# SDIS1_HW_ChangeDocument

## SDIS1 HW Change Document

Product: SDIS1

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Approver: CTC Advanced

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# Document History

| Date | Version | Editor | Description | Changed pages / Chapters |
|---|---|---|---|---|
| 12.07.2016 | 0.1 | V.Kill-Tollnek | Document created | Initial draft |
| 21.07.2016 | 1.0 | V.Kill-Tollnek | Document reviewed by Cetecom and approved | Approved |
| 27.10.2016 | 2.0 | Schuster Emil | Document updated with RGB LED change from Osram to Everlight | Approved |
| 08.11.2017 | 2.1 | Tobias Cremer | Re-work for single HWCD covering all HWIDs; Added HWID46 | Changed Number of Ch 2 to Ch 1.2; Ch2.1 to Ch1.2<br>Added Chapter 2, HW46 |
| 09.11.2017 | 2.2 | Tobias Cremer | Changed Title and ID of document to be generic; Added Table of Contents | |
| 22.11.2017 | 2.3 | Tobias Cremer | Adding Chapter 1, renaming the following chapters consequently | Chapter 1 |
| 07.12.2017 | 2.4 | Tobias Cremer | Update of chapter 1 according to review of Meik Widmer/eso HW | Chapter 1 |

# Table of Contents

# 1 Introduction of HW42

This chapter describes the changes between initial HW C101 used for certification testing, and the SOP HW 42. It also concludes the certification relevant tests which are to be performed with this new HW version before product certification can be issued.

## 1.1 Change Details for HW42

### 1.1.1 Description

| # | Affected Area | Change description | Expert opinion | Cetecom review |
|---|---|---|---|---|
| 1 | Antenna tuning | The tuning was adapted to catch de-tuning caused by mechanical changes | No certification relevance | |
| 2 | Voltage undershoot correction | Increase value of capacitors to avoid damage of processor | No certification relevance | |
| 3 | Changes to VCM EMI-Shield | Added holes to avoid bubbles under foil after gluing | No certification relevance | |
| 4 | GPS Antenna flex design change | Cut-outs on flex for reliable gluing and performance | No certification relevance | |
| 5 | Test points for RGB LED | Added test points on PCB | No certification relevance | |
| 6 | Change in PMU Shielding geometry | Changed depth of cut-outs on shiedling flanks | No certification relevance | |
| 7 | System Crash Prevention | Added components to avoid that system crashes under certain conditions | No certification relevance | |
| 8 | Termination of RX-Line | Rx signal needs to be terminated to avoid false input signals. | No certification relevance | |
| 9 | EMC correction for radiated emissions at 750kHz | Added components to improve radiated emissions at 750kHz | No certification relevance | |
| 10 | Power-On-Key: HW de-bouncing | Improved user-experience by faster reaction of system on power-on-key event PMU_ONKEY_AP* | No certification relevance | |
| 11 | Stabilization of USB-Charging current | Corrects a potential malfunction in USB charging mode, to allow for reliable charging with 500mA | No certification relevance | |
| 12 | Remove ONE LCD Grounding Foam next to GPS side | Removal of one "LCD Grounding Foam", next to GPS Antenna. | No certification relevance | |
| 13 | Voltage undershoot correction for signal "CON_TEST_IN_SPEAKER" | Implementation of one additional capacitors on engine PWB. | No certification relevance | |
| 14 | PMIC HW-Shutdown for VSYS-Cut | In case of unexpected system-power-cut to PMIC, the component must be shutdown via HW trigger. | No certification relevance | |
| 15 | USB-Mux: Reassignment of power supply | Re-assignment of power supply for USB-Mux (I5000) | No certification relevance | |

| | | | | |
|---|---|---|---|---|
| 16 | Forced shut down for WiLink8 | Wilink8 needs to be forced to shut-down (WL_EN and BT_EN pulled low by HW-Circuitry), in case of unexpected power-cut. | No certification relevance | |
| 17 | UART4 option on Syscon for PV | Added additiuonal components | No certification relevance | |
| 18 | PMIC deadlock prevention | Power sequence for LDO6 input needs to be modified, in order to prevent PMIC deadlock under rare condition. | No certification relevance | |
| 19 | EMI correction for emission at 156MHz, radiated by harness | Added a 2n2 50V 0603 capacitor to the V+ Supply | No certification relevance | |
| 20 | VCM Power sequence correction | Added components to correct power sequence | No certification relevance | |
| 21 | Correction for conducted emissions at 640kHz | low pass filter added for conducted emissions | No certification relevance | |
| 22 | Re-Configuration of Temperature Sensor | Added capacitor to DHS_WAKE*. | No certification relevance | |

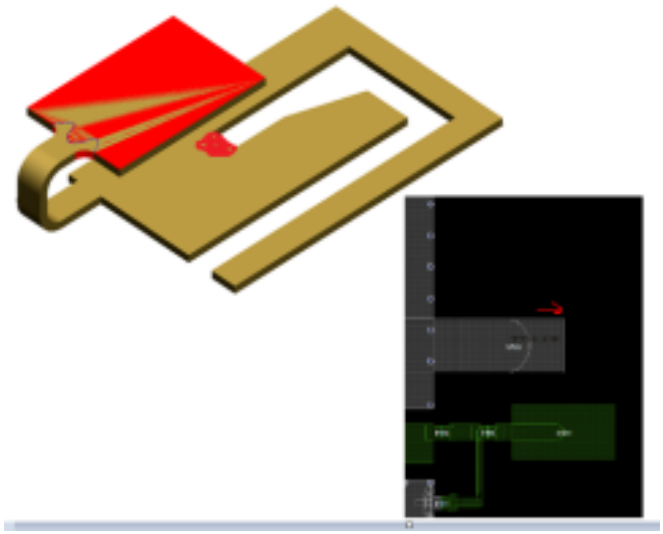
### 1.1.2 Details

#### 1.1.2.1 Adaption of BT and WLAN antenna tunings

Due to mechanical changes, the antenna was de-tuned. The tuning was adapted accordingly.

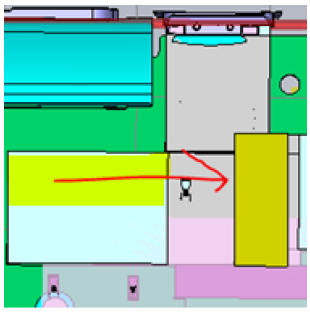
##### 1.1.2.1.1 WiFi antenna 5GHz

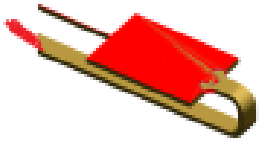
Pattern tuning + move C-Clip on PCB



#### 1.1.2.1.2 BT antenna

Pattern tuning + move grounding on audio shielding





### 1.1.2.2 Voltage undershoot correction for Volume-Keys

**Description:** Change to Engine PCB to avoid damage of processor

**Changes:** Increase value of capacitors C1170 and C1171 from 0u1 to 0u22 (1100254 Capacitor 0402 0u22 +/-10 % 16Vdc Murata GRM155R71C224KA12D)

**Reason:** Signal undershoot at falling edges of VOL_UP* and VOL_DOWN* exceeding absolute maximum ratings of -500mV according to NVIDIA datasheet.

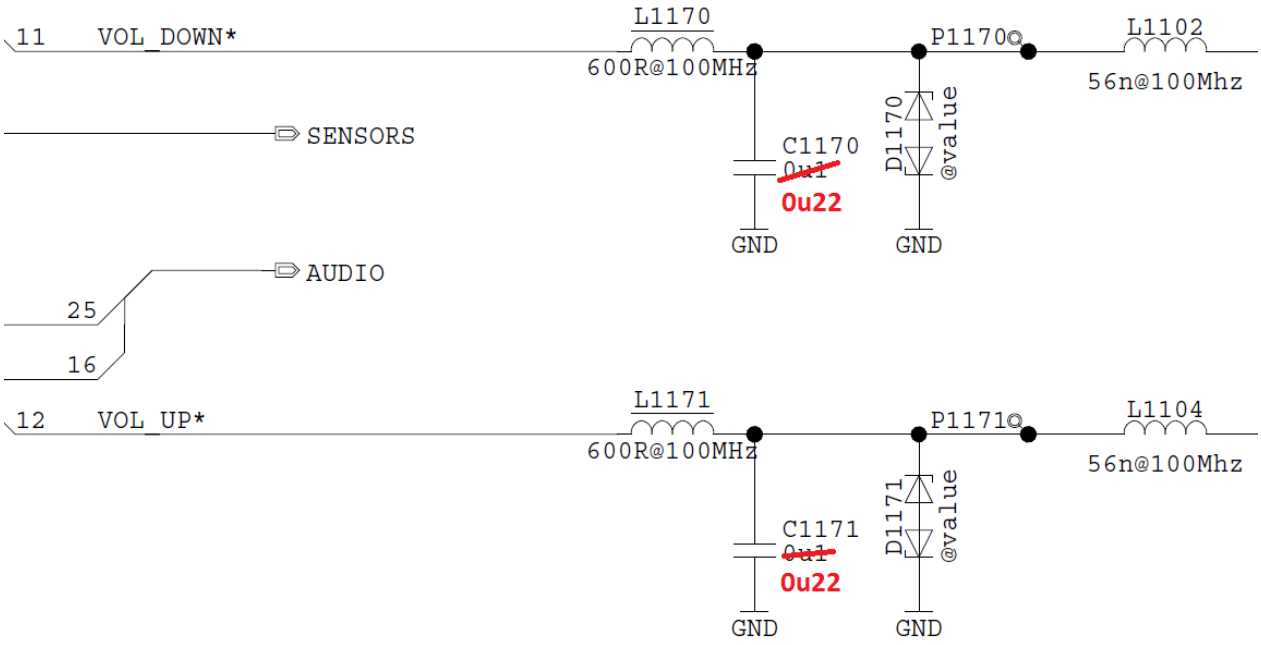



*Figure 1 Schematic drawing of change for voltage undershoot correction*

### 1.1.2.3 Changes to VCM EMI-Shield

Added holes to copper foil to avoid air trapped in under foil in gluing process.

Copper foil is still attached to entire metal surface of processor with electrically conductive glue, thus holes do not affect EMI performance.

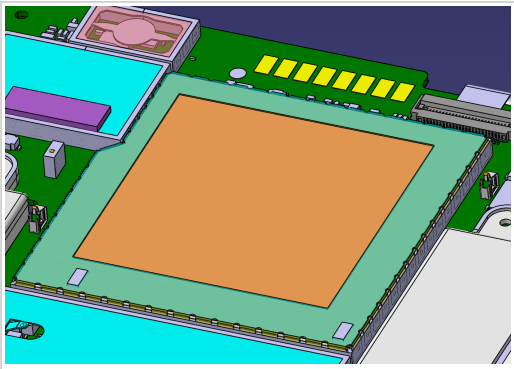


Figure 2 Copper foil before change

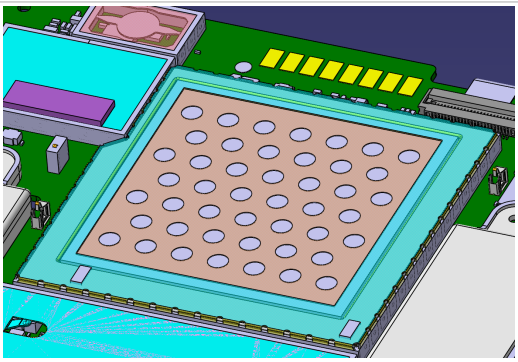
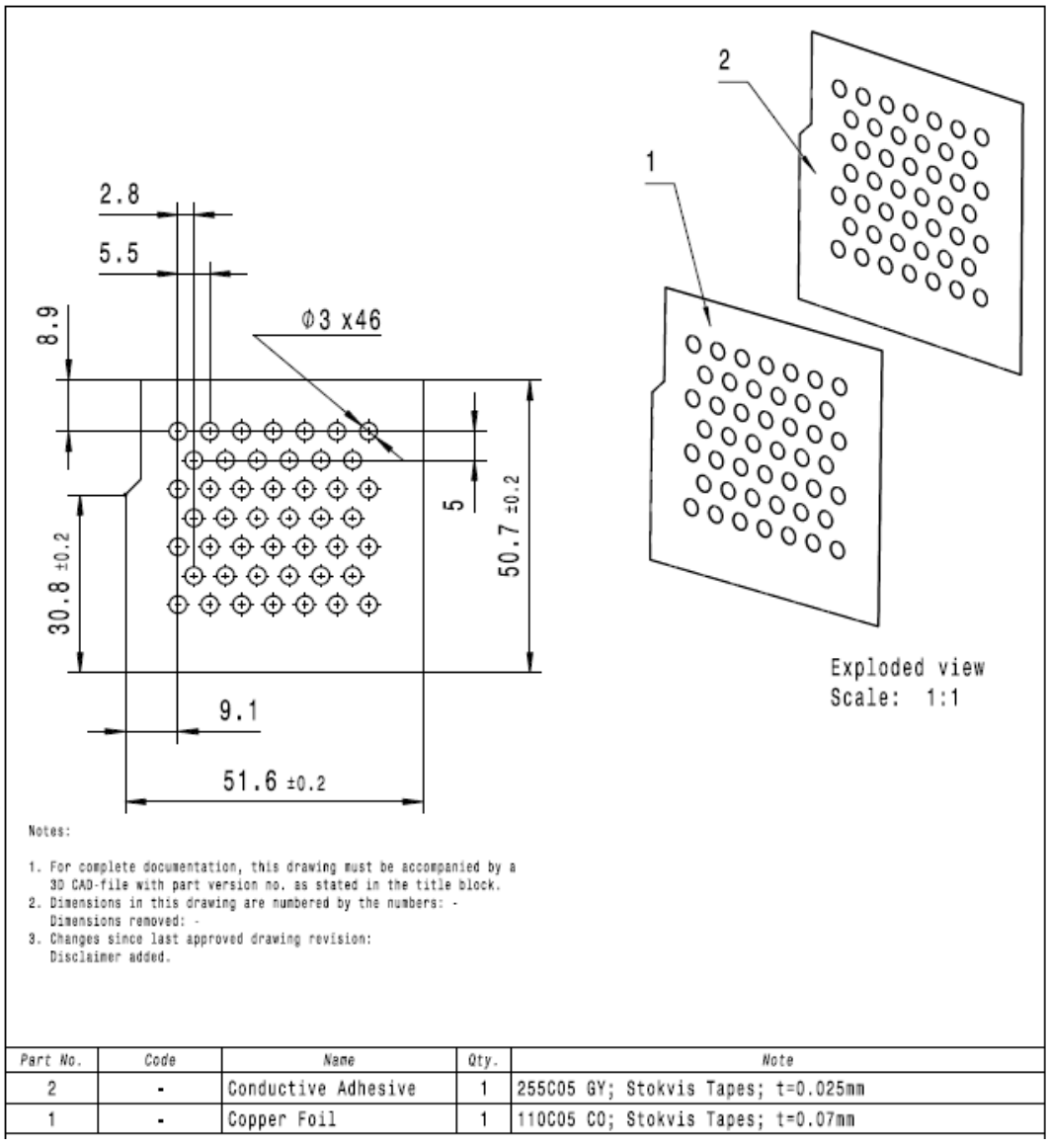


Figure 3 Copper foil after change




| Part No. | Code | Name | Qty. | Note |
|---|---|---|---|---|
| 2 | - | Conductive Adhesive | 1 | 255C05 GY; Stokvis Tapes; t=0.025mm |
| 1 | - | Copper Foil | 1 | 110C05 CO; Stokvis Tapes; t=0.07mm |

F

Figure 4 Drawing of change

### 1.1.2.4 GPS Antenna flex design change

Radius of GPS antenna flex is too tight, added cutting lines to improve reliability and keep performance.

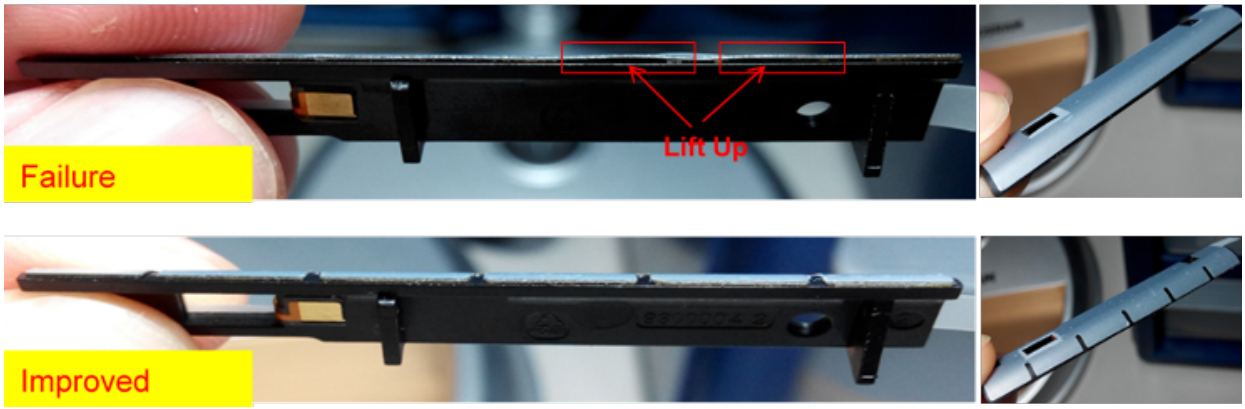



*Figure 5 Image of antenna flex change, before and after*

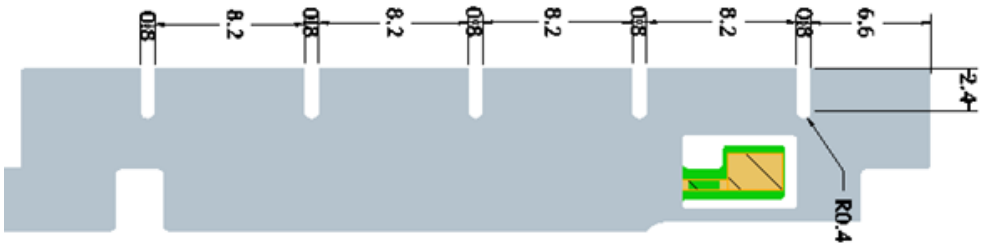



*Figure 6 Drawing of GPS antenna flex change*

### 1.1.2.5 Test points for RGB LED

For production testing, test points on the PCB were introduced.

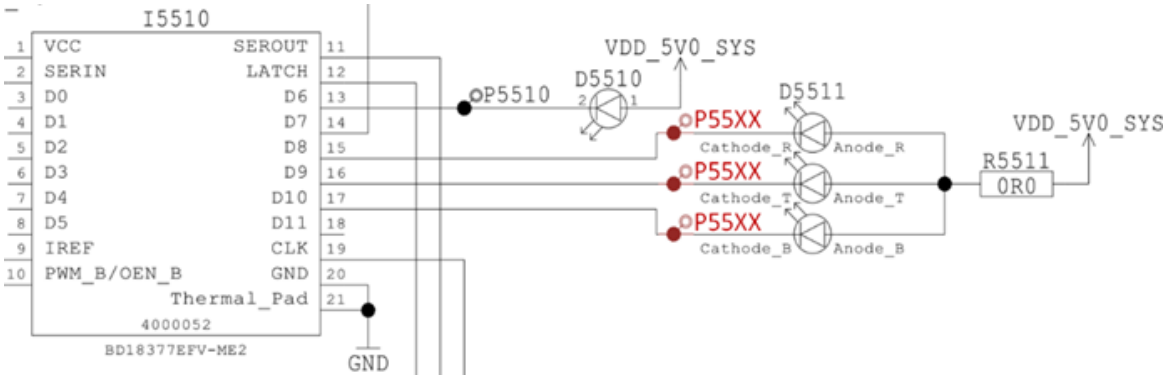



*Figure 7 Schematics of RGB LED test points*

### 1.1.2.6 Change in PMU Shielding geometry

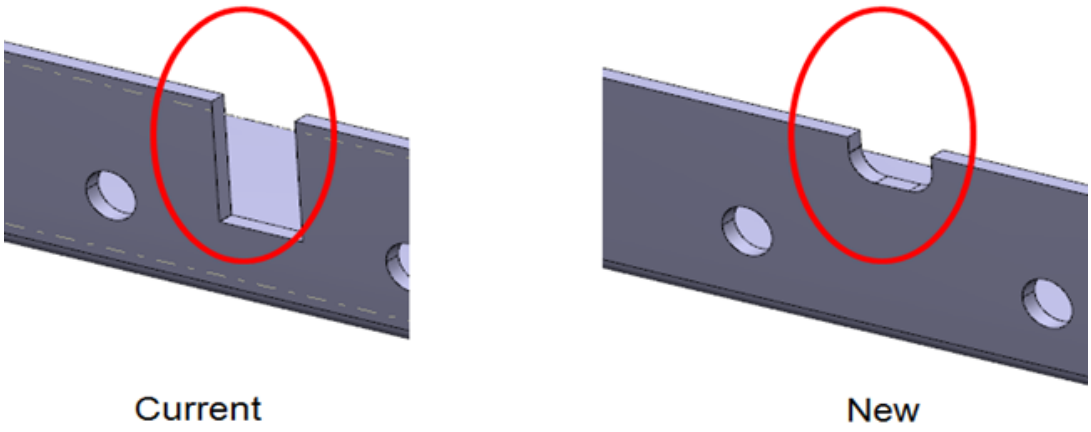



*Figure 8 Drawing of change of geometry of PMU Shieldings*

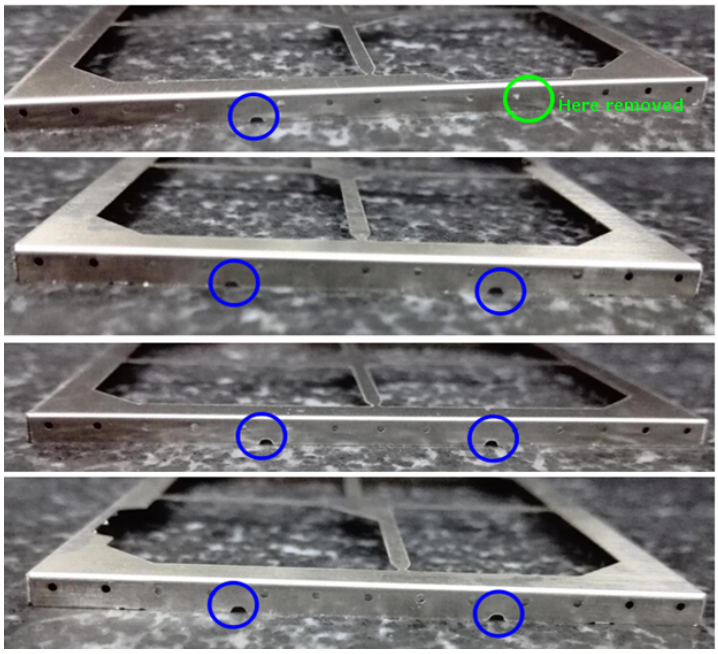



*Figure 9 Pictures of change in PMU shielding geometry*

### 1.1.2.7 System-Crash-Prevention

Added Schottky-diode and leakage compensation to avoid that system crashes under certain conditions.

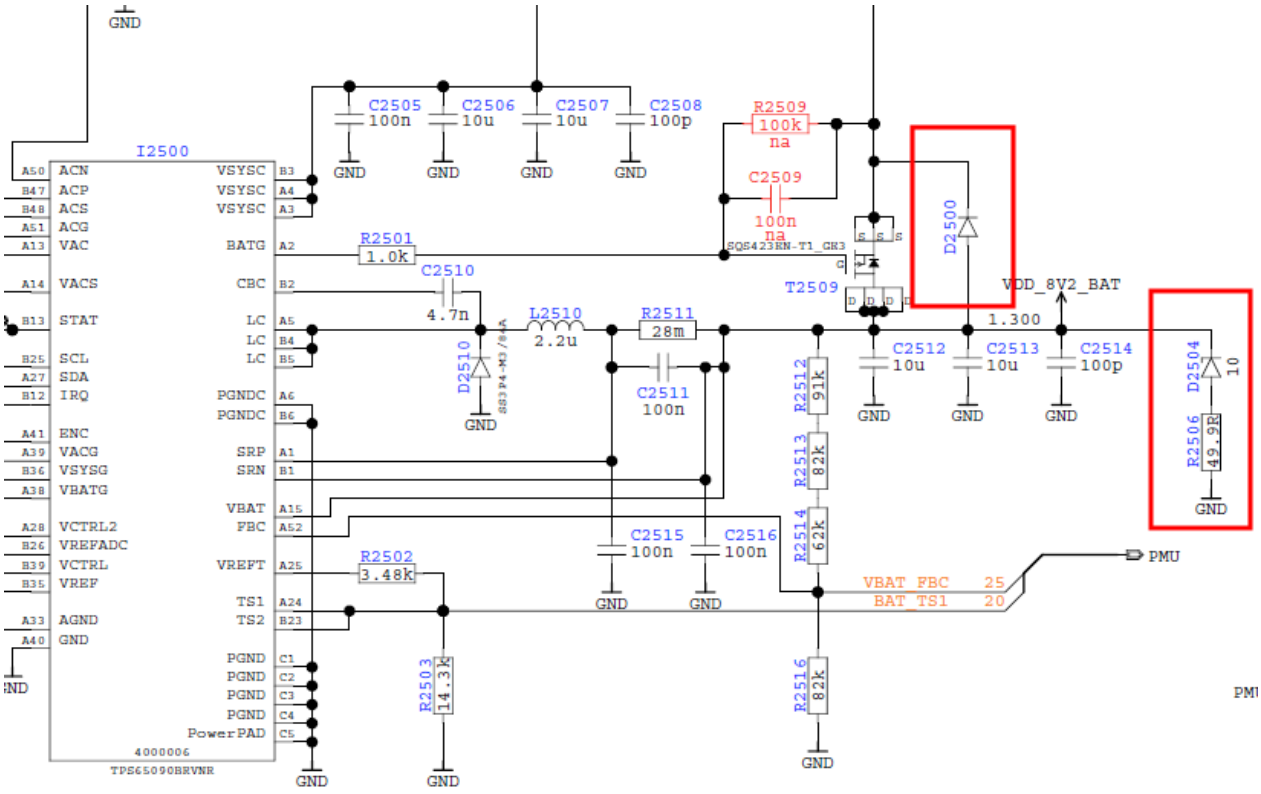



*Figure 10 Components added for system crash prevention*

### 1.1.2.8 Termination of RX-Line

Rx (signal to VCM) line of internal debug connector is currently floating and needs to be terminated to avoid false input signals.

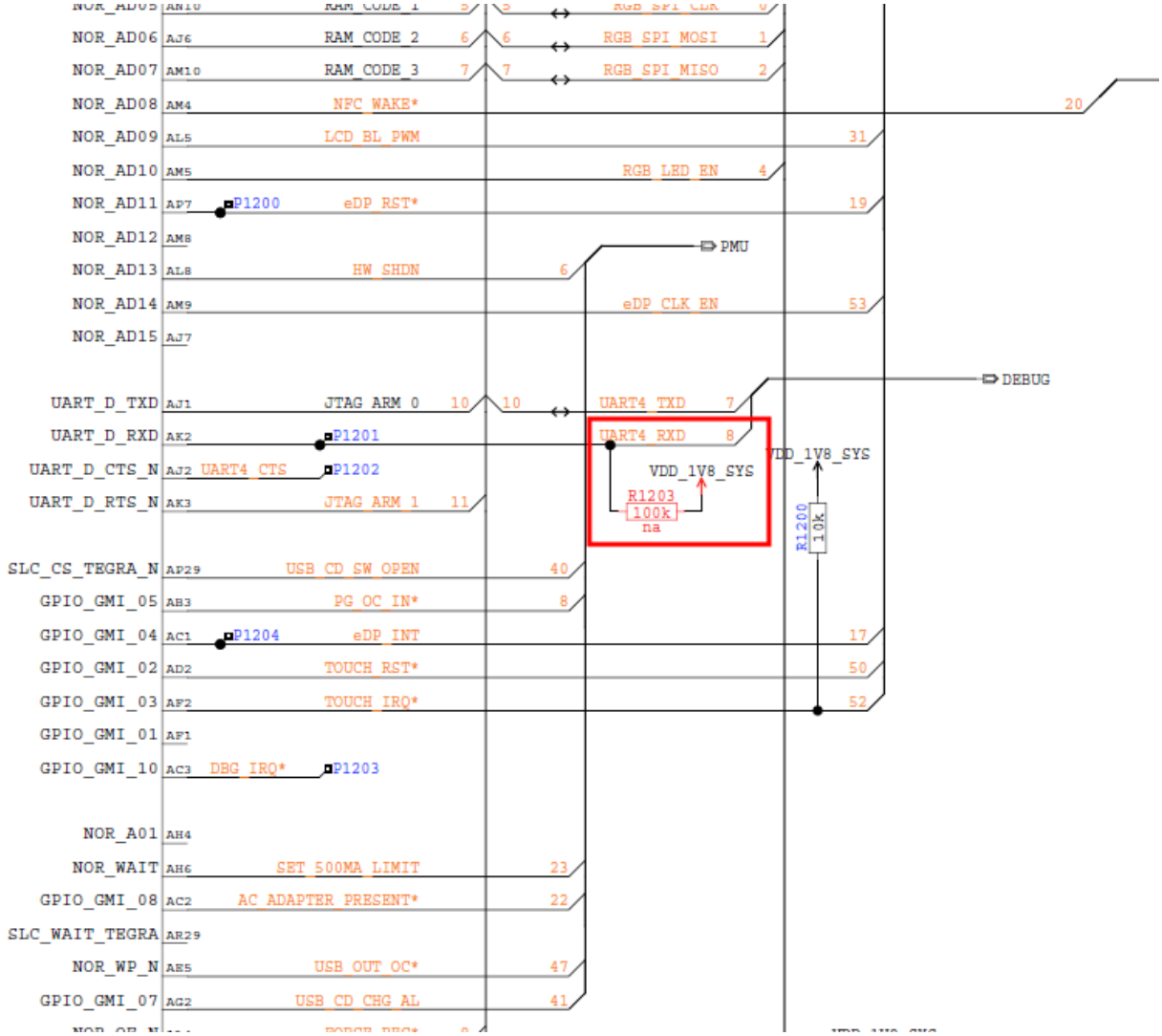



*Figure 11 Component added for RX line termination*

### 1.1.2.9 EMC correction for radiated emissions at 750kHz

Added one capacitor to ground at each audio output line of the audio codec I6300. Capacitors to be placed after ferrites L6002, L6003, L6032, L6033 to ground.  Parts to be set to not assembled.

Description of the capacitor: Capacitor 0402 470p +/-5 % 50Vdc AEC-Q200

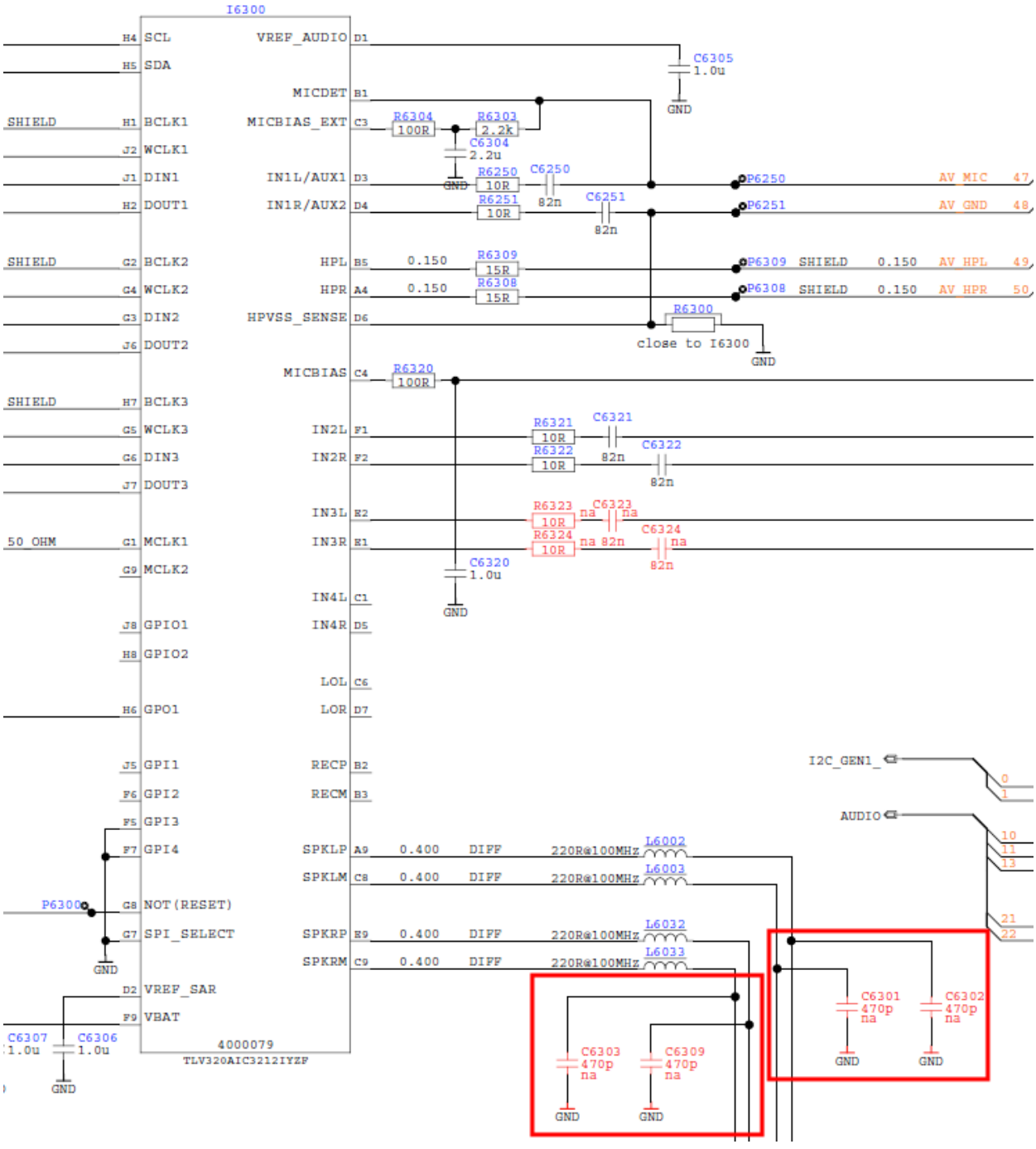



*Figure 12 Components added for EMC correction at 750kHz*

### 1.1.2.10 Power-On-Key: HW de-bouncing for PMIC signal

Debouncing circuit to improve user experience by decreasing response time of power button press while device is being started in charger/hidden mode.

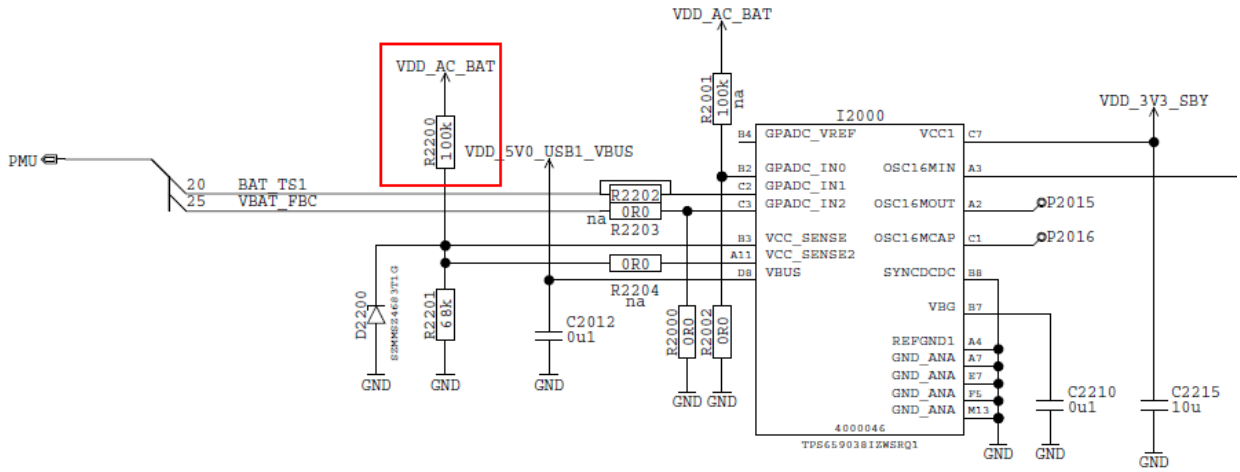



*Figure 13 Schematics before change*

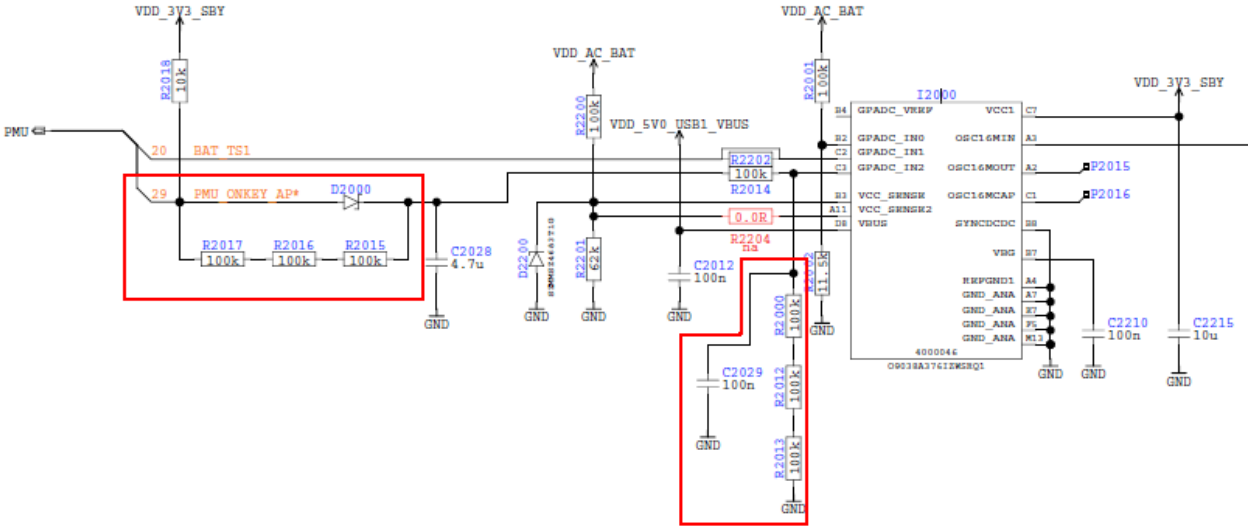



*Figure 14 Schematics after change*

### 1.1.2.11 Stabilization of USB-Charging current to 500mA

Stabilization of USB-Charging current to 500mA

Reason: Corrects a potential malfunction in USB charging mode, to allow for reliable charging with 500mA

Technical solution: One additional ground connection (via) on engine PCB.

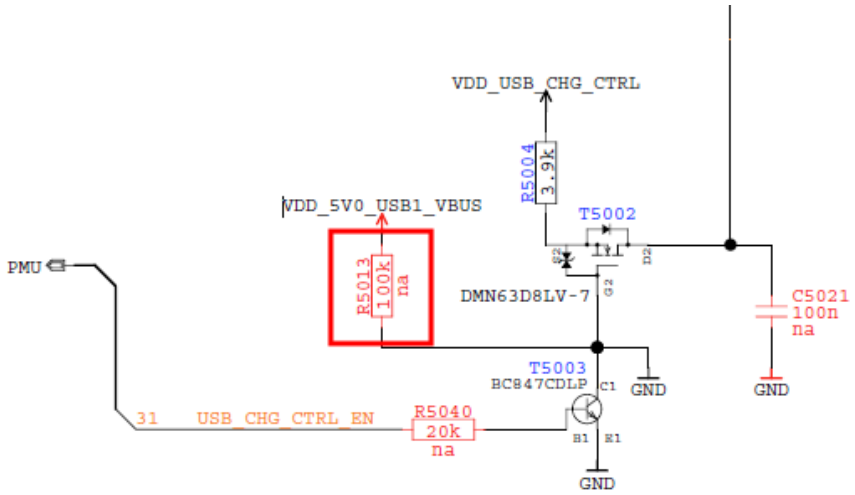



*Figure 15 Schematic drawing of component added for USB-charging stabilisation*

#### 1.1.2.12 Remove one LCD Grounding Foam next to GPS side

Removal of one "LCD Grounding Foam", next to GPS Antenna. Only one Grounding Foam next to GPS side remains and is sufficient.

### 1.1.2.13 Voltage undershoot correction for signal "CON_TEST_IN_SPEAKER"

Current circuitry creates unwanted voltage-undershoot, which is not allowed (could harm application processor)
Solution: Implementation of one additional capacitors on engine PWB.

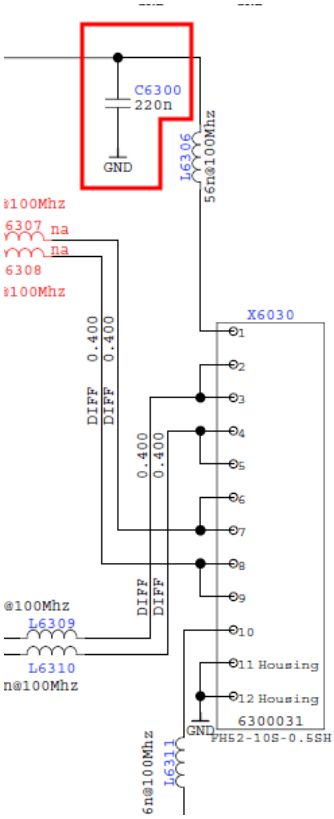



*Figure 16 Voltage undershoot correction: change in schematics*


*Figure 17 Voltage undershoot correction: Changes on PCB*

### 1.1.2.14 PMIC HW-Shutdown for VSYS-Cut / component damage protection

In case of unexpected system-power-cut to PMIC, the component must be shutdown via HW trigger (NSLEEP), to prevent potential damage of the component.

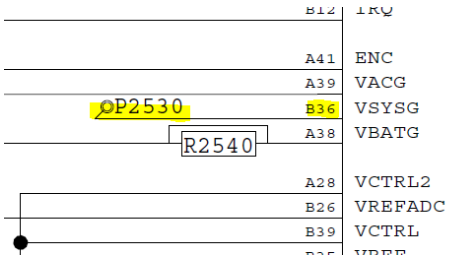



*Figure 18 Schematic before change*

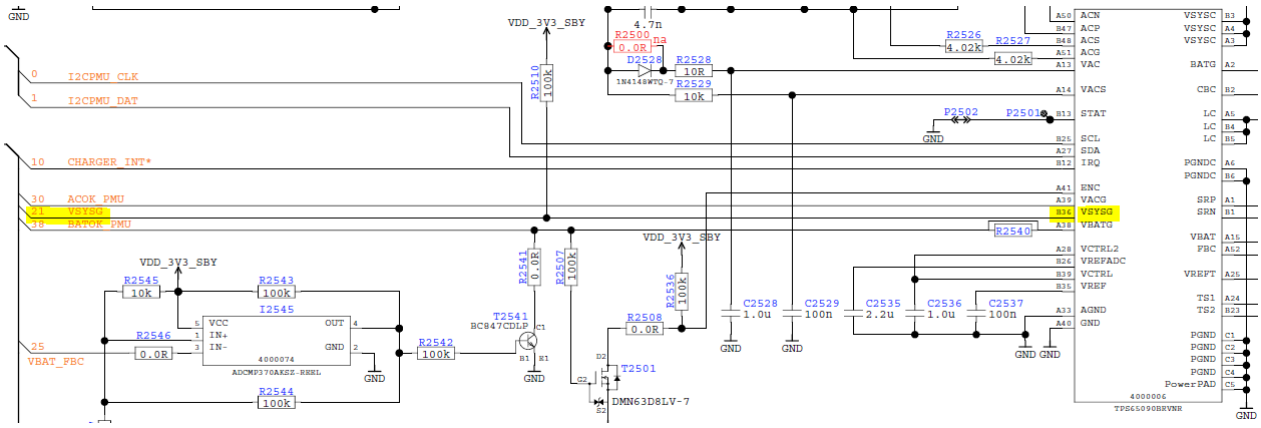



*Figure 19 changed schematics for PMIC HW shutdown*

### 1.1.2.15 USB-Mux: Reassignment of power supply

Power supply for USB-Mux (I5000) needs to be re-assigned from VDD_3V3_SBY to VDD_5V_USB1_VBUS, correct supply voltage needs to be set by resistive voltage-divider and one zener-diode.

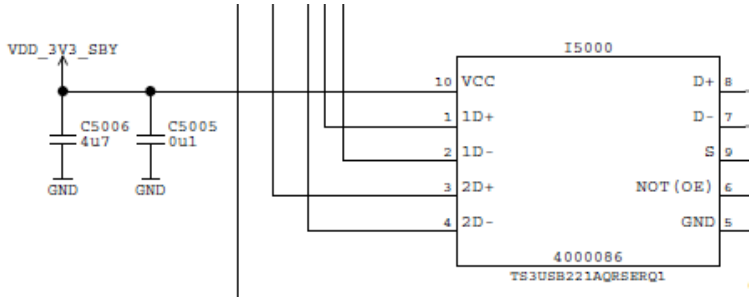



*Figure 20 Schematics before change*

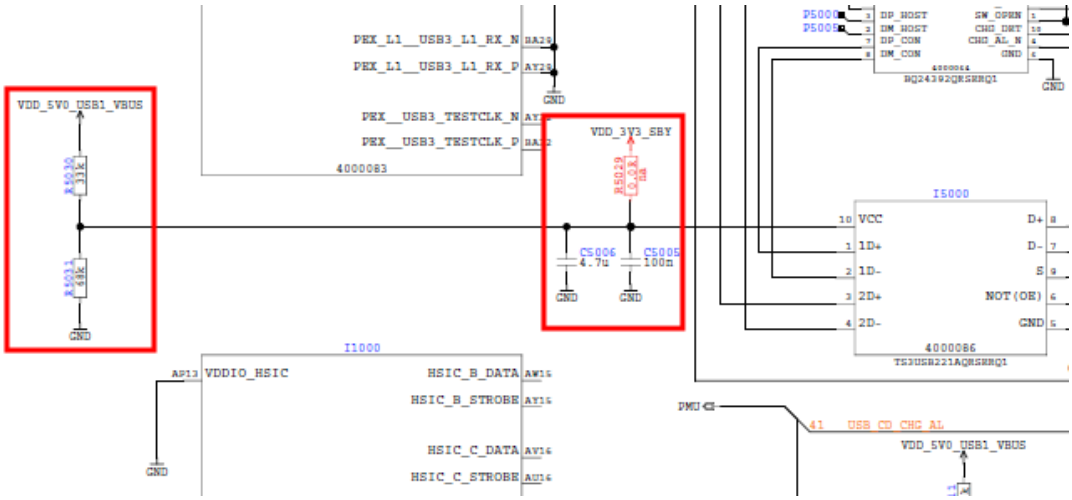



*Figure 21 Schematics after change*

### 1.1.2.16 Forced shut down for WiLink8 in case of unexpected power-cut

Wilink8 needs to be forced to shut-down (WL_EN and BT_EN pulled low by HW-Circuitry), in case of unexpected power-cut.

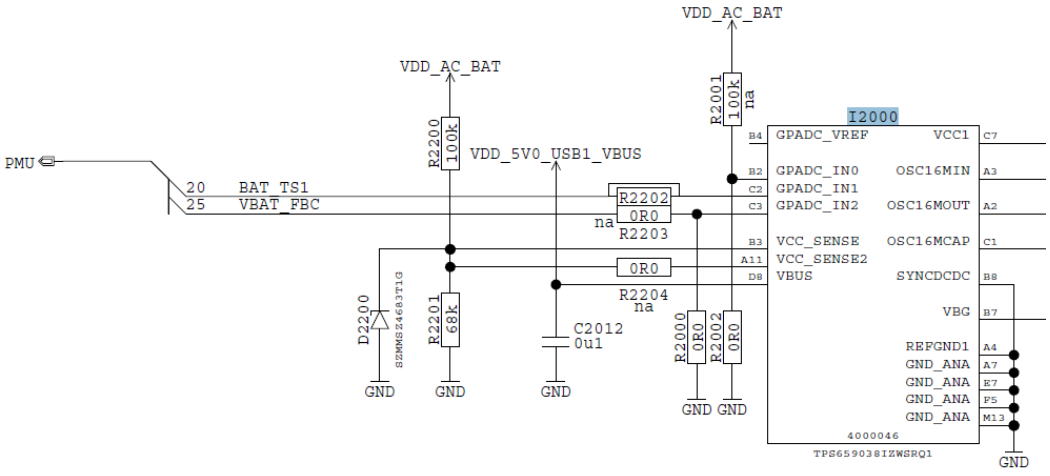



*Figure 22 Schematics before change*

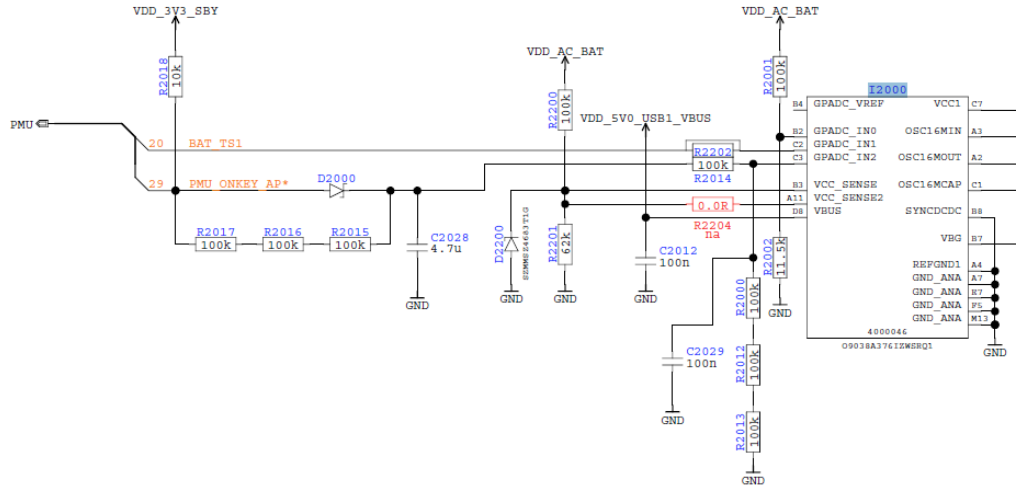



*Figure 23 Schematics after change*

### 1.1.2.17 UART4 option on Syscon for PV

2 additional resistors 0201 0R0 Ohm Rohm MCR006YZPJ000

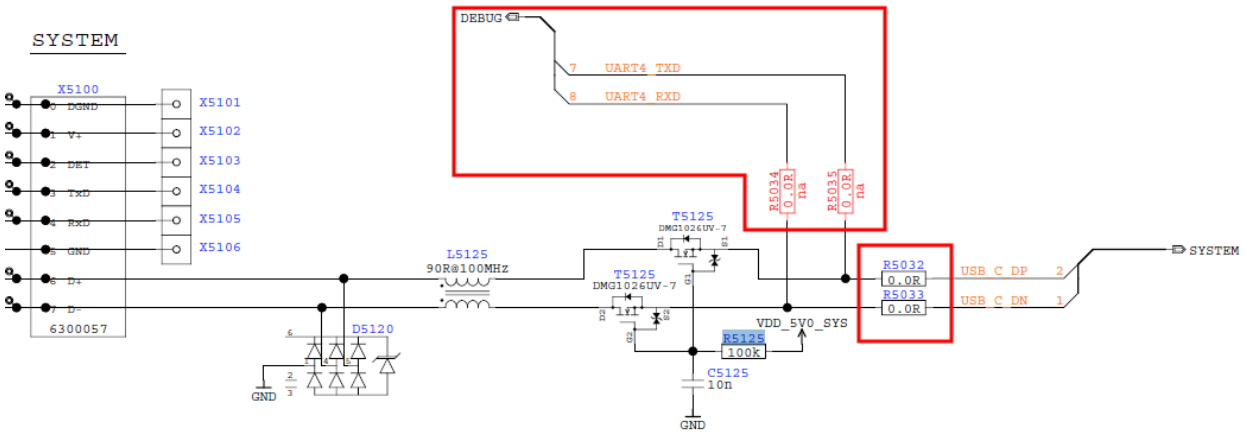



*Figure 24 Changed schematics for UART4 option*

### 1.1.2.18 PMIC deadlock prevention

Power sequence for LDO6 input needs to be modified, in order to prevent PMIC deadlock under rare condition.

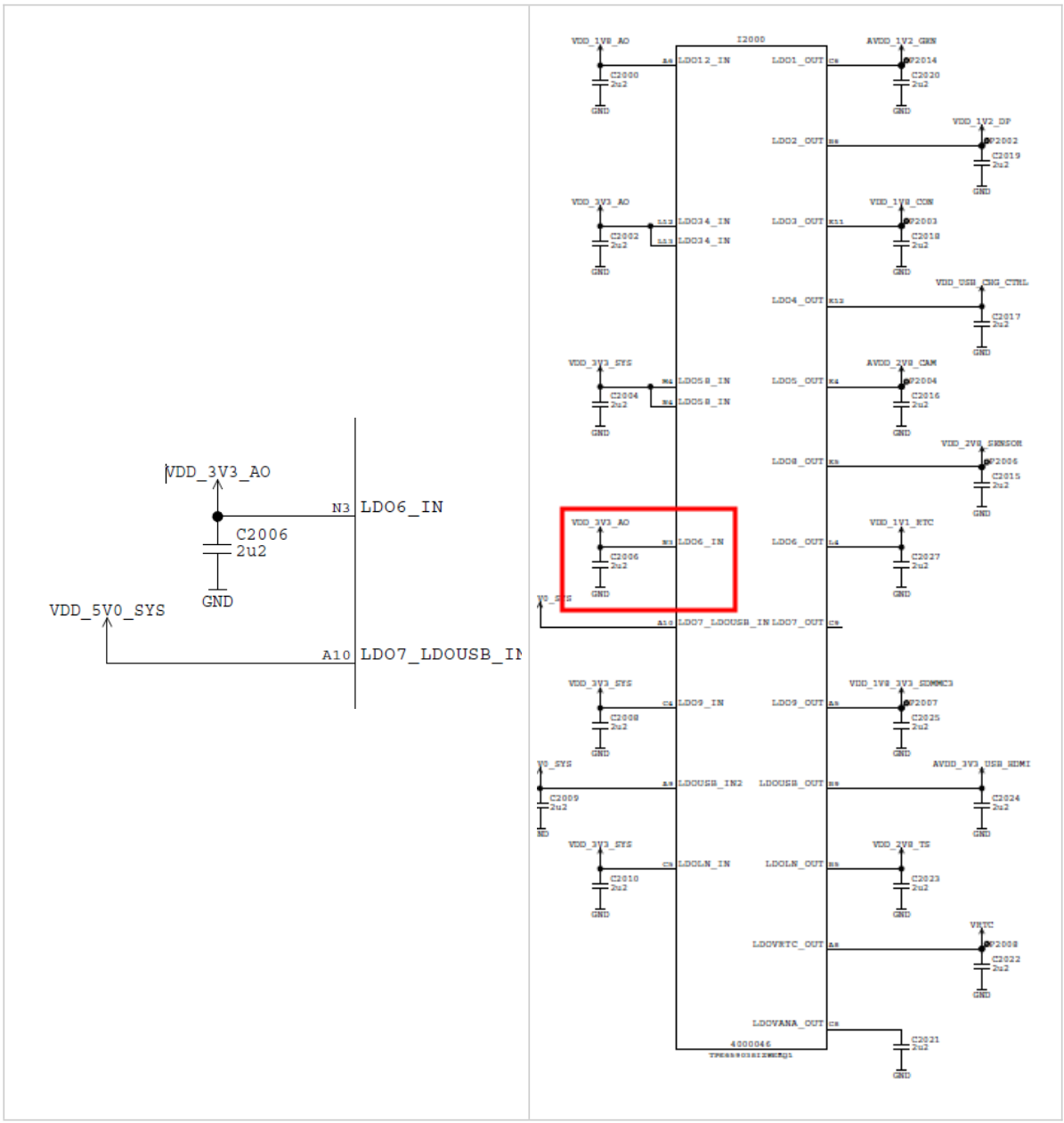



*Figure 25 Detailed schematics before change*

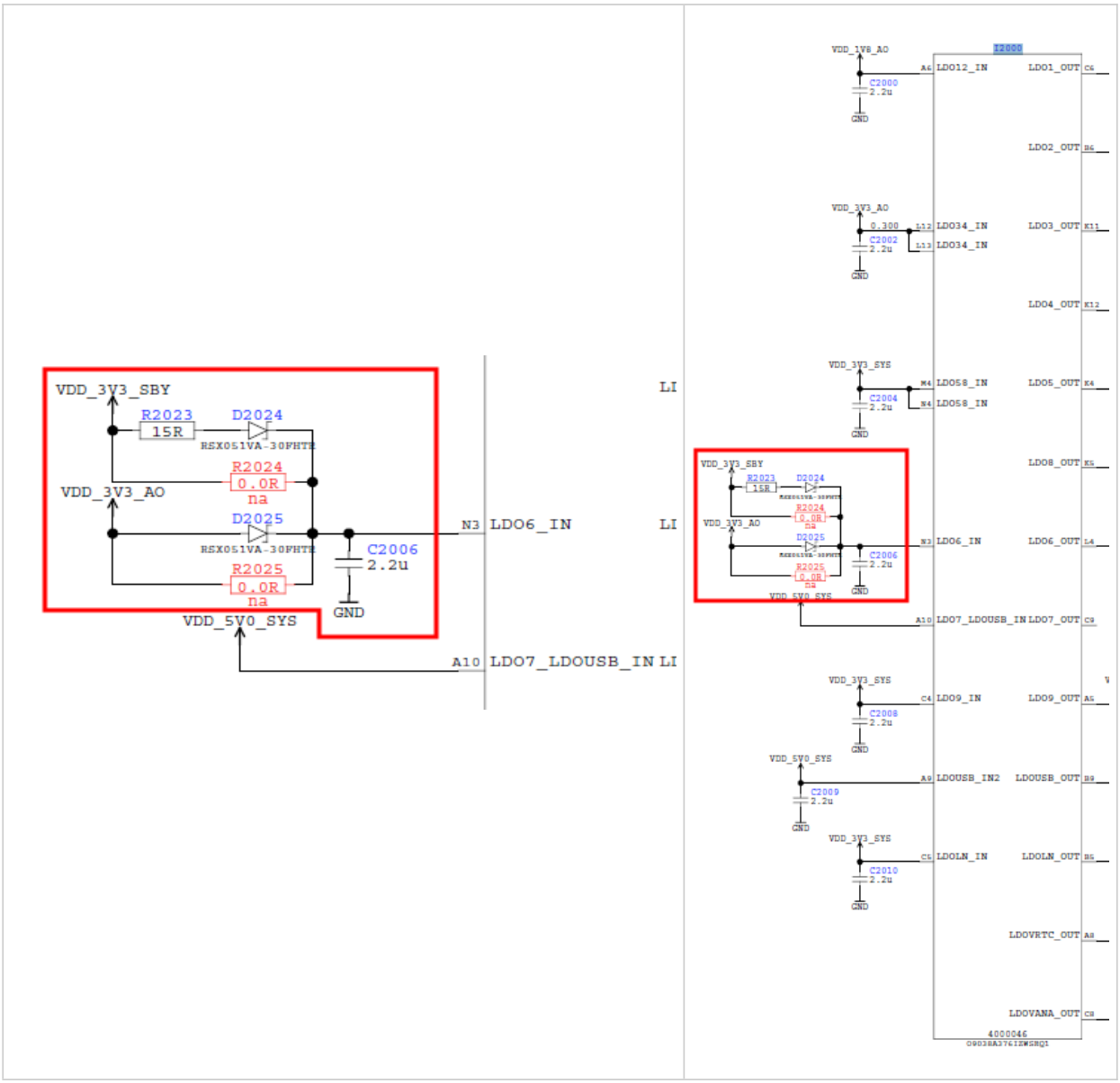



*Figure 26 Detailed schematics after change*

### 1.1.2.19 EMI correction for emission at 156MHz, radiated by harness

Changes to Engine PCB required to add a 2n2 50V 0603 capacitor to the V+ Supply close to the system connector. Removal of 0 Ohm Resistors in Supply Lines.

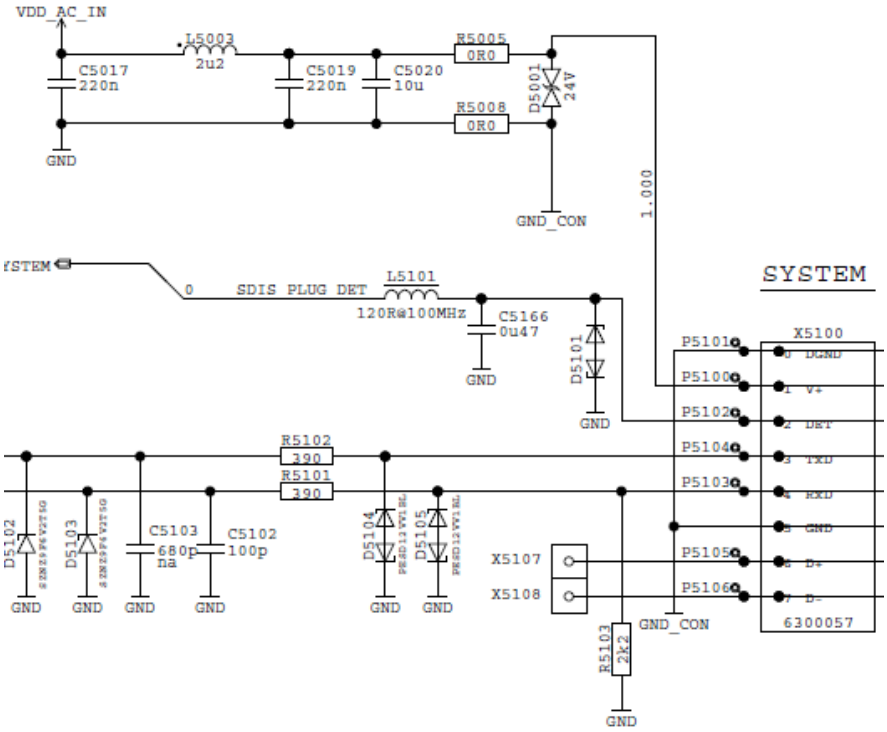



*Figure 27 Schematics before change*

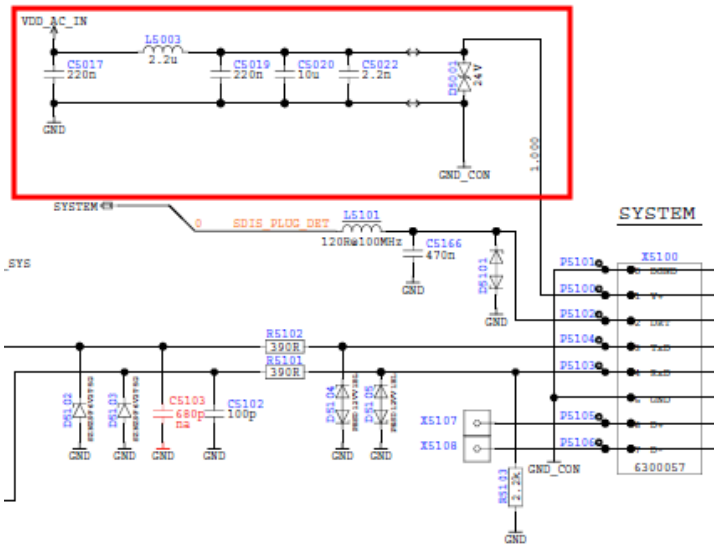



*Figure 28 Schematics after change*

### 1.1.2.20 VCM Power sequence correction

Update for PCB and components. in order to avoid non-deterministic behavios of GPIOs after boot up and damage of of VCM after ~60k boot cycles.

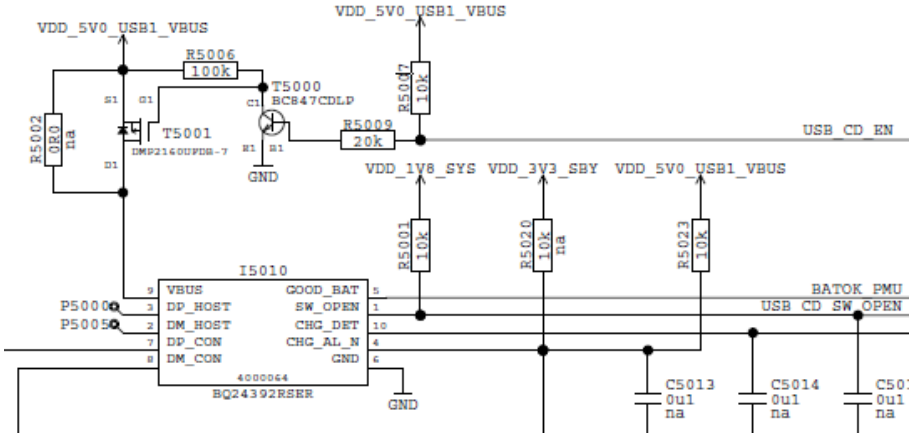



*Figure 29 Schematics before change*

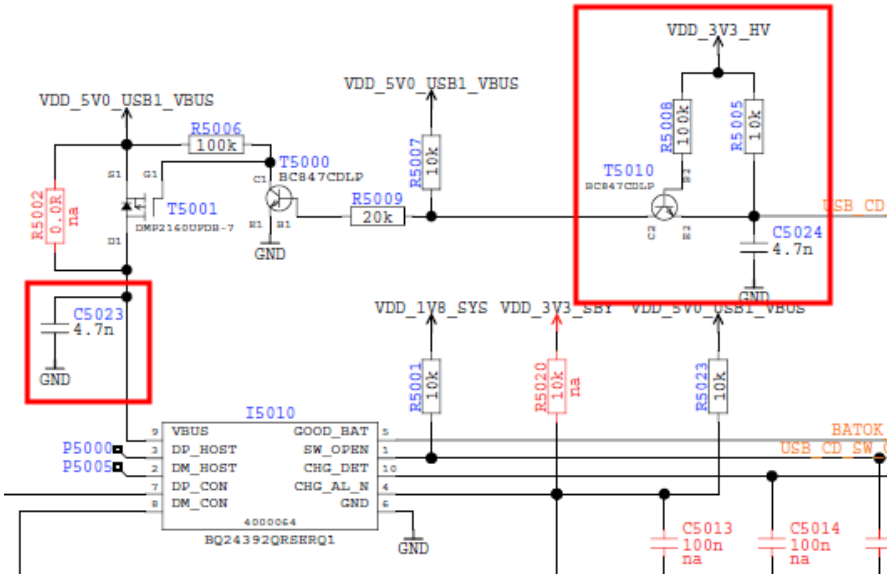



*Figure 30 Schematics after change*

#### 1.1.2.21 EMV correction for conducted emissions at 640kHz

1. The modifications shown in “M1” are incorporating a low-pass-filter, in order to optimize the conducted emissions behavior at 640 kHz
2. The low pass filter is comprising
   a. Shielded power inductor: Coilcraft XAL4020-222ME 2.2.uH
   b. Capacitor: Murata GCM188R71E224KA55D 220nF
   c. Capacitor: Murata GRM21BC81E106KE11 10uF
3. The SDIS1 passed official testing at CETECOM including this low-pass-filter

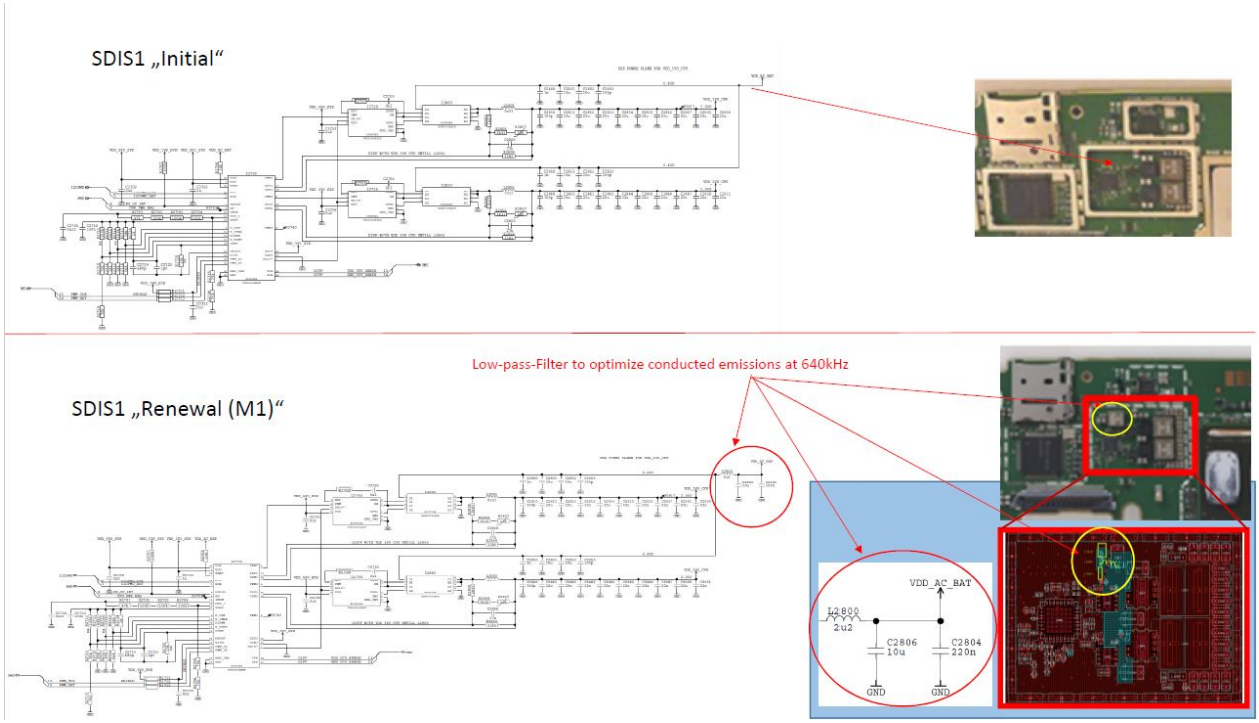



*Figure 31 Comparison of schematics*

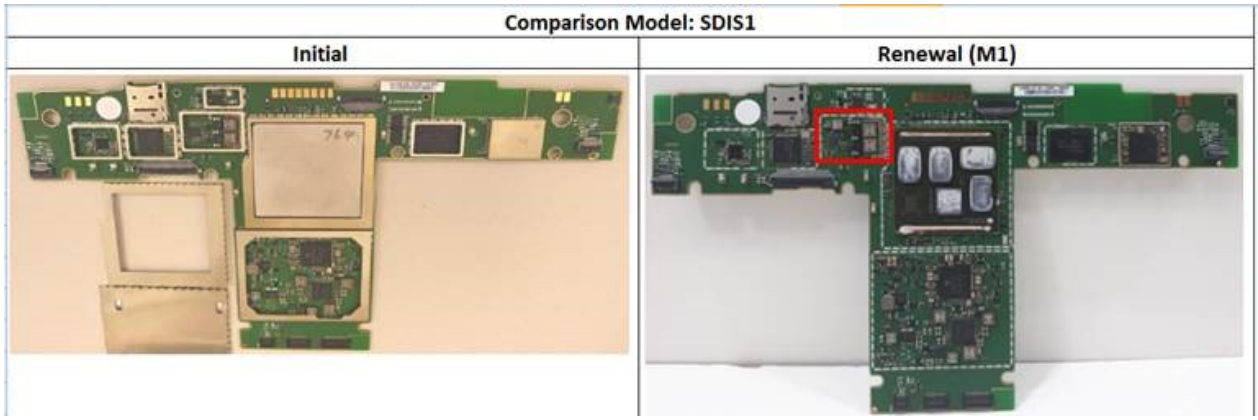



*Figure 32 Pictures of PCB before and after the change*

### 1.1.2.22 Re-Configuration of Temperature Sensor

Added a capacitor on the DHS_WAKE*.

Component: Capacitor 0603 10u +/-20 % 10Vdc, Murata, GRM188C81A106MA73

Reason: Wake-up the system when battery power comes back with temperature decreasing after interruption at 80°C, so that TMP102 can be reconfigured via software after POR.

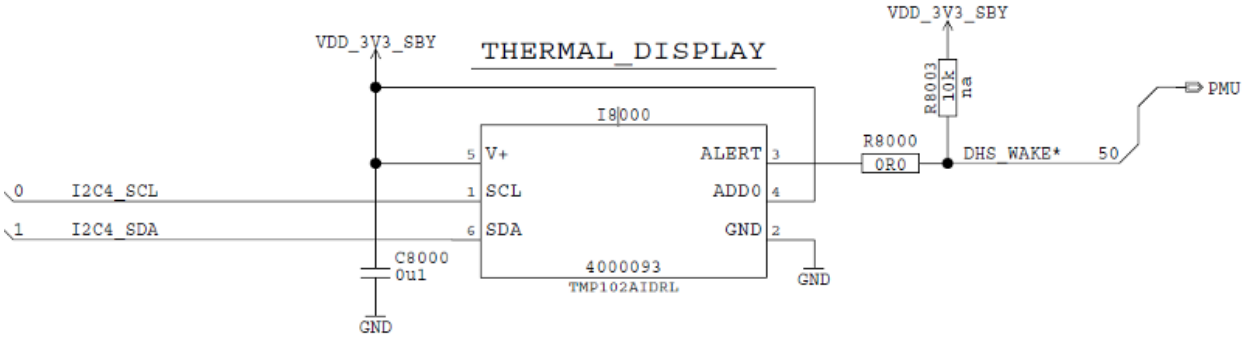



*Figure 33 Schematics of Thermal Display before change*

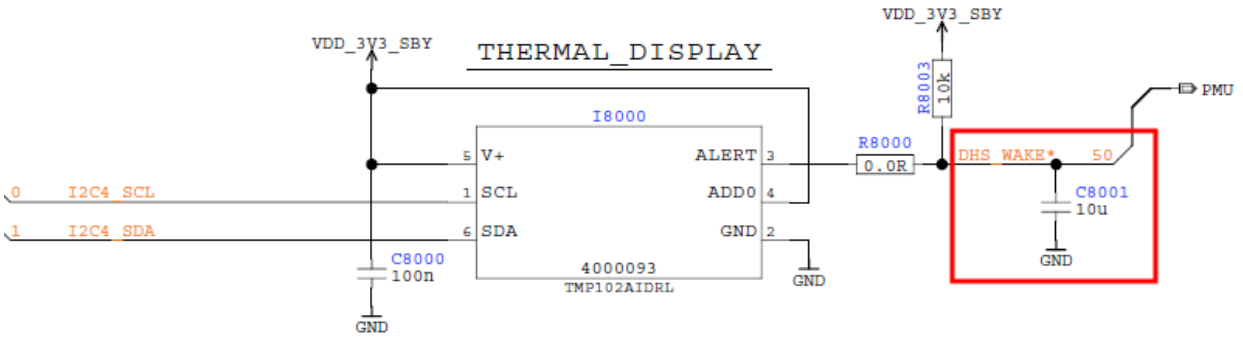



*Figure 34 Schematics of Thermal Display after change*

## 2 Introduction of HW44

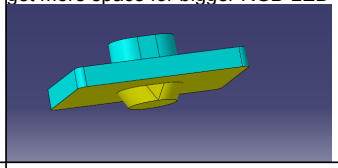
This document describes the SDIS1 Hardware changes to the previous HW version. It also concludes the certification relevant tests which are to be performed with this new HW version before product certification can be issued.

### 2.1 Conclusion

The information and data available by the references listed in chapter 3 have been reviewed for the HW change in question and it has been concluded that the test cases listed in the following tables are needed to assume full compliance after the change.

| Certifications | | Standard or Test Spec. | Test Cases to be re-tested |
|---|---|---|---|
| R&TTE | BT/WLAN | EN 300 328 | No testing |
| | WLAN | EN 301 893<br>EN 300 440 | No testing |
| | RFID (NFC) | EN 300 330 | No testing |
| | GPS | EN 300 440 | No testing |
| | Safety, LVD | EN 60950 | No testing |
| | Health, SAR | EN 60209 | No testing |
| EMC | BT/WLAN | EN 301 489-1<br>EN 301 489-17 | No testing |
| | RFID | EN 301 489-1<br>EN 301 489-3 | No testing |
| | GPS | EN 301 489-1 | No testing |
| FCC/IC | | CFR 47 Part 2 | No testing |
| | | CFR 47 Part 15B/C | No testing |
| | | RSS-Gen/-102/-210 | No testing |
| Japan | Business Law | - | No testing |
| | Radio Law | - | No testing |
| China | SRRC, CCC | - | No testing |
| Other countries | | - | No testing |
| BT Qualification | | BT SIG Profiles | reuse of QDID B019990 and testing as defined by BQE |
| | | BT SIG Protocol and core | covered by QDID B019990 and 58354 |
| | | BT SIG RF | No testing |
| WLAN | | WiFi Alliance | No testing |
| USB | | USB.org | No testing |
| NFC | | NFC Forum | No testing |

### 2.2 Change details for new HWID 44

| # | Affected Area | Change description | Expert opinion | Cetecom review |
|---|---|---|---|---|
| 1 | RGB light-guide: Update | Changed thickens of RGB lightguide to get more space for bigger RGB-LED  | Uncritical, only change in plastic part | 12.05. 16, Cetecom, No testing |
| 2 | RGB LED: Changed from Osram to Everlight | The new RGB-LED has a chan-ged Footprint and therefore the PWB has been adjusted. | Uncritical, no influence to EMC behavior.<br>The expert opinion is that the | 25.10.16, Cetecom, No testing |

| | | | | |
|---|---|---|---|---|
| | | | layout changes are marginal and therefore the EMC behavior is the same. | |
| 3 | Nvidia VCM | Solder ball supplierchange from SPIL to TSMC | Uncritical, Solder balls identical from mechanical and electrical point of view. No influence on EMC behaviour. | 12.05. 16, Cetecom, No testing |
| 4 | Loudspeaker | Replacement for Grand Speaker (supplier / part not finally decided yet) | Uncritical: Loudspeaker has same performance and is identical to the Grand Speaker currently in use. R&D Antenna performance measurements of one supplier showed small improvements of the Antenna. | 12.05. 16, Cetecom, No testing in case no influence of Antenna performance |
| 5 | Volume Key PCB cut out removal | SDIS_HW44_V2_ChangeDocument.pptx | R&D Anntenna measurements are done and no changes in antenna performance seen | 12.05. 16, Cetecom, No testing |
| 6 | Display | Changed ESR80 reflector foil inside the Innolux Display near the Aluminium backside | | 12.05. 16, Cetecom, No testing |
| 7 | Nvidia VCM | Nvidia VCM (DRAM, Automotive-Resistors, Bump-Site).<br>7_1.pdf<br>7_2.pdf<br>7_3.pdf | Uncritical, no influence to EMC behaviour:<br>• DRAM: Is part of VCM and below EMC shielding.<br>• Automotive-Resistors: not certification relevant identical component values Bump Site: not certification relevant, only relocation of the processes for application of solder balls on the Processor-Die | 20.07.16, Cetecom, No testing |
| 8 | Mass storage system | eMMC changed from Hynix 4.5 to Samsung 5.0 | Uncritical, no influence to EMC behaviour:<br>- Influence improbable because mass storage under own EMC-Shield<br>- supply conductors are completely burrowed routed | 04.11.2015, Cetecom, No testing |

# Mass storage system

| | Old | | | | NEW | | | |
|---|---|---|---|---|---|---|---|---|
| **Ref-Des** | **PartName** | **Description** | **Supplier** | **Supplier code** | **PartName** | **Description** | **Supplier** | **Supplier code** |
| I3000 | 4000174 | 32GB eMMC 5.0 | Hynix | H26M64103EMRA | 4000208 | Automotive eMMC 5.0 32GB | Samsung | KLMBG4GESD-B03P017 |

# 3 Introduction of HW46

The information and data available by the references listed in chapter 2 have been reviewed for the HW change in question and it has been concluded that the test cases listed in the following tables are needed to assume full compliance after the change.

## 3.1 Conclusion

| Certifications | | Standard or Test Spec. | Test Cases to be re-tested |
|---|---|---|---|
| R&TTE | BT/WLAN | EN 300 328 | No testing |
| | WLAN | EN 301 893<br>EN 300 440 | No testing |
| | RFID (NFC) | EN 300 330 | No testing |
| | GPS | EN 300 440 | No testing |
| | Safety, LVD | EN 60950 | No testing |
| | Health, SAR | EN 60209 | No testing |
| EMC | BT/WLAN | EN 301 489-1<br>EN 301 489-17 | No testing |
| | RFID | EN 301 489-1<br>EN 301 489-3 | No testing |
| | GPS | EN 301 489-1 | No testing |
| FCC/IC | | CFR 47 Part 2 | |
| | | CFR 47 Part 15B/C | |
| | | RSS-Gen/-102/-210 | |
| Japan | Business Law | - | No testing |
| | Radio Law | - | No testing |
| China | SRRC, CCC | - | |
| Other countries | | - | |
| BT Qualification | | BT SIG Profiles | reuse of QDID B019990 and testing as defined by BQE |
| | | BT SIG Protocol and core | covered by QDID B019990 and 58354 |
| | | BT SIG RF | |
| WLAN | | WiFi Alliance | No testing |
| USB | | USB.org | No testing |
| NFC | | NFC Forum | No testing |

### 3.2 Change Details for new HW46

#### 3.2.1 Description

| # | Affected Area | Change description | Expert opinion | Cetecom review |
|---|---|---|---|---|
| 1 | NFC | Removal of NFC functionality:<br>Remove of NFC chip I9500 and related components; remove of NFC Antenna in Window Carrier Assy | no impact | |

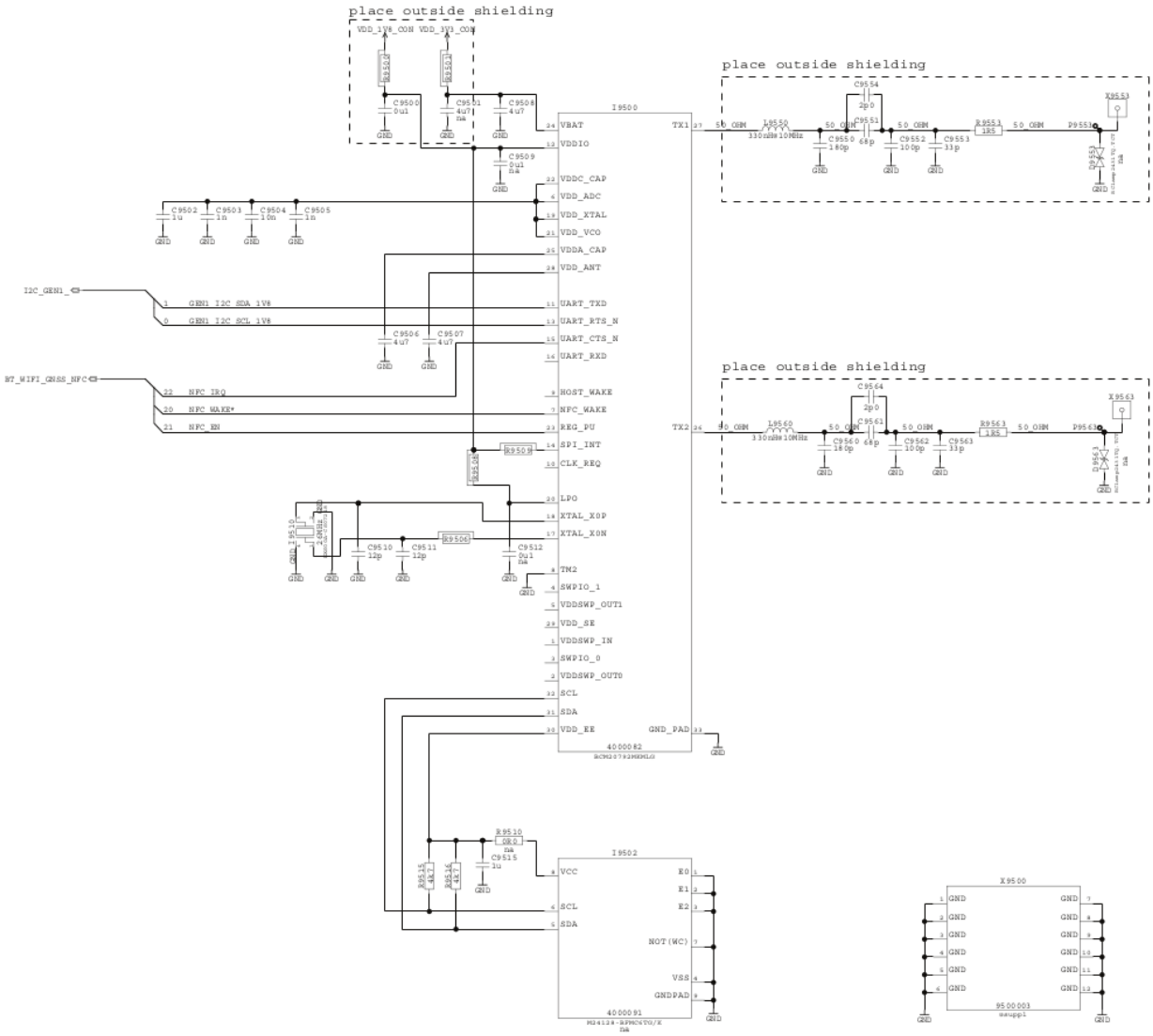
#### 3.2.2 Details

##### 3.2.2.1 Parts List

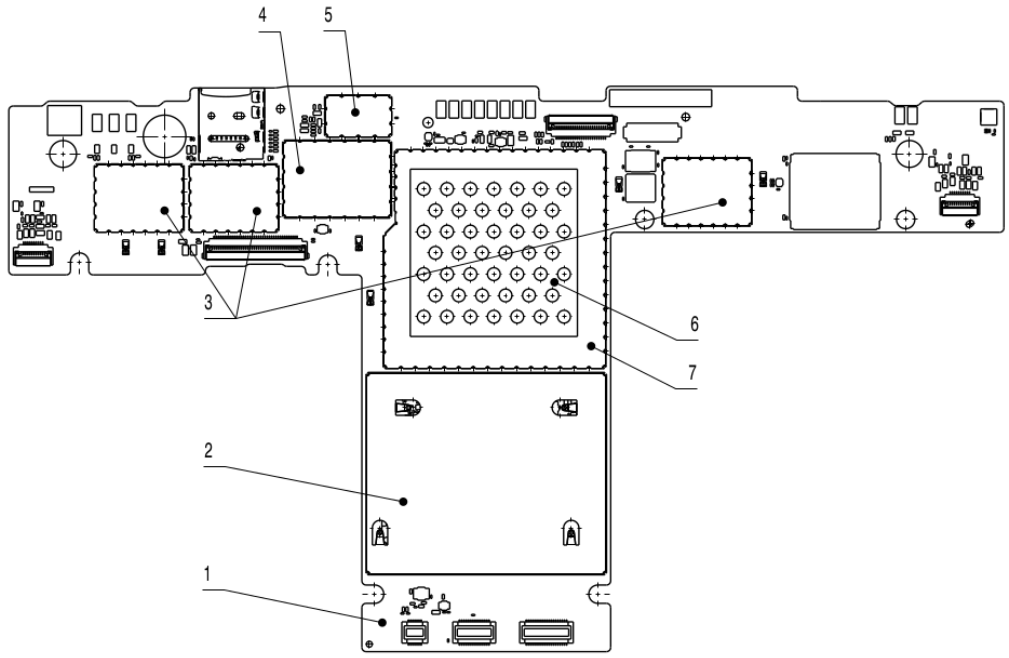
The following components are set to not assembled

| | |
|---|---|
| I9500 | NFC controller BCM20792M QFN32 |
| I9510 | Crystal Unit XTAL 26 MHz |
| C9500 | Capacitor 0201 0u1 +/-10 % 6,3Vdc |
| C9502 | Capacitor 0402 1u +/-10 % 16Vdc |
| C9503 | Capacitor 0201 1n +/-10 % 25Vdc |
| C9504 | Capacitor 0201 10n +/-10 % 10Vdc |
| C9505 | Capacitor 0201 1n +/-10 % 25Vdc |
| C9506 | Capacitor 0402 4u7 +/-20 % 6,3Vdc |
| C9507 | Capacitor 0402 4u7 +/-20 % 6,3Vdc |
| C9508 | Capacitor 0402 4u7 +/-20 % 6,3Vdc |
| C9510 | Capacitor 0201 12p +/-5 % 25Vdc |
| C9511 | Capacitor 0201 12p +/-5 % 25Vdc |
| C9515 | Capacitor 0402 1u +/-10 % 16Vdc |
| C9550 | Capacitor 0402 180p +/-2 % 50Vdc |
| C9551 | Capacitor 0402 68p +/-2 % 50Vdc |
| C9552 | Capacitor 0402 100p +/-1 % 50Vdc |
| C9553 | Capacitor 0402 33p +/-2 % 50Vdc |
| C9554 | Capacitor 0402 2p0 +/-0.1p % 50Vdc |
| C9560 | Capacitor 0402 180p +/-2 % 50Vdc |
| C9561 | Capacitor 0402 68p +/-2 % 50Vdc |
| C9562 | Capacitor 0402 100p +/-1 % 50Vdc |
| C9563 | Capacitor 0402 33p +/-2 % 50Vdc |
| C9564 | Capacitor 0402 2p0 +/-0.1p % 50Vdc |
| L9550 | Wire Wound Magnetic Type for Choke–LQW18C 330nH@10MHz Henry +/-5 |
| L9560 | Wire Wound Magnetic Type for Choke–LQW18C 330nH@10MHz Henry +/-5 |
| R9515 | Resistor 0201 4k7 Ohm +/-5 % |
| R9516 | Resistor 0201 4k7 Ohm +/-5 % |
| R9553 | Resistor 0603 1R5 Ohm +/-5 % |
| R9563 | Resistor 0603 1R5 Ohm +/-5 % |
| X9500 | Shielding Frame 9.46 x 15.40 |
| X9553 | C-Clip uncompressed 1.6mm height |
| X9563 | C-Clip uncompressed 1.6mm height |

### 3.2.2.2 Schematics

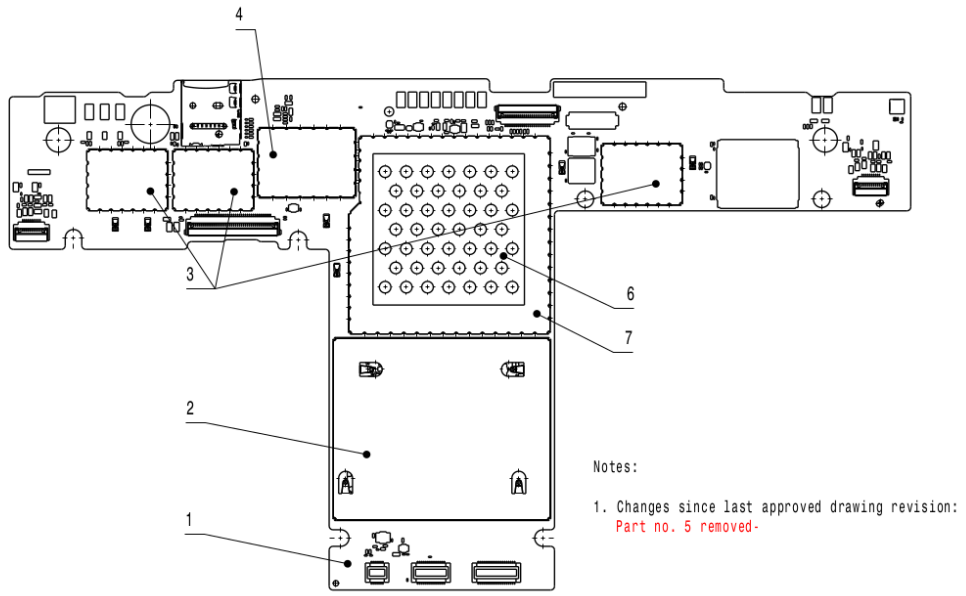


### 3.2.2.3 PCB Placement




| Part No. | Code | Name | Qty. | Note |
|---|---|---|---|---|
| 7 | 9500010 | Shielding Lid 52 x 51.1 | 1 | |
| 6 | 9400059 | Copper Foil VCM | 1 | |
| 5 | 9500007 | Shielding Lid 9.5 x 15.4 | 1 | |
| 4 | 9500006 | Shielding Lid 17.9 x 25.2 | 1 | |
| 3 | 9500012 | Shielding Lid 20.7 x 15.65 | 3 | |
| 2 | 9500005 | Shielding Lid 47.1 x 56.1 | 1 | |
| 1 | 8800001 | SDIS1 Engine PCB Module assembled | 1 | |

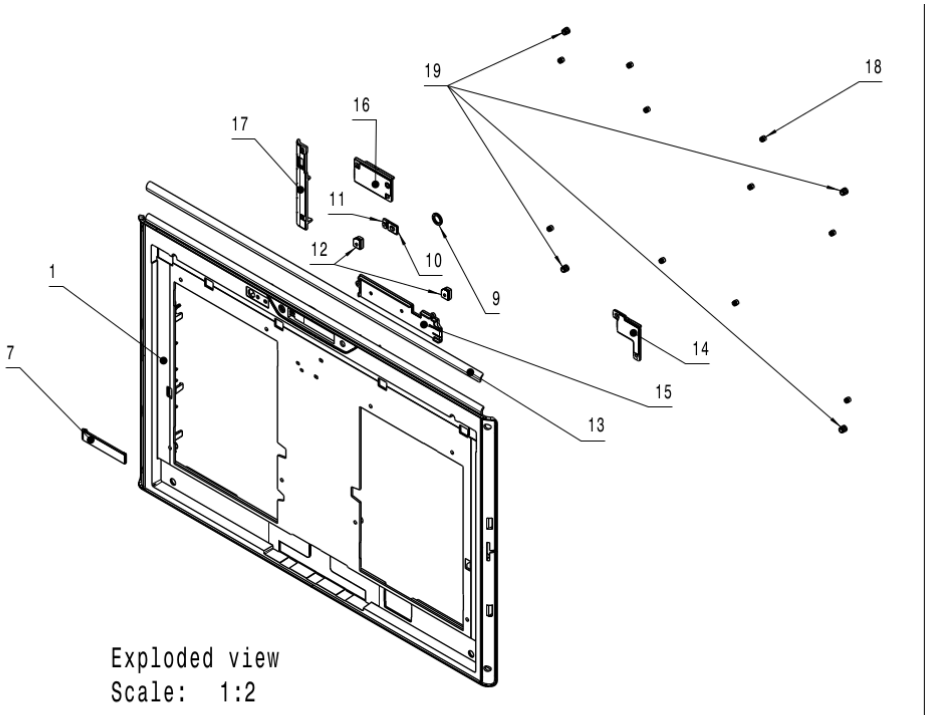
*Figure 35 : PCB Placement HW44*




| Part No. | Code | Name | Qty. | Note |
|---|---|---|---|---|
| 7 | 9500010 | Shielding Lid 52 x 51.1 | 1 | |
| 6 | 9400059 | Copper Foil VCM | 1 | |
| 5 | - | - | - | |
| 4 | 9500006 | Shielding Lid 17.9 x 25.2 | 1 | |
| 3 | 9500012 | Shielding Lid 20.7 x 15.65 | 3 | |
| 2 | 9500005 | Shielding Lid 47.1 x 56.1 | 1 | |
| 1 | 8800001 | SDIS1 Engine PCB Module assembled | 1 | |

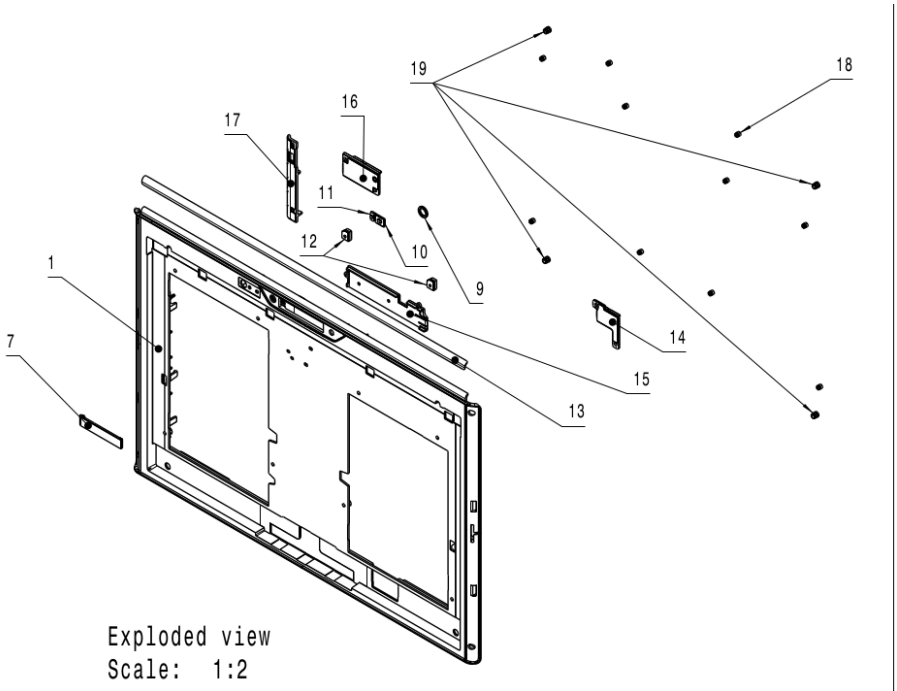
*Figure 36 : PCB Placement HW46*

### 3.2.2.4 Window Carrier Assy




| Part No. | Code | Name | Qty. | Note |
|---|---|---|---|---|
| 20 | - | - | - | |
| 19 | 9800002 | Insert M2X3 | 4 | |
| 18 | 9800010 | Insert M1.4 | 10 | |
| 17 | 9300004 | GPS Antenna Subassy | 1 | |
| 16 | 9300002 | WIFI1 Antenna Subassy | 1 | |
| 15 | 9300001 | NFC Antenna Subassy | 1 | |
| 14 | 9300003 | WIFI2 Antenna Subassy | 1 | |
| 13 | 9400030 | Dust Foam | 1 | see note 2. |
| 12 | 9400018 | Mic Foam middle | 2 | see note 2. |
| 11 | 9100054 | LED Lightguide Subassy | 1 | |
| 10 | 9100053 | RGB Lightguide Subassy | 1 | |
| 9 | 9400009 | Camera Gasket | 1 | see note 2. |
| 8 | - | - | - | |
| 7 | 9100007 | Logo Lightguide Subassy | 1 | |
| 6 | - | - | - | |
| 5 | - | - | - | |
| 4 | - | - | - | |
| 3 | - | - | - | |
| 2 | - | - | - | |
| 1 | 9100005 | Window Carrier | 1 | |

*Figure 37 : Window Assy HW44*




| Part No. | Code | Name | Qty. | Note |
|---|---|---|---|---|
| 20 | - | - | - | |
| 19 | 9800002 | Insert M2X3 | 4 | |
| 18 | 9800010 | Insert M1.4 | 10 | |
| 17 | 9300004 | GPS Antenna Subassy | 1 | |
| 16 | 9300002 | WIFI1 Antenna Subassy | 1 | |
| 15 | 9300001 | NFC Antenna Subassy | 1 | |
| 14 | 9300003 | WIFI2 Antenna Subassy | 1 | |
| 13 | 9400030 | Dust Foam | 1 | see note 2. |
| 12 | 9400018 | Mic Foam middle | 2 | see note 2. |
| 11 | 9100054 | LED Lightguide Subassy | 1 | |
| 10 | 9100053 | RGB Lightguide Subassy | 1 | |
| 9 | 9400009 | Camera Gasket | 1 | see note 2. |
| 8 | - | - | - | |
| 7 | 9100007 | Logo Lightguide Subassy | 1 | |
| 6 | - | - | - | |
| 5 | - | - | - | |
| 4 | - | - | - | |
| 3 | - | - | - | |
| 2 | - | - | - | |
| 1 | 9100005 | Window Carrier | 1 | |

*Figure 38 : Window Assy HW46*