

## Change Note

<b>Distribution</b>	Richard Davies, Peter Goldsmith, Chris Taylor, Celestica		
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<b>Drawing number</b>	C7491-DL-001	<b>Old version</b>	a <b>New version</b> b
<b>CR number</b>	<i>(Reference of associated Change Request, if any)</i>		
<b>Category</b>	Major <input checked="" type="checkbox"/> Minor <input type="checkbox"/>	<i>(Category is major if form, fit or function is affected)</i>	
<b>PM approval</b>	<i>(If using DocMan, you may sign electronically)</i>		

### Description of changes

This CN describes in outline the changes to be made to a Monaco DoD issue a transceiver board to make the Monaco DoD issue b transceiver.

## 1 BOM Changes

See C7491-CECP-001, 002 and 003 for details of part numbers, changes to

- MicroChip to Maxim part due to obsolescence  
Change U64 from Microchip TMC680EOATR to Maxim MAX680ESA
- AMD to Spansion memory part due to obsolescence  
Change U41 from AM41DL6408H701 to Spansion S71PL064J08BAW0B
- Resistor R231 value change because of new Spansion memory part (see section 4 below)
- CN7 not fitted

In addition the following parts should be changed to “Not Fitted”

- ITT KMR221G, PUSH BUTTON SWITCH SM SPST NO, SW4 (Reset switch)
- TOBY TP-108, SM TESTPOINT LOOP, TP36,TP63
- MOLEX 55560-0507, 50W SM DUAL ROW 0.5mm PITCH, CN5 (Test connector)

## 2 Rakon Footprint

The Rakon TX1857 IVT110E 16.8 MHz is being made obsolete. We will change over to use the Rakon TX4100 IVT7510BE which is already used in Talladega. This part has a smaller footprint.

## 3 Spansion Footprint

Change the memory device to Spansion S71PL064JA0BAW0B, and use the correct 56-pad footprint.

## 4 Main Digital Supply Regulator

The Spansion memory part has a lower maximum voltage rating than the original AMD part. Issue a uses a different value for R231, but the regulator TPS62020 is insufficiently tightly toleranced to meet the needs of the FPGA (3.0V min) and the memory (3.1V max). For rev b we will use TPS62300 which has a tighter tolerance.

- Change PS2 from TPS62020 to TPS62300DRCR
- Delete C292 and C293
- Change R231 to 88k7, 0.1%
- Change L80 from 4u7 to 1uH, Coilcraft Lpo3010-102NLB
- Change C291 from 22uF to 4u7 (copy of C296)
- Change the +3V15 power supply net name to +3V05
- Change the +3V15\_A power supply net name to +3V05\_A

## 5 Version resistors

See C7032-M-032 v0.10.xls

- Change R368 from 2k2 to 33k
- Change R415 from 4k3 to 3k3
- Change R174 from 3k9 to 47k

## 6 Boost converter slow-start

Change R337 from 470 kOhm to 511 kOhm (same part as R332).

## 7 PA Power track on Layer 5

On H1b we had two tracks taking power to the PA one of layer 5 and one of layer 3. In DoD rev a the track was missing from layer 5 this should be reinstated.

## 8 Panel Fiducials

There is a panel drawing for 1 board on layer 55 but it is missing fiducials which were present in H1b, re-add.

## 9 Bare PCB Quality

The rev a PCBs were manufactured by Price in the USA.

The surface plating above the blind vias is very poor. A mere brush with a scalpel blade removes the plating completely. It looks as if the resin in the via has out gassed and caused the copper above the via to bubble, just like bubble wrap!

The diameter of the through hole vias (layers 1-12). The diameter looks substantially smaller than what was used on H1b.

The diameter of the mounting holes looks substantially smaller than what was used on H1b although the drilling drawing states the same diameter.

## 10 Filtering of buzzer connector

Connector is shown on schematic as Z3 on sheet 11.

Delete R66 and C469. Connect Z3 pin 3 to 0VA.

Change the connection of Z3 pin 4 from 0V to 0VA

Add 600 Ohm inductor (Murata BLM15HG601SN1) between BUZZ\_OUT\_P and C439

Add 600 Ohm inductor (Murata BLM15HG601SN1) between BUZZ\_OUT\_N and C437

Sheet 13

Connect U29 pin A7 to 0V via a 47 kOhm resistor.

## 11 LNA protection switch dc feed

Change R428 from 100 Ohms to 10 Ohms

## 12 Grounding

Use more through ground vias around the edge of the board.

## 13 LNA bias

Change R437 from 2.2 kOhm to 1 kOhm

## 14 Antenna feed track

There are three vias on the digital side of the board that are close to the via carrying the antenna feed from the low-pass filter to the buried track on layer 4. Move these vias further away from the antenna feed via.

There is a 0VA screening patch set into layer 7 under this via. Increase the size of this patch under the above-mentioned via, and bring the ground connection via closer.

