

## Model Name: GA-Z97X-Gaming G1 WIFI

Rev 1.0

SHEET

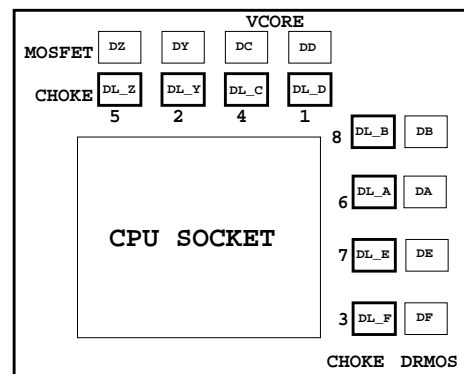
TITLE

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU_LGA1155-A
05	CPU_LGA1155-B
06	CPU_LGA1155-C
07	DDR III CHANNEL A
08	DDR III CHANNEL B
09	PCH_FDI,DMI,USB,PCIE
10	PCH_DP,CLK BUFFER
11	PCH_HOST,SATA,PCI
12	PCH_GPIO,CTRL,AUDIO
13	PCH_PWR,GND
14	DVI / DP
15	R_USB3 / HDMI
16	PLX8605
17	PCI EXPRESS*1 SLOTS X3
18	Dual BIOS
19	CT9570 Audio
20	Audio Connect
21	Audio Power
22	IR3580 PWM
23	IR3598-VCORE
24	IR3570_DDR PWM
25	IR3598-DDR
26	DISCRETE POWER I
27	DISCRETE POWER II
28	I/O ITE8620
29	FP,F_USB,BZ
30	USB DAC-UP , PS2
31	ATX POWER
32	RST, PWR, CLR_CMOS, 80 PORT
33	LAN E2201
34	INTEL I217

SHEET

TITLE

35	RENESAS USB3 HUB-1
36	RENESAS USB3 HUB-1
37	F_USB3.0 , SATA EXPRESS
38	IT8790
39	FAN CTRL
40	PCIEx16(x8) REFCLK
41	PCI EXPRESS*16_2 SLOT
42	PCI EXPRESS X16 SWITCH_2
43	PCI EXPRESS*8_2 SLOT
44	PCI EXPRESS*16_1 SLOT
45	PCI EXPRESS X16 SWITCH_1
46	PCI EXPRESS*8_1 SLOT
47	PEX8747S UPSTREAM & MISC
48	PEX8747S DOWNSTREAM SLOTS
49	PEX8747S STRAP & CPLD INTF
50	PEX8747S POWER
51	PEX8747 POWER DESIGN
52	Marvell 9172 1
53	Marvell 9172 2
54	TABLE LIST



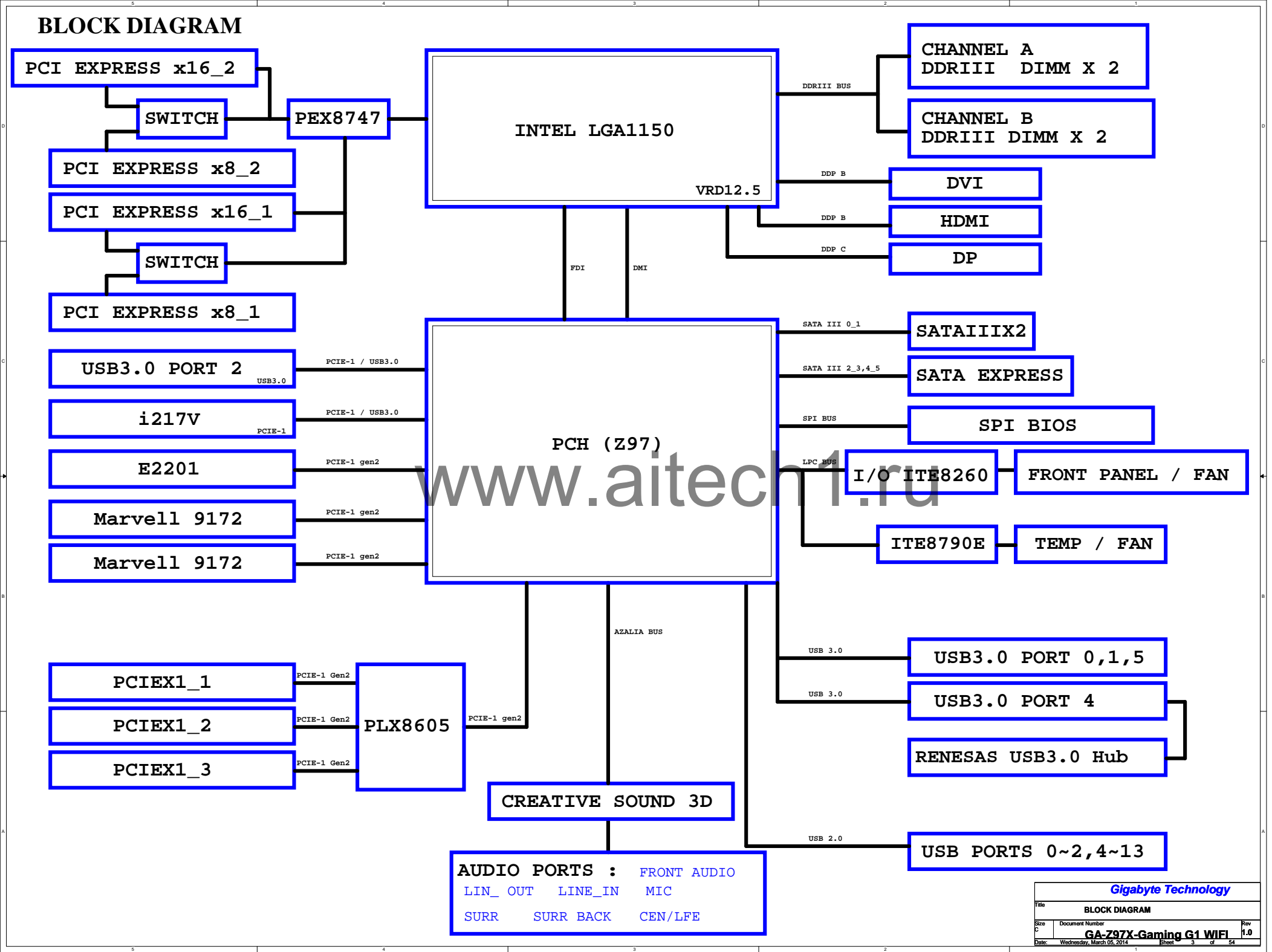
Gigabyte Technology

Title			Cover Sheet
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Custom	GA-Z97X-Gaming G1 WIFI	1.0	
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## Component value change history

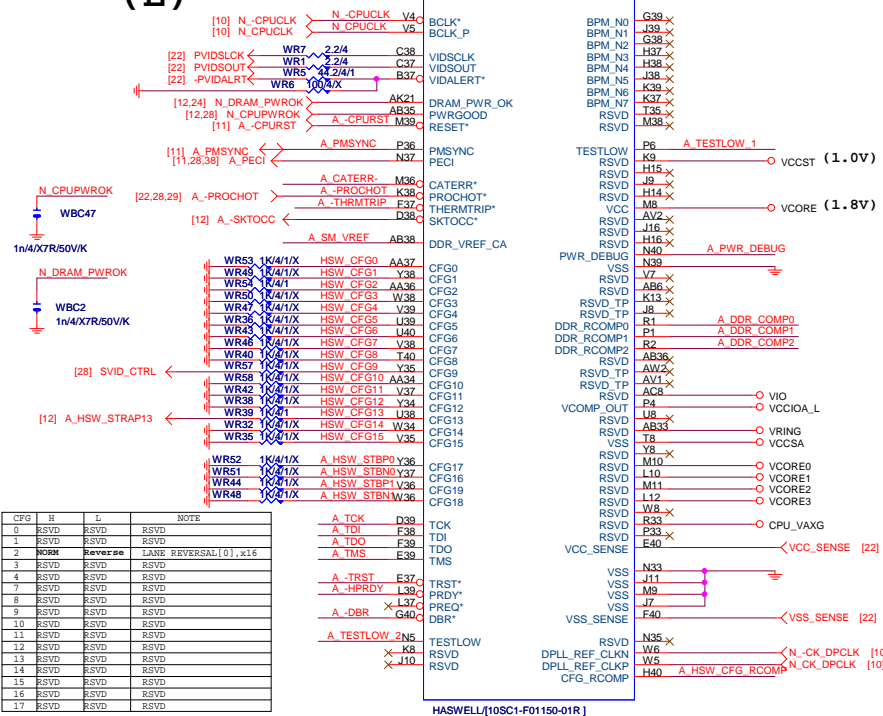
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# BLOCK DIAGRAM



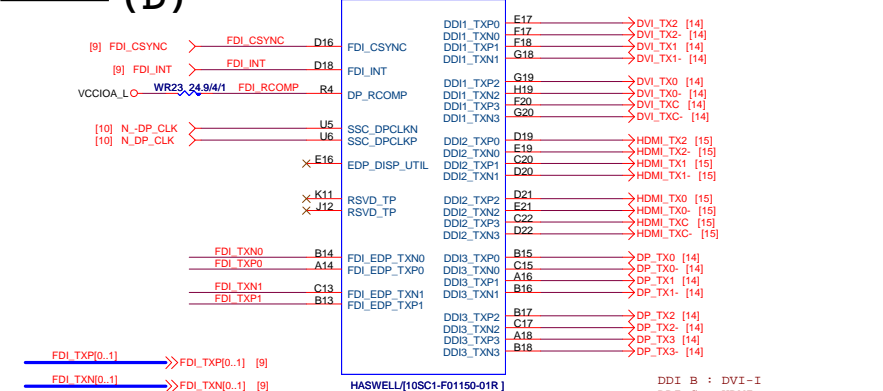
## LGA1150

(E)



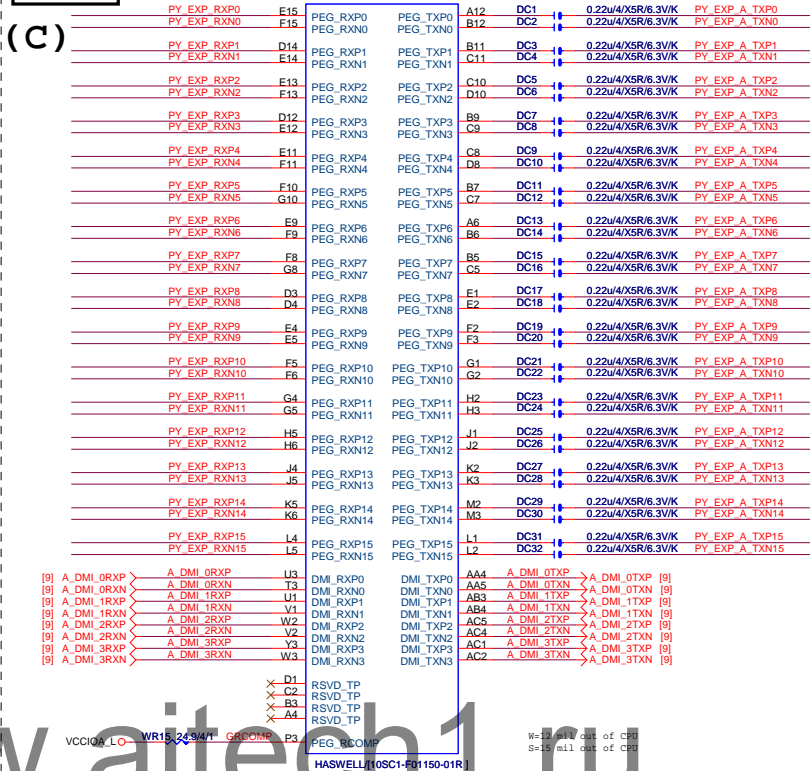
## LGA1150

(D)

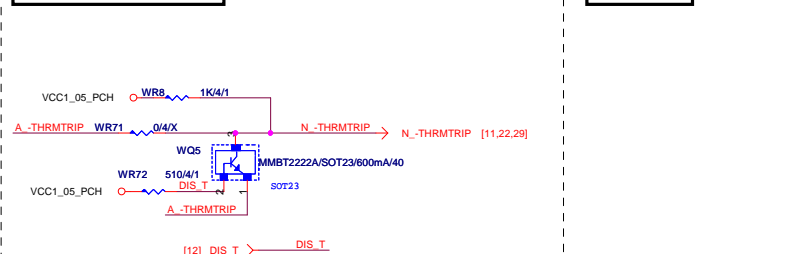


## LGA1150

(C)



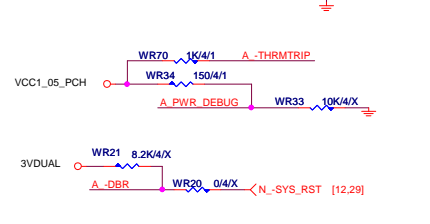
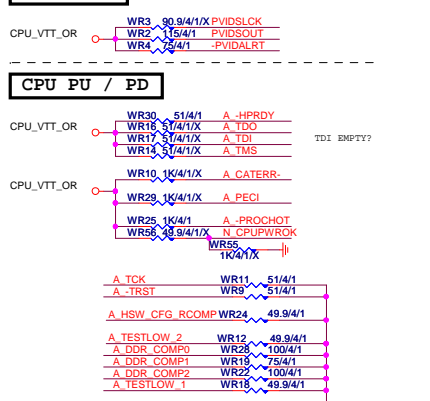
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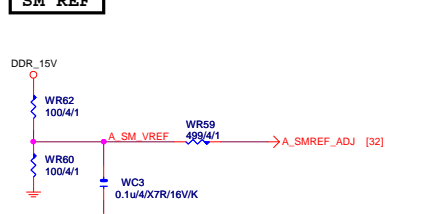
## -CPURST



## CPU SVID



## SM REF



Gigabyte Technology			
CPU LGA1150-A			
Title	Document Number	Rev	
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## LGA1150A

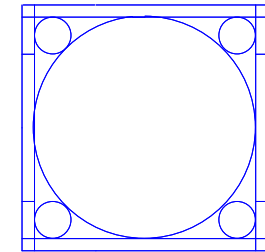
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MAAA1	AV16	DDR0_MA1	DDR0_DQ1	AD39	MDA1
MAAA2	AU16	DDR0_MA2	DDR0_DQ2	AF38	MDA2
MAAA3	AW17	DDR0_MA3	DDR0_DQ3	AF39	MDA3
MAAA4	AU17	DDR0_MA4	DDR0_DQ4	AD37	MDA4
MAAA5	AW18	DDR0_MA5	DDR0_DQ5	AD40	MDA5
MAAA6	AV17	DDR0_MA6	DDR0_DQ6	AF37	MDA6
MAAA7	AT18	DDR0_MA7	DDR0_DQ7	AF40	MDA7
MAAA8	AU18	DDR0_MA8	DDR0_DQ8	AH40	MDA9
MAAA9	AT19	DDR0_MA9	DDR0_DQ9	AH39	MDA13
MAAA10	AW11	DDR0_MA10	DDR0_DQ10	AK38	MDA10
MAAA11	AV19	DDR0_MA11	DDR0_DQ11	AK39	MDA11
MAAA12	AU19	DDR0_MA12	DDR0_DQ12	AH37	MDA12
MAAA13	AT10	DDR0_MA13	DDR0_DQ13	AH38	MDA8
MAAA14	AT20	DDR0_MA14	DDR0_DQ14	AK37	MDA14
MAAA15	AU21	DDR0_MA15	DDR0_DQ15	AK40	MDA15
MODT_A0	AW10	DDR0_ODT0	DDR0_DQ16	AM40	MDA17
MODT_A1	AY8	DDR0_ODT1	DDR0_DQ17	AM39	MDA21
MODT_A2	AW9	DDR0_ODT2	DDR0_DQ18	AP38	MDA18
MODT_A3	AU8	DDR0_ODT3	DDR0_DQ19	AP39	MDA19
			DDR0_DQ20	AM37	MDA20
			DDR0_DQ21	AM38	MDA16
			DDR0_DQ22	AP37	MDA22
			DDR0_DQ23	AP40	MDA23
			DDR0_DQ24	AV37	MDA25
			DDR0_DQ25	AV32	MDA29
			DDR0_DQ26	AU35	MDA26
			DDR0_DQ27	AV35	MDA27
			DDR0_DQ28	AT37	MDA28
			DDR0_DQ29	MDA24	
			DDR0_DQ30	AT35	MDA30
			DDR0_DQ31	AW35	MDA31
			DDR0_DQ32	AM38	MDA37
			DDR0_DQ33	AU6	MDA34
			DDR0_DQ34	AU4	MDA35
			DDR0_DQ35	AW6	MDA36
			DDR0_DQ36	AV6	MDA32
			DDR0_DQ37	AW4	MDA38
			DDR0_DQ38	AY4	MDA39
			DDR0_DQ39	AR1	MDA41
			DDR0_DQ40	AR4	MDA45
			DDR0_DQ41	AN3	MDA42
			DDR0_DQ42	AN4	MDA43
			DDR0_DQ43	AR2	MDA44
			DDR0_DQ44	AR3	MDA40
			DDR0_DQ45	AN2	MDA46
			DDR0_DQ46	AN1	MDA47
			DDR0_DQ47	AL1	MDA49
			DDR0_DQ48	AL4	MDA53
			DDR0_DQ49	AL3	MDA50
			DDR0_DQ50	AL4	MDA51
			DDR0_DQ51	AL2	MDA52
			DDR0_DQ52	AJ3	MDA48
			DDR0_DQ53	AJ2	MDA54
			DDR0_DQ54	AJ1	MDA55
			DDR0_DQ55	AG1	MDA57
			DDR0_DQ56	AG4	MDA61
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			DDR0_DQ58	AE4	MDA59
			DDR0_DQ59	AG2	MDA60
			DDR0_DQ60	AG3	MDA56
			DDR0_DQ61	AE2	MDA62
			DDR0_DQ62	AE1	MDA63
			DDR0_DQ63	AE39	DQSA0
			DDR0_DQ64	AN39	DQSA2
			DDR0_DQ65	AV36	DQSA3
			DDR0_DQ66	AV5	DQSA4
			DDR0_DQ67	AP3	DQSA5
			DDR0_DQ68	AK3	DQSA6
			DDR0_DQ69	AF3	DQSA7
			DDR0_DQ70	AV32	DQSA0
			DDR0_DQ71	AJ38	DQSA1
			DDR0_DQ72	AN38	DQSA2
			DDR0_DQ73	AU36	DQSA3
			DDR0_DQ74	AW5	DQSA4
			DDR0_DQ75	AP2	DQSA5
			DDR0_DQ76	AK2	DQSA6
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			DDR0_DQ78	AU32	

HASWELL[10SC1-F01150-01R]

## LGA1150B

MAAB0	AL19	DDR1_MA0	DDR1_DQ0	AE34	MDB0
MAAB1	AK23	DDR1_MA1	DDR1_DQ1	AE35	MDB1
MAAB2	AM22	DDR1_MA2	DDR1_DQ2	AG35	MDB2
MAAB3	AM23	DDR1_MA3	DDR1_DQ3	AH35	MDB3
MAAB4	AP23	DDR1_MA4	DDR1_DQ4	AD34	MDB4
MAAB5	AL23	DDR1_MA5	DDR1_DQ5	AD35	MDB5
MAAB6	AY24	DDR1_MA6	DDR1_DQ6	AG34	MDB6
MAAB7	AV25	DDR1_MA7	DDR1_DQ7	AH34	MDB7
MAAB8	AU25	DDR1_MA8	DDR1_DQ8	AL34	MDB8
MAAB9	AW25	DDR1_MA9	DDR1_DQ9	AL35	MDB9
MAAB10	AP18	DDR1_MA10	DDR1_DQ10	AK31	MDB10
MAAB11	AY25	DDR1_MA11	DDR1_DQ11	AL31	MDB11
MAAB12	AV26	DDR1_MA12	DDR1_DQ12	AK34	MDB12
MAAB13	AR15	DDR1_MA13	DDR1_DQ13	AK35	MDB13
MAAB14	AV27	DDR1_MA14	DDR1_DQ14	AK32	MDB14
MAAB15	AY28	DDR1_MA15	DDR1_DQ15	AL32	MDB15
			DDR1_DQ16	AN34	MDB17
			DDR1_DQ17	AP34	MDB21
			DDR1_DQ18	AN31	MDB19
			DDR1_DQ19	AP31	MDB23
			DDR1_DQ20	AN35	MDB20
			DDR1_DQ21	AN32	MDB18
			DDR1_DQ22	AP32	MDB22
			DDR1_DQ23	AM29	MDB25
			DDR1_DQ24	AM28	MDB28
			DDR1_DQ25	AR29	MDB27
			DDR1_DQ26	AR28	MDB30
			DDR1_DQ27	AL29	MDB24
			DDR1_DQ28	AL28	MDB29
			DDR1_DQ29	AP29	MDB26
			DDR1_DQ30	AP28	MDB31
			DDR1_DQ31	AR12	MDB32
			DDR1_DQ32	AP12	MDB33
			DDR1_DQ33	AL12	MDB35
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			DDR1_DQ35	AR13	MDB37
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			DDR1_DQ37	AM13	MDB39
			DDR1_DQ38	AM12	MDB45
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			DDR1_DQ40	AP9	MDB47
			DDR1_DQ41	AR6	MDB43
			DDR1_DQ42	AP8	MDB44
			DDR1_DQ43	AR10	MDB46
			DDR1_DQ44	AP10	MDB40
			DDR1_DQ45	AR7	MDB42
			DDR1_DQ46	AM9	MDB52
			DDR1_DQ47	AL9	MDB53
			DDR1_DQ48	AL6	MDB50
			DDR1_DQ49	AL7	MDB55
			DDR1_DQ50	AM10	MDB48
			DDR1_DQ51	AM7	MDB54
			DDR1_DQ52	AM6	MDB51
			DDR1_DQ53	AM7	MDB61
			DDR1_DQ54	AM6	MDB60
			DDR1_DQ55	AE7	MDB59
			DDR1_DQ56	AE7	MDB63
			DDR1_DQ57	AE8	MDB66
			DDR1_DQ58	AJ7	MDB57
			DDR1_DQ59	AF8	MDB58
			DDR1_DQ60	AF7	MDB62
			DDR1_DQ61	AF35	DQSB0
			DDR1_DQ62	AL33	DQSB1
			DDR1_DQ63	AP33	DQSB2
			DDR1_DQ64	AN28	DQSB3
			DDR1_DQ65	AN12	DQSB4
			DDR1_DQ66	AP8	DQSB5
			DDR1_DQ67	AL8	DQSB6
			DDR1_DQ68	AG7	DQSB7
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			DDR1_DQ70	AF34	DQSB0
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			DDR1_DQ73	AN29	DQSB3
			DDR1_DQ74	AN13	DQSB4
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			DDR1_DQ77	AG8	DQSB7
			DDR1_DQ78	AN26	

HASWELL[10SC1-F01150-01R]

LGA1150  
ILM\_BP/1156/BKN[12KRC-0F0001-61R]

Need check the new CPU ME

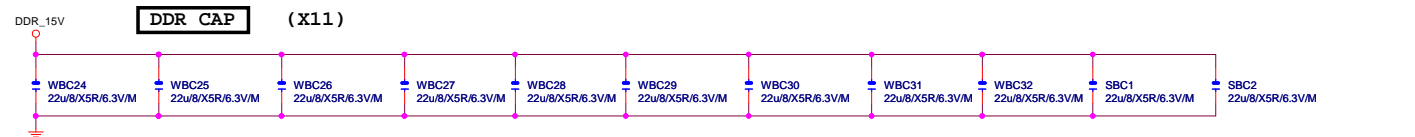
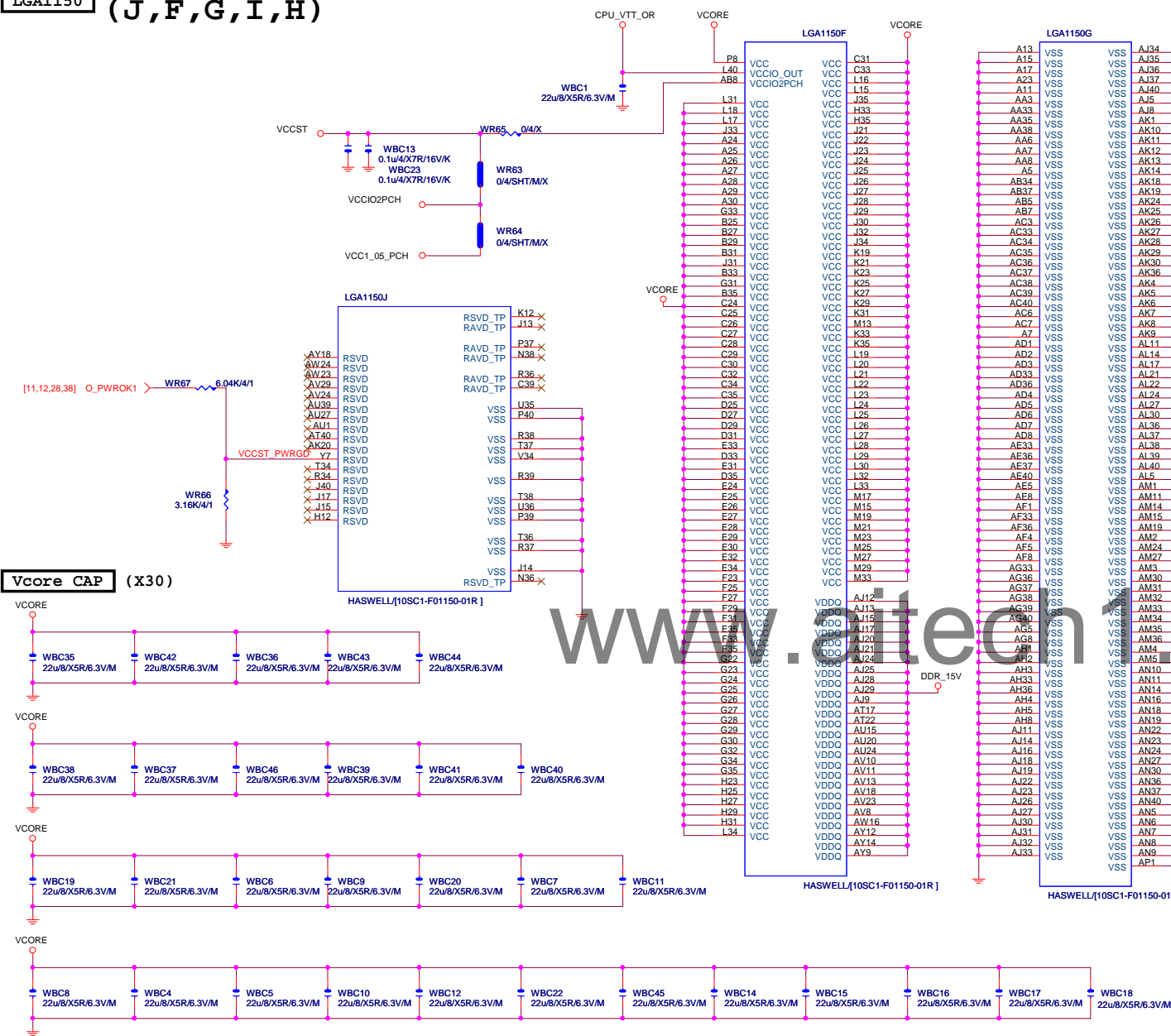
DDR BUS

[7] MODT_A[0..3]	←	MODT_A[0..3]
[8] MODT_B[0..3]	←	MODT_B[0..3]
[7] MDA[0..63]	←	MDA[0..63]
[8] MDB[0..63]	←	MDB[0..63]
[7] DQSA[0..7]	←	DQSA[0..7]
[7] -DQSA[0..7]	←	-DQSA[0..7]
[7] MAAA[0..15]	←	MAAA[0..15]
[8] MAAB[0..15]	←	MAAB[0..15]
[8] DQSB[0..7]	←	DQSB[0..7]
[8] -DQSB[0..7]	←	-DQSB[0..7]

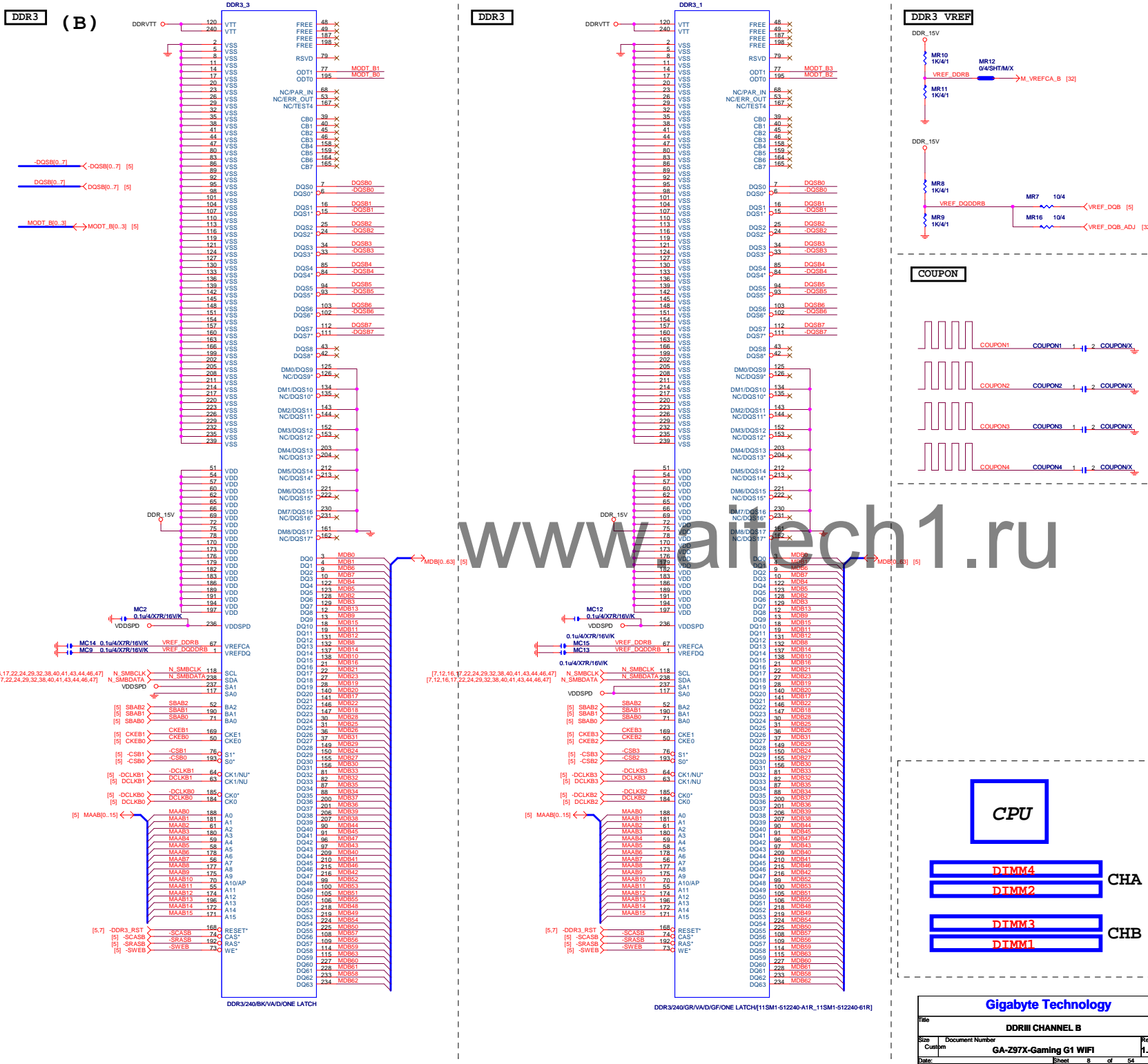
Gigabyte Technology

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Size			Document Number		
Custom			GA-Z97X-Gaming G1 WIFI		
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			Rev 1.0		

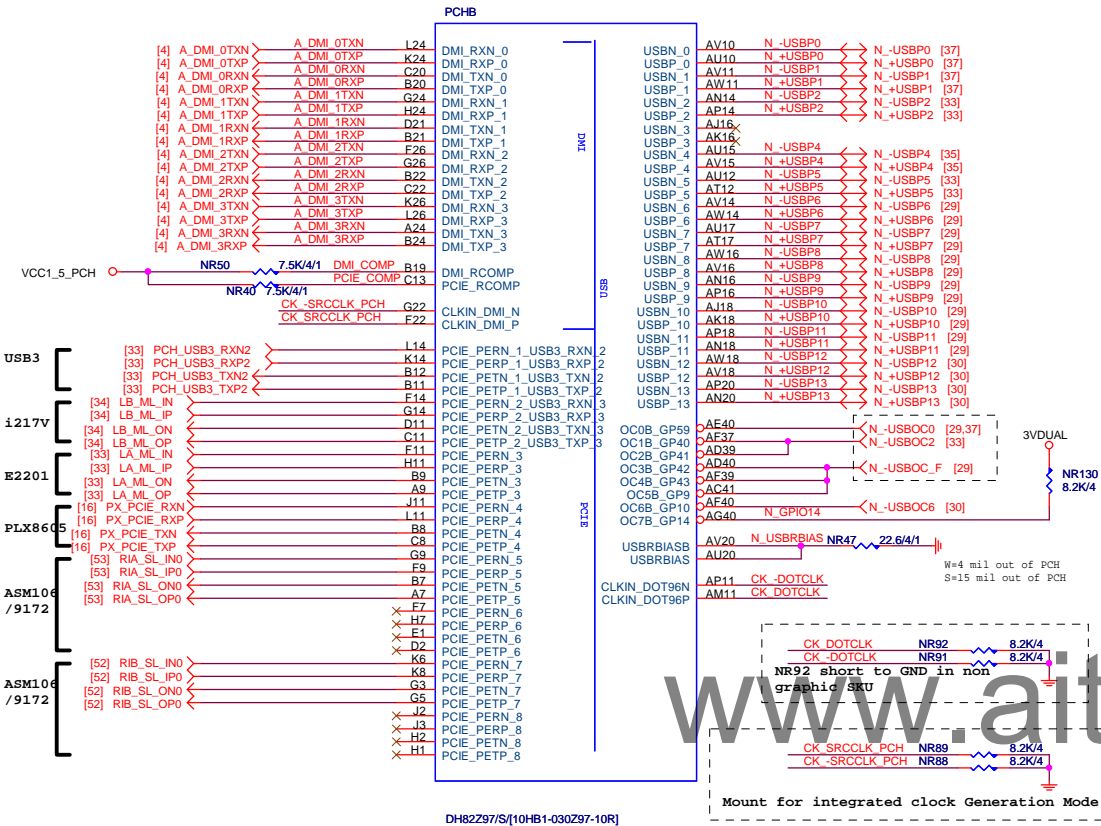
**LGA1150 (J,F,G,I,H)**



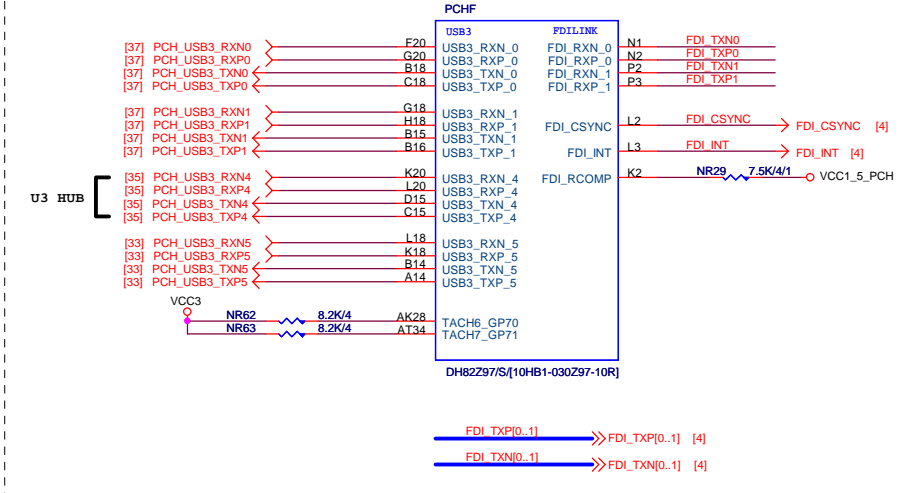




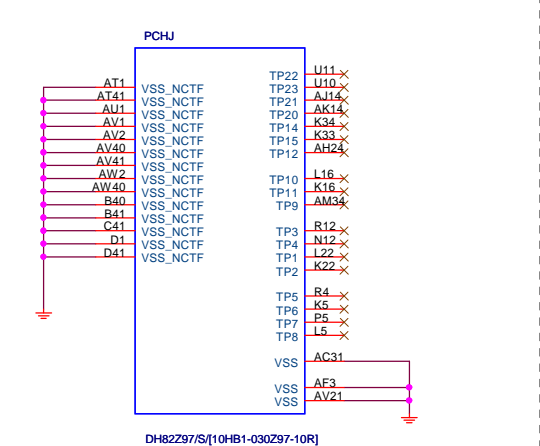
PCH (B)



PCH (F)



PCH (J)



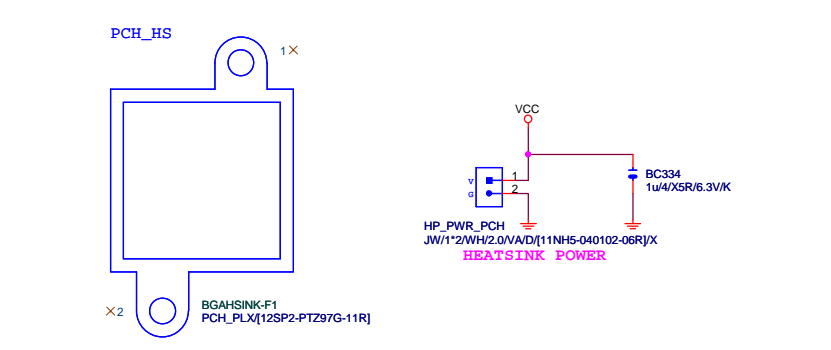
USB TABLE

OC[3:0]# for Device 29 (ports 0-7)

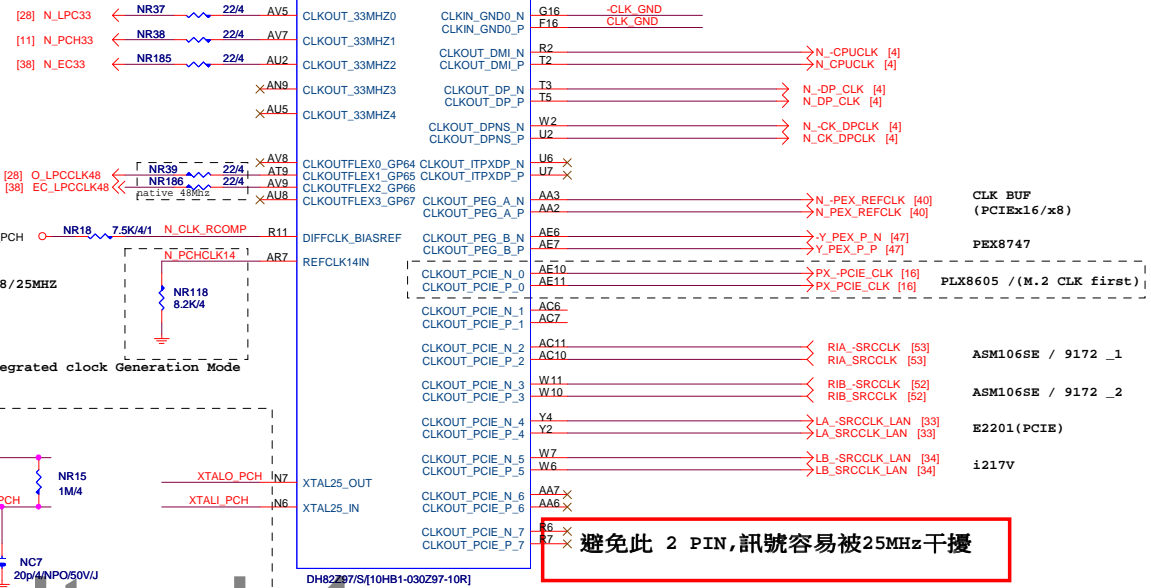
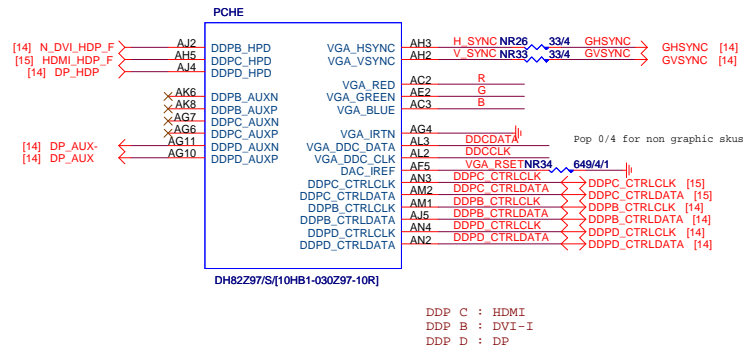
OC[7:4]# for Device 26 (ports 8-13)

USB3	00 01	04	05	F_USB1	F_USB2
USB2	00 01	04	05	02 03	06 07
OC	OC0	D720210_Hub	D720210_Hub	OC_F	

PCH Heatsink







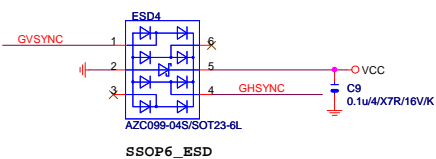
Mount for integrated clock Generation Mode

XTAL 25MHz 須參考 GND

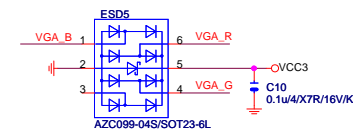
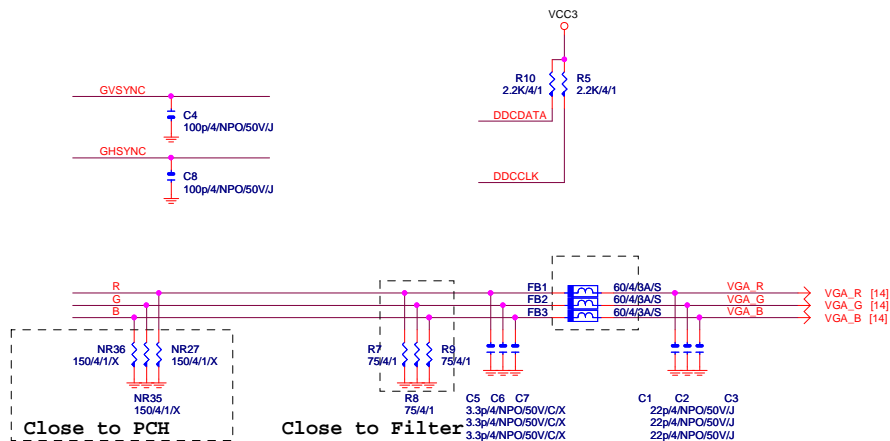
CRYSTAL TRACE 週邊不要有訊號, VIA 靠近

走線遠離其他 40mil 以上

## VGA ESD



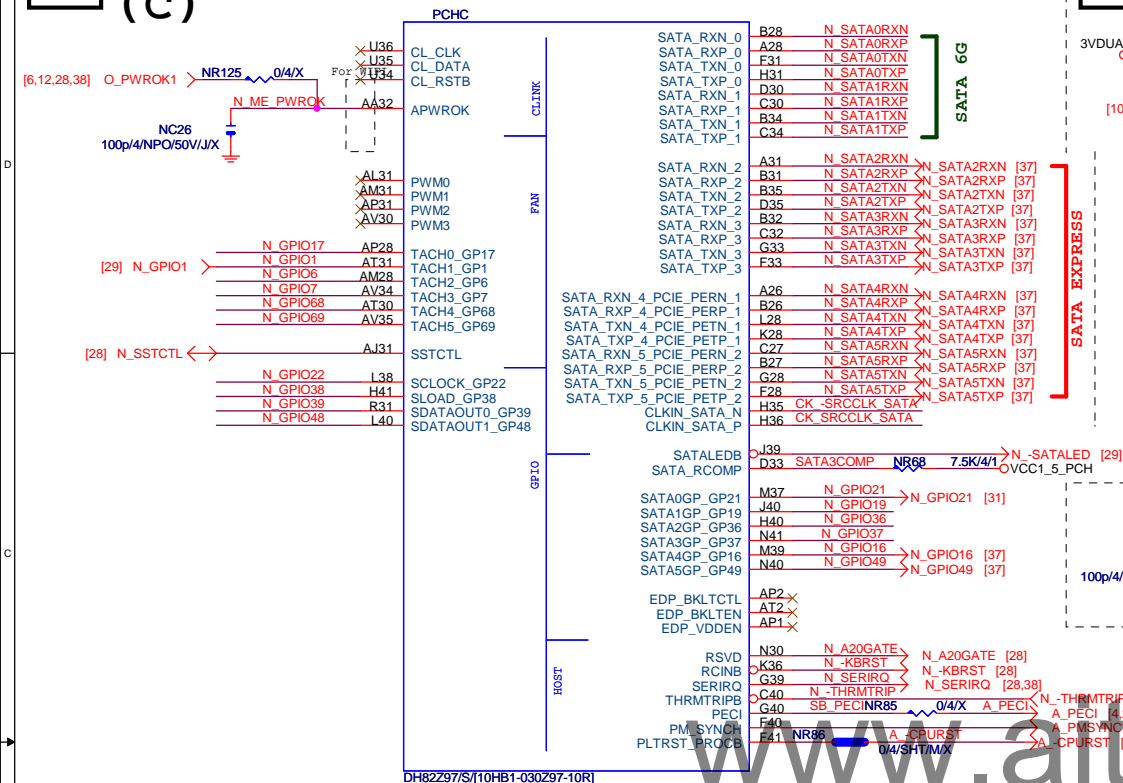
## VGA DDC



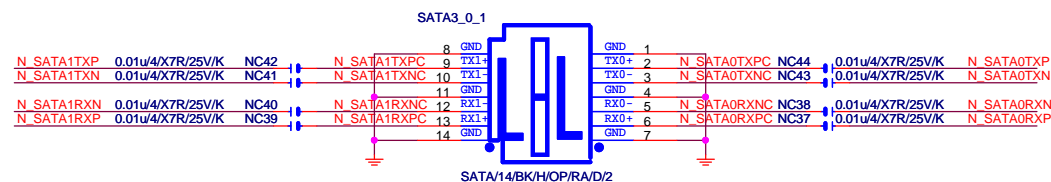
## Gigabyte Technology

Title			
PCH DISPLAY ,CLK BUFFER			
Size	Document Number		Rev
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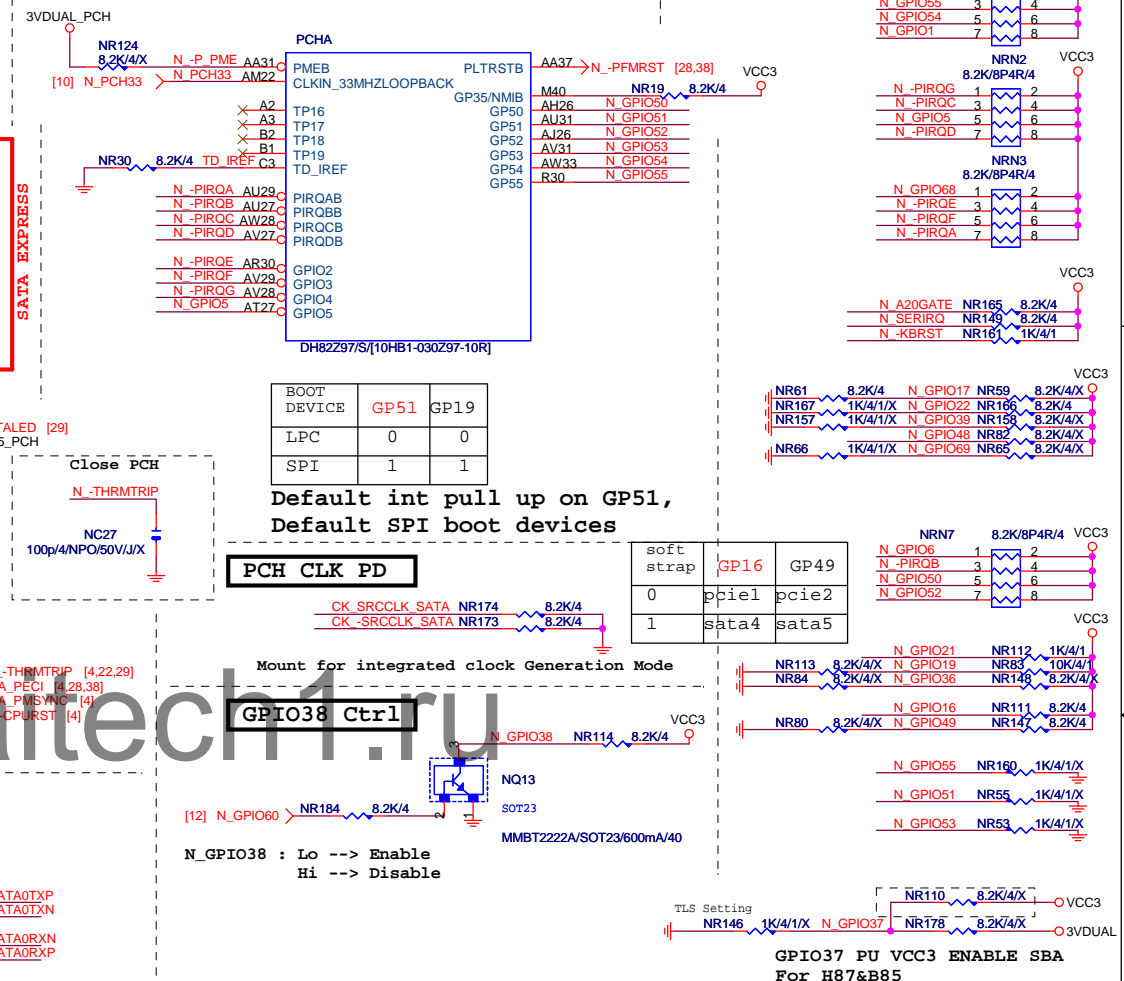
**PCH (C)**



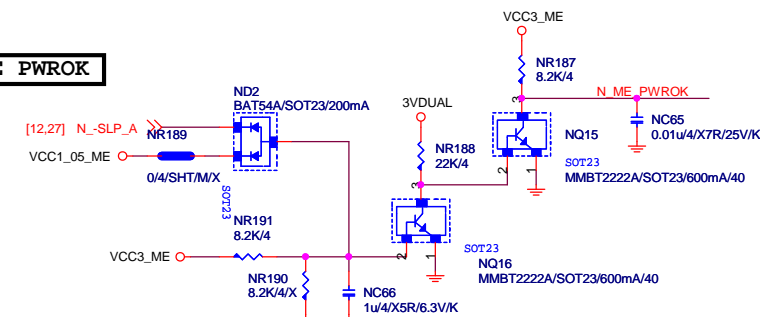
## SATA3 CONNECTOR

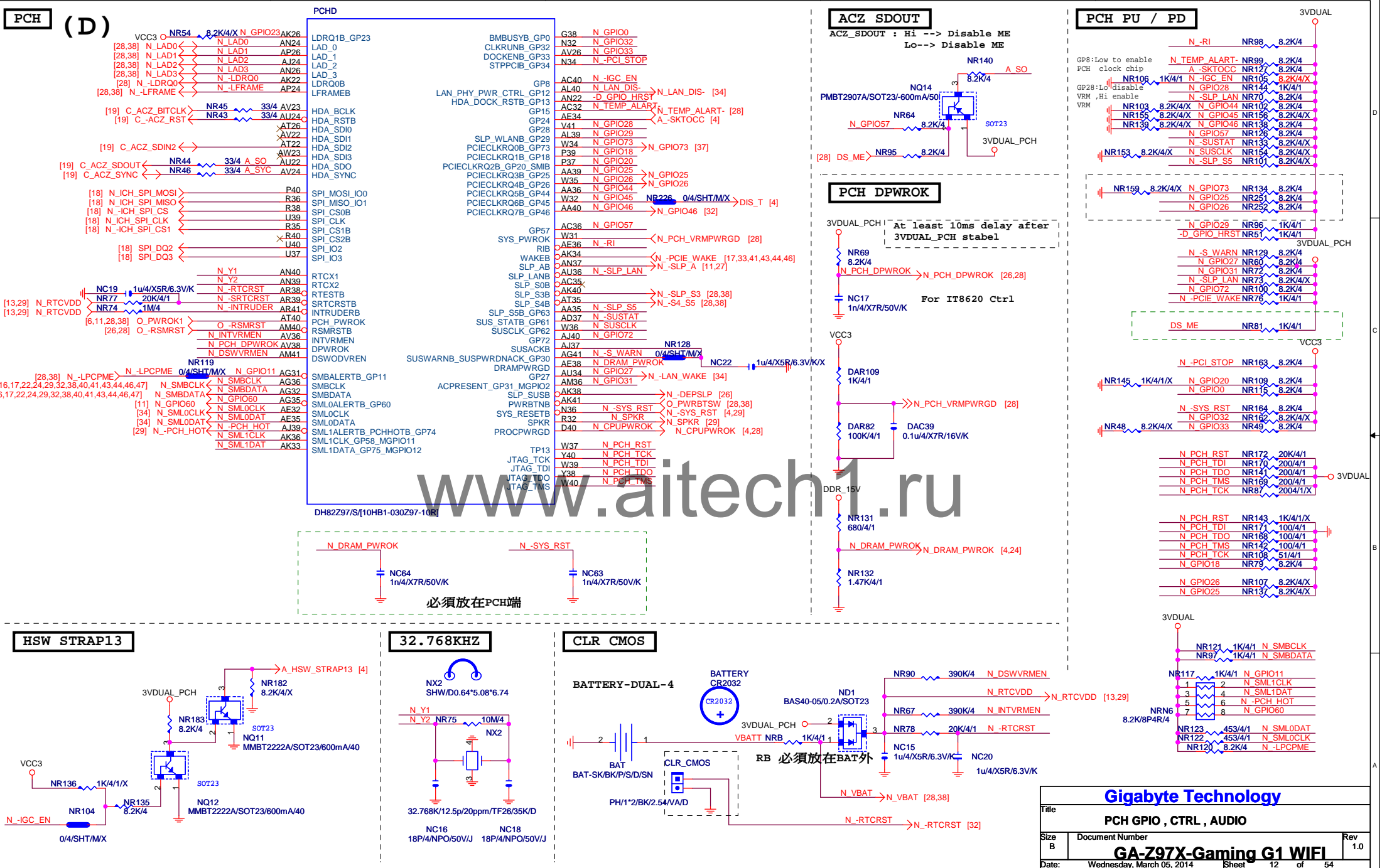


**PCH (A)**



ME PWROK





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<b>Gigabyte Technology</b>			
Title			
<b>PCH GPIO , CTRL , AUDIO</b>			
Size B	Document Number		Rev 1.0
<b>GA-Z97X-Gaming G1 WIFI</b>			
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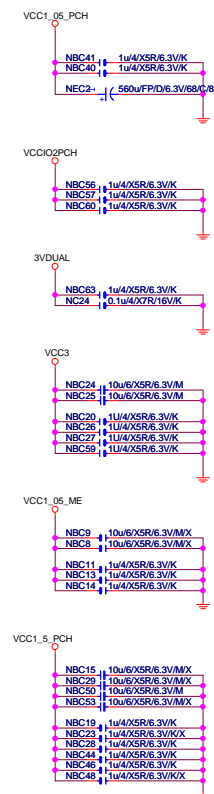
(H)



## 3VDUAL PCH

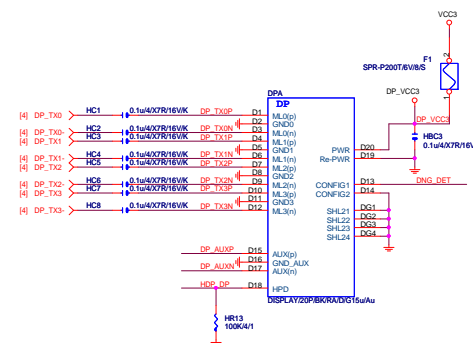
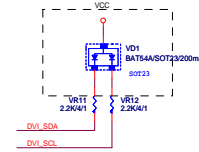


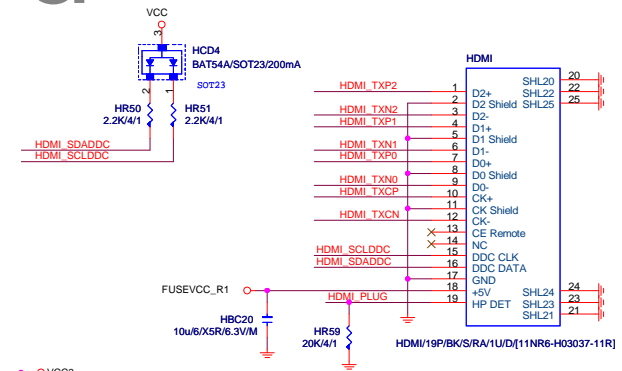
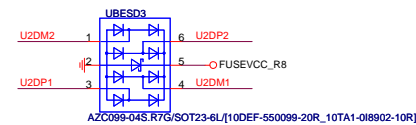
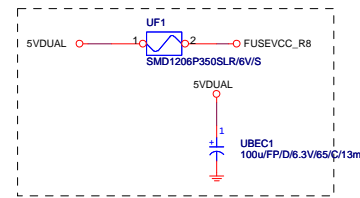
## SHT PWR



(I)

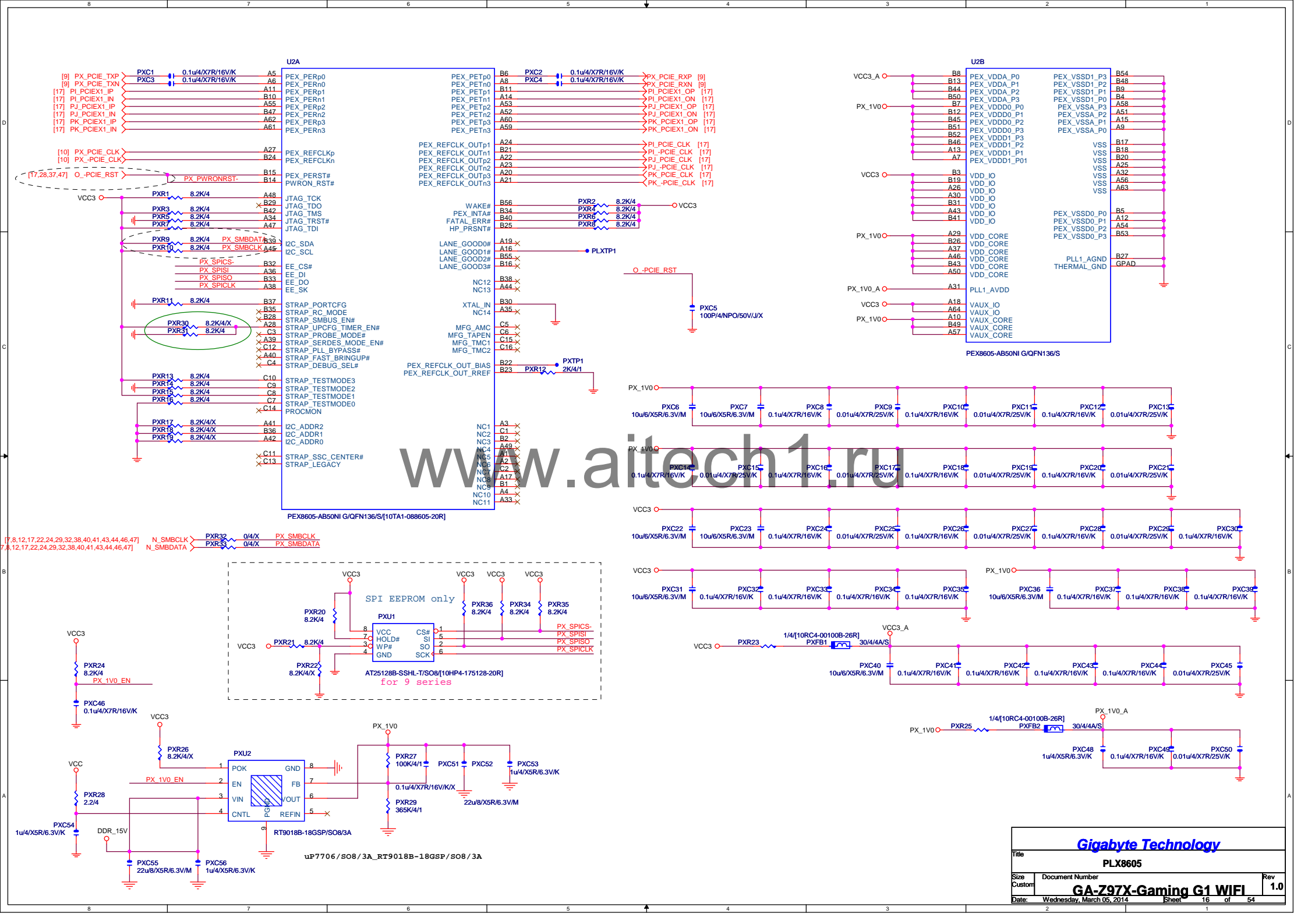


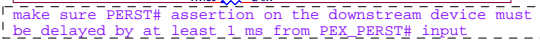
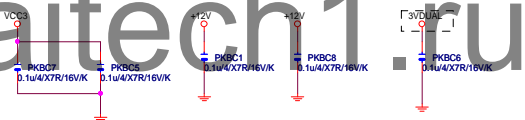
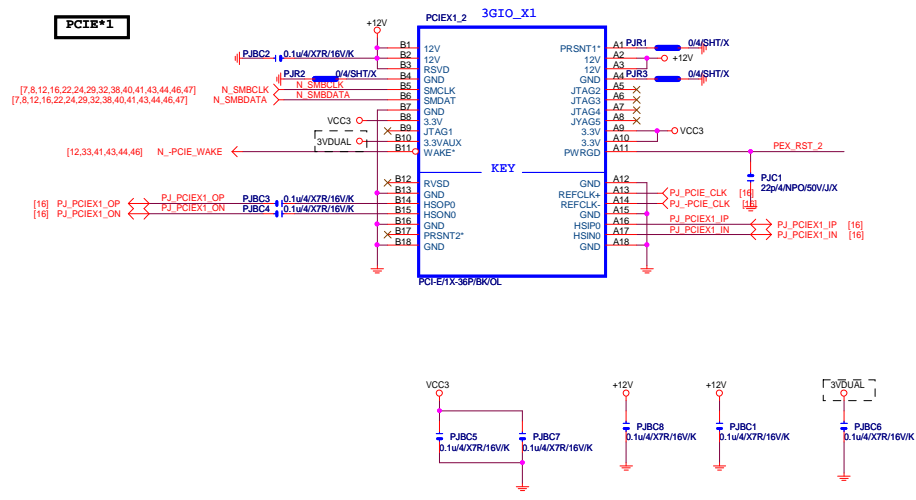


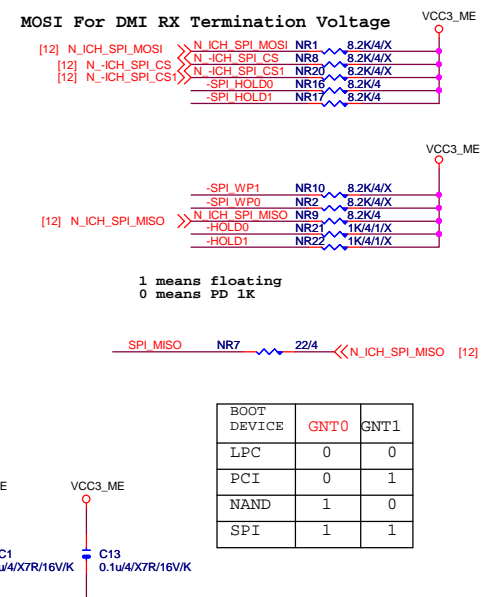
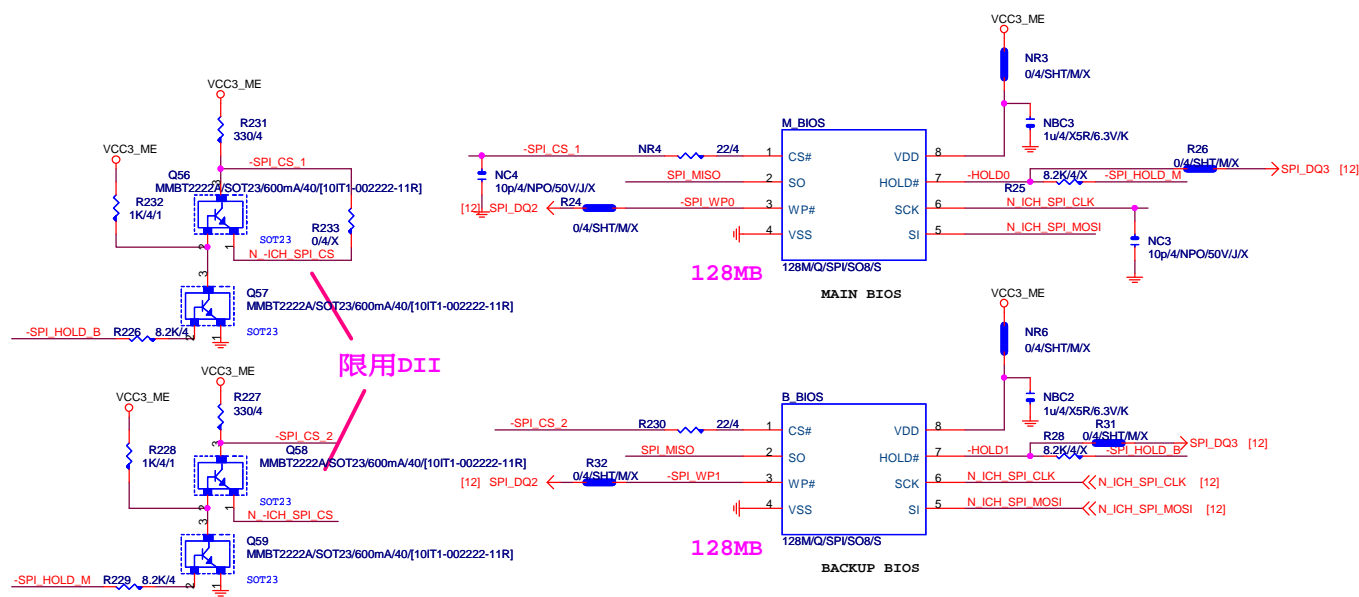


改善: ASMEDIA ASM1442 : 3.16K(PIN6 PULL DOWN電阻) 10ohm(PIN4 PULL DOWN電阻)

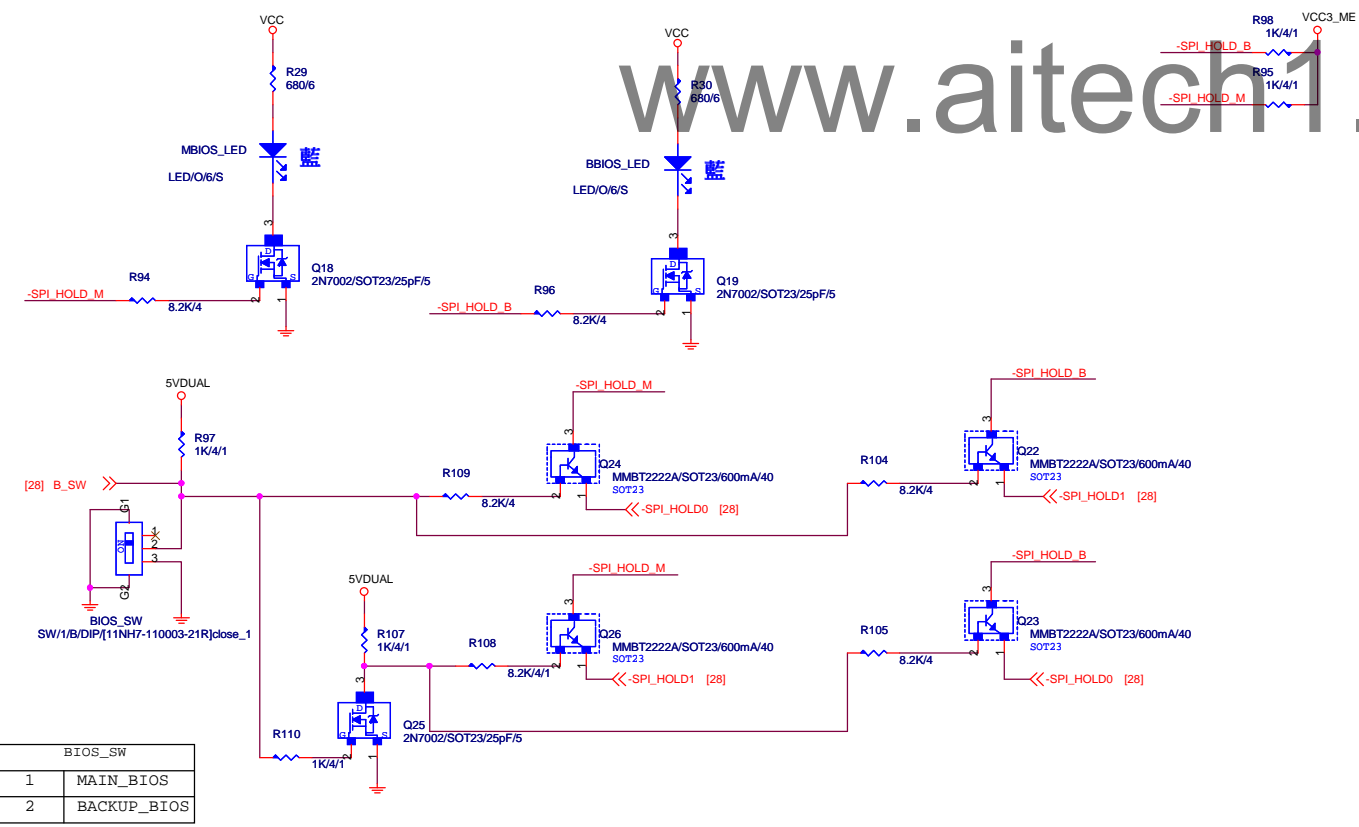
<b>Gigabyte Technology</b>			
Title			
<b>USB3 / HDMI</b>			
Size	Document Number		Rev
Custom	<b>GA-Z97X-Gaming G1 WIFI</b>		<b>1.0</b>
Date:	Wednesday, March 05, 2014	Sheet 15 of 54	



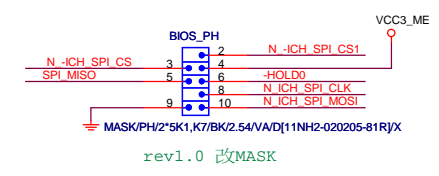




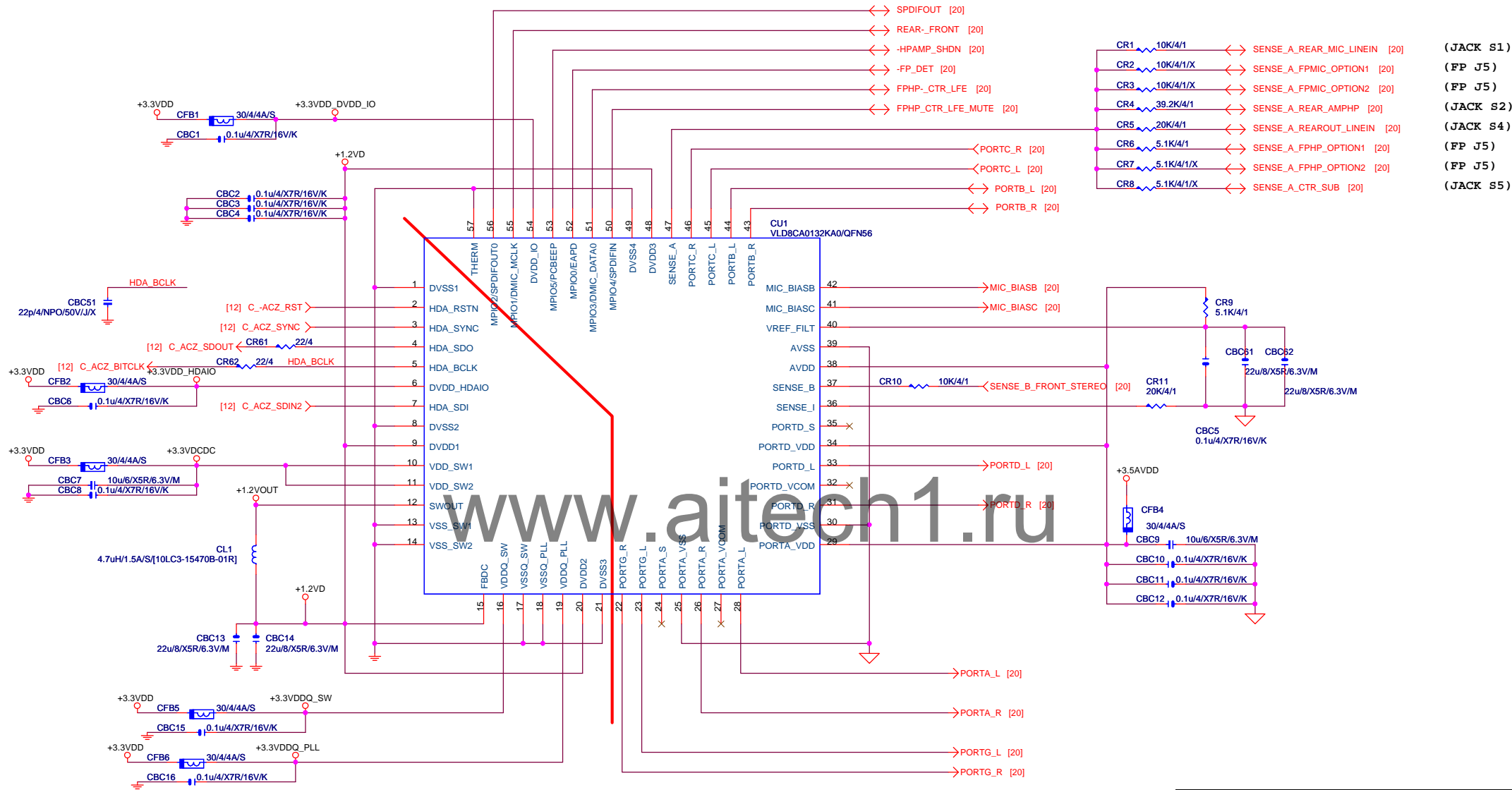
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**BIOS Debug port**

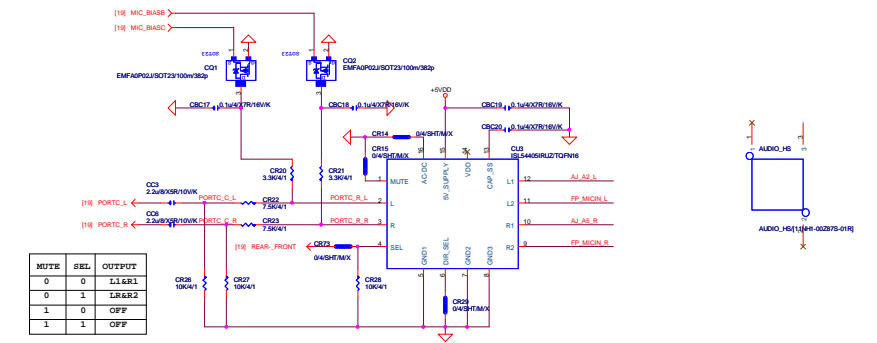


SB: SINGLE BIOS	
1	DISABLE
2	ENABLE

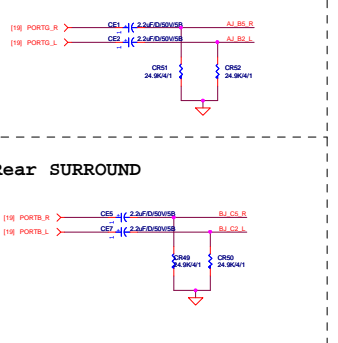


GIGABYTE™			
Title			
MALCOLM-EX			
Size	Document Number	Rev	
Custom	GA-Z97X-Gaming G1 WIFI	1.0	
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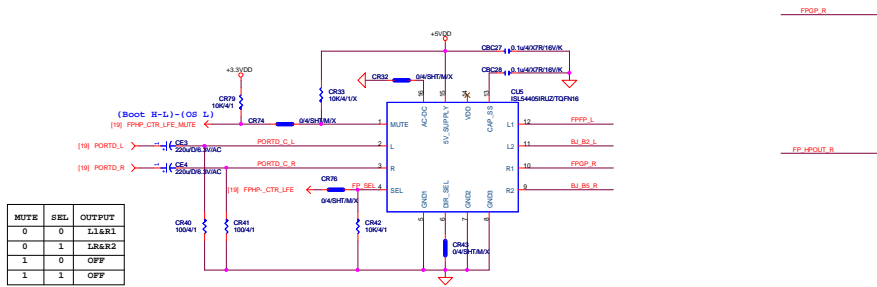
Rear MIC & FP MIC



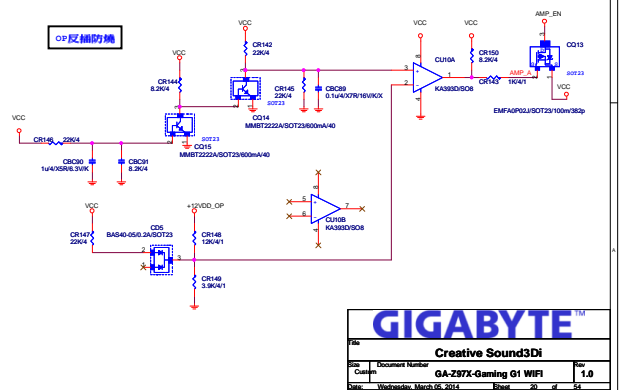
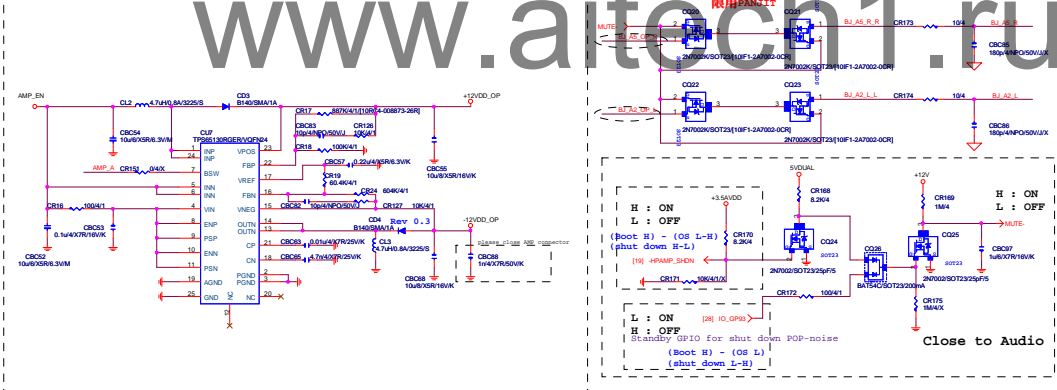
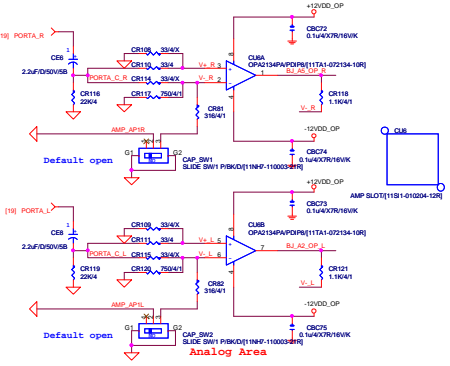
Line-Out



Rear CEN/LFE & FP HP-Out



AMPLIFIED

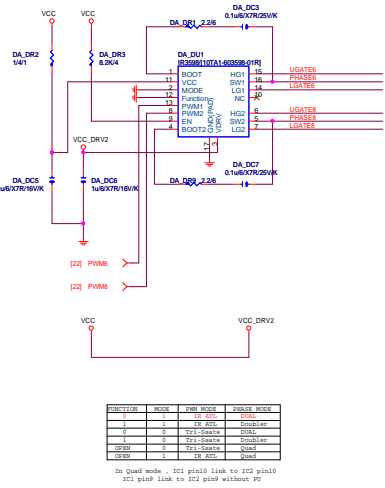




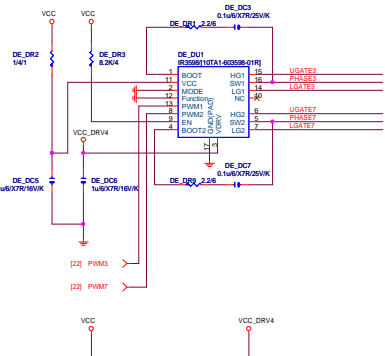




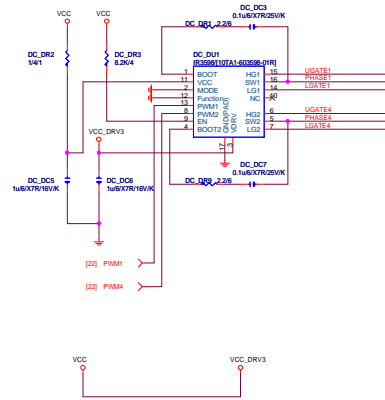
## VCORE Phase 6,8



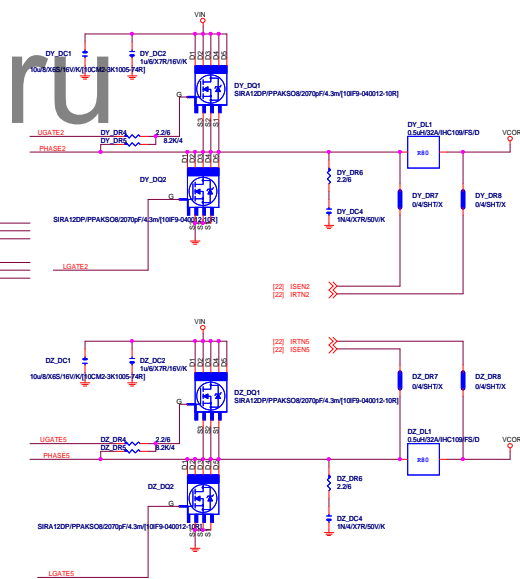
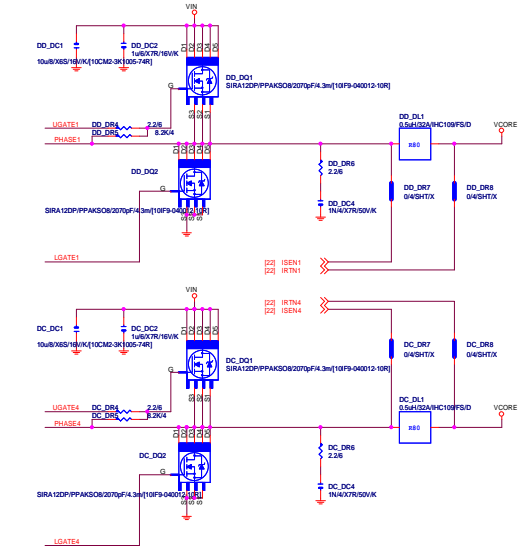
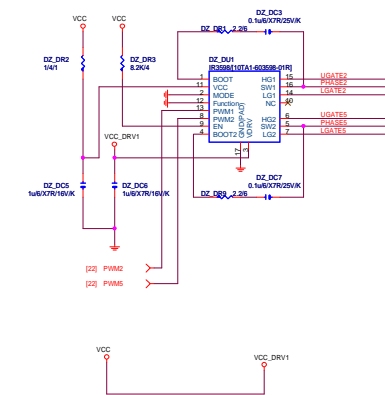
## VCORE Phase 3,7

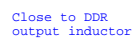
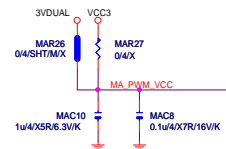


## VCORE Phase 1,4

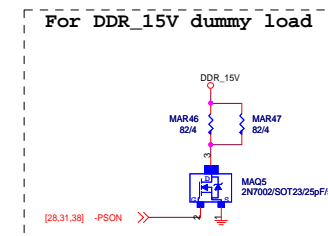
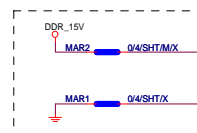


## VCORE Phase 2,5

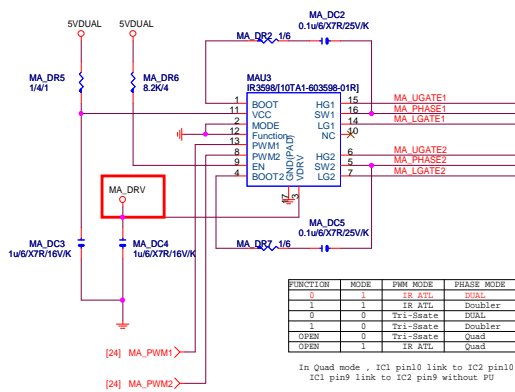




should be routed as  
differential pair,  
7mil width, 8mil  
spacing

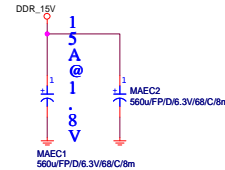
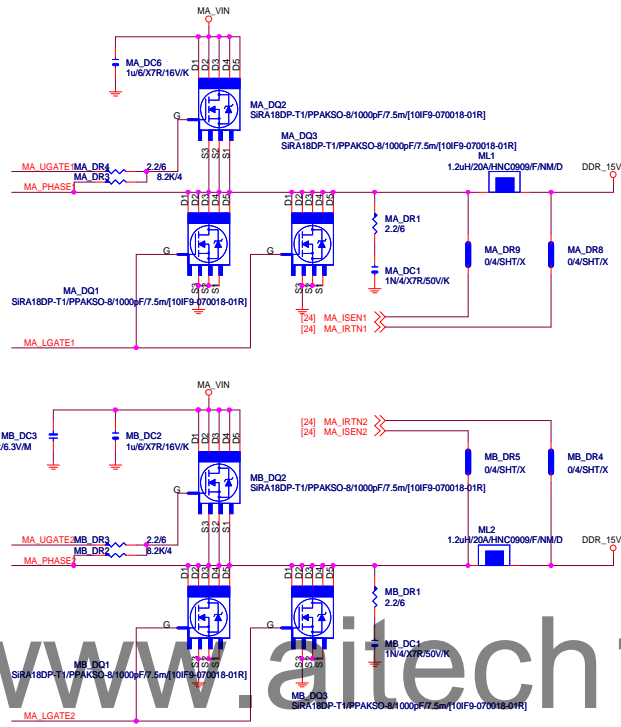
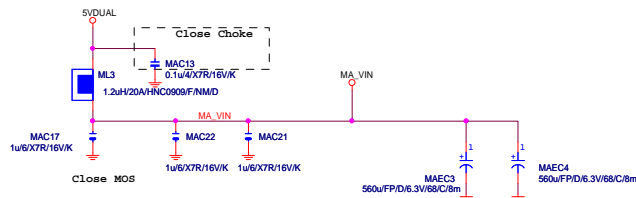
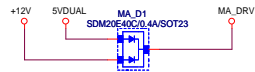


# DDR\_15V

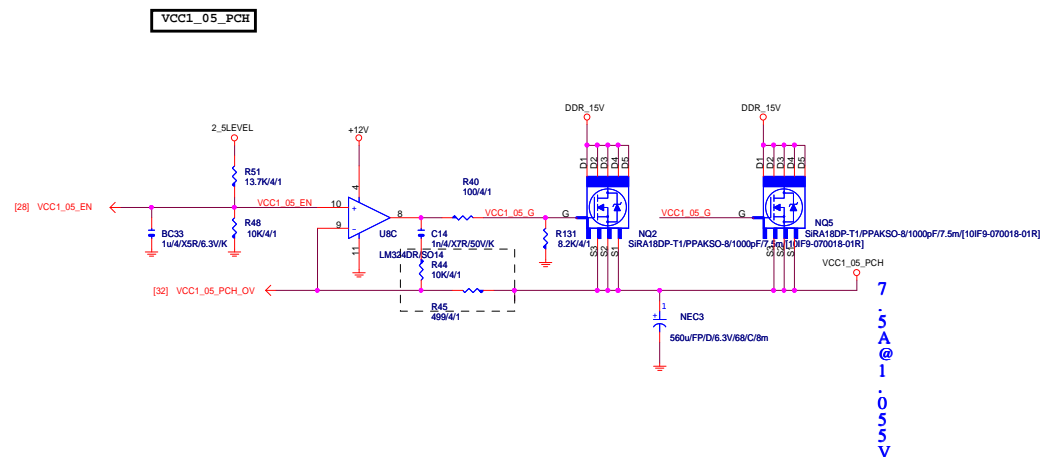


FUNCTION	MODE	PWM MODE	PHASE MODE
0	1	IR ATC	DUAL
1	1	IR ATC	Doublet
0	0	Tw1-Stat	DUAL
1	0	Tw1-Stat	Doublet
OPEN	0	Tw1-Stat	Quad
OPEN	1	IR ATC	Quad

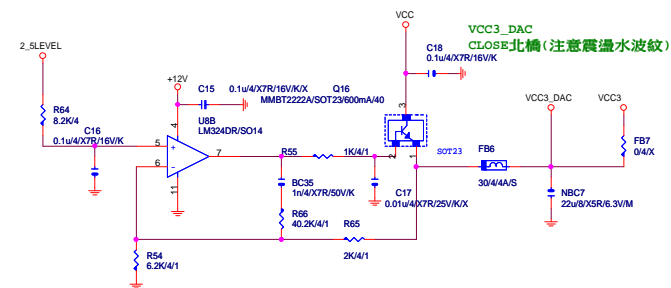
In Quad mode, IC1 pin10 link to IC3 pin10  
IC1 pin9 link to IC2 pin9 without PU







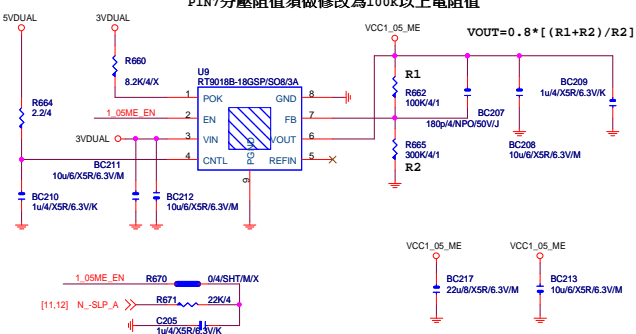
**VCC3\_DAC**  
(3.3V/70mA+360uA)



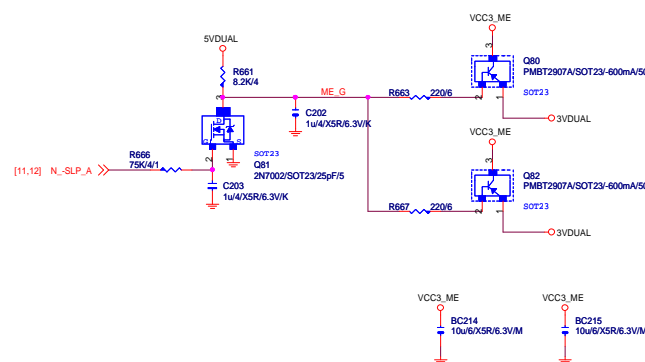
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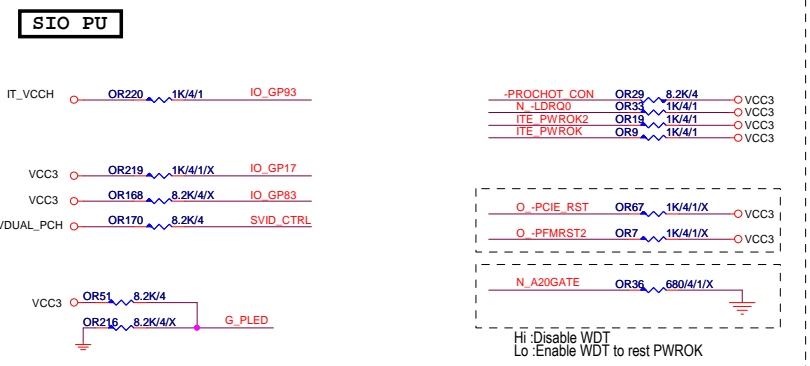
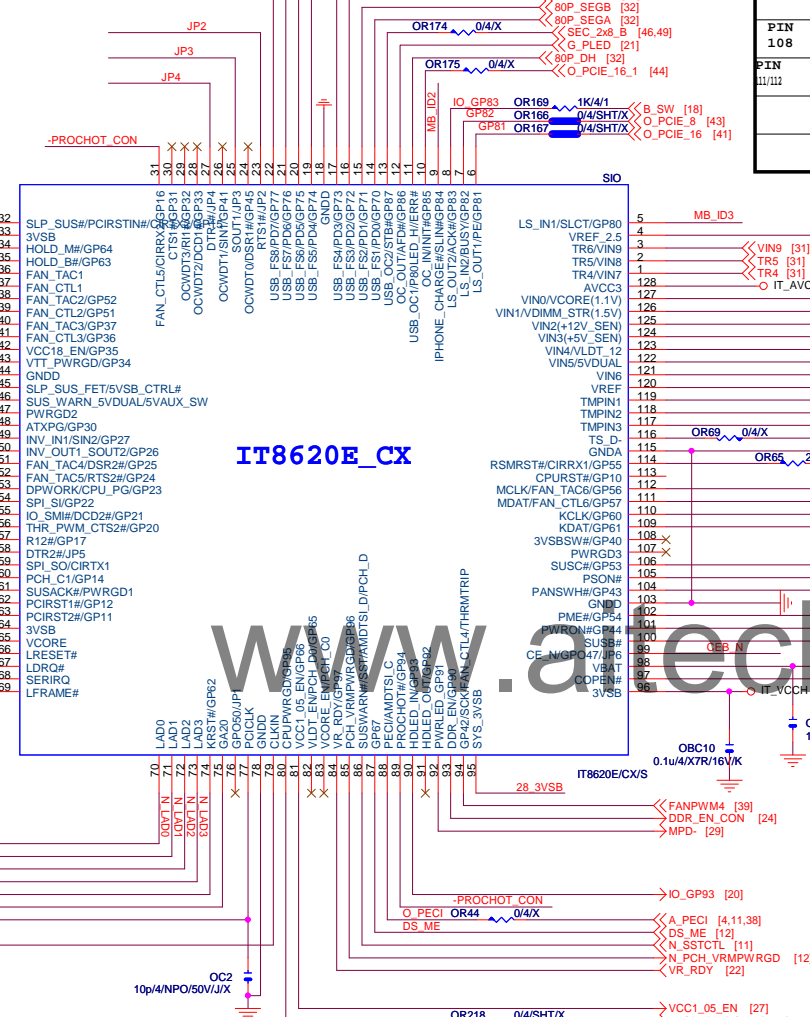
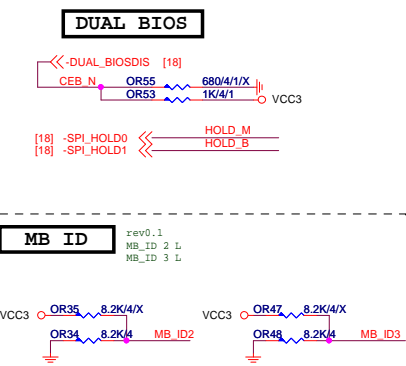
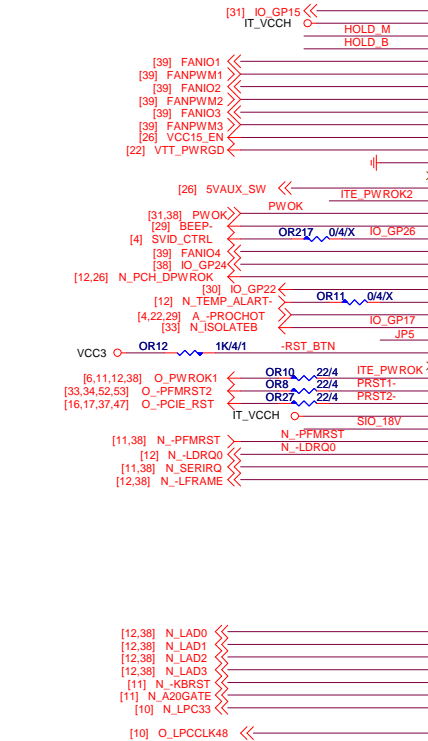
**VCC1\_05\_ME**

【技術通報R&D技術通報156】  
(RICHTER), (NUVOTON), (EMC) 做共用  
PIN7分壓阻值須做修改為100K以上電阻值

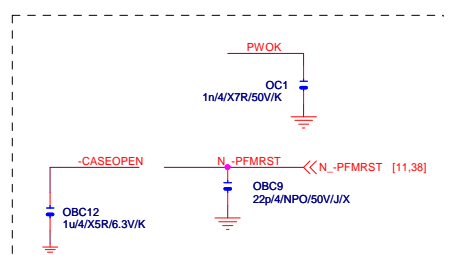
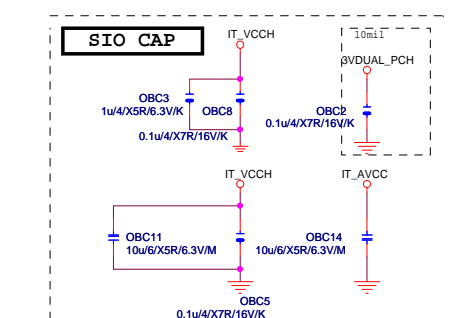
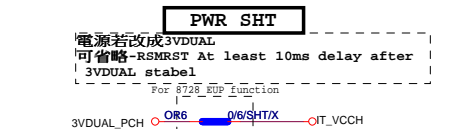
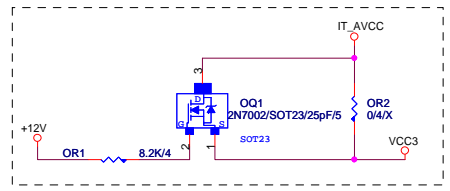


**VCC3\_ME**

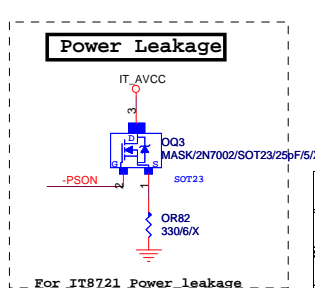
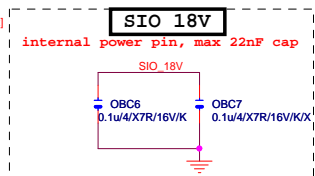
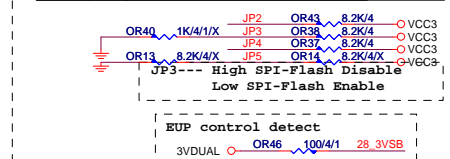




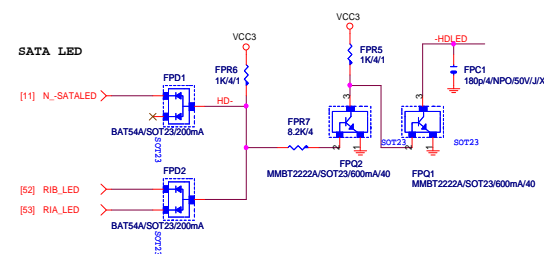
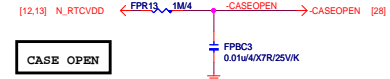
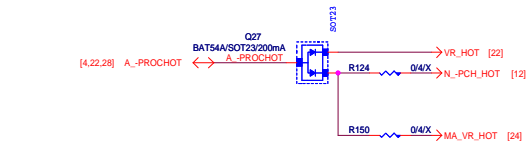
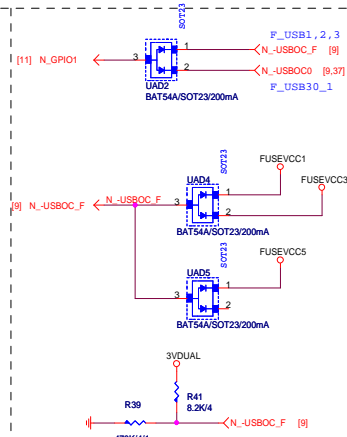
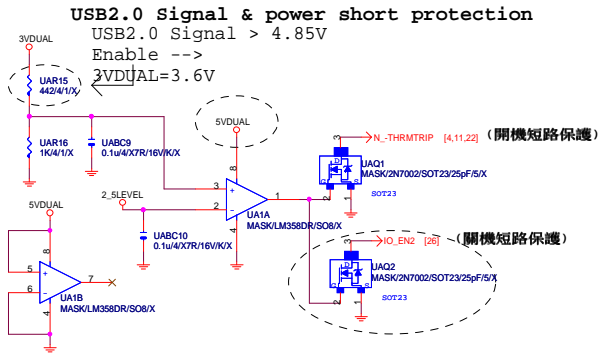
IT8620E GPIO問題匯整	
PIN 50	GP26--- 1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100-101-102-103-104-105-106-107-108-109-110-111-112-113-114-115-116-117-118-119-120-121-122-123-124-125-126-127-128-129-130-131-132-133-134-135-136-137-138-139-140-141-142-143-144-145-146-147-148-149-150-151-152-153-154-155-156-157-158-159-160-161-162-163-164-165-166-167-168-169-170-171-172-173-174-175-176-177-178-179-180-181-182-183-184-185-186-187-188-189-190-191-192-193-194-195-196-197-198-199-200-201-202-203-204-205-206-207-208-209-210-211-212-213-214-215-216-217-218-219-220-221-222-223-224-225-226-227-228-229-230-231-232-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249-250-251-252-253-254-255-256-257-258-259-260-261-262-263-264-265-266-267-268-269-270-271-272-273-274-275-276-277-278-279-280-281-282-283-284-285-286-287-288-289-290-291-292-293-294-295-296-297-298-299-300-301-302-303-304-305-306-307-308-309-310-311-312-313-314-315-316-317-318-319-320-321-322-323-324-325-326-327-328-329-330-331-332-333-334-335-336-337-338-339-340-341-342-343-344-345-346-347-348-349-350-351-352-353-354-355-356-357-358-359-360-361-362-363-364-365-366-367-368-369-370-371-372-373-374-375-376-377-378-379-380-381-382-383-384-385-386-387-388-389-390-391-392-393-394-395-396-397-398-399-400-401-402-403-404-405-406-407-408-409-410-411-412-413-414-415-416-417-418-419-420-421-422-423-424-425-426-427-428-429-430-431-432-433-434-435-436-437-438-439-440-441-442-443-444-445-446-447-448-449-450-451-452-453-454-455-456-457-458-459-460-461-462-463-464-465-466-467-468-469-470-471-472-473-474-475-476-477-478-479-480-481-482-483-484-485-486-487-488-489-490-491-492-493-494-495-496-497-498-499-500-501-502-503-504-505-506-507-508-509-510-511-512-513-514-515-516-517-518-519-520-521-522-523-524-525-526-527-528-529-530-531-532-533-534-535-536-537-538-539-540-541-542-543-544-545-546-547-548-549-550-551-552-553-554-555-556-557-558-559-560-561-562-563-564-565-566-567-568-569-570-571-572-573-574-575-576-577-578-579-580-581-582-583-584-585-586-587-588-589-590-591-592-593-594-595-596-597-598-599-600-601-602-603-604-605-606-607-608-609-610-611-612-613-614-615-616-617-618-619-620-621-622-623-624-625-626-627-628-629-630-631-632-633-634-635-636-637-638-639-640-641-642-643-644-645-646-647-648-649-650-651-652-653-654-655-656-657-658-659-660-661-662-663-664-665-666-667-668-669-670-671-672-673-674-675-676-677-678-679-680-681-682-683-684-685-686-687-688-689-690-691-692-693-694-695-696-697-698-699-700-701-702-703-704-705-706-707-708-709-710-711-712-713-714-715-716-717-718-719-720-721-722-723-724-725-726-727-728-729-730-731-732-733-734-735-736-737-738-739-740-741-742-743-744-745-746-747-748-749-750-751-752-753-754-755-756-757-758-759-760-761-762-763-764-765-766-767-768-769-770-771-772-773-774-775-776-777-778-779-780-781-782-783-784-785-786-787-788-789-790-791-792-793-794-795-796-797-798-799-800-801-802-803-804-805-806-807-808-809-810-811-812-813-814-815-816-817-818-819-820-821-822-823-824-825-826-827-828-829-830-831-832-833-834-835-836-837-838-839-840-841-842-843-844-845-846-847-848-849-850-851-852-853-854-855-856-857-858-859-860-861-862-863-864-865-866-867-868-869-870-871-872-873-874-875-876-877-878-879-880-881-882-883-884-885-886-887-888-889-890-891-892-893-894-895-896-897-898-899-900-901-902-903-904-905-906-907-908-909-910-911-912-913-914-915-916-917-918-919-920-921-922-923-924-925-926-927-928-929-930-931-932-933-934-935-936-937-938-939-940-941-942-943-944-945-946-947-948-949-950-951-952-953-954-955-956-957-958-959-960-961-962-963-964-965-966-967-968-969-970-971-972-973-974-975-976-977-978-979-980-981-982-983-984-985-986-987-988-989-990-991-992-993-994-995-996-997-998-999-1000-1001-1002-1003-1004-1005-1006-1007-1008-1009-1010-1011-1012-1013-1014-1015-1016-1017-1018-1019-1020-1021-1022-1023-1024-1025-1026-1027-1028



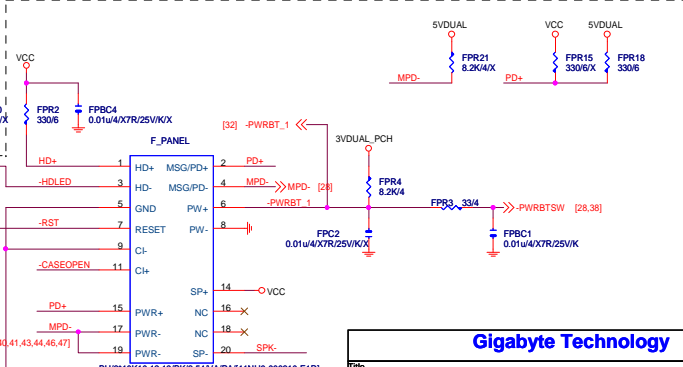
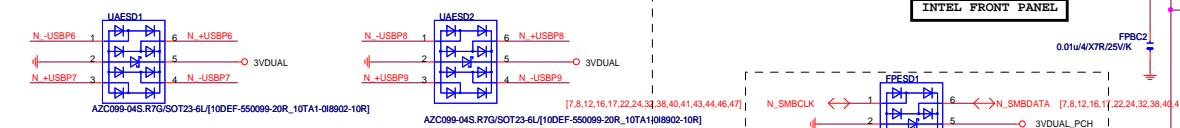
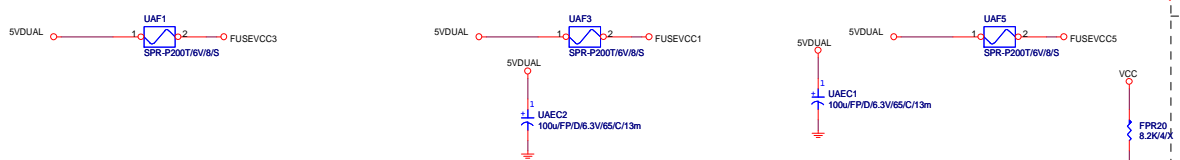
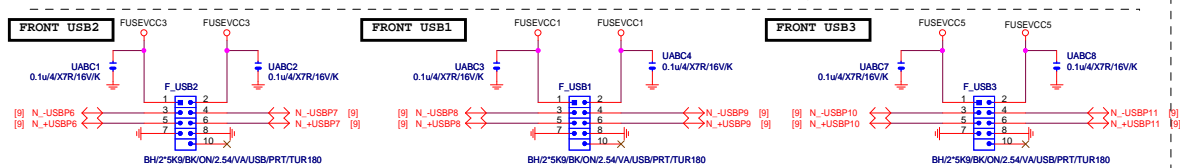
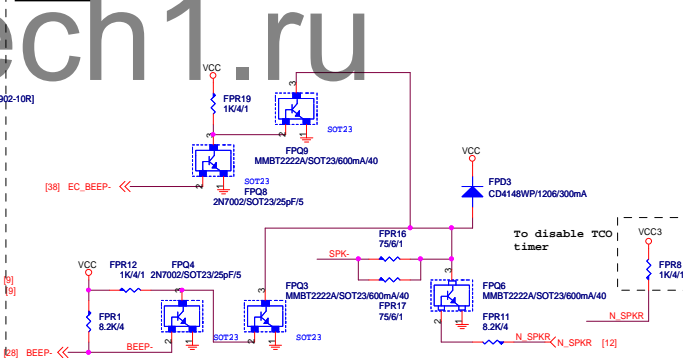
SIO STRAP		
JP4	1	k8 power sequency function is Disable
	0	k8 power sequency function is Enable
JP3	1 1	The default value of EC Index 63h/6Bh/73h is 80h.
	0 1	The default value of EC Index 63h/6Bh/73h is FFh.
JP5	1 0	The default value of EC Index 63h/6Bh/73h is 00h.
	0 0	The default value of EC Index 63h/6Bh/73h is 40h.



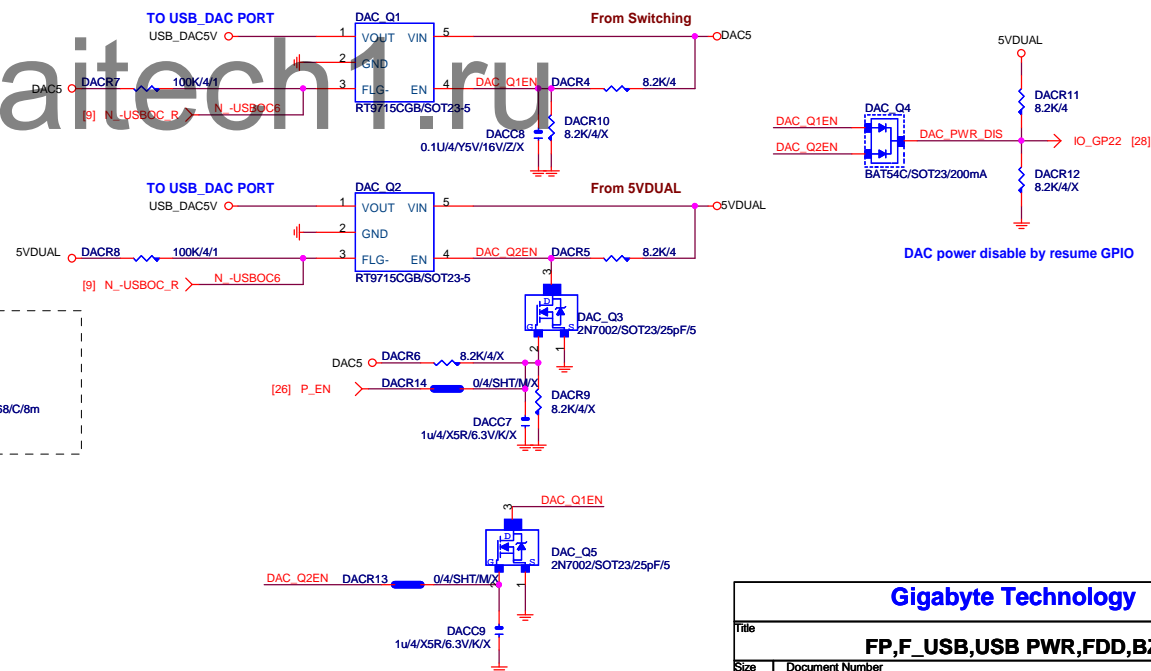
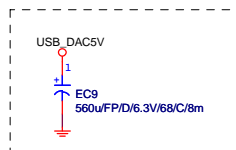
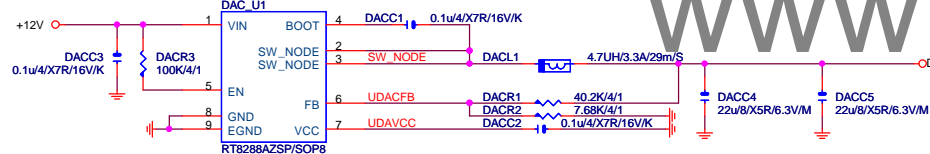
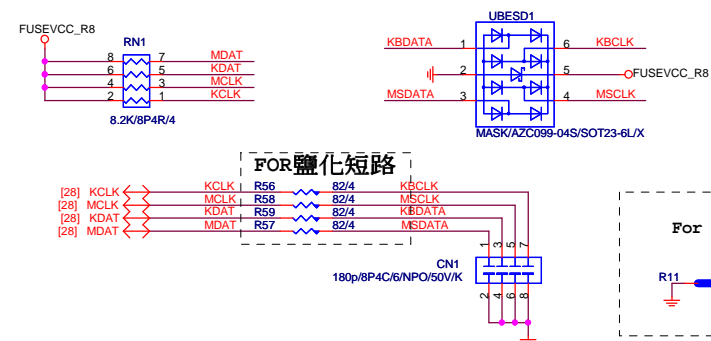
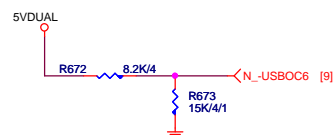




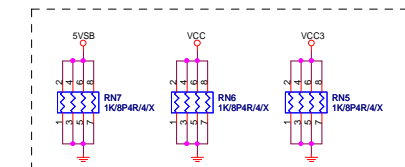
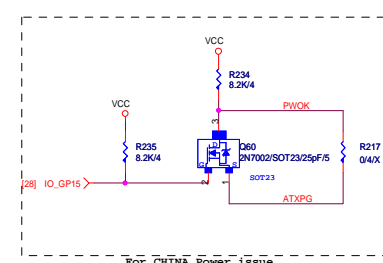
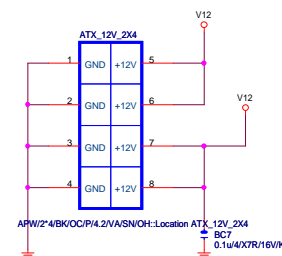
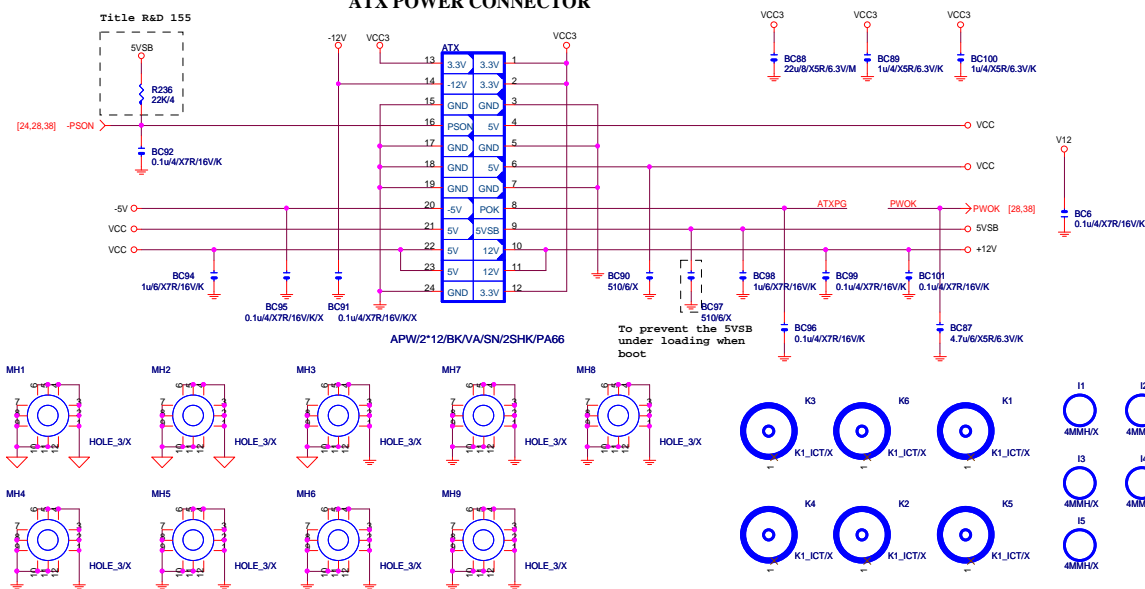
**SPEAKER**



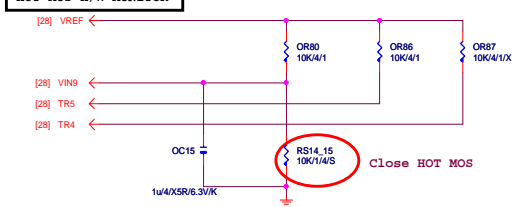
Gigabyte Technology			
Title	FP,F USB,USB PWR,FDD,BZ,TB C		
Size	Document Number	Rev	
Customer	GA-Z97X-Gaming G1 WIFI	1.0	
Date	Wednesday, March 05, 2014	Sheet	29 of 54



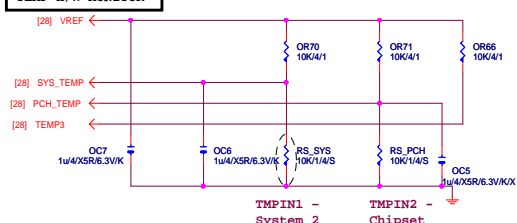
# ATX POWER CONNECTOR



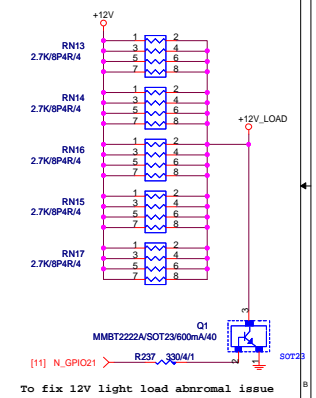
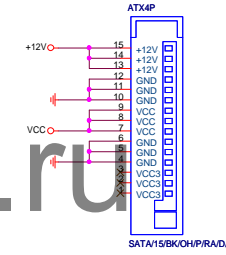
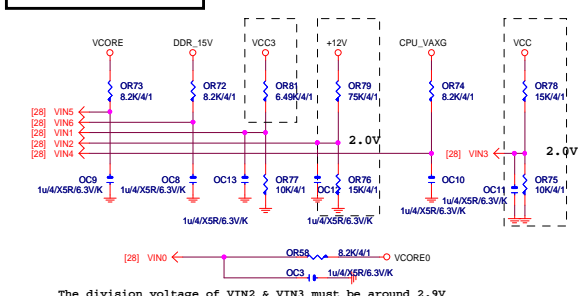
## HOT MOS H/W MONITOR

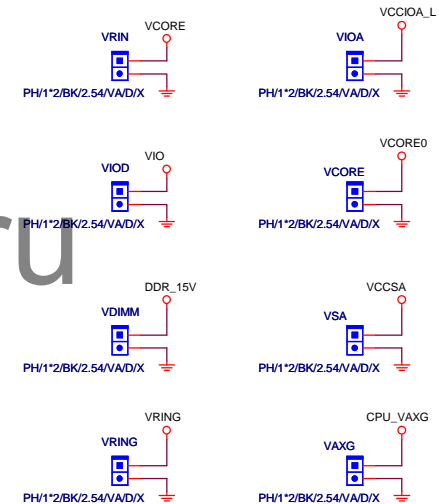
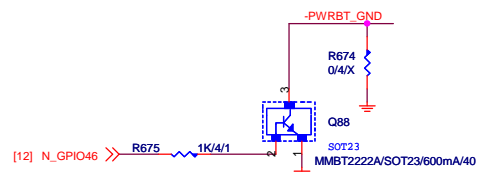
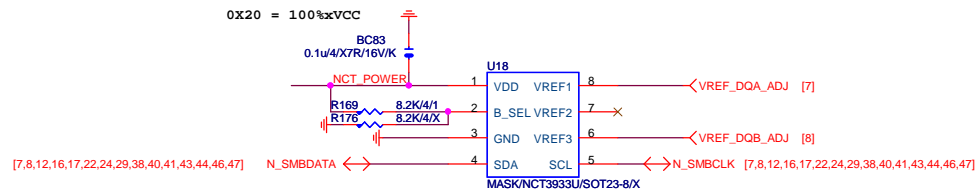


## TEMP H/W MONITOR

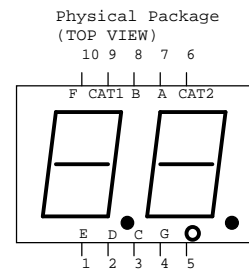
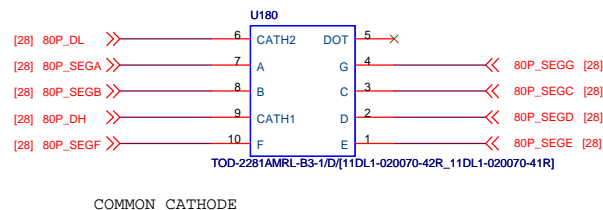


## VOLTAGE-- H/W MONITOR



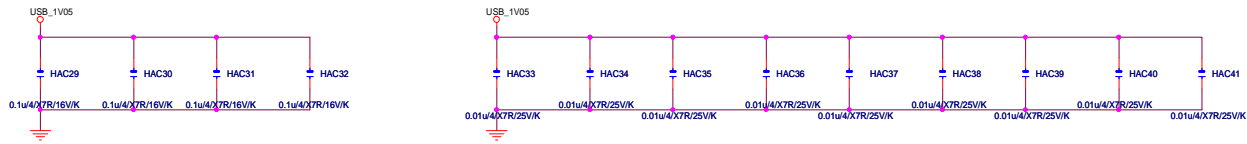
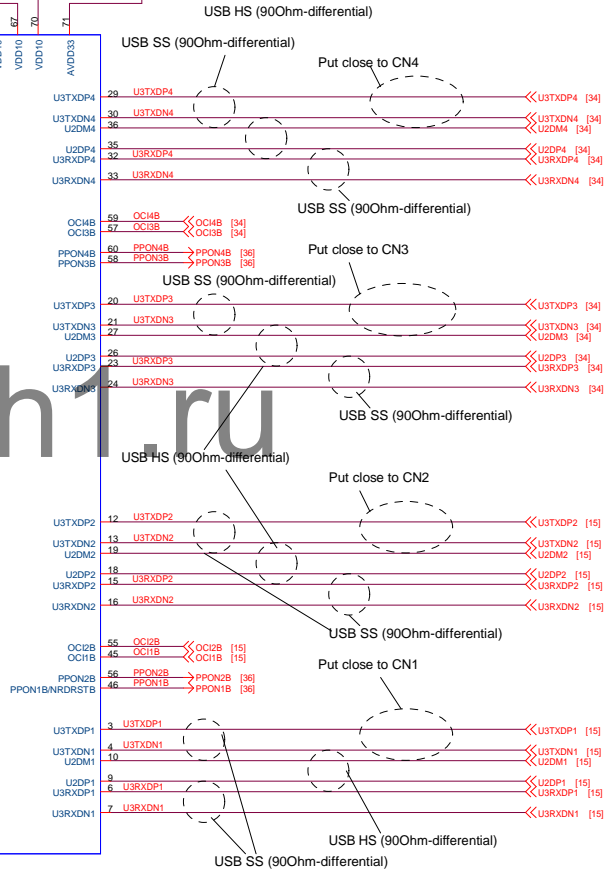
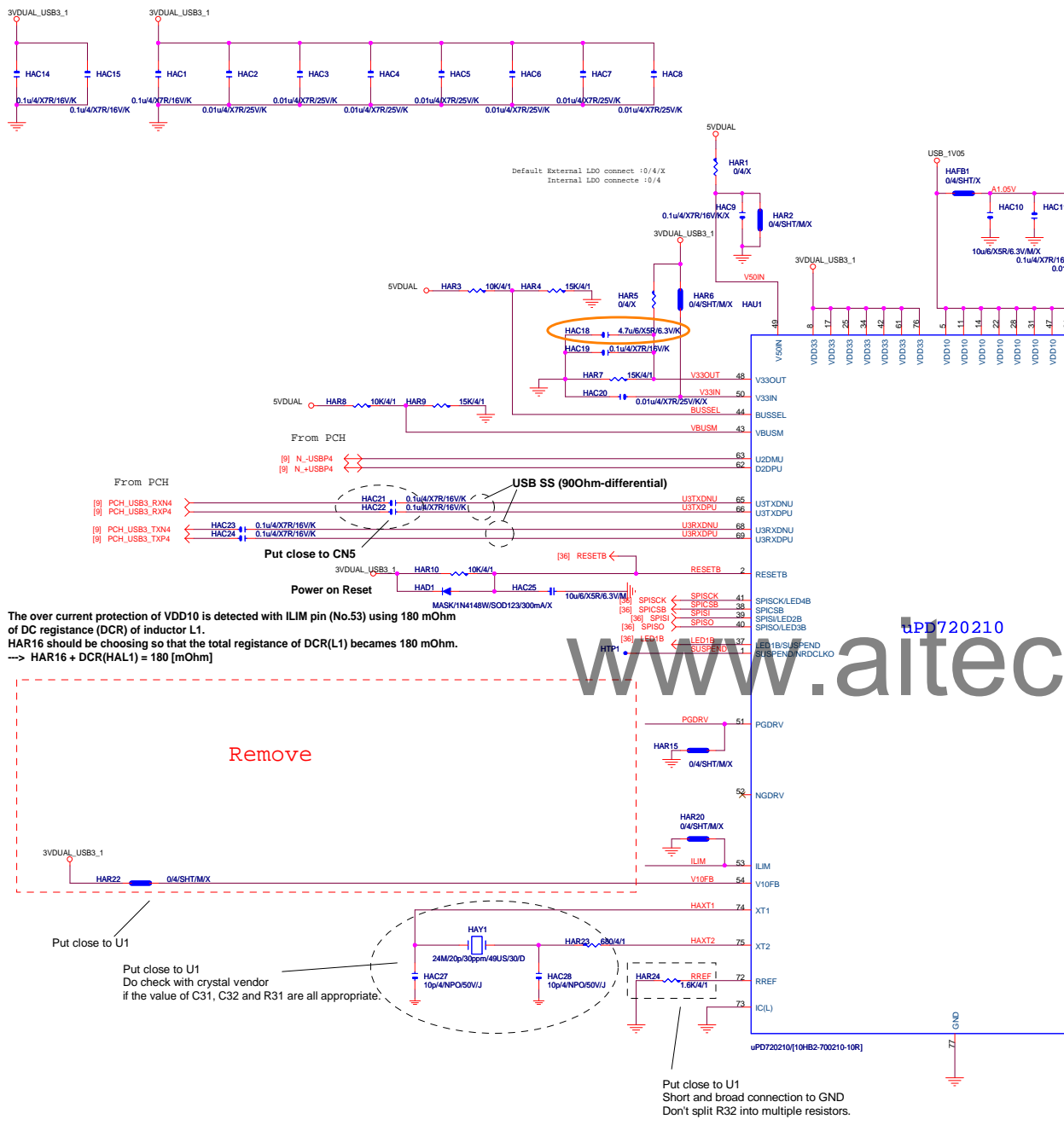


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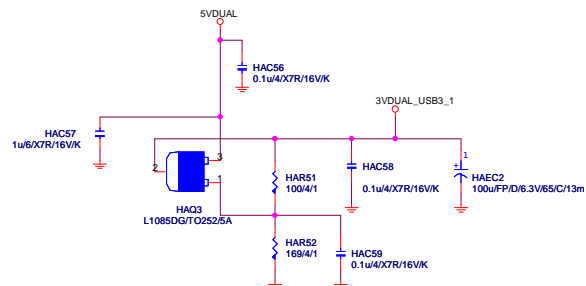




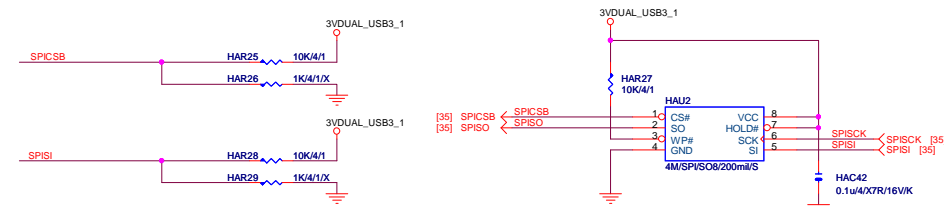




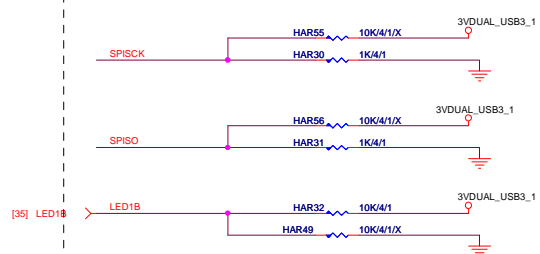
# 3VDUAL\_USB



# External SPI ROM ; SPI ROM attached mode

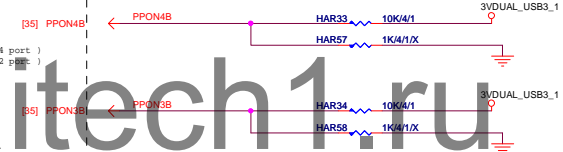


# Battery Charging

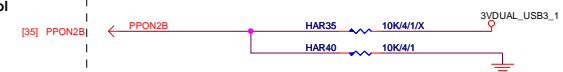


# Number of Ports ; 4Ports mode

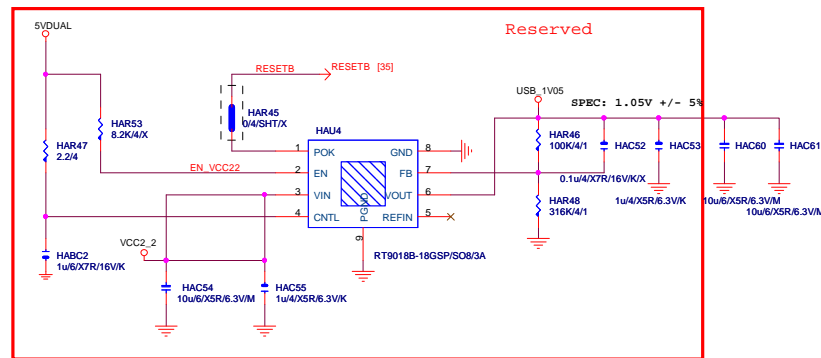
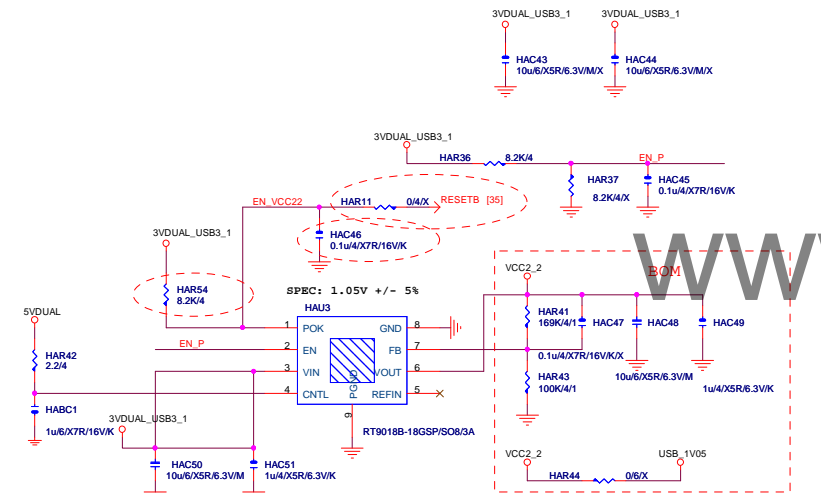
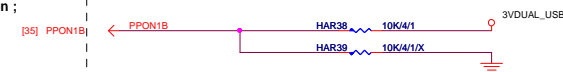
PPON3B / PPON4B : H / H ( 4 port )  
PPON3B / PPON4B : L / L ( 2 port )



#5 VBUS Power Control ; Individual mode



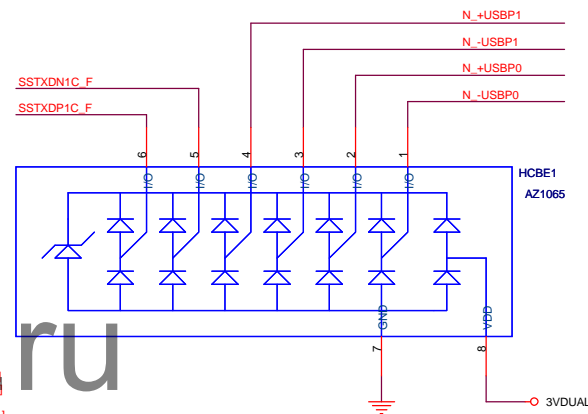
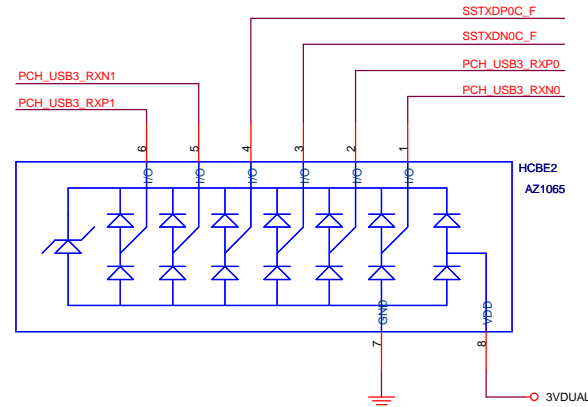
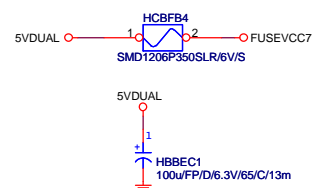
# PPON1B Pin Function ; Port1 PPONB mode



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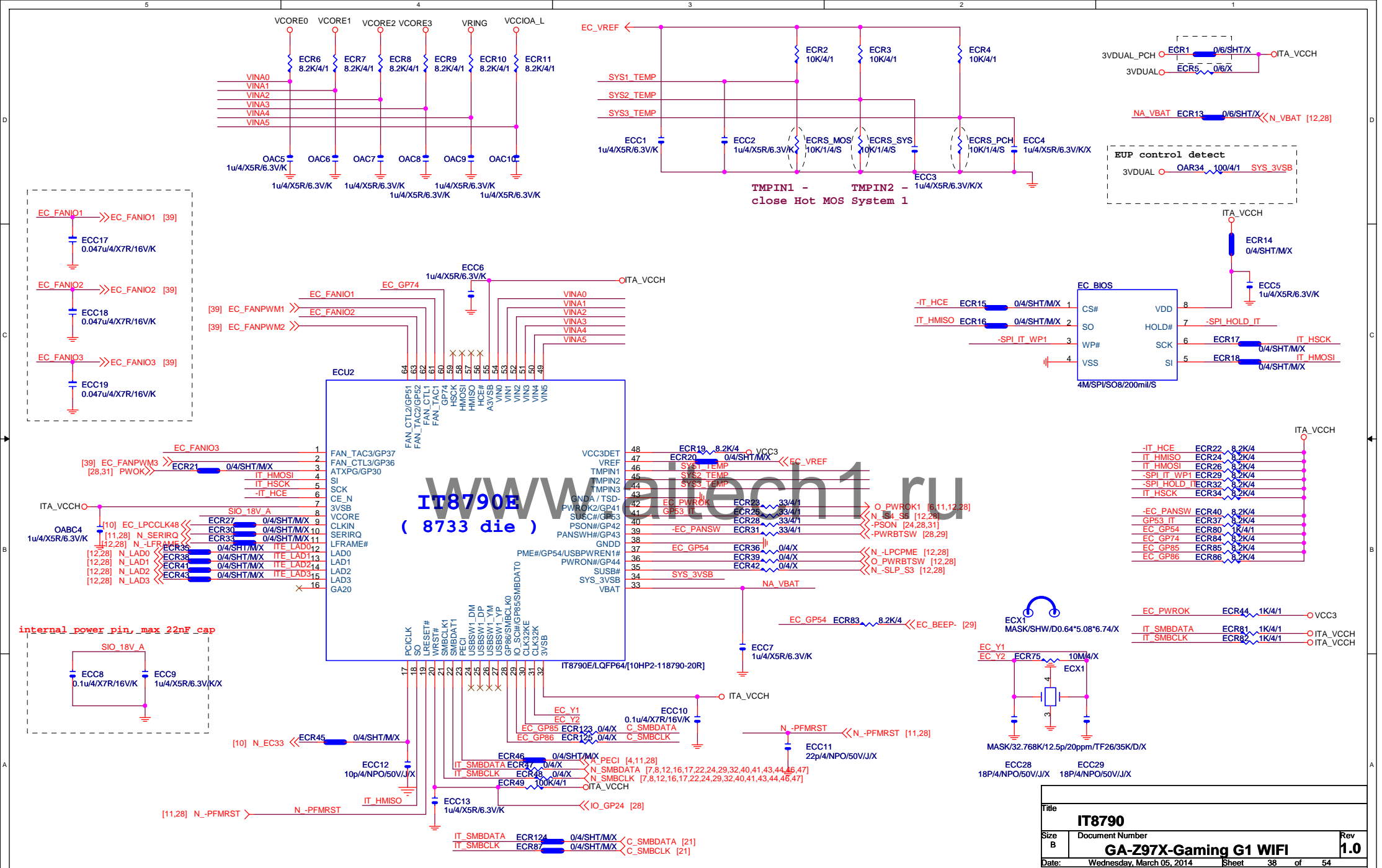
Title			D720210 4port Hub		
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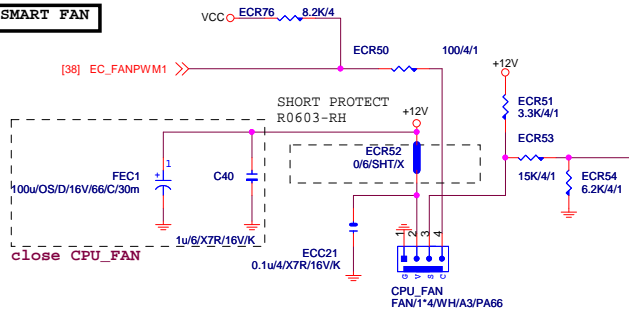


雙層:11NR6-C10236-01R

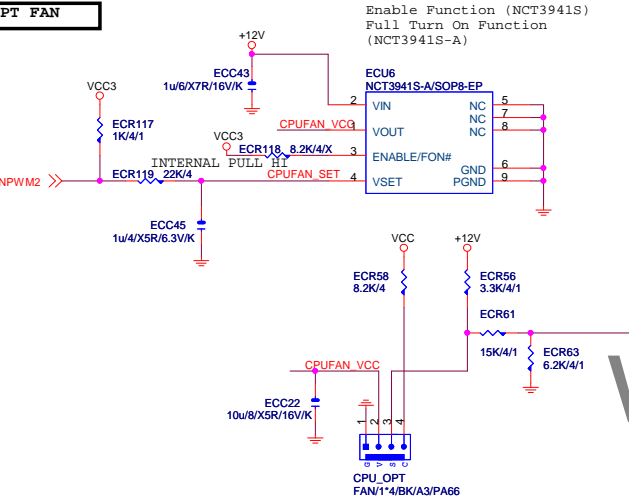




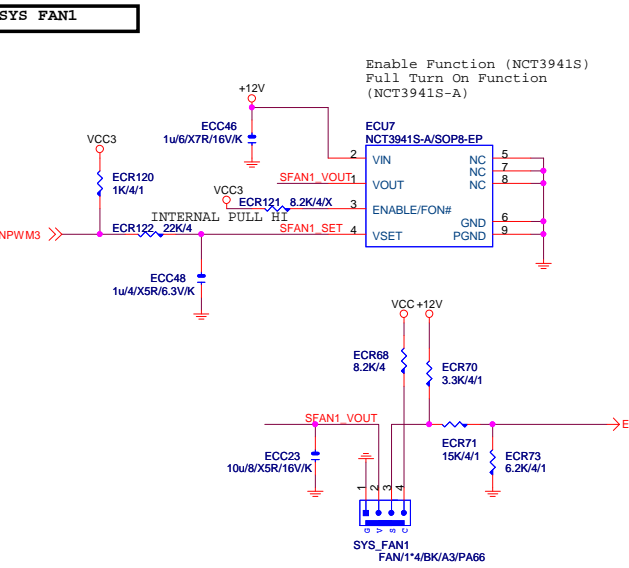
# CPU SMART FAN



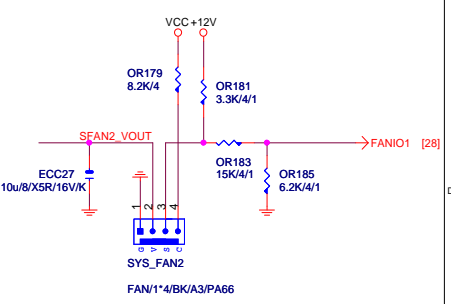
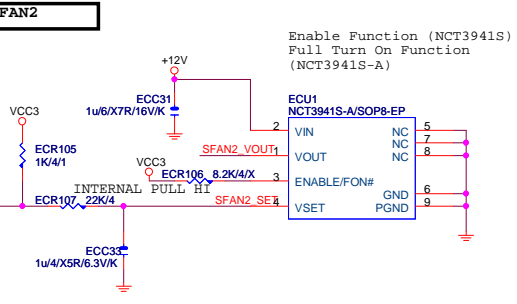
# CPUOPT FAN



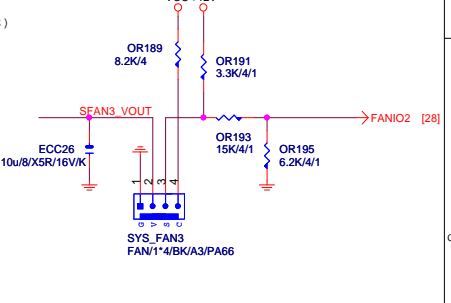
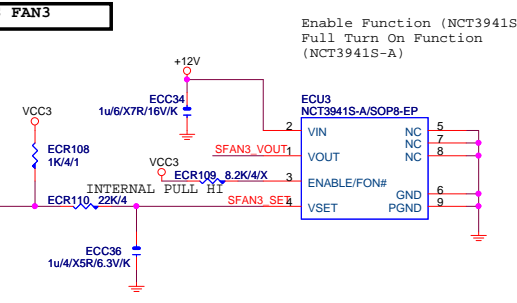
# SYS FAN1



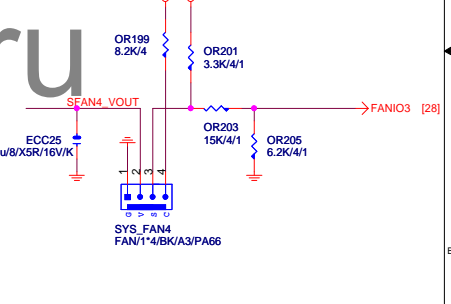
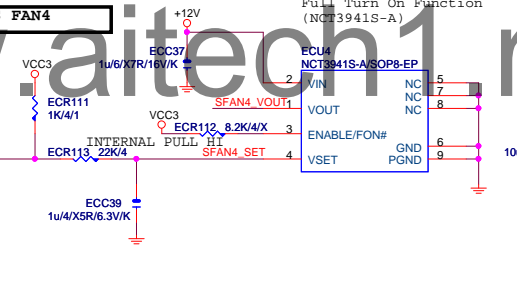
# SYS FAN2



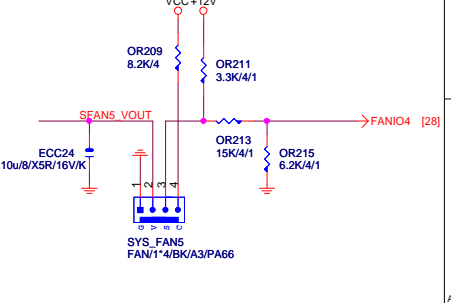
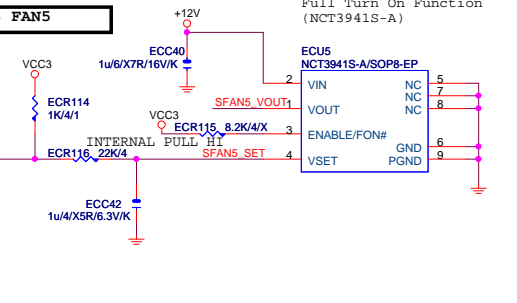
# SYS FAN3



# SYS FAN4

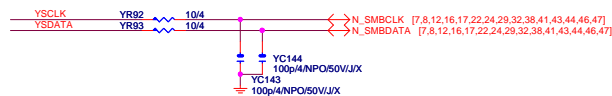
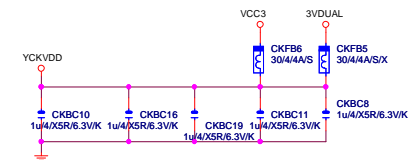
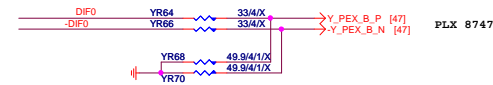
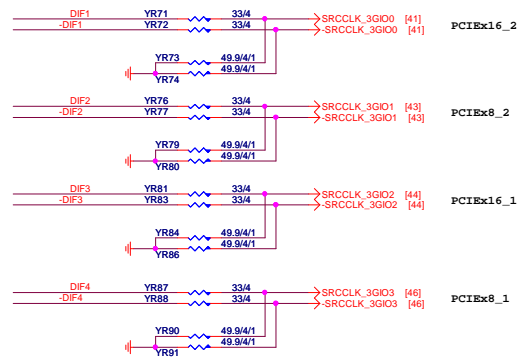
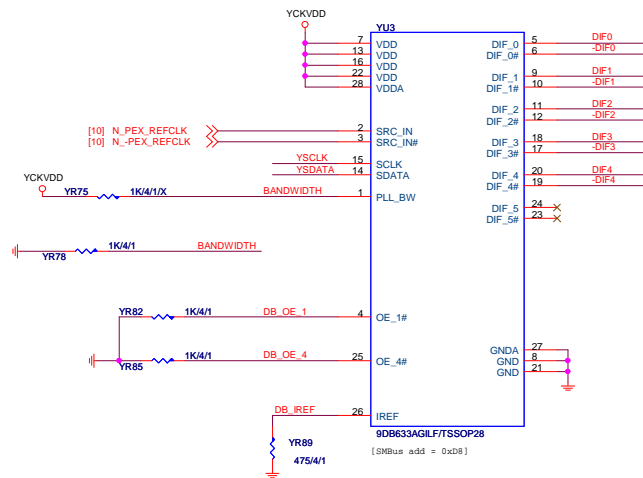


# SYS FAN5

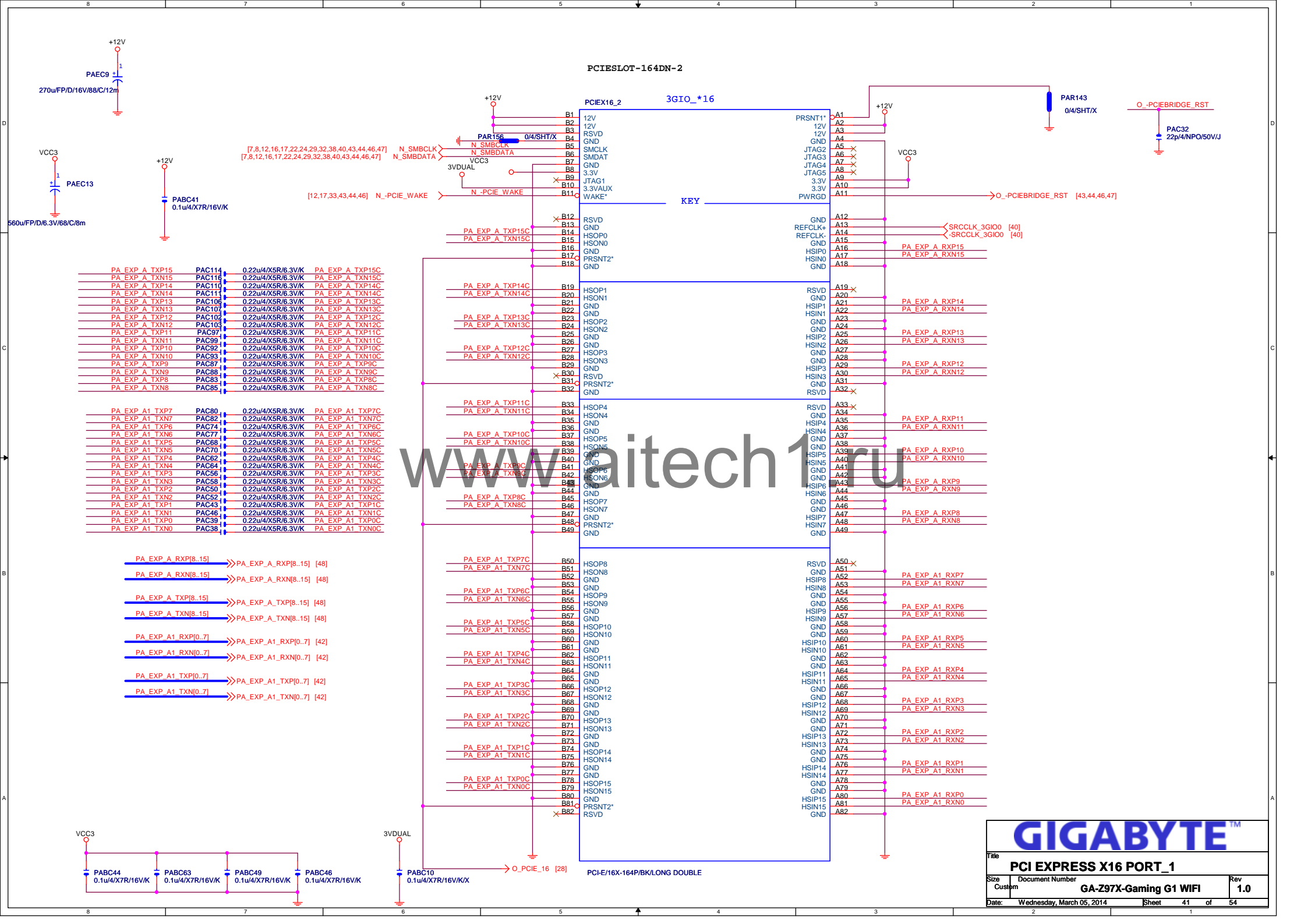


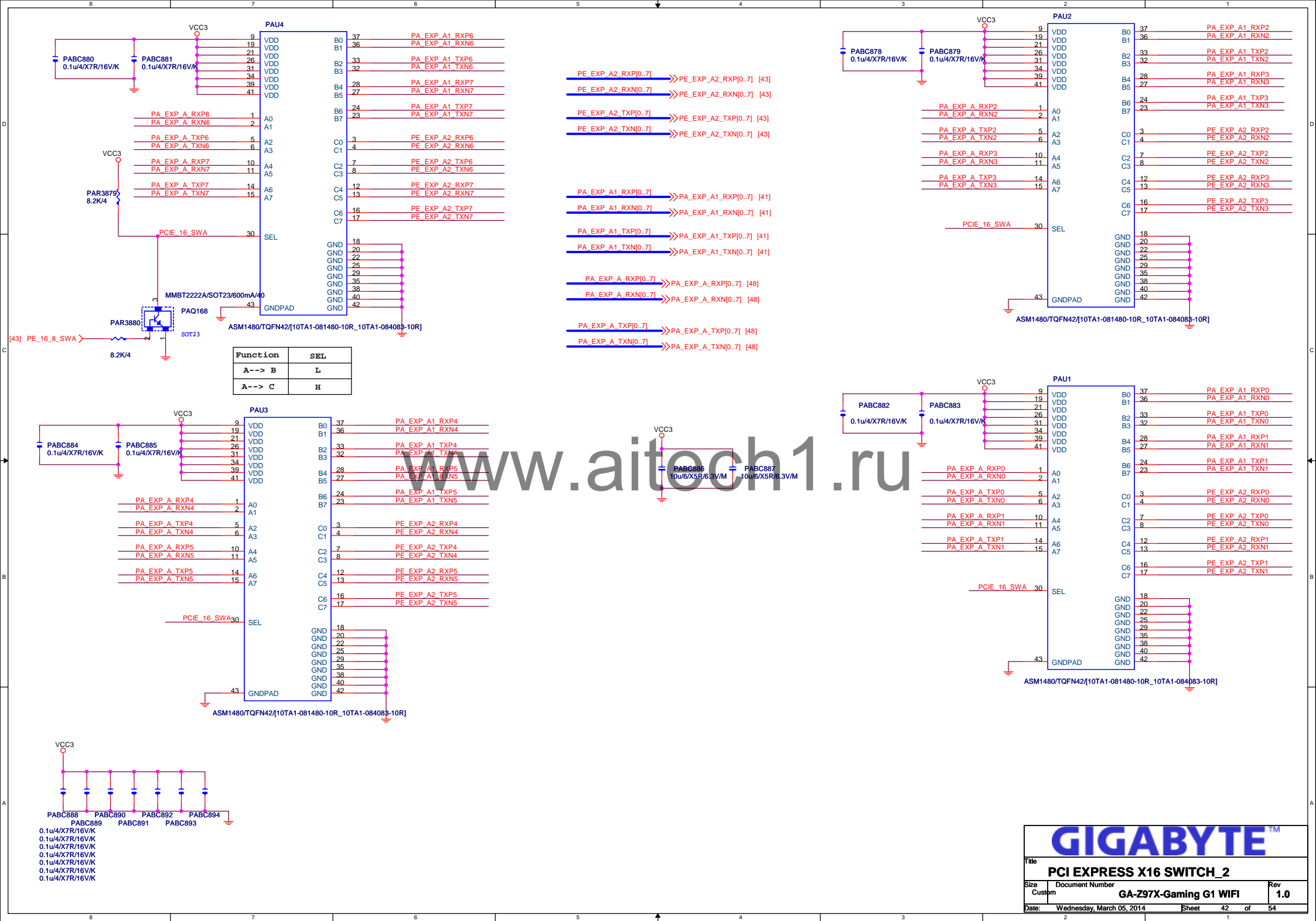
Gigabyte Technology

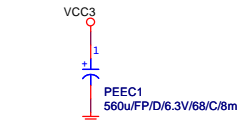
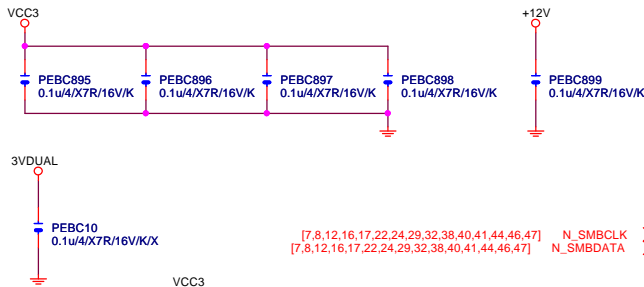
Title		
HWM,KB/MS, FAN CTRL		
Size	Document Number	Rev
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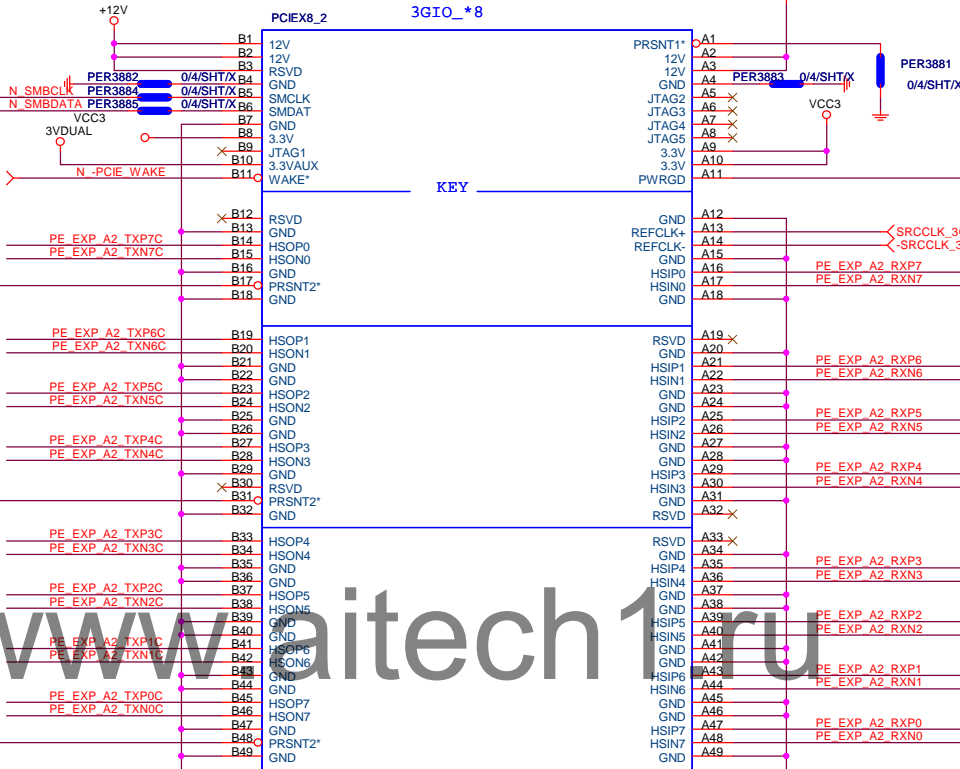
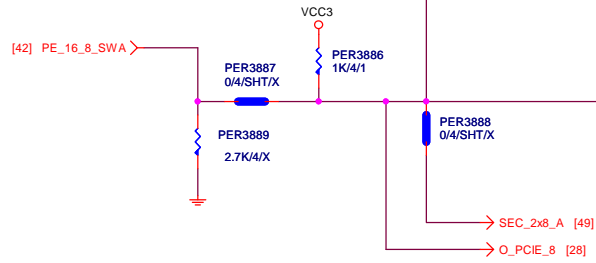






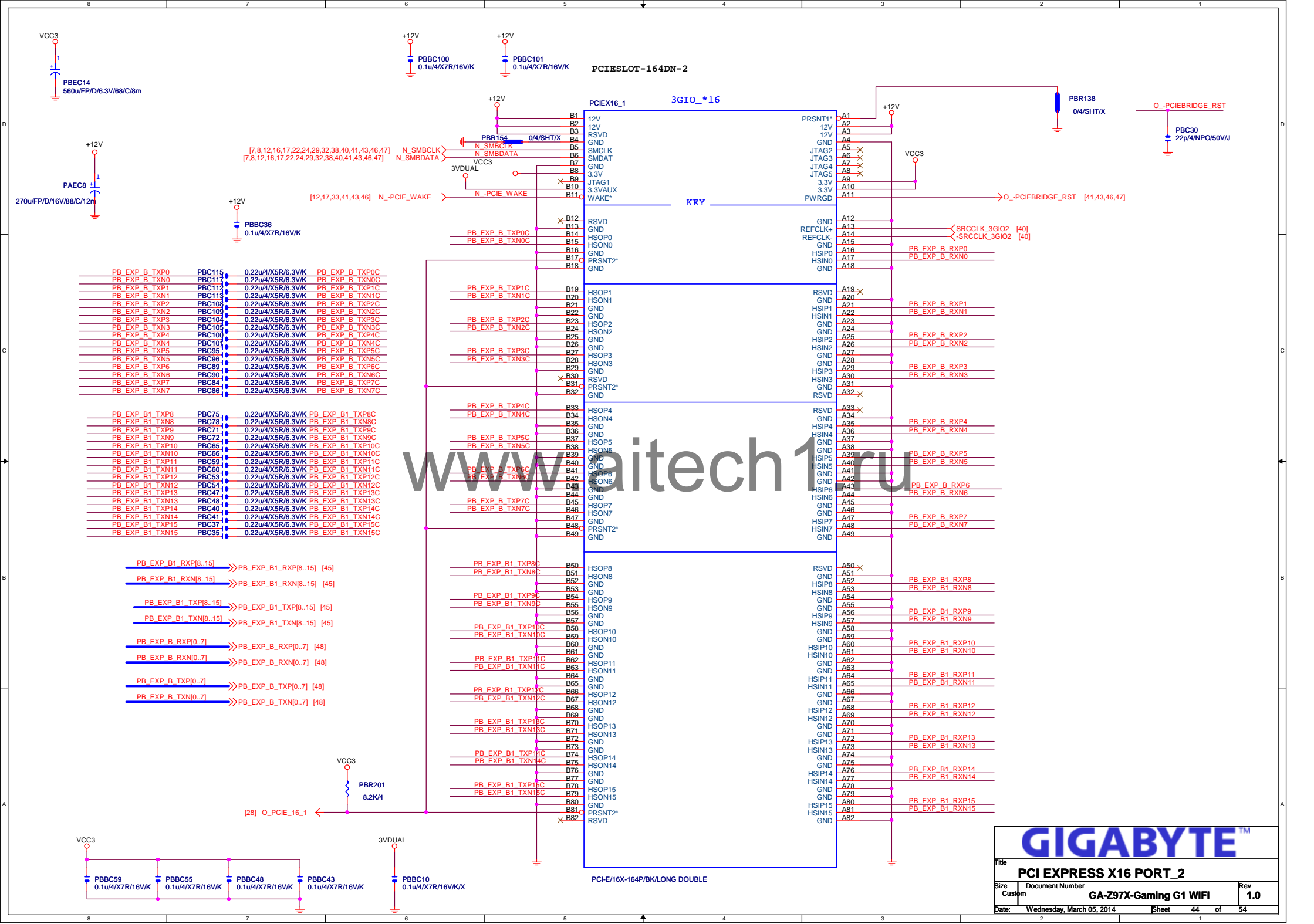
PE\_EXP\_A2\_TXP[0..7] >> PE\_EXP\_A2\_TXP[0..7] [42]  
 PE\_EXP\_A2\_TXN[0..7] >> PE\_EXP\_A2\_TXN[0..7] [42]

PE_EXP_A2_TXP7	PEC231	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXP7C
PE_EXP_A2_TXN7	PEC232	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXN7C
PE_EXP_A2_TXP6	PEC233	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXP6C
PE_EXP_A2_TXN6	PEC234	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXN6C
PE_EXP_A2_TXP5	PEC235	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXP5C
PE_EXP_A2_TXN5	PEC236	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXN5C
PE_EXP_A2_TXP4	PEC237	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXP4C
PE_EXP_A2_TXN4	PEC238	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXN4C
PE_EXP_A2_TXP3	PEC239	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXP3C
PE_EXP_A2_TXN3	PEC240	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXN3C
PE_EXP_A2_TXP2	PEC241	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXP2C
PE_EXP_A2_TXN2	PEC242	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXN2C
PE_EXP_A2_TXP1	PEC243	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXP1C
PE_EXP_A2_TXN1	PEC244	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXN1C
PE_EXP_A2_TXP0	PEC245	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXP0C
PE_EXP_A2_TXN0	PEC246	0.22u/4/X5R/6.3V/K	PE_EXP_A2_TXN0C

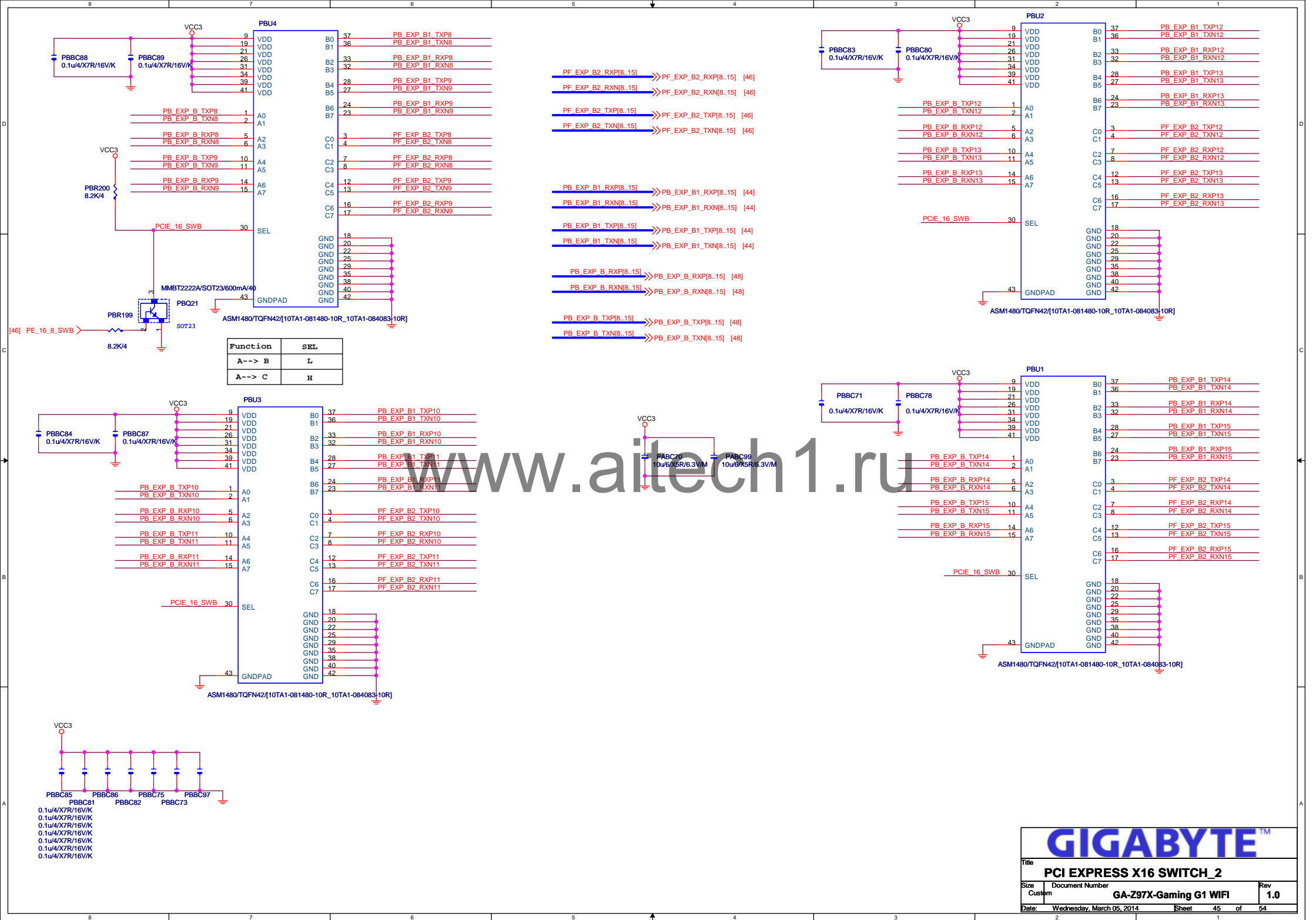


PE\_EXP\_A2\_RXP[0..7] >> PE\_EXP\_A2\_RXP[0..7] [42]  
 PE\_EXP\_A2\_RXN[0..7] >> PE\_EXP\_A2\_RXN[0..7] [42]

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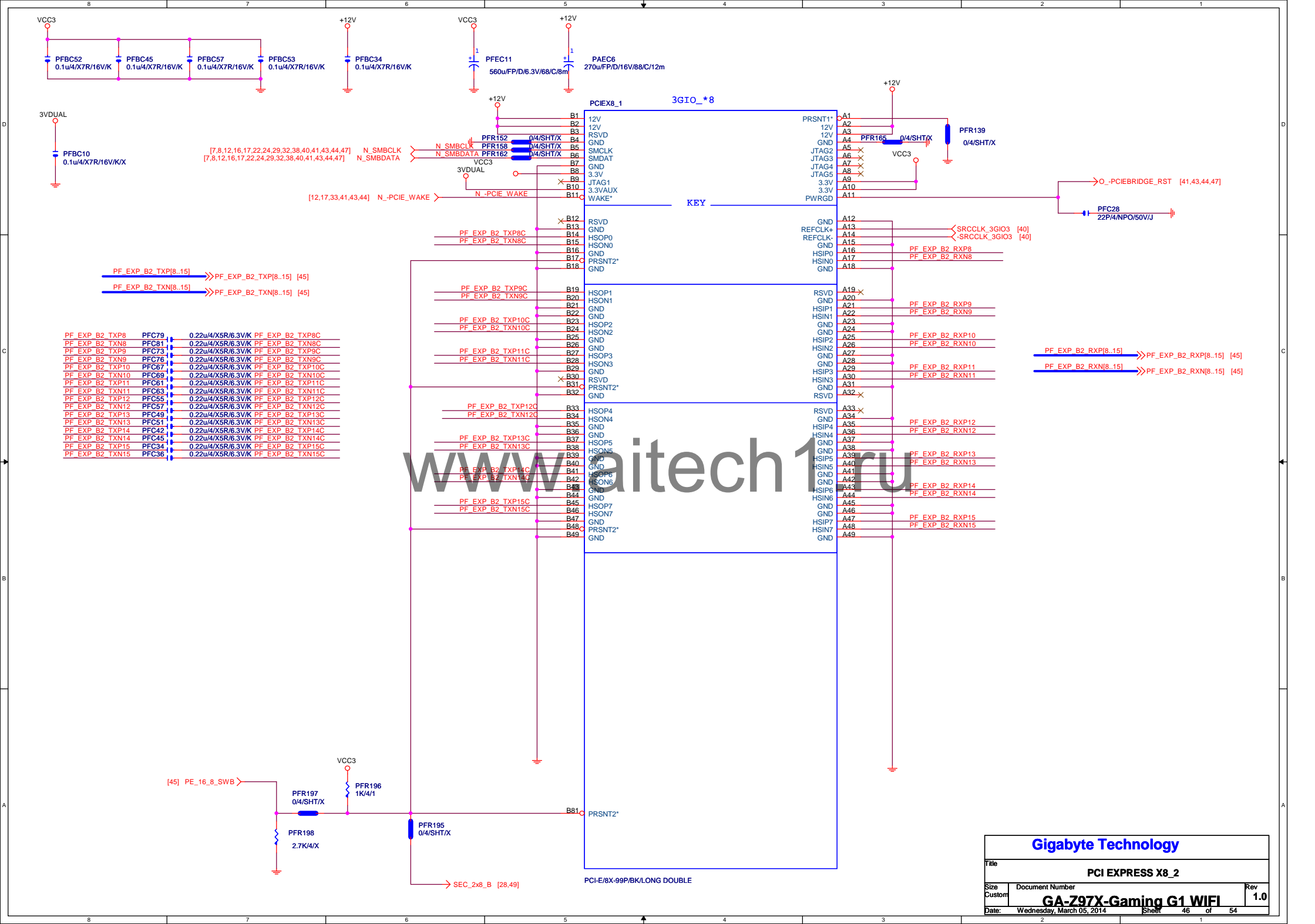






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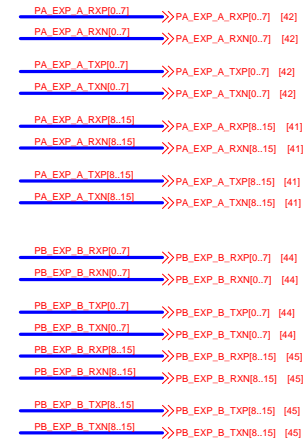
Title			
PCI EXPRESS X16 SWITCH_2			
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U1B			
PA EXP A RXP0	V4	PEX_PERP16	V2
PA EXP A RXN0	V5	PEX_PERN16	V1
PA EXP A RXP1	U4	PEX_PETP17	U2
PA EXP A RXN1	U5	PEX_PETP17	U1
PA EXP A RXP2	R5	PEX_PETN17	R2
PA EXP A RXN2	R4	PEX_PETN18	R1
PA EXP A RXP3	P5	PEX_PETN18	P2
PA EXP A RXN3	P4	PEX_PETP19	P1
PA EXP A RXP4	M5	PEX_PETN19	M2
PA EXP A RXN4	M4	PEX_PETP20	M1
PA EXP A RXP5	L5	PEX_PETN20	L2
PA EXP A RXN5	L4	PEX_PETN21	L1
PA EXP A RXP6	J5	PEX_PETN21	J2
PA EXP A RXN6	J4	PEX_PETP22	J1
PA EXP A RXP7	H5	PEX_PETP23	H2
PA EXP A RXN7	H4	PEX_PETN23	H1
PA EXP A RXP8	D1	PEX_PETP24	A1
PA EXP A RXN8	D2	PEX_PETN24	A2
PA EXP A RXP9	D3	PEX_PETP25	B2
PA EXP A RXN9	D4	PEX_PETN25	B4
PA EXP A RXP10	E4	PEX_PETP26	A4
PA EXP A RXN10	E5	PEX_PETN26	A5
PA EXP A RXP11	D6	PEX_PETP27	A6
PA EXP A RXN11	D7	PEX_PETN27	A7
PA EXP A RXP12	E7	PEX_PETP28	B7
PA EXP A RXN12	D7	PEX_PETN28	B8
PA EXP A RXP13	E8	PEX_PETP29	A8
PA EXP A RXN13	D8	PEX_PETN29	A9
PA EXP A RXP14	E10	PEX_PETP30	B10
PA EXP A RXN14	D10	PEX_PETN30	B11
PA EXP A RXP15	E11	PEX_PETP31	A11
PA EXP A RXN15	D11	PEX_PETN31	A11

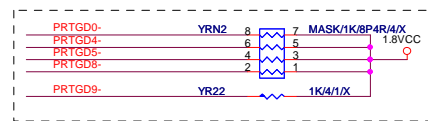
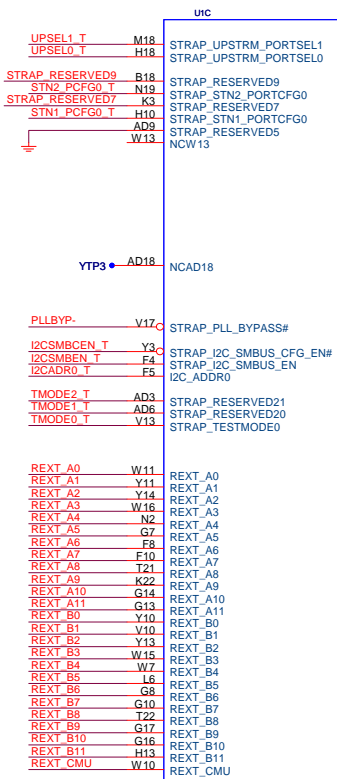
SYSCLK_INP4	P7	PEX_REFCLK_SSCP4	P17	SYSCLK_INP8
SYSCLK_INN4	P6	PEX_REFCLK_SSCP4	P18	SYSCLK_INN8
		PEX_REFCLK_SSCP8		
		PEX_REFCLK_SSCP8		



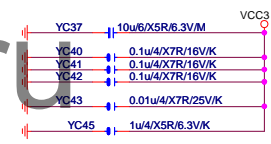
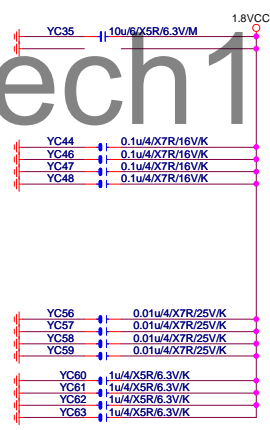
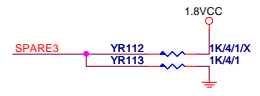
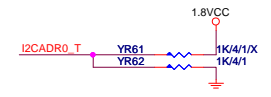
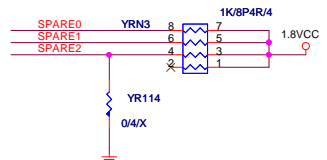
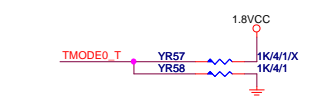
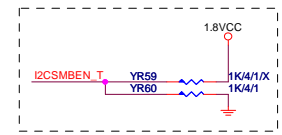
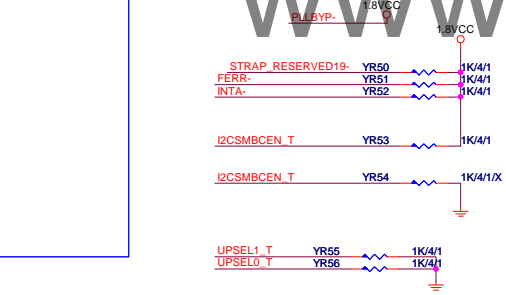
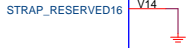
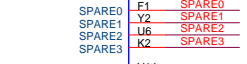
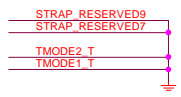
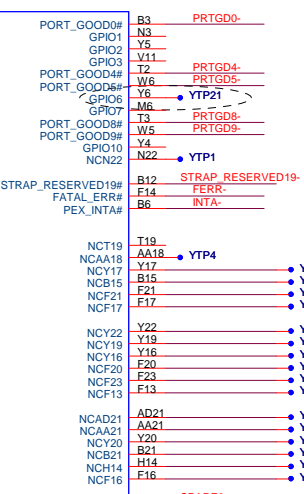
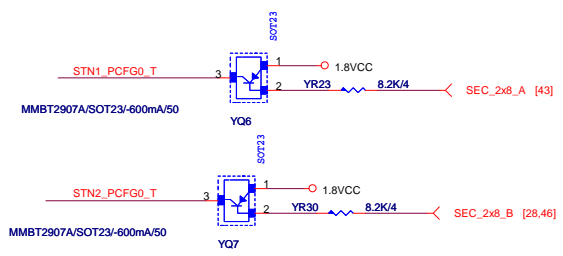
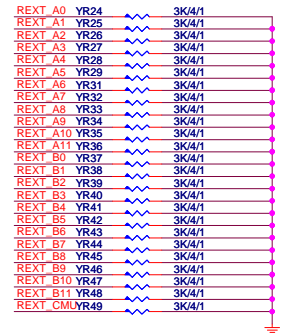
**GIGABYTE™**

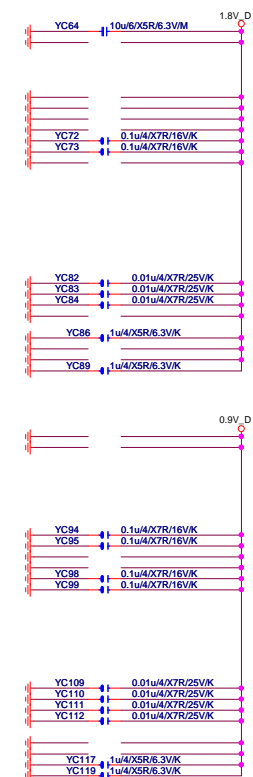
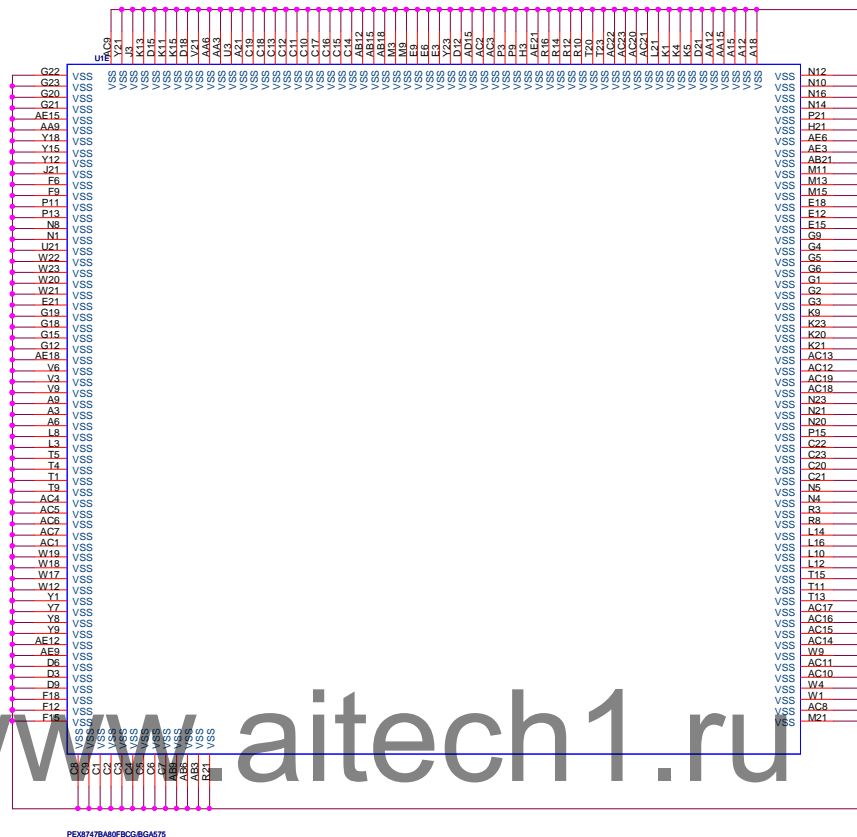
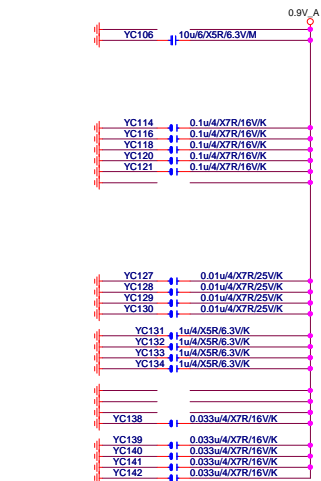
**P6X8747S DOWNSTREAM SLOTS**

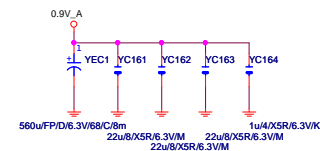
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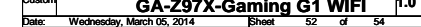
Resistors should be placed close to U1



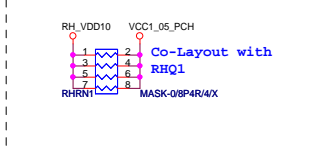
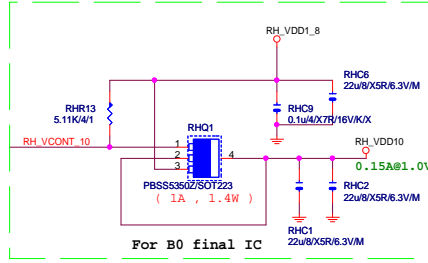
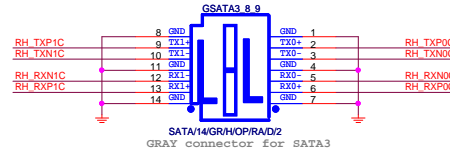
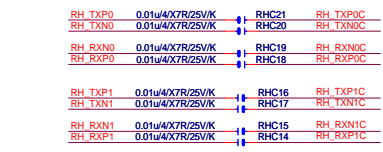
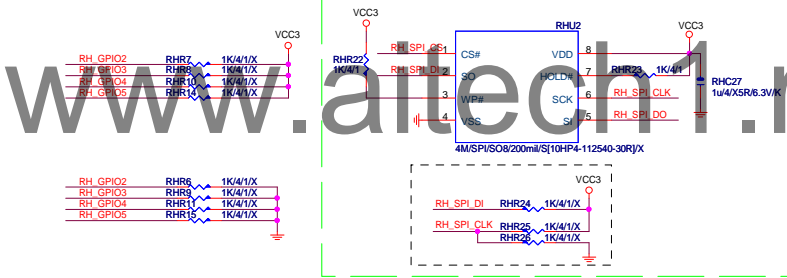
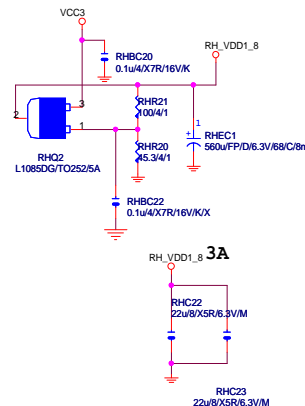
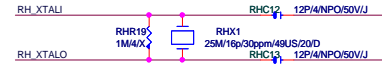
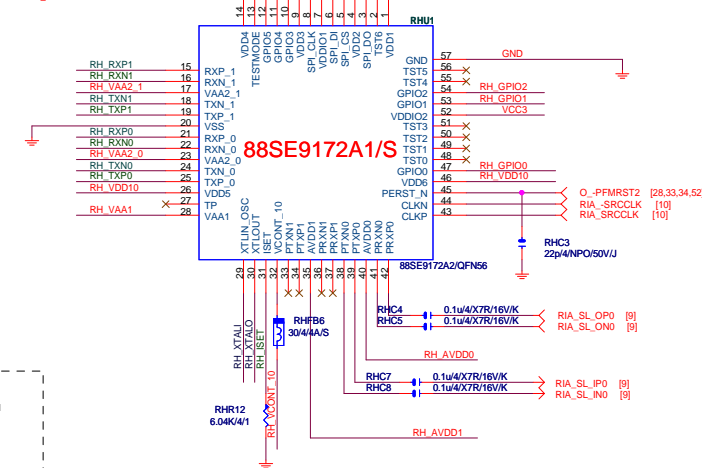
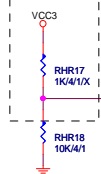
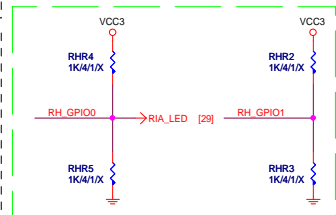
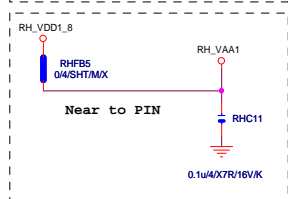
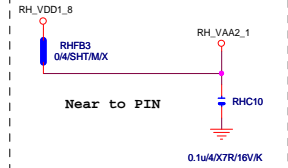
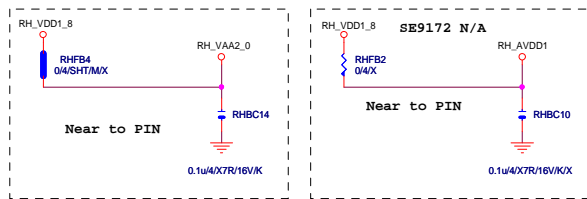
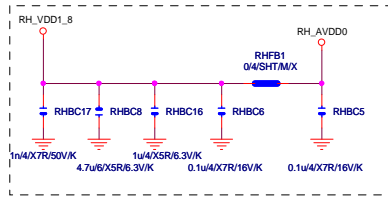
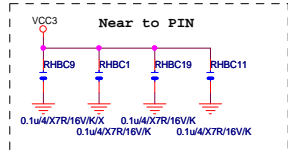
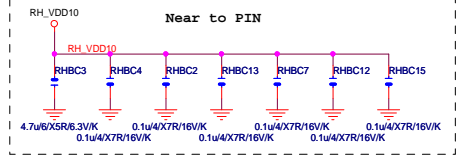




Near to PIN







灰色 connector

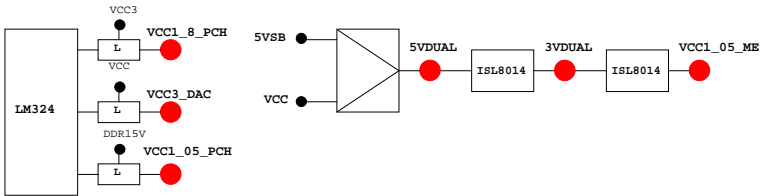
<b>GIGABYTE™</b>			
Title	Marvell 9172 -1		
Size	Document Number	GA-Z97X-Gaming G1 WIFI	Rev
Custom			1.0
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PCH GPIO LIST TABLE					
PIN NAME	PWR	Default	USAG	NOTE	
GP0	MAIN	H-Z	GPI	-PECI_REQ	N/A
GP1/TACH1	MAIN		GPI	ICH_FAN_TACH1	N/A
GP2/PIRQE#	MAIN		GPI	-PIRQE	P/U 8.2K VCC3
GP3/PIRQF#	MAIN		GPI	-PIRQF	P/U 8.2K VCC3
GP4/PIRQG#	MAIN		GPI	-PIRQG	P/U 8.2K VCC3
GP5/PIRQH#	MAIN		GPI	-PIRQH	P/U 8.2K VCC3
GP6/TACH2	MAIN		GPI	ICH_FAN_TACH2	N/A
GP7/TACH3	MAIN		GPI	ICH_FAN_TACH3	N/A
GP8	STBY	H	GPO	GPIO8	P/U 8.2K 3VDUAL
GP9/OC5#	STBY		NATIVE	OC5#	N/A
GP10/OC6#	STBY		NATIVE	OC6#	N/A
GP11/SMBALERT#	STBY		NATIVE	-SMBALERT	P/U 8.2K 3VDUAL
GP12	STBY	L	GPI	LAN_PHY_PWR_CTRL	P/U 8.2K 3VDUAL
GP13	STBY	L	GPI	GPIO13	P/U 8.2K 3VDUAL
GP14/OC7#	STBY		NATIVE	OC7#	N/A
GP15	STBY	L	GPO	GPIO15	N/A
GP16	MAIN		GPI	-SKTOCC	P/U 8.2K VCC3
GP17/TACH0	MAIN		GPI	ICH_FAN_TACH0	N/A
GP18	MAIN		NATIVE	MB_ID0	P/D 8.2K GND
GP19	MAIN		GPI	-LAN1_ISO	P/U 8.2K VCC3
GP20	MAIN		NATIVE	LED_CTL	P/U 1K VCC3
GP21	MAIN		GPI	VCC18_PCH_OV2	P/U 8.2K VCC3
GP22	MAIN	H-Z	GPI	VCORE_OV3	P/U 8.2K VCC3
GP23	MAIN		NATIVE	-LDRQ1	P/U 8.2K VCC3
GP24	STBY	L	GPO	TLS	P/U 8.2K 3VDUAL
GP25	STBY		NATIVE	-CPU_STOP	P/U 8.2K 3VDUAL
GP26	STBY		NATIVE	-AC2_DET	P/U 8.2K 3VDUAL
GP27	STBY	H	GPO	GPIO27	P/U 8.2K 3VDUAL
GP28	STBY	H	GPO	GPIO28	P/U 8.2K 3VDUAL
GP29	STBY	L	GPI	GPIO29	N/A
GP30	STBY	H-Z	GPI	S_PWR_ACK	P/U 100K 3VDUAL
GP31	STBY	H-Z	GPI	N/A(Reverse)	P/U 8.2K VCC3
GP32	MAIN	H	GPO	MB_ID1	P/D 8.2K GND
GP33	MAIN	H	GPO	LOAD-LINE	P/U 1K VCC3
GP34	MAIN	H-Z	GPI	-PCI_STOP	P/U 8.2K VCC3
GP35	MAIN	L	GPO	GPIO35	P/U 8.2K VCC3
GP36	MAIN		GPI	-LAN1_DSM	P/U 8.2K VCC3
GP37	MAIN		GPI	N/A	P/U 8.2K VCC3
GP38	MAIN	H-Z	GPI	VCORE_OV2	P/U 8.2K VCC3
GP39	MAIN	H-Z	GPI	-LAN_DSM	P/U 8.2K VCC3
GP40	STBY		NATIVE	OC1#	N/A
GP41	STBY		NATIVE	OC2#	N/A
GP42	STBY		NATIVE	OC3#	N/A
GP43	STBY		NATIVE	OC4#	N/A
GP44	STBY	L	NATIVE	N/A	P/U 8.2K 3VDUAL
GP45	STBY		NATIVE	-LPCPME	P/U 8.2K 3VDUAL
GP46	STBY	L	NATIVE	PWR_LED	P/U 8.2K 3VDUAL
GP47	STBY		NATIVE	PSI_LED	P/U 8.2K 3VDUAL
GP48	MAIN	H-Z	IN	EN_PWM	P/U 8.2K VCC3
GP49	MAIN	H-Z	IN	VCC18_OV1	P/U 8.2K VCC3
GP50	MAIN		NATIVE	-REQ1	P/U 2.2K VCC
GP51	MAIN	H	NATIVE	-GNT1	N/A
GP52	MAIN		NATIVE	-REQ2	P/U 2.2K VCC
GP53	MAIN	H	NATIVE	-GNT2	N/A
GP54	MAIN		NATIVE	-REQ3	P/U 2.2K VCC
GP55	MAIN	H	NATIVE	-GNT3	N/A
GP56	STBY		NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL
GP57	STBY	H-Z	IN	VCORE_OV1	P/U 8.2K 3VDUAL
GP58	STBY	H-Z	NATIVE	F_USB_OC	P/U 8.2K 3VDUAL
GP59	STBY		NATIVE	USB_OC0#	N/A
GP60	STBY	H-Z	NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL
GP61	STBY	L	NATIVE	-SUSTAT	N/A
GP62	STBY	L	NATIVE	SUSCLK	N/A
GP63	STBY	L	NATIVE	GPIO63	N/A
GP64	MAIN	L	NATIVE	CLKOUTFLEX0	N/A
GP65	MAIN	L	NATIVE	CLKOUTFLEX1	N/A
GP66	MAIN	L	NATIVE	CLKOUTFLEX2	N/A
GP67	MAIN	L	NATIVE	CLKOUTFLEX3	N/A
GP72	STBY	H-Z	NATIVE	VCORE_OV4	P/U 8.2K 3VDUAL
GP73	STBY		NATIVE	1_05V_OV1	P/U 8.2K 3VDUAL
GP74	STBY	H-Z	NATIVE	1_05V_OV2	P/U 8.2K 3VDUAL
GP75	STBY	H-Z	NATIVE	N/A(Reverse)	P/U 8.2K 3VDUAL

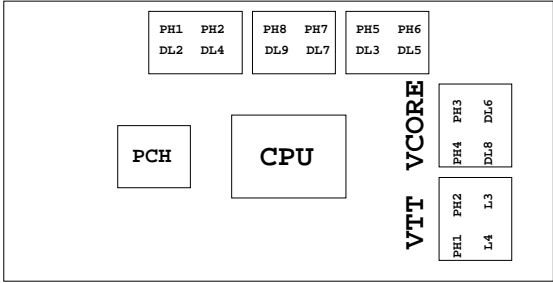
Super I/O ITE8720 GPIO Table

PIN NAME	USAG	NOTE
SVC/PECI_RQT/GP14	-PECI_REQ	
PWROK1/GP13	PWROK1/ITE_PWROK	
KRST#/GP62	-KBRST	
SO/GP50	-ICH_SPI_CS	
IRTX/GP47/CE2_N/JP7	CEB_N	
GP46/IRRX	-LAN2_DSM	
PSION#/GP42	-PSON	
PWROK2#/GP41	PECI_CTL	
PCIRST3#/GP10/VDIMM_STR_EN	-PCIE_RST	
RSMRST#CIRRX1/GP55	-RSMRST	
PME#/GP54	-LPCPME	
PD5/GP75/BUSS00	N/A	

PIN NAME	USAG	NOTE
FAN_TAC2/GP52	FANIO2	
FAN_TAC3/GP37	FANIO3	
VIDO3/FAN_TAC4/GP25/DSR2#	FANIO4	
FAN_CTL2/GP51	FANPWM2	
FAN_CTL3/GP36	FANPWM3	
VID4/GP34	BEEP-	
VID3/GP33	TURBO1	
VID2/GP32	TURBO0	
VCORE_GOOD/VID6/GP63	CPUT_LED1_C	
VID5/GP35	CPUT_LED2_C	
VID1/GP31	CPUT_LED3_C	
VID0/GP30	-LAN1_DSM	NBT_LED1_C
SLCT/GP80	CPU_LED1_C	
PE/GP81	CPU_LED2_C	
BUSY/GP82	CPU_LED3_C	
PD3/GP73/BUSS11	SB_LED1_C	
PD4/GP74/BUSS12	SB_LED2_C	
VCORE_EN/VID7/GP64	IT_GP64	SB_LED3_C
PD0/GP70	NB_LED1_C	
PD1/GP71	NB_LED2_C	
PD2/GP72/BUSS10	NB_LED3_C	
GP22/SEN	LOW_PWR_1	
VID05/GP27/SEN2	LOW_PWR_2	
PCIRST2#/GP11	-PFMRST1	
PCIRST1#/GP12	-PFMRST2	
3VSB5W#/GP40	CSI_F0	BSEL166_1
SUSCH#/GP53	CSI_F1	BSEL166_2
GP23/SI	BSEL166_3/CsisBSL	
VID00/GP20/CTS2#	CPUT_LED1_C	BSEL166_4
GP65/VDDA_EN/GB_01	MB_ID2	
PD6/GP76/BUSS01	MB_ID3	
PD7/GP77/BUSS02	MB_ID4	
AFD#/GP86/SMBC_R	W_PIN	FST_2X8
INIT#/GP85/SMBD_M	SEC_2x8	GTLREF_AD2
ACK#/GP83	DDR_LED1_C	
VID01/GP21/DCD2#	DDR_LED2_C	
STB#/GP87/SMBC_M	DDR_LED3_C	
PWRON#GP44	VCORE_OV1	
PANSWH#/GP43	PWRBTSW	
KDAT/GP61	-PWRBTSW	
KCLK/GP60	KDAT	
MDAT/GP57	KCLK	
MACL/GP56	MDAT	
GP66/VLDT_EN/GB_02	NBT_LED1_C	MCLK
SVD/PCIRSTIN#/CIRTX/GP15	PWM2_CR	
KDAT/GP61	PWM2_CR	
GP67/CPU_PG/GB_03	EN_LOADLINE	IT_GP67/-EN_PWM2
SLIN#/GP84/SMBD_R	-EN_PWM2	
PSI_L/FAN_CLT15/CIRRX2/GP16	-THERM	
VID04/GP26/SOUT2	DDR18V_PH2_EN	
VID02/FAN_TAC5/GP24/DSR2#	DDR18V_LED	
VID06/GP17/RI2#	1_1V_PH_EN	
VID07/JP6/DTR2#	JP6	
PD5/GP75/BUSS00	SB_LED3_C	



PWM各相位的擺法如下：



BIOS超電壓對應表：

線路圖名稱	BIOS選項
Vcore	CPU Vcore
CPU_VTT	CPU Termination
CPU_VAXG	CPU Graphic Core
VCC1_8_PCH	CPU PLL
VCC1_05_PCH	PCH core
3VDUAL	3VDUAL
DDR15V	DRAM voltage
DDRVTT	DRAM Terminatio
VREF_CA_AVREF_CA_B	DRAM Address Ref
VREF_DQ_AVREF_DQ_B	DRAM Data Ref

散熱模組料號：

8IBP：  
1.12SP2-01A001-Y1R/Y2R  
2.12SP2-01A001-Z1R/Z2R  
(HIBRID模組)包材階

	3 pin FAN control	4 pin FAN control	FAN speed	Controller
CPU FAN	FANPWM1	FANPWM3	FANIO1	IT8720
	ICH_FAN_PWM2	ICH_FAN_PWM0	ICH_FAN_TACH0	PCH
SYS FAN	FANPWM2	N/A	FANIO2	IT8720
	ICH_FAN_PWM1	N/A	ICH_FAN_TACH1	PCH
PWR FAN	N/A	N/A	FANIO3	IT8720
			ICH_FAN_TACH2	PCH

Gigabyte Technology			
TABLE LIST			
Size C	Document Number	Rev	
	GA-Z97X-Gaming G1 WIFI	1.0	
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