

EVB-LAN8700

LAN8700(I) MII Customer Evaluation Board

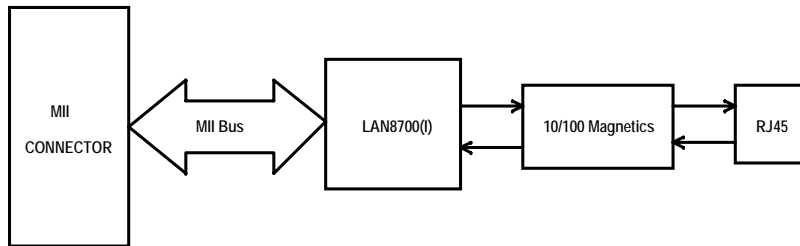
Design Details

Schematic Revision D0P1

Board: PCB-7054AZ-D
Chip: LAN8700(I)
Board Form Factor:
Assembly:

Circuit Diagrams utilizing SMSC Products Are Included As A Means Of Illustrating Typical Semiconductor Applications: Consequently Complete Information Sufficient For Construction Purposes Is Not Necessarily Given. The Information Has Been Carefully Checked And Is Believed To Be Entirely Reliable. However, No Responsibility Is Assumed For Inaccuracies. Furthermore, Such Information Does Not Convey To The Purchaser Of The Semiconductor Devices Described Any License Under The Patent Rights Of SMSC Or Others. SMSC Reserves The Right To Make Changes At Any Time In Order To Improve Design And Supply The Best Product Possible.

EVB BLOCK DIAGRAM



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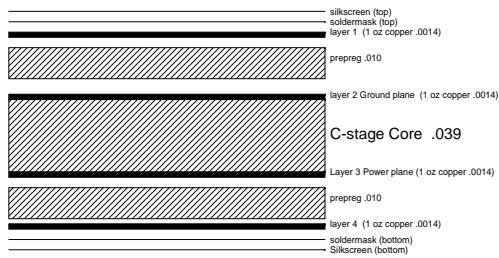
Revisions

Rev D0P0 12/6/05 Schematics revision D0 Public 0
Rev D0P1 5/11/06 Schematics revision D0 Public 1: Updated strapping table for configuring address resistors to set physical address to 0.



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stackup

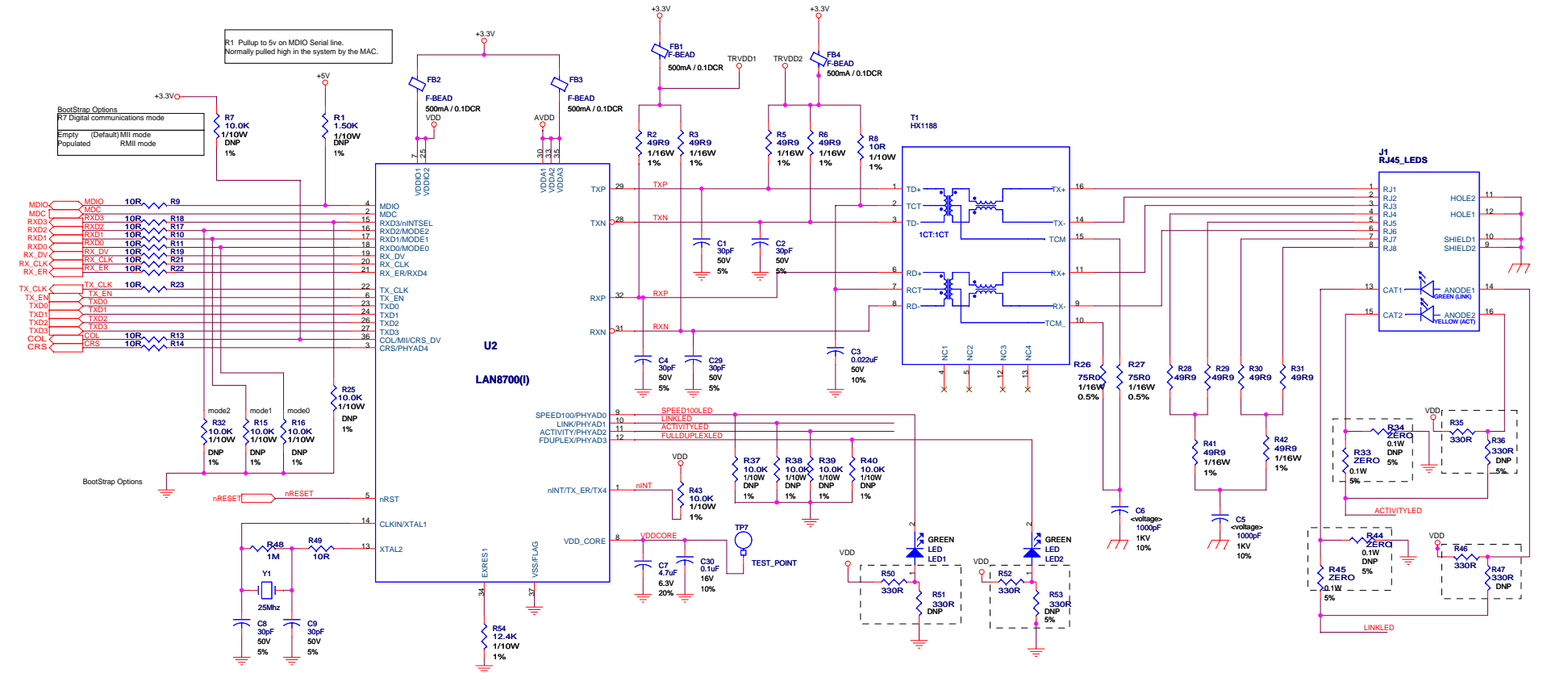


NOTES:

- BOARD FABRICATION AND QUALITY ACCEPTANCE PER IPC-6012 CLASS 2. BOARD MUST MEET OR EXCEED QUALIFICATION TESTING AND QUALITY CONFORMANCE TESTING INSPECTION SPECIFIED WITHIN.
- MATERIAL: NEMA GRADE STANDARD FR4 LAMINATED SHEET; HTE 1 OZ COPPER CLAD, TYPE GF/GF3 WOVEN GLASS BASE; FLAME RESISTANCE MEETING UL94V-0 OR BETTER. MATERIAL IN ACCORDANCE WITH IPC-4101.
- BOARD FABRICATION SHALL APPLY DATE CODE, FABRICATOR'S CAGE CODE, I.D. AND UL MARKING TO SECONDARY SIDE WHERE INDICATED. MARKING PREFERABLY COPPER ETCHED, EPOXY INK ACCEPTABLE.
- SOLDERMASK USING TYPE B PHOTO IMAGEABLE LPI FILM 0.0015 THICK. APPLY TO BOTH SIDES IN ACCORDANCE WITH IPC-SM-940 (TYPE B CLASS 3). USE APPROPRIATE SOLDER MASK ARTWORK FOR EACH SIDE. PUNCTURING OF PUNCTURING OF TENDED HOLES IS PERMISSIBLE. SOLDERMASK MISREGISTRATION SHALL NOT EXCEED .004 INCH. SOLDERMASK OVERLAP PERMITTED ON CIRCULAR LANDS ONLY AND SHALL NOT EXCEED 0.001 INCH. NO OVERLAP PERMITTED ON RECTANGULAR LANDS.
- FINISH: SOLDER MASK OVER BARE COPPER (SMOBC), HOT AIR LEVEL DEPOSIT ABOUT TRUE POSITION.
- DRILL BOARDS USING DRILL DATA, DRILL PATTERN AND HOLE SCHEDULE. HOLE LOCATION MAY VARY WITHIN .004 IN. MAX.
- MINIMUM ANNULAR RINGS:
.002 IN MINIMUM - EXTERNAL LAYERS.
.001 IN MINIMUM - INTERNAL LAYERS.
- ALL EXPOSED SURFACE LANDS AND LINES TO BE SOLDER COATED.
- ALL HOLES ARE PLATED THROUGH UNLESS NOTED OTHERWISE. MINIMUM COPPER PLATING IN PLATED HOLES TO BE .001 IN. COPPER PLATING IN TENDED HOLES SHALL NOT PLUG HOLES WITHOUT PERMISSION FROM SMSC.
- COMPONENT MARKINGS: SILKSCREEN BOTH SIDES USING NON-CONDUCTIVE WHITE EPOXY INK. LANDS AND EXPOSED PLATED AREAS TO BE FREE OF INK.
- DIMENSIONS ARE AFTER ETCHING AND PLATING AND ARE BASIC UNLESS OTHERWISE INDICATED.
- BARE BOARD ELECTRICAL TEST: BARE BOARDS SHALL BE ELECTRICALLY TESTED USING CAD GENERATED NET LIST DATA. THIS INFORMATION TO BE SUPPLIED IN IPC-D-350 FORMAT. ELECTRICAL TESTING SHALL FOLLOW THE GUIDELINES ESTABLISHED BY IPC-ET-652, GUIDELINES AND REQUIREMENTS FOR ELECTRICAL TESTING OF PRINTED WIRING BOARDS.



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R1 Pullup to 5v on MDIO Serial line. Normally pulled high in the system by the MAC.

Boot Strap Options
 R7 Digital communications mode
 Empty (Default) MII mode
 Populated RMI mode

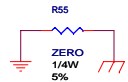
Boot Strap Options
 mode2 mode1 mode0
 R32 10.0K DNP 1%
 R15 10.0K DNP 1%
 R16 10.0K DNP 1%

Mode 2	Mode 1	Mode 0	
R32	R15	R16	
Empty	Empty	Empty	111 All Capable (Default)
Empty	Populated	Empty	110 Power Down Mode
Empty	Populated	Populated	101 Repeater Mode
Populated	Empty	Populated	100 100Base-TX Half duplex Advertised
Populated	Populated	Empty	011 100Base-TX Full Duplex Auto Negotiate
Populated	Empty	Populated	010 100Base-TX Half Duplex Auto Negotiate
Populated	Populated	Empty	001 10Base-T Full Duplex Auto Negotiate
Populated	Populated	Populated	000 10Base-T Half Duplex Auto Negotiate

R25 pin 1 mode
 Empty (Default) nINT
 Populated TXER/TXD4


PHY address	LED Output	Resistor configuration
LED1	SB PHYAD0 = 1	Default Active Low LED1 orient up. Populate R50 Depopulate R51, R37
LED2	SB PHYAD1 = 1	Default Active High LED1 orient down. Populate R51, R37 Depopulate R50
LED3	PHYAD1 = 1	Default Active Low Populate R45, R46 Depopulate R44, R47, R38
LED4	PHYAD2 = 1	Default Active High Populate R44, R47, R38 Depopulate R45, R46
LED5	PHYAD2 = 0	Default Active Low Populate R33, R36 Depopulate R34, R36, R39
LED6	PHYAD2 = 0	Default Active High Populate R34, R36, R39 Depopulate R33, R35
LED7	MSB PHYAD3 = 1	Default Active Low LED4 orient up. Populate R52 Depopulate R53, R40
LED8	MSB PHYAD3 = 1	Default Active High LED4 orient down. Populate R53, R40 Depopulate R52

The rev D revision of the EVB does not have a CRS/PHYAD4 pull-down strapping resistor. To set PHYAD4 to 0, please add an external 10K ohm resistor to R14 (pin closest to the PHY) strapping to ground.



* Note: The (I) designates industrial temperature LAN8700I PHY (-40c to +85c). For industrial temperature applications, SMSC recommends using the LAN8700I with industrial temperature magnetics. Please refer to APP note 8.13 "Magnetics Selection Guide".

--- configuratin resistor compliments

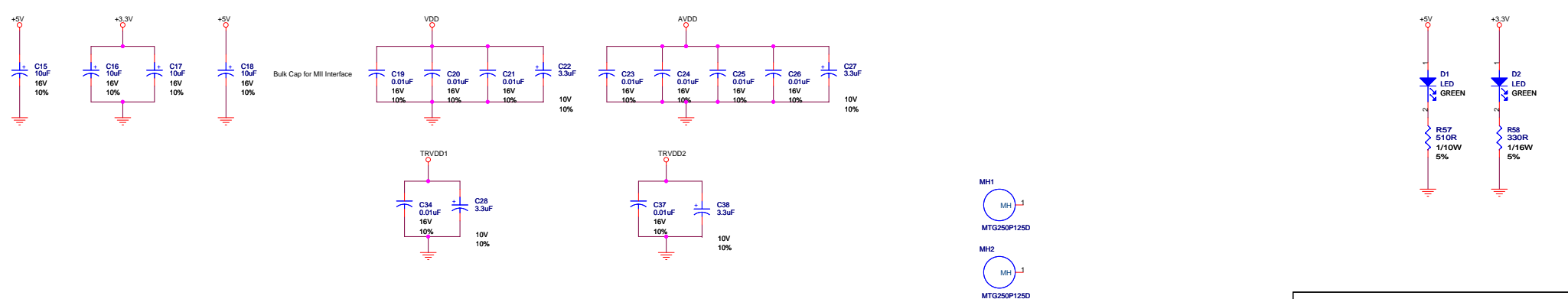
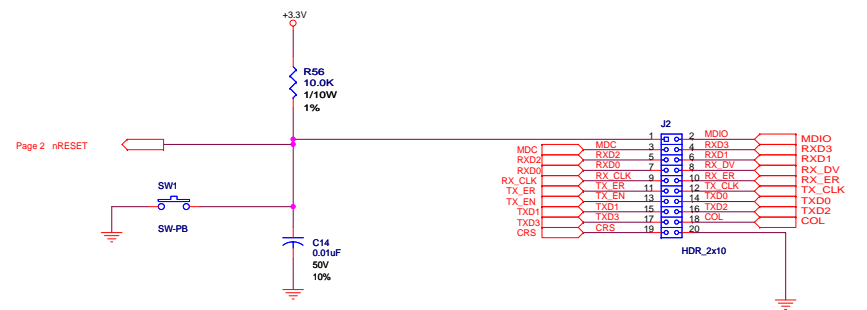
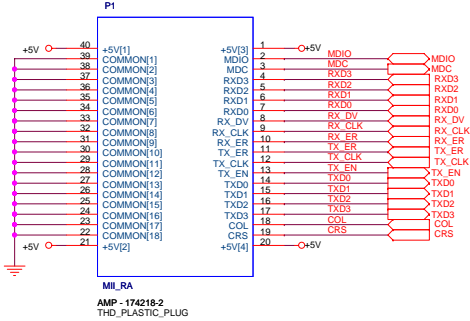
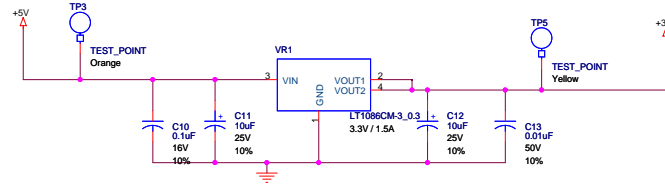


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+5V MII to +3.3V Regulator

1.5 A Max Current from Reg



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SUCCESS BY DESIGN

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