FEATURE OVERVIEW:

PCB INFORMATION:

- Board size: 2661 x 1181 mil.

Thickness: 40 ± 4 mil.
Panel: 5 pieces PCB per panel.
8-layer board.
Impedance: 45/60(Single-ended) Ohm ± 10%, 68/88(differential) Ohm ±15%.
Pin count: 204 PIN.

IC INFORMATION:

- 64MBx8,
  SAMSUNG, 10.0 x 11.5 mm,
  INFINEON, 10.0 x 16.0 mm,
  QIMONDA, 10.0 x 16.0 mm,
  ELPIDA, 9.8 x 10.8 mm,
  1.5V, 8K Refresh, FBGA, 106(78+28) Ball, 8 BANKS DDRIII SDRAM based.
- 128MBx8,
  SAMSUNG, 11.0 x 18.0 mm,
  MICRON, 9.0 x 15.5 mm,
  HYNIX, 10.0 x 14.4 mm,
  12.3 x 20.0 mm (MAX),
  1.5V, 8K Refresh, FBGA, 106(78+28) Ball, 8 BANKS DDRIII SDRAM based.

MODULE INFORMATION:

- PC3-12800 DDRIII SDRAM 204-PIN UNBUFFERED SO DIMM
- Assembled DIMM capacity: 512MB, 1024MB.
- Non-ECC DIMM organizations: 64MBx64, 128MBx64.
- For PC3-12800 system.

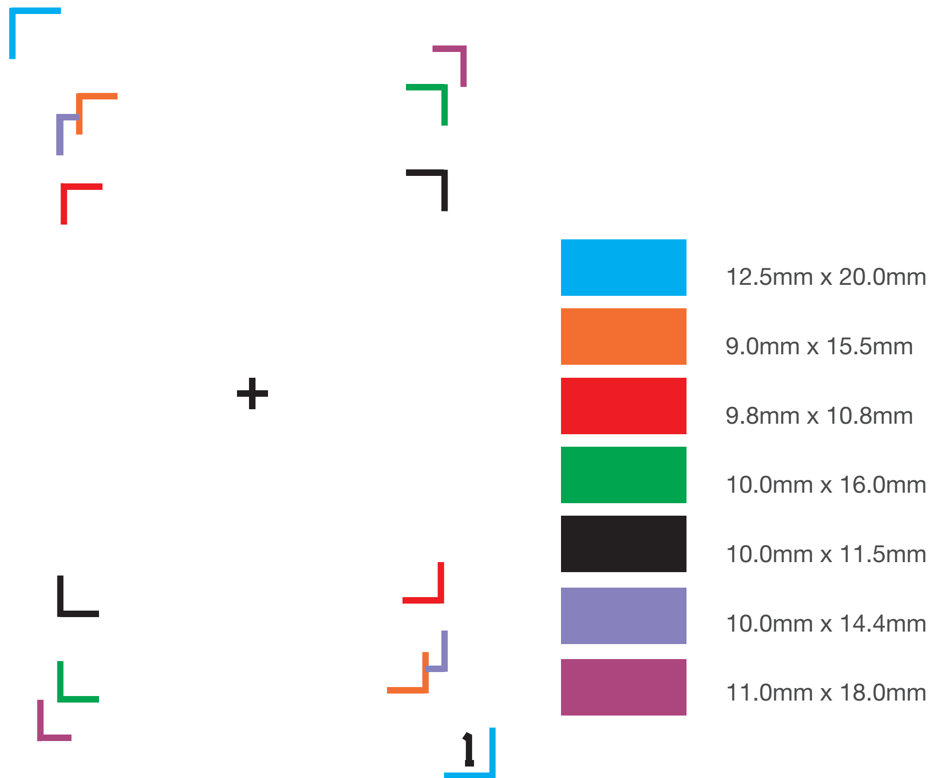
STENCIL INFORMATION:

- Top Side Stencil: B83SRCB 0.55
- Bottom Side Stencil: B83SRCB 0.55

X8 DEVICE BALL PATTERN

	1	2	3		7	8	9	
NC	NC		NC		NC		NC	NC
NC	NC		NC		NC		NC	NC
NC	VSS	VDD	NC	A	NU/ TDQS-	VSS	VDD	NC
	VSS	VSSQ	DQ0	B	DM/ TDQS-	VSSQ	VDDQ	
	VDDQ	DQ2	DQS	C	DQ1	DQ3	VSSQ	
	VSSQ	DQ6	DQS-	D	VDD	VSS	VSSQ	
	VREFDQ	VDDQ	DQ4	E	DQ7	DQ5	VDDQ	
	NC	VSS	RAS-	F	CK	VSS	NC	
	ODT	VDD	CAS-	G	CK-	VDD	CKE	
	NC	CS-	WE-	H	A10/AP	ZQ	NC	
	VSS	BA0	BA2	J	A15	VREFDA	VSS	
	VDD	A3	A0	K	A12/BC-	BA1	VDD	
	VSS	A5	A2	L	A1	A4	VSS	
	VDD	A7	A9	M	A11	A6	VDD	
NC	VSS	RESET-	A13	N	A14	A8	VSS	NC
NC	NC		NC		NC	NC		NC
NC	NC		NC		NC	NC		NC

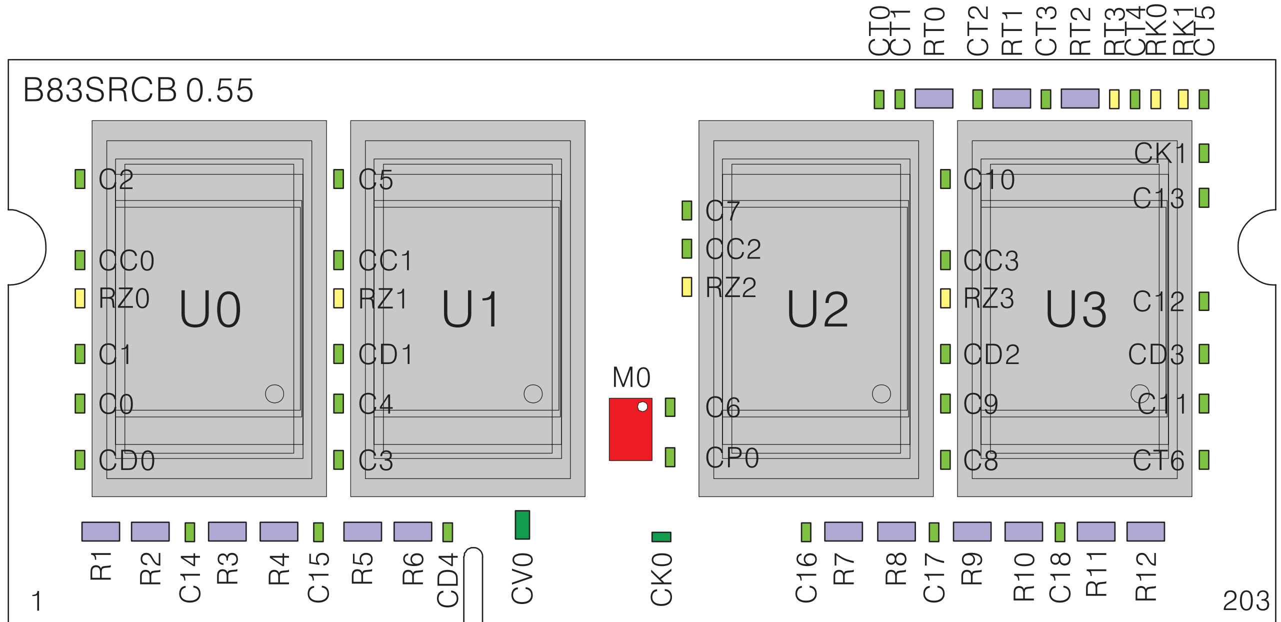
X8 DEVICE IC OUTLINE



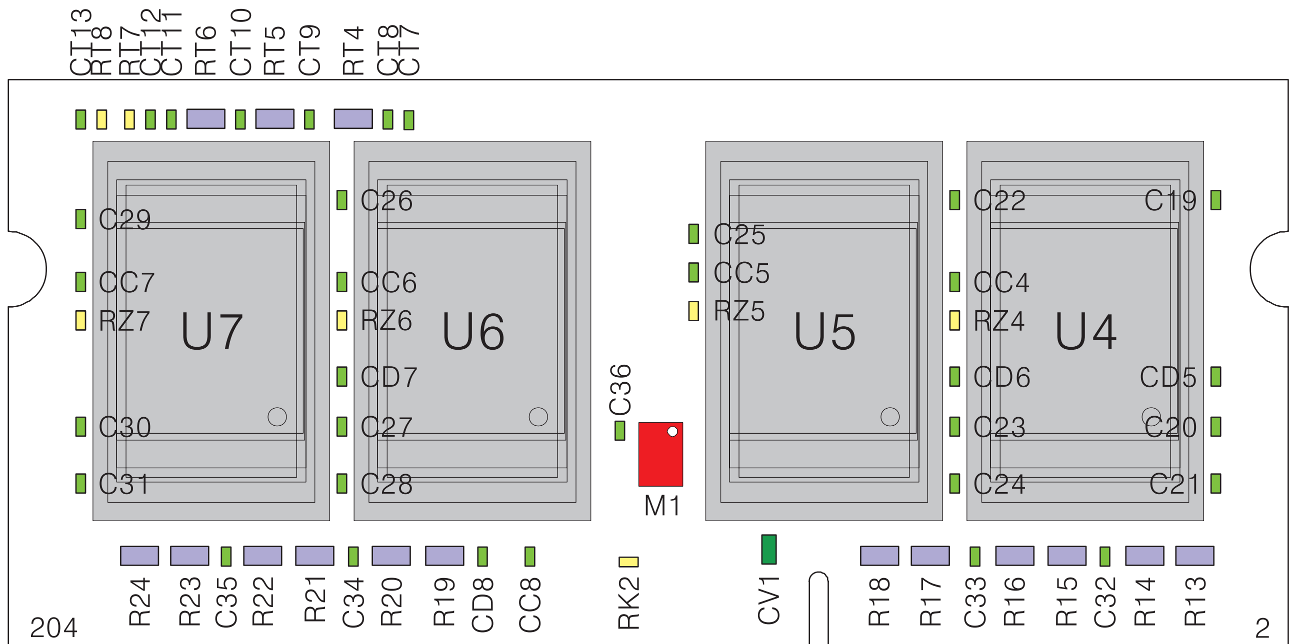
64MBx64, 512MB, by 64MBx8 DDRIII SDRAM, 1-RANK, WITHOUT ECC;
128MBx64, 1024MB, by 128MBx8 DDRIII SDRAM, 1-RANK, WITHOUT ECC;

Item#	Q'ty	Reference		Parts
		TOP	BOTTOM	
1	8	U0~U3	U4~U7	DDRIII SDRAM 64MBx8, SAMSUNG, 10.0 x 11.5 mm, INFINEON, 10.0 x 16.0 mm, QIMONDA, 10.0 x 16.0 mm, ELPIDA, 9.8 x 10.8 mm, 1.5V, 8K Refresh, FBGA, 106(78+28) Ball, 8 BANKS DDRIII SDRAM based. 128MBx8, SAMSUNG, 11.0 x 18.0 mm, MICRON, 9.0 x 15.5 mm, HYNIX, 10.0 x 14.4 mm, 12.3 x 20.0 mm (MAX), 1.5V, 8K Refresh, FBGA, 106(78+28) Ball, 8 BANKS DDRIII SDRAM based.
2	1	M0		EEPROM 1.90 x 2.90 mm TDFN-8 Package. CATALYST CAT34RC02VP2I-TE13 MICROCHIPS 24LC02B-I/MC
3	1		M1	Temperature Sensor 1.90 x 2.90 mm TDFN-8 Package. MICROCHIPS MCP9805T-BE/MC
4	1	CK0		Capacitor, 3.3pF, ± 0.25pF, NPO, 0402 size, 50V.
5	71	C0~C18, CC0~CC3, CD0~CD4, CK1, CP0, CT0~CT6	C19~C36, CC4~CC8, CD5~CD8, CT7~CT13	Capacitor, 0.1uF, +80%-20%, Y5V, 0402 size, 16V.
6	2	CV0	CV1	Capacitor, 2.2uF, +80%-20%, Y5V, 0603 size, 10V.
7	2	RK0, RK1		Resistor, 30 Ohm, ± 5%, 1/16W, 0402 size.
8	3	RT3	RT7, RT8	Resistor, 36 Ohm, ± 5%, 1/16W, 0402 size.
9	1		RK2	Resistor, 75 Ohm, ± 5%, 1/16W, 0402 size.
10	8	RZ0~RZ3	RZ4~RZ7	Resistor, 240 Ohm, ± 5%, 1/16W, 0402 size.
11	24	R1~R12	R13~R24	Resistor Array, 15 Ohm, ± 5%, 1/16W, 0402 8P4R size, (R-PACK)
12	6	RT0~RT2	RT4~RT6	Resistor Array, 36 Ohm, ± 5%, 1/16W, 0402 8P4R size, (R-PACK)
13	1			P.C.B B83SRCB 0.55, 2661 x 1181 mil, 5 PCS/PNL

TOP SIDE 1-RANK WITHOUT ECC



BOTTOM SIDE 1-RANK WITHOUT ECC



UNBUFFERED DDRIII SDRAM DIMM MODULE 512M/1024M BYTE (MODULE SIZE BY 64MBx64, 128MBx64) BY 64MBx8, 128MBx8 DDRIII SDRAM CHIPS

COMPONENTS#:

Item#	64MBx8 DDRIII SDRAM	128MBx8 DDRIII SDRAM
MODULE SIZE	512MB 64MBx64	1024MB 128MBx64
DDRIII SDRAM	U0~U7 8 piece	U0~U7 8 piece
EEPROM	M0 1 piece	M0 1 piece
Temperature Sensor	M1 1 piece	M1 1 piece
Capacitor, 3.3pF, 0402	CK0 1 piece	CK0 1 piece
Capacitor, 0.1uF, 0402	C0~C36, CC0~CC8, CD0~CD8, CK1, CP0, CT0~CT13 71 pieces	C0~C36, CC0~CC8, CD0~CD8, CK1, CP0, CT0~CT13 71 pieces
Capacitor, 2.2uF, 0603	CV0~CV1 2 pieces	CV0~CV1 2 pieces
Resistor, 30 Ohm, 0402	RK0, RK1 2 pieces	RK0, RK1 2 pieces
Resistor, 36 Ohm, 0402	RT3, RT7, RT8 3 pieces	RT3, RT7, RT8 3 pieces
Resistor, 75 Ohm, 0402	RK2 1 piece	RK2 1 piece
Resistor, 240 Ohm, 0402	RZ0~RZ7 8 pieces	RZ0~RZ7 8 pieces
Resistor, Array 15 Ohm, 0402 8P4R	R1~R24 24 pieces	R1~R24 24 pieces
Resistor, Array 36 Ohm, 0402 8P4R	RT0~RT2, RT4~RT6 6 pieces	RT0~RT2, RT4~RT6 6 pieces
PCB	1 piece	1 piece

B83SRCB 0.55 DQ MAP:

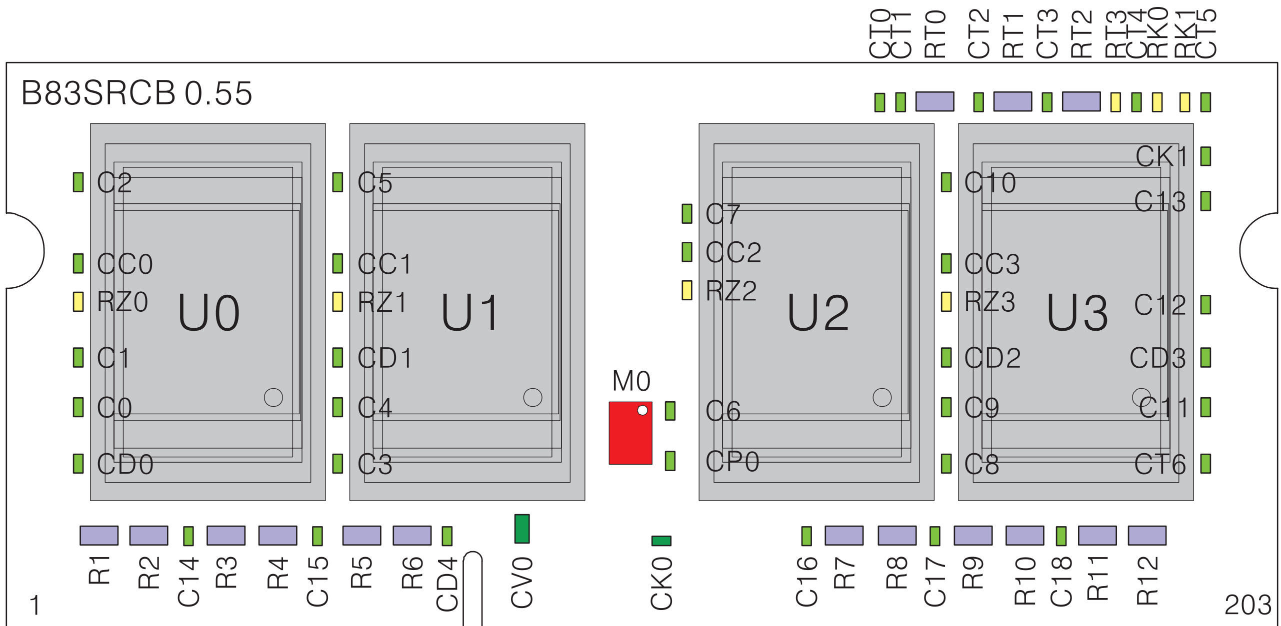
Description: DDRIII SDRAM, Single-RANK, x8-FBGA 106(78+28)Ball-based,
x64, UNBUFFERED 204-pin SO DIMM 1.0

Module Pin No.	Module DQ	damping RES.	IC No.	IC DQ		Module Pin No.	Module DQ	damping RES.	IC No.	IC DQ
5 7 15 17 4 6 16 18	0 1 2 3 4 5 6 7	R1.1-R1.8 R.2-R1.7 R2.1-R2.8 R2.2-R2.7 R13.3-R13.6 R13.4-R13.5 R14.4-R14.5 R14.3-R14.6	U0	5 1 0 6 7 3 2 4		U1	0 1 2 3 4 5 6 7	R2.3-R2.6 R2.4-R2.5 R3.3-R3.6 R3.4-R3.5 R14.2-R14.7 R14.1-R14.8 R15.2-R15.7 R15.1-R15.8	U4	6 0 1 3 4 2 7 5
39 41 51 53 40 42 50 52	16 17 18 16 20 21 22 23	R4.1-R4.8 R4.2-R4.7 R5.1-R5.8 R5.2-R5.7 R16.4-R16.5 R16.3-R16.6 R17.4-R17.5 R17.3-R17.6	U1	5 1 2 6 7 3 0 4		U3	0 1 2 3 4 5 6 7	R5.3-R5.6 R5.4-R5.5 R6.3-R6.6 R6.4-R6.5 R17.1-R17.8 R17.2-R17.7 R18.2-R18.7 R18.1-R18.8	U5	4 2 1 7 6 0 5 3
129 131 141 143 130 132 140 142	32 33 34 35 36 37 38 39	R7.1-R7.8 R7.2-R7.7 R8.1-R8.8 R8.2-R8.7 R19.4-R19.5 R19.3-R19.6 R20.4-R20.5 R20.3-R20.6	U2	5 3 0 4 1 7 2 6		U5	0 1 2 3 4 5 6 7	R8.3-R8.6 R8.4-R8.5 R9.3-R9.6 R9.4-R9.5 R20.2-R20.7 R20.1-R20.8 R21.2-R21.7 R21.1-R21.8	U6	4 6 1 7 2 0 3 5
163 165 175 177 164 166 174 176	48 49 50 51 52 53 54 55	R10.1-R10.8 R10.2-R10.7 R11.1-R11.8 R11.2-R11.7 R22.4-R22.5 R22.3-R22.6 R23.4-R23.5 R23.3-R23.6	U3	5 3 0 6 7 1 2 4		U7	0 1 2 3 4 5 6 7	R11.3-R11.6 R11.4-R11.5 R12.3-R12.6 R12.4-R12.5 R23.2-R23.7 R23.1-R23.8 R24.2-R24.7 R24.1-R24.8	U7	6 2 3 5 4 0 1 7

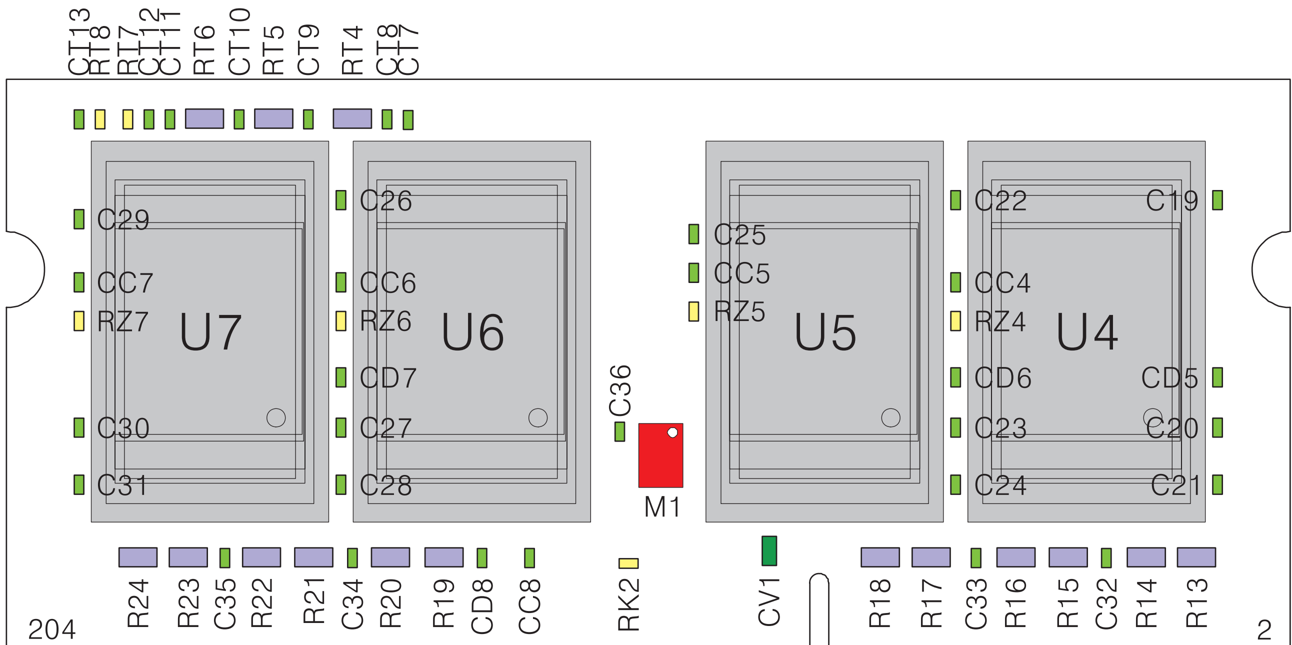
First check the SPD data and EEPROM. Then check the following components for other problem.

	Clock loading	Boot failure
1-RANK	CK0, RZ0~RZ7	SPD data, M0

TOP SIDE:



BOTTOM SIDE:



PART NUMBER DECODER