN3
DMI TXP0
DMI TXN0
DMI TXP1
DMI TXN1
DMI TXP2
DMI TXN2
DMI TXP3
DMI TXN3
GCLKINP
GCLKINN
SDVOCTRLDATA
SDVOCTRLCLK
BSEL0
BSEL1
BSEL2
RSVRD
MTYPE
EXP_SLR
DREFSSCLKINP
DREFSSCLKINN
VCCAHPLL
VCCAMPLL
VCCADPLLA
VCCADPLLB
VCCA3GPLL
VCCHV
VCCACRTDAC
VSSACRTDAC
EXPACOMPO
EXPACOMPI
CRTHSYNC
CRTVSYNC
CRTRED
CRTGREEN
CRTBLUE
CRTREDB
CRTGREENB
CRTBLUEB
CRTDDCDATA
CRTDDCCLK
DREFCLKINP
DREFCLKINN
CRTIREF
PMEXTTS
PMBMBUSY#
TESTIN#
MCHDETECT
GRANTSDALE
GRCOMP
R210
24.9RS1
HSYNC
VSYNC
VGA_RED
VGA_GREEN
VGA_BLUE
MCH_DDC_DATA
MCH_DDC_CLK
CK_96M_DREF
CK_96M_DREF#
DACREFSET
R152
255R1%
EXTTS
R177
10KR
V_2P5_MCH
V_2P5_DAC_FILTERED
V_FSB_VTT
C143
C158
C159
C0.1U25Y
MCH MEMORY DECOUPLING
X_C10U10Y0805
C10U10Y0805
FSB GENERIC DECOUPLING
CP14
CP15
CP16
CP11
CP18
X_COPPER
L7
L9
L11
L6
L12
X_10U100m_0805
X_90nH
VCCA_MPLL
VCCA_DPLLB
VCCA_DPLLA
VCCA_HPLL
VCCA_GPLL
L8
10U100m_0805
R156
0R
L10
0.1U50m
C174
C169
C170
X_C0.22U16Y
X_C10U10Y0805
C0.1U25Y
C187
C183
C192
C193
C160
C166
C181
C179
C191
C171
C185
C10000P50Y5
C222
C260
BSEL TABLE
2 1 0 PSB FREQUENCY
0 0 1 133 MHZ (533)
0 1 0 200 MHZ (800)
MICRO-STAR INt'L CO., LTD.
Title
Intel Grantsdale PCI-Express & RBG Signals
Size
Document Number
MS-7066
Rev
0B
Date: Friday, July 02, 2004
Sheet 8 of 30

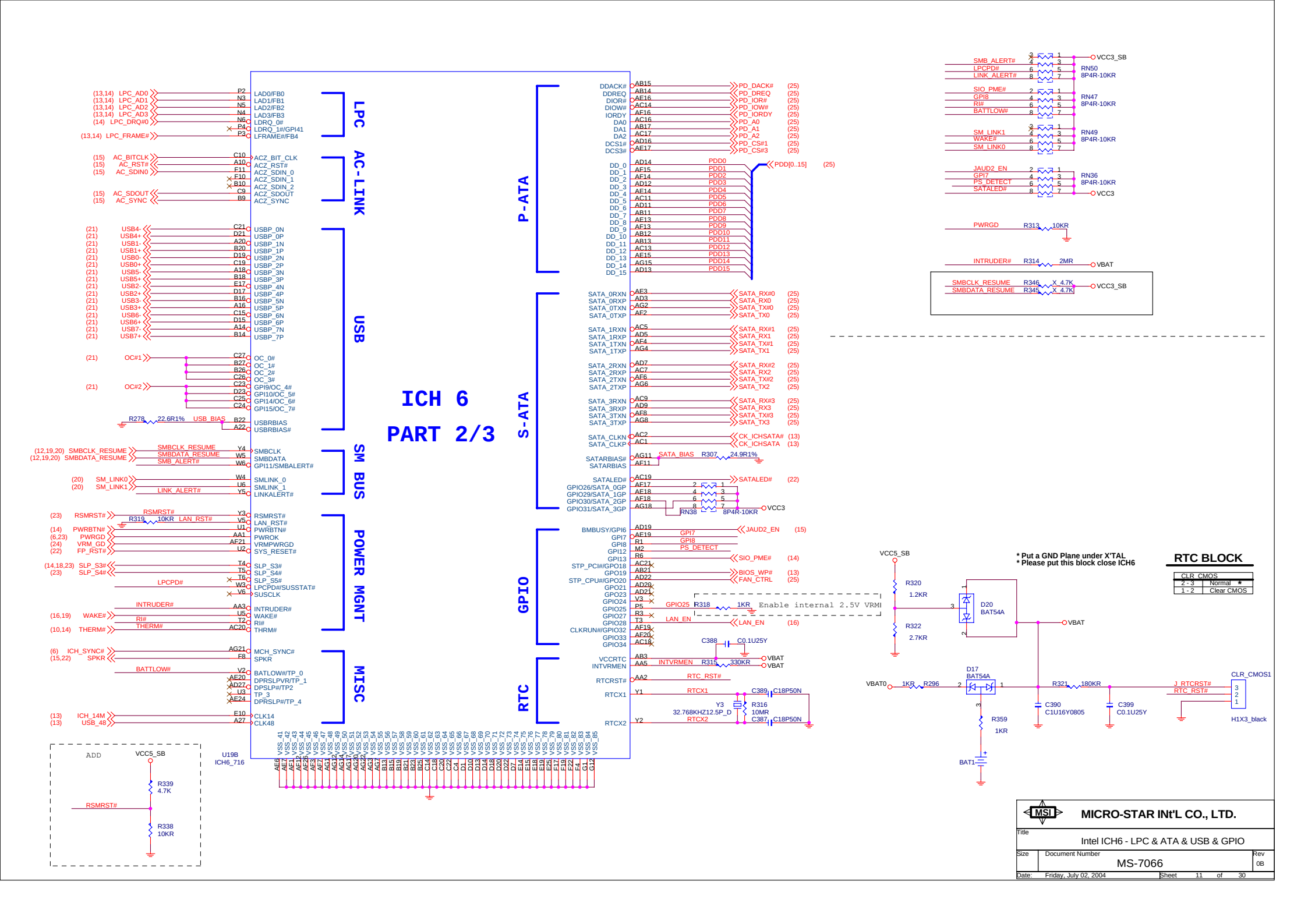
MSI **MICRO-STAR INt'L CO., LTD.**

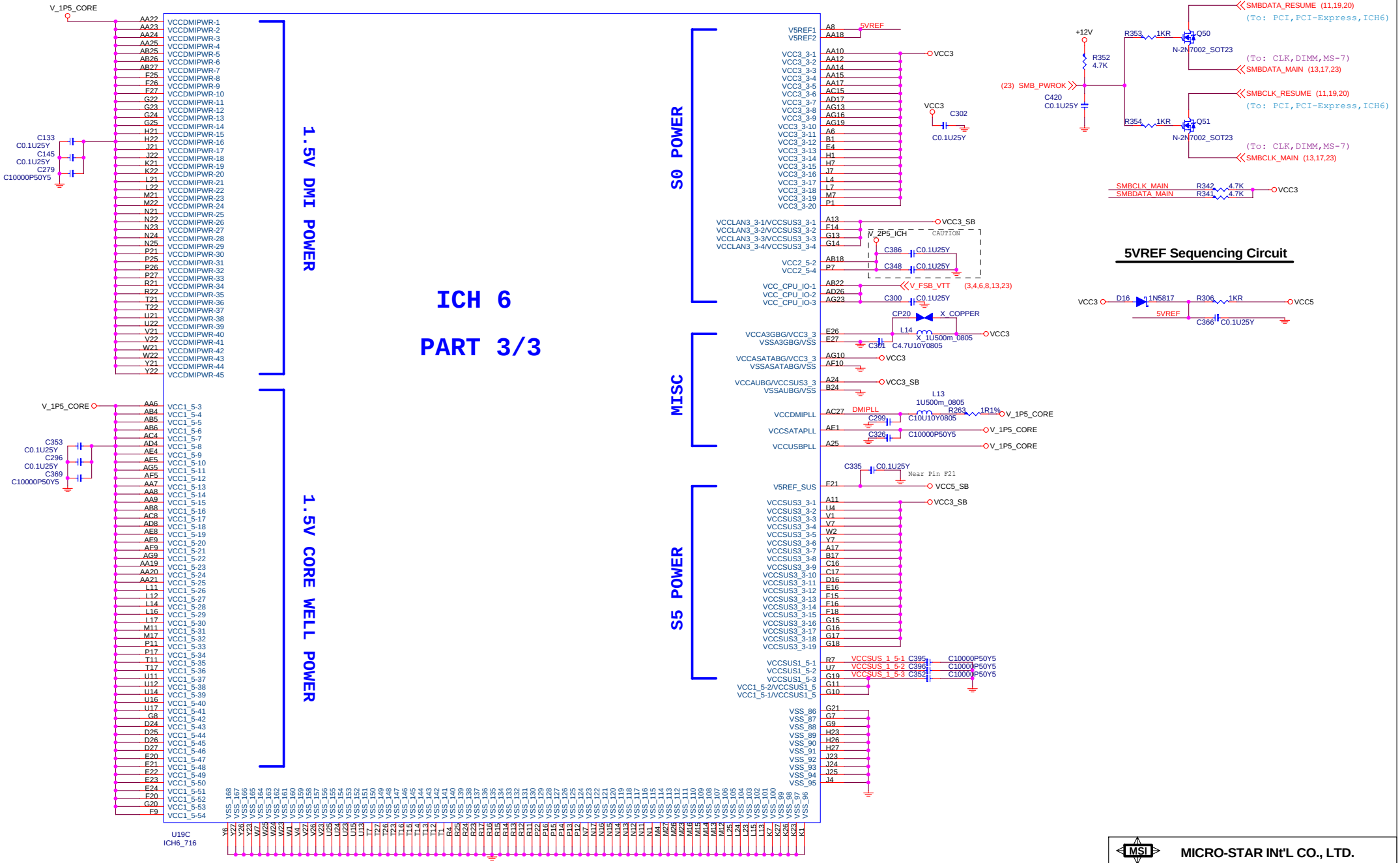
Title	Intel Grantsdale - GND	
Size	Document Number MS-7066	Rev 0B
Date: Friday, July 02, 2004	Sheet 9 of 30	



DMI Interface
Trace width 5 mils & 7 mils space.
GMCH breakout space 5 mils, length < 250 mils
Length matching < 5 mils
Trace Length 2" to 11"

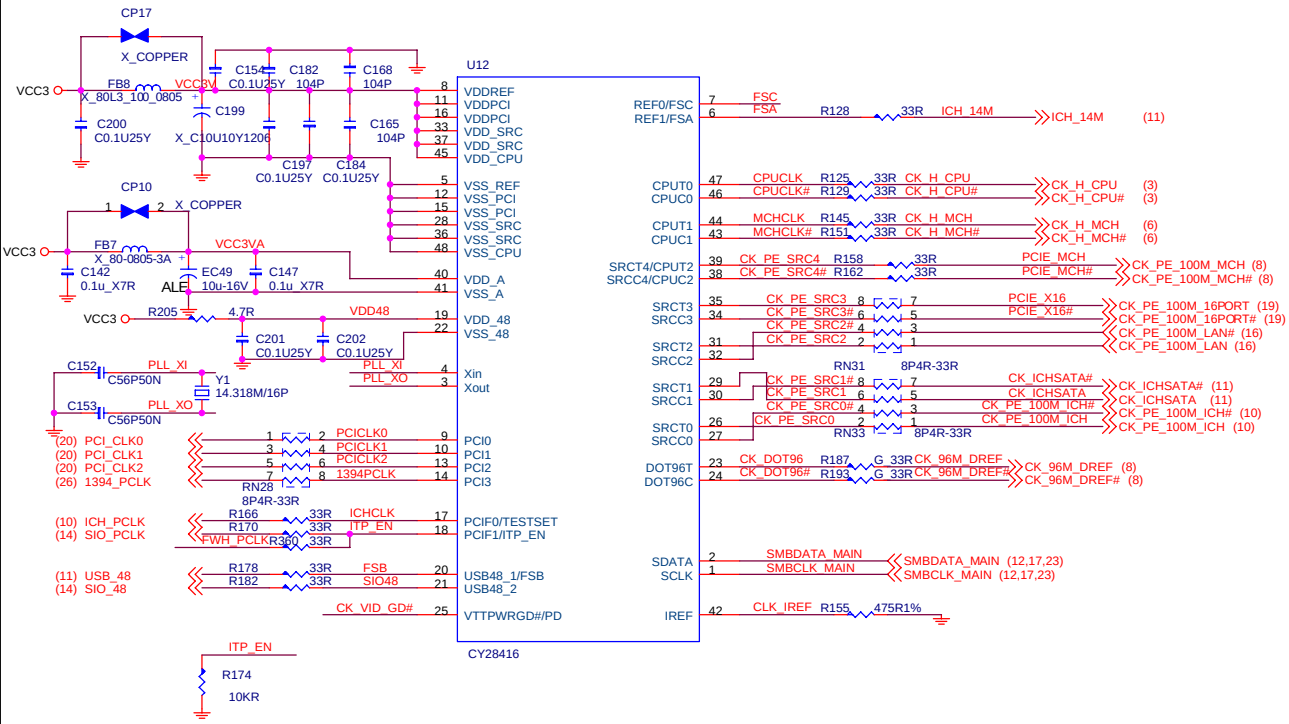
MSI	MICRO-STAR INt'L CO., LTD.		
Title	Intel ICH6 - PCI & DMI & CPU & IRQ		
Size	Document Number	MS-7066	Rev 0B
Date: Friday, July 02, 2004	Sheet 10 of 30		

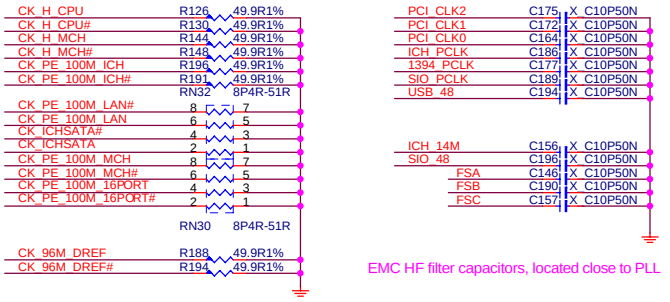

ICH 6
PART 2/3
LPC
AC-LINK
USB
SM BUS
POWER MGNT
MISC
P-ATA
S-ATA
GPIO
RTC
LAD0/FB0
LAD1/FB1
LAD2/FB2
LAD3/FB3
LDRQ_0#
LDRQ_1#/GPI41
LFRAME#/FB4
ACZ_BIT_CLK
ACZ_RST#
ACZ_SDIN_0
ACZ_SDIN_1
ACZ_SDIN_2
ACZ_SDOUT
ACZ_SYNC
USBP_0N
USBP_0P
USBP_1N
USBP_1P
USBP_2N
USBP_2P
USBP_3N
USBP_3P
USBP_4N
USBP_4P
USBP_5N
USBP_5P
USBP_6N
USBP_6P
USBP_7N
USBP_7P
OC_0#
OC_1#
OC_2#
OC_3#
GPI9/OC_4#
GPI10/OC_5#
GPI14/OC_6#
GPI15/OC_7#
USBRBIAS
USBRBIAS#
SMBCLK
SMBDATA
GPI11/SMBALERT#
SMLINK_0
SMLINK_1
LINKALERT#
RSMRST#
LAN_RST#
PWRBTN#
PWROK
VRMPWRGD
SYS_RESET#
SLP_S3#
SLP_S4#
SLP_S5#
LPCPD#/SUSSTAT#
SUSCLK
INTRUDER#
WAKE#
RI#
THERM#
MCH_SYNC#
SPKR
BATLOW#/TP_0
DPRSLPVR/TP_1
DPSLP#/TP2
TP_3
DPRSLP#/TP_4
CLK14
CLK48
DDACK#
DDREQ
DIOR#
DIOW#
IORDY
DA0
DA1
DA2
DCS1#
DCS3#
DD_0
DD_1
DD_2
DD_3
DD_4
DD_5
DD_6
DD_7
DD_8
DD_9
DD_10
DD_11
DD_12
DD_13
DD_14
DD_15
SATA_0RXN
SATA_0RXP
SATA_0TXN
SATA_0TXP
SATA_1RXN
SATA_1RXP
SATA_1TXN
SATA_1TXP
SATA_2RXN
SATA_2RXP
SATA_2TXN
SATA_2TXP
SATA_3RXN
SATA_3RXP
SATA_3TXN
SATA_3TXP
SATA_CLKN
SATA_CLKP
SATARBIAS#
SATARBIAS
SATALED#
GPIO26/SATA_0GP
GPIO29/SATA_1GP
GPIO30/SATA_2GP
GPIO31/SATA_3GP
BMBUSY/GPI6
GPI7
GPI8
GPI12
GPI13
STP_PCI#/GPIO18
GPIO19
STP_CPU#/GPIO20
GPO21
GPO23
GPIO24
GPIO25
GPIO27
GPIO28
CLKRUN#/GPIO32
GPIO33
GPIO34
VCCRTC
INTVRMEN
RTCRST#
RTCX1
RTCX2
VSS_41
VSS_42
VSS_43
VSS_44
VSS_45
VSS_46
VSS_47
VSS_48
VSS_49
VSS_50
VSS_51
VSS_52
VSS_53
VSS_54
VSS_55
VSS_56
VSS_57
VSS_58
VSS_59
VSS_60
VSS_61
VSS_62
VSS_63
VSS_64
VSS_65
VSS_66
VSS_67
VSS_68
VSS_69
VSS_70
VSS_71
VSS_72
VSS_73
VSS_74
VSS_75
VSS_76
VSS_77
VSS_78
VSS_79
VSS_80
VSS_81
VSS_82
VSS_83
VSS_84
VSS_85
U19B
ICH6_716
ADD
VCC5_SB
R339
4.7K
RSMRST#
R338
10KR
PD_DACK#
PD_DREQ
PD_IOR#
PD_IOW#
PD_IORDY
PD_A0
PD_A1
PD_A2
PD_CS#1
PD_CS#3
PDD[0..15]
PDD0
PDD1
PDD2
PDD3
PDD4
PDD5
PDD6
PDD7
PDD8
PDD9
PDD10
PDD11
PDD12
PDD13
PDD14
PDD15
SATA_RX#0
SATA_RX0
SATA_TX#0
SATA_TX0
SATA_RX#1
SATA_RX1
SATA_TX#1
SATA_TX1
SATA_RX#2
SATA_RX2
SATA_TX#2
SATA_TX2
SATA_RX#3
SATA_RX3
SATA_TX#3
SATA_TX3
CK_ICHSATA#
CK_ICHSATA
SATA_BIAS
R307
24.9R1%
RN38
8P4R-10KR
VCC3
GPI7
GPI8
PS_DETECT
JAUD2_EN
SIO_PME#
BIOS_WP#
FAN_CTRL
LAN_EN
GPIO25
R318
1KR
Enable internal 2.5V VRMI
C388
C0.1U25Y
INTVRMEN
R315
330KR
VBAT
RTC_RST#
RTCX1
C389
C18P50N
Y3
32.768KHZ12.5P_D
R316
10MR
C387
RTCX2
SMB_ALERT#
LPCPD#
LINK_ALERT#
RN50
8P4R-10KR
SIO_PME#
GPI8
RI#
BATTLOW#
RN47
SM_LINK1
WAKE#
SM_LINK0
RN49
JAUD2_EN
GPI7
PS_DETECT
SATALED#
RN36
PWRGD
R313
10KR
INTRUDER#
R314
2MR
SMBCLK_RESUME
R346
X_4.7K
SMBDATA_RESUME
R345
VCC5_SB
VCC5_SB
R320
1.2KR
R322
2.7KR
D20
BAT54A
VBAT
* Put a GND Plane under X'TAL
* Please put this block close ICH6
RTC BLOCK
CLR_CMOS
2 - 3 Normal *
1 - 2 Clear CMOS
VBAT0
1KR
R296
D17
BAT54A
R321
180KR
C390
C1U16Y0805
C399
C0.1U25Y
J_RTCRST#
RTC_RST#
CLR_CMOS1
H1X3_black
R359
1KR
BAT1
MSI
MICRO-STAR INt'L CO., LTD.
Title
Intel ICH6 - LPC & ATA & USB & GPIO
Size
Document Number
MS-7066
Rev
0B
Date: Friday, July 02, 2004
Sheet 11 of 30


ICH 6
PART 3/3
1.5V DMI POWER
1.5V CORE WELL POWER
S0 POWER
MISC
S5 POWER
SM BUS ISOLATION
5VREF Sequencing Circuit
U19C
ICH6_716
MICRO-STAR INt'L CO., LTD.
Intel ICH6 - POWER
MS-7066
Friday, July 02, 2004

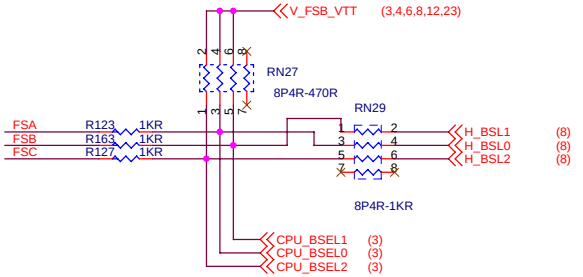
Clock Generator - CY28416

Trace length less than 0.5inchs

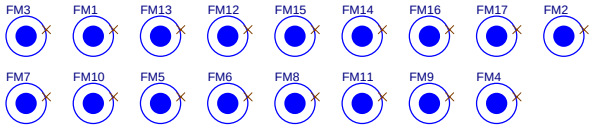




EMC HF filter capacitors, located close to PLL

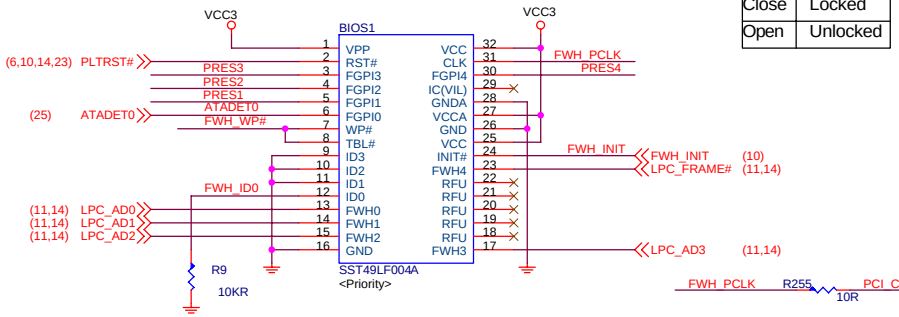


Optical Fiducial Marks

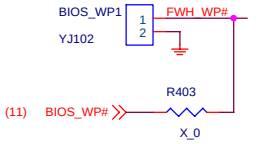


Firware Hub (FWH)

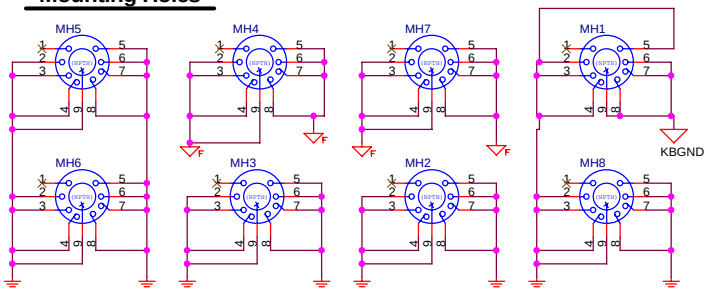
FWH_WP	
Close	Locked
Open	Unlocked

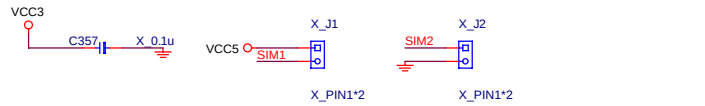


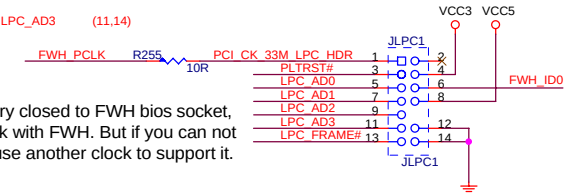
FWH write protect



Mounting Holes

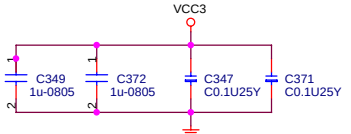






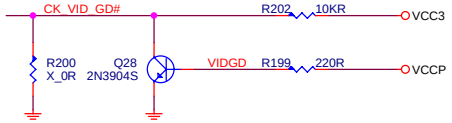
If you place the jumper very closed to FWH bios socket, please use the same clock with FWH. But if you can not place it so close, please use another clock to support it.

FWH DECOUPLING CAPACITORS



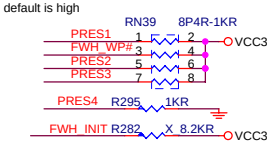
Place Cap. as Close to FWH< 350 mil

Clock Generator VTT Power Down Block

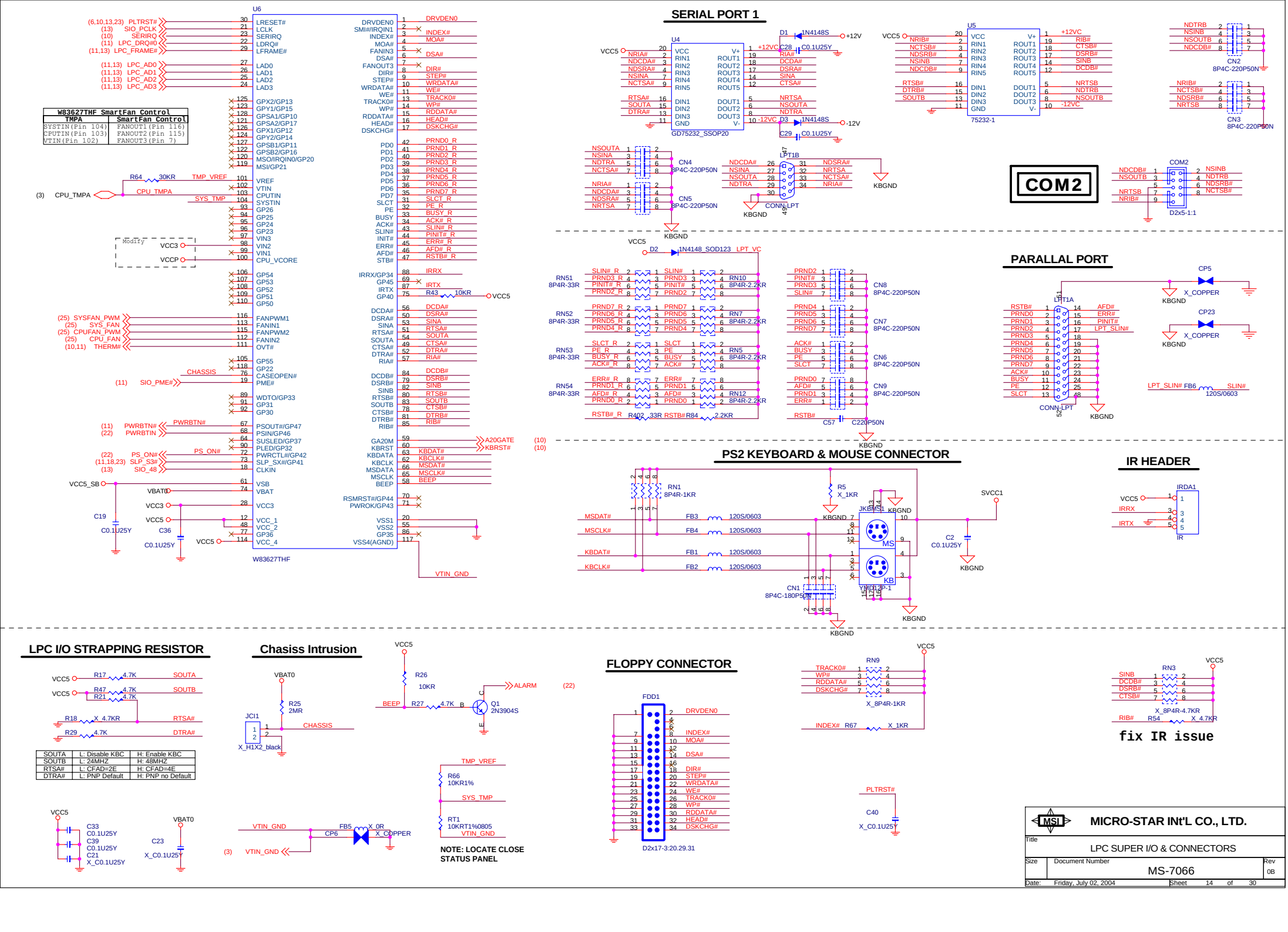


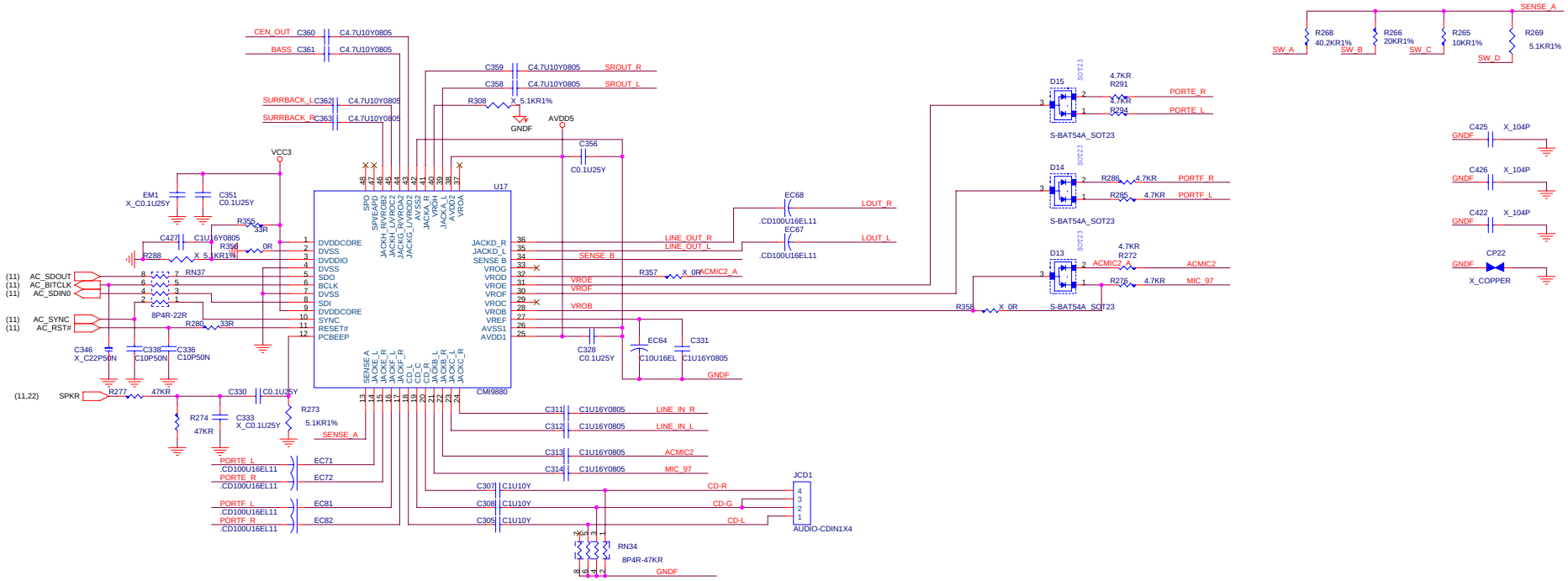
FWH Resistors

default is high

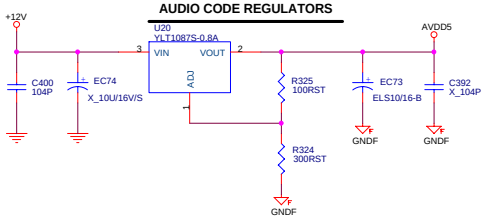


MSI	MICRO-STAR INt'L CO., LTD.		
Title	CY28416 & FWH		
Size	Document Number		Rev
	MS-7066		0B
Date:	Friday, July 02, 2004	Sheet 13 of 30	

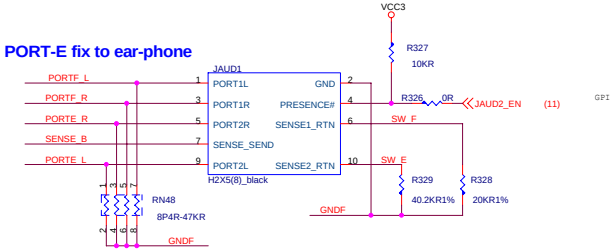

SERIAL PORT 1
PARALLAL PORT
COM2
PS2 KEYBOARD & MOUSE CONNECTOR
IR HEADER
LPC I/O STRAPPING RESISTOR
Chasiss Intrusion
FLOPPY CONNECTOR
W83627THF SmartFan Control
TMPA
SmartFan Control
SYSTIN(Pin 104)
FANOUT1(Pin 116)
CPUTIN(Pin 103)
FANOUT2(Pin 115)
VTIN(Pin 102)
FANOUT3(Pin 7)
U6
W83627THF
U4
GD75232_SSOP20
U5
75232-1
CN2
CN3
CN4
CN5
CN1
CN8
CN7
CN6
CN9
LPT1A
CONN_LPT
JKBMS1
JCI1
X_H1X2_black
FDD1
D2x17-3:20.29.31
SOUTA L: Disable KBC H: Enable KBC
SOUTB L: 24MHZ H: 48MHZ
RTSA# L: CFAD=2E H: CFAD=4E
DTRA# L: PNP Default H: PNP no Default
NOTE: LOCATE CLOSE STATUS PANEL
fix IR issue
MICRO-STAR INt'L CO., LTD.
LPC SUPER I/O & CONNECTORS
MS-7066
Friday, July 02, 2004
Sheet 14 of 30

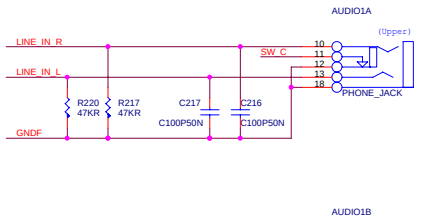


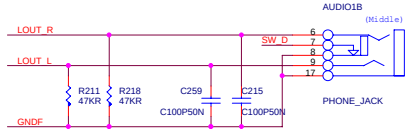
AUDIO CODE REGULATORS

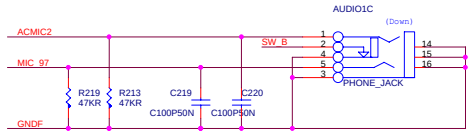


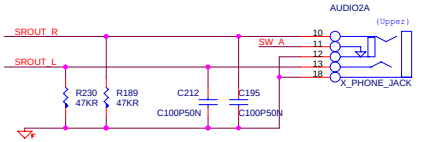
PORT-E fix to ear-phone

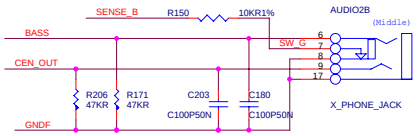


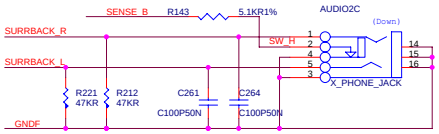




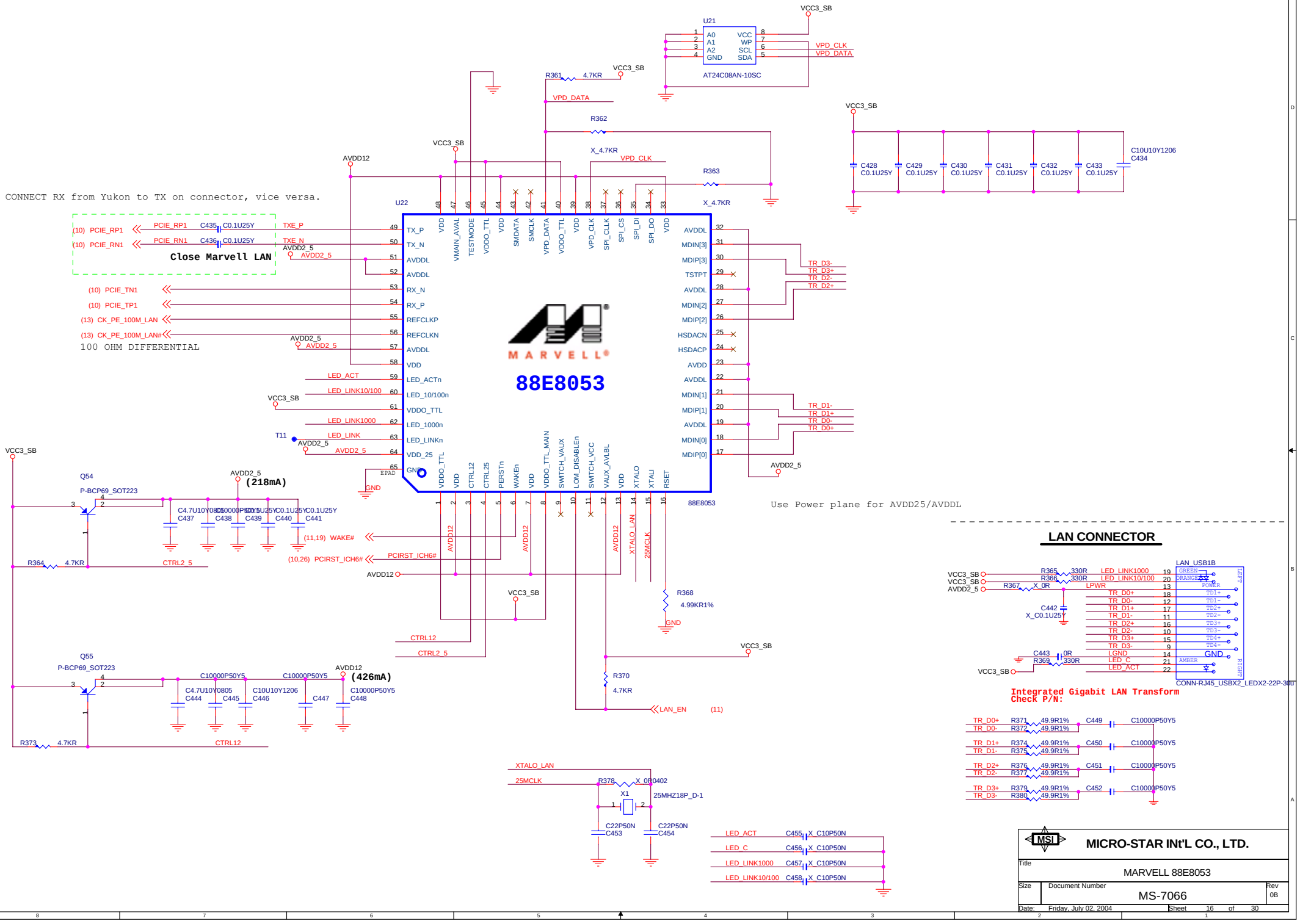


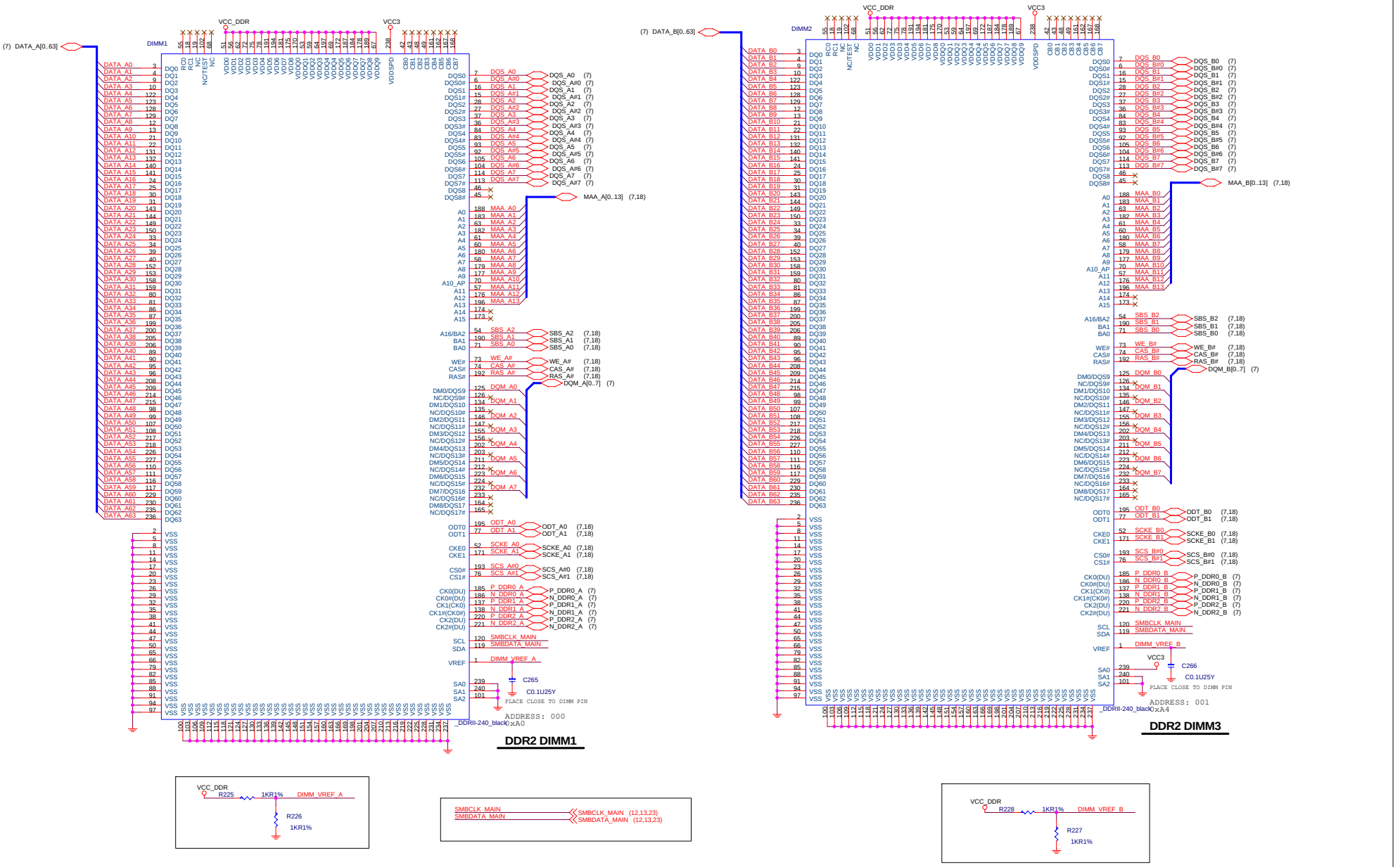




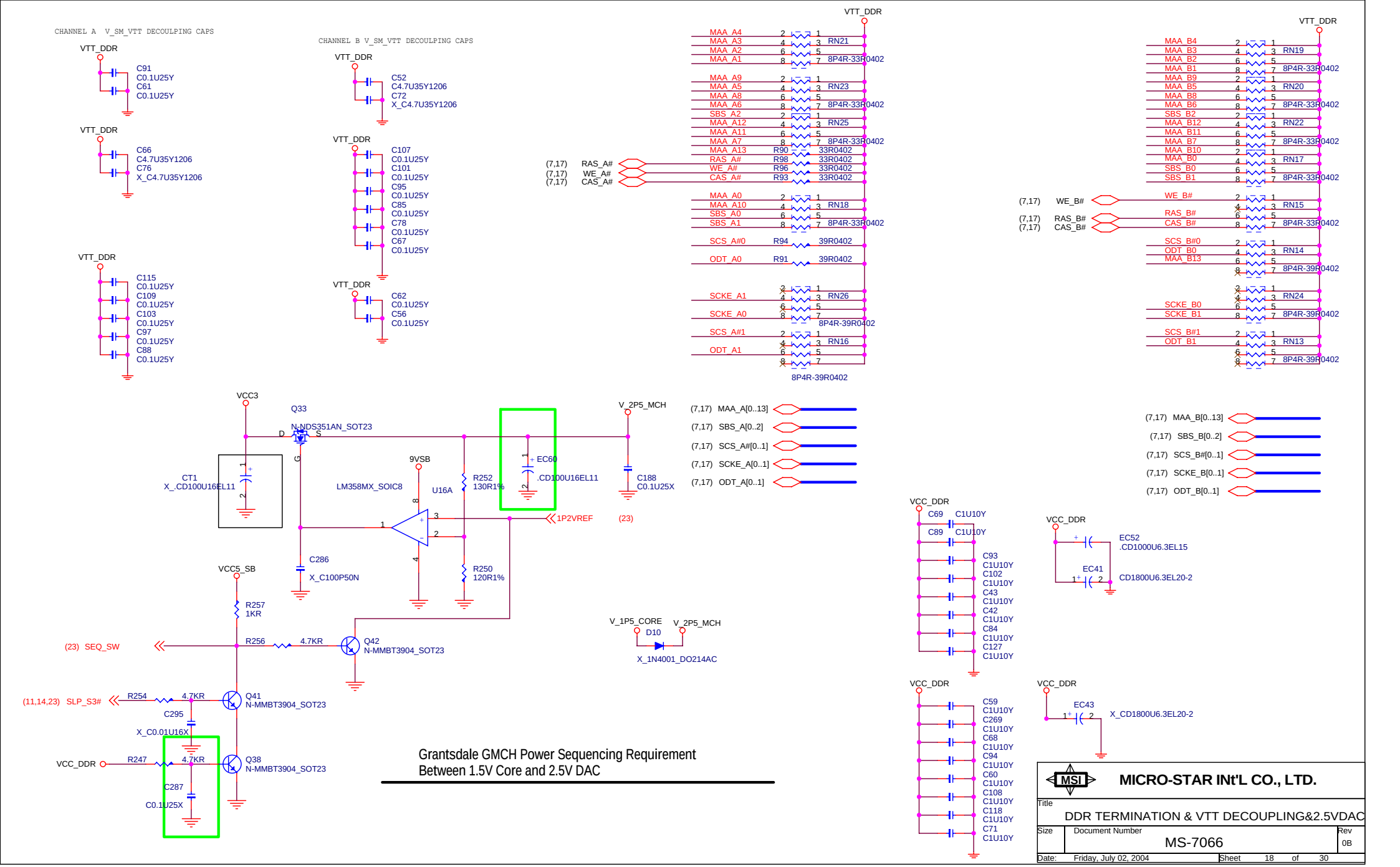


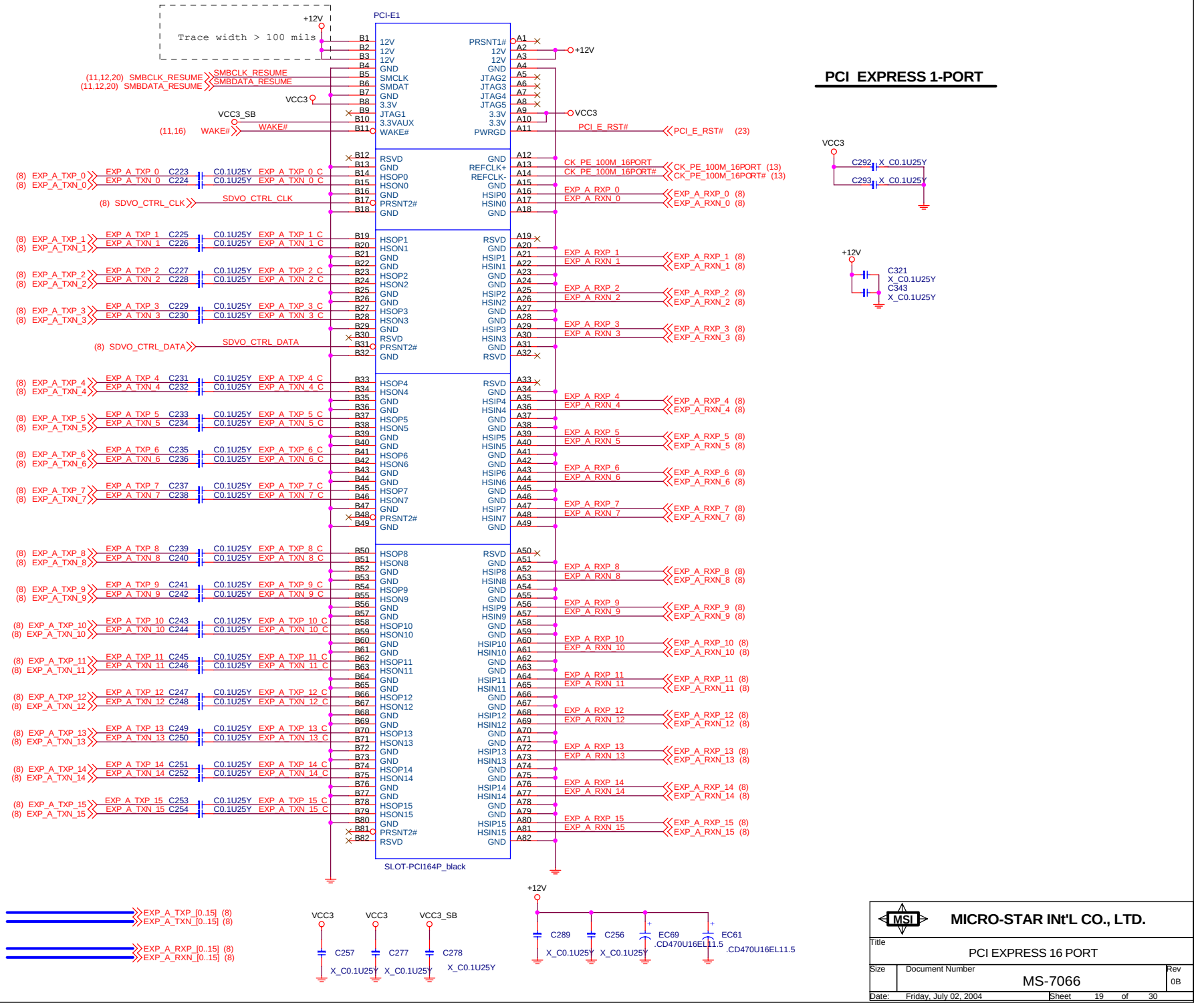
Micro Star Restricted Secret		
Title	*Azalia CMI 9880*	Rev 0B
Document Number	*MS-7066*	
MICRO-STAR INT'L No. 69-1, De St, Jung-He City, Taipei Hsien, Taiwan http://www.msi.com.tw	Last Revision Date: Friday, July 02, 2004	
	Sheet 15 of 30	


CONNECT RX from Yukon to TX on connector, vice versa.
Close Marvell LAN
100 OHM DIFFERENTIAL
88E8053
Use Power plane for AVDD25/AVDDL
LAN CONNECTOR
Integrated Gigabit LAN Transform
Check P/N:
MICRO-STAR INt'L CO., LTD.
MARVELL 88E8053
MS-7066
Friday, July 02, 2004



Company	MICRO-STAR INt'L CO., LTD.
Title	DDR2 DIMM 1 & 2
Size	
Document Number	MS-7066
Rev	0B
Date	Friday, July 02, 2004
Sheet	17 of 30

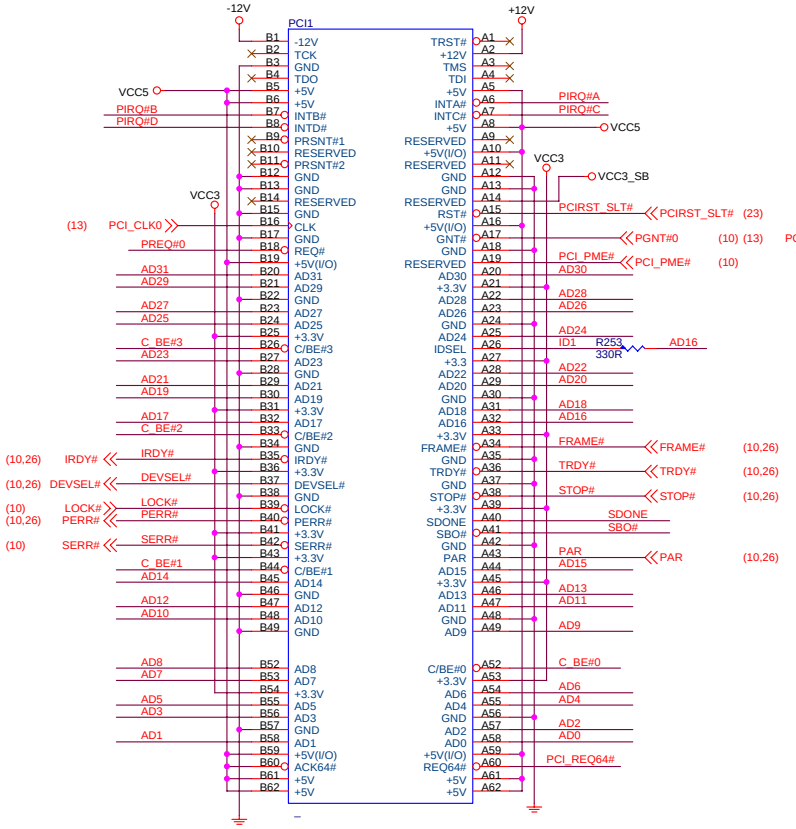

CHANNEL A V_SM_VTT DECOUPLING CAPS
VTT_DDR
C91
C0.1U25Y
C61
C0.1U25Y
C66
C4.7U35Y1206
C76
X_C4.7U35Y1206
C115
C0.1U25Y
C109
C0.1U25Y
C103
C0.1U25Y
C97
C0.1U25Y
C88
C0.1U25Y
CHANNEL B V_SM_VTT DECOUPLING CAPS
C52
C4.7U35Y1206
C72
X_C4.7U35Y1206
C107
C0.1U25Y
C101
C0.1U25Y
C95
C0.1U25Y
C85
C0.1U25Y
C78
C0.1U25Y
C67
C0.1U25Y
C62
C0.1U25Y
C56
C0.1U25Y
MAA_A4
MAA_A3
MAA_A2
MAA_A1
RN21
8P4R-33R0402
MAA_A9
MAA_A5
MAA_A8
MAA_A6
RN23
8P4R-33R0402
SBS_A2
MAA_A12
MAA_A11
MAA_A7
RN25
8P4R-33R0402
MAA_A13
RAS_A#
WE_A#
CAS_A#
R90
R98
R96
R93
33R0402
(7,17) RAS_A#
(7,17) WE_A#
(7,17) CAS_A#
MAA_A0
MAA_A10
SBS_A0
SBS_A1
RN18
8P4R-33R0402
SCS_A#0
ODT_A0
R94
R91
39R0402
SCKE_A1
SCKE_A0
RN26
8P4R-39R0402
SCS_A#1
ODT_A1
RN16
8P4R-39R0402
MAA_B4
MAA_B3
MAA_B2
MAA_B1
RN19
8P4R-33R0402
MAA_B9
MAA_B5
MAA_B8
MAA_B6
RN20
8P4R-33R0402
SBS_B2
MAA_B12
MAA_B11
MAA_B7
RN22
8P4R-33R0402
MAA_B10
MAA_B0
SBS_B0
SBS_B1
RN17
8P4R-33R0402
WE_B#
RAS_B#
CAS_B#
RN15
8P4R-33R0402
(7,17) WE_B#
(7,17) RAS_B#
(7,17) CAS_B#
SCS_B#0
ODT_B0
MAA_B13
RN14
8P4R-39R0402
SCKE_B0
SCKE_B1
RN24
8P4R-39R0402
SCS_B#1
ODT_B1
RN13
8P4R-39R0402
VCC3
Q33
N-NDS351AN_SOT23
CT1
X_.CD100U16EL11
LM358MX_SOIC8
9VSB
U16A
R252
130R1%
EC60
.CD100U16EL11
V_2P5_MCH
C188
C0.1U25X
1P2VREF
(23)
(7,17) MAA_A[0..13]
(7,17) SBS_A[0..2]
(7,17) SCS_A#[0..1]
(7,17) SCKE_A[0..1]
(7,17) ODT_A[0..1]
C286
X_C100P50N
R250
120R1%
VCC5_SB
R257
1KR
R256
4.7KR
Q42
N-MMBT3904_SOT23
(23) SEQ_SW
V_1P5_CORE
V_2P5_MCH
D10
X_1N4001_DO214AC
R254
4.7KR
Q41
N-MMBT3904_SOT23
(11,14,23) SLP_S3#
C295
X_C0.01U16X
R247
4.7KR
Q38
N-MMBT3904_SOT23
VCC_DDR
C287
C0.1U25X
(7,17) MAA_B[0..13]
(7,17) SBS_B[0..2]
(7,17) SCS_B#[0..1]
(7,17) SCKE_B[0..1]
(7,17) ODT_B[0..1]
C69
C1U10Y
C89
C1U10Y
C93
C102
C43
C42
C84
C127
C1U10Y
EC52
.CD1000U6.3EL15
EC41
CD1800U6.3EL20-2
C59
C269
C68
C94
C60
C108
C118
C71
C1U10Y
EC43
X_CD1800U6.3EL20-2
Grantsdale GMCH Power Sequencing Requirement
Between 1.5V Core and 2.5V DAC
MSI
MICRO-STAR INt'L CO., LTD.
Title
DDR TERMINATION & VTT DECOUPLING&2.5VDAC
Size
Document Number
MS-7066
Rev
0B
Date: Friday, July 02, 2004
Sheet 18 of 30



Title	PCI EXPRESS 16 PORT
Size	Document Number: MS-7066
Rev	0B
Date:	Friday, July 02, 2004
Sheet	19 of 30

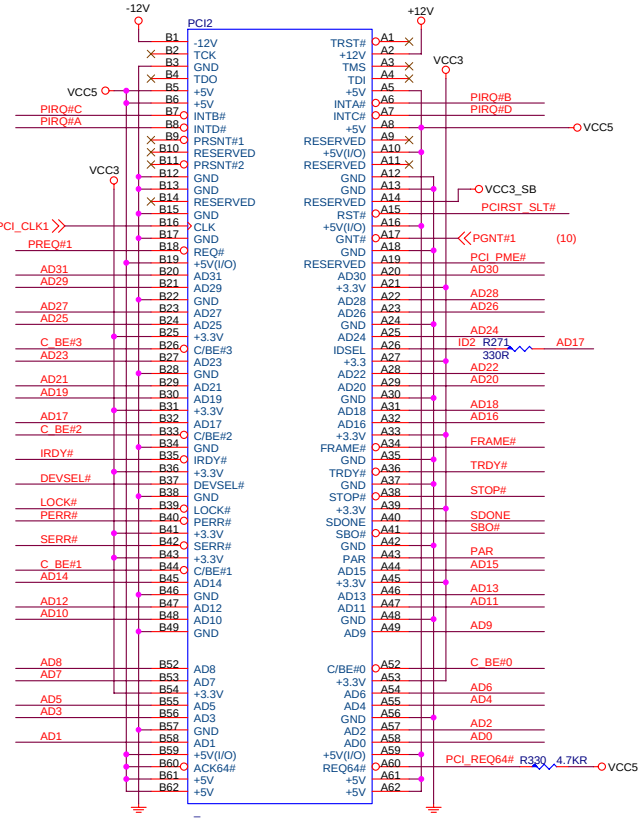
MICRO-STAR INt'L CO., LTD.

PCI SLOT 1 (PCI VER: 2.2 COMPLY)



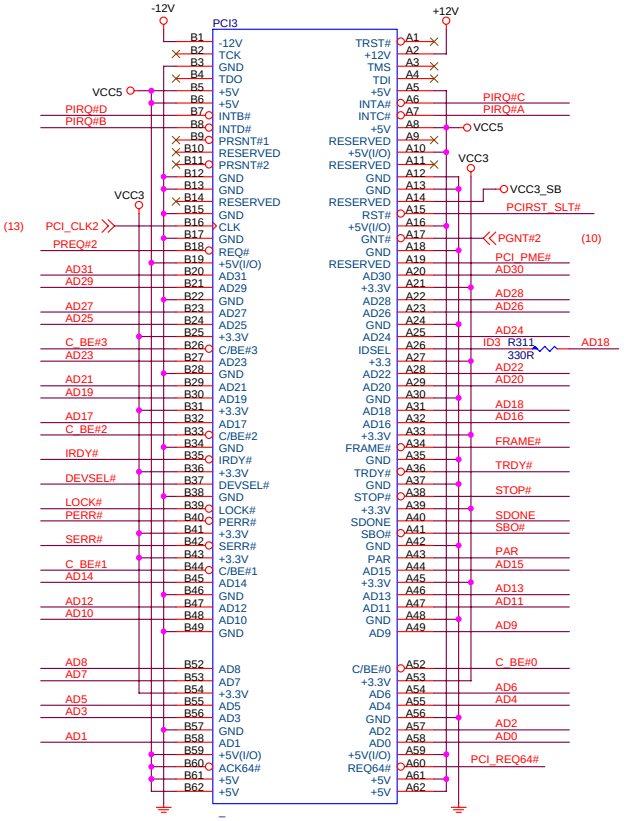
IDSEL = AD16
MASTER = PREQ#0
PIRQ#A

PCI SLOT 2 (PCI VER: 2.2 COMPLY)



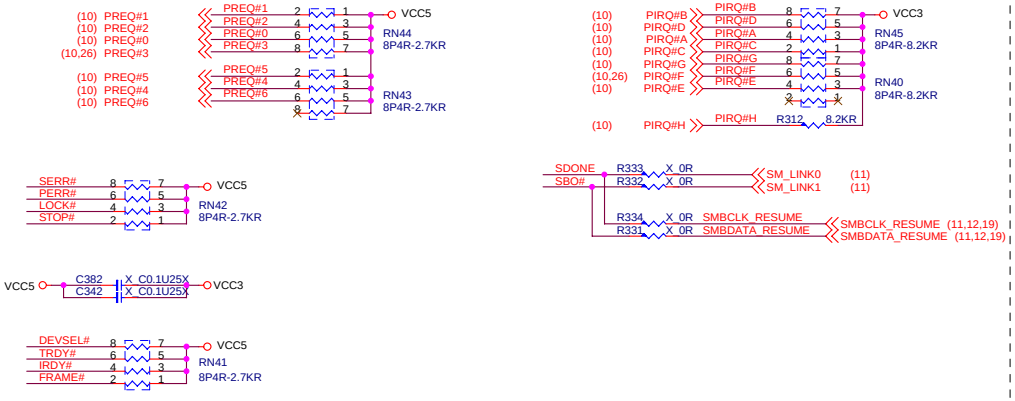
IDSEL = AD17
MASTER = PREQ#1
PIRQ#B

PCI SLOT 3 (PCI VER: 2.2 COMPLY)

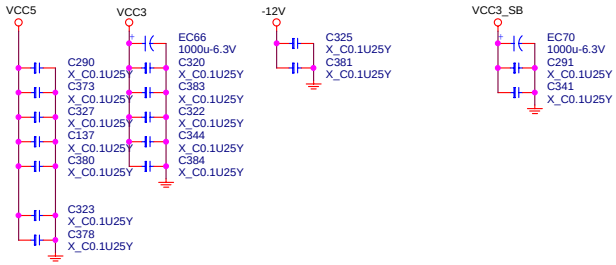


IDSEL = AD18
MASTER = PREQ#2
PIRQ#C

PCI PULL-UP / DOWN RESISTORS



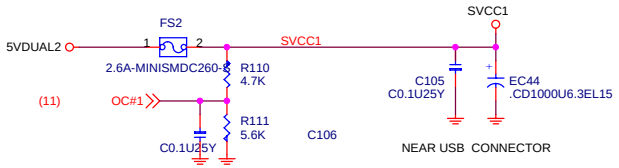
PCI SLOT DECOUPLING CAPACITORS



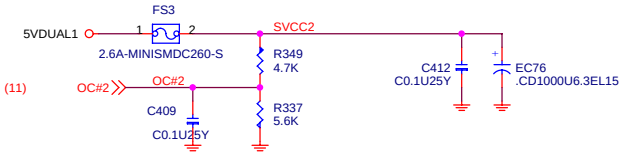
MICRO-STAR INt'L CO., LTD.

Title	PCI 1& 2 Slots	
Size	Document Number MS-7066	Rev 0B
Date: Friday, July 02, 2004	Sheet 20 of 30	

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

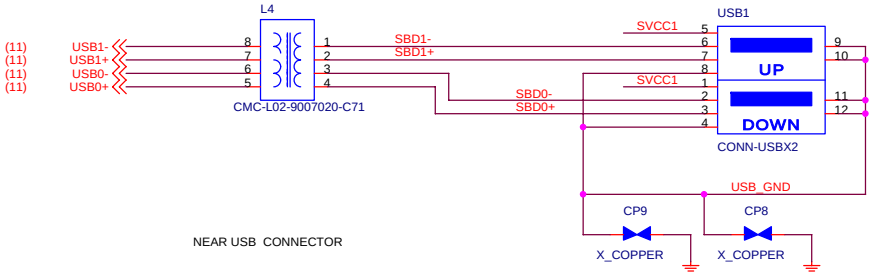


POWER CIRCUIT FOR USB PORT 4,5,6,7 (FRONT)



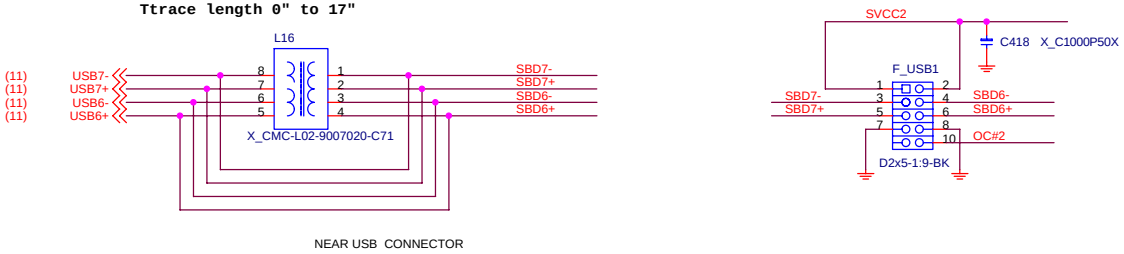
REAR PANEL USB CONNECTOR FOR USB PORT 0,1

USB Interface
Diff. Trace width 7.5 mils & 7.5 mils space.
Diff. & other space 20 mils.
Length matching: < 150 mils
Ttrace length 0" to 17"

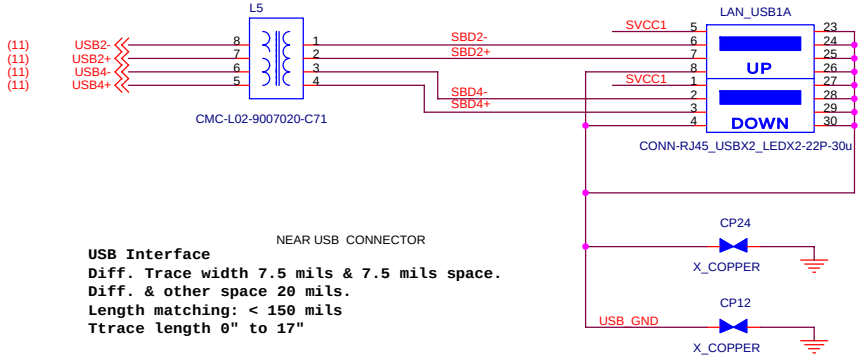


FRONT PANEL USB CONNECTOR FOR USB PORT 6,7

USB Interface
Diff. Trace width 7.5 mils & 7.5 mils space.
Diff. & other space 20 mils.
Length matching: < 150 mils
Ttrace length 0" to 17"

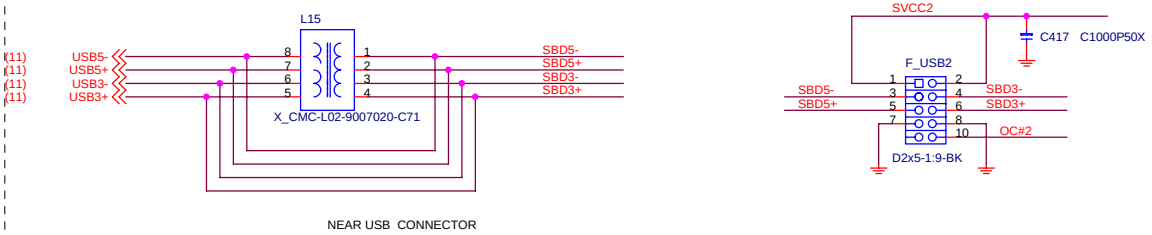


REAR PANEL USB CONNECTOR FOR USB PORT 2,3



USB Interface
Diff. Trace width 7.5 mils & 7.5 mils space.
Diff. & other space 20 mils.
Length matching: < 150 mils
Ttrace length 0" to 17"

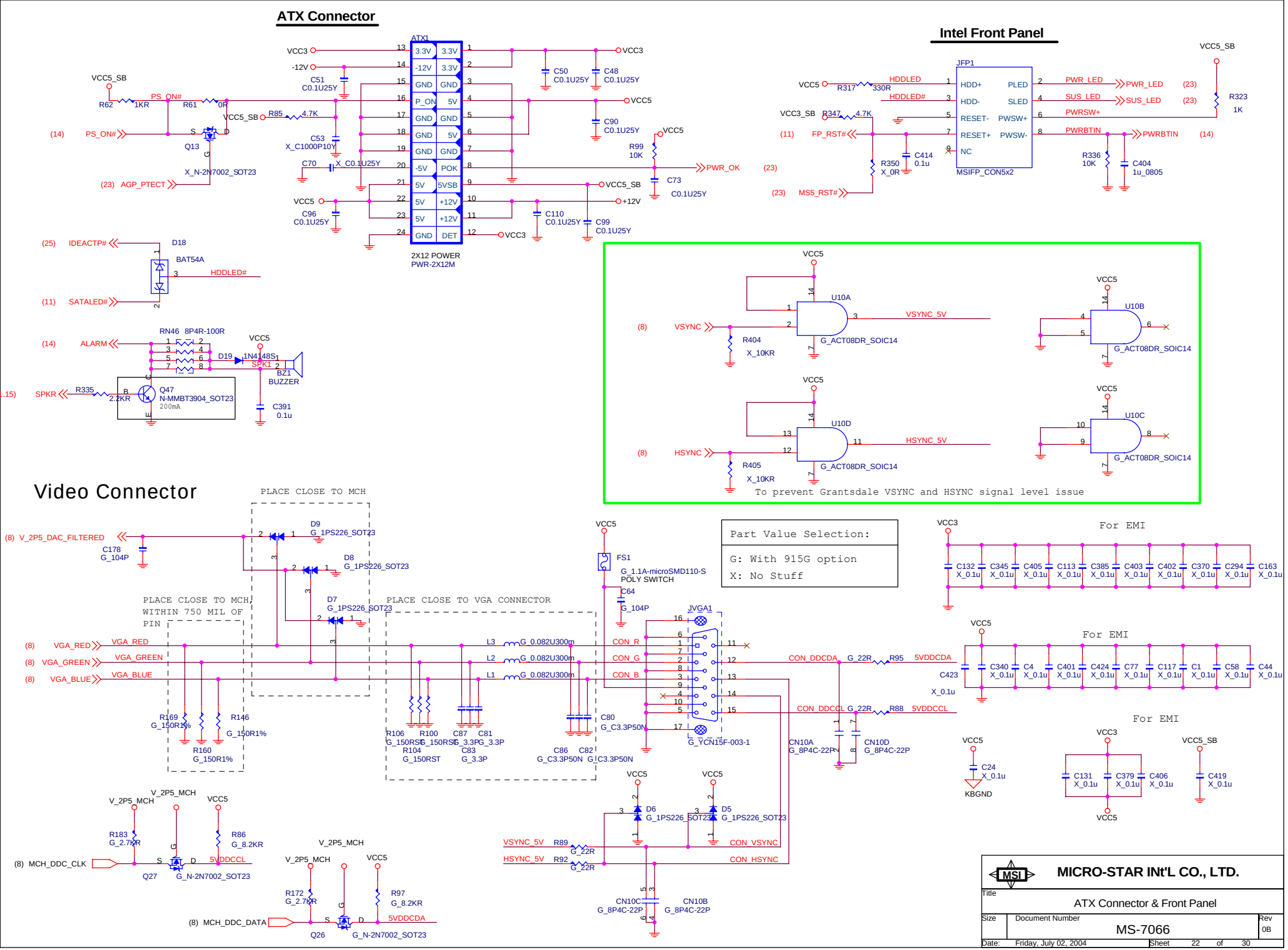
FRONT PANEL USB CONNECTOR FOR USB PORT 4,5



USB Interface
Diff. Trace width 7.5 mils & 7.5 mils space.
Diff. & other space 20 mils.
Length matching: < 150 mils
Ttrace length 0" to 17"

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

Title	USB Connectors	
Size	Document Number MS-7066	Rev 0B
Date: Friday, July 02, 2004	Sheet 21 of 30	


ATX Connector
ATX1
2X12 POWER
PWR-2X12M
Intel Front Panel
JFP1
MSIFP_CON5x2
To prevent Grantsdale VSYNC and HSYNC signal level issue
Video Connector
PLACE CLOSE TO MCH
PLACE CLOSE TO MCH WITHIN 750 MIL OF PIN
PLACE CLOSE TO VGA CONNECTOR
JVGA1
G_YCN15F-003-1
Part Value Selection:
G: With 915G option
X: No Stuff
For EMI
MICRO-STAR INt'L CO., LTD.
Title
ATX Connector & Front Panel
Size
Document Number
MS-7066
Rev
0B
Date: Friday, July 02, 2004
Sheet 22 of 30

ACPI Controller

3VSB MODE SELECT

3VSB MODE	3VDLDEC#
SINGLE MOSFET	PULL HIGH
DUAL MOSFET	PULL LOW

VDIMM LINEAR OR PWM SELECT

VDIMM MODE	EXTRAM
LINEAR REGULATOR	PULL LOW
PWM REGULATOR	PULL HIGH

PCI-Express POWER

5V DUAL Power

DDR VTT Power

DDR AND DDR II VOLT SELECT

DDRTYPE	VDIMM
PULL LOW	2.5V
PULL HIGH	1.8V

THIS PIN IS OPEN DRAIN OUTPUT

CHARGE PUMP VOLTAGE OUTPUT

Close to MS6+

Wide Trace

CLOSE TO CHIP

Regulator(TO-252)
D03-45N020B-N03
D03-40N030B-A36
D03-6530A0B-F01
Regulator(TO-263)
D03-50N034B-N03
D03-50N031B-P03
Dual NMOS
D03-07D0303-N03
D03-0731303-A30

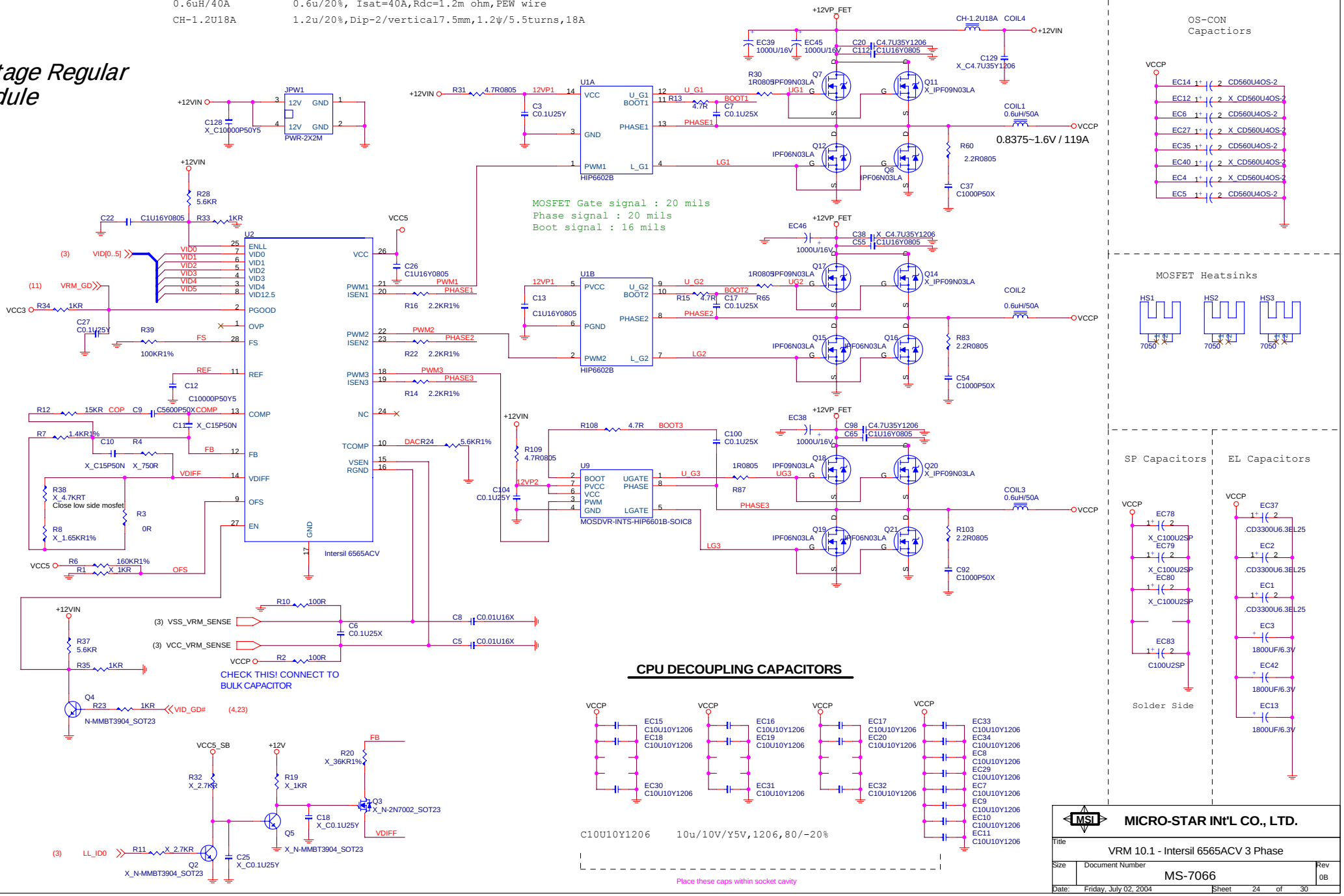
MICRO-STAR INt'L CO., LTD.

Title	ACPI CONTROLLER MS7	
Size	Document Number MS-7066	Rev 0B
Date: Friday, July 02, 2004	Sheet 23 of 30	

IPF06N03LA	Rds(on)=8.7mΩ(@4.5V,30A),Vgs(on)=1.2~2V,Id=50A,Ciss=3110pf,Qg=10nC,Vds=25V,Vgs=±20V
C100U2SP	ESR<13mΩ,Ripple cur.<2.7A,LC<12uA,105C
.CD3300U6.3EL25	ESR<12mΩ,Ripplecur.<2800mA,105C,longlife3000hrs,KZGSeries
560u_2.5V	ESR=6mΩ,Ripplecur.=4400mA,Lc.<500uA,105C/2000hrs
1800UF/6.3V	ESR<12mΩ, Ripplecur<2350mA,105C, longlife change from 2000hrs to 3000hrs ,KZJ series
0.6uH/40A	0.6u/20%, Isat=40A,Rdc=1.2m ohm,PEW wire
CH-1.2U18A	1.2u/20%,Dip-2/vertical7.5mm,1.2ψ/5.5turns,18A

TDP = 115 W
VR_TDC = 101 A
Icc(max) = 119 A
Tejas Tcase = [P x 0.213] + 43.3
Prescott Tcase = [P x 0.25] + 43.3

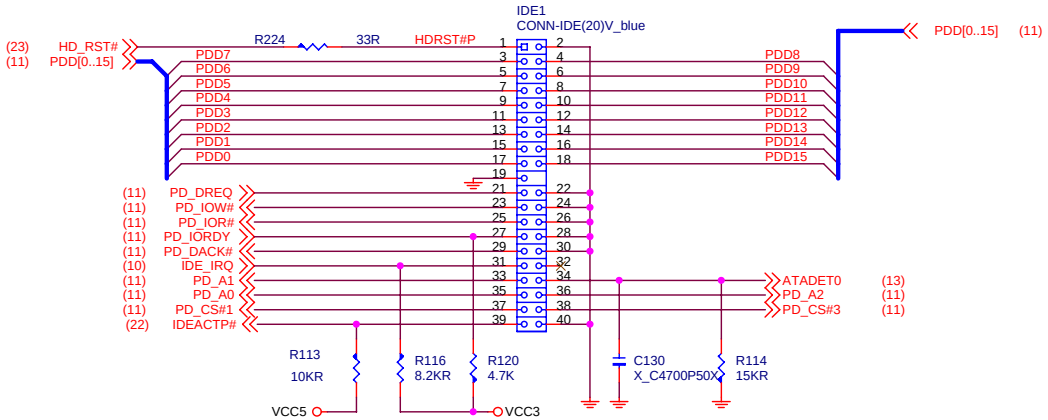
Voltage Regular Module



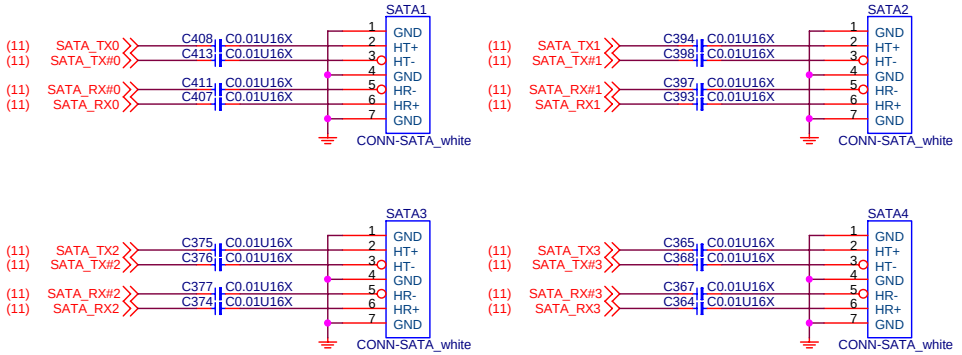
MSI	MICRO-STAR INt'L CO., LTD.		
Title	VRM 10.1 - Intersil 6565ACV 3 Phase		
Size	Document Number	MS-7066	Rev 0B
Date:	Friday, July 02, 2004	Sheet 24 of 30	

FAN CONTROL

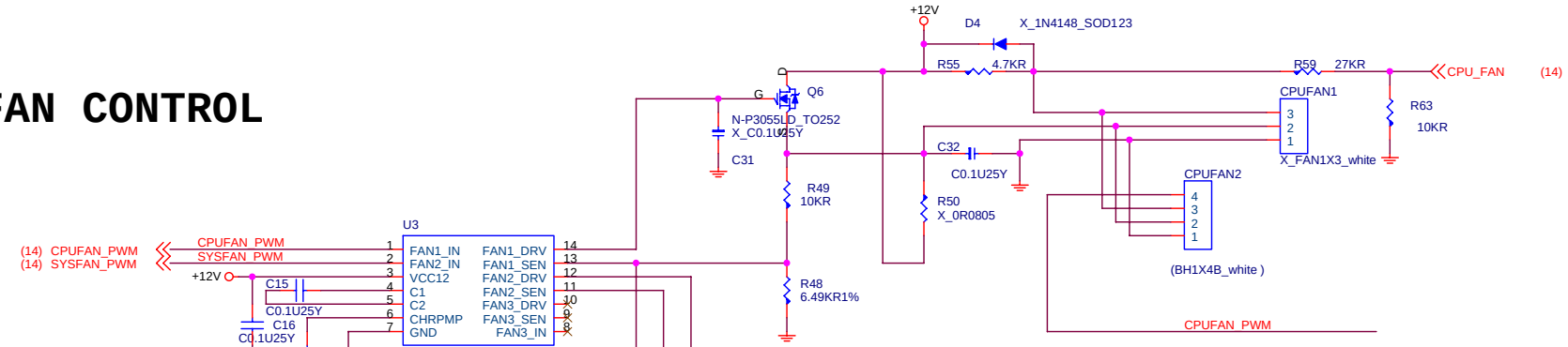
ATA 33/66/100 IDE Connectors



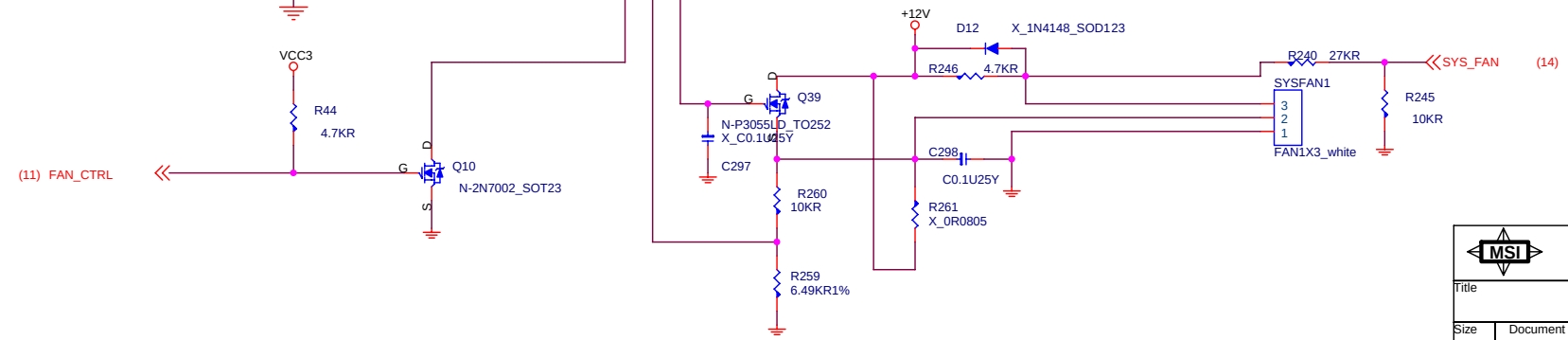
SERIAL ATA CONNECTOR BLOCK



CPU FAN



SYSTEM FAN



MSI	MICRO-STAR INt'L CO., LTD.	
Title	FAN & IDE Connectors	
Size	Document Number MS-7066	Rev 0B
Date: Friday, July 02, 2004	Sheet 25 of 30	

Part Value Selection:
E: With IEEE-1394 option
X: No Stuff

IEEE-1394

IDSEL = AD25
MASTER = PREQ#3
PIRQ#F

FRONT 1394 PORT

(T/S/S=5/7.5/20)

Place close to pin 81
(Less then 500 mils)

(T/S/S=5/7.5/20)

Place close to pin 74
(Less then 500 mils)

For 24C02

For save EEPROM

NEAR EACH POWER PIN (8 PCS)

1394-EEPROM 24C02

E_VIA-VT6307

E_YJ205 N31-2051201-H06

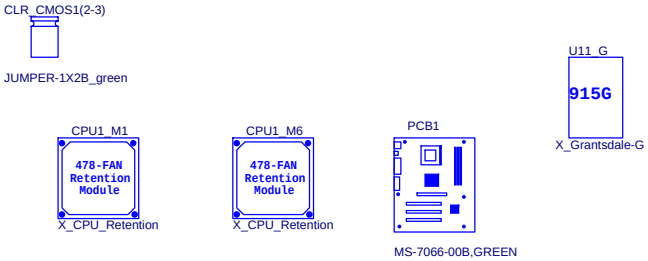
TC = 0-55oC, VCC = 3.3V+/-10%, GND = 0V

Symbol	Parameter	Typ	Max	Unit	Condition
ICC	Power Supply Current-VCC	89	107	mA	S400, two ports transmitting

MICRO-START INT'L CO.,LTD.

Title		
VIA-6307 IEEE1394 Controller		
Size A3	Document Number MS-7066	Rev 0B
Date: Friday, July 02, 2004	Sheet 26 of 30	

MANUAL PART



Model option table

Model type	Function	BOM Config	ERP BOM No.
MS7066	915G+ICH6+G-bit Lan+1394	Cfg7066-00B-SIG	601-7066-XXX
MS7066	915P+ICH6+G-bit Lan+1394	Cfg7066-00B-SID	

MICRO-STAR INt'L CO., LTD.

Title: General Purpose Spec & JUMPER SETTING

Size | Document Number: MS-7066 | Rev: 0B

Date: Friday, July 02, 2004 | Sheet 27 of 30

ICH6

GPIO	Alt Func	Pin	I/O/NC	Power	PU	SMI	Tol	Default	Rickles Signal Name
GPI[0]	PCIREQ[6]#	B7	I	V5REF	N	Y	5)	N/A	PREQ#6
GPI[1]	PCIREQ[5]#	E8	I	V5REF	N	Y	5	N/A	PREQ#5
GPI[2]	PIRQE#	D9	I	V5REF	N	Y	5	N/A	PIRQ#E
GPI[3]	PIRQF#	C7	I	V5REF	N	Y	5	N/A	PIRQ#F
GPI[4]	PIRQG#	C6	I	V5REF	N	Y	5	N/A	PIRQ#G
GPI[5]	PIRQH#	M3	I	V5REF	N	Y	5	N/A	PIRQ#H
GPI[6]	unmuxed	AD19	I	Vcc3p3	N	Y	3.3	N/A	strapped hi
GPI[7]	unmuxed	AE19	I	Vcc3p3	N	Y	3.3	N/A	NC
GPI[8]	unmuxed	R1	I	VccSus3p3	N	Y	3.3	N/A	NC
GPI[9]	OC[4]#	C23	I	VccSus3p3	N	Y	3.3	N/A	OC#2
GPI[10]	OC[5]#	D23	I	VccSus3p3	N	Y	3.3	N/A)	OC#2
GPI[11]	SMBALERT#	W6	I	VccSus3p3	N	Y	3.3	N/A	SMB_ALERT#
GPI[12]	unmuxed	M2	I	Vcc3p3	N	Y	3.3	N/A	NC
GPI[13]	unmuxed	R6	I	VccSus3p3	N	Y	3.3	N/A	strapped hi / SIO_PME#
GPI[14]	OC[6]#	C25	I	VccSus3p3	N	Y	3.3		OC#2
GPI[15]	OC[7]#	C24	I	VccSus3p3	N	Y	3.3		OC#2
GPO[16]	PCIGNT[6]#	D8	O	Vcc3p3	U	N	3.3	1	NC
GPO[17]	PCIGNT[5]#	F6	O	Vcc3p3	U	N	3.3	1	PGNT#5
GPO[18]	blink	AC21	O	Vcc3p3	N	N	3.3	1	NC
GPO[19]	blink	AB21	O	Vcc3p3	N	N	3.3	1	GPO BIOS WP#
GPO[20]	unmuxed	AD22	O	Vcc3p3	N	N	3.3	1	GPO FAN CTRL
GPO[21]	unmuxed	AD20	O	Vcc3p3	N	N	3.3	1	NC
GPO[23]	unmuxed	AD21	O	Vcc3p3	N	N	3.3	0	NC
GPIO[24]	unmuxed	V3	I/O	VccSus3p3	N	N	3.3	Out-1	NC
GPIO[25]	Internal 2.5V	p5	I/O	VccSus3p3	D	N	3.3	Out-1	strapped low for 2.5v reg internal
GPI[26]	SATA[0]GP	AF17	I	Vcc3p3	N	N	3.3	N/A	~GPI VGA CABLE DET/strapped hi
GPIO[27]	unmuxed	R3	I/O	VccSus3p3	N	N	3.3	Out-1	NC
GPIO[28]	unmuxed	T3	I/O	VccSus3p3	N	N	3.3	Out-1	GPO LAN EN
GPI[29]	SATA[1]GP	AE18	I	Vcc3p3	N	N	3.3		ICH GPI29/strapped hi
GPI[30]	SATA[2]GP	AF18	I	Vcc3p3	N	N	3.3		ICH GPI30/strapped hi
GPI[31]	SATA[3]GP	AG18	I	Vcc3p3	N	N	3.3		ICH GPI31/strapped hi
GPIO[32]	unmuxed	AF19	I/O	Vcc3p3	N	N	3.3	Out-1	NC
GPIO[33]	unmuxed	AF20	I/O	Vcc3p3	N	N	3.3	Out-1	NC
GPIO[34]	unmuxed	AC18	I/O	Vcc3p3	N	N	3.3	Out-1	NC
GPIO[40]	REQ4#	F7	I	V5REF	N	N	5		NC
GPIO[41]	LDRQ1#	P4	I	Vcc3p3	U	N	3.3		NC
GPIO[48]	GNT4#	E7	O	Vcc3p3	N	N	3.3		NC
GPIO[49]	CPUPWRGD	AG25	OD	V_CPU_IO	N	N	3.3		H_PWRGD

Note: All inputs are sticky. The status bit remains set as long as the input was asserted for two clocks. GPI's are sampled on PCI clocks in S0/S1. GPIs are sampled on RTC clocks in S3/S4/S5.

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-down
FPGI[2]	4	Main	3.3	pull-down
FPGI[3]	3	Main	3.3	pull-down
FPGI[4]	30	Main	3.3	pull-down

PCI Config.

DEVICE	MCP1 INT Pin	REQ#/GNT#	IDSEL	CLOCK
PCI Slot 1	PIRQA PIRQB PIRQC PIRQD	PCI_REQ#0 PCI_GNT#0	AD16	PCICLK0
PCI Slot 2	PIRQB PIRQC PIRQD PIRQA	PCI_REQ#1 PCI_GNT#1	AD17	PCICLK1
PCI Slot 3	PIRQC PIRQD PIRQA PIRQB	PCI_REQ#2 PCI_GNT#2	AD18	PCICLK2
1394	PIRQF	PCI_REQ#3 PCI_GNT#3	AD25	1394_PCLK

DDRII DIMM Config.

DEVICE	ADDRESS	CLOCK
DIMM 1	AOH	MCLK_A0/MCLK_A#0 MCLK_A1/MCLK_A#1 MCLK_A2/MCLK_A#2
DIMM 2	A2H	MCLK_B0/MCLK_B#0 MCLK_B1/MCLK_B#1 MCLK_B2/MCLK_B#2

JUMPER SETTING

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

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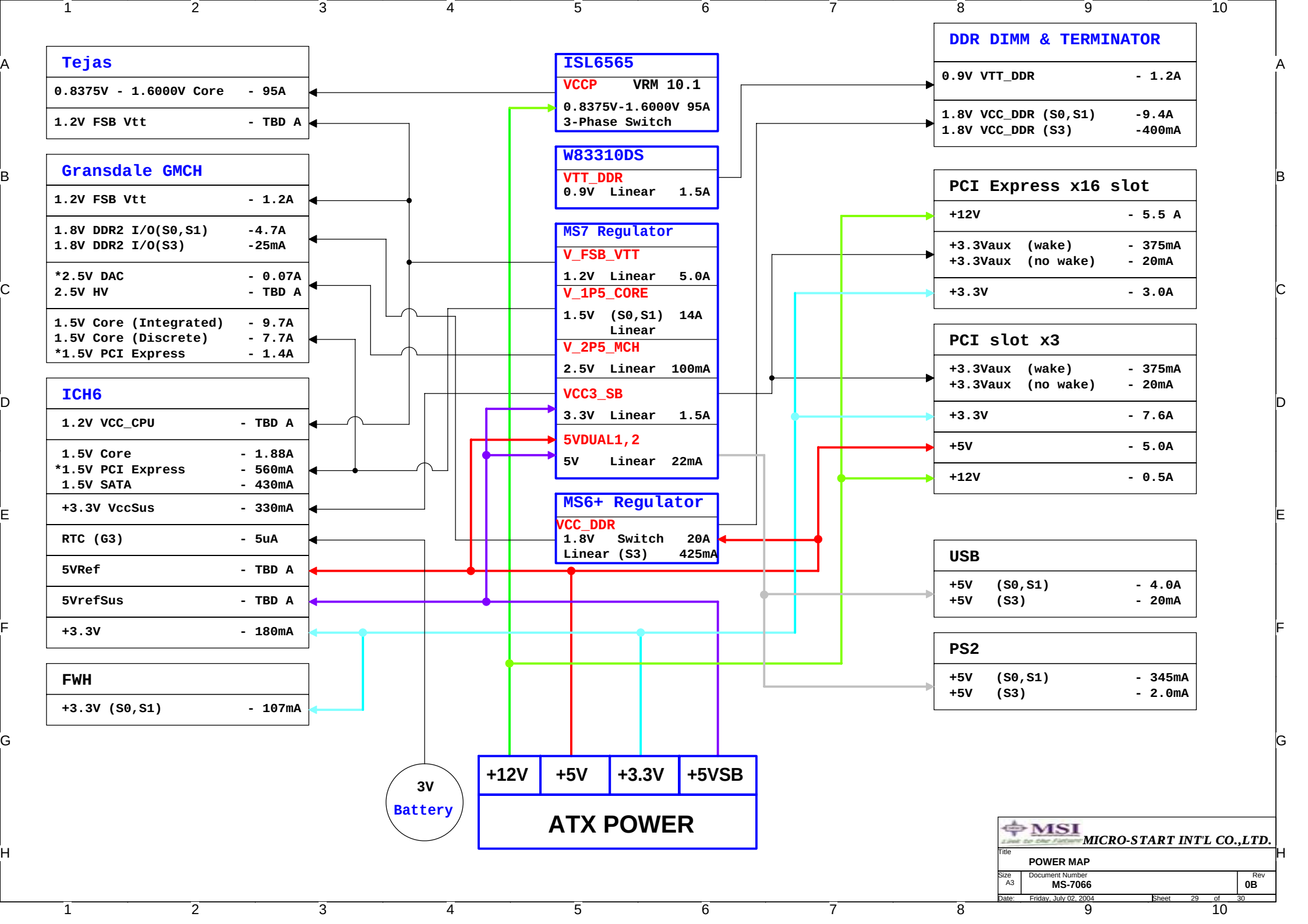
Title: General Purpose Spec & JUMPER SETTING

Size | Document Number: MS-7066 | Rev: 0B

Date: Friday, July 02, 2004 | Sheet 28 of 30



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Title	POWER MAP	
Size A3	Document Number MS-7066	Rev 0B
Date: Friday, July 02, 2004	Sheet 29 of 30	

03/12

Page 4 add C74, C75 for CPU PLL PWR (ADV suggest)
Page 10 add PGNT5# and R351 for DEBUG
Page 23 Del R305 (MS7 time issue)
Page 22 add R61 del Q13 (AGP_PTECT not used)
Page 5 add R72 ,R75 (referenced MS-7052)
Page 3,5 add CPU TEST PIN

03/15

Page 24 Change PWM CHOCK2~4
Page 6 Add R229ICH_SYNC# pull high V_2P5_MCH referenced MS-7028

03/18

Page 15 Change D13, D14, D15 BAT54A footprint

03/22

Page 8 Del R132 R149 R157 CYPRESS RECOMMEND
Page 14 Add C40 near Super IO
Page 23 Del EC59 add EC56 (卡件)

04/27

Page 26 Add VIA-6307 IEEE 1394 Controller
Page 16 Change PCIE GigaLan from 82570EI to MARVELL 88E8052
Page 15 Swap AUDIO1 and AUDIO2
Change COPPER library to NC_T
Page 13 Change JLPC1 library
Page 22 Add 22P at CN10 to meet SPEC.
Page 21 Add L4 L5 for EMI
Page 14 Add R402 RN51 ~RN54 for EMI

Title: HISTORY		
Size: B	Document Number: MS-7066	Rev: 0B
Date: Friday, July 02, 2004	Sheet 30 of 30	