B365

Version : 10

CPU :

Intel CoffeeLake-S

System Chipset :

Intel CannonLake-H Chipset

On Board Chipset :

IMVP8 -- NCP81220+NCP81258 7Phase
Gigabit LAN -- RTL8111HN
HDA Codec -- Realtek ALC623
Super I/O --NCT6686D-L
SPI Flash 128Mb + 64Mb

Main Memory :

2 Channel DDR 4 * 4 (Max 64GB)

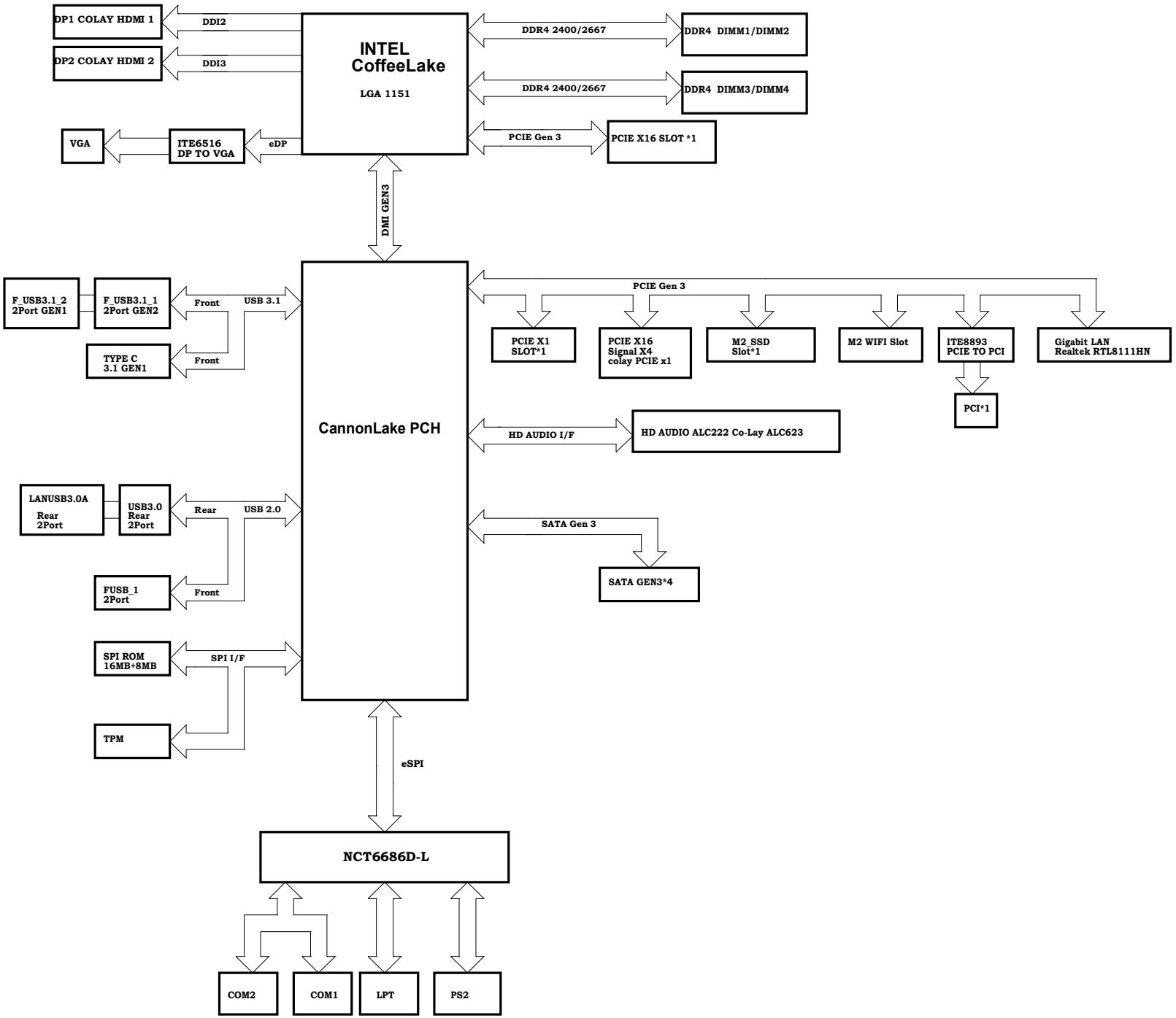
Expansion Slot :

PCI Express x16 Slot * 1
PCI Express x4 Slot * 1
PCI Express x1 Slot * 1
PCI SLOT * 1

lenovo

MSI Link to the Future **MICRO-START INT'L CO.,LTD.**

Title: Cover Sheet		
Size	Document Number: B365	Rev: 10
Date: Tuesday, April 23, 2019	Sheet 1 of 44	

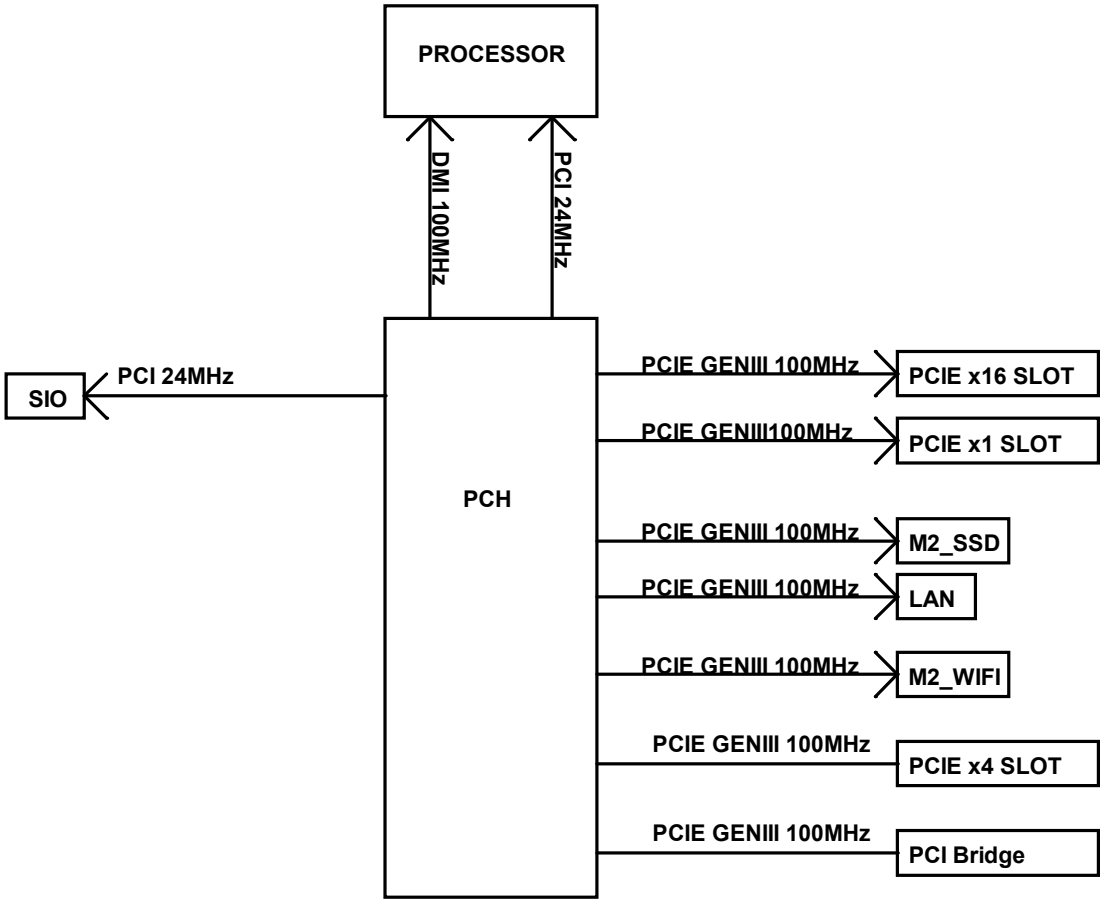


Slot Sequence:

- PCIE X16
- PCIE X1
- PCIE X16(signal x4)
- PCI SLOT

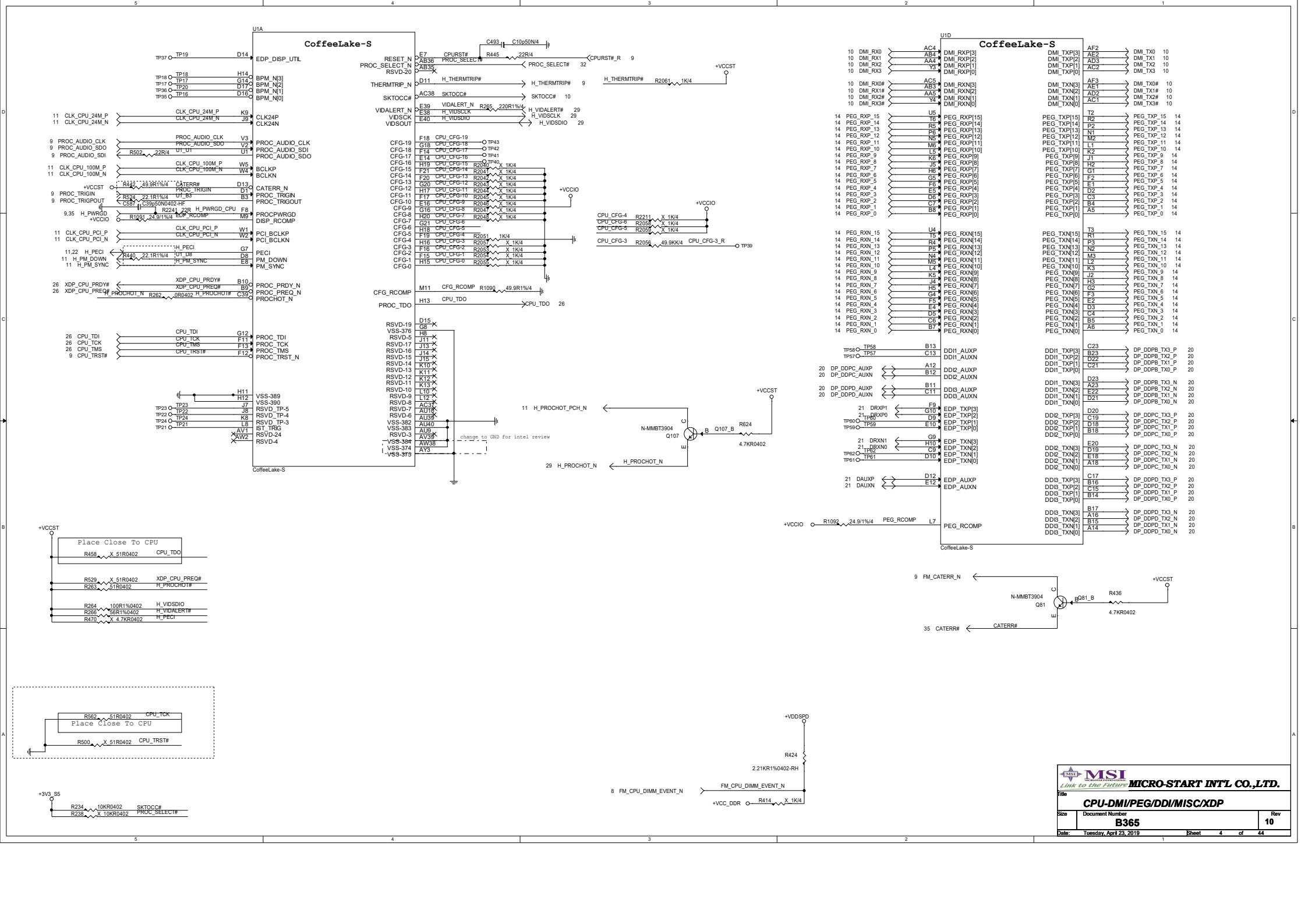
MSI *Link to the Future* **MICRO-START INT'L CO.,LTD.**

Title: ***Block Diagram***		
Size	Document Number: **B365**	Rev: **10**
Date: Tuesday, April 23, 2019	Sheet 2 of 44	



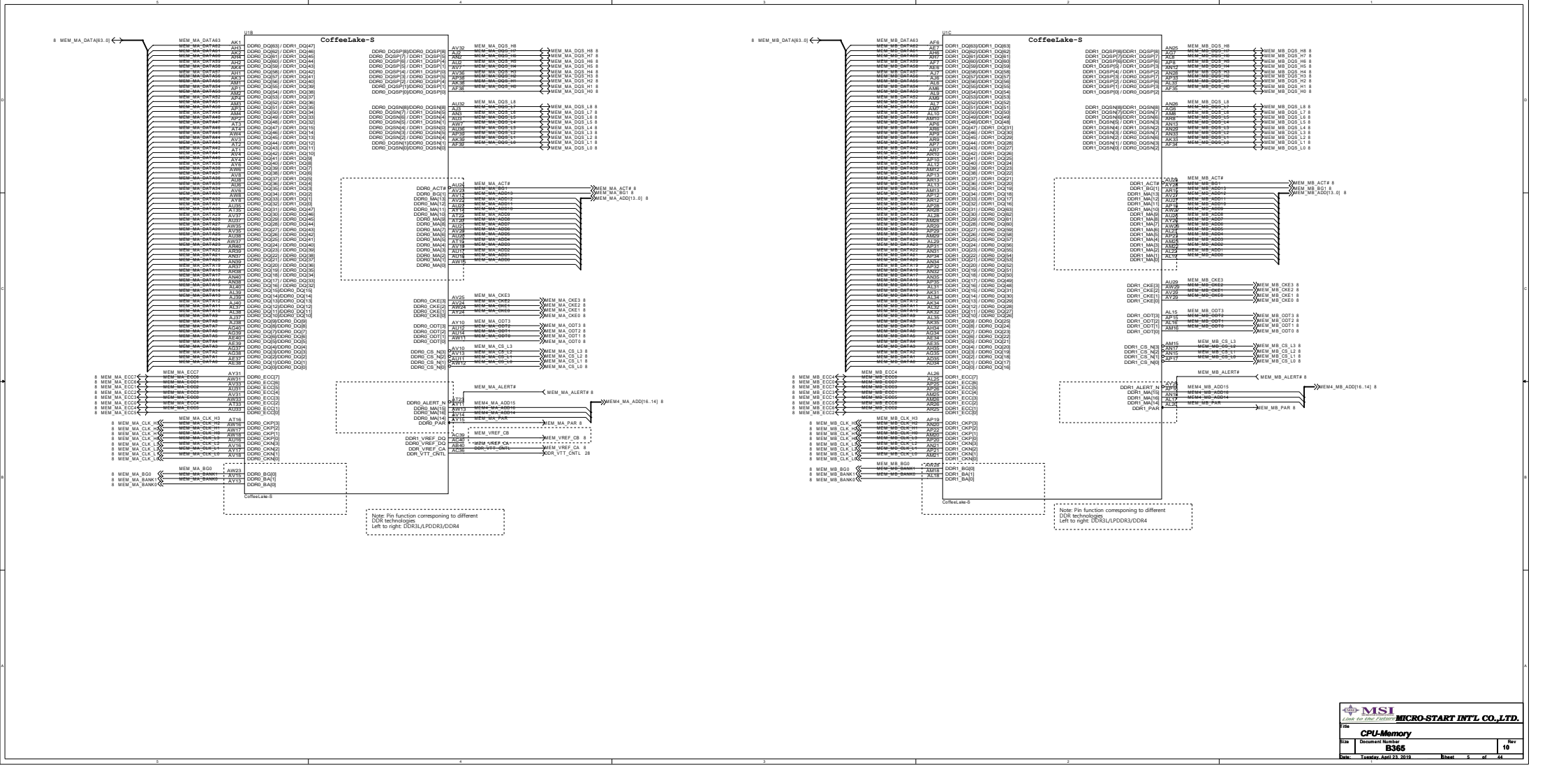
MSI Link to the Future MICRO-START INT'L CO.,LTD.

Title: Clock Distribution		
Size	Document Number: B365	Rev: 10
Date: Tuesday, April 23, 2019	Sheet 3 of 44	



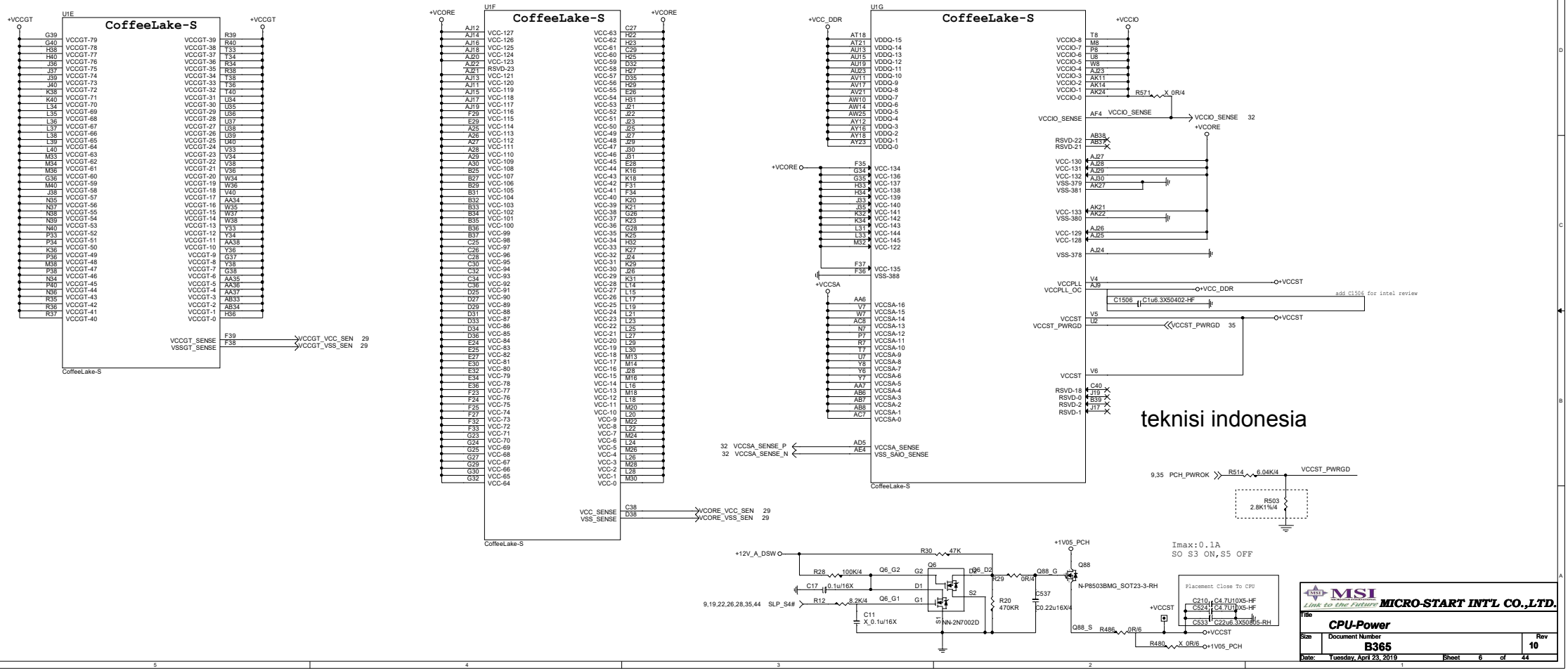
Title	CPU-DMI/PEG/DDI/MISC/XDP
Size	Document Number: B365
Rev	10
Date:	Tuesday, April 23, 2019
Sheet	4 of 44

MSI MICRO-STAR INT'L CO.,LTD.
Link to the Future



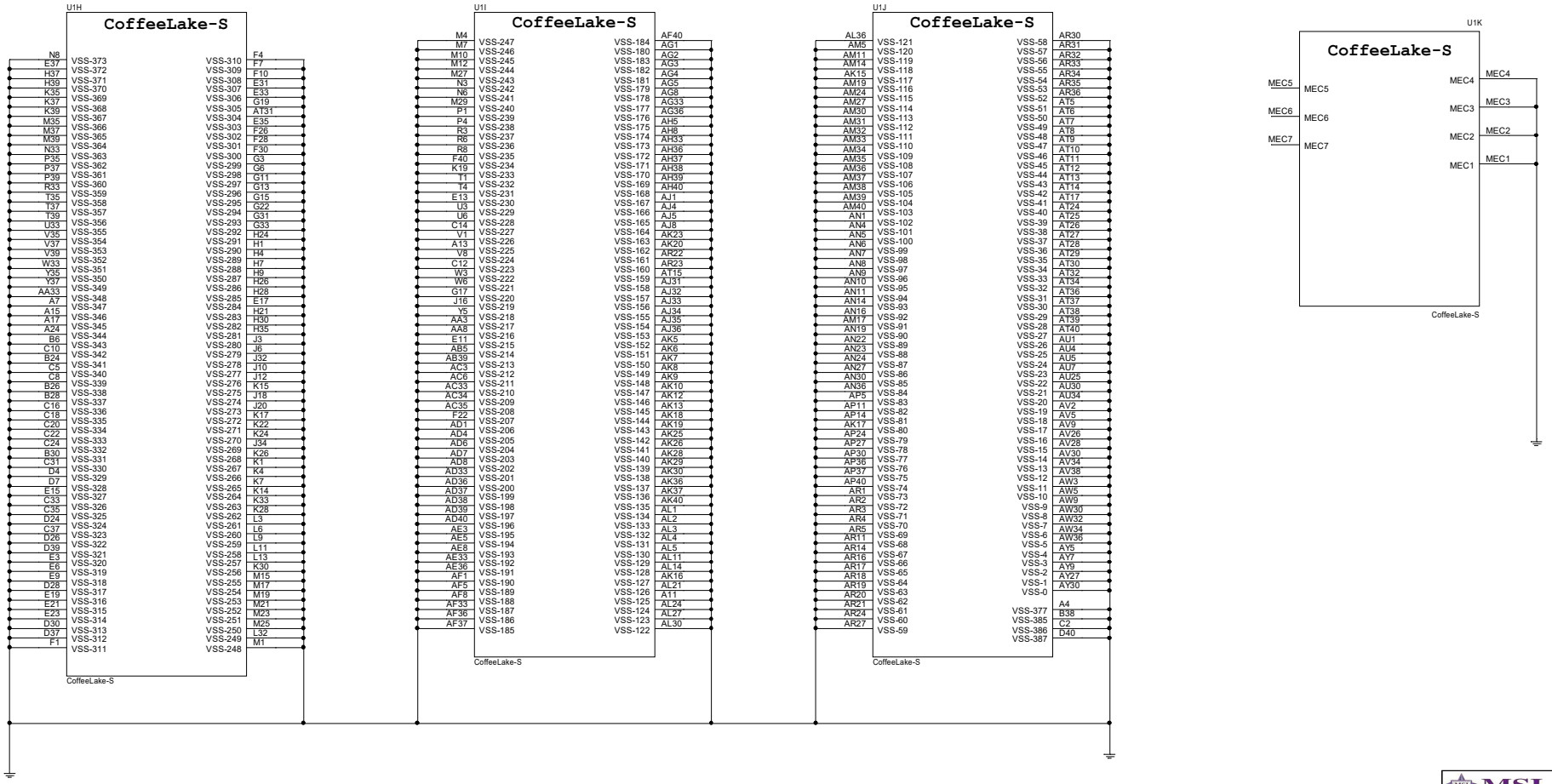
MSI — Link to the Future — MICRO-START INT'L CO.,LTD.

Title	CPU-Memory	
Size	Document Number: B365	Rev: 10
Date: Tuesday, April 23, 2019	Sheet 5 of 44	



MICRO-START INT'L CO.,LTD.

Title	CPU-Power	
Size	Document Number: B365	Rev: 10
Date: Tuesday, April 23, 2019	Sheet 6 of 44	

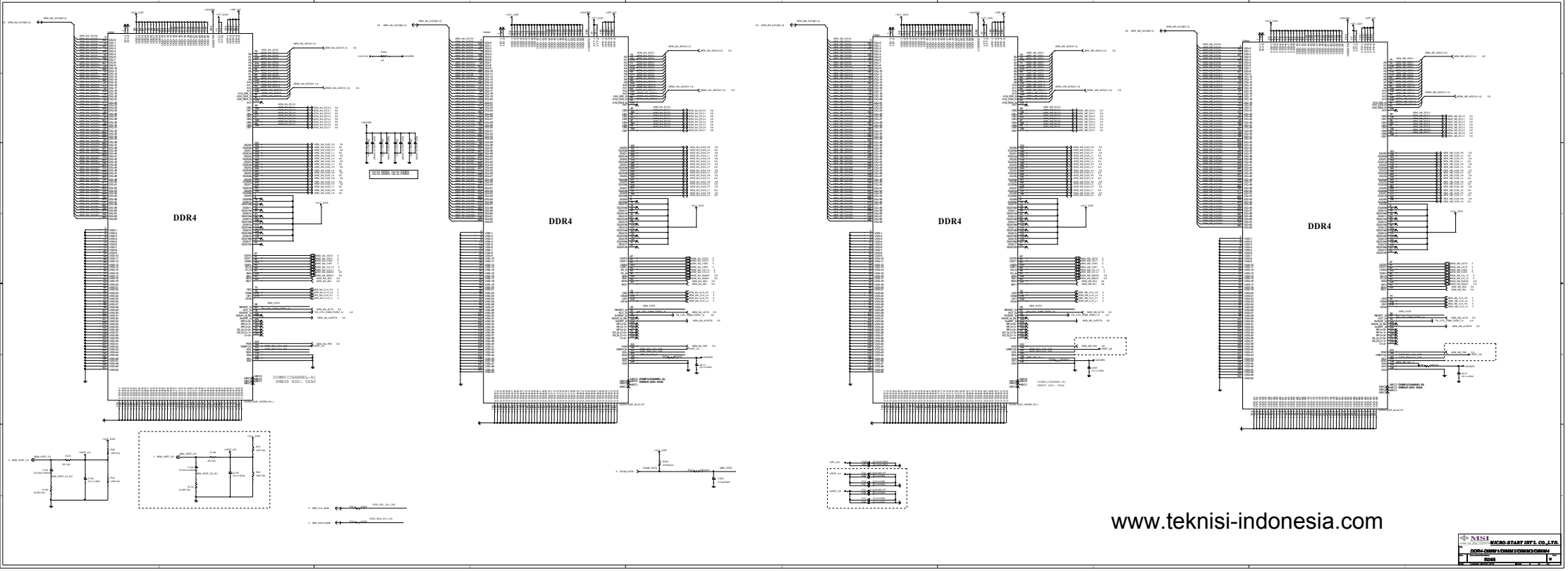


MSI MICRO-STAR INT'L CO.,LTD.
Link to the Future

Title: CPU-GND

Size	Document Number	Rev
	B365	10

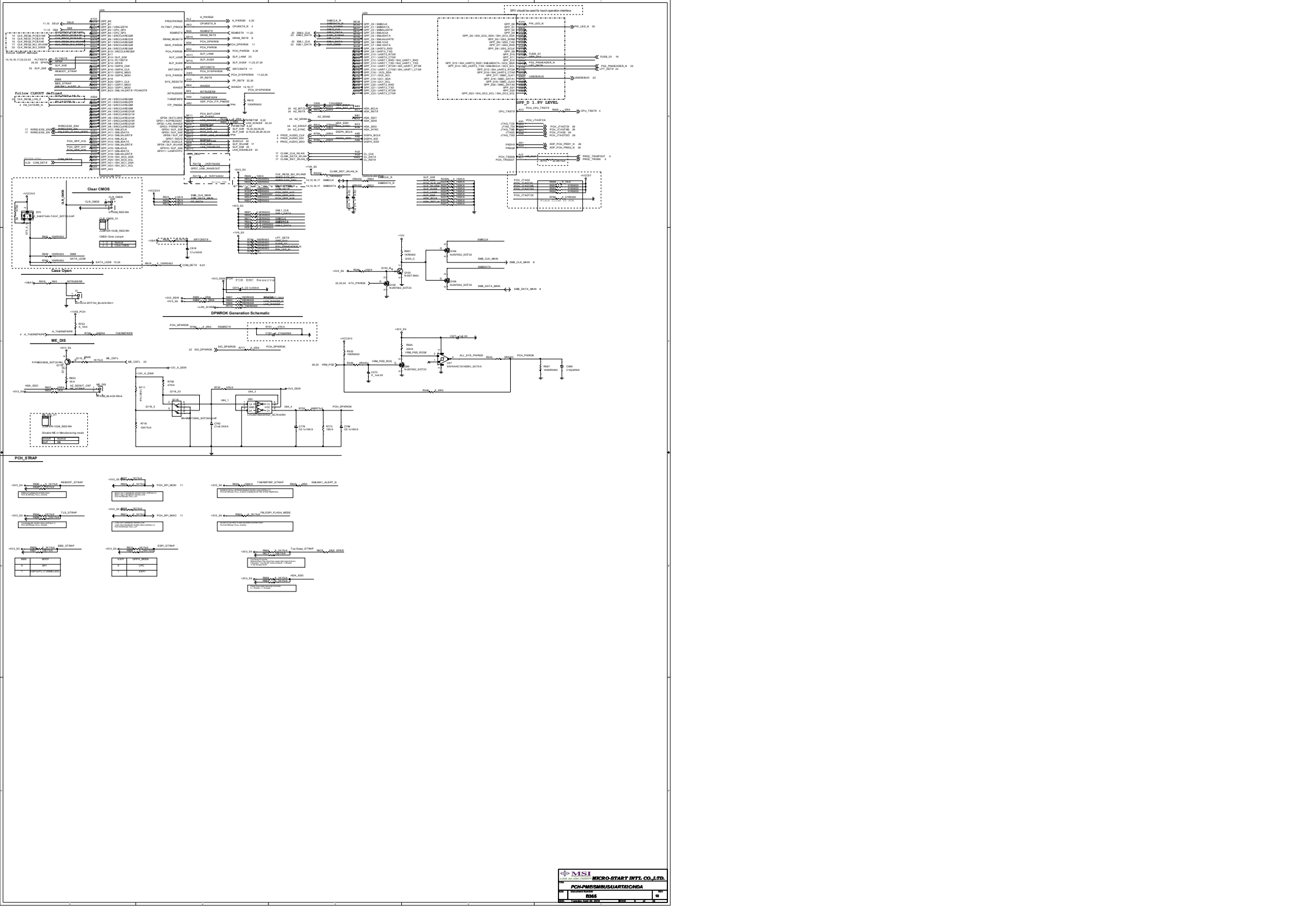
Date: Tuesday, April 23, 2019 Sheet 7 of 44

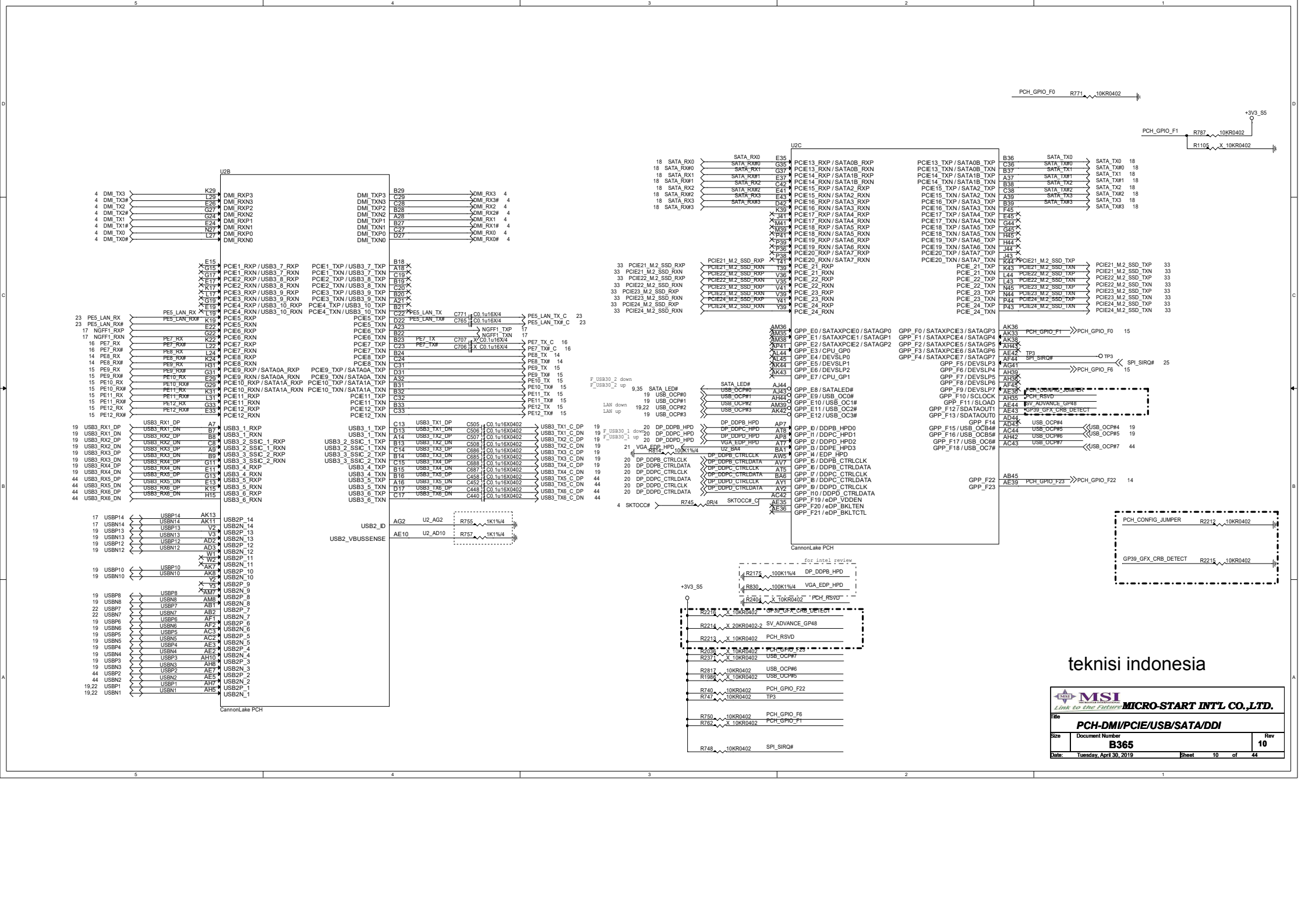


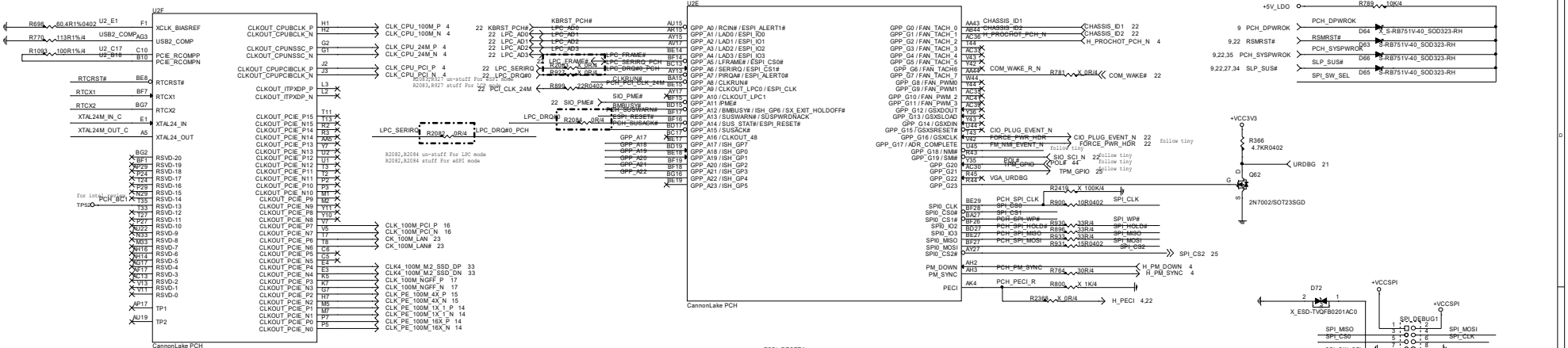
MICRO-STAR INT'L CO.,LTD.

DDR4-DIMM1/DIMM2/DIMM3/DIMM4

MS65


SPI1 should be used for touch operation interface
follow CLKOUT defined
Clear CMOS
Case Open
ME_DIS
DPWROK Generation Schematic
PCH_STRAP
MICRO-START INTL CO.,LTD.
PCH-PME/SMBUS/UART2/CHDA
B365
Last Date: Mon, Apr 16, 2018


U2B
CannonLake PCH
U2C
CannonLake PCH
DMI_RXP3
DMI_RXN3
DMI_RXP2
DMI_RXN2
DMI_RXP1
DMI_RXN1
DMI_RXP0
DMI_RXN0
DMI_TXP3
DMI_TXN3
DMI_TXP2
DMI_TXN2
DMI_TXP1
DMI_TXN1
DMI_TXP0
DMI_TXN0
PCIE1_RXP / USB3_7_RXP
PCIE1_RXN / USB3_7_RXN
PCIE2_RXP / USB3_8_RXP
PCIE2_RXN / USB3_8_RXN
PCIE3_RXP / USB3_9_RXP
PCIE3_RXN / USB3_9_RXN
PCIE4_RXP / USB3_10_RXP
PCIE4_RXN / USB3_10_RXN
PCIE1_TXP / USB3_7_TXP
PCIE1_TXN / USB3_7_TXN
PCIE2_TXP / USB3_8_TXP
PCIE2_TXN / USB3_8_TXN
PCIE3_TXP / USB3_9_TXP
PCIE3_TXN / USB3_9_TXN
PCIE4_TXP / USB3_10_TXP
PCIE4_TXN / USB3_10_TXN
PCIE5_RXP
PCIE5_RXN
PCIE6_RXP
PCIE6_RXN
PCIE7_RXP
PCIE7_RXN
PCIE8_RXP
PCIE8_RXN
PCIE9_RXP / SATA0A_RXP
PCIE9_RXN / SATA0A_RXN
PCIE10_RXP / SATA1A_RXP
PCIE10_RXN / SATA1A_RXN
PCIE11_RXP
PCIE11_RXN
PCIE12_RXP
PCIE12_RXN
PCIE5_TXP
PCIE5_TXN
PCIE6_TXP
PCIE6_TXN
PCIE7_TXP
PCIE7_TXN
PCIE8_TXP
PCIE8_TXN
PCIE9_TXP / SATA0A_TXP
PCIE9_TXN / SATA0A_TXN
PCIE10_TXP / SATA1A_TXP
PCIE10_TXN / SATA1A_TXN
PCIE11_TXP
PCIE11_TXN
PCIE12_TXP
PCIE12_TXN
USB3_1_RXP
USB3_1_RXN
USB3_2_SSIC_1_RXP
USB3_2_SSIC_1_RXN
USB3_3_SSIC_2_RXP
USB3_3_SSIC_2_RXN
USB3_4_RXP
USB3_4_RXN
USB3_5_RXP
USB3_5_RXN
USB3_6_RXP
USB3_6_RXN
USB3_1_TXP
USB3_1_TXN
USB3_2_SSIC_1_TXP
USB3_2_SSIC_1_TXN
USB3_3_SSIC_2_TXP
USB3_3_SSIC_2_TXN
USB3_4_TXP
USB3_4_TXN
USB3_5_TXP
USB3_5_TXN
USB3_6_TXP
USB3_6_TXN
USB2P_14
USB2N_14
USB2P_13
USB2N_13
USB2P_12
USB2N_12
USB2P_11
USB2N_11
USB2P_10
USB2N_10
USB2P_9
USB2N_9
USB2P_8
USB2N_8
USB2P_7
USB2N_7
USB2P_6
USB2N_6
USB2P_5
USB2N_5
USB2P_4
USB2N_4
USB2P_3
USB2N_3
USB2P_2
USB2N_2
USB2P_1
USB2N_1
USB2_ID
USB2_VBUSSENSE
SATA_RX0
SATA_RX#0
SATA_RX1
SATA_RX#1
SATA_RX2
SATA_RX#2
SATA_RX3
SATA_RX#3
SATA_TX0
SATA_TX#0
SATA_TX1
SATA_TX#1
SATA_TX2
SATA_TX#2
SATA_TX3
SATA_TX#3
PCIE13_RXP / SATA0B_RXP
PCIE13_RXN / SATA0B_RXN
PCIE14_RXP / SATA1B_RXP
PCIE14_RXN / SATA1B_RXN
PCIE15_RXP / SATA2_RXP
PCIE15_RXN / SATA2_RXN
PCIE16_RXP / SATA3_RXP
PCIE16_RXN / SATA3_RXN
PCIE17_RXP / SATA4_RXP
PCIE17_RXN / SATA4_RXN
PCIE18_RXP / SATA5_RXP
PCIE18_RXN / SATA5_RXN
PCIE19_RXP / SATA6_RXP
PCIE19_RXN / SATA6_RXN
PCIE20_RXP / SATA7_RXP
PCIE20_RXN / SATA7_RXN
PCIE13_TXP / SATA0B_TXP
PCIE13_TXN / SATA0B_TXN
PCIE14_TXP / SATA1B_TXP
PCIE14_TXN / SATA1B_TXN
PCIE15_TXP / SATA2_TXP
PCIE15_TXN / SATA2_TXN
PCIE16_TXP / SATA3_TXP
PCIE16_TXN / SATA3_TXN
PCIE17_TXP / SATA4_TXP
PCIE17_TXN / SATA4_TXN
PCIE18_TXP / SATA5_TXP
PCIE18_TXN / SATA5_TXN
PCIE19_TXP / SATA6_TXP
PCIE19_TXN / SATA6_TXN
PCIE20_TXP / SATA7_TXP
PCIE20_TXN / SATA7_TXN
PCIE21_M.2_SSD_RXP
PCIE21_M.2_SSD_RXN
PCIE22_M.2_SSD_RXP
PCIE22_M.2_SSD_RXN
PCIE23_M.2_SSD_RXP
PCIE23_M.2_SSD_RXN
PCIE24_M.2_SSD_RXP
PCIE24_M.2_SSD_RXN
PCIE21_M.2_SSD_TXP
PCIE21_M.2_SSD_TXN
PCIE22_M.2_SSD_TXP
PCIE22_M.2_SSD_TXN
PCIE23_M.2_SSD_TXP
PCIE23_M.2_SSD_TXN
PCIE24_M.2_SSD_TXP
PCIE24_M.2_SSD_TXN
GPP_E0 / SATAXPCIE0 / SATAGP0
GPP_E1 / SATAXPCIE1 / SATAGP1
GPP_E2 / SATAXPCIE2 / SATAGP2
GPP_E3 / CPU_GP0
GPP_E4 / DEVSLP0
GPP_E5 / DEVSLP1
GPP_E6 / DEVSLP2
GPP_E7 / CPU_GP1
GPP_E8 / SATALED#
GPP_E9 / USB_OC0#
GPP_E10 / USB_OC1#
GPP_E11 / USB_OC2#
GPP_E12 / USB_OC3#
GPP_I0 / DDPB_HPD0
GPP_I1 / DDPC_HPD1
GPP_I2 / DDPD_HPD2
GPP_I3 / DDPD_HPD3
GPP_I4 / EDP_HPD
GPP_I5 / DDPB_CTRLCLK
GPP_I6 / DDPB_CTRLDATA
GPP_I7 / DDPC_CTRLCLK
GPP_I8 / DDPC_CTRLDATA
GPP_I9 / DDPD_CTRLCLK
GPP_I10 / DDPD_CTRLDATA
GPP_F19 / eDP_VDDEN
GPP_F20 / eDP_BKLTEN
GPP_F21 / eDP_BKLTCTL
GPP_F0 / SATAXPCIE3 / SATAGP3
GPP_F1 / SATAXPCIE4 / SATAGP4
GPP_F2 / SATAXPCIE5 / SATAGP5
GPP_F3 / SATAXPCIE6 / SATAGP6
GPP_F4 / SATAXPCIE7 / SATAGP7
GPP_F5 / DEVSLP3
GPP_F6 / DEVSLP4
GPP_F7 / DEVSLP5
GPP_F8 / DEVSLP6
GPP_F9 / DEVSLP7
GPP_F10 / SCLOCK
GPP_F11 / SLOAD
GPP_F12 / SDATAOUT1
GPP_F13 / SDATAOUT0
GPP_F14
GPP_F15 / USB_OCB4#
GPP_F16 / USB_OCB5#
GPP_F17 / USB_OC6#
GPP_F18 / USB_OC7#
GPP_F22
GPP_F23
PCH_GPIO_F0
PCH_GPIO_F1
PCH_GPIO_F22
PCH_GPIO_F23
PCH_GPIO_F6
PCH_GPIO_F1
SPI_SIRQ#
TP3
PCH_CONFIG_JUMPER
GP39_GFX_CRB_DETECT
PCH_RSVD
SV_ADVANCE_GP48
USB_OCP#4
USB_OCP#5
USB_OCP#6
USB_OCP#7
DP_DDPB_HPD
DP_DDPC_HPD
DP_DDPD_HPD
VGA_EDP_HPD
DP_DDPB_CTRLCLK
DP_DDPB_CTRLDATA
DP_DDPC_CTRLCLK
DP_DDPC_CTRLDATA
DP_DDPD_CTRLCLK
DP_DDPD_CTRLDATA
SKTOCC#
PE5_LAN_TX
PE5_LAN_RX
NGFF1_TXP
NGFF1_TXN
PE7_TX
PE7_RX
PE8_TX
PE8_RX
PE9_TX
PE9_RX
PE10_TX
PE10_RX
PE11_TX
PE11_RX
PE12_TX
PE12_RX
USB3_TX1_DP
USB3_TX1_DN
USB3_TX2_DP
USB3_TX2_DN
USB3_TX3_DP
USB3_TX3_DN
USB3_TX4_DP
USB3_TX4_DN
USB3_TX5_DP
USB3_TX5_DN
USB3_TX6_DP
USB3_TX6_DN
USB3_RX1_DP
USB3_RX1_DN
USB3_RX2_DP
USB3_RX2_DN
USB3_RX3_DP
USB3_RX3_DN
USB3_RX4_DP
USB3_RX4_DN
USB3_RX5_DP
USB3_RX5_DN
USB3_RX6_DP
USB3_RX6_DN
USBP14
USBN14
USBP13
USBN13
USBP12
USBN12
USBP10
USBN10
USBP8
USBN8
USBP7
USBN7
USBP6
USBN6
USBP5
USBN5
USBP4
USBN4
USBP3
USBN3
USBP2
USBN2
USBP1
USBN1
PCH_GPIO_F0
R771
10KR0402
+3V3_S5
PCH_GPIO_F1
R787
R1105
X_10KR0402
PCH_CONFIG_JUMPER
R2212
GP39_GFX_CRB_DETECT
R2215
for intel review
R2175
100K1%/4
R830
R2401
R2216
R2214
20KR0402-2
R2213
R2539
R2537
R2817
R1986
R740
R747
R750
R762
R748
SPI_SIRQ#
teknisi indonesia
MSI
MICRO-START INT'L CO.,LTD.
Link to the Future
PCH-DMI/PCIE/USB/SATA/DDI
B365
10
Tuesday, April 30, 2019
Sheet 10 of 44



Bom Option Configuration

GPP_A22	GPP_A21	GPP_A20	GPP_A19	GPP_A18	GPP_A17	Project	BOM Opt
1	0	0	0	0	0	Think ROW M720t/s	
1	0	0	0	0	1	Cosumer B365	
1	0	0	0	1	0		
1	0	0	0	1	1		
1	0	0	1	0	0		
1	0	0	1	0	1		
1	0	0	1	1	0		
1	0	0	1	1	1		
1	0	1	0	0	0		

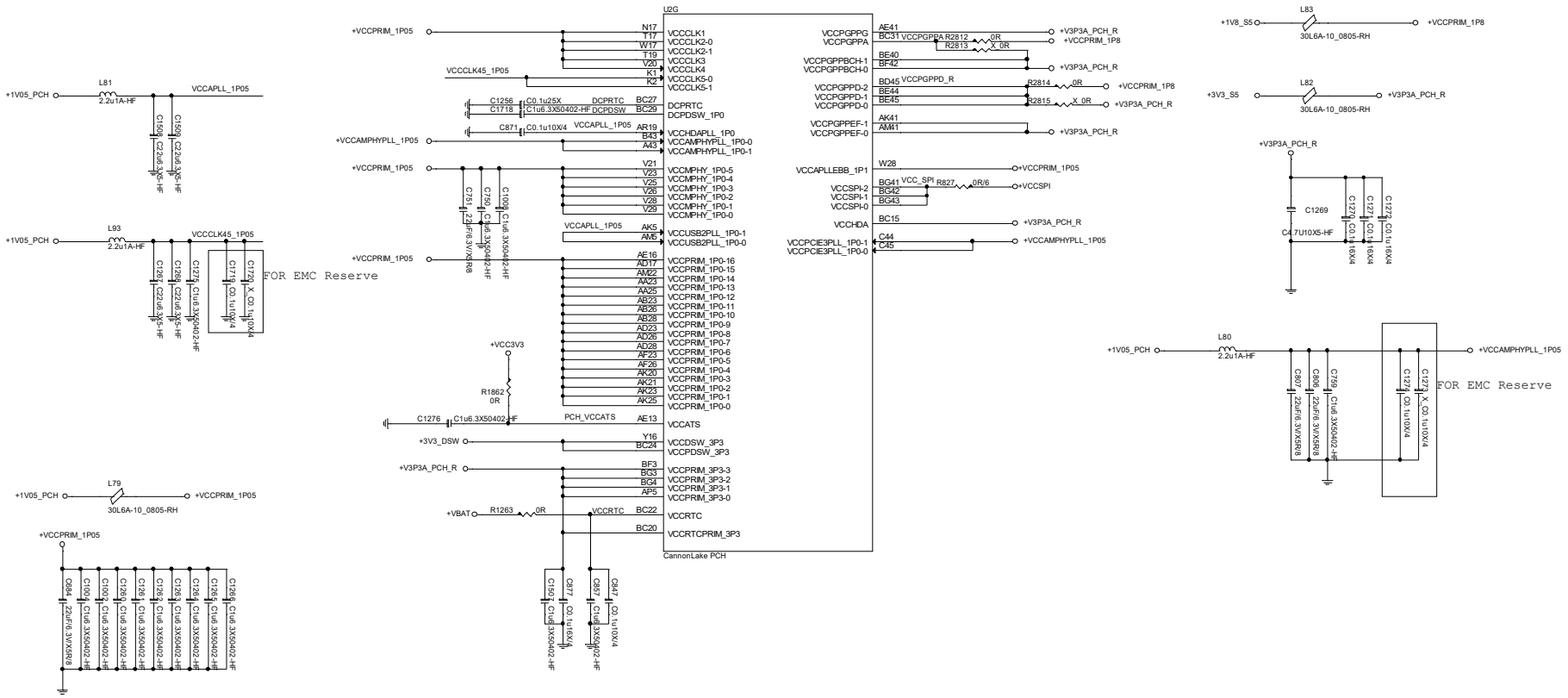
GPIO	Board ID
GPP_A17	BRD_ID0
GPP_A18	BRD_ID1
GPP_A19	BRD_ID2
GPP_A20	BRD_ID3
GPP_A21	BRD_ID4
GPP_A22	BRD_ID5

MSI — Link to the Future — MICRO-START INT'L CO.,LTD.

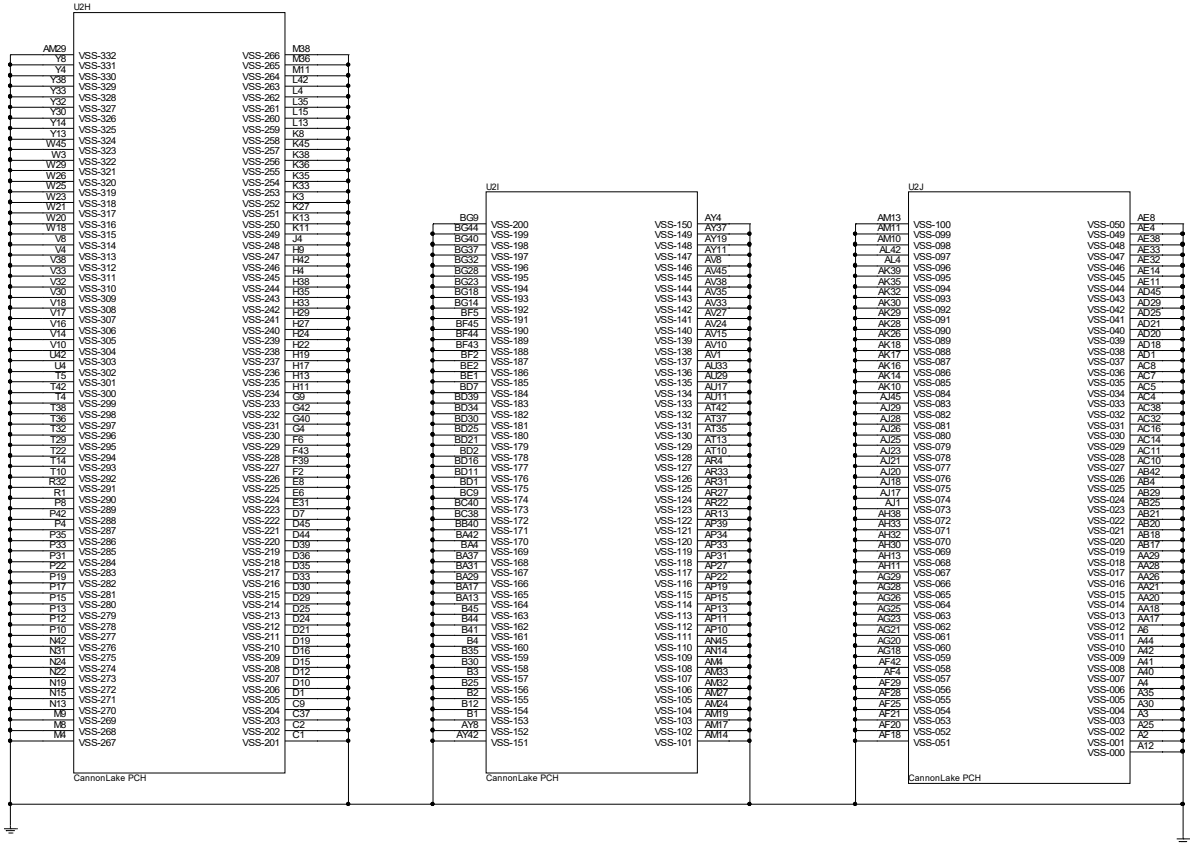
File: PCH-Clock/LPC/FAN/SPI/PECI

Size	Document Number	Rev
	B365	10

Date: Tuesday, April 30, 2019 Sheet 11 of 44



MSI MICRO-STAR INTERNATIONAL			
Link to the Future	MICRO-START INTL CO.,LTD.		
Title	PCH-Power		
Size	Document Number B365		Rev 10
Date: Tuesday, April 30, 2019	Sheet 12 of 44		

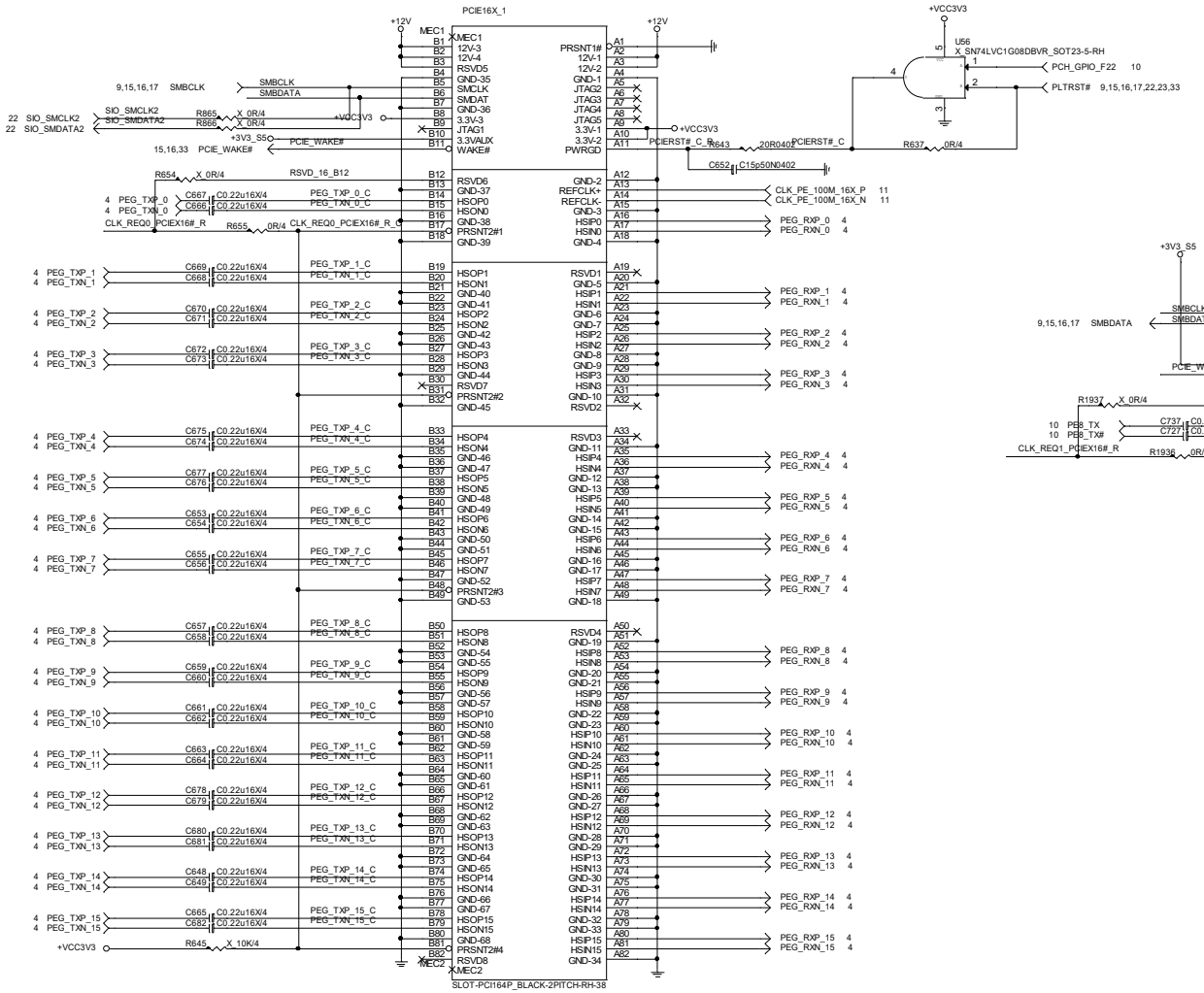


MICRO-START INT'L CO.,LTD.

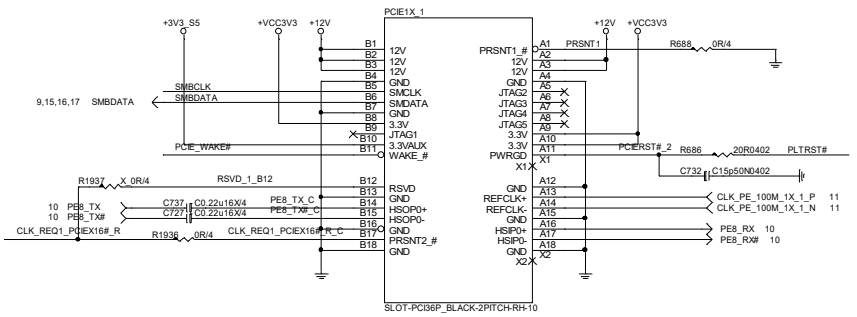
Link to the Future

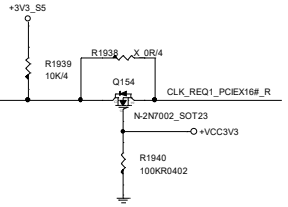
Title	PCH-GND	
Size	Document Number: B365	Rev: 10
Date: Tuesday, April 30, 2019	Sheet 13 of 44	

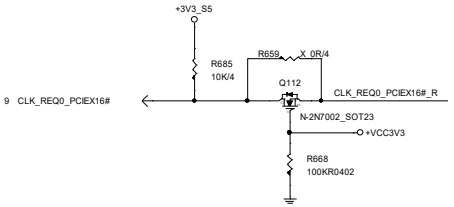
PCI_EXPRESS X16 SLOT

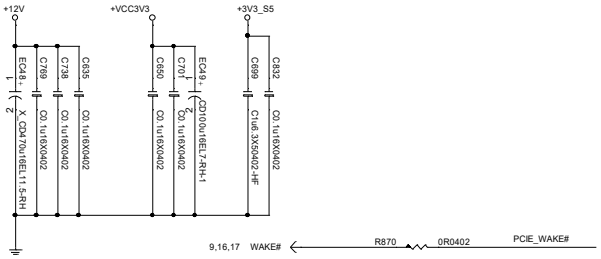


PCI_EXPRESS x1-PORT









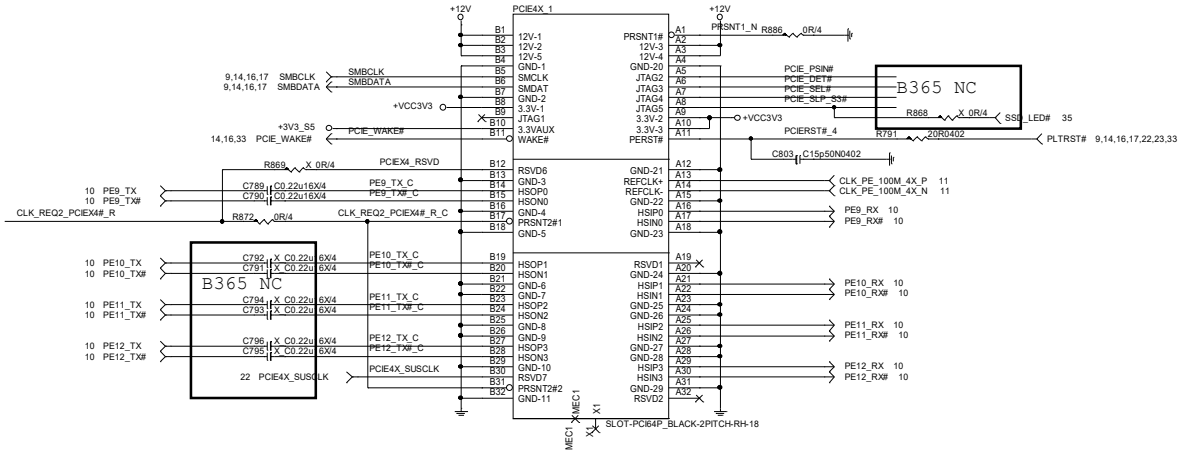
MSI MICRO-STAR INTERNATIONAL
Link to the Future MICRO-START INTL CO.,LTD.

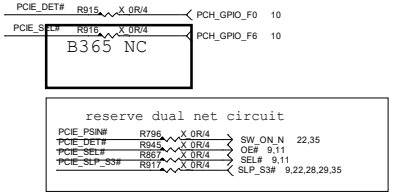
Title: PCIE x16/x1 slot

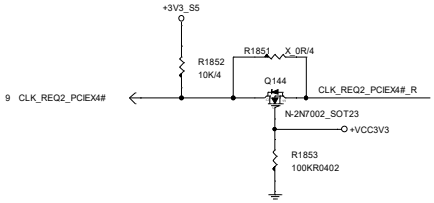
Size	Document Number	Rev
	B365	10

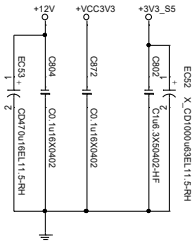
Date: Tuesday, April 23, 2019 Sheet 14 of 44

PCI_EXPRESS X4 SLOT colay PCI_Ex1

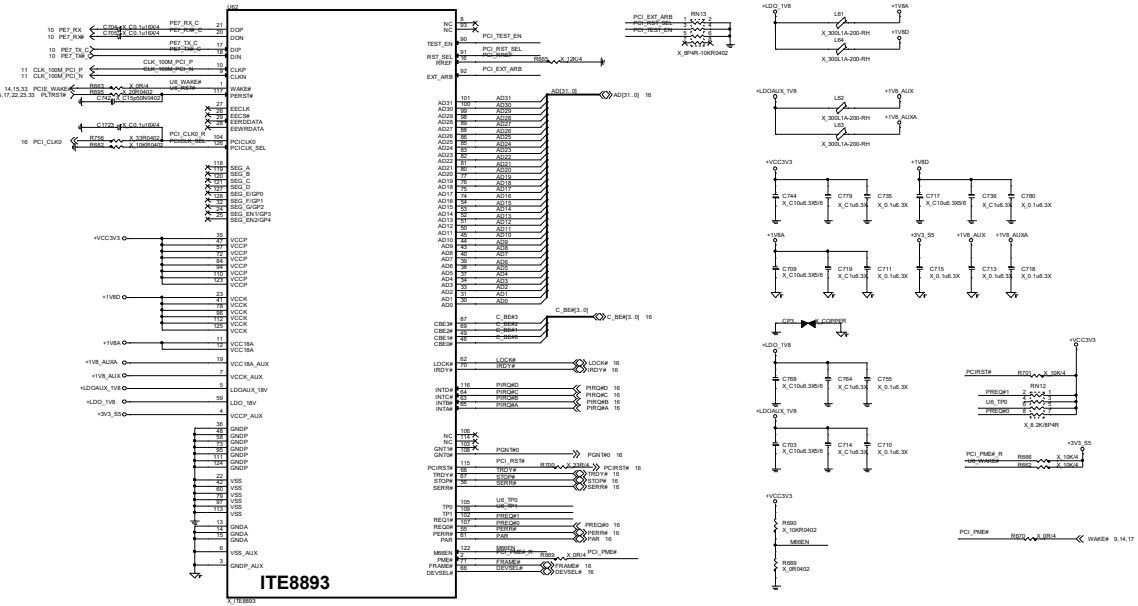


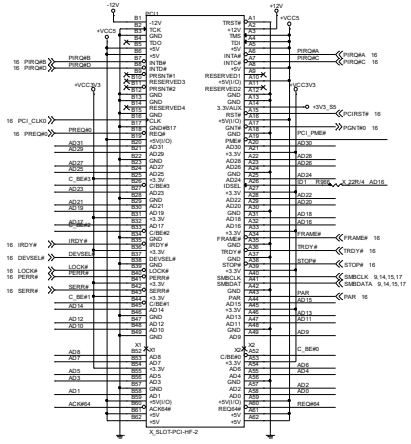






MSI Link to the Future	MICRO-START INT'L CO.,LTD.		
Title: PCIE 4X			
Size	Document Number: B365		Rev: 10
Date: Tuesday, April 30, 2019	Sheet 15 of 44		





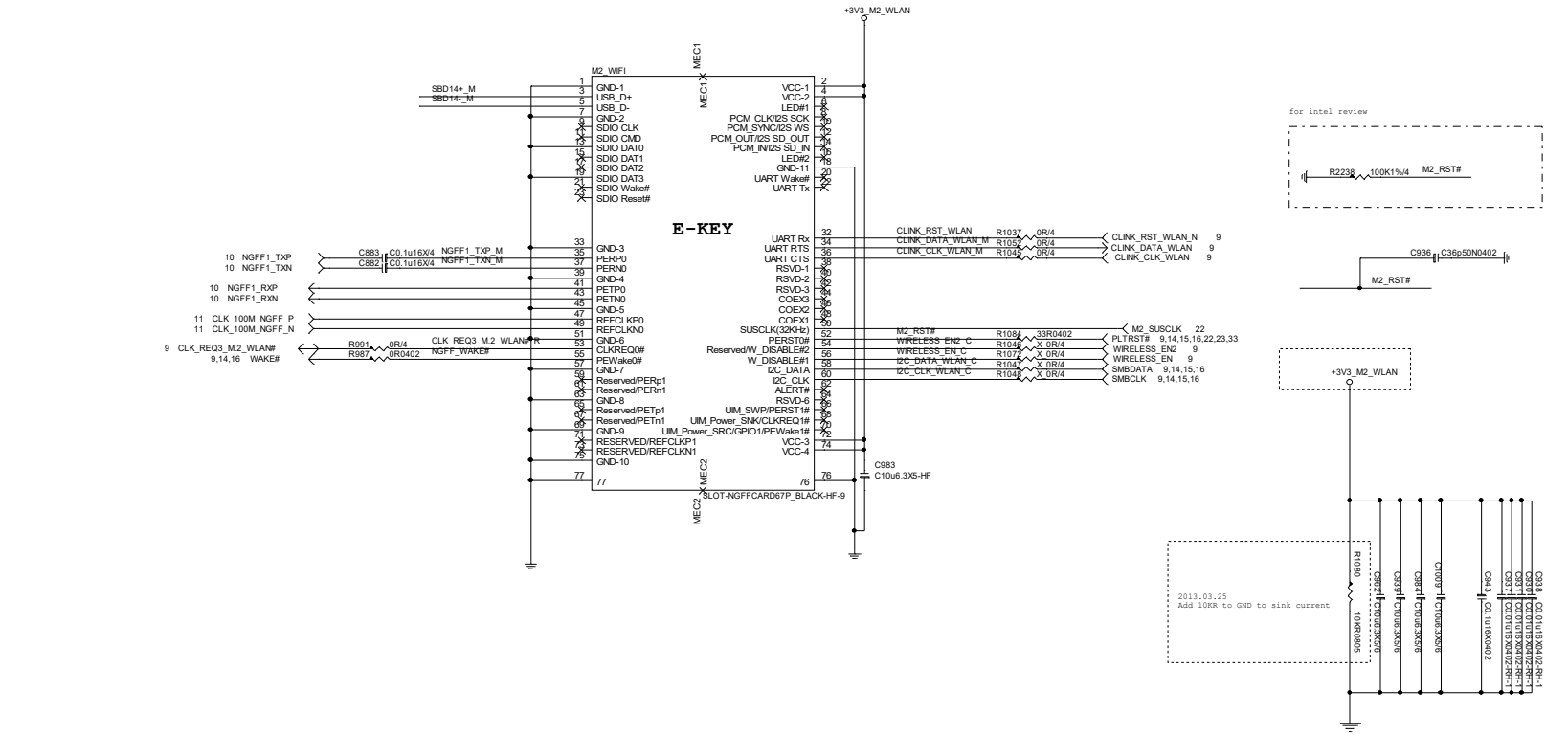
IDSEL = AD16
MASTER = PREQ#0
PIRQ#A

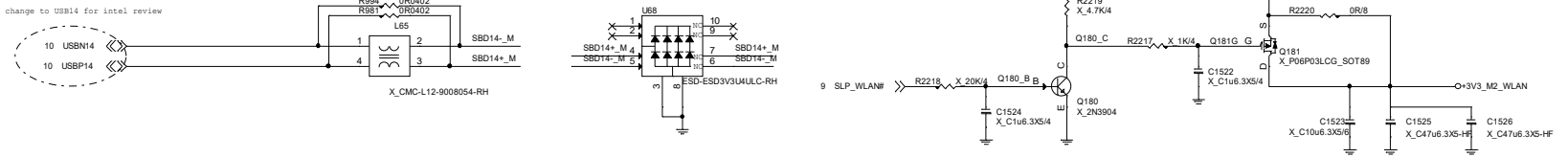
PCI PULL-UP / DOWN RESISTORS

PCI slot		
+3VSB	(wake)	- 375mA
+3VSB	(no wake)	- 20mA
+3.3V		- 7.6A
+5V		- 5A
+12V		- 0.5A

Title	PCI Slot
Size	B
Document Number	B365
Rev	10
Date	Tuesday, April 30, 2019
Sheet	16 of 44

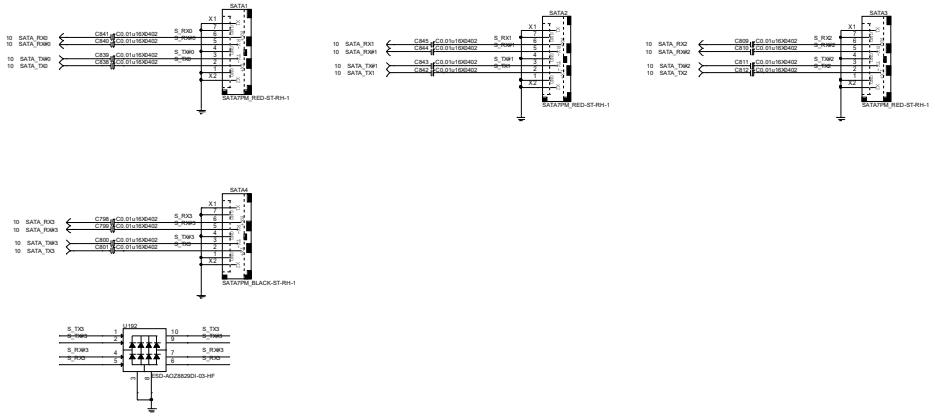
MSI Link to the Future MICRO-START INT'L CO.,LTD.



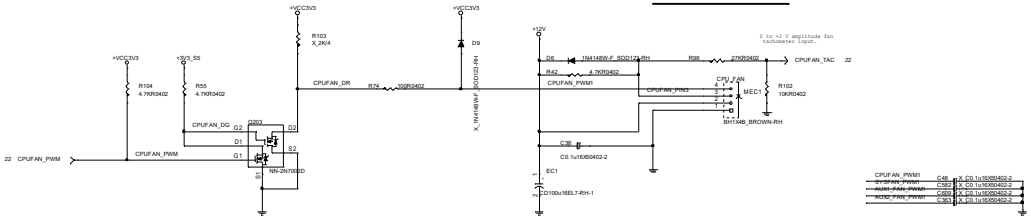


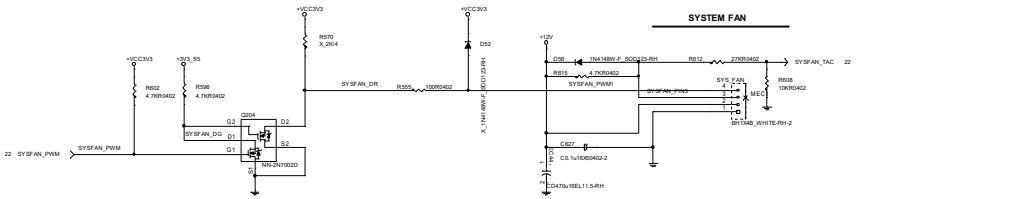
MSI COMPUTER CORP.
Link to the Future MICRO-START INT'L CO.,LTD.

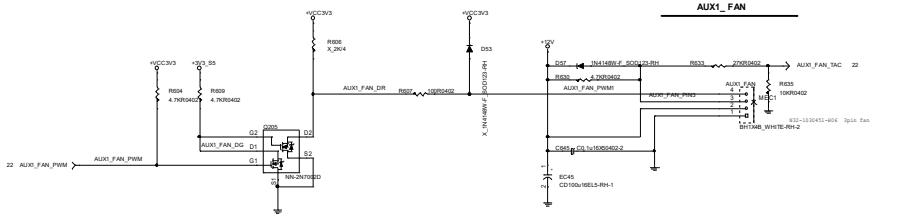
Title: M2 Connector		
Size	Document Number: B365	Rev: 10
Date: Tuesday, April 30, 2019	Sheet 17 of 44	

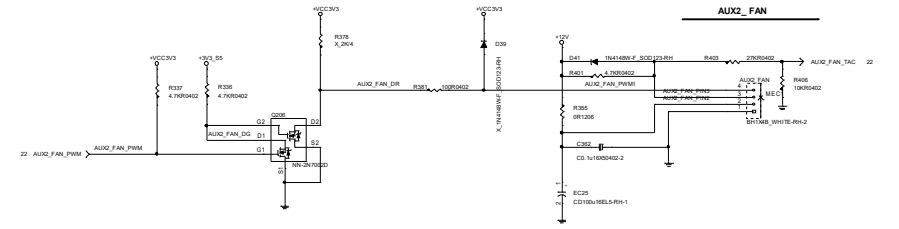


CPU FAN /SYSTEM FAN /POWER FAN









MSI Link to the Future	MICRO-START INT'L CO.,LTD.		
Title	SATA/FAN		
Size	Document Number B365		Rev 1.0
Date: Tuesday, April 30, 2019	Sheet 18 of 44		

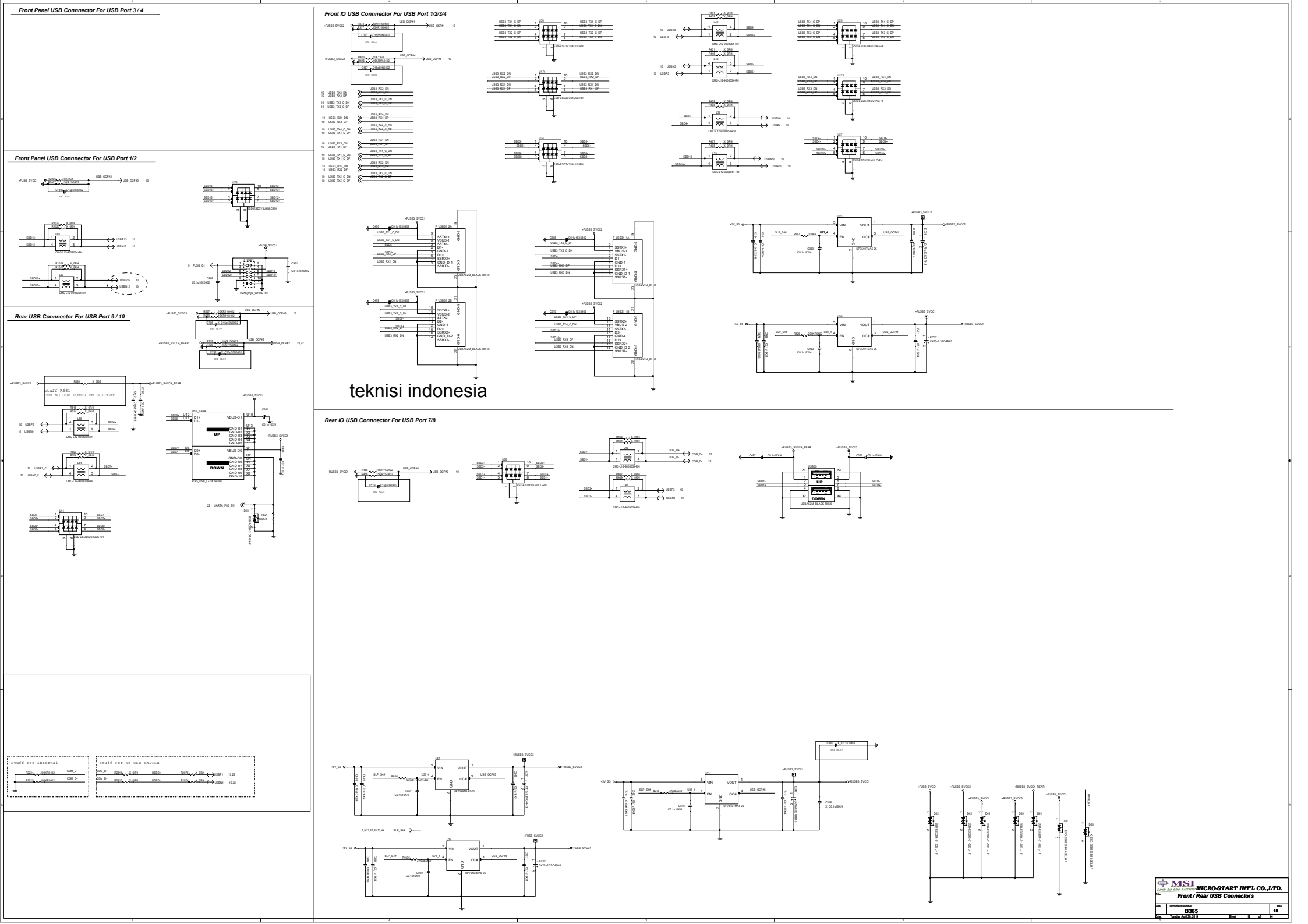
Front Panel USB Connnector For USB Port 3 / 4

Front Panel USB Connnector For USB Port 1/2

Rear USB Connnector For USB Port 9 / 10

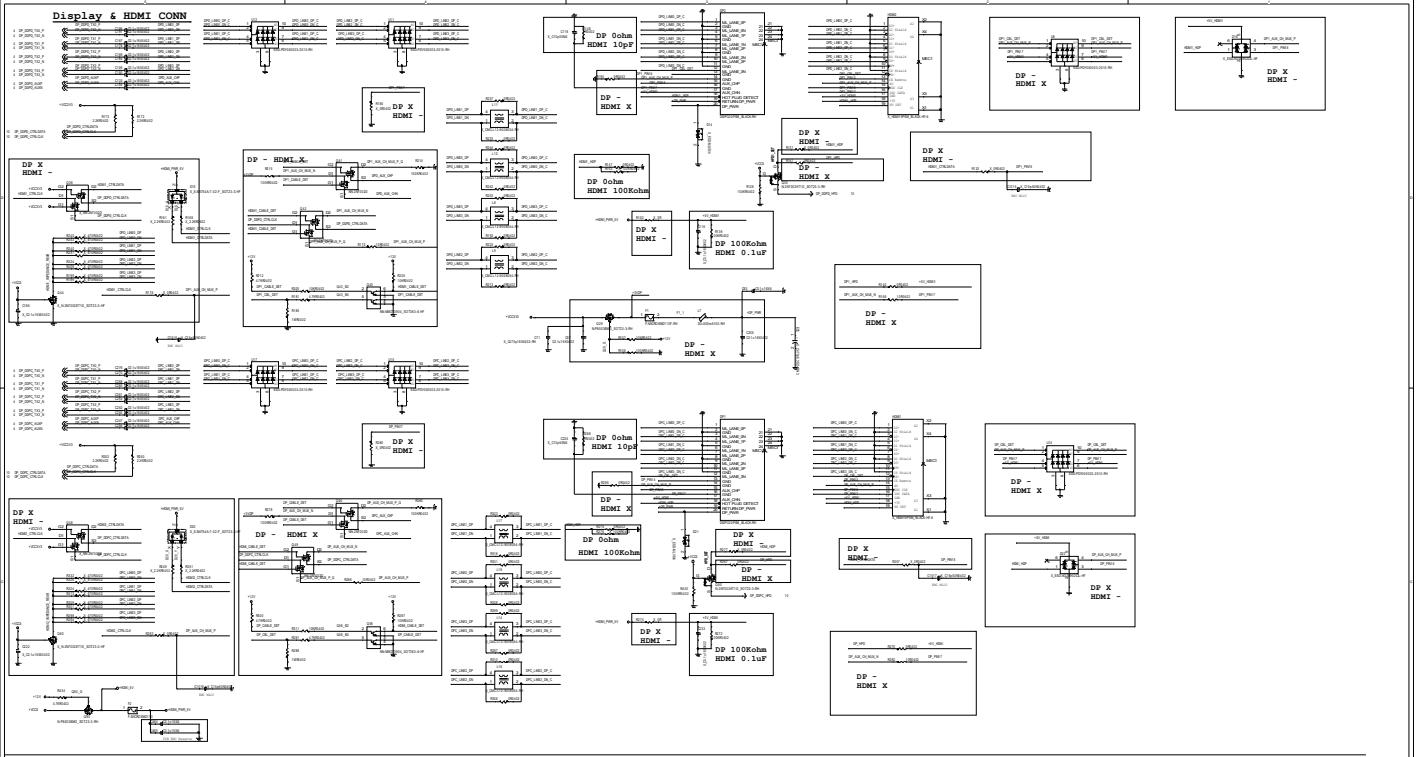
Front IO USB Connnector For USB Port 1/2/3/4

Rear IO USB Connnector For USB Port 7/8

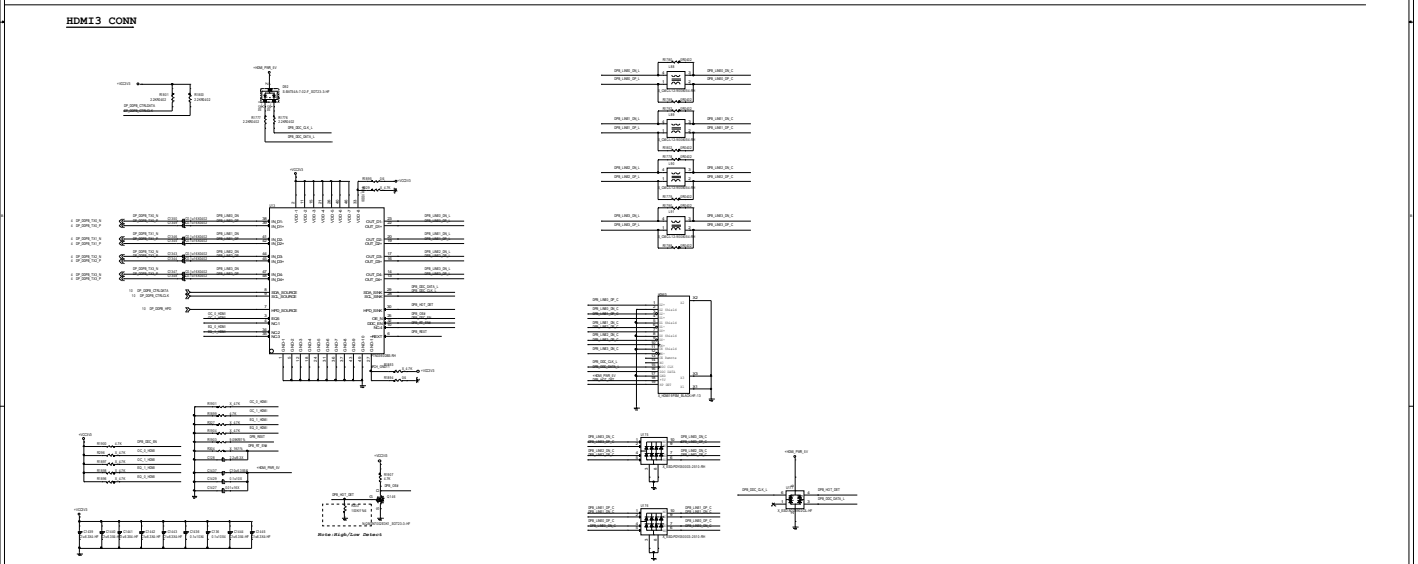


MSI MICRO-STAR INT'L CO.,LTD.
Title: Front / Rear USB Connectors
Size: B | Document Number: B365 | Rev: 1.0
Date: Tuesday, April 30, 2019 | Sheet 10 of 45

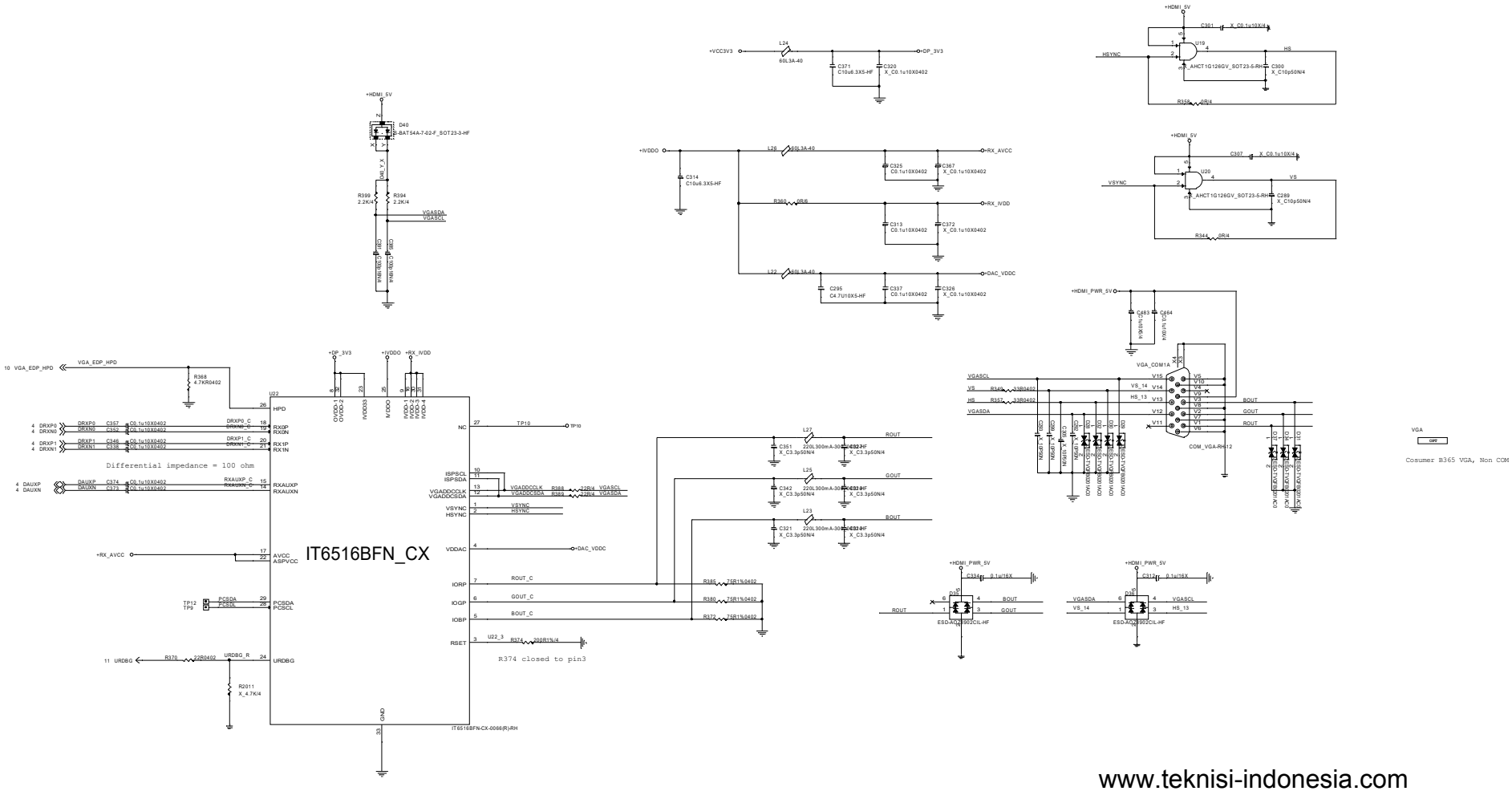
Display & HDMI CONN



HDMI3 CONN

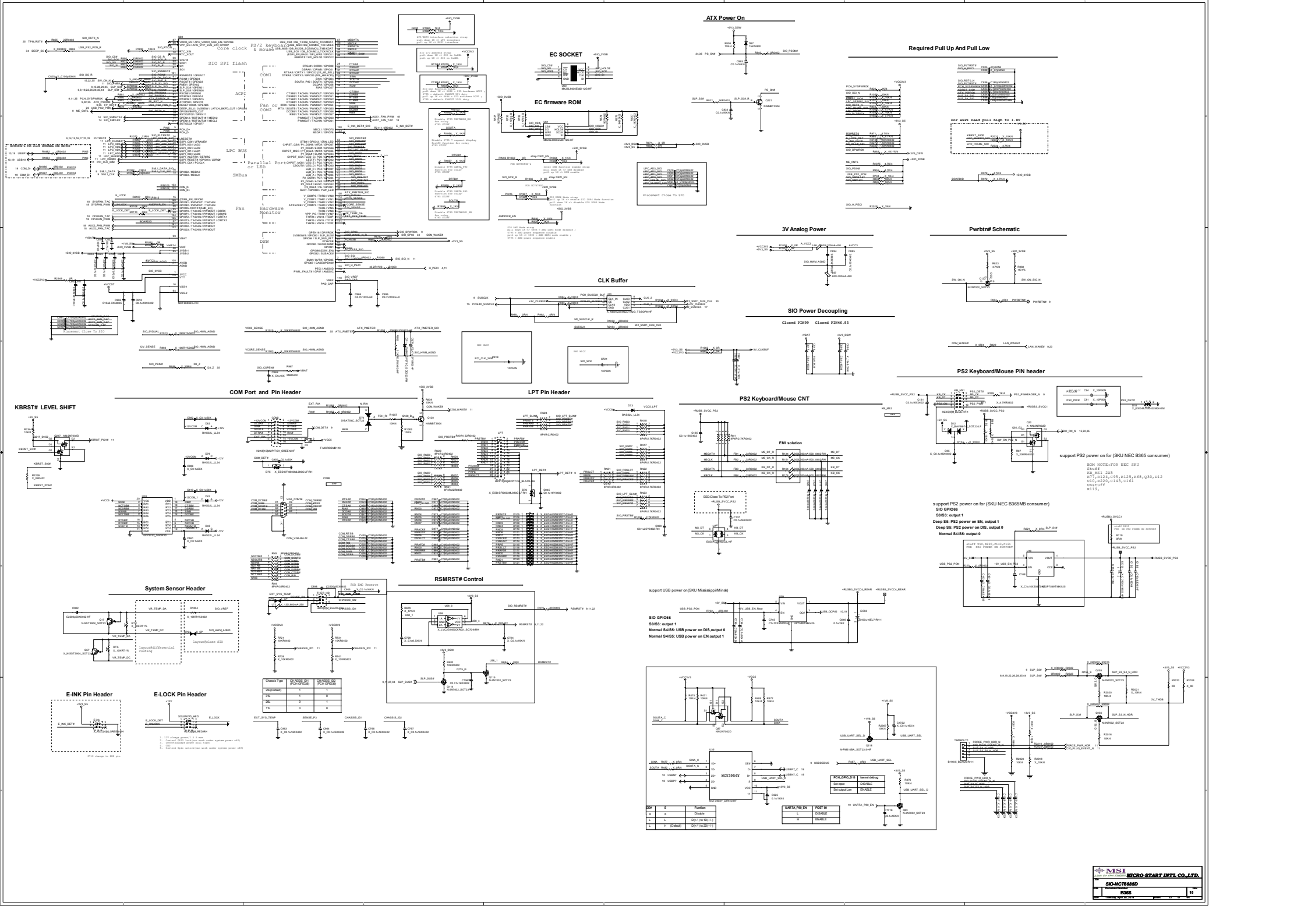


MSI MICRO-STAR INT'L CO.,LTD.
Display Port/HDMI Port
E366



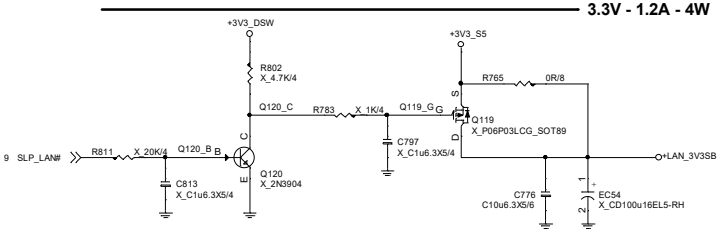
MSI MICRO-STAR INT'L CO.,LTD.

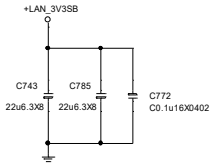
Title: VGA		
Size	Document Number: B365	Rev: 10
Date: Tuesday, April 23, 2019	Sheet 21 of 44	

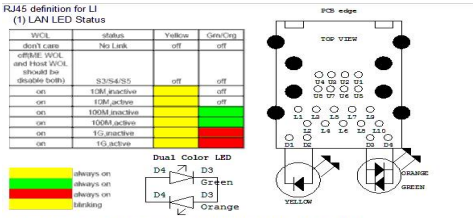

ATX Power On
EC SOCKET
EC firmware ROM
Required Pull Up And Pull Low
3V Analog Power
Pwrbtn# Schematic
CLK Buffer
SIO Power Decoupling
PS2 Keyboard/Mouse PIN header
COM Port and Pin Header
LPT Pin Header
PS2 Keyboard/Mouse CNT
KBRST# LEVEL SHIFT
EMI solution
support PS2 power on for (SKU NEC B365 consumer)
support PS2 power on for (SKU NEC B365MB consumer)
SIO GPIO66
S0/S3: output 1
Deep S5: PS2 power on EN, output 1
Deep S5: PS2 power on DIS, output 0
Normal S4/S5: output 0
System Sensor Header
RSMRST# Control
support USB power on(SKU Mississippi/Minsk)
SIO GPIO66
S0/S3: output 1
Normal S4/S5: USB power on DIS,output 0
Normal S4/S5: USB power on EN,output 1
E-INK Pin Header
E-LOCK Pin Header
SIO SPI flash
Core clock
PS/2 keyboard & mouse
COM1
COM2
ACPI
Fan or IRRX / IRTX
Parallel Port or EPP
LPC BUS
SMBus
Hardware Monitor
Fan
DSW
MICRO-START INT'L CO.,LTD.
SIO-NCT6685D
B365
1.0

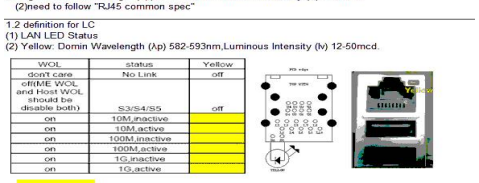
LAN Power

3.3V - 1.2A - 4W



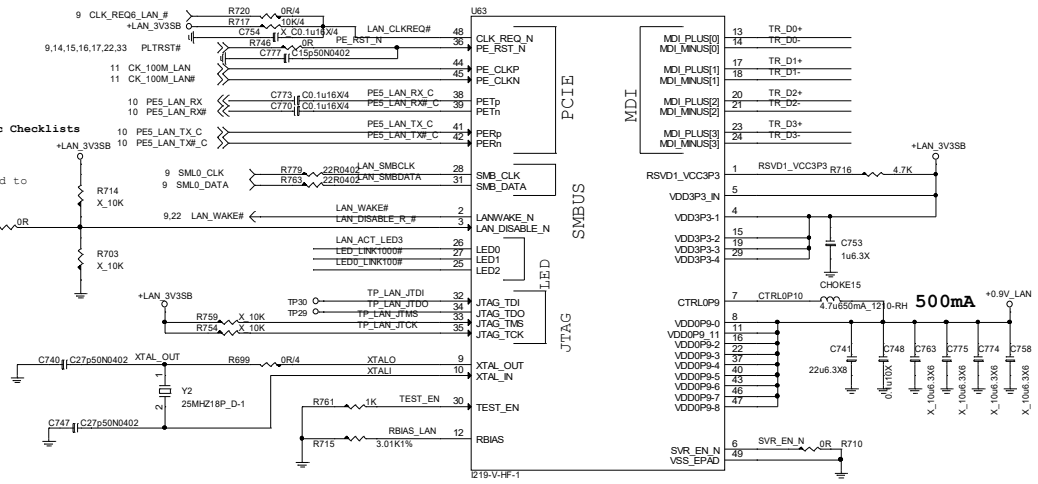


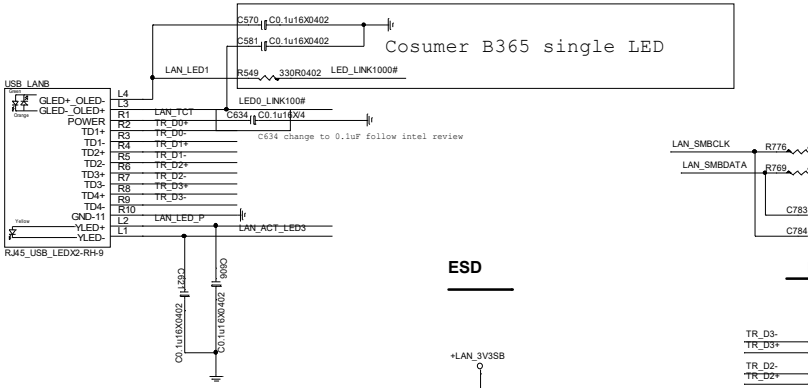




Reserve R714.R703 for Schematic Checklists

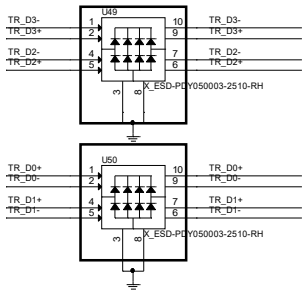
LAN_DISABLE# must be connected to PCH's LAN_PHY_PWR_CTRL

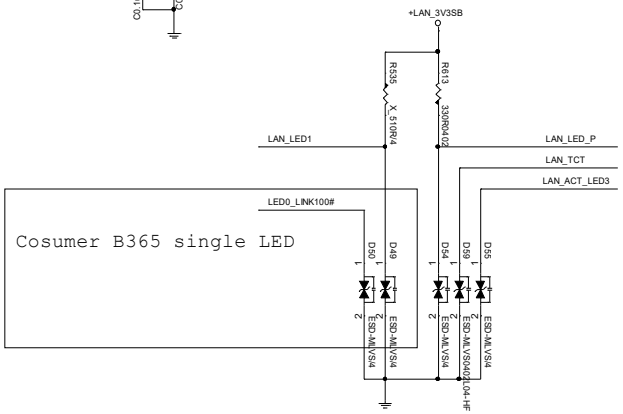


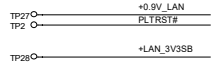


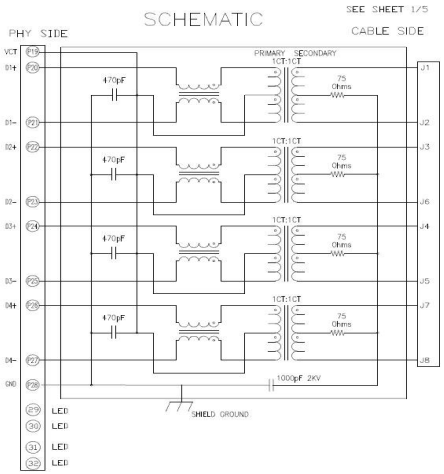
ESD

EMI solution: can be unmounted if LAN connector has surge protect

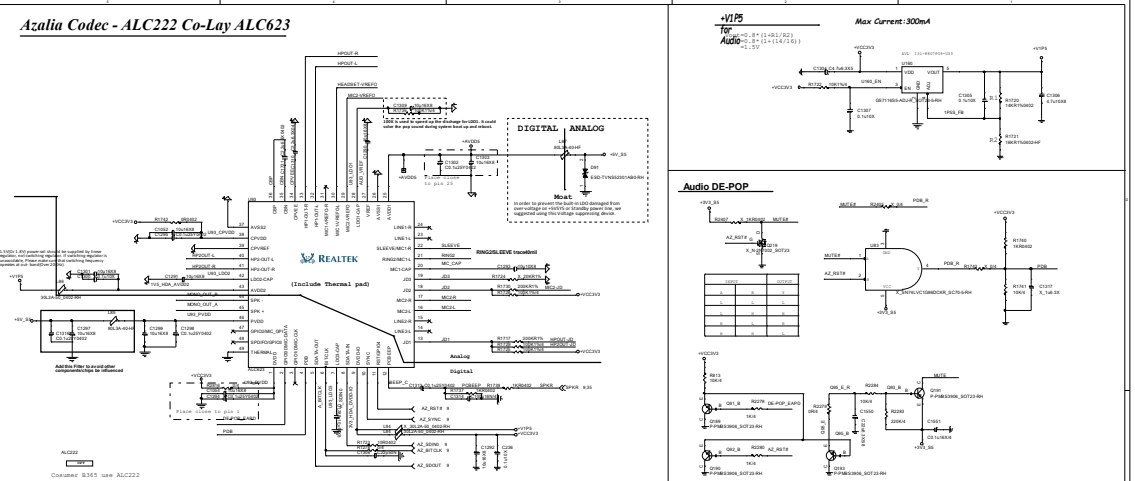


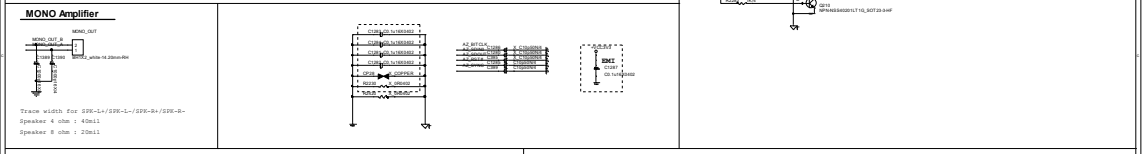


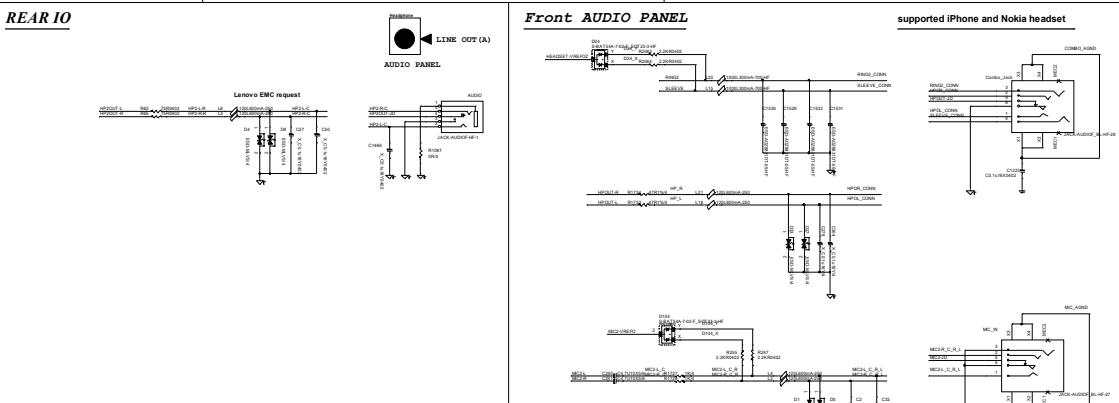




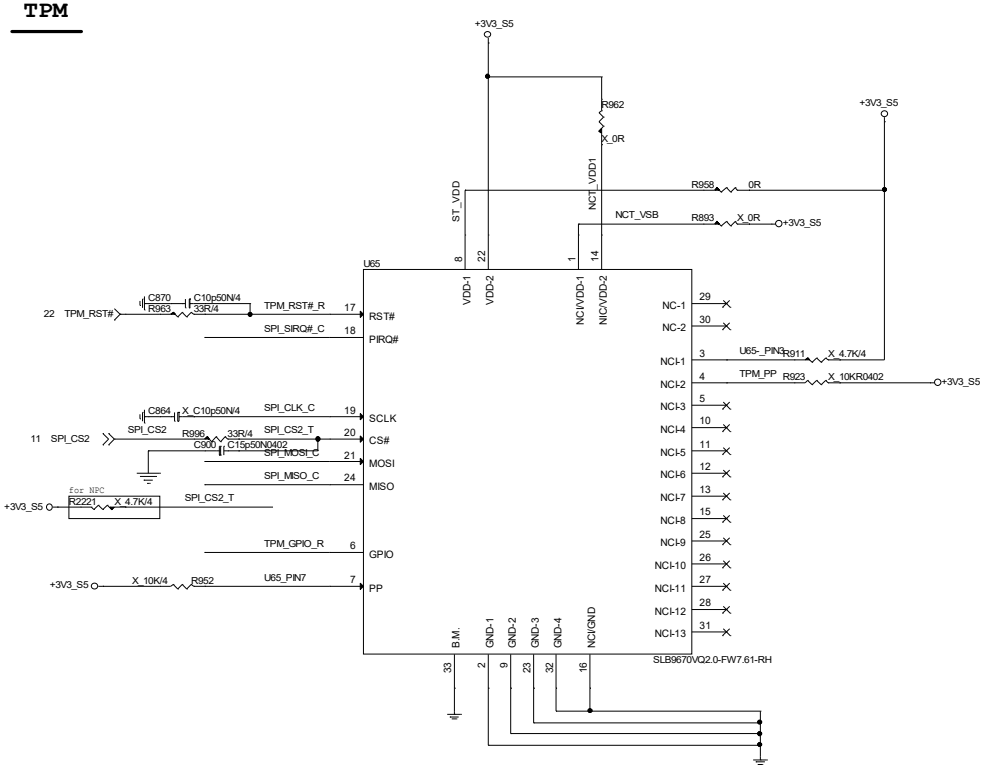
MSI Computer Corp.	Link to the Future	MICRO-START INT'L CO.,LTD.	
Title: LAN-i219V			
Size	Document Number: B365		Rev: 10
Date: Tuesday, April 30, 2019	Sheet 23 of 44		

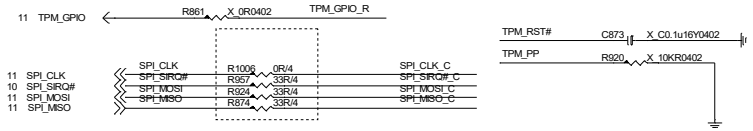




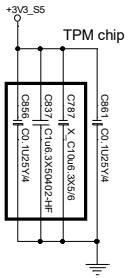


TPM





	R893	R911	R923	R920	R952	R958	R962	R861
ST----ST33HTPH2E32AHB4(SPI)	X	X	X	X	X	X	X	X
NPC----NPCT750 (SPI)	V	X	X	X	X	V	V	X
Infineon SLB 9670VQ2.0 (SPI)	X	X	X	X	X	V	X	X



MICRO-START INT'L CO.,LTD.

Link to the Future

Title: TPM & Asset ID

Size: | Document Number: B365 | Rev: 10

Date: Tuesday, April 23, 2019 | Sheet 25 of 44

XDP_CPU_PREQ# — XDP_CPU_PREQ# 4
XDP_CPU_PRDY# — XDP_CPU_PRDY# 4

CPU_TCK — CPU_TCK 4
CPU_TDO — CPU_TDO 4

CPU_TDI — CPU_TDI 4
CPU_TMS — CPU_TMS 4

CPU_TCK	R563 0/4	PCH_JTAGX	PCH_JTAGX	9
CPU_TDI	R505 0/4	PCH_JTAGTDI	PCH_JTAGTDI	9
CPU_TMS	R506 0/4	PCH_JTAGTMS	PCH_JTAGTMS	9
CPU_TDO	R498 0/4	PCH_JTAGTDO	PCH_JTAGTDO	9
XDP_CPU_PRDY#	R554 0/4	XDP_PCH_PRDY_N	XDP_PCH_PRDY_N	9
XDP_CPU_PREQ#	R553 0/4	XDP_PCH_PREQ_N	XDP_PCH_PREQ_N	9

USB power discharge circuit

+3V3_DSW — R672 10KR0402 — SVCC_DIS

6,9,19,22,28,35,44 — SLP_S4# — R82 8.2KR0402 — Q33_B

Q33 NPN-MMBT2222A-7-F_SOT23-RH

C96 X_C0.1u16X0402

C67 X_C0.1u16X0402

NO USB and PS2 POWER ON SUPPORT:
unstuff Q116,R677,R694

+3V3_DSW — R677 10KR0402 — SVCC_DIS1

22 USB_PS2_PON — R694 49.9KR1%0402 — Q116_B

Q116 NPN-MMBT2222A-7-F_SOT23-RH

C725 X_C0.1u16X0402

C734 X_C0.1u16X0402

+RUSB3_SVCC4_REAR — RN9 — Q113_D

Q113 2N7002LT1G_SOT23-RH

NO USB POWER ON SUPPORT:
unstuff RN9,Q113

+FUSB3_SVCC2 — RN6 — Q73_D — 8P4R-270R — Q73 N-2N7002LT1G_SOT23-RH

+RUSB3_SVCC1 — RN7 — Q83_D — 8P4R-270R — Q83 N-2N7002LT1G_SOT23-RH

+RUSB3_SVCC3 — RN8 — Q111_D — 8P4R-270R — Q111 N-2N7002LT1G_SOT23-RH

+RUSB_SVCC_PS2 — RN2 — Q47_D — X_8P4R-270R — Q47 X_N-2N7002LT1G_SOT23-RH — Q47_G — R246 X_0/4 — SVCC_DIS

R254 X_0/4 — SVCC_DIS1

stuff RN2,Q47,R254
FOR PS2 POWER ON SUPPORT

+FUSB_SVCC1 — RN19 — Q125_D — 8P4R-270R — Q125 N-2N7002LT1G_SOT23-RH

+FUSB3_SVCC1 — RN3 — Q69_D — 8P4R-270R — Q69 N-2N7002LT1G_SOT23-RH

+FUSB3_SVCC3 — RN30 — Q158_D — 8P4R-270R — Q158 N-2N7002LT1G_SOT23-RH

MSI Link to the Future MICRO-START INT'L CO.,LTD.

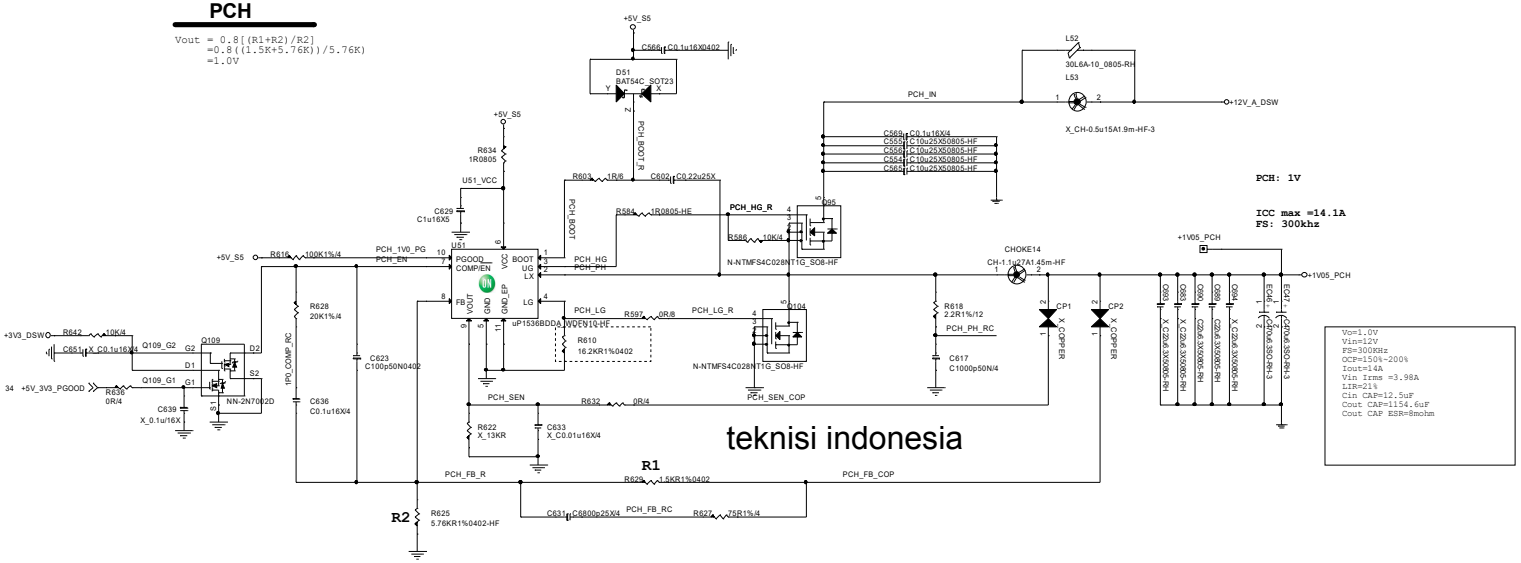
Title: XDP/USB Power Dischage

Size	Document Number	Rev
	B365	10

Date: Tuesday, April 23, 2019 Sheet 26 of 44

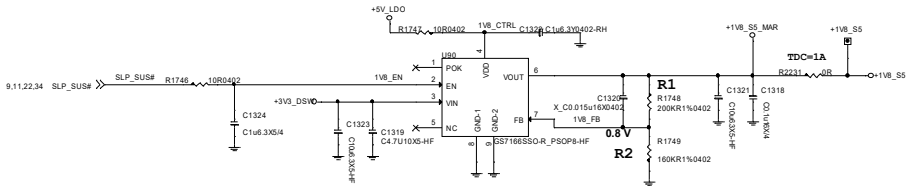
PCH

Vout = 0.8[(R1+R2)/R2]
=0.8((1.5K+5.76K))/5.76K)
=1.0V

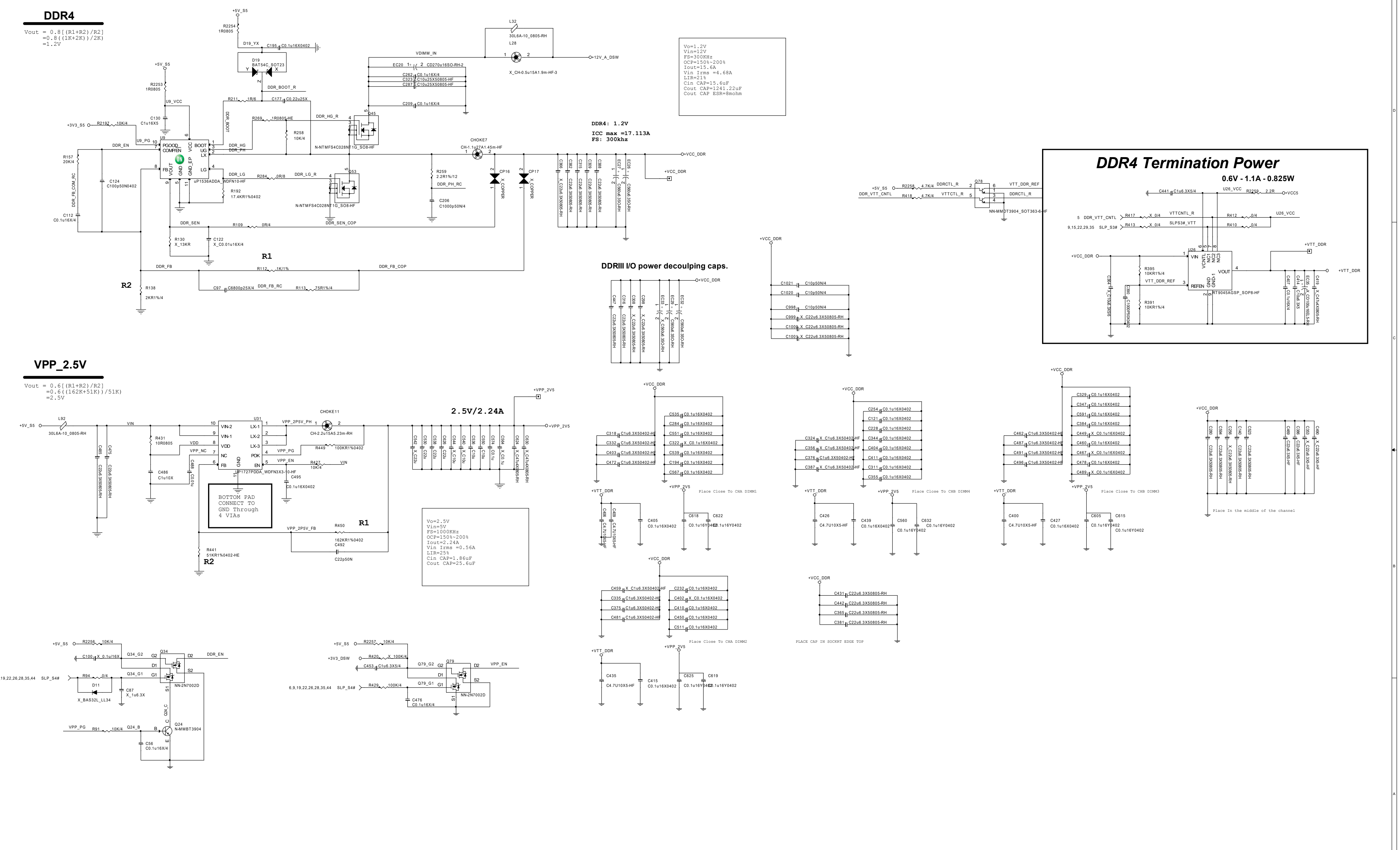


+1V8_S5

Vout = 0.8[(R1+R2)/R2]
=0.8((15K+12K))/12K)
=1.8V



MSI Link to the Future	MICRO-START INT'L CO.,LTD.	
Title: PCH Core Power		
Size	Document Number: B365	Rev: 10
Date: Tuesday, April 30, 2019	Sheet 27 of 44	



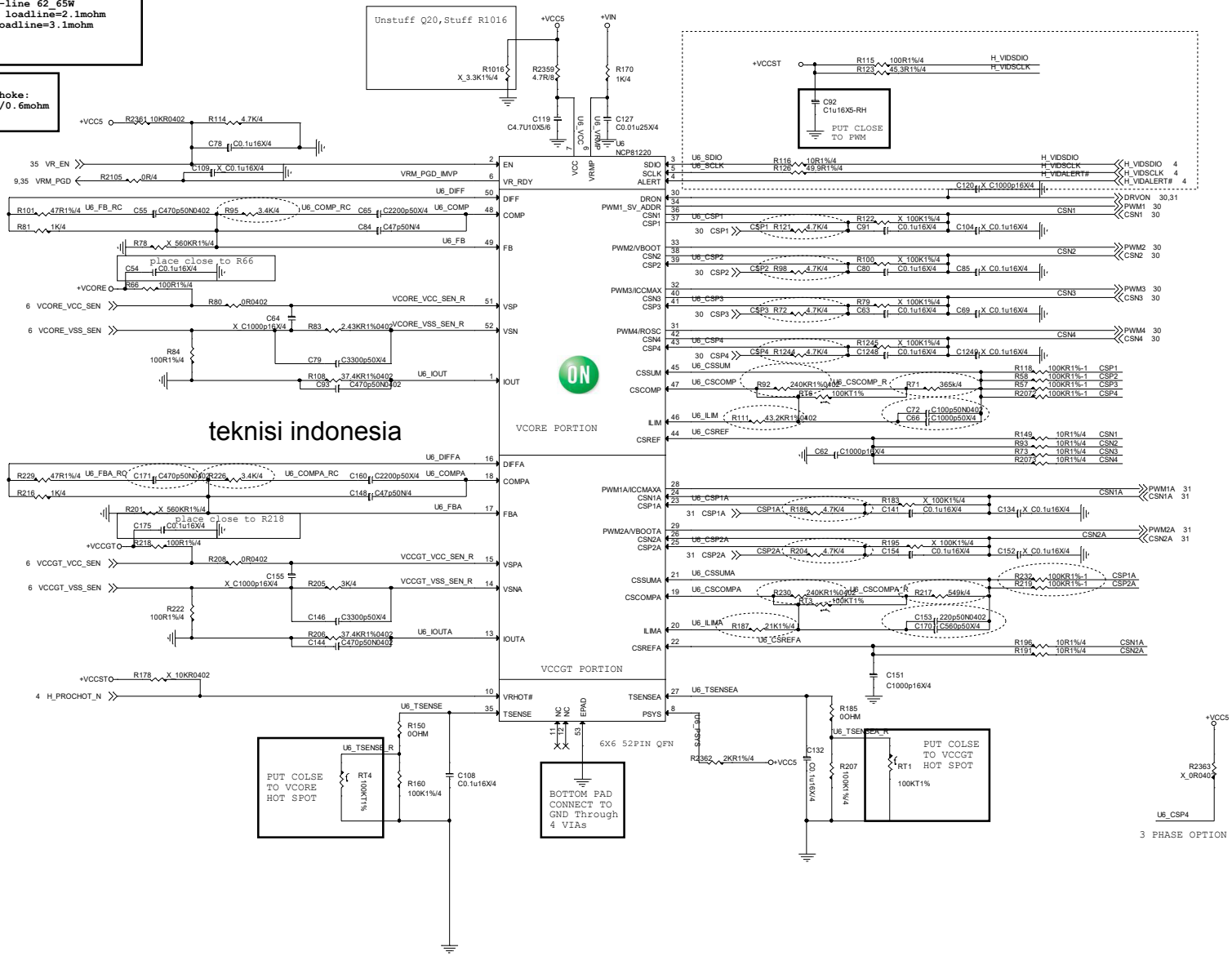
MSI MICRO-START INT'L CO.,LTD.

Title	DDR4 Power	
Size	Document Number: B365	Rev: 10
Date: Tuesday, April 30, 2019	Sheet 28 of 44	

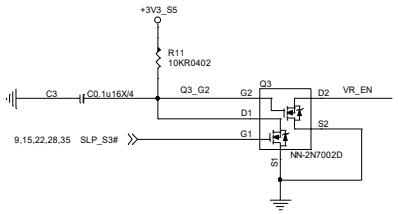
Intel Coffee Lake IMVP8 POWER CKT - 4+2 PHASE

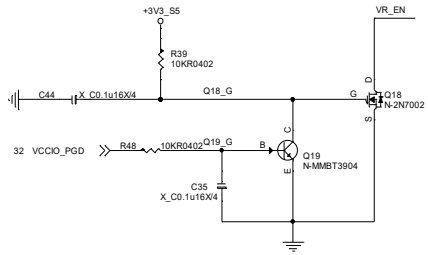
CFL S-line 62_65W
Vcore loadline=2.1mohm
VGT loadline=3.1mohm

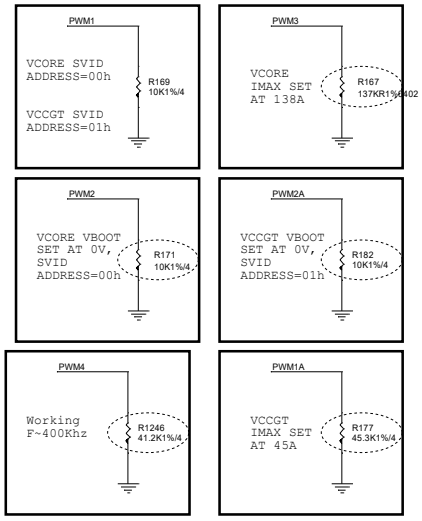
O/P Choke:
0.3uH/0.6mohm



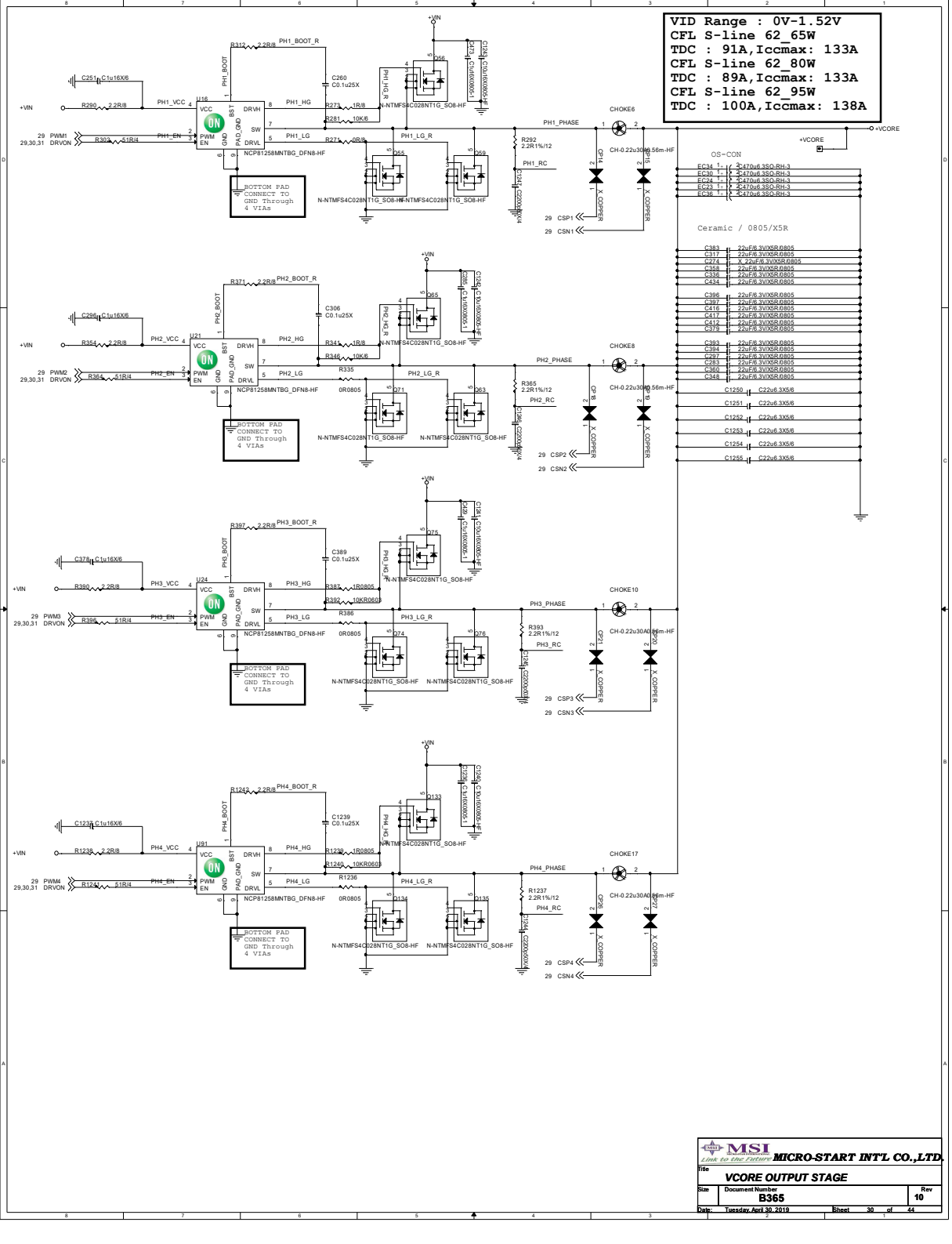
Power Sequence





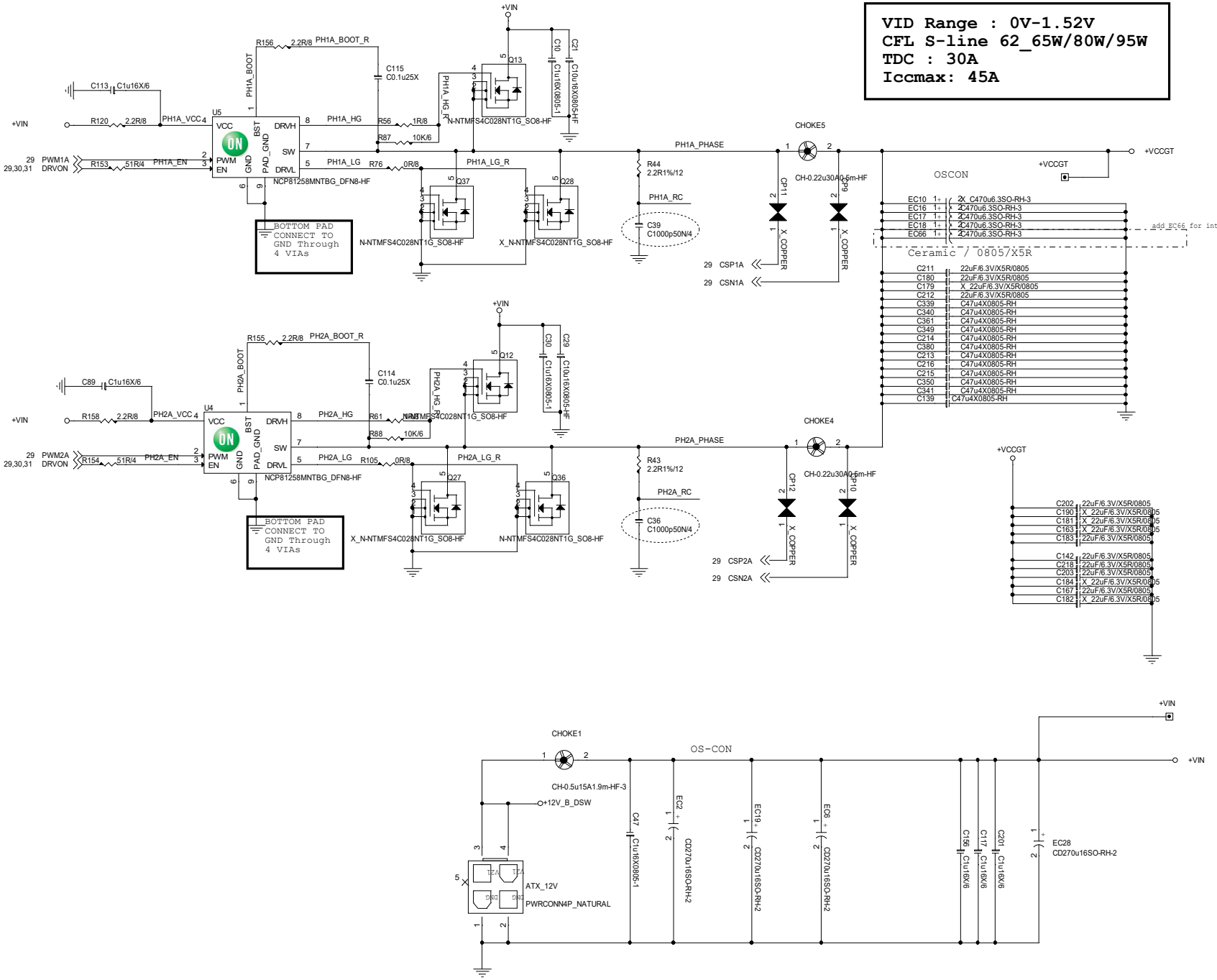


MSI / Link to the Future	MICRO-START INT'L CO.,LTD.	
Title	IMVP8-NCP81203 5 Phase	
Size	Document Number B365	Rev 10
Date: Tuesday, April 23, 2019	Sheet 29 of 44	



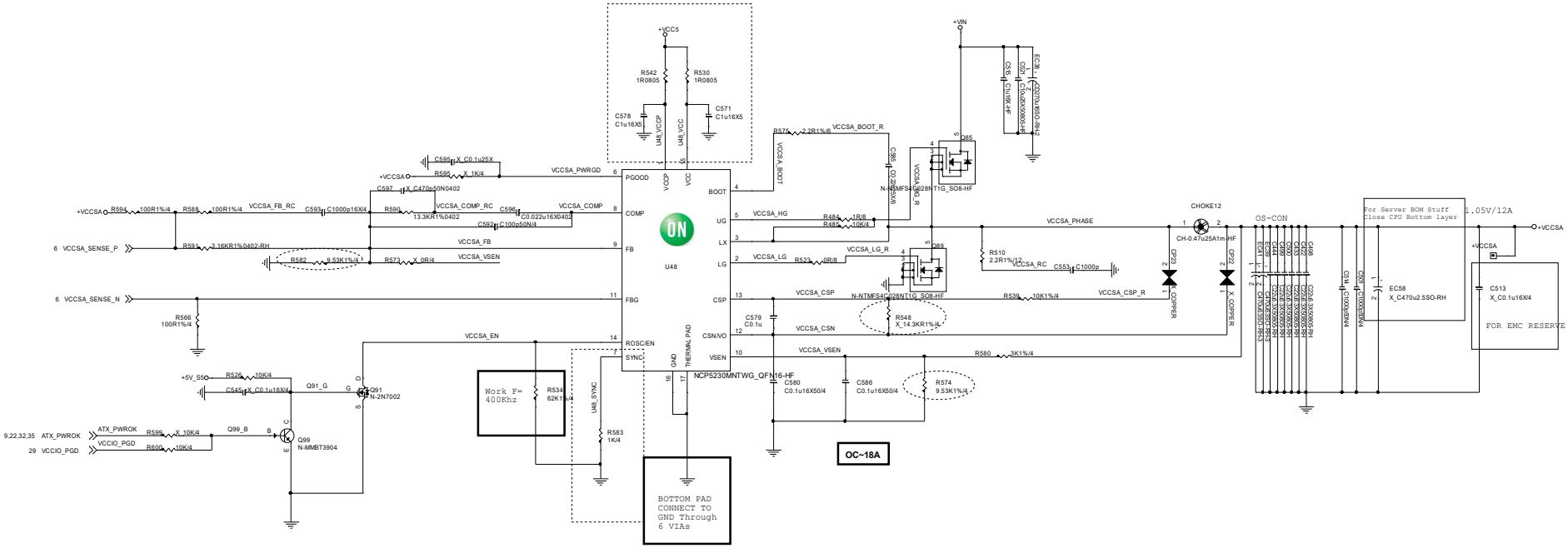
MICRO-START INT'L CO.,LTD.			
Title: VCORE OUTPUT STAGE			
Size	Document Number: B365		Rev: 10
Date: Tuesday, April 30, 2019		Sheet 30 of 44	

VID Range : 0V-1.52V
CFL S-line 62_65W/80W/95W
TDC : 30A
Iccmax: 45A

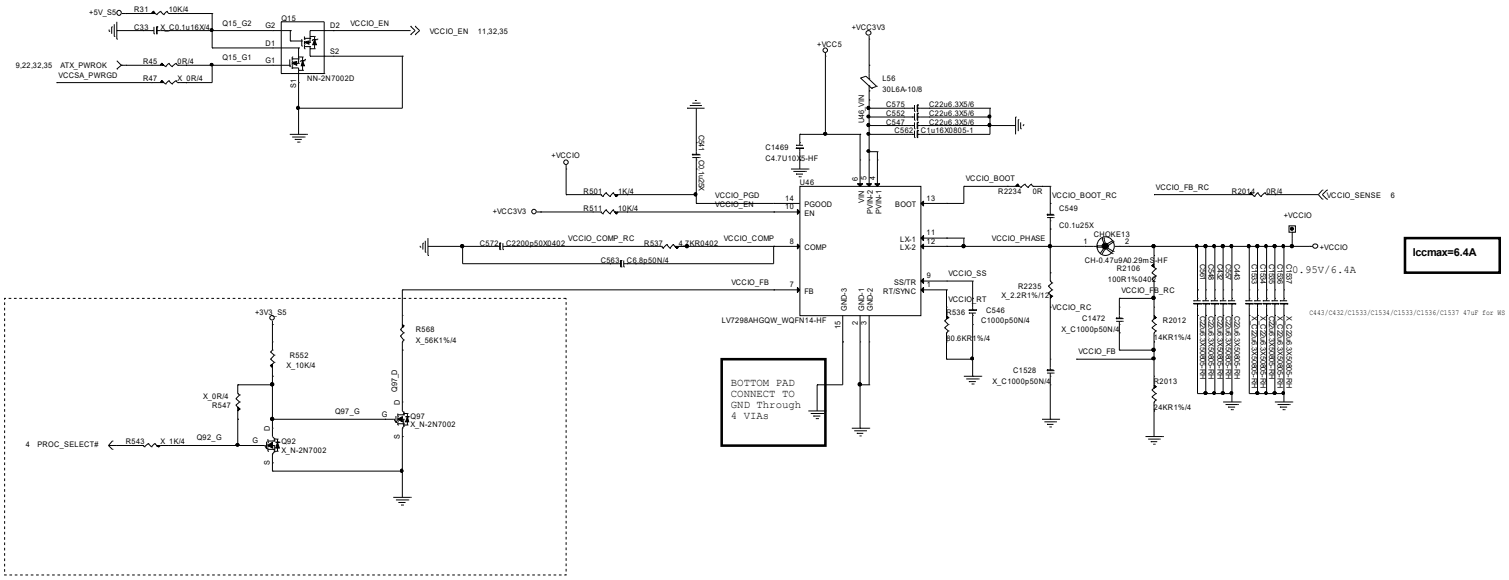


MSI	MICRO-START INT'L CO.,LTD.		
Title	VCCGT OUTPUT STAGE		
Size	Document Number B365		Rev 10
Date: Tuesday, April 30, 2019	Sheet 31 of 44		

VCCSA



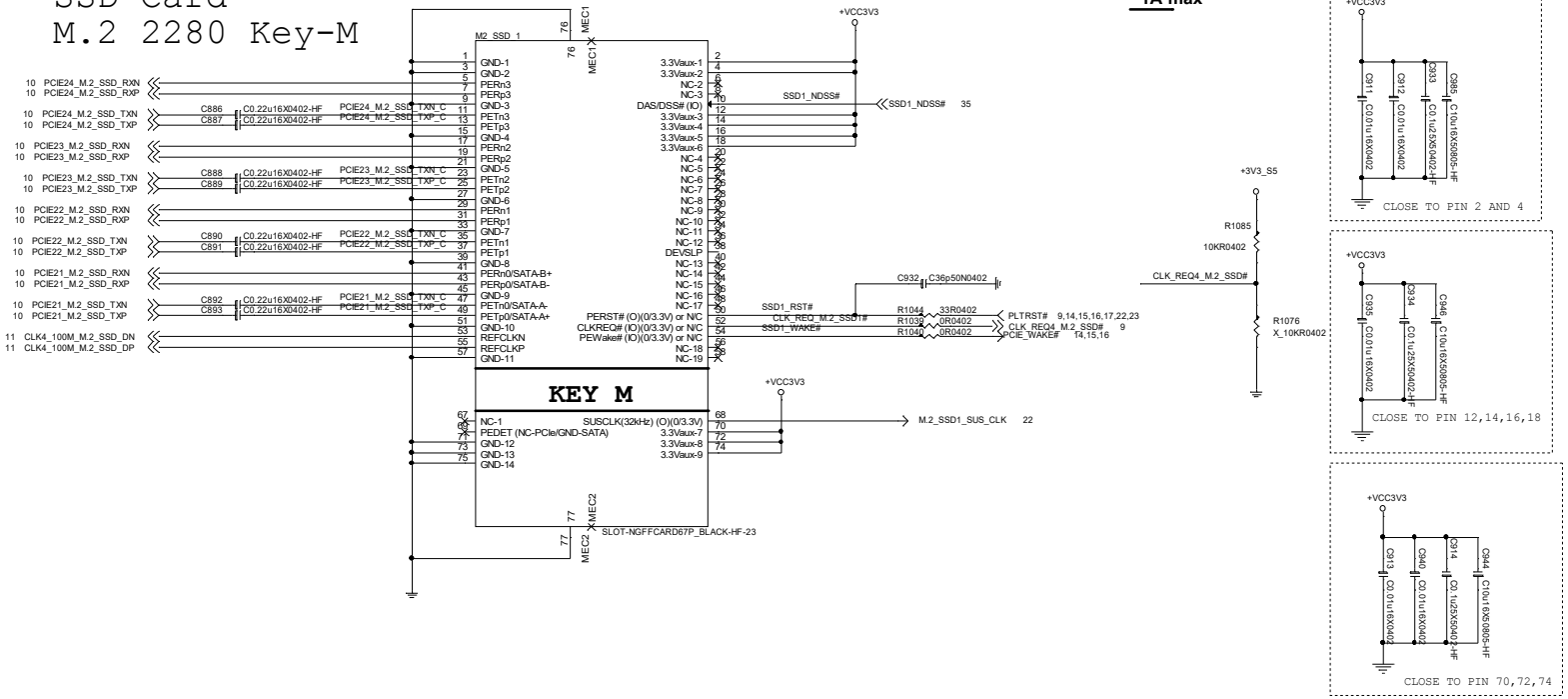
VCCIO



MSI Computer Corp. Link to the Future
MICRO-START INTL CO.,LTD.

Title	VccSA/VccIO	
Size	Document Number B365	Rev 10
Date: Tuesday, April 30, 2019	Sheet 32 of 44	

SSD Card
M.2 2280 Key-M



Title	Nothing
Size	B365
Document Number	
Rev	10
Date:	Tuesday, April 23, 2019
Sheet	33 of 44

MSI MICRO-STAR INTERNATIONAL
Link to the Future MICRO-START INTL CO.,LTD.

VCC3&VCC5 Power

MOS AVL
1. D03-4C10N03-C05
D03-4C10N03-C05
2. D03-516BA0C-N03
D03-516BA0C-N03
3. D03-4377N00-ST8
D03-4377N00-ST8

Vo=5V
Vin=12V
FS=300KHz
OCP=150%~200%
Iout=20A
Vin Irms =9.86A
LIR=22%
Cin CAP=54.01uF
Cout CAP=989.6uF
Cout CAP ESR=8mohm

Vo=3.3V
Vin=12V
FS=300KHz
OCP=150%~200%
Iout=20A
Vin Irms =8.93A
LIR=36%
Cin CAP=44.3uF
Cout CAP=853.15uF
Cout CAP ESR=8mohm

teknisi indonesia

OCP 37.94A

OCP 35.14A

VCC3&VCC5 Power Output Connector

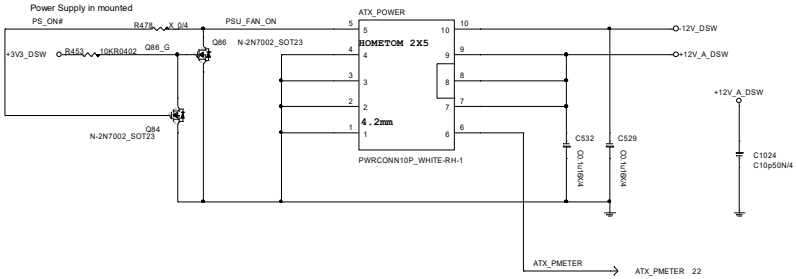
support NEC Consumer PS2 power on
SIO GPIO40 output
Deep S5: PS2 power on EN, output 0
Deep S5: PS2 power on DIS, output 1

MSI Link to the Future	MICRO-START INT'L CO.,LTD.		
Title	VCC3/VCC5/3VSB/5VSB		
Size	Document Number B365		Rev 10
Date: Tuesday, April 30, 2019		Sheet 34 of 44	

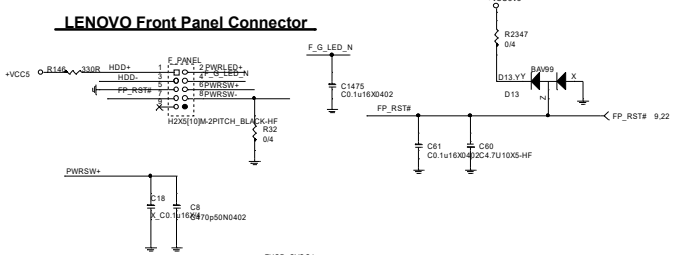
ATX Power Connector / Front Panel / LED/DSW

8 Pin ATX Power Connector

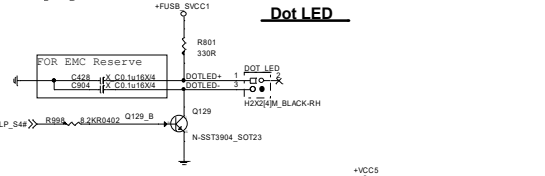
Power Supply in mounted

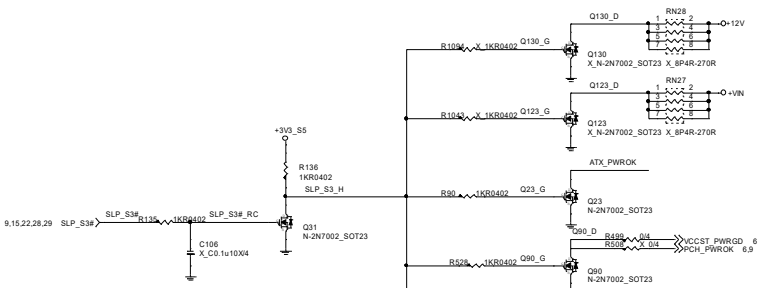


LENOVO Front Panel Connector

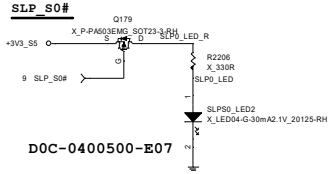


Dot LED



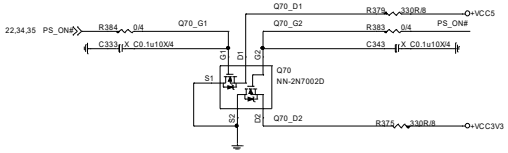


SLP_S0#

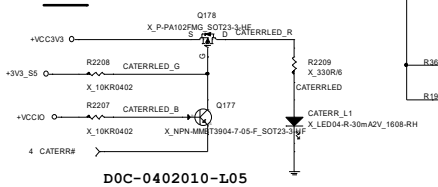


D0C-0400500-E07

VCC3/VCC5 Discharge

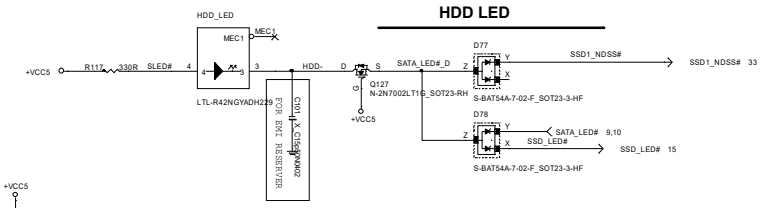


IERR

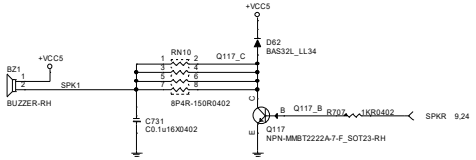


D0C-0402010-L05

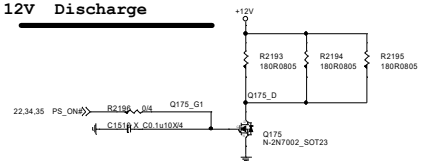
HDD LED

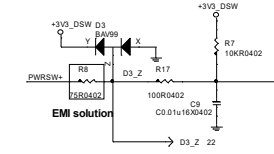


Buzzer Circuit

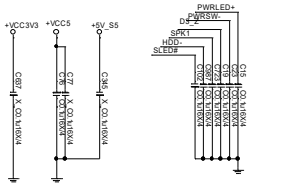


12V Discharge

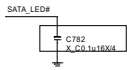


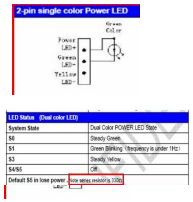


Cap For EMI

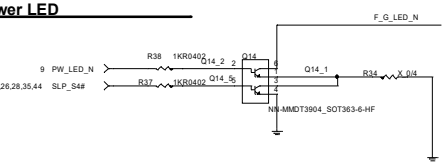


Lenovo EMC suggestion for 144MHz harmonic wave





Power LED



HD （IDE Hard Disk Active LED）	Pin 1:LED anode(+) Pin 8:LED cathode(-)
(Power LED)	Pin 3:LED cathode(-) (green) Pin 2:LED cathode(-) (yellow)
Power Switch	Open:Normal Operation Close:Power on /Off

MICRO-START INT'L CO.,LTD.

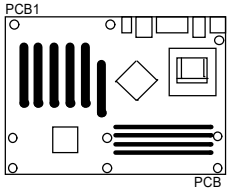
Title: ATX/F_Panel/EMI/LED

Size	Document Number	Rev
	B365	10

Date: Tuesday, April 23, 2019 Sheet 35 of 44

Manual Parts

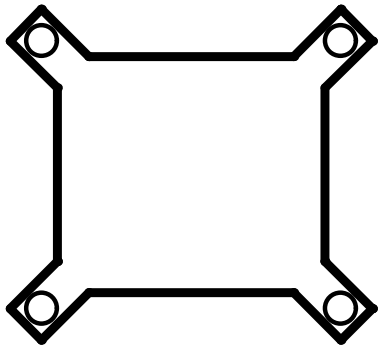
PCB1



PCB

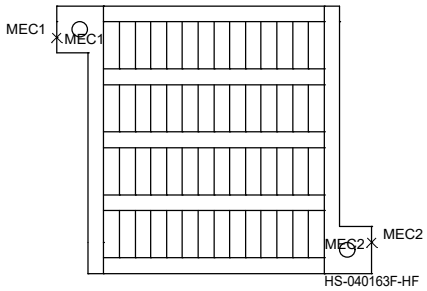
P30-07C5010-E48

XU1_X2



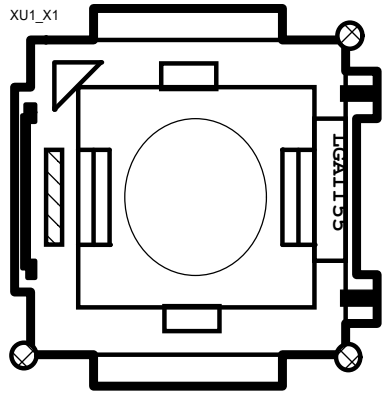
X_CPU Backplate

PCH1



HS-040163F-HF

XU1_X1



CPU SOCKET

USB_LAN5

OPT

Q270LC

6KV

with surge single LED +USB3.0 X2 connector: N58-30F0151-F02

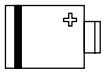
USB_LAN2

OPT

Q270LI

without surge +USB3.0 X2 connector: N58-32F0531-S42

VBAT-S1



BAT-BCR2032P-RH

USB_LAN

OPT

USB_LAN4

OPT

NEC Q270

without surge +USB3.0 X2 connector: N58-32F0221-F02

LABEL1 OPT

HDMI_LABEL OPT

HDMI_LABEL1 OPT

WIN10KEY1 OPT

WIN10KEY2 OPT

AMI_KEY1 OPT

USB_LAN6

OPT

without surge +USB2.0 X2 connector: N58-27F0021-F02

USB_LAN3

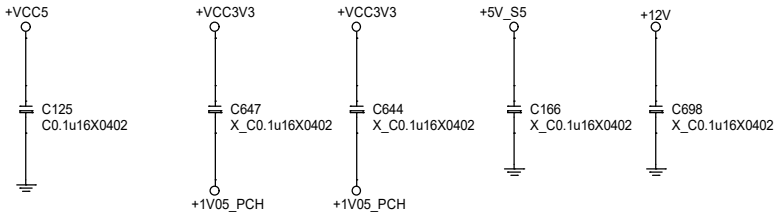
OPT

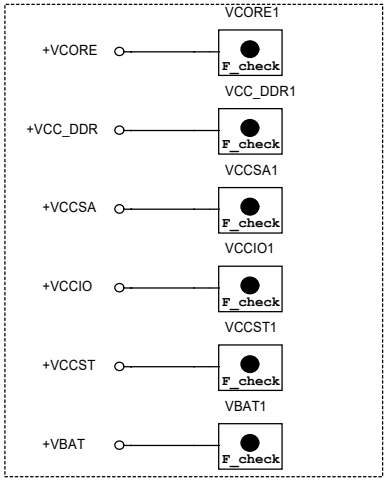
Cosumer B360

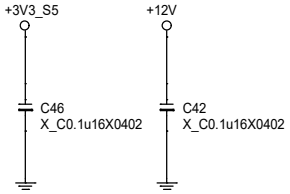
6KV N58-25F0321-S42 N58-27F0071-U30

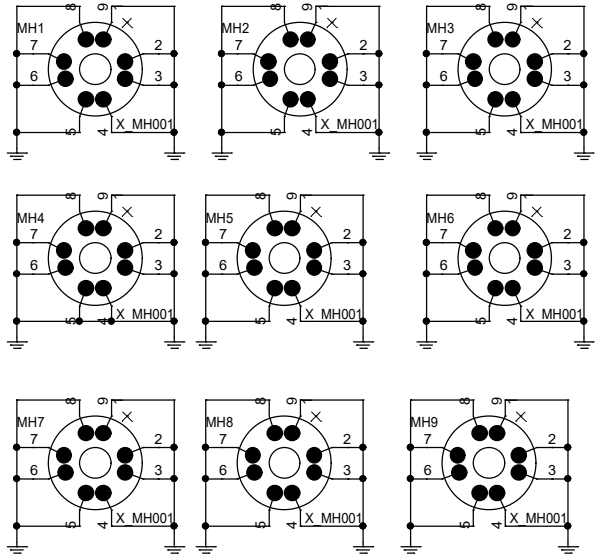
with surge single LED +USB2.0 X2 connector: N58-25F0291-F02

For EMI For Moat CAP



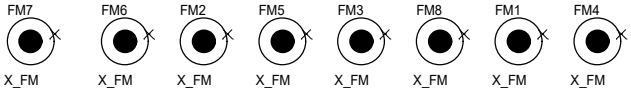






Optics Orientation Holes

Optical Fiducial Marks-120

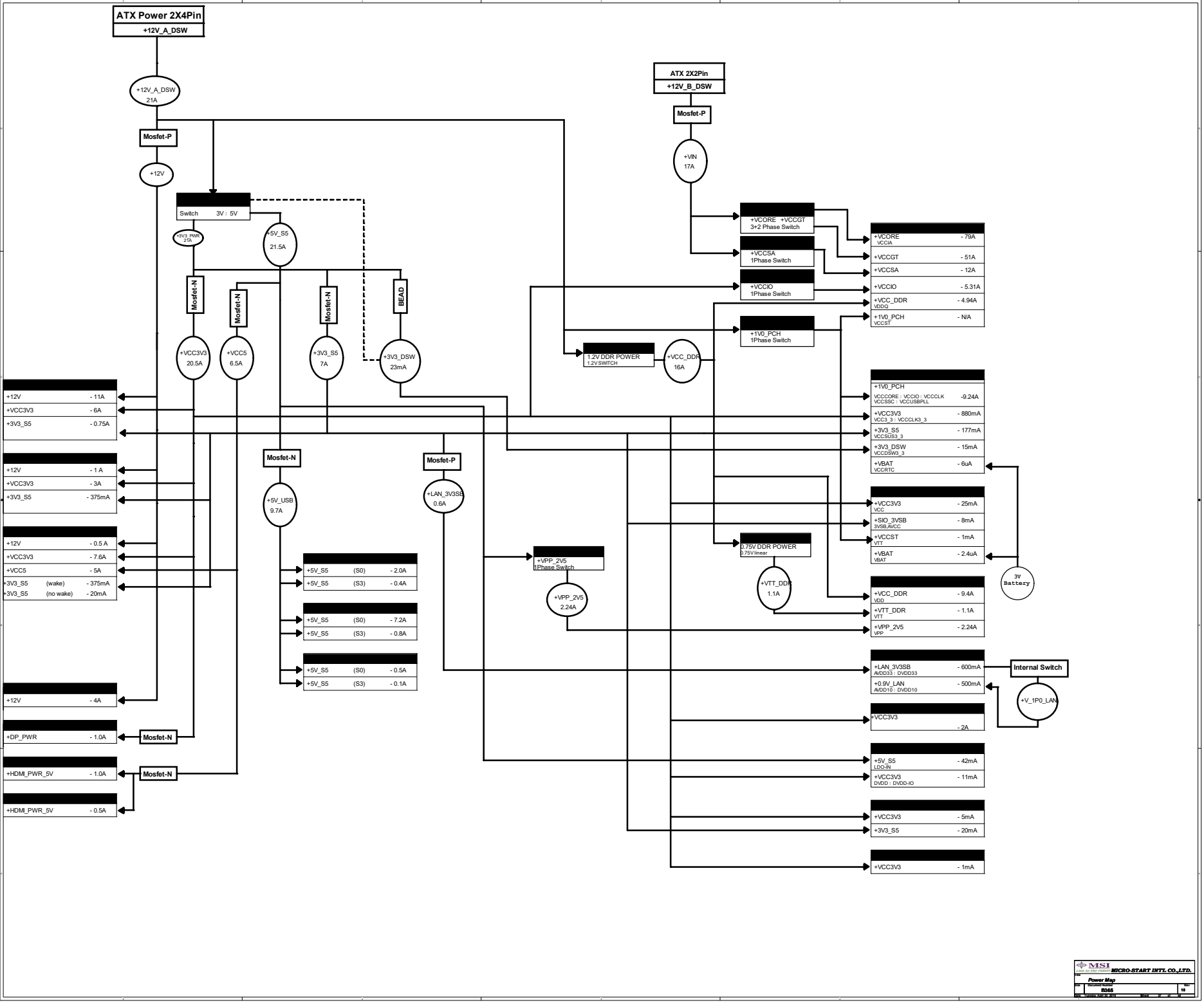


MICRO-START INT'L CO.,LTD.

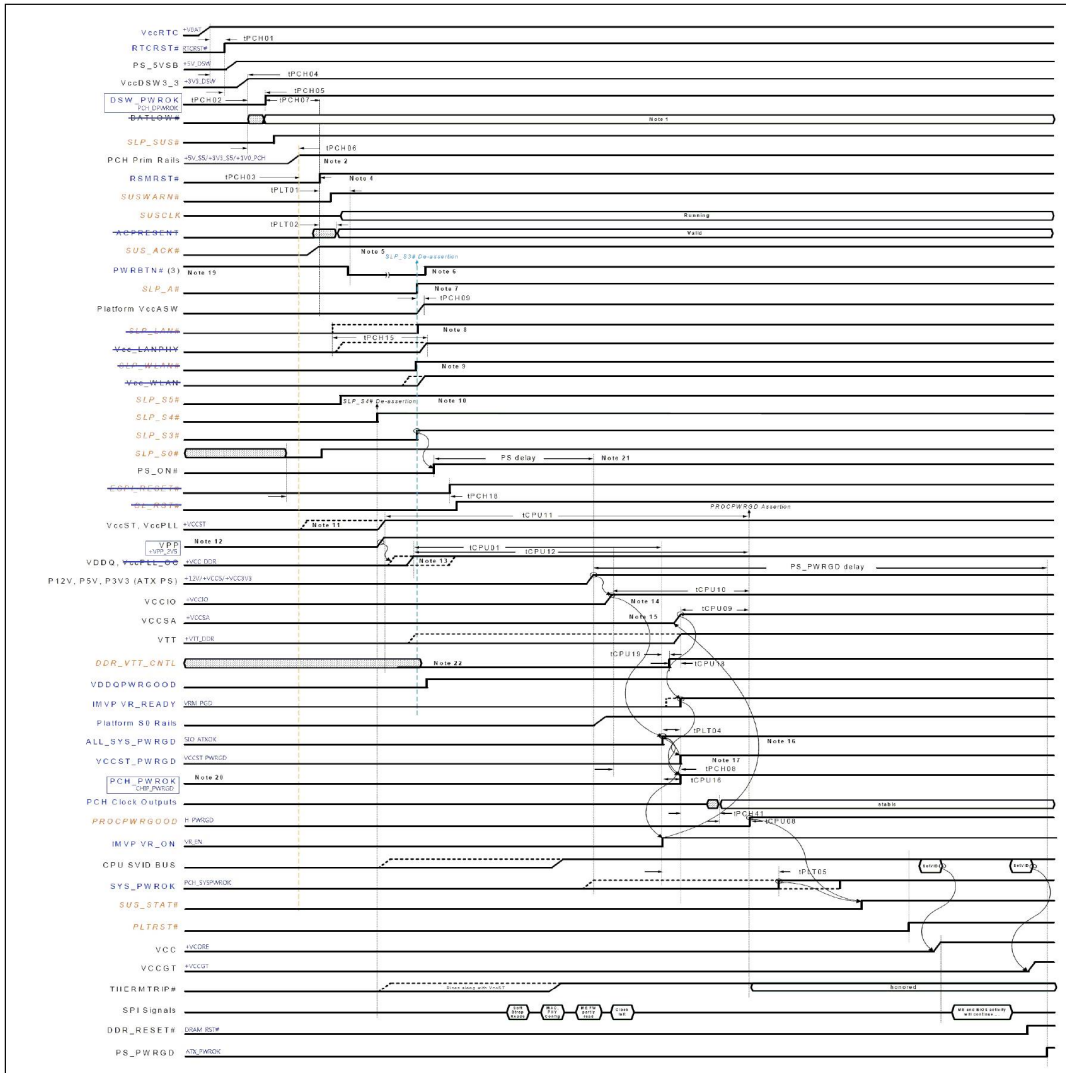
Title: Manual & Option Parts

Size: | Document Number: B365 | Rev: 10

Date: Tuesday, April 30, 2019 | Sheet 36 of 44


ATX Power 2X4Pin
+12V_A_DSW
+12V_A_DSW
21A
Mosfet-P
+12V
Switch 3V / 5V
+3V3_PWR
2.5A
+5V_S5
21.5A
Mosfet-N
Mosfet-N
Mosfet-N
BEAD
+VCC3V3
20.5A
+VCC5
6.5A
+3V3_S5
7A
+3V3_DSW
23mA
+12V - 11A
+VCC3V3 - 6A
+3V3_S5 - 0.75A
+12V - 1 A
+VCC3V3 - 3A
+3V3_S5 - 375mA
+12V - 0.5 A
+VCC3V3 - 7.6A
+VCC5 - 5A
+3V3_S5 (wake) - 375mA
+3V3_S5 (no wake) - 20mA
+12V - 4A
+DP_PWR - 1.0A
Mosfet-N
+HDMI_PWR_5V - 1.0A
Mosfet-N
+HDMI_PWR_5V - 0.5A
Mosfet-N
+5V_USB
9.7A
+5V_S5 (S0) - 2.0A
+5V_S5 (S3) - 0.4A
+5V_S5 (S0) - 7.2A
+5V_S5 (S3) - 0.8A
+5V_S5 (S0) - 0.5A
+5V_S5 (S3) - 0.1A
Mosfet-P
+LAN_3V3SB
0.6A
+VPP_2V5
1Phase Switch
+VPP_2V5
2.24A
ATX 2X2Pin
+12V_B_DSW
Mosfet-P
+VIN
17A
+VCORE +VCCGT
3+2 Phase Switch
+VCCSA
1Phase Switch
+VCCIO
1Phase Switch
+1V0_PCH
1Phase Switch
1.2V DDR POWER
1.2V SWITCH
+VCC_DDR
16A
0.75V DDR POWER
0.75V linear
+VTT_DDR
1.1A
+VCORE - 79A
VCCIA
+VCCGT - 51A
+VCCSA - 12A
+VCCIO - 5.31A
+VCC_DDR - 4.94A
VDDQ
+1V0_PCH - N/A
VCCST
+1V0_PCH
VCCCORE / VCCIO / VCCCLK -9.24A
VCCSSC / VCCUSBPLL
+VCC3V3 - 880mA
VCC3_3 / VCCCLK3_3
+3V3_S5 - 177mA
VCCSUS3_3
+3V3_DSW - 15mA
VCCDSW3_3
+VBAT - 6uA
VCCRTC
+VCC3V3 - 25mA
VCC
+SIO_3VSB - 8mA
3VSB,AVCC
+VCCST - 1mA
VTT
+VBAT - 2.4uA
VBAT
3V Battery
+VCC_DDR - 9.4A
VDD
+VTT_DDR - 1.1A
VTT
+VPP_2V5 - 2.24A
VPP
+LAN_3V3SB - 600mA
AVDD33 / DVDD33
+0.9V_LAN - 500mA
AVDD10 / DVDD10
Internal Switch
+V_1P0_LAN
+VCC3V3 - 2A
+5V_S5 - 42mA
LDO-IN
+VCC3V3 - 11mA
DVDD / DVDD-IO
+VCC3V3 - 5mA
+3V3_S5 - 20mA
+VCC3V3 - 1mA
MSI
MICRO-START INT'L CO.,LTD.
Power Map
Document Number
R946
Rev
1.0
Monday, June 24, 2013
Sheet of

SKL-S Timing Diagram for G3 to S0 [Deep Sx Platform]



teknisi indonesia

with Deep Sx support

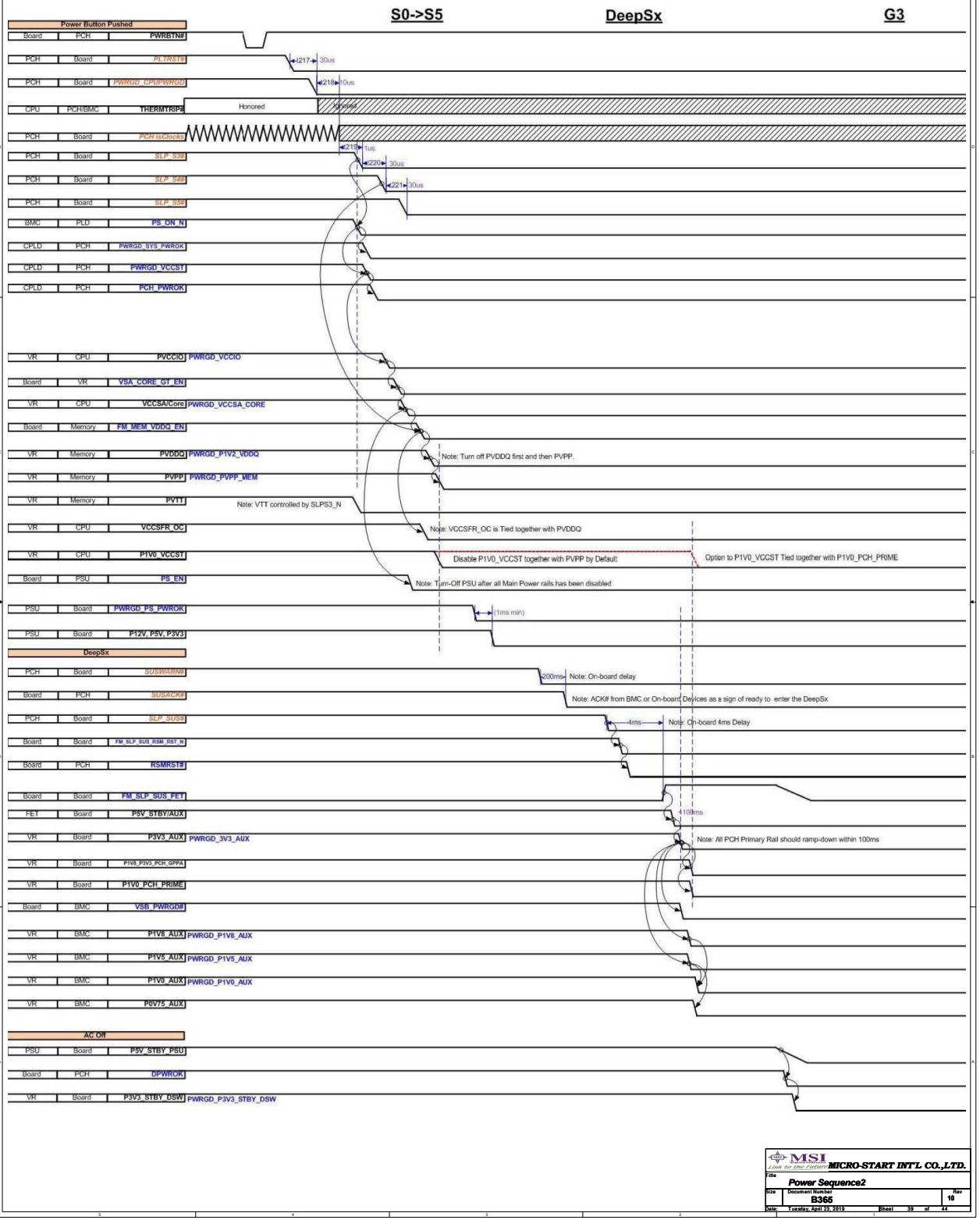
source	destination		G3	DEEP S5	S0
board	PCH	VBAT			
board	PCH	RTCRST#			
PSU	board	+5VSB_DSW			
board	PCH	+3VSB_DSW			
board	PCH	PCH_DPWROK			
PCH	SIO	PCH_SUSWARN#			
SIO	PCH	PCH_SUSACK#			
PCH	SIO	SLP_SUS#			
board	board	+5V_S5			
board	PCH	+3V3_S5			
board	PCH	+1V0_PCH			
SIO	PCH	RSMRST#			

MSI — Lead on the Future — MICRO-STAR INT'L CO.,LTD.

Title: Power Sequence1

Size: — Document Number: B365 — Rev: 1.0

Date: Tuesday, June 10, 2014 — Sheet 38 of 48

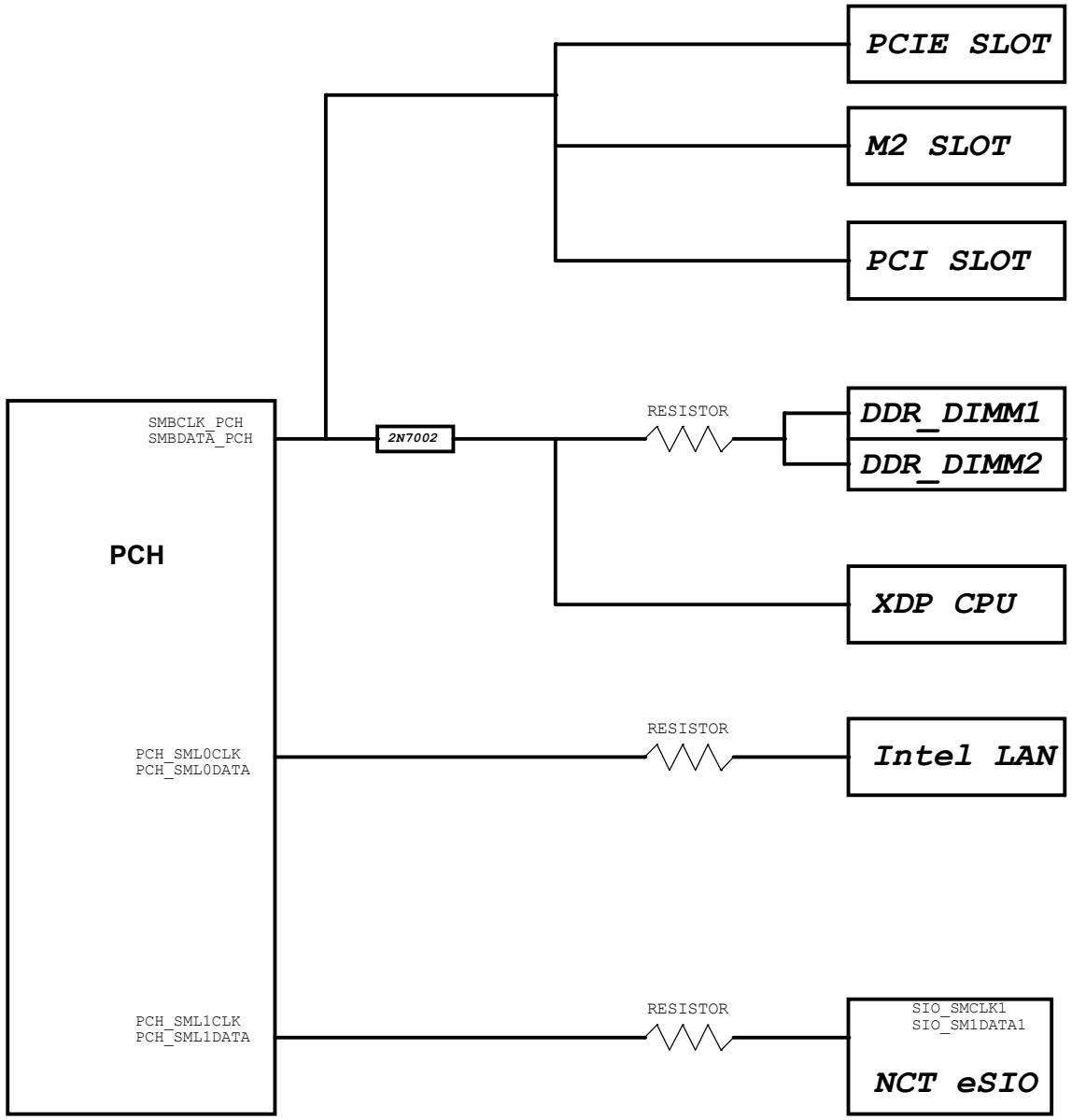


MSI Link to the Future MICRO-STAR INT'L CO.,LTD.

Title: Power Sequence2

Size	Document Number	Rev
	B365	10

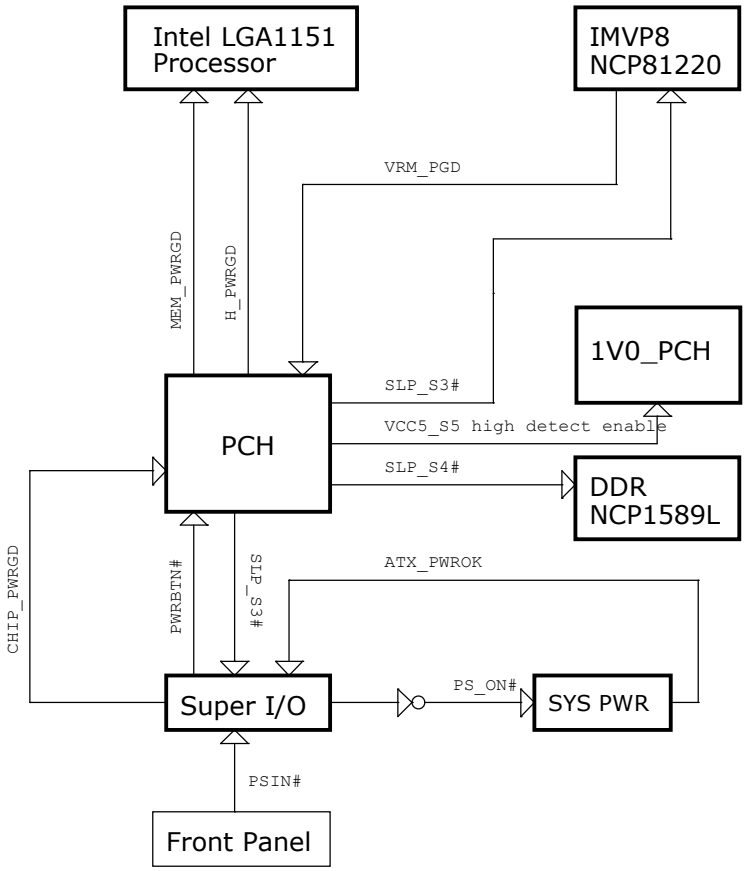
Date: Tuesday, April 23, 2019 Sheet 39 of 44



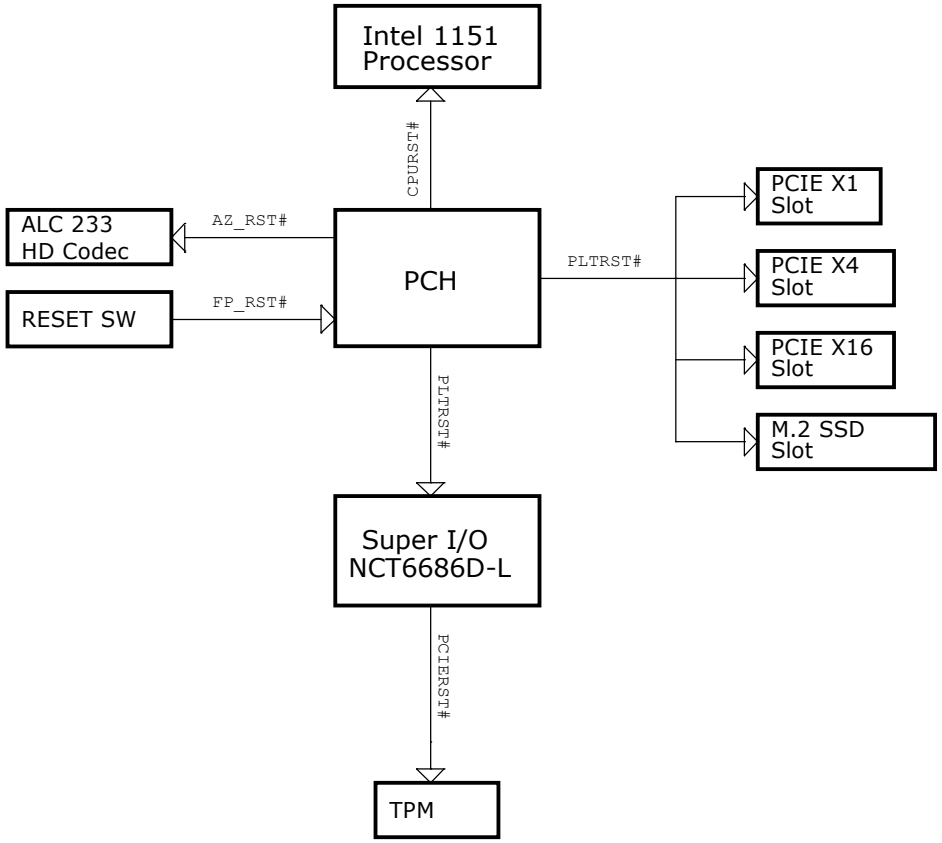
MSI MICRO-STAR INT'L CO.,LTD.
Link to the Future

Title: SMBUS Block Diagram		
Size	Document Number: B365	Rev: 10
Date: Tuesday, April 23, 2019	Sheet 40 of 44	

PWROK MAP



RESET MAP



MSI MICRO-STAR INTERNATIONAL
Link to the Future **MICRO-START INT'L CO.,LTD.**

Title: **Power & Reset Map**		
Size	Document Number: **B365**	Rev: **10**
Date: Tuesday, April 23, 2019	Sheet 41 of 44	

GPIO	Signal Name	Power Well	IN/OUT	Usage
GPP_A0	GPP_A0_RCIN_N_ESPI_ALERT1_N	SB3V	Native	KBRST#
GPP_A1	GPP_A1_LAD0_ESPI_IO0	SB3V	Native	LPC_AD0
GPP_A2	GPP_A2_LAD1_ESPI_IO1	SB3V	Native	LPC_AD1
GPP_A3	GPP_A3_LAD2_ESPI_IO2	SB3V	Native	LPC_AD2
GPP_A4	GPP_A4_LAD3_ESPI_IO3	SB3V	Native	LPC_AD3
GPP_A5	GPP_A5_LFRAME_N_ESPI_CS_N	SB3V	Native	LPC_FRAME#
GPP_A6	GPP_A6_SERIRQ	SB3V	Native	LPC_SERIRQ
GPP_A7	GPP_A7_PIRQA_N_ESPI_ALERT0_N	SB3V	Native	LPC_DRQ#0
GPP_A8	GPP_A8_CLKRUN_N	SB3V	Native	CLKRUN#
GPP_A9	GPP_A9_CLKOUT_LPC0_ESPI_CLK	SB3V	Native	LEO_CHIP_CLK
GPP_A10	GPP_A10_CLKOUT_LPC1	SB3V	Native	PCI_CLK_24M
GPP_A11	GPP_A11_PME_N	SB3V	Native	SIO_PME#
GPP_A12	GPP_A12_BMBUSY_N	SB3V	Native	BMBUSY#
GPP_A13	GPP_A13_SUSWARN_N_SUSPWRDNACK	SB3V	Native	PCH_SUSWARN#
GPP_A14	GPP_A14_SUS_STAT_N_ESPI_RST_N	SB3V	Native	SUS_STAT#
GPP_A15	GPP_A15_SUSACK_N	SB3V	Native	PCH_SUSACK#
GPP_A16	GPP_A16_CLKOUT_48	SB3V	Native	N.C
GPP_A17	GPP_A17_ISH_GP7	SB3V	OUT	BT_DISABLE_N
GPP_A18	GPP_A18_ISH_GP0	SB3V	IN	OE#
GPP_A19	GPP_A19_ISH_GP1	SB3V	Native	N.C
GPP_A20	GPP_A20_ISH_GP2	SB3V	OUT	SEL#
GPP_A21	GPP_A21_ISH_GP3	SB3V	IN	WLAN_DETECT_N
GPP_A22	GPP_A22_ISH_GP4	SB3V	IN	COM_GPIO1
GPP_A23	GPP_A23_ISH_GP5	SB3V	IN	LEO_CHIP_GPIO
GPP_B0	GPP_B0	SB3V	Native	N.C
GPP_B1	GPP_B1	SB3V	Native	N.C
GPP_B2	GPP_B2_VRALERT_N	SB3V	Native	PCH_VRALERT#
GPP_B3	GPP_B3_CPU_GP2	SB3V	Native	N.C
GPP_B4	GPP_B4_CPU_GP3	SB3V	Native	N.C
GPP_B5	GPP_B5_SRCCLKREQ0_N	SB3V	IN	PCIEX16_PRSNT2_R2_N
GPP_B6	GPP_B6_SRCCLKREQ1_N	SB3V	Native	PCIECLKREQ1#
GPP_B7	GPP_B7_SRCCLKREQ2_N	SB3V	IN	PCIEX4_SLOT3_PRSNT2_R_N
GPP_B8	GPP_B8_SRCCLKREQ3_N	SB3V	IN	CLK_REQ1_M.2_WLAN_N
GPP_B9	GPP_B9_SRCCLKREQ4_N	SB3V	Native	CLK_REQ1_M.2_SSD#
GPP_B10	GPP_B10_SRCCLKREQ5_N	SB3V	Native	N.C
GPP_B11	GPP_B11	SB3V	Native	N.C
GPP_B12	GPP_B12_SLP_S0_N	SB3V	Native	SLP_S0#
GPP_B13	GPP_B13_PLTRST_N	SB3V	Native	PLTRST#
GPP_B14	GPP_B14_SPKR	SB3V	Native	SPKR
GPP_B15	GPP_B15_GSPI0_CS_N	SB3V	Native	N.C
GPP_B16	GPP_B16_GSPI0_CLK	SB3V	Native	N.C
GPP_B17	GPP_B17_GSPI0_MISO	SB3V	Native	N.C
GPP_B18	GPP_B18_GSPI0_MOSI	SB3V	Native	REBOOT_STRAP
GPP_B19	GPP_B19_GSPI1_CS_N	SB3V	Native	N.C
GPP_B20	GPP_B20_GSPI1_CLK	SB3V	IN	SMI#
GPP_B21	GPP_B21_GSPI1_MISO	SB3V	Native	N.C
GPP_B22	GPP_B22_GSPI1_MOSI	SB3V	IN	BBS_STRAP
GPP_B23	GPP_B23_SML1ALERT_N_PCHHOT_N	SB3V	IN	SMLINK1_ALERT_N
GPP_C0	GPP_C0_SMBCLK	SB3V	Native	SMBCLK_R
GPP_C1	GPP_C1_SMBDATE	SB3V	Native	SMBDATA_R
GPP_C2	GPP_C2_SMBALERT_N	SB3V	Native	TLS_STRAP
GPP_C3	GPP_C3_SML0CLK	SB3V	Native	SML0_CLK
GPP_C4	GPP_C4_SML0DATA	SB3V	Native	SML0_DATA
GPP_C5	GPP_C5_SML0ALERT_N	SB3V	Native	ESPI_STRAP
GPP_C6	GPP_C6_SML1CLK	SB3V	Native	SML1_CLK
GPP_C7	GPP_C7_SML1DATA	SB3V	Native	SML1_DATA
GPP_C8	GPP_C8_UART0_RXD	SB3V	IN	CLR_CMOS
GPP_C9	GPP_C9_UART0_TXD	SB3V	Native	N.C
GPP_C10	GPP_C10_UART0_RTS	SB3V	Native	IBUTTON
GPP_C11	GPP_C11_UART0_CTS_N	SB3V	Native	N.C
GPP_C12	GPP_C12_UART1_RXD_ISH_UART1_RXD	SB3V	IN	PCH_GPIO22
GPP_C13	GPP_C13_UART1_TXD_ISH_UART1_TXD	SB3V	IN	PCH_GPIO23
GPP_C14	GPP_C14_UART1_RTS_N_ISH_UART1_RTS_	SB3V	IN	PCH_GPIO21
GPP_C15	GPP_C15_UART1_CTS_N_ISH_UART1_CTS_	SB3V	OUT	WLAN_DISABLE_N
GPP_C16	GPP_C16_I2C0_SDA	SB3V	Native	N.C
GPP_C17	GPP_C17_I2C0_SCL	SB3V	Native	N.C
GPP_C18	GPP_C18_I2C1_SDA	SB3V	Native	N.C
GPP_C19	GPP_C19_I2C1_SCL	SB3V	Native	N.C
GPP_C20	GPP_C20_UART2_RXD	SB3V	Native	N.C
GPP_C21	GPP_C21_UART2_TXD	SB3V	Native	N.C
GPP_C22	GPP_C22_UART2_RTS_N	SB3V	Native	N.C
GPP_C23	GPP_C23_UART2_CTS_N	SB3V	Native	N.C

GPIO	Signal Name	Power Well	IN/OUT	Usage
GPP_D0	GPP_D0_SPI1_CS_N	SB3V	Native	N.C
GPP_D1	GPP_D1_SPI1_CLK	SB3V	OUT	PW_LED_N
GPP_D2	GPP_D2_SPI1_MISO	SB3V	IN	PD_PCH_GPP_D_2
GPP_D3	GPP_D3_ SPI1_MOSI	SB3V	IN	PD_PCH_GPP_D_3
GPP_D4	GPP_D4_ISH_I2C2_SDA	SB3V	OUT	SUS_LED_N
GPP_D5	GPP_D5_SSP0_SFRM	SB3V	Native	N.C
GPP_D6	GPP_D6_SSP0_TXD	SB3V	Native	N.C
GPP_D7	GPP_D7_SSP0_RXD	SB3V	Native	N.C
GPP_D8	GPP_D8_SSP0_SCLK	SB3V	Native	N.C
GPP_D9	GPP_D9_ISH_SPI_CS_N	SB3V	Native	N.C
GPP_D10	GPP_D10_ISH_SPI_CLK	SB3V	Native	N.C
GPP_D11	GPP_D11_ISH_SPI_MISO	SB3V	IN	FUSB_01
GPP_D12	GPP_D12_ISH_SPI_MOSI	SB3V	IN	FUSB_02
GPP_D13	GPP_D13_ISH_UART0_RXD	SB3V	IN	FUSB_03
GPP_D14	GPP_D14_ISH_UART0_TXD	SB3V	IN	PS2_PINHEADER_N
GPP_D15	GPP_D15_ISH_UART0_RTS_N	SB3V	IN	LPT_DET#
GPP_D16	GPP_D16_ISH_UART0_CTS_N	SB3V	Native	N.C
GPP_D17	GPP_D17_DMIC_CLK1	SB3V	Native	COM_WAKE#
GPP_D18	GPP_D18_DMIC_DATA1	SB3V	IN	PCH_GPIO_D18
GPP_D19	GPP_D19_DMIC_CLK0	SB3V	Native	N.C
GPP_D20	GPP_D20_DMIC_DATA0	SB3V	Native	N.C
GPP_D21	GPP_D21_SPI1_IO2	SB3V	Native	N.C
GPP_D22	GPP_D22_SPI1_IO3	SB3V	Native	N.C
GPP_D23	GPP_D23_ISH_I2C2_SCL	SB3V	Native	N.C
GPP_E0	GPP_E0_SATAXPCIE0_SATAGP	SB3V	Native	N.C
GPP_E1	GPP_E1_SATAXPCIE1_SATAGP1	SB3V	Native	N.C
GPP_E2	GPP_E2_SATAXPCIE2_SATAGP2	SB3V	Native	N.C
GPP_E3	GPP_E3_CPU_GP0	SB3V	Native	BMC_PCH_SCI_N
GPP_E4	GPP_E4_DEVSLP0	SB3V	Native	BMC_FORCE_SMI_N
GPP_E5	GPP_E5_DEVSLP1	SB3V	Native	N.C
GPP_E6	GPP_E6_DEVSLP2	SB3V	Native	N.C
GPP_E7	GPP_E7_CPU_GP1	SB3V	Native	N.C
GPP_E8	GPP_E8_SATALED_N	SB3V	OUT	SATA_LED#
GPP_E9	GPP_E9_USB2_OC0_N	SB3V	Native	USB_OCP#0
GPP_E10	GPP_E10_USB2_OC1_N	SB3V	Native	USB_OCP#1
GPP_E11	GPP_E11_USB2_OC2_N	SB3V	Native	USB_OCP#2
GPP_E12	GPP_E12_USB2_OC3_N	SB3V	Native	USB_OCP#3
GPP_F0	GPP_F17_USB2_OC8_5	SB3V	Native	PCH_GPIO_F1
GPP_F1	GPP_F1_SATAXPCIE4_SATAGP4	SB3V	IN	M.2_SSD1_PEDET#
GPP_F2	GPP_F2_SATAXPCIE5_SATAGP5	SB3V	Native	PCH_GPIO_F2
GPP_F3	GPP_F3_SATAXPCIE6_SATAGP6	SB3V	Native	N.C
GPP_F4	GPP_F4_SATAXPCIE7_SATAGP7	SB3V	Native	TP20
GPP_F5	GPP_F5_DEVSLP3	SB3V	IN	SPI_SIRQ#
GPP_F6	GPP_F6_DEVSLP4	SB3V	Native	PCH_GPIO_F6
GPP_F7	GPP_F7_DEVSLP5	SB3V	Native	SSD1_SATA_DEVSLP
GPP_F8	GPP_F8_DEVSLP6	SB3V	Native	N.C
GPP_F9	GPP_F9_DEVSLP7	SB3V	Native	USB_DISABLE#
GPP_F10	GPP_F10_SCLOCK	SB3V	OUT	N.C
GPP_F11	GPP_F11_SLOAD	SB3V	OUT	N.C
GPP_F12	GPP_F12_SDATAOUT1	SB3V	OUT	N.C
GPP_F13	GPP_F13_SDATAOUT0	SB3V	OUT	N.C
GPP_F14	GPP_F14	SB3V	IN	SKTOCC#
GPP_F15	GPP_F15_USB2_OCB_4	SB3V	Native	USB_OCP#4
GPP_F16	GPP_F16_USB2_OCB_5	SB3V	Native	USB_OCP#5
GPP_F17	GPP_F17_USB2_OCB_6	SB3V	Native	USB_OCP#6
GPP_F18	GPP_F18_USB2_OCB_7	SB3V	Native	USB_OCP#7
GPP_F19	GPP_F19_EDP_VDDEN	SB3V	Native	N.C
GPP_F20	GPP_F20_EDP_BKLTEN	SB3V	Native	N.C
GPP_F21	GPP_F21_EDP_BKLTCTL	SB3V	Native	N.C
GPP_F22	GPP_F22	SB3V	OUT	PCH_GPIO_F22
GPP_F23	GPP_F23	SB3V	Native	N.C
GPD0	GPD0_BATLOW_N	SB3V_DSW	Native	PCH_BATLOW#
GPD1	GPD1_ACPRESENT	SB3V_DSW	OUT	SUS_LED_N
GPD2	GPD2_LAN_WAKE_N	SB3V_DSW	Native	LAN_WAKE#_C
GPD3	GPD3_PWRBTN_N	SB3V_DSW	Native	PWRBTN#
GPD4	GPD4_SLP_S3_N	SB3V_DSW	Native	SLP_S3#
GPD5	GPD5_SLP_S4_N	SB3V_DSW	Native	SLP_S4#
GPD6	GPD6_SLP_A_	SB3V_DSW	Native	PCH_SLP_A#
GPD7	GPD7_USB2_WAKEOUT_N	SB3V_DSW	Native	N.C
GPD8	GPD8_SUSCL	SB3V_DSW	Native	SUSCLK
GPD9	GPD9_SLP_WLAN_N	SB3V_DSW	Native	N.C
GPD10	GPD10_SLP_S5_N	SB3V_DSW	Native	SLP_S5#
GPD11	GPD11_LANPHYPC	SB3V_DSW	Native	LAN_DISABLE#

GPIO	Signal Name	Power Well	IN/OUT	Usage
GPP_G0	GPP_G0_FAN_TACH_0	SB3V	IN	CHASSIS_ID1
GPP_G1	GPP_G1_FAN_TACH_1	SB3V	IN	CHASSIS_ID2
GPP_G2	GPP_G2_FAN_TACH_2	SB3V	IN	H_PROCHOT_PCH_N
GPP_G3	GPP_G3_FAN_TACH_3	SB3V	Native	PCH_BMC_FOURCE_INT_N
GPP_G4	GPP_G4_FAN_TACH_4	SB3V	Native	N.C
GPP_G5	GPP_G5_FAN_TACH_5	SB3V	Native	N.C
GPP_G6	GPP_G6_FAN_TACH_6	SB3V	Native	N.C
GPP_G7	GPP_G7_FAN_TACH_7	SB3V	Native	N.C
GPP_G8	GPP_G8_FAN_PWM_0	SB3V	Native	N.C
GPP_G9	GPP_G9_FAN_PWM_1	SB3V	Native	N.C
GPP_G10	GPP_G10_FAN_PWM_2	SB3V	Native	N.C
GPP_G11	GPP_G11_FAN_PWM_3	SB3V	IN	BMC_THROTTLE_N
GPP_G12	GPP_G12_GSXDOUT	SB3V	IN	GPP_G0
GPP_G13	GPP_G13_GSXSLOAD	SB3V	IN	GPP_G1
GPP_G14	GPP_G14_GSXDIN	SB3V	IN	GPP_G2
GPP_G15	GPP_G15_GSXSRESET_N	SB3V	IN	GPP_G3
GPP_G16	GPP_G16_GSXCLK	SB3V	IN	GPP_G4
GPP_G17	GPP_G17_ADR_COMPLETE	SB3V	IN	GPP_G5
GPP_G18	GPP_G18_NMI_N	SB3V	Native	FM_NMI_EVENT_N
GPP_G19	GPP_G19_SMI_N	SB3V	IN	SIO_SCI_N
GPP_G20	GPP_G20	SB3V	Native	BMC_READY
GPP_G21	GPP_G21	SB3V	IN	PCH_GPIO20
GPP_G22	GPP_G22	SB3V	Native	BMC_CARD_DET_R_N
GPP_G23	GPP_G23	SB3V	OUT	VGA_URDBG
GPP_H0	GPP_H0_SRCCLKREQ0_N	SB3V	Native	FM_MEM_THERM_EVENT_LVT3_N
GPP_H1	GPP_H1_SRCCLKREQ7_N	SB3V	Native	FM_NM_THROTTLE_N
GPP_H2	GPP_H2_SRCCLKREQ8_N	SB3V	OUT	FM_CATERR_N
GPP_H3	GPP_H3_SRCCLKREQ9_N	SB3V	Native	PCH_BMC_ALERT
GPP_H4	GPP_H4_SRCCLKREQ10_N	SB3V	Native	N.C
GPP_H5	GPP_H5_SRCCLKREQ11_N	SB3V	Native	N.C
GPP_H6	GPP_H6_SRCCLKREQ12_N	SB3V	Native	N.C
GPP_H7	GPP_H7_SRCCLKREQ13_N	SB3V	Native	N.C
GPP_H8	GPP_H8_SRCCLKREQ14_N	SB3V	Native	N.C
GPP_H9	GPP_H9_SRCCLKREQ15_N	SB3V	Native	N.C
GPP_H10	GPP_H10_SML2CLK	SB3V	OUT	WIRELESS_EN2
GPP_H11	GPP_H11_SML2DATA	SB3V	OUT	WIRELESS_EN
GPP_H12	GPP_H12_SML2ALERT_N	SB3V	Native	FM_ESPI_FLASH_MODE
GPP_H13	GPP_H13_SML3CLK	SB3V	Native	N.C
GPP_H14	GPP_H14_SML3DATA	SB3V	Native	N.C
GPP_H15	GPP_H15_SML3ALERT_N	SB3V	Native	PCH_GPP_H15
GPP_H16	GPP_H16_SML4CLK	SB3V	Native	N.C
GPP_H17	GPP_H17_SML4DATA	SB3V	Native	N.C
GPP_H18	GPP_H18_SML4ALERT_N	SB3V	Native	PCH_GPP_H18
GPP_H19	GPP_H19_ISH_I2C0_SDA	SB3V	Native	N.C
GPP_H20	GPP_H20_ISH_I2C0_SCL	SB3V	Native	N.C
GPP_H21	GPP_H21_ISH_I2C1_SDA	SB3V	Native	N.C
GPP_H22	GPP_H22_ISH_I2C1_SCL	SB3V	Native	N.C
GPP_H23	GPP_H23	SB3V	Native	N.C
GPP_I0	GPP_I0_DDPB_HPD0	SB3V	IN	VGA_DDI3_HPD
GPP_I1	GPP_I1_DDPC_HPD1	SB3V	IN	DP_DDPC_HPD
GPP_I2	GPP_I2_DDPD_HPD2	SB3V	IN	DP_DDPD_HPD
GPP_I3	GPP_I3_DDPE_HPD3	SB3V	IN	U2_BA4
GPP_I4	GPP_I4_EDP_HPD	SB3V	IN	U2_BD7
GPP_I5	GPP_I5_DDPB_CTRLCLK	SB3V	Native	TP30
GPP_I6	GPP_I6_DDPB_CTRLDATA	SB3V	Native	DDPD_CTRLDATA
GPP_I7	GPP_I7_DDPC_CTRLCLK	SB3V	Native	DP_DDPC_CTRLCLK
GPP_I8	GPP_I8_DDPC_CTRLDATA	SB3V	Native	DP_DDPC_CTRLDATA
GPP_I9	GPP_I9_DDPD_CTRLCLK	SB3V	Native	DP_DDPD_CTRLCLK
GPP_I10	GPP_I10_DDPD_CTRLDATA	SB3V	Native	DP_DDPD_CTRLDATA

SIO GPIO (NCT6685D)

GPIO	Signal Name	PIN	Power Well	In/Out	Usage
GPIO00	PWMOUT/TACHIN/GPIO00	9	SB3V	IN	FM_CATERR_N
GPIO95	GPIO95/BKPD_CUT	74	SB3V	OUT	ME_CNTL
GPIO85	SMI#/OVT#/GPIO85	2	SB3V	---	SIO_SCI_N
GPIO74	GPIO74 / TACHIN / PWMOUT	37	SB3V	OD	BMC_THROTTLE_N
GPIO77	SKTOCC# / GPIO77	102	SB3V	IN	IS100M_BOARDID
GPIO66	IF_55_0 / 3VSBSW / LATCH_BKPD_CUT / GP	70	SB3V	OUT	USB_PS2_PON
GPIO93	3VSBSW/GPIO93/SLP_SUS#	89	3V_DSW	OUT	SIO_GPS1
GPIO94	GPIO94/SLP_SUS_FET	88	3V_DSW	IN	COM_WAKE#

MSI Link to the Future MICRO-START INT'L CO.,LTD.

Title: GPIO Table

Size: | Document Number: B365 | Rev: 10

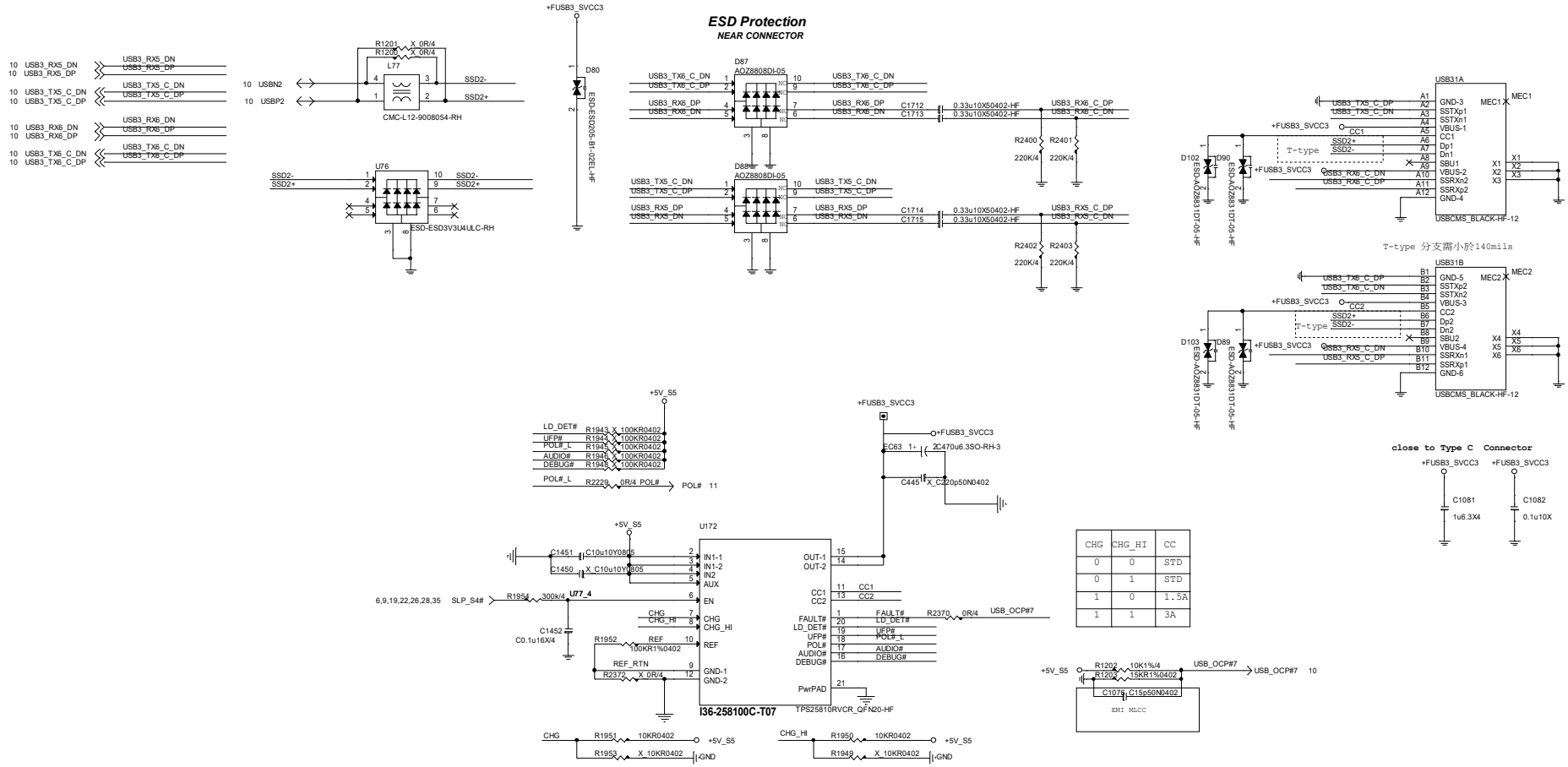
Date: Tuesday, April 23, 2019 | Sheet 42 of 44

MSI
Link to the Future
MICRO-STAR INT'L CO.,LTD.

Title
History

Size	Document Number	Rev
	B365	1.0

Date: Tuesday, April 23, 2013 Sheet 43 of 44



CHG	CHG_HI	CC
0	0	STD
0	1	STD
1	0	1.5A
1	1	3A

MICRO-START INT'L CO.,LTD.

Title: History

Size	Document Number	Rev
	B365	10

Date: Friday, May 03, 2019 Sheet 44 of 44