1 SCB3.4.1 changes

The SCB3.4.1 produced by OPNT has the following changes (compared to version 3.4 in the OHWR repository):

1.1 New components:

- J6: u.FL connector to low jitter daughterboard VCO output connection
- J5: Jumper to select on-board VCO or output from VCO on low-jitter daughterboard (clock source)

1.2 Changed components:

- Q1, Q2, Q3: SI2302 (N-channel MOSFET; original component obsolete)
- IC25: AT45DB641E-MWHN-T (SPI NOR flash; original component obsolete)
- IC30: MT29F8G16ABBCAH4:C (parallel NAND flash; original component obsolete)
- D1, D2, D3, D4: CD0603-S01575 (Diode; original component obsolete)
- IC7: KV7050B25.0000C3GD00 (25MHz oscillator; original component obsolete)
- R241: 14k Ohm (resistor; raise 1.8V power from 1.75 to 1.82V so it isn't marginally low)
- J3: Samtec QTS expansion connector always placed to allow mounting low jitter daughterboard

1.3 Changes

- The RJ45 ethernet connector (CN1) should be soldered onto the board instead of relying on the press-fit pins to hold the connector in place.
- The heatsink & clip are made part of the bill-of-materials for the SCB3.4.1 board (instead of the WR switch casing).

1.4 Known issues

- When the clock source select jumper (J5) isn't placed the AD9516 clock synthesizer may produce a clock signal anyway. This can not be detected from software except that de phase noise performance is bad and slave devices may not lock properly.
- The MT29F8G16ABBCAH4:C (IC30) is a 1Gbyte NAND flash. This NAND flash is not supported by the standard software. Extra patches for Barebox and the Linux kernel are required to make the NAND flash work (these are made available by OPNT).
- The SCB3.4.1 (and earlier versions) may not pass radiated emission testing for class-B equipment / NEBS compliance and may not pass surge, EFT and ESD testing (required when allowing cables longer than 3 meters) due to lack of input/output protection.

2 Carrier board (backplane) V3.3.1 changes

The 3.3.1 carrier board (backplane) produced by OPNT has the following changes (compared to 3.3 in the OHWR repository):

- The fans are always on and no longer software controlled. Having the fans always on improves reliability because even in case of a software failure there is still cooling.
- Heavy duty SFP cages

2.1 Changed components:

- R4,R60,R1,R2: removed (no longer used for fan control)
- Q1, Q2: removed (no longer used for fan control)
- Q3, Q4: replace with DMN100-7-F (N channel instead of P channel so the internal diode always conducts and thus the fan is always on)
- Heavy duty SFP cages: Molex 74754-0101
- J1, J2: Samtec QTS-048-02-L-D-DP (correct height version of the Samtec QTS connector)

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