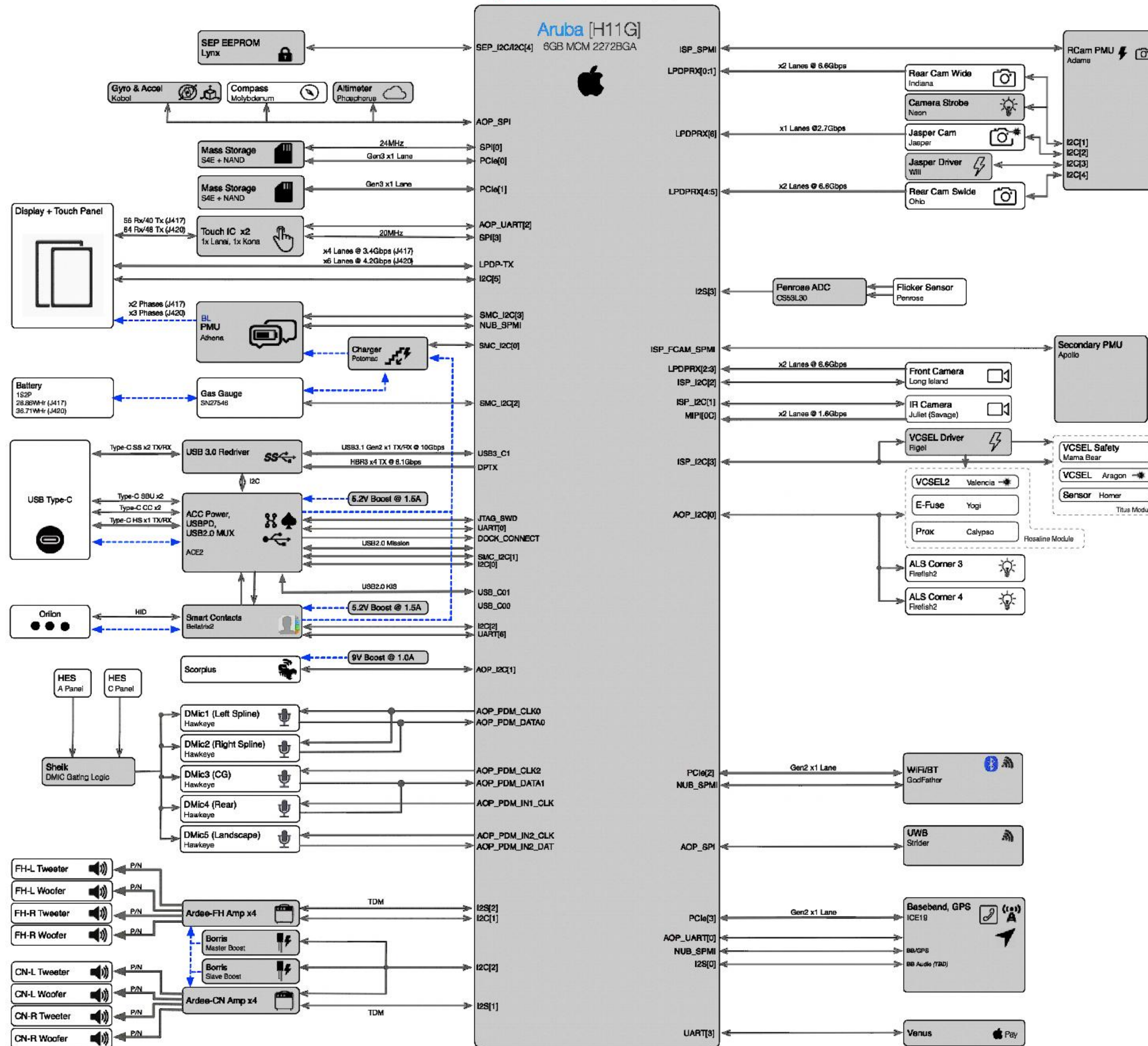


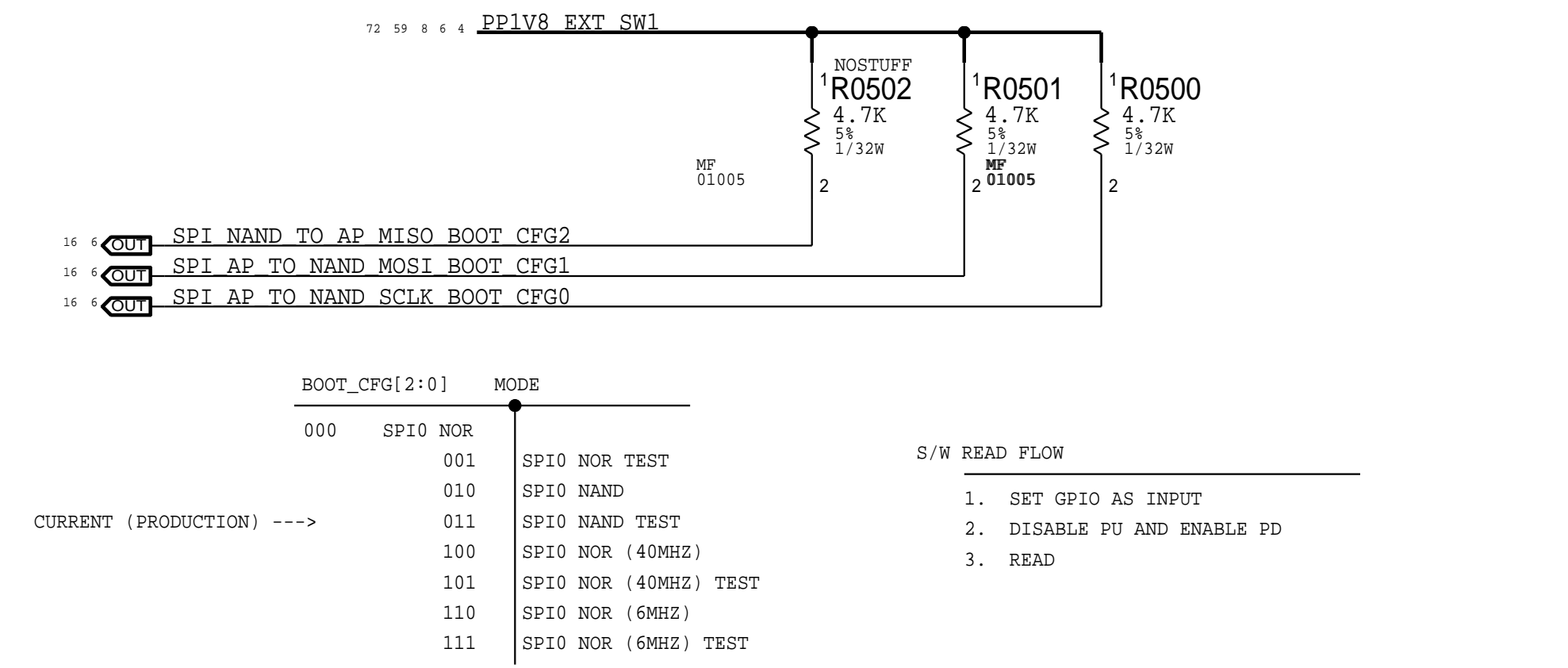
| 8 | | 7 | | 6 | | 5 | | 4 | | 3 | | 2 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <div>1. ALL RESISTANCE VALUES ARE IN OHMS, 0.1 WATT +/- 5%.</div> <div>2. ALL CAPACITANCE VALUES ARE IN MICROFARADS.</div> <div>3. ALL CRYSTALS & OSCILLATOR VALUES ARE IN HERTZ.</div> <div>J421 P2 CHINA: MLB-B</div> <div>LAST_MODIFIED= Tue May 28 13:29:54 2019</div> <div>RADIO_SYNC: J417_RADIO_MLB NFC_SYNC: J417_STOCKHOLM_MLB</div> <div>WIFI_SYNC: J420_WIFI_MLB DEV_SYNC: J417_DEV_ARUBA_J4XX</div> <div>LAST_MODIFICATION= Tue May 28 13:29:54 2019</div> <div><table><tr><th>PAGE</th><th>CSA</th><th>CONTENTS</th><th>SYNC</th><th>DATE</th></tr><tr><td>1</td><td>1</td><td>TABLE OF CONTENTS</td><td></td><td></td></tr><tr><td>2</td><td></td><td>BLOCK DIAGRAM</td><td></td><td>03/09/2017</td></tr><tr><td>3</td><td>4</td><td>BOM TABLES</td><td></td><td>05/28/2019</td></tr><tr><td>4</td><td>5</td><td>SOC: MISC & ALIASES</td><td></td><td>03/09/2017</td></tr><tr><td>5</td><td>6</td><td>SOC: MAIN</td><td>DEV_REV_0.40</td><td>12/17/2017</td></tr><tr><td>6</td><td>7</td><td>SOC: I/OS</td><td>J317_MLB_B</td><td>01/07/2019</td></tr><tr><td>7</td><td>8</td><td>SOC: LPDP & MIPI</td><td>DEV_REV_0.40</td><td>12/17/2017</td></tr><tr><td>8</td><td>9</td><td>SOC: PCIE</td><td>DEV_REV_0.40</td><td>12/17/2017</td></tr><tr><td>9</td><td>10</td><td>SOC: AOP</td><td>J417_MLB_SOC_AOP</td><td>01/11/2019</td></tr><tr><td>10</td><td>11</td><td>SOC: POWER (DDR,SRAM)</td><td>DEV_REV_0.40</td><td>12/17/2017</td></tr><tr><td>11</td><td>12</td><td>SOC: POWER (IO)</td><td>DEV_REV_0.40</td><td>12/17/2017</td></tr><tr><td>12</td><td>13</td><td>SOC: POWER (CPU, GPU)</td><td>DEV_REV_0.40</td><td>12/17/2017</td></tr><tr><td>13</td><td>14</td><td>SOC: POWER (SRAM, SOC)</td><td>DEV_REV_0.40</td><td>12/17/2017</td></tr><tr><td>14</td><td>15</td><td>SOC: GND</td><td>DEV_REV_0.40</td><td>12/17/2017</td></tr><tr><td>15</td><td></td><td>SOC: GND-2</td><td>DEV_REV_0.40</td><td>12/17/2017</td></tr><tr><td>16</td><td>18</td><td>NAND: NAND1</td><td></td><td>03/09/2017</td></tr><tr><td>17</td><td>19</td><td>NAND: NAND2</td><td></td><td>03/09/2017</td></tr><tr><td>18</td><td>21</td><td>SENSOR: KOBOL, PHOS2, MOLY</td><td>MLB_A_REV_0.6</td><td>02/20/2018</td></tr><tr><td>19</td><td>22</td><td>TOUCH: LANAI MASTER</td><td>J317_MLB_B_POC</td><td>04/05/2017</td></tr><tr><td>20</td><td>23</td><td>TOUCH: KONA SLAVE</td><td>J317_MLB_B_POC</td><td>04/05/2017</td></tr><tr><td>21</td><td>24</td><td>TOUCH: GRAPE CONN</td><td>J120_MIMOSA</td><td>03/15/2017</td></tr><tr><td>22</td><td></td><td>CAMERA: PENROSE ADC</td><td>J418_SYNC_P2</td><td>05/16/2019</td></tr><tr><td>23</td><td>27</td><td>CAMERA: B2B STROBE & MISC</td><td>J317_MLB_B</td><td>01/14/2019</td></tr><tr><td>24</td><td>28</td><td>CAMERA: B2B FRONT</td><td>J317_MLB_SYNC</td><td>05/12/2017</td></tr><tr><td>25</td><td>29</td><td>CAMERA: STROBE</td><td>J317_MLB_SYNC</td><td>05/12/2017</td></tr><tr><td>26</td><td>30</td><td>AUDIO: BORRIS BOOST</td><td></td><td></td></tr><tr><td>27</td><td>31</td><td>AUDIO: DMIC B2B & 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(2/2)</td><td>JASPER_WILL_ADAM</td><td>01/09/2019</td></tr><tr><td>47</td><td>62</td><td>CAMERA: JASPER POWER</td><td>J421_P2_CHINA</td><td>05/22/2019</td></tr><tr><td>48</td><td>65</td><td>CAMERA: B2B RCAM1 WIDE</td><td>JASPER_WILL_ADAM</td><td>01/09/2019</td></tr><tr><td>49</td><td>66</td><td>CAMERA: B2B RCAM2 SWIDE</td><td>J418_SYNC_P2</td><td>05/16/2019</td></tr><tr><td>50</td><td>67</td><td>CAMERA: B2B JASPER</td><td>J418_SYNC_P2</td><td>05/16/2019</td></tr></table><table><tr><th>PAGE</th><th>CSA</th><th>CONTENTS</th><th>SYNC</th><th>DATE</th></tr><tr><td>51</td><td>74</td><td>NFC CONTROLLER</td><td>STOCKHOLM_MLB_0.4.0</td><td>02/26/2019</td></tr><tr><td>52</td><td></td><td>GPM</td><td>J421_P2_CHINA</td><td>05/15/2019</td></tr><tr><td>53</td><td>77</td><td>POWER: APOLLO (1/3)</td><td>DEV_REV_0.40</td><td>12/17/2017</td></tr><tr><td>54</td><td>78</td><td>POWER: APOLLO (2/3)</td><td>DEV_REV_0.40</td><td>12/17/2017</td></tr><tr><td>55</td><td>79</td><td>POWER: APOLLO (3/3)</td><td>DEV_REV_0.40</td><td>12/17/2017</td></tr><tr><td>56</td><td>80</td><td>ORION CONNECTOR & POWER PATH</td><td></td><td>03/09/2017</td></tr><tr><td>57</td><td>81</td><td>POWER: ATHENA (1/4)</td><td>DEV_REV_0.40</td><td>12/17/2017</td></tr><tr><td>58</td><td>82</td><td>POWER: ATHENA (2/4)</td><td>DEV_ARUBA_J3XX</td><td>01/03/2018</td></tr><tr><td>59</td><td>83</td><td>POWER: ATHENA (3/4)</td><td>DEV_REV_0.40</td><td>12/17/2017</td></tr><tr><td>60</td><td>84</td><td>POWER: ATHENA (4/4)</td><td>DEV_REV_0.40</td><td>12/17/2017</td></tr><tr><td>61</td><td>85</td><td>POWER: CHARGER</td><td>DEV_REV_0.40</td><td>12/17/2017</td></tr><tr><td>62</td><td>86</td><td>POWER: EXTERNAL SWITCHES</td><td>ARUBADEV_REV_0.30</td><td>11/27/2017</td></tr><tr><td>63</td><td>87</td><td>POWER: SCORPIUS/BELLATRIX2 BOOSTS</td><td>MLB_A_REV_0.6</td><td>02/20/2018</td></tr><tr><td>64</td><td>89</td><td>POWER: BATTERY & ORION SCORPIUS 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| 6 | 7 | SOC: I/OS | J317_MLB_B | 01/07/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | 8 | SOC: LPDP & MIPI | DEV_REV_0.40 | 12/17/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | 9 | SOC: PCIE | DEV_REV_0.40 | 12/17/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | 10 | SOC: AOP | J417_MLB_SOC_AOP | 01/11/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 11 | SOC: POWER (DDR,SRAM) | DEV_REV_0.40 | 12/17/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | 12 | SOC: POWER (IO) | DEV_REV_0.40 | 12/17/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | 13 | SOC: POWER (CPU, GPU) | DEV_REV_0.40 | 12/17/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | 14 | SOC: POWER (SRAM, SOC) | DEV_REV_0.40 | 12/17/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | 15 | SOC: GND | DEV_REV_0.40 | 12/17/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | | SOC: GND-2 | DEV_REV_0.40 | 12/17/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | 18 | NAND: NAND1 | | 03/09/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | 19 | NAND: NAND2 | | 03/09/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | 21 | SENSOR: KOBOL, PHOS2, MOLY | MLB_A_REV_0.6 | 02/20/2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | 22 | TOUCH: LANAI MASTER | J317_MLB_B_POC | 04/05/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | 23 | TOUCH: KONA SLAVE | J317_MLB_B_POC | 04/05/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | 24 | TOUCH: GRAPE CONN | J120_MIMOSA | 03/15/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | | CAMERA: PENROSE ADC | J418_SYNC_P2 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | 27 | CAMERA: B2B STROBE & MISC | J317_MLB_B | 01/14/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | 28 | CAMERA: B2B FRONT | J317_MLB_SYNC | 05/12/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | 29 | CAMERA: STROBE | J317_MLB_SYNC | 05/12/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | 30 | AUDIO: BORRIS BOOST | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | 31 | AUDIO: DMIC B2B & FILTERS | J317_REV_0_27 | 05/21/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | 32 | AUDIO: SPEAKER AMPS (CNL) | J317_MLB_SYNC | 05/12/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | 33 | AUDIO: SPEAKER AMPS (CNR) | J317_MLB_SYNC | 05/12/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | 34 | AUDIO: SPEAKER AMPS (FHL) | J317_MLB_SYNC | 05/12/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | 35 | AUDIO: SPEAKER AMPS (FHR) | J317_MLB_SYNC | 05/12/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | 36 | IO: ACE PERIPHERALS | USBREDRIVER_LEVEL_SHIFTER | 01/10/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 33 | 37 | IO: IOFLEX B2B & SIM B2B | | 03/09/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 34 | 38 | IO: ACE USB-C CONTROLLER | J420_MLB | 01/24/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 35 | | IO: ACE REDRIVER | MLB_A_REV_0.6 | 11/06/2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 36 | 40 | IO: ACE FILTERS | J320_USBDC | 11/06/2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 37 | 41 | PEARL: RIGEL DRIVER | J317_REV_0_34 | 05/26/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 38 | 42 | PEARL: B2B TITUS + JULIET | J317_REV_38 | 06/02/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 39 | 43 | PEARL: B2B ROSALINE + MISC | J317_REV_38 | 06/02/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | 45 | DISPLAY: B2B CONN | | 03/09/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 41 | 46 | DISPLAY: EDP SUPPORT | | 03/09/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 42 | | GODFATHER | J420_WIFI_MLB_0.15.0 | 05/28/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 43 | 50 | J421: Remote FEM | J420_WIFI_MLB_0.15.0 | 05/28/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 44 | 51 | J421: Front End | J420_WIFI_MLB_0.15.0 | 05/28/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 45 | 60 | CAMERA: ADAMS POWER (1/2) | JASPER_WILL_ADAM | 01/09/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 46 | 61 | CAMERA: ADAMS IO (2/2) | JASPER_WILL_ADAM | 01/09/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 47 | 62 | CAMERA: JASPER POWER | J421_P2_CHINA | 05/22/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 48 | 65 | CAMERA: B2B RCAM1 WIDE | JASPER_WILL_ADAM | 01/09/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 49 | 66 | CAMERA: B2B RCAM2 SWIDE | J418_SYNC_P2 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | 67 | CAMERA: B2B JASPER | J418_SYNC_P2 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PAGE | CSA | CONTENTS | SYNC | DATE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 51 | 74 | NFC CONTROLLER | STOCKHOLM_MLB_0.4.0 | 02/26/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 52 | | GPM | J421_P2_CHINA | 05/15/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 53 | 77 | POWER: APOLLO (1/3) | DEV_REV_0.40 | 12/17/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 54 | 78 | POWER: APOLLO (2/3) | DEV_REV_0.40 | 12/17/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 55 | 79 | POWER: APOLLO (3/3) | DEV_REV_0.40 | 12/17/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 56 | 80 | ORION CONNECTOR & POWER PATH | | 03/09/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 57 | 81 | POWER: ATHENA (1/4) | DEV_REV_0.40 | 12/17/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 58 | 82 | POWER: ATHENA (2/4) | DEV_ARUBA_J3XX | 01/03/2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 59 | 83 | POWER: ATHENA (3/4) | DEV_REV_0.40 | 12/17/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 60 | 84 | POWER: ATHENA (4/4) | DEV_REV_0.40 | 12/17/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 61 | 85 | POWER: CHARGER | DEV_REV_0.40 | 12/17/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 62 | 86 | POWER: EXTERNAL SWITCHES | ARUBADEV_REV_0.30 | 11/27/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 63 | 87 | POWER: SCORPIUS/BELLATRIX2 BOOSTS | MLB_A_REV_0.6 | 02/20/2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 64 | 89 | POWER: BATTERY & ORION SCORPIUS CONN | J317_REV_0_27 | 05/21/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 65 | | SOC: DEBUG | | 03/09/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 66 | 91 | ALIASES: BB/WLAN/BT | J317_MLB_B | 01/11/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 67 | 92 | ALIASES: J417/J420 DIFF | | 03/09/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 68 | 93 | TEST: TPS/HOLES/FIDUCUALS | TPS_EE_TP_PP | 02/27/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 69 | 94 | TEST: TPS ADDITIONAL | TPS_EE_TP_PP | 02/27/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 70 | 95 | TEST: EE TP/PP | TPS_EE_TP_PP | 02/27/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 71 | 98 | TEST: DCR TABLE | MLB_A_REV_0.6 | 02/20/2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 72 | | ALIASES: POWER | J207_MLB_B | 03/09/2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 73 | 100 | BOM TABLES | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 74 | 101 | BBPMU: CONTROL (1/2) | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 75 | 102 | BBPMU: RAILS (2/2) | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 76 | 103 | BB: INTERFACE (1/3) | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 77 | 104 | BB: MEMORY & TRACING (2/3) | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 78 | 105 | BB: POWER (3/3) | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 79 | 106 | XCVR: TX & GNSS (1/3) | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 80 | 107 | XCVR: INTERFACE & PWR (2/3) | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 81 | 108 | XCVR: PRX DRX (3/3) | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 82 | 109 | ET | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 83 | 110 | LB SPAD | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 84 | 111 | HB SPAD | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 85 | | UHB MLB SPAD | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 86 | 113 | LB DIVERSITY RECEIVE LNA | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 88 | 115 | MIMO RECIEVE LNA | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 89 | 116 | PRIMARY COUPLER | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 90 | 117 | SECONDARY COUPLER | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 91 | 118 | BLANK | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 92 | | ANTENNA: UAT FEED | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 94 | 121 | ANTENNA: CELL CONNECTIONS | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 95 | 122 | ANTENNA: Diagram and LAA | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 96 | 123 | SIM | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 97 | 124 | TEST POINTS | RADIO_MLB_0.57.0 | 05/16/2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PART# | QTY | DESCRIPTION | REFERENCE DESIGNATOR(S) | CRITICAL | SECTION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 051-04757 | 1 | SCH, MLB-B, J421 | SCH1 | CRITICAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 820-01798 | 1 | PCBF, MLB-B, J421 | PCB1 | CRITICAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| REV | ECN | DESCRIPTION OF REVISION | CK APPD | DATE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 0017936654 | ENGINEERING RELEASED | | 2019-05-28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| DRAWING TITLE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SCHEM, MLB-B, NY, J421 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | 7 | | 6 | | 5 | | 4 | | 3 | | 2 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

J4xx System Block Diagram

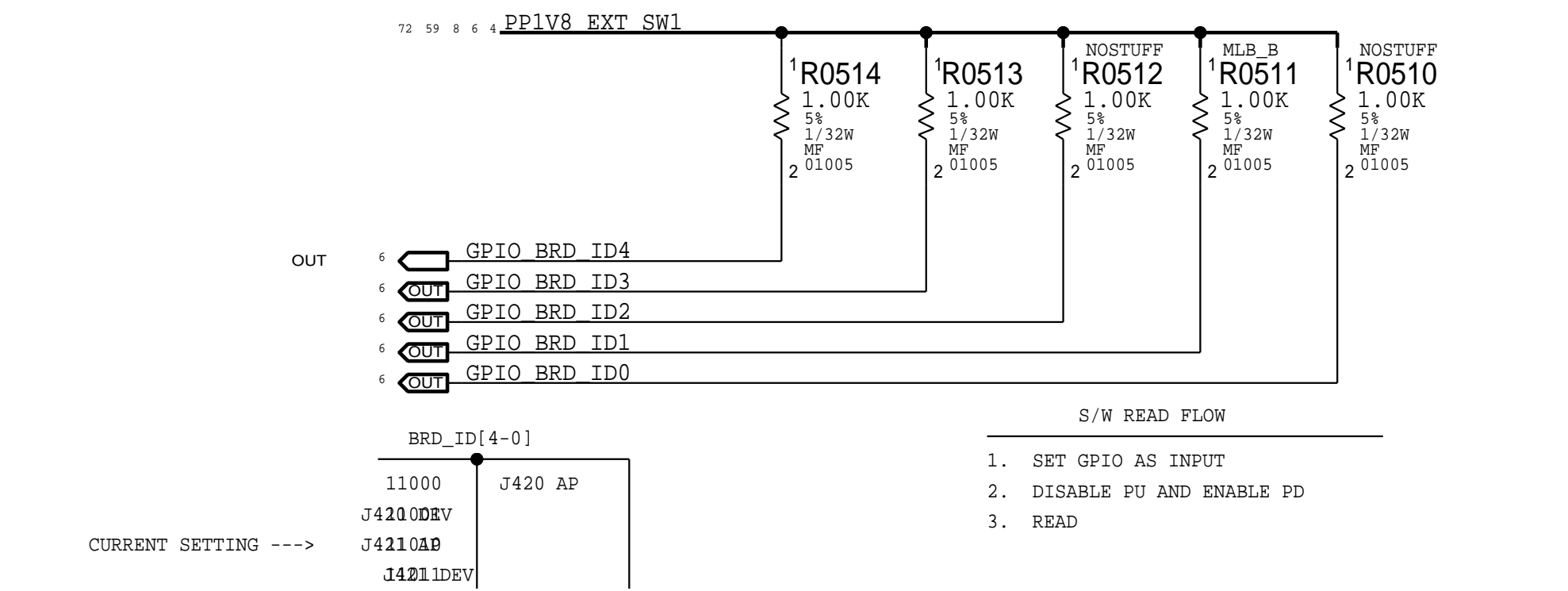
Apple Confidential Updated: May 9th, 2019



BOOT CONFIG ID

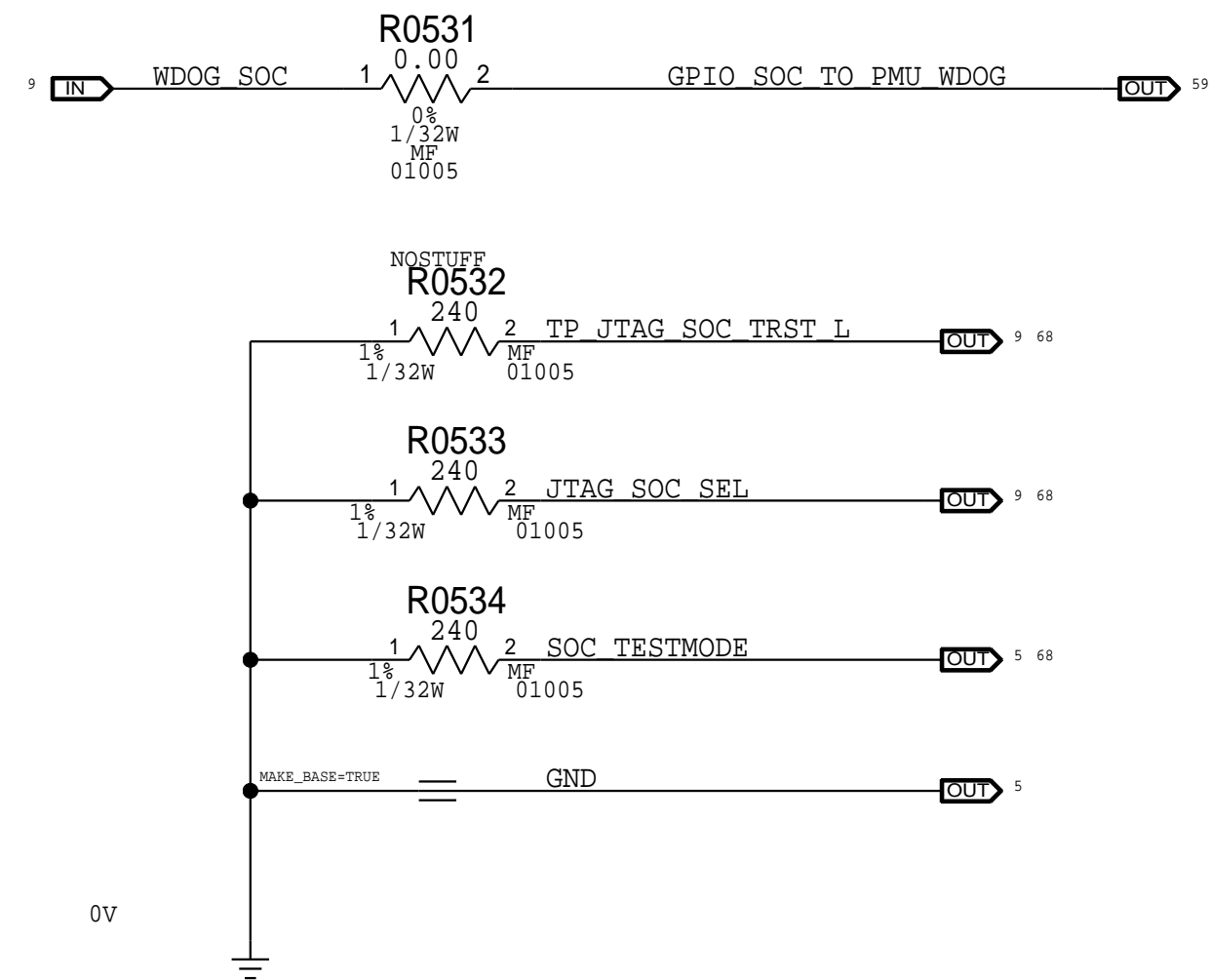
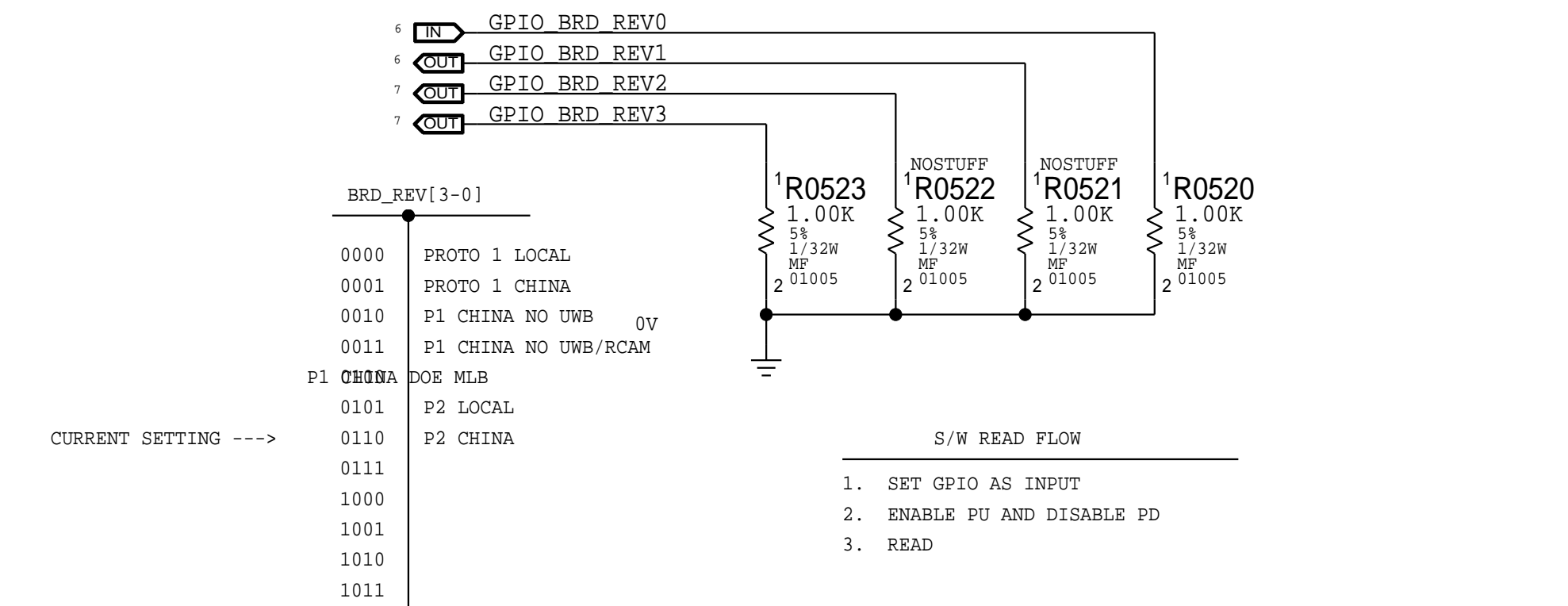


BOARD ID



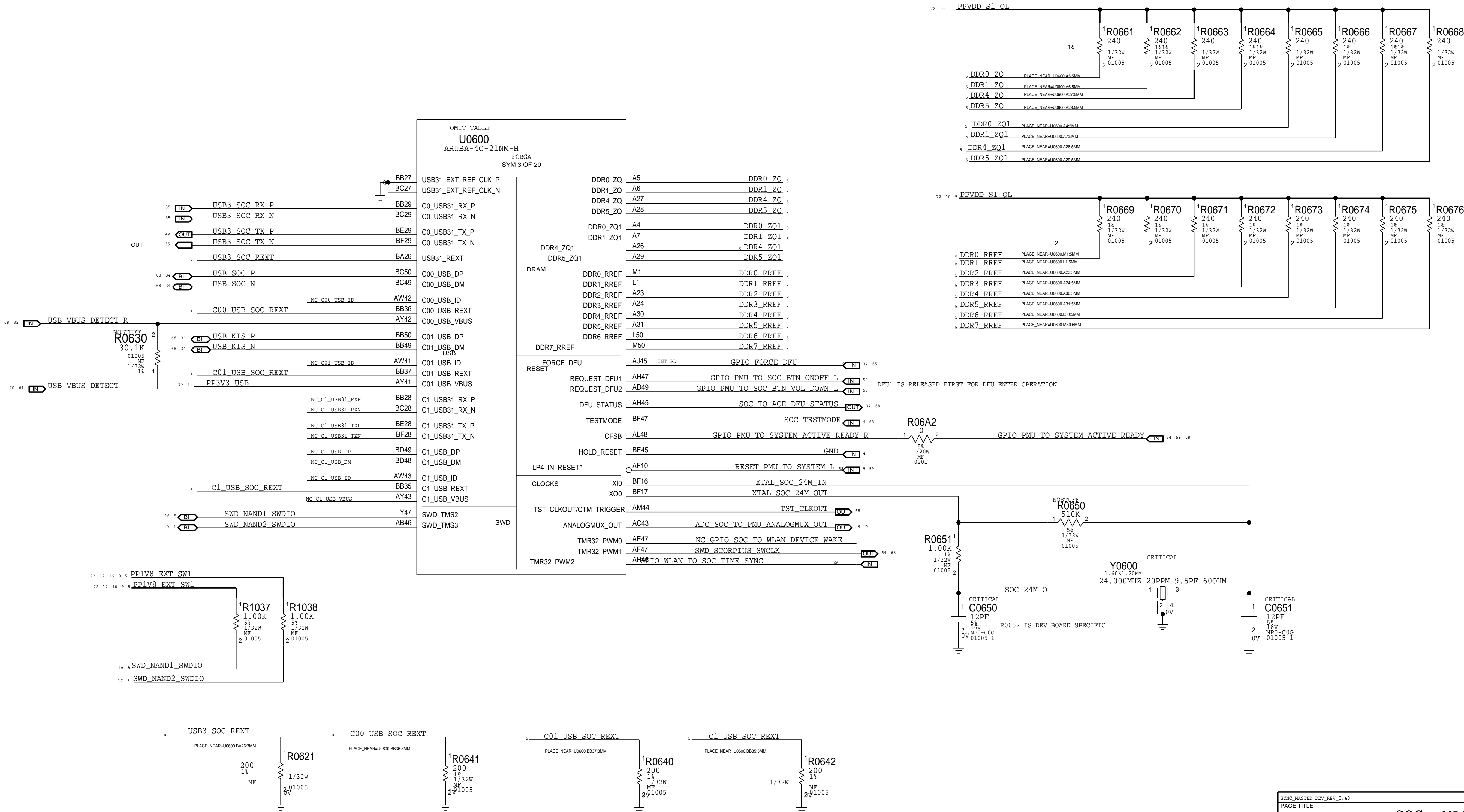
BOARD REVISION

NOTE: STUFFING RESISTOR MEANS 0



| Device | 8-BIT | 7-BIT | Signal | Direction | Pin |
|----------------|--------------|-----------|--------|----------------|-----------------------|
| I2C0 | DEVIDE | 8-BIT | 7-BIT | MAKE_BASE=TRUE | I2C0_SCL_1V8 |
| ACE2(ONE-ACE) | 0X70 | 0X38 | | | |
| ACE2(ALL) | 0XD6 | 0X6B | | | |
| I2C1 | DEVIDE | 8-BIT | 7-BIT | MAKE_BASE=TRUE | I2C1_SCL_1V8 |
| SKR AMP PHRT | 0X70 | 0X38 | | | |
| SKR AMP PHRW | 0X72 | 0X39 | | | |
| SKR AMP FHLT | 0X74 | 0X3A | | | |
| SKR AMP FHLW | 0X76 | 0X3B | | | |
| I2C2 | DEVIDE | 8-BIT | 7-BIT | MAKE_BASE=TRUE | I2C2_SCL_1V8 |
| SKR AMP CNRT | 0X78 | 0X3C | | | |
| SKR AMP CNRW | 0X7A | 0X3D | | | |
| SKR AMP CNIT | 0X7C | 0X3E | | | |
| SKR AMP CNLW | 0X7E | 0X3F | | | |
| SKR BOOST MST | 0X60 | 0X30 | | | |
| SKR BOOST SLV | 0X62 | 0X31 | | | |
| BELLATRIX | 0X26 | 0X13 | | | |
| I2C3 | DEVIDE | 8-BIT | 7-BIT | MAKE_BASE=TRUE | I2C3_SCL_1V8 |
| PENROSE ADC | 0X90 | 0X48 | | | |
| I2C4 | SEP I2C | | | | |
| I2C5 | DEVIDE | 8-BIT | 7-BIT | MAKE_BASE=TRUE | I2C5_SCL_1V8 |
| TCN | 0X30-0X4E | 0X18-0X27 | | | |
| TEMP (U2400) | 0XE0 | 0X70 | | | |
| I2C0 AOP | DEVIDE | 8-BIT | 7-BIT | MAKE_BASE=TRUE | I2C AOP I2CM0_SCL_1V8 |
| ALS (C3) | 0X72 | 0X39 | | | |
| ALS (C4) | 0X52 | 0X29 | | | |
| YOGI(ROSALINE) | 0X66 | 0X33 | | | |
| DOPFLER(ROSA.) | 0XB0 | 0X58 | | | |
| I2C1 AOP | DEVIDE | 8-BIT | 7-BIT | MAKE_BASE=TRUE | I2C AOP I2CM1_SCL_1V8 |
| SCORPIUS | 0XAA | 0X55 | | | |
| ISP | NOT USED | | | | |
| I2C0 | DEVIDE | 8-BIT | 7-BIT | MAKE_BASE=TRUE | ISP I2C1_SCL_1V8 |
| 0X30 | 0X18 | | | | |
| I2C1 | 8-BIT | 7-BIT | | | |
| 0X20 | 0X10 | | | | |
| I2C2 | DEVIDE | 8-BIT | 7-BIT | MAKE_BASE=TRUE | ISP I2C2_SCL_1V8 |
| TITUS | 0XCC | 0X66 | | | |
| RIGEL | 0XAA | 0X55 | | | |
| I2C3 | DEVIDE | 8-BIT | 7-BIT | MAKE_BASE=TRUE | ISP I2C3_SCL_1V8 |
| SMC | 0XCC | 0X66 | | | |
| I2C0 | DEVIDE | 8-BIT | 7-BIT | MAKE_BASE=TRUE | ISP I2C3_SDA_1V8 |
| POTOMAC | 0XEA | 0X75 | | | |
| SMC | DEVIDE | 8-BIT | 7-BIT | MAKE_BASE=TRUE | I2C SMC I2CM0_SCL_1V8 |
| I2C1 | ACE2 | 0X70 | 0X38 | | |
| SMC | DEVIDE | 8-BIT | 7-BIT | MAKE_BASE=TRUE | I2C SMC I2CM1_SCL_1V8 |
| I2C1 | ACE2 | 0X70 | 0X38 | | |
| SMC | DEVIDE | 8-BIT | 7-BIT | MAKE_BASE=TRUE | I2C SMC I2CM1_SDA_1V8 |
| I2C2 | GASGAUGE | 0XAA | 0X55 | | |
| SMC | DEVIDE | 8-BIT | 7-BIT | MAKE_BASE=TRUE | I2C SMC I2CM2_SCL_1V8 |
| I2C2 | GASGAUGE | 0XAA | 0X55 | | |
| SMC | DEVIDE | 8-BIT | 7-BIT | MAKE_BASE=TRUE | I2C SMC I2CM2_SDA_1V8 |
| I2C3 | ATHENA | 0X78 | 0X3C | | |
| I2C3 | APOLLO | 0X80 | 0X40 | | |
| SMC | DEVIDE | 8-BIT | 7-BIT | MAKE_BASE=TRUE | I2C SMC I2CM3_SCL_1V8 |
| I2C4 | NOT USED | | | | |
| ADAMS | RCAM1(FOCUS) | 0X18 | 0X0C | | |
| I2C1 | RCAM1(IN) | 0X20 | 0X10 | | |
| STROBE2 | 0X0C | 0X67 | | | |
| ADAMS | DEVIDE | 8-BIT | 7-BIT | MAKE_BASE=TRUE | I2C1 RCAM PMU SCL |
| I2C2 | JA PERISCOPE | 0X20 | 0X10 | | |
| I2C2 | JA RIKER | 0X60 | 0X30 | | |
| ADAMS | JA EEPROM | 0XA2 | 0X51 | | |
| I2C3 | DEVIDE | 8-BIT | 7-BIT | MAKE_BASE=TRUE | I2C2 RCAM PMU SCL |
| I2C3 | WILL | 0X80 | 0X40 | | |
| ADAMS | DEVIDE | 8-BIT | 7-BIT | MAKE_BASE=TRUE | I2C2 RCAM PMU SDA |
| I2C4 | RCAM2(OH) | 0X40 | 0X20 | | |
| I2C4 | RCAM2(OH) | 0X40 | 0X20 | | |

SOC: MAIN

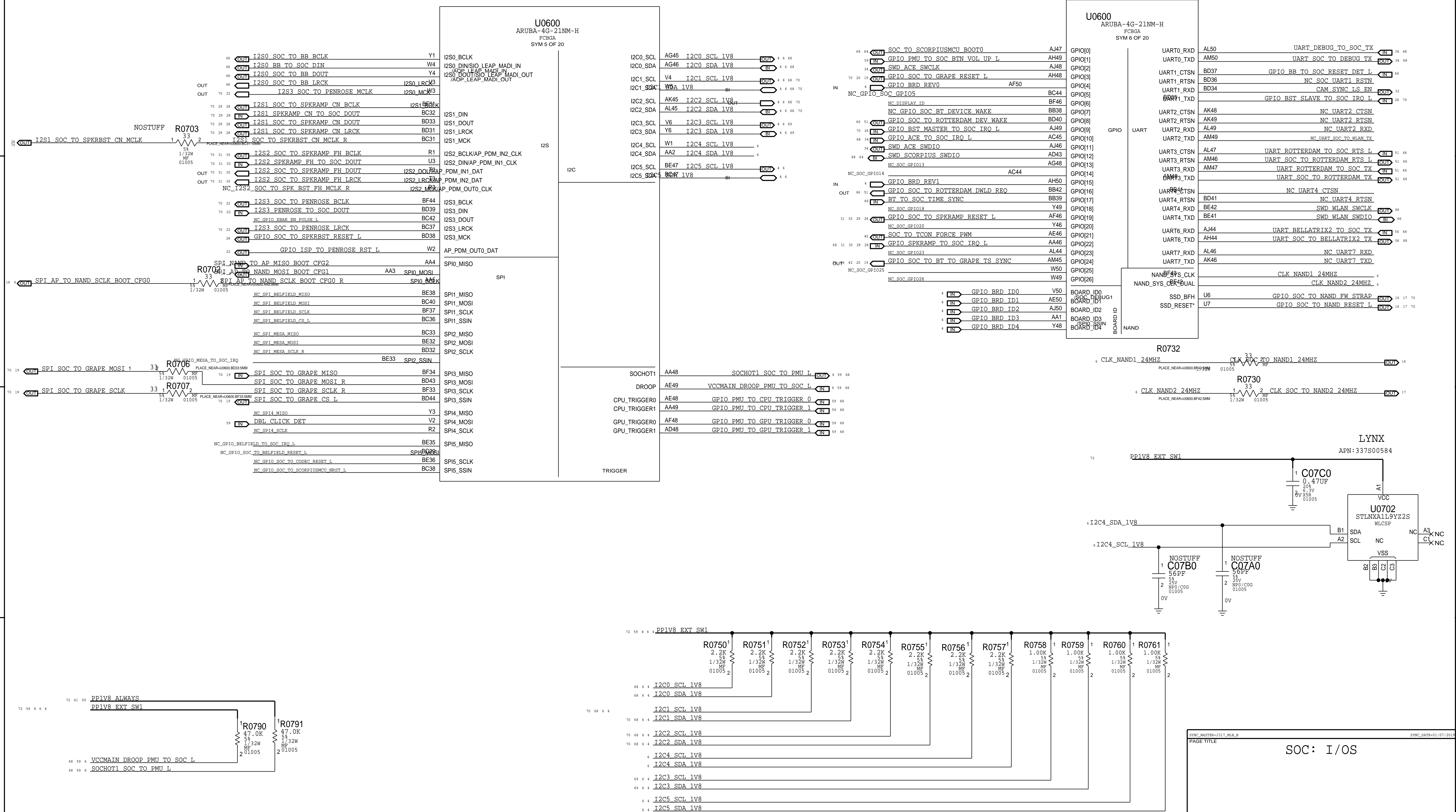


| PART NUMBER | ALTERNATE FOR | BOM COMMENTS | COMMENTS: |
|-------------|---------------|--------------|--------------------|
| 197S0591 | | Y0600 | EPSON, 24MHZ, XTAL |
| 197S0588 | 197S0591 | | TXC, 24MHZ, XTAL |

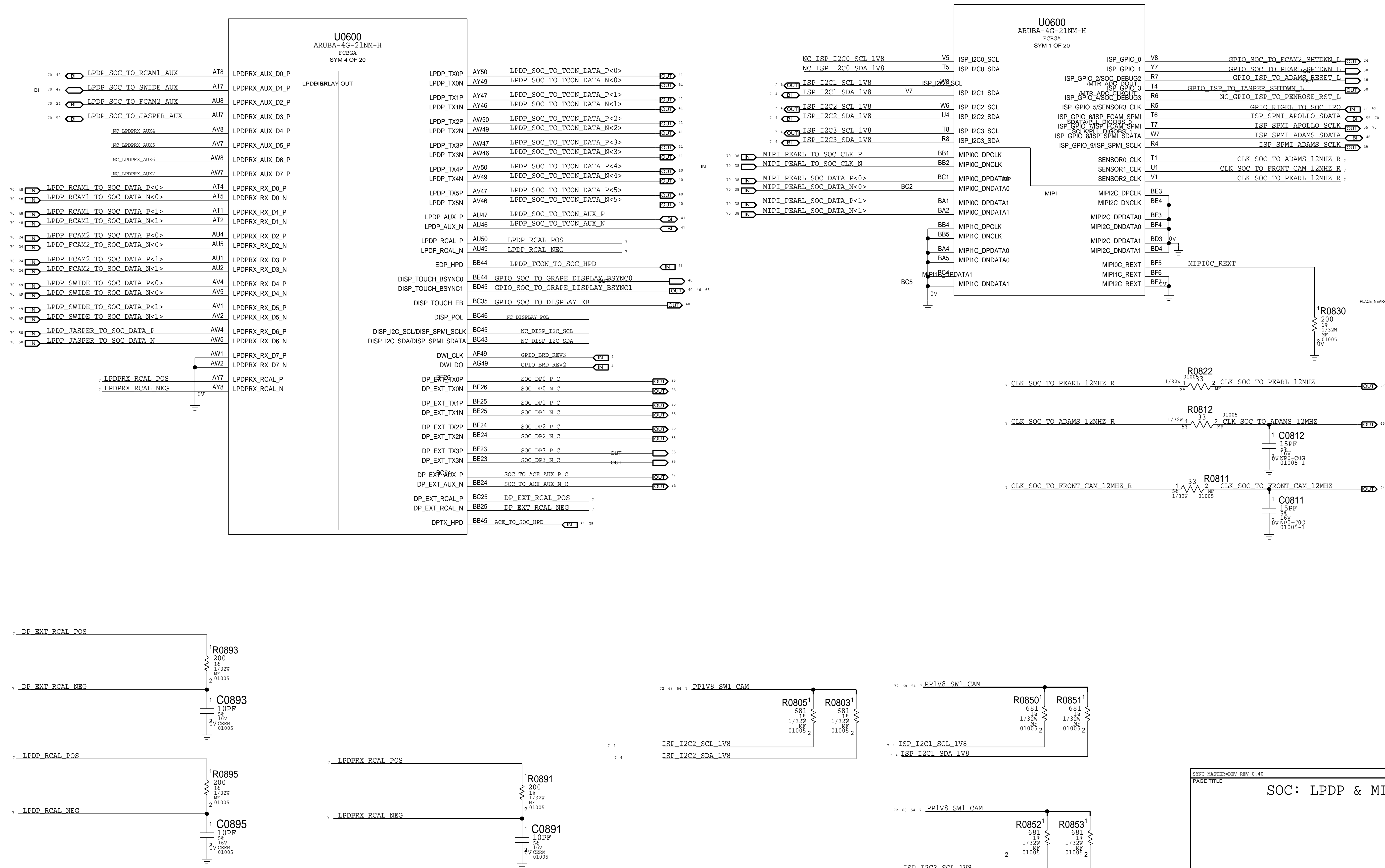
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PAGE TITLE

SOC: MAIN

SOC: GPIO



SOC: LPDP & MIPI

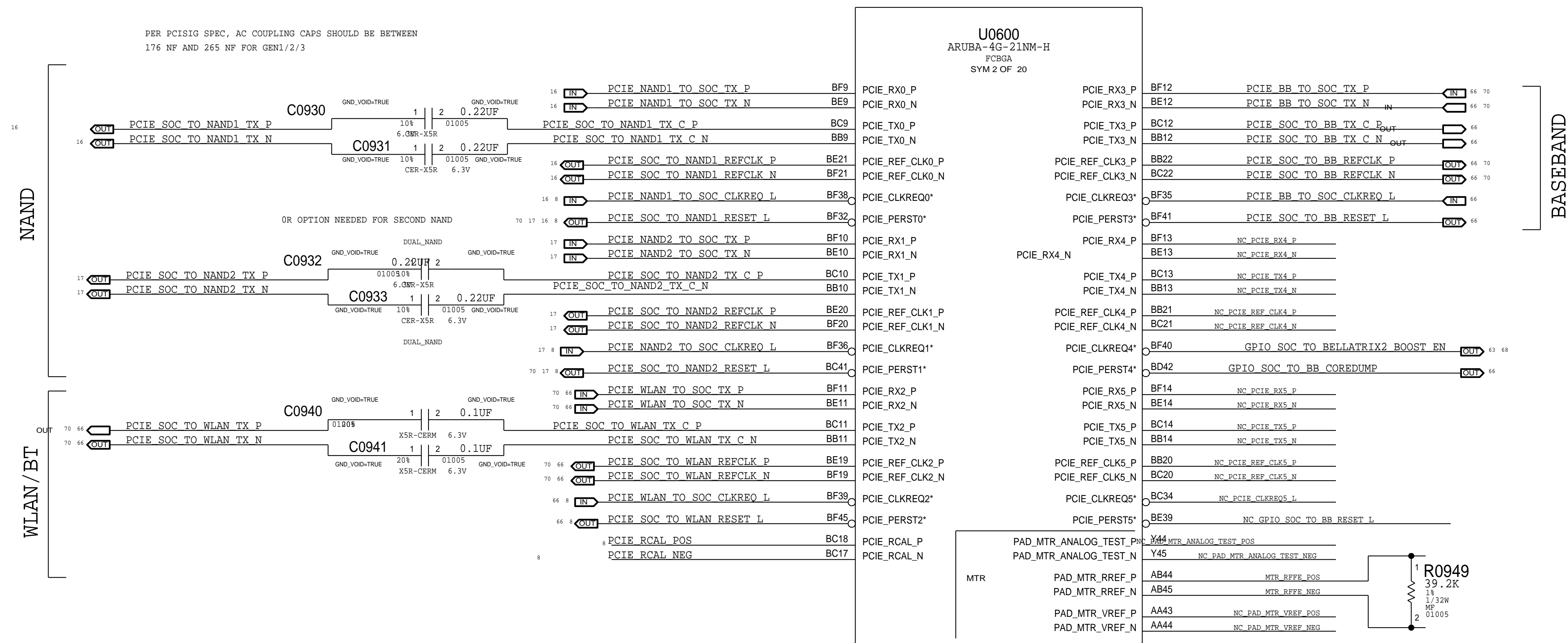


SYNC_MASTER=DEV_REV_0_40
PAGE TITLE

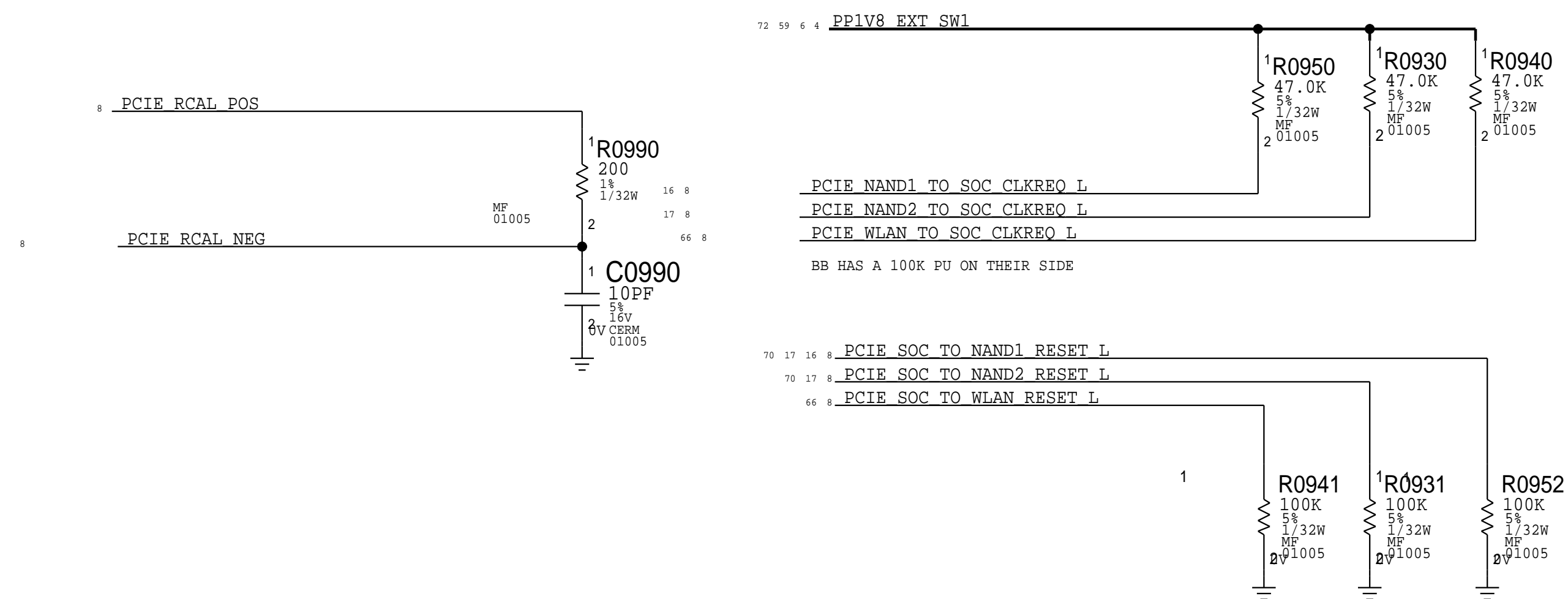
SOC: LPDP & MIPI

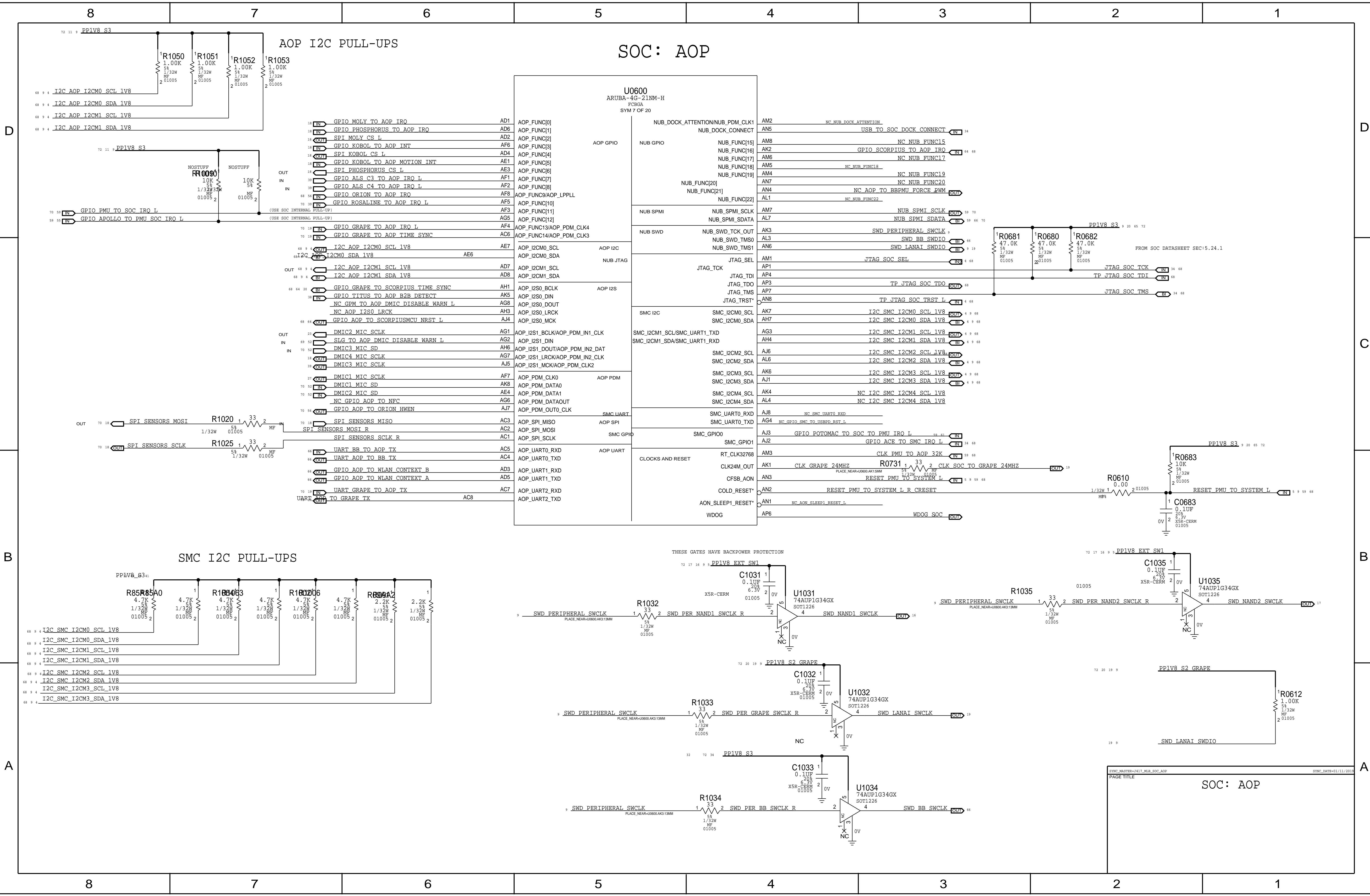
SYNC_DATE=12/17/2017

SOC: PCIE

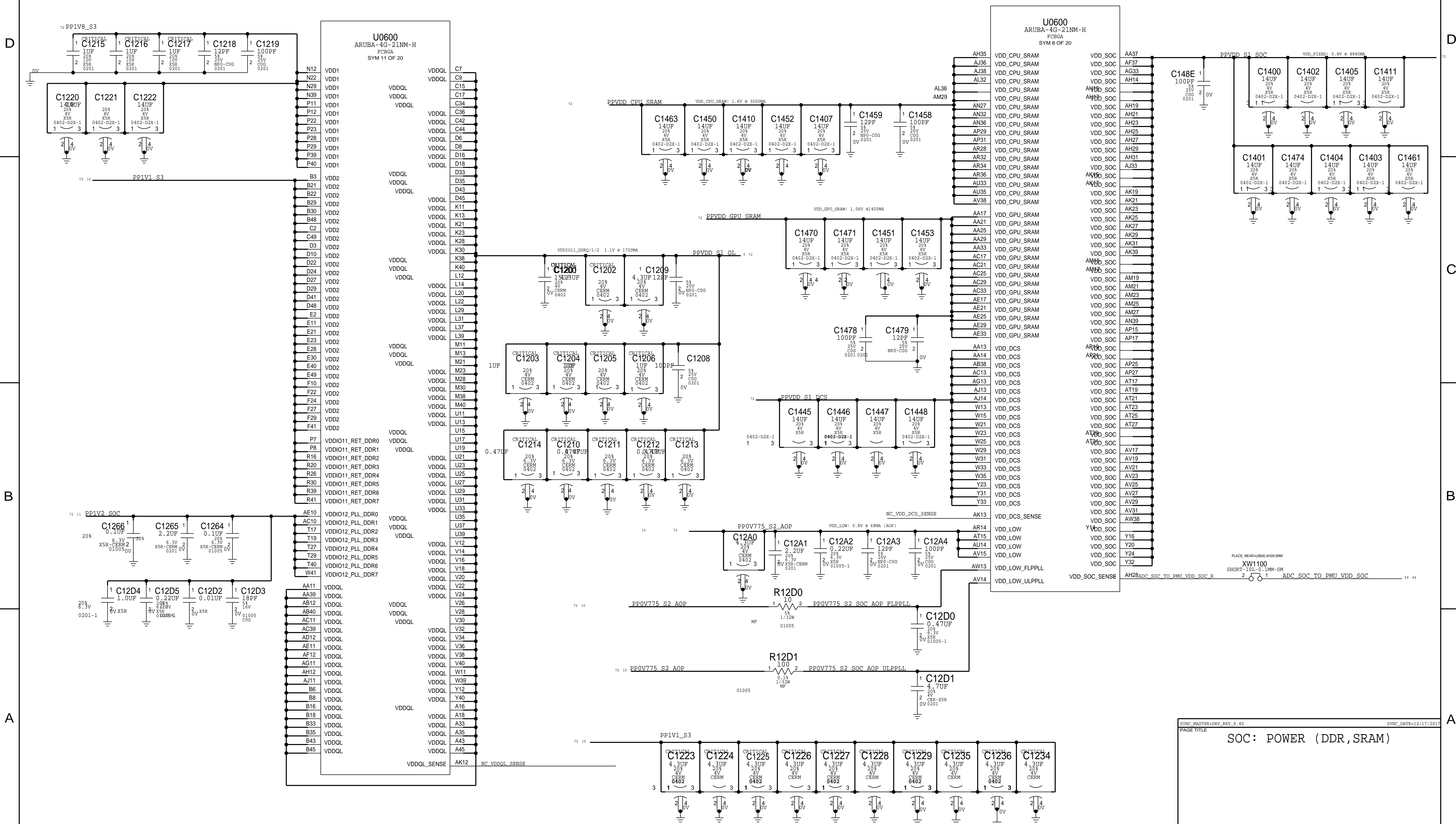


TO BE CHECKED WITH SEG- DO NOT MATCH WITH SILVAL
IS THE PULL-UP VOLTAGE CORRECT?





SOC: POWER (DDR, SRAM)

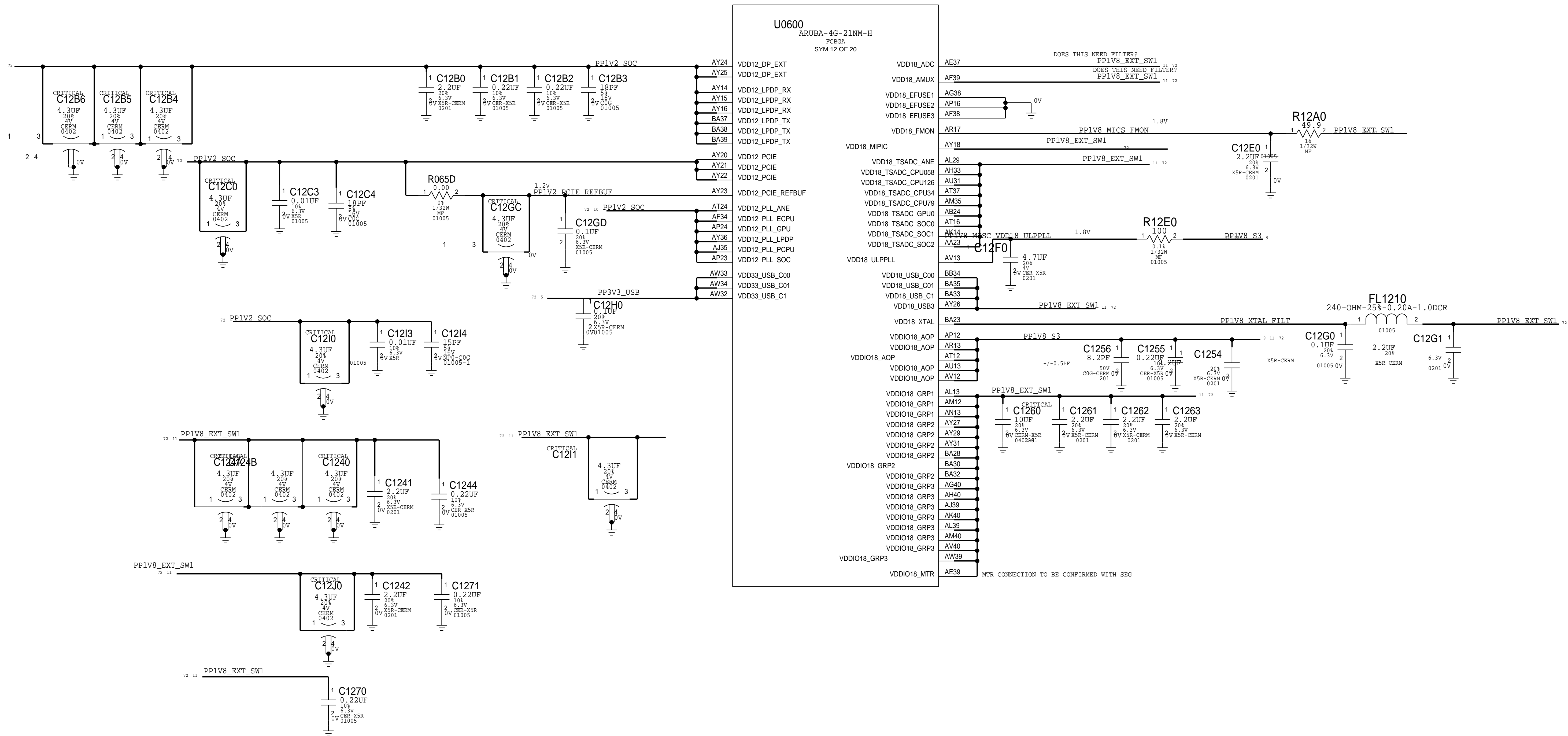


SOC: POWER (IO)

| PART NUMBER | ALTERNATE FOR PART NUMBER | BOM OPTION | REF DES | COMMENTS: |
|-------------|---------------------------|------------|--------------|-------------------------|
| 138S00049 | 138S0831 | | C1221 & MORE | SDAR://PROBLEM/19974064 |

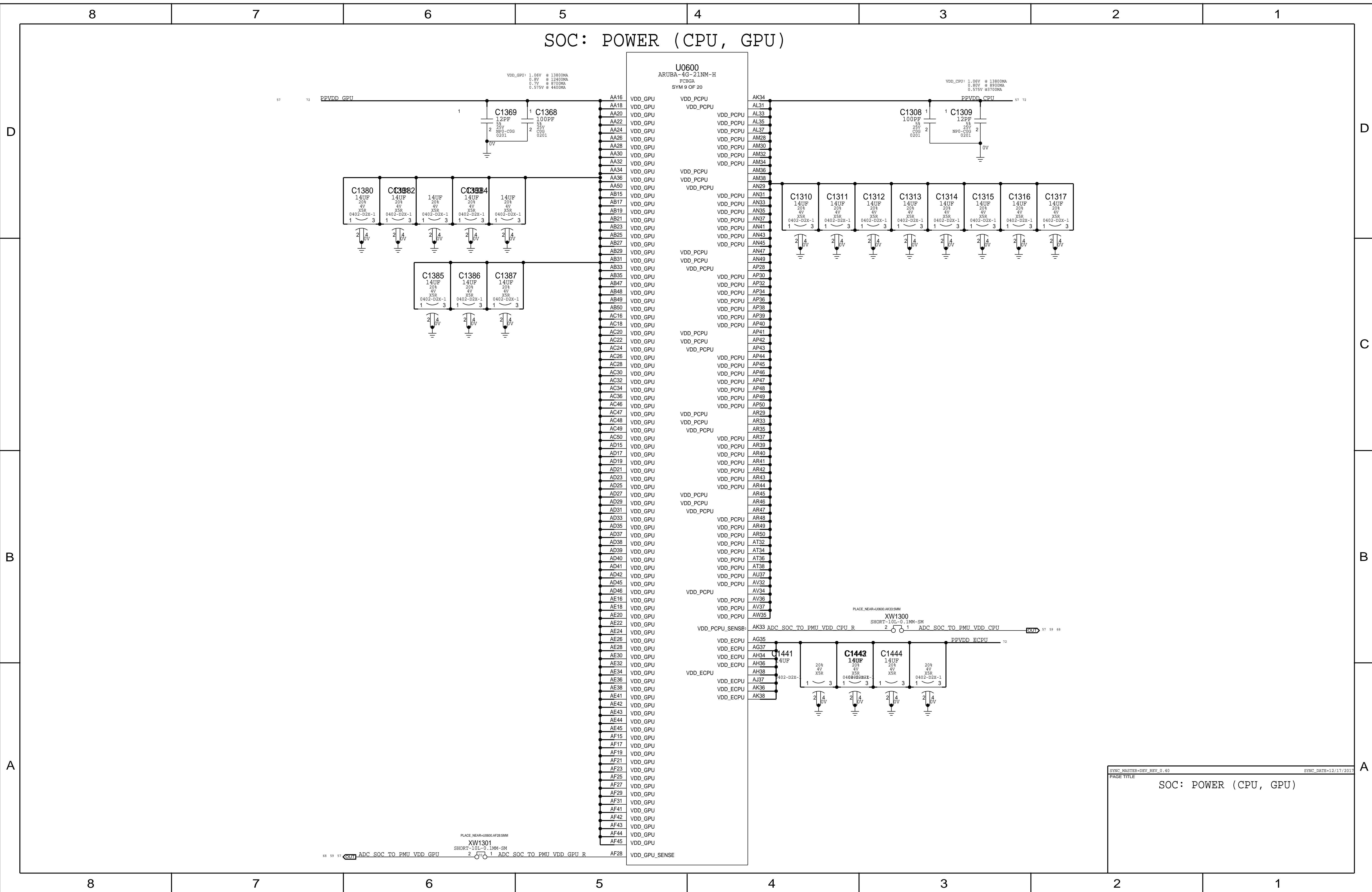
```
VDD12_PLL_CPU: 1.2V @ 7MA
VDD12_PLL_SOC: 1.2V @ 4MA
VDD12_PLL_GPU: 1.2V @ 7MA
VDD12_PLL_LDPDP: 1.2V @ 9MA
VDD12_PCIE_REFBUF: 1.2V @ 48MA
VDD12_LDPDP_TX: 1.2V @ 45MA
VDD12_LDPDP_RX: 1.2V @ 55MA
VDD12_USB3: 1.2V @ 25MA
VDD12_DP_EXT: 1.2V @ 40MA
```

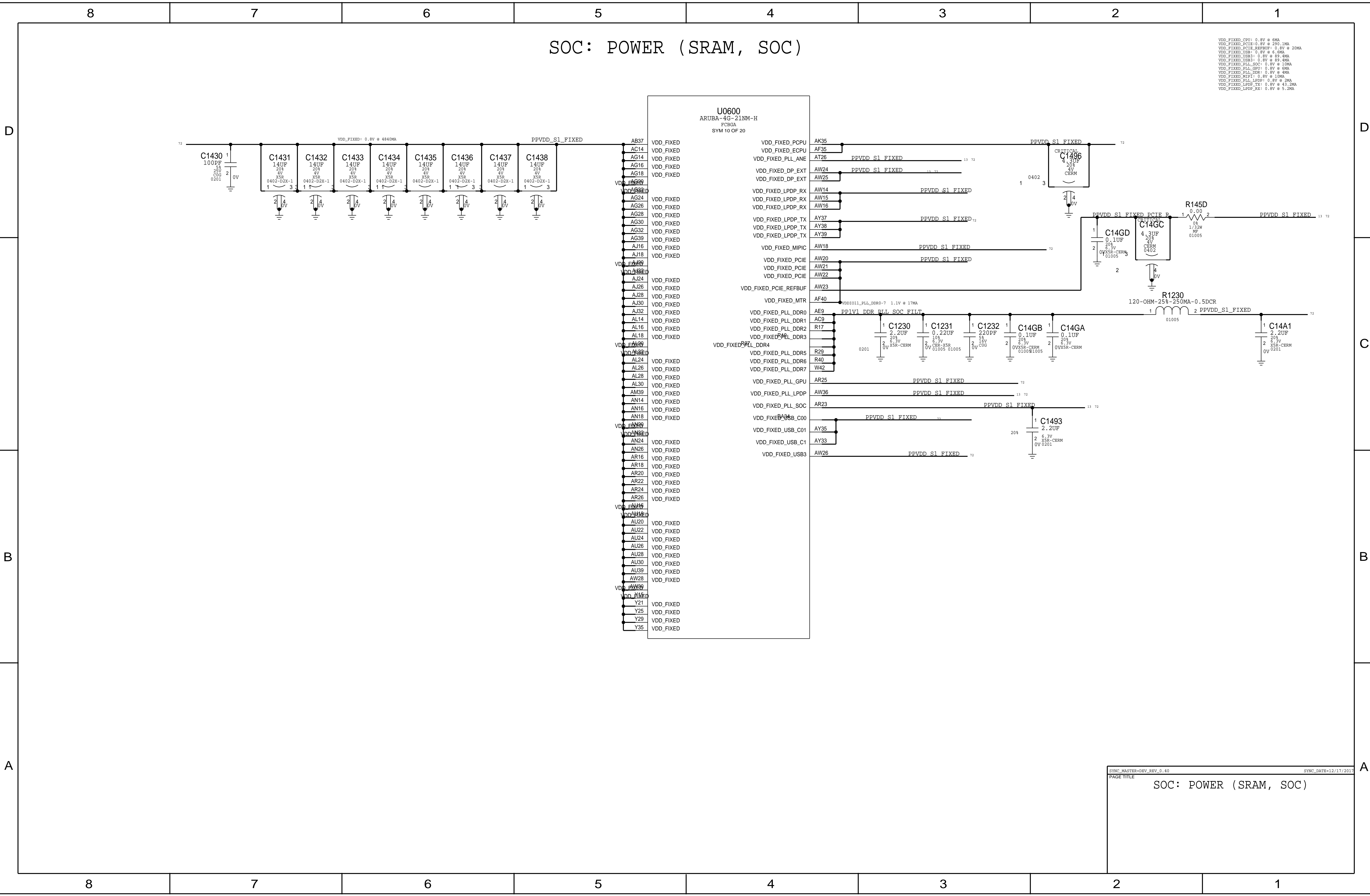
```
VDD18_AOP: 1.8V @ TBDMA
VDD18_USB: 1.8V @ 17MA
VDD18_TSADC: 1.8V @ 10.4MA
VDDIO18_GRP: 1.8V @ TBDMA
VDD18_MIP1: 1.8V @ 2MA
VDD18_XTAL: 1.8V @ 2MA
VDD18_LPOSC: 1.8V @ 1MA
VDD18_FMON: 1.8V @ 1MA
VDD18_PCIE: 1.8V @ 81.7MA
VDD33_USB: 3.3V @ 5MA
```



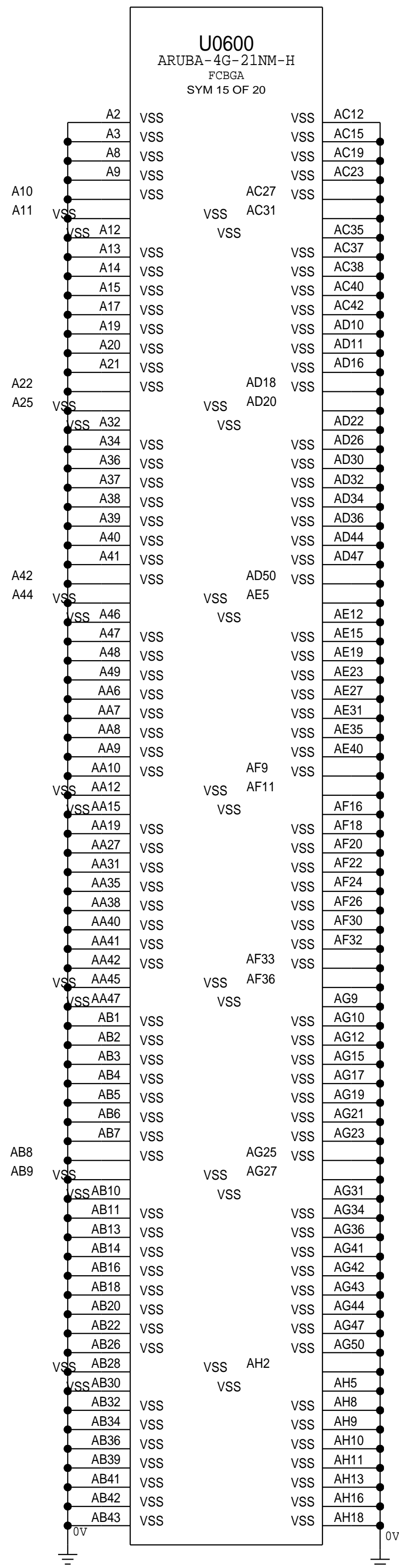
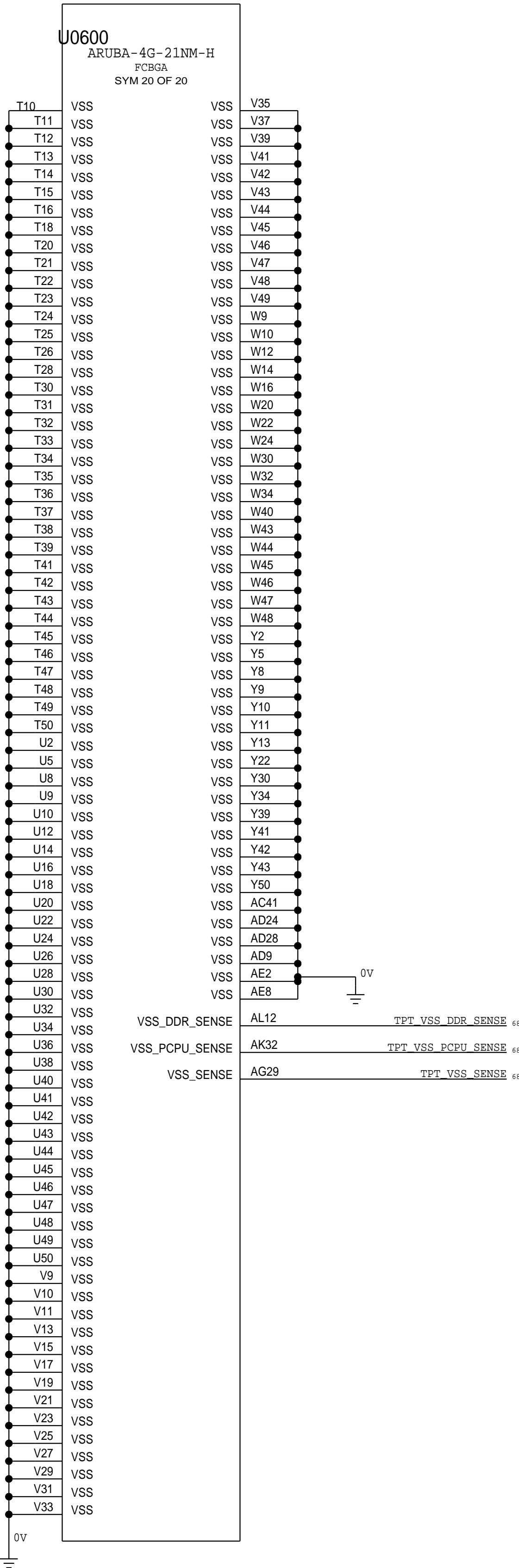
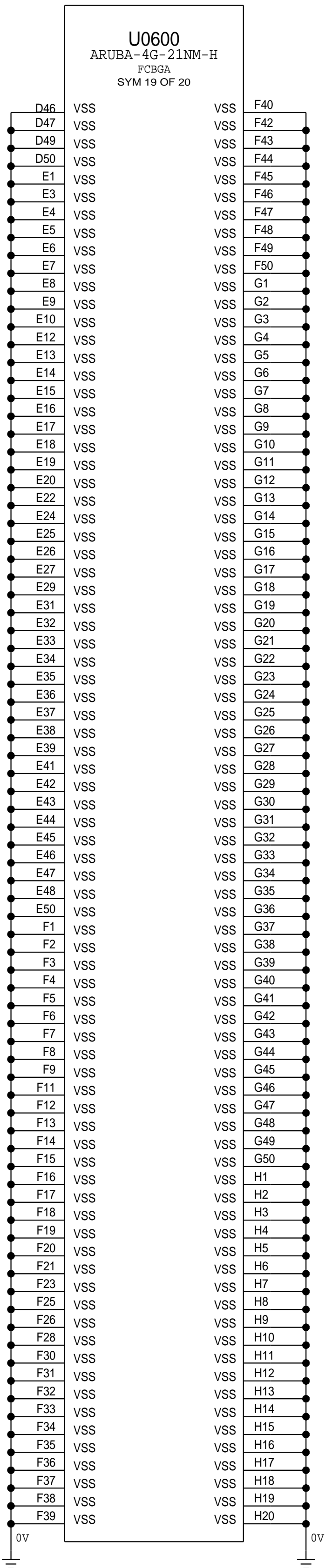
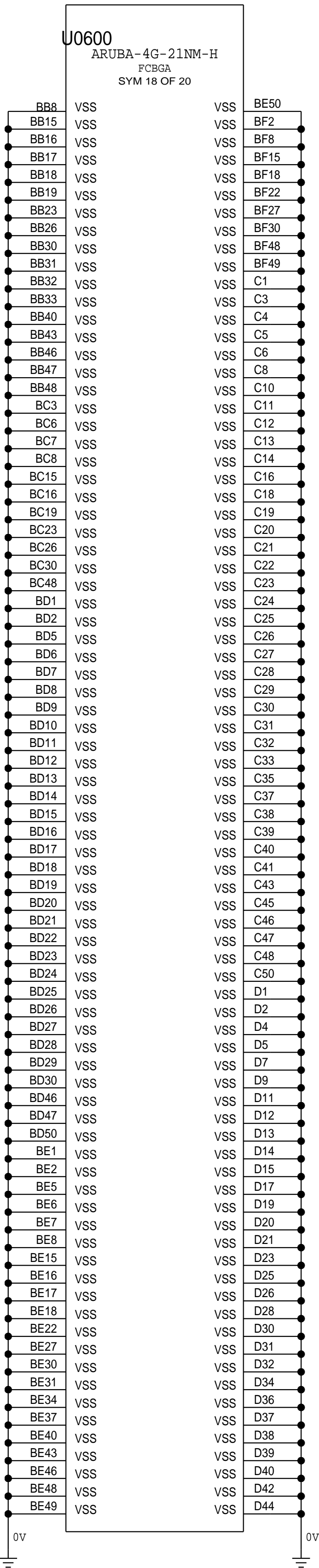
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| PAGE TITLE | |

SOC: POWER (IO)

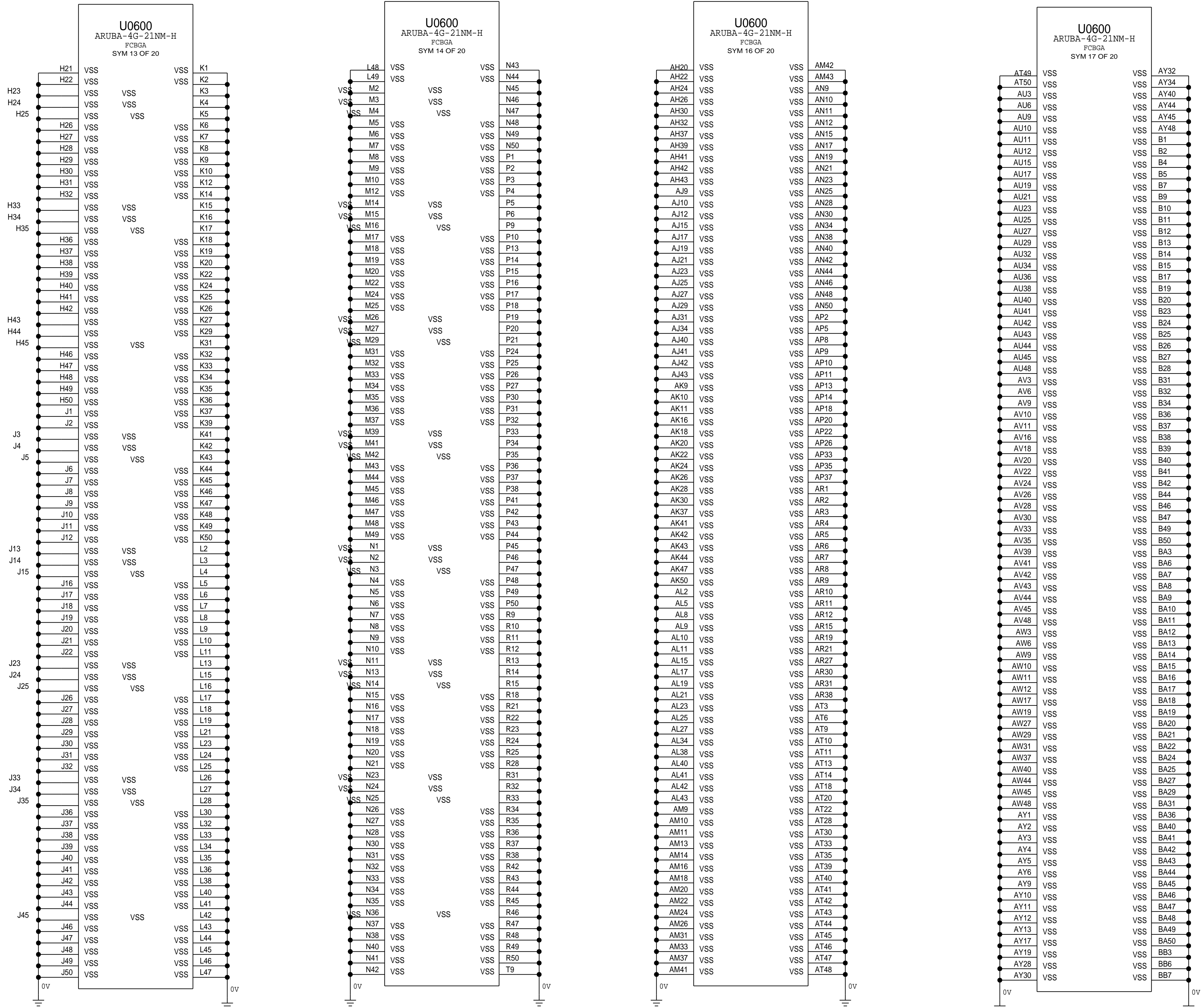




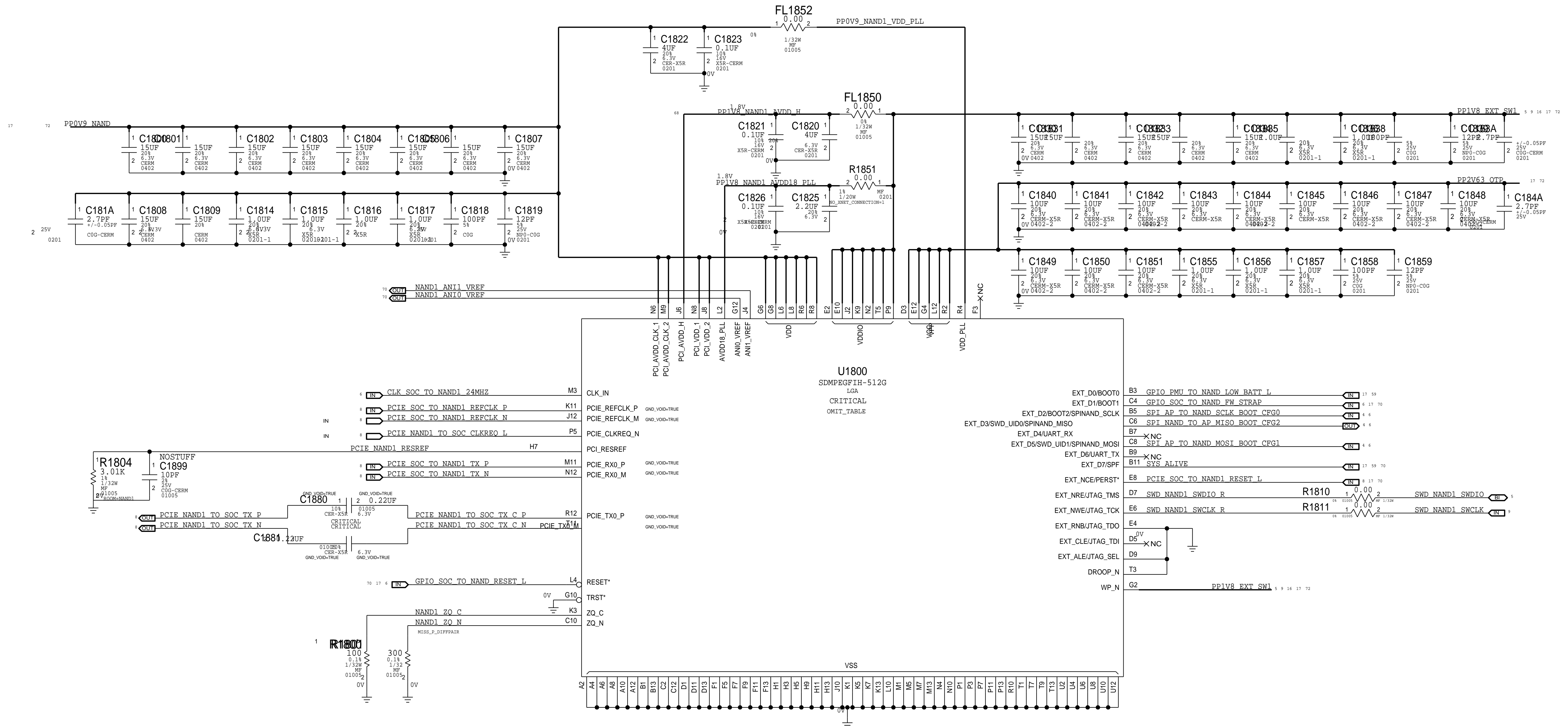
SOC: GND (1)



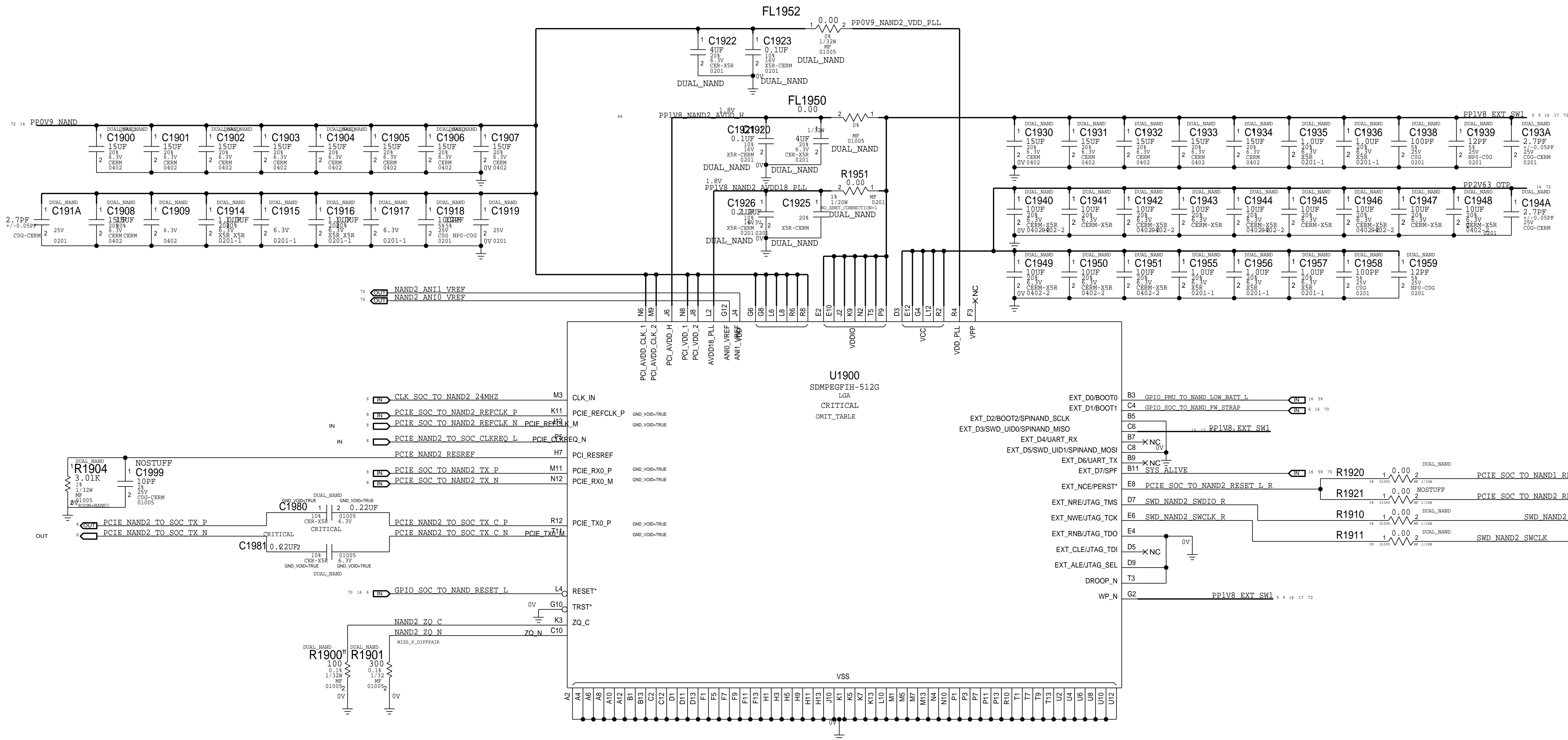
SOC: GND (2)



S4E NAND1



S4E NAND2

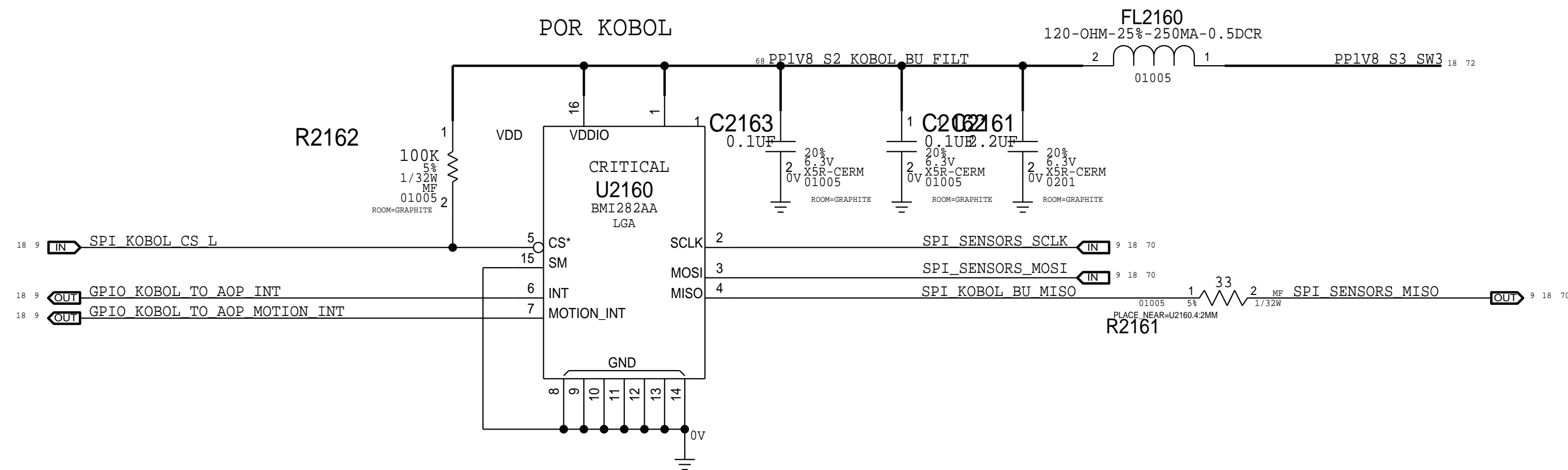
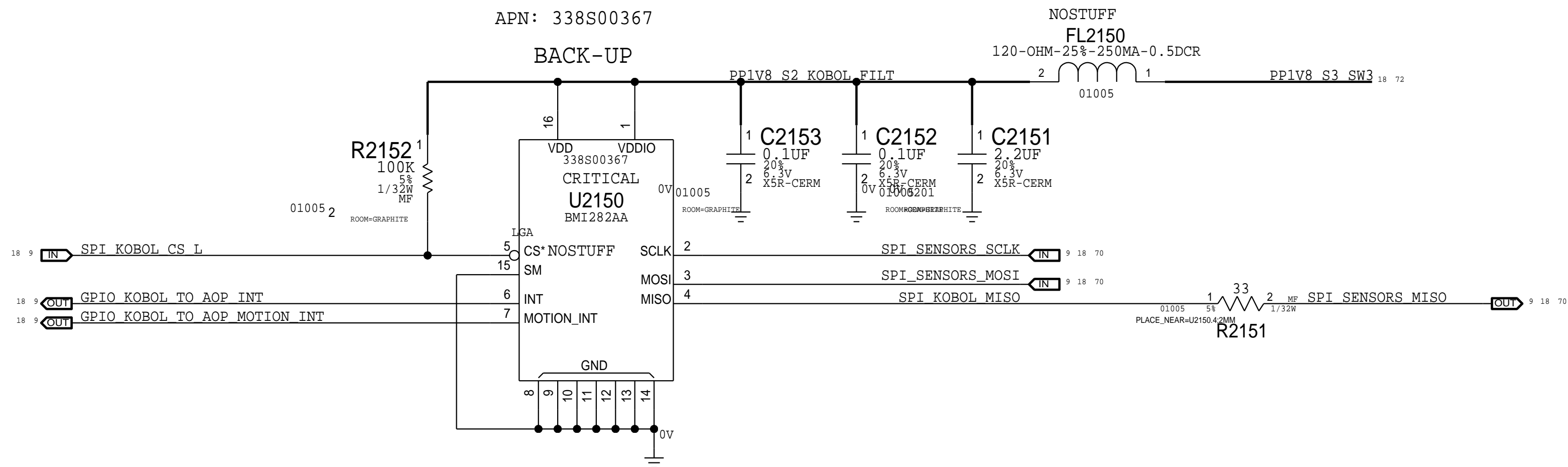


| | |
|------------|-------------|
| PAGE TITLE | NAND: NAND2 |
|------------|-------------|

SENSORS

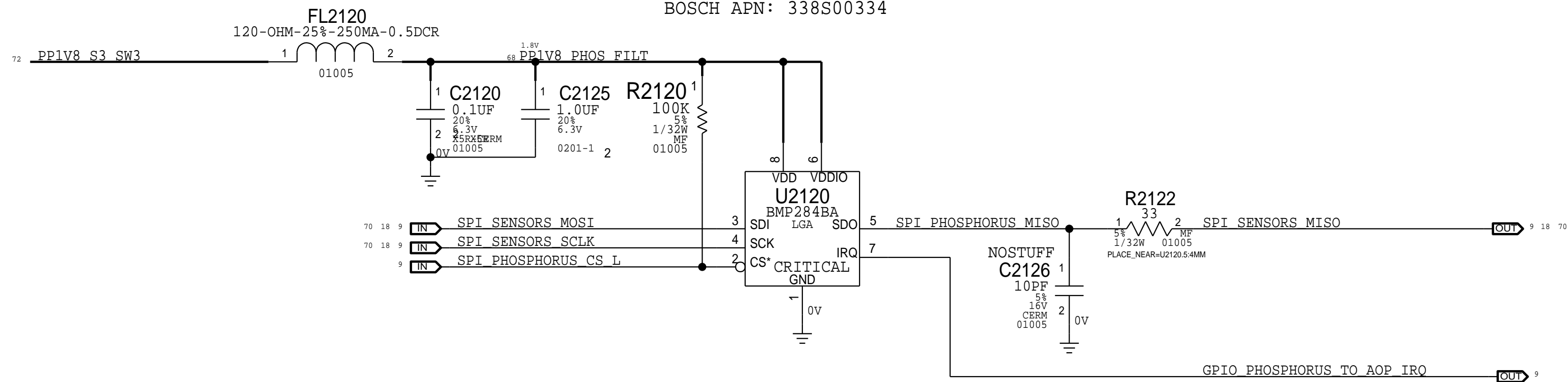
KOBOL - ACCEL & GYRO

APN: 338S00367



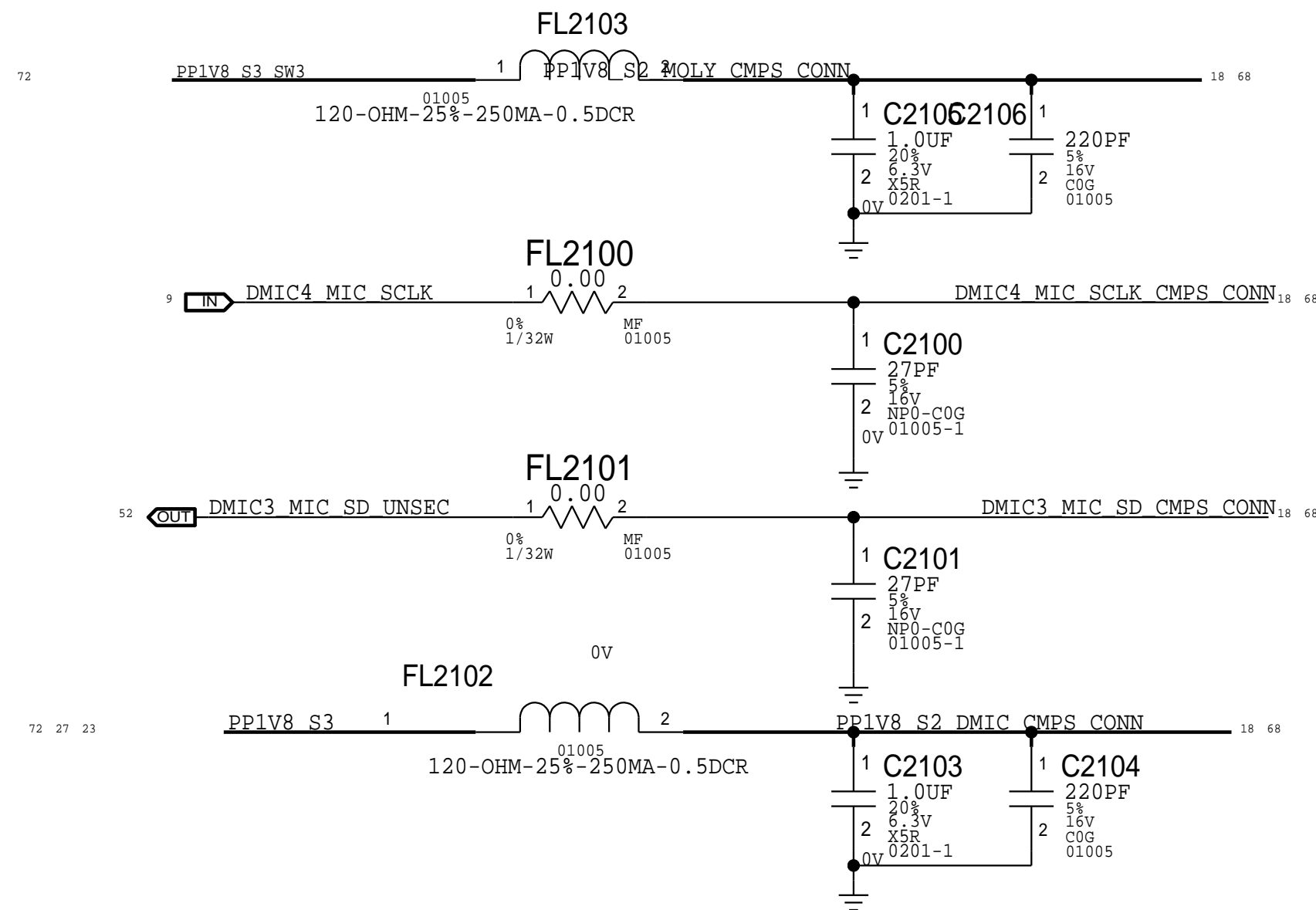
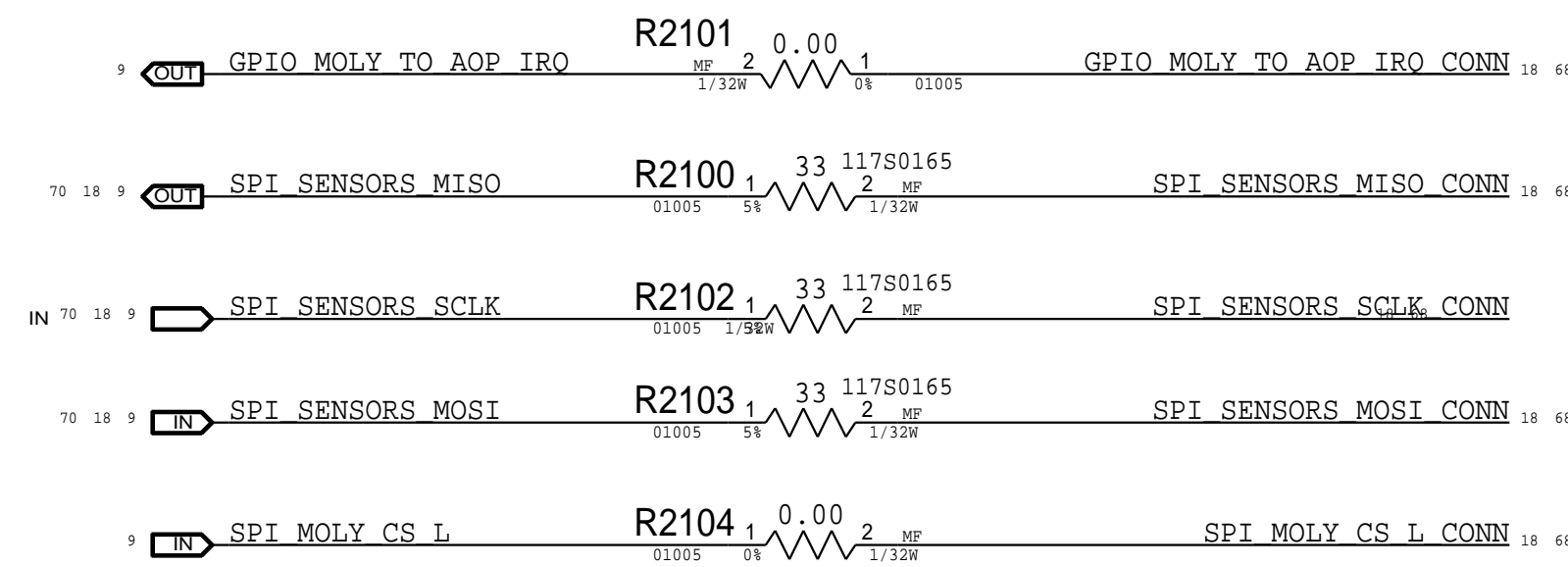
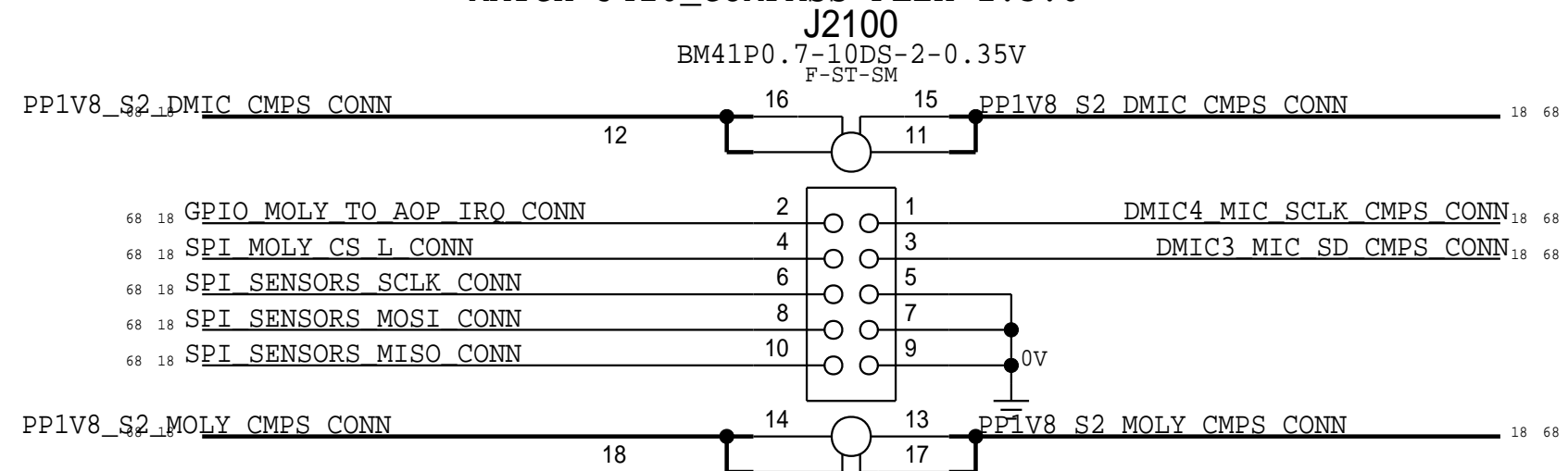
PHOSPHORUS

BOSCH APN: 338S00334

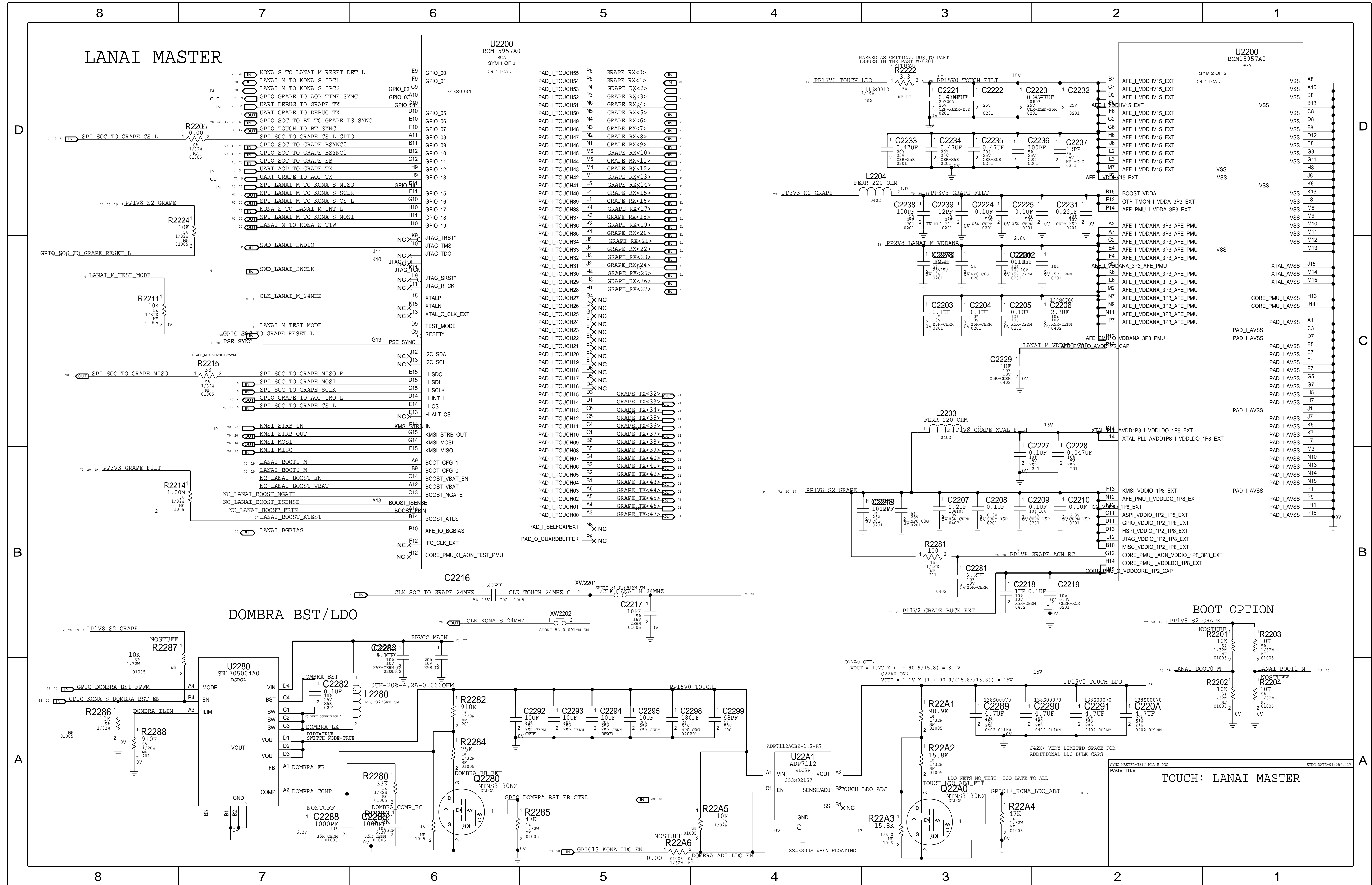


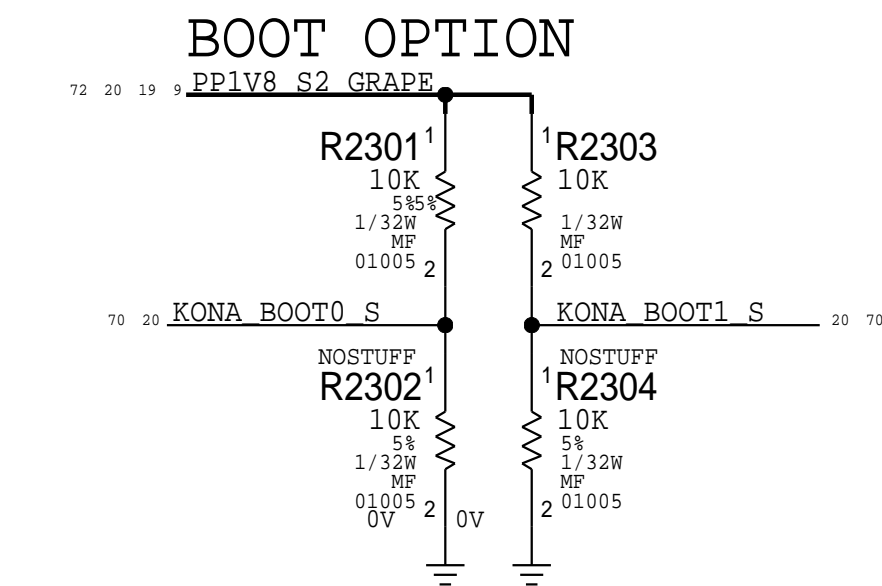
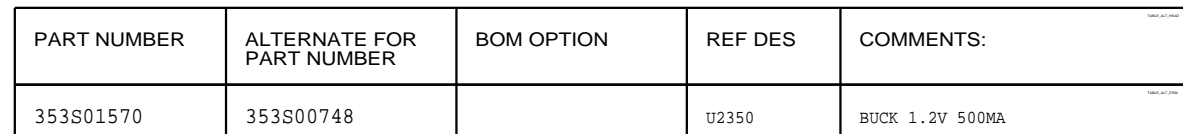
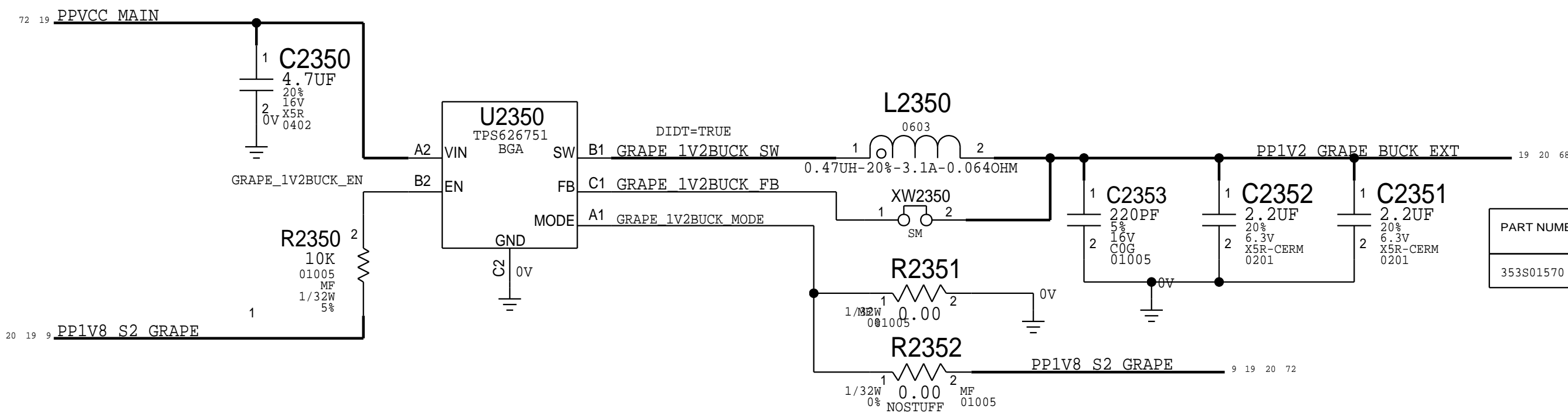
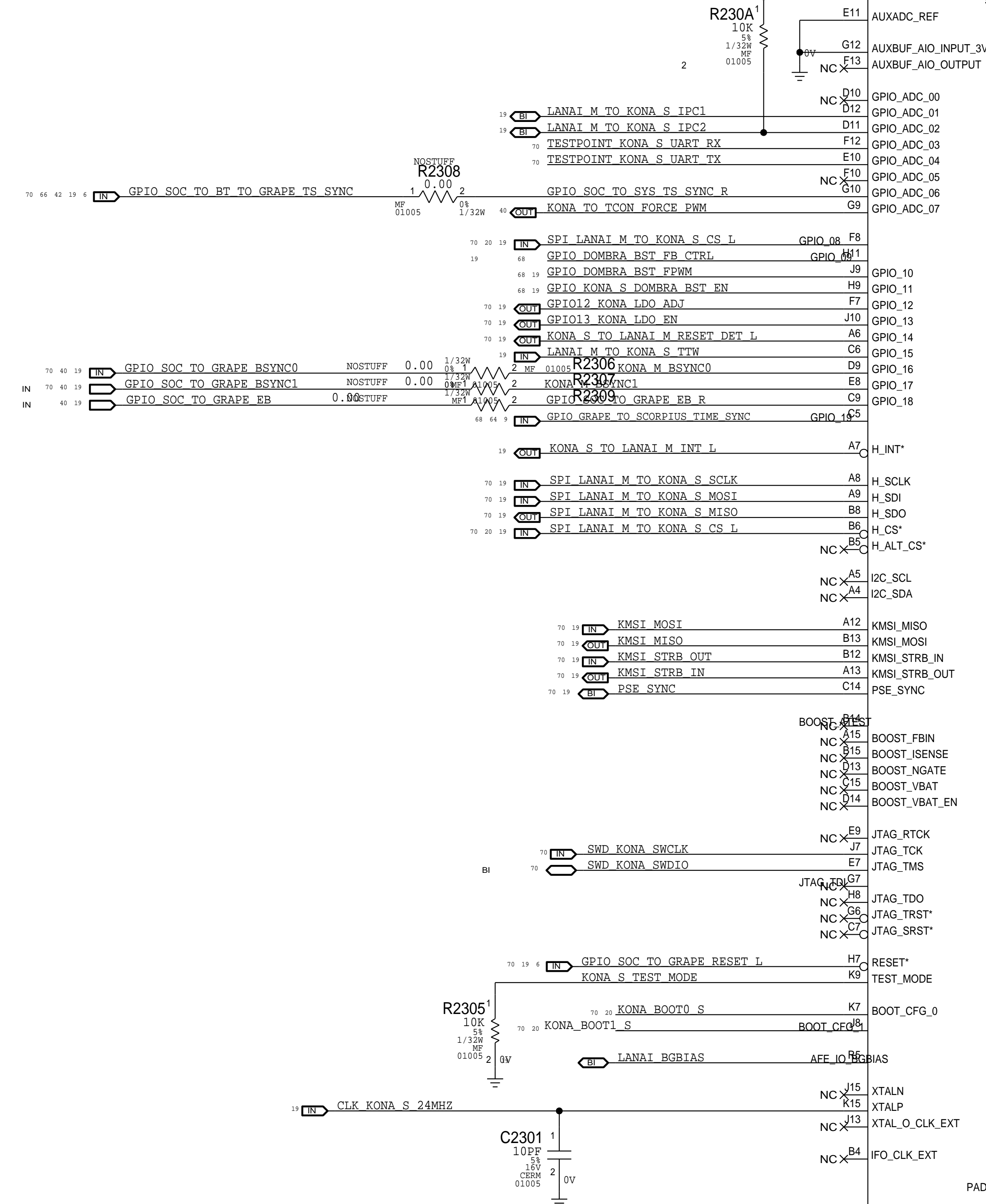
COMPASS/DMIC FLEX B2B

MLB SIDE: 516S00176
FLEX SIDE: 516S00175
MATCH J420_COMPASS FLEX 2.3.0

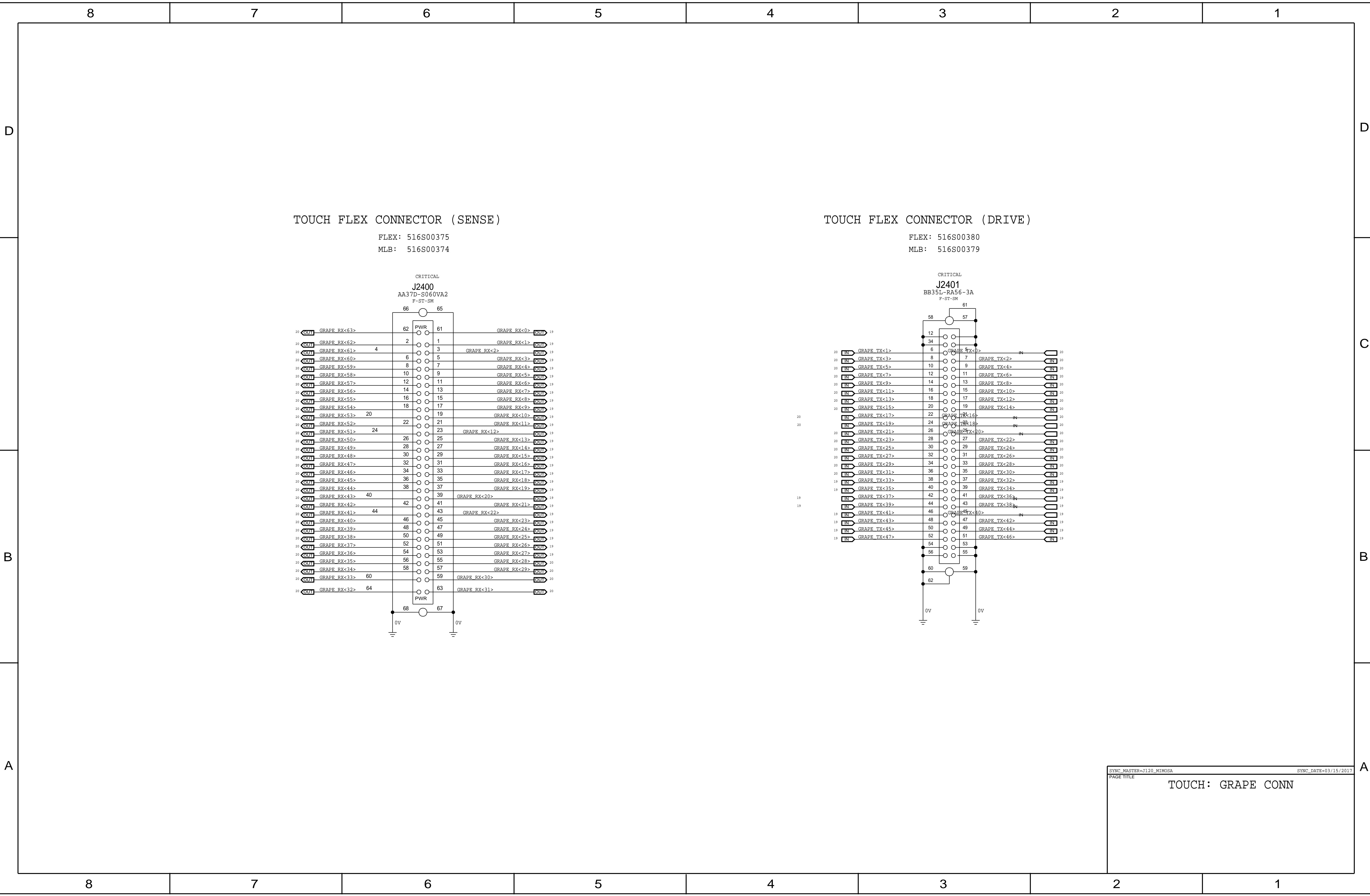


SENSOR: KOBOL, PHOS2, MOLY





TOUCH: KONA SLAVE



TOUCH FLEX CONNECTOR (DRIVE)

FLEX: 516S00380
MLB: 516S00379

CRITICAL

J2401

BB35L-RA56-3A

F-ST-SM

61

58

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GRAPE_TX<0>

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0V

0V

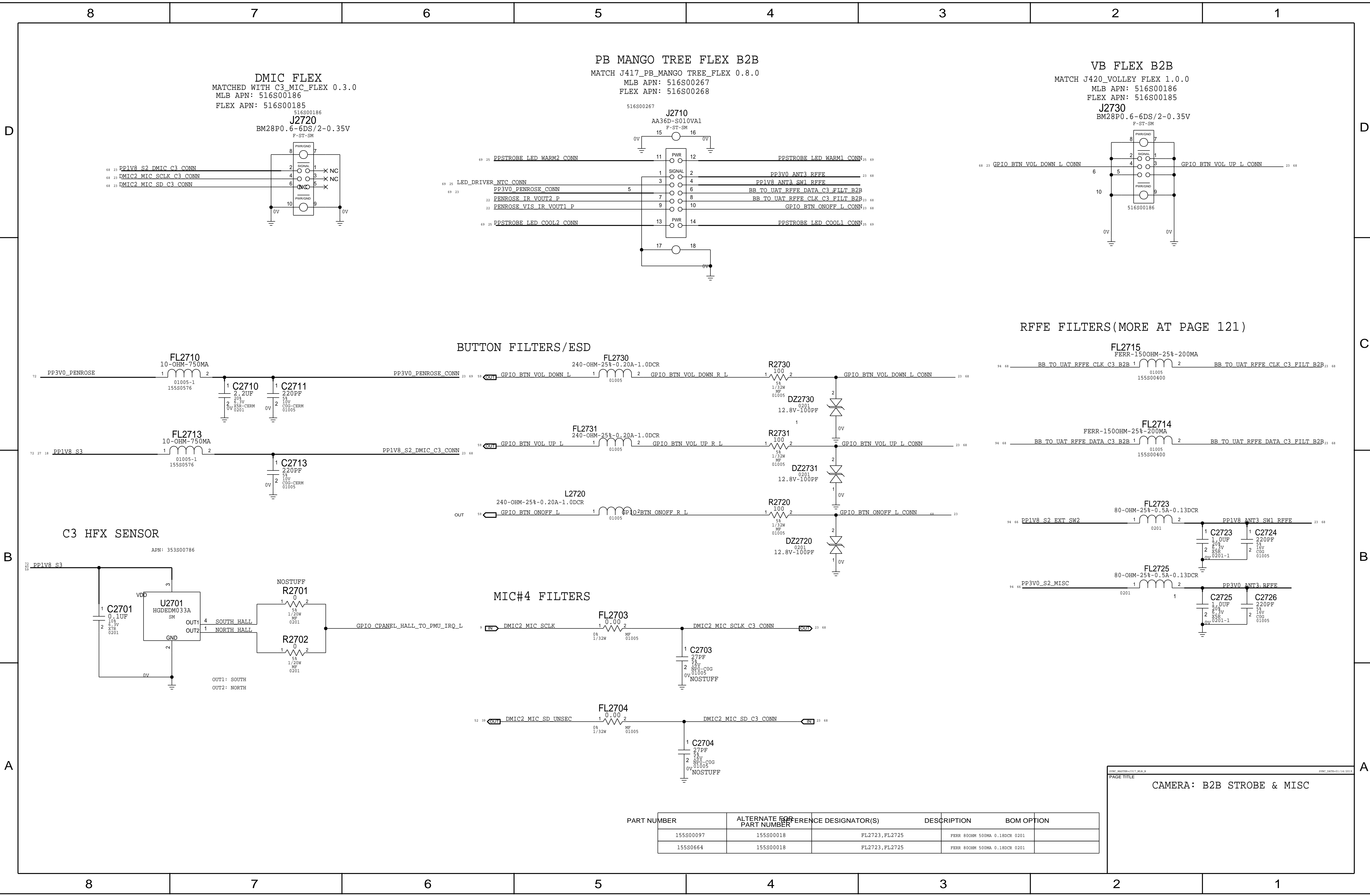
TOUCH: GRAPE CONN

7-BIT I2C ADD: 0X48



PAGE TITLE

CAMERA: PENROSE ADC



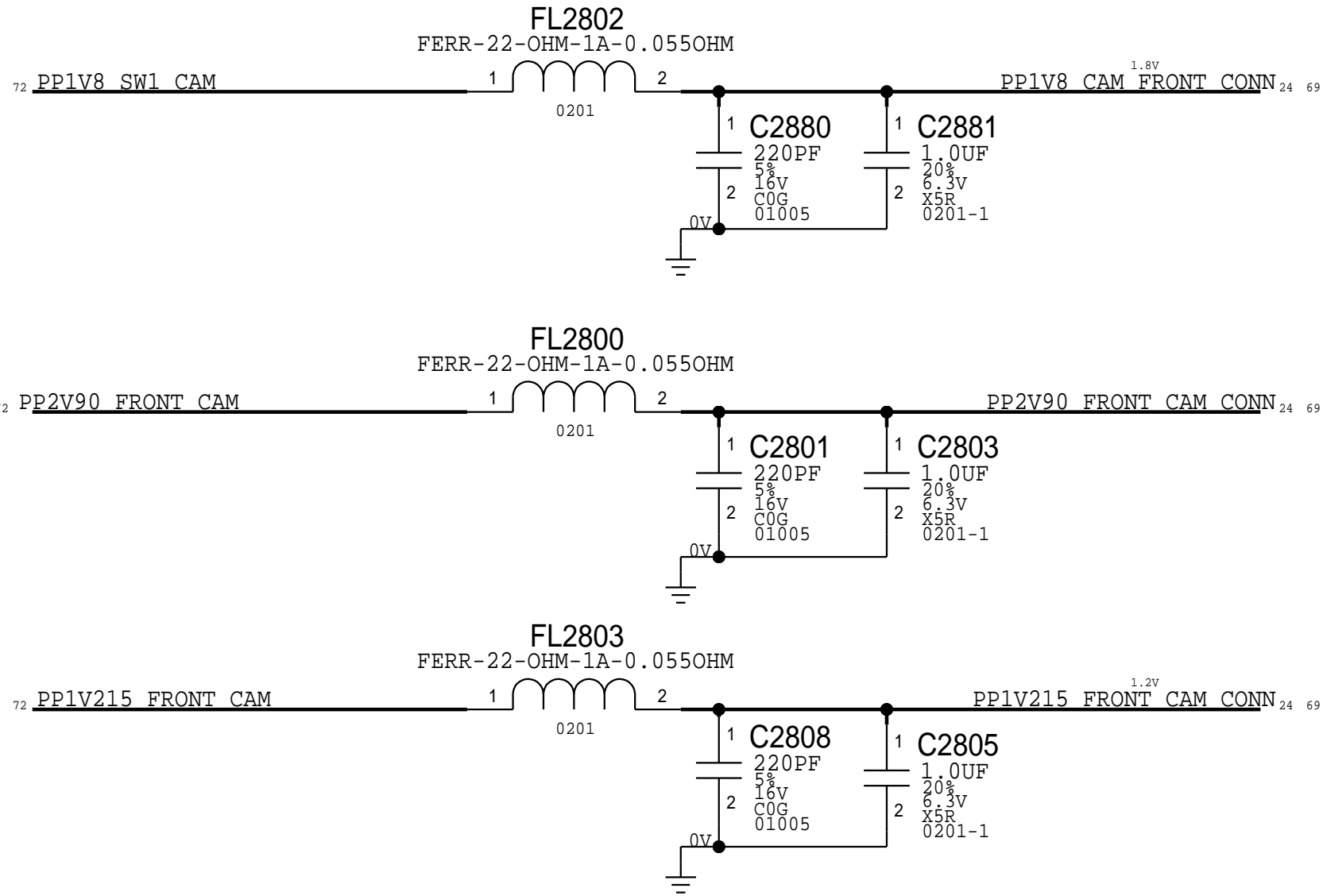
| PART NUMBER | ALTERNATE FOR PART NUMBER | REFERENCE DESIGNATOR(S) | DESCRIPTION | BOM OPTION |
|-------------|---------------------------|-------------------------|-------------------------------|------------|
| 155S00097 | 155S00018 | FL2723,FL2725 | FERR 800HM 500MA 0.18DCR 0201 | |
| 155S0664 | 155S00018 | FL2723,FL2725 | FERR 800HM 500MA 0.18DCR 0201 | |

SYNCH MASTER=71117_MCAL_B
PAGE TITLE
CAMERA: B2B STROBE & MISC
SYNCH DATE=03/14/2019

FRONT CAMERA (LI)

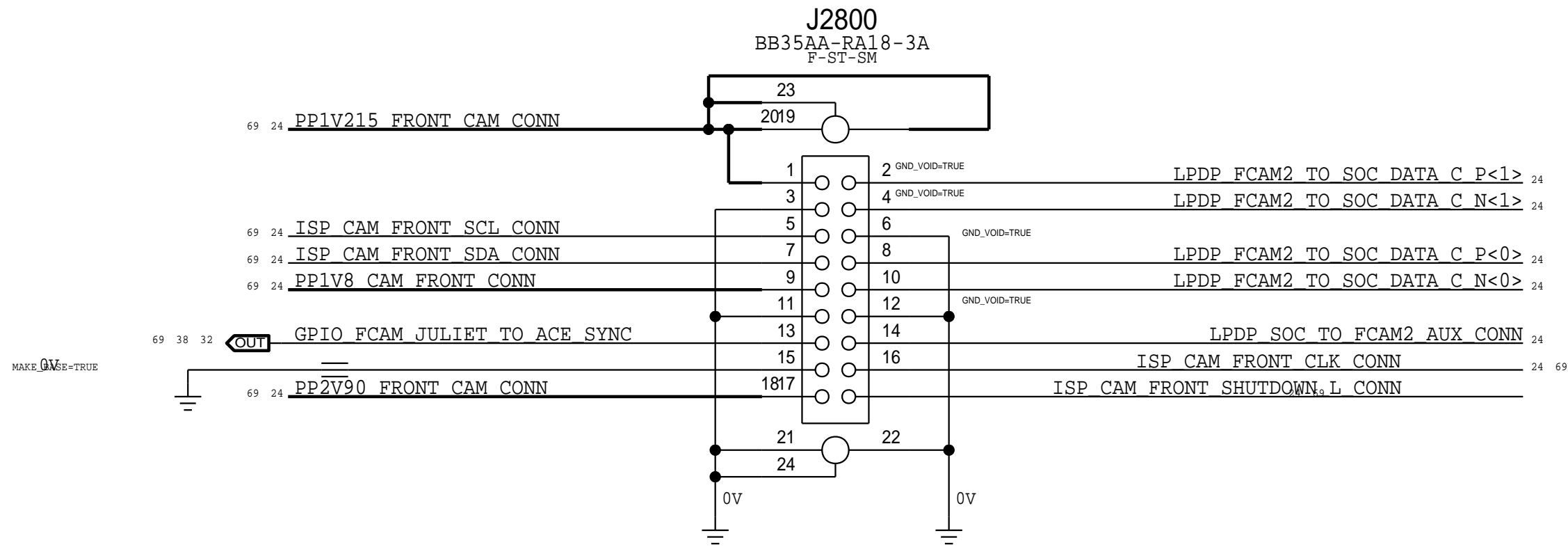
| PART NUMBER | ALTERNATE FOR PART NUMBER | BOM OPTION | REF DES | COMMENTS: |
|-------------|---------------------------|------------|------------|-----------------------|
| 15580660 | 15580513 | | FL3101,ETC | 220HM 1A .055DCR 0201 |

POWER FILTERS

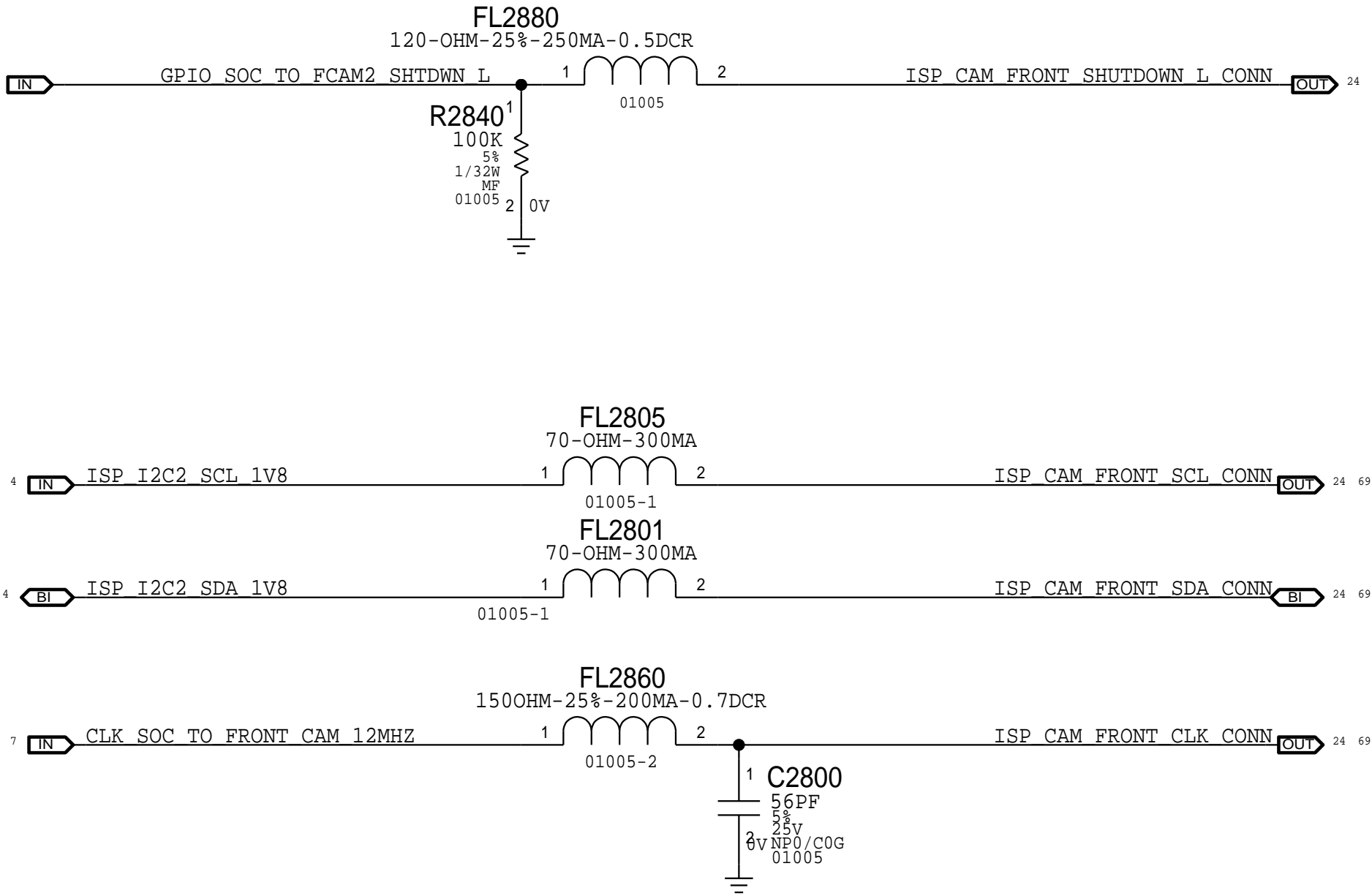


FRONT CAMERA CONNECTOR

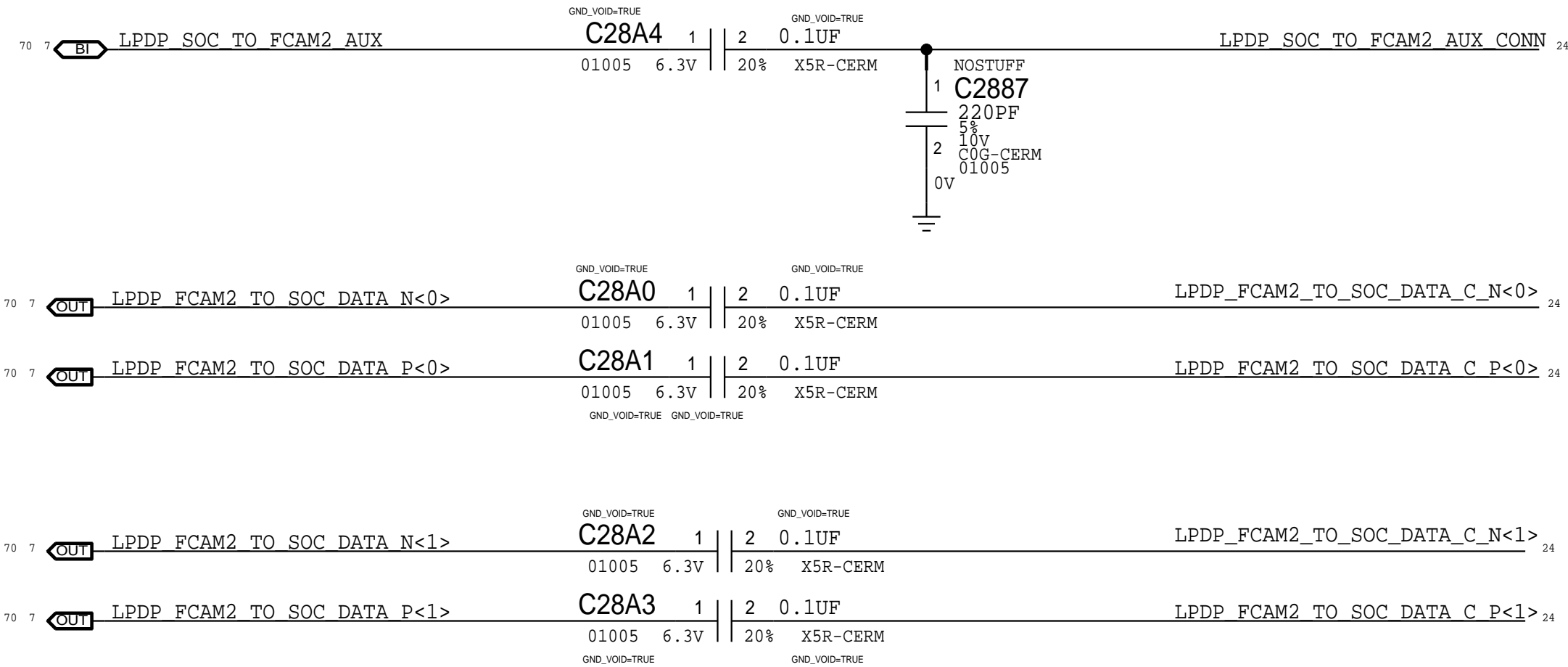
FLEX SIDE: 516S00396
MLB SIDE: 516S00395
MATCH J317_FRONT_CAM_ISLAND_FLEX A.0.0



IO FILTERS



LPDP AC COUPLING CAPS

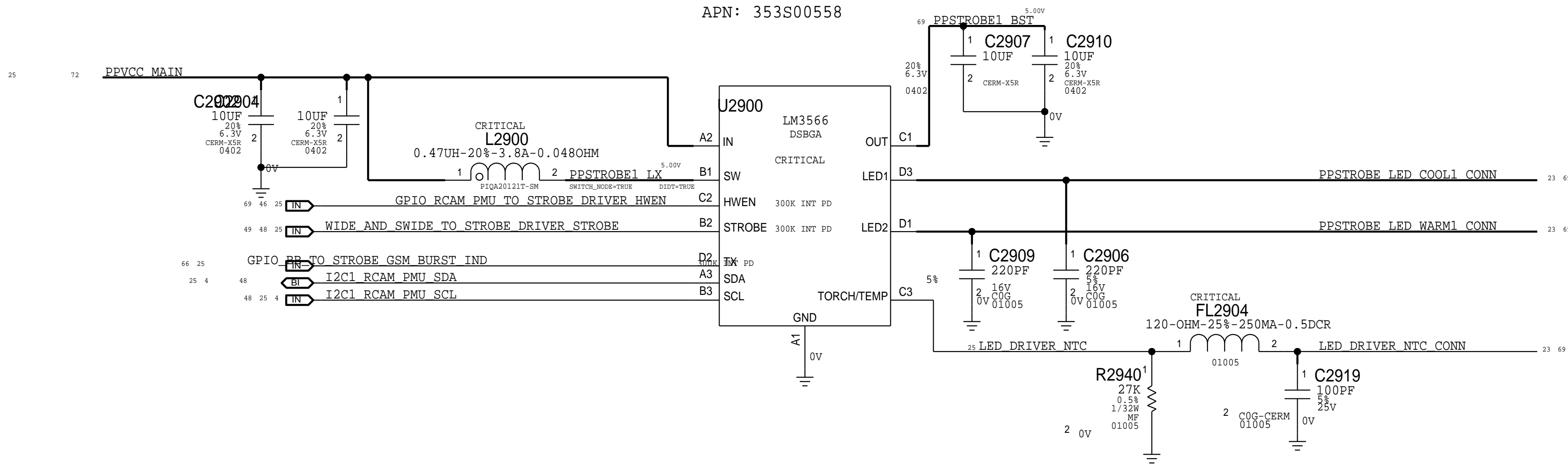


| PART NUMBER | ALTERNATE FOR PART NUMBER | BOM OPTION | REF DES | COMMENTS: |
|-------------|---------------------------|------------|------------|-------------------------|
| 138S0875 | 138S0678 | | C2902, ETC | SDAS://PROBLEM/26929420 |

STROBE CIRCUITRY

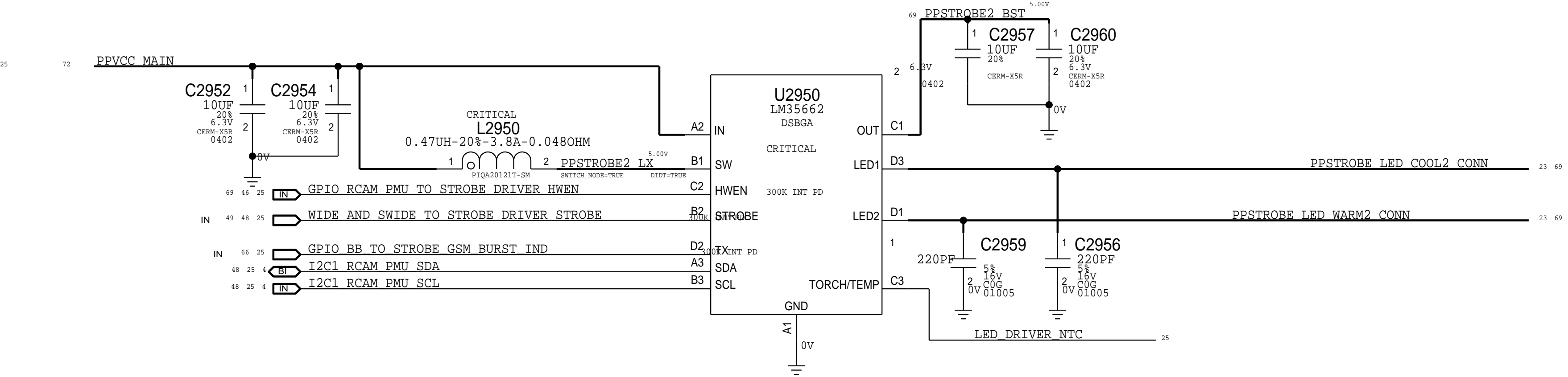
LED DRIVER 1

APN: 353S00558



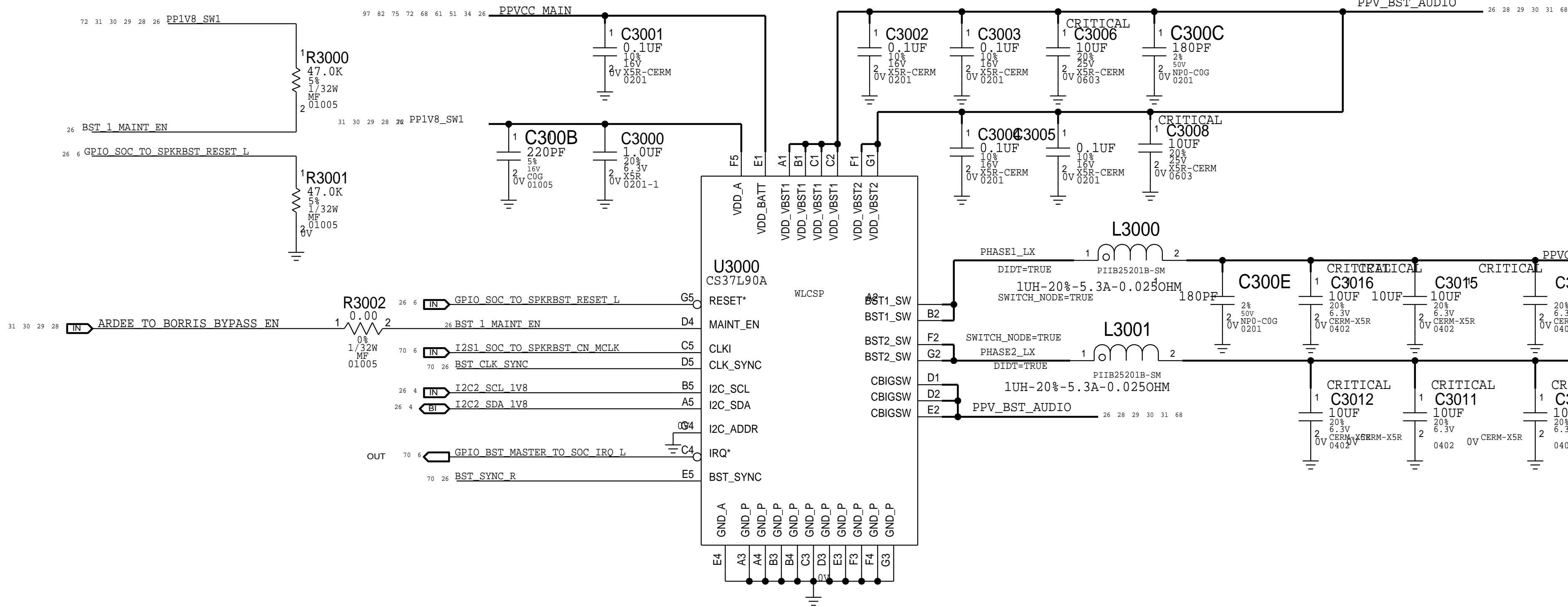
LED DRIVER 2

APN: 353S00868

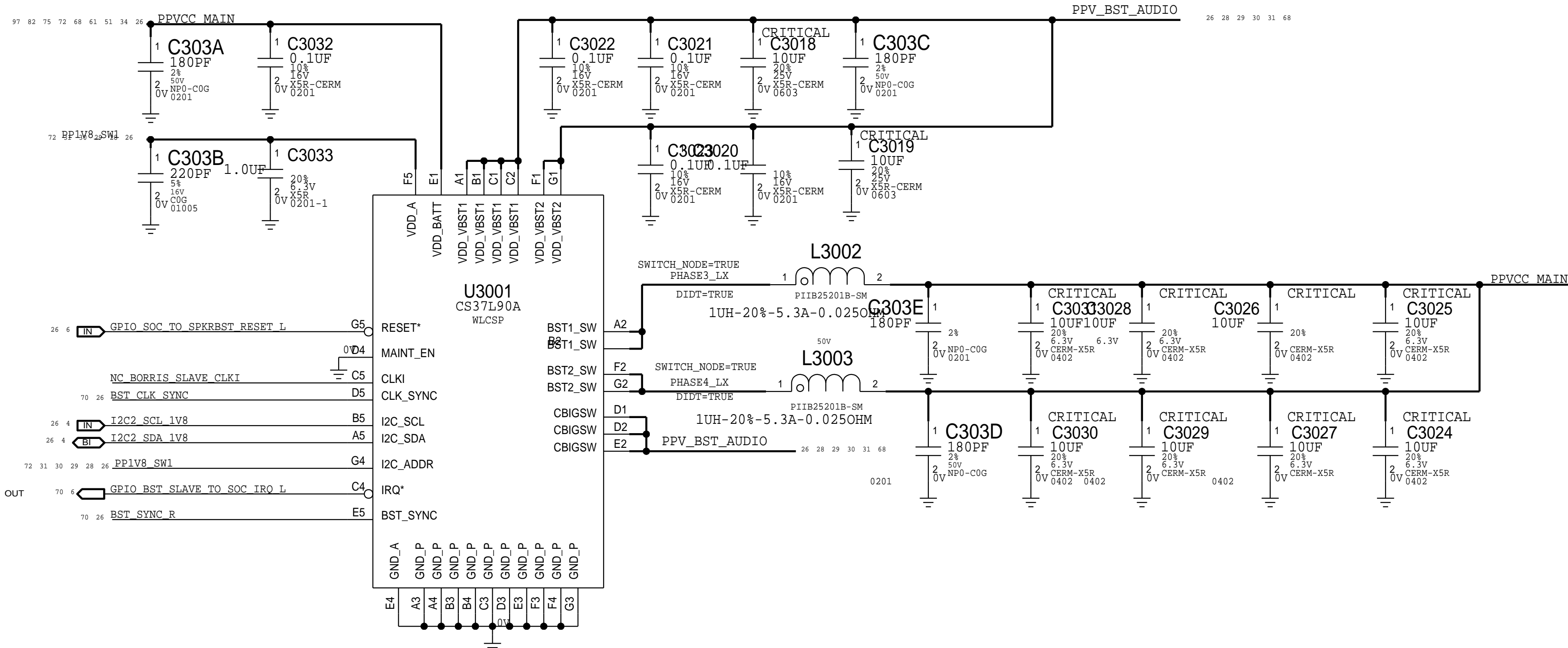


BOOST MASTER

BORRIS BOOST



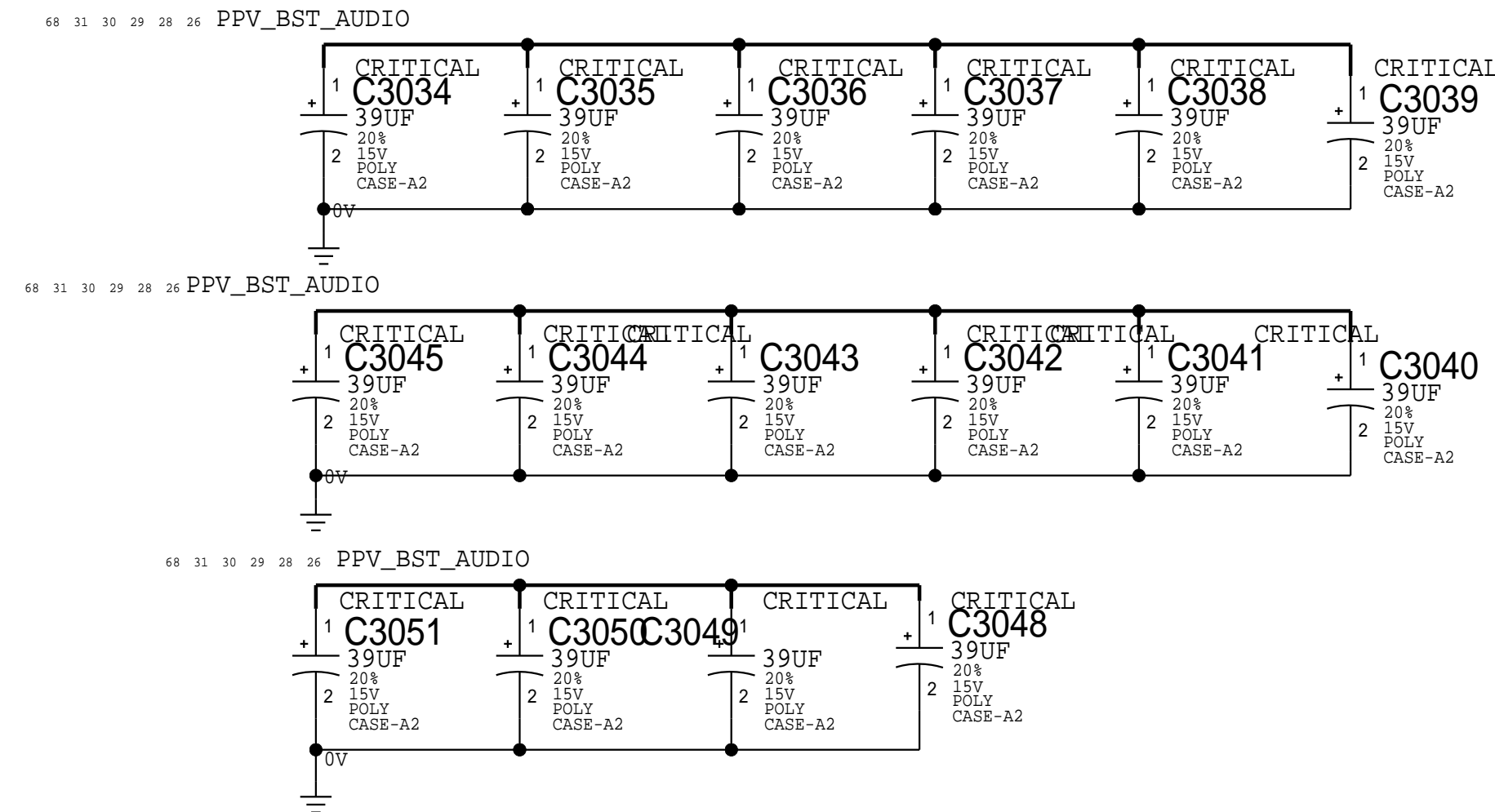
BOOST SLAVE



| CS35L91 (ARDEE) | | | |
|-----------------|-----|------|----------|
| ADDR | PIN | PULL | RESISTOR |
| GND | | | 0K |
| VDD | | | 0K |
| GND | | | 4.99K |
| VDD | | | 4.99K |
| GND | | | 20K |
| VDD | | | 20K |
| GND | | | 100K |
| VDD | | | 100K |

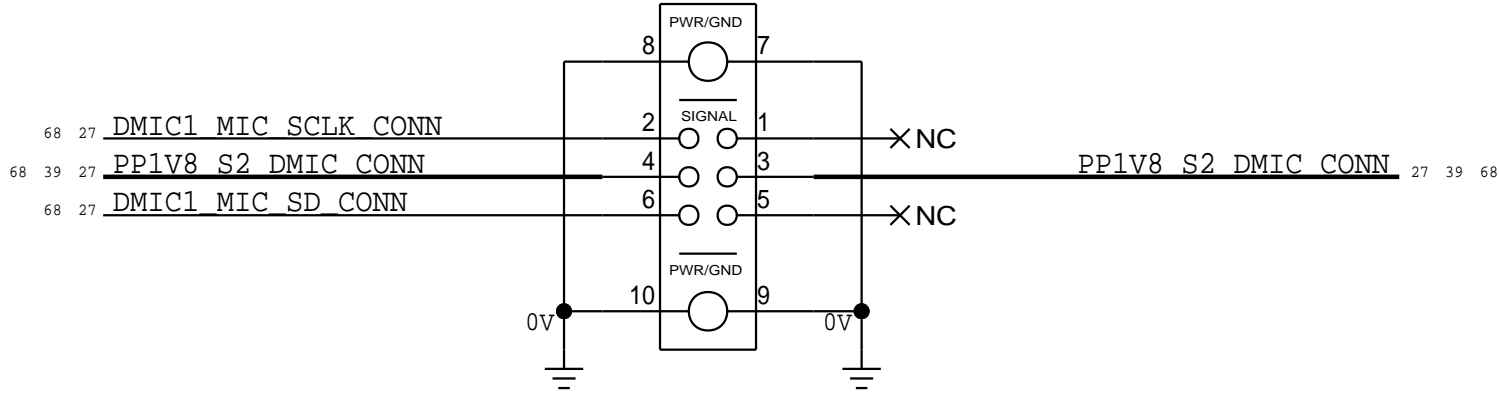
| CS37L90 (BORRIS) | | | |
|------------------|-----|------|----------|
| ADDR | PIN | PULL | RESISTOR |
| GND | | | 0K |
| DVDD | | | 0K |

CAP RESERVOIR



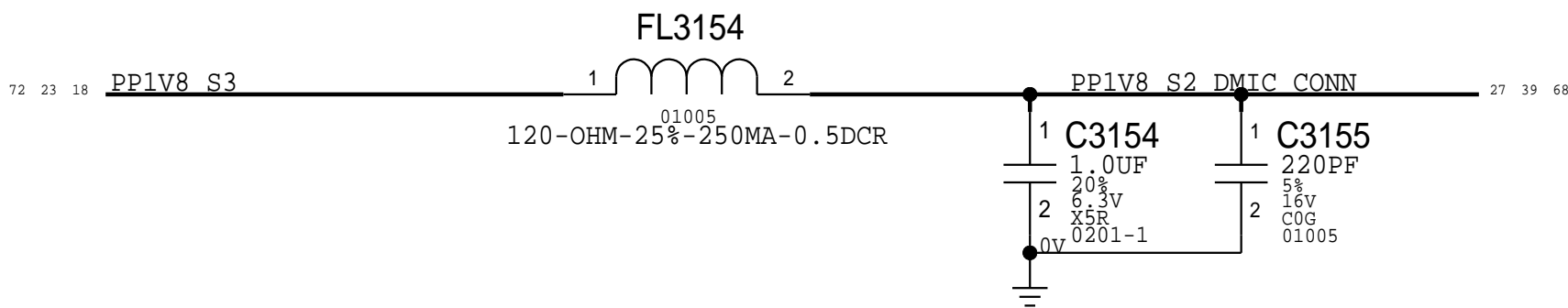
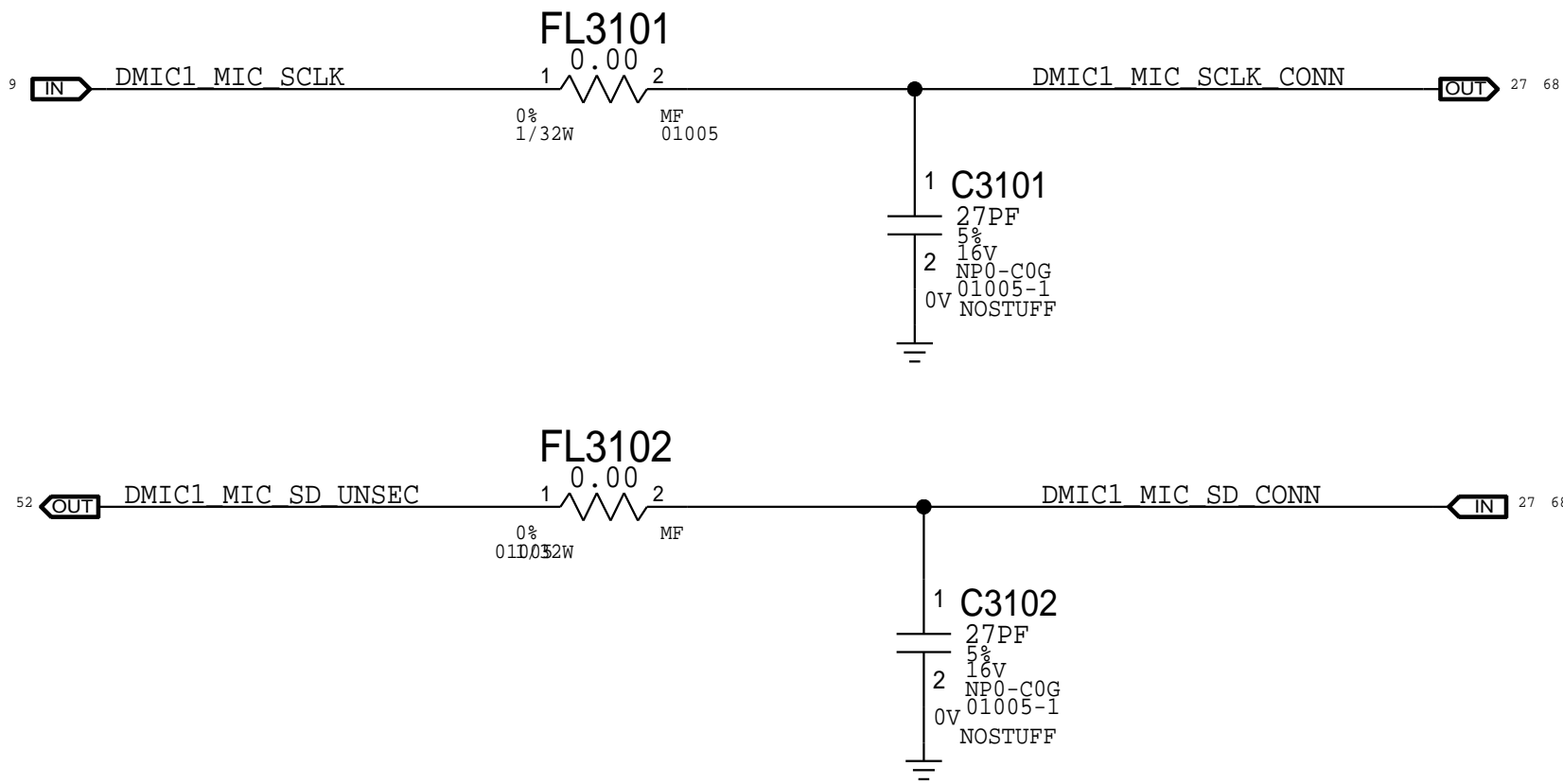
DMIC CONN AND FILTERS

MIC FLEX B2B
MATCH J317_MIC_FLEX 5.2.0
MLB APN: 516S00186
FLEX APN: 516S00185
J3100
BM28P0.6-6DS/2-0.35V
F-ST-SM

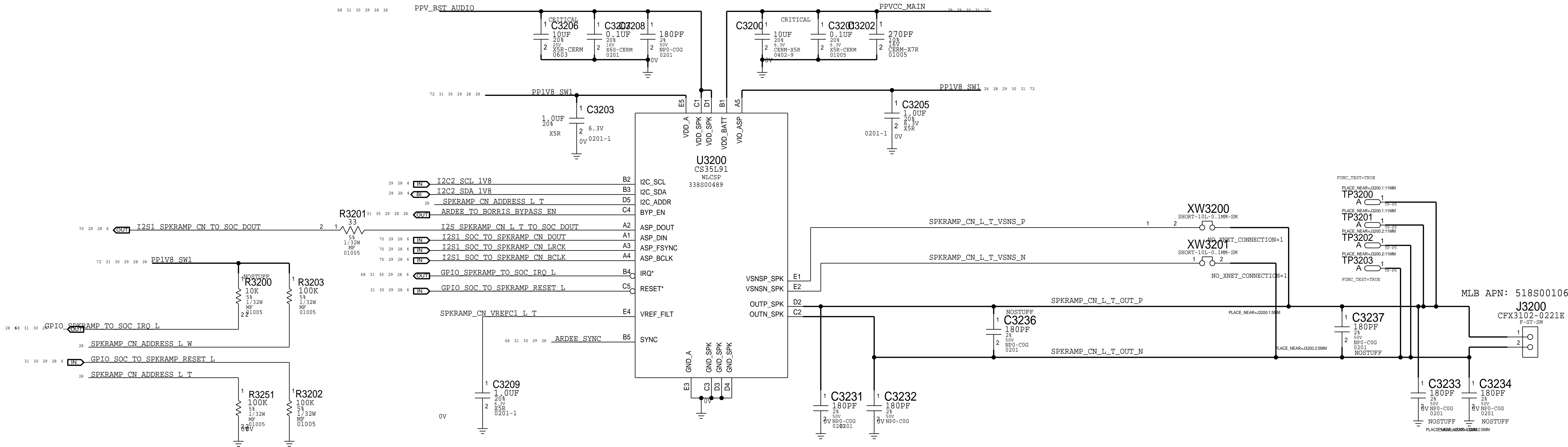


| ROUTING | BUS | SELECT | LOCATION | DATA ASSERTS ON | DATA LATCHED ON |
|---------|------|--------|---------------------------|------------------|------------------|
| MIC#1 | PDM0 | HIGH | LEFT | CLK RISING EDGE | CLK FALLING EDGE |
| MIC#2 | PDM0 | LOW | RIGHT | CLK FALLING EDGE | CLK RISING EDGE |
| PDMIC#3 | HIGH | | FRONT/CLK FALLING EDGE | CLK FALLING EDGE | |
| PDMIC#4 | LOW | | REAR/CLK FALLING EDGE | CLK RISING EDGE | |
| PDMIC#5 | HIGH | | LANDSCAPE/CLK RISING EDGE | CLK FALLING EDGE | |

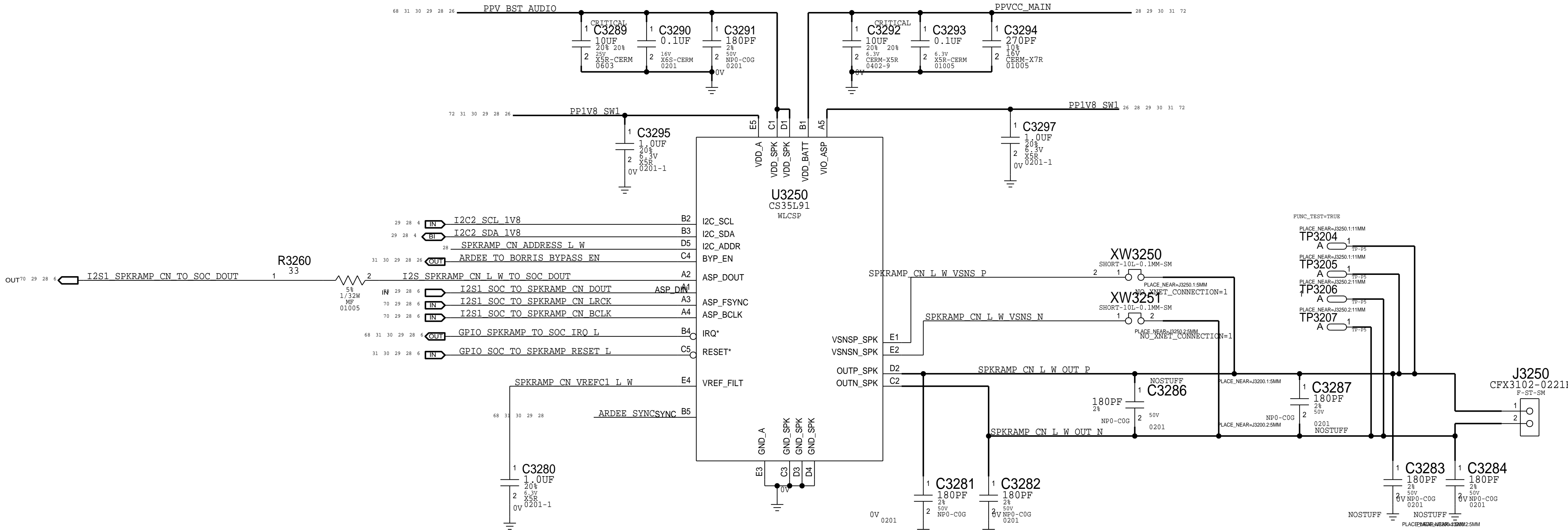
DMIC2 FILTERS



CN L TWEETER SPEAKER AMP

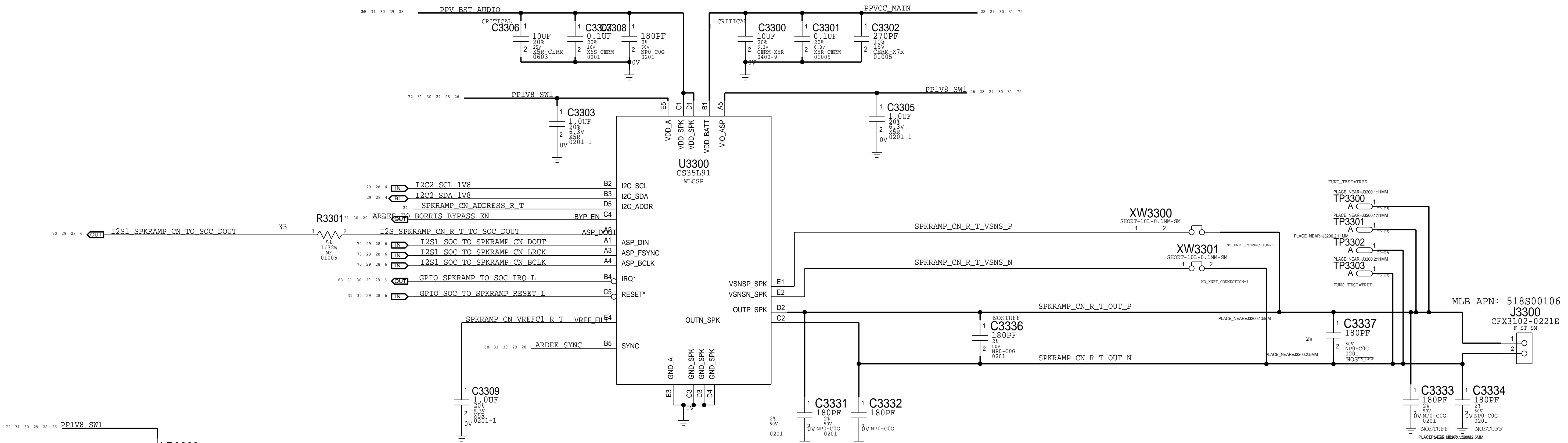


CN L WOOFER SPEAKER AMP

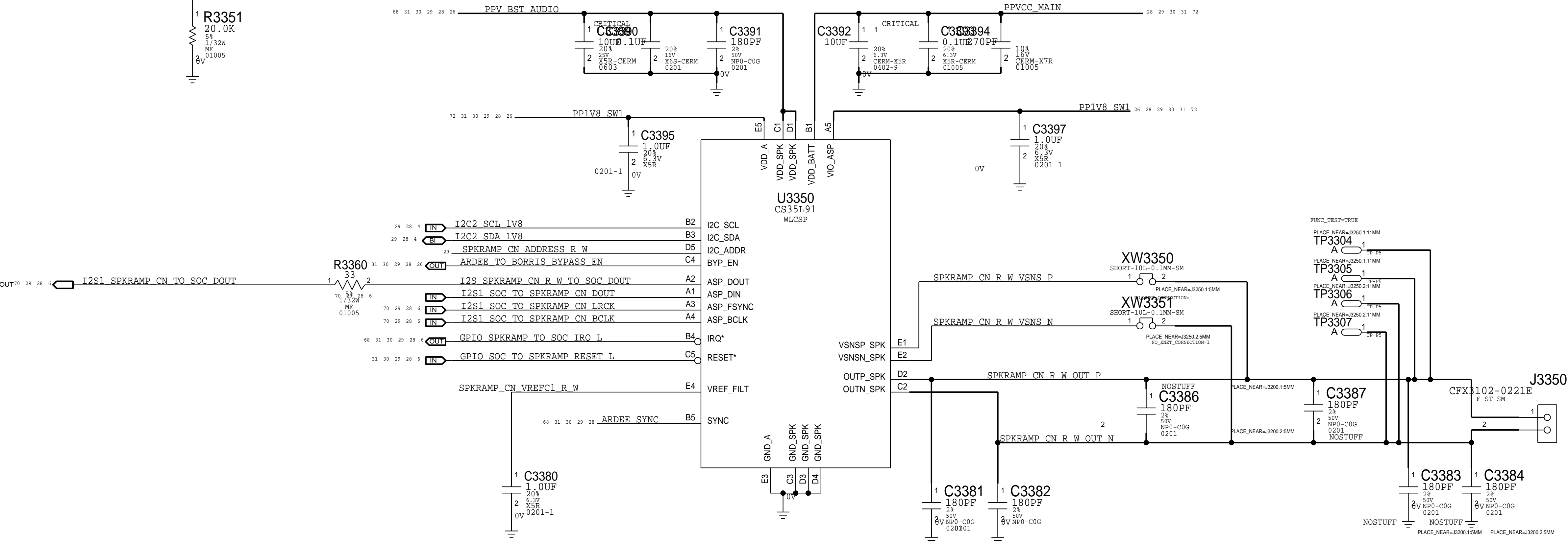


AUDIO: SPEAKER AMPS (CNL)

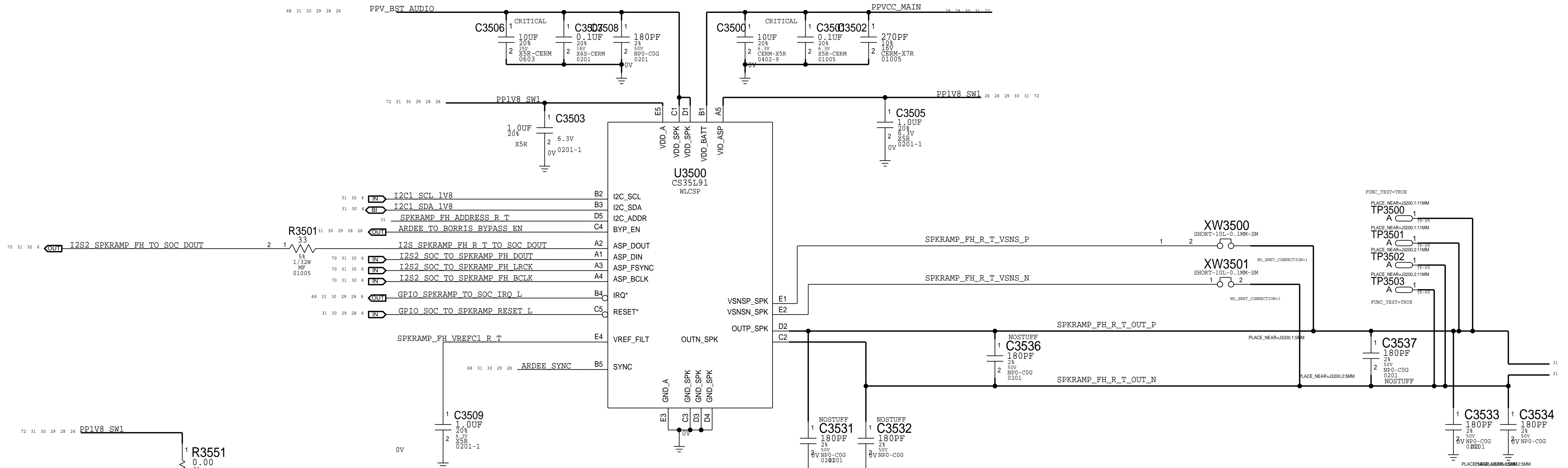
CN R TWEETER SPEAKER AMP



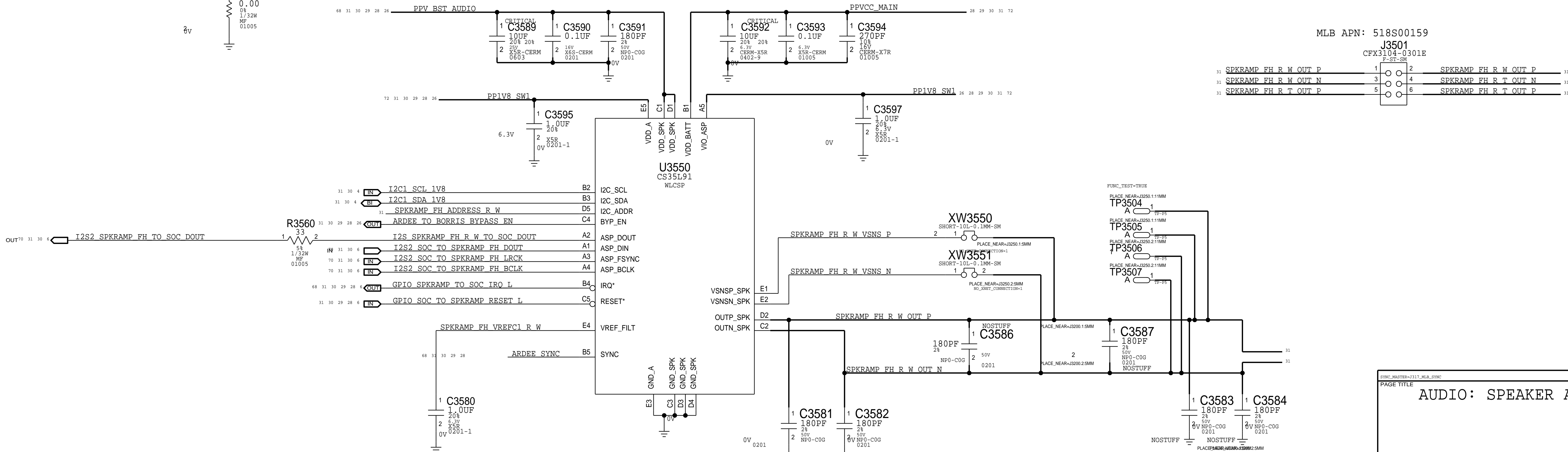
CN R WOOFER SPEAKER AMP



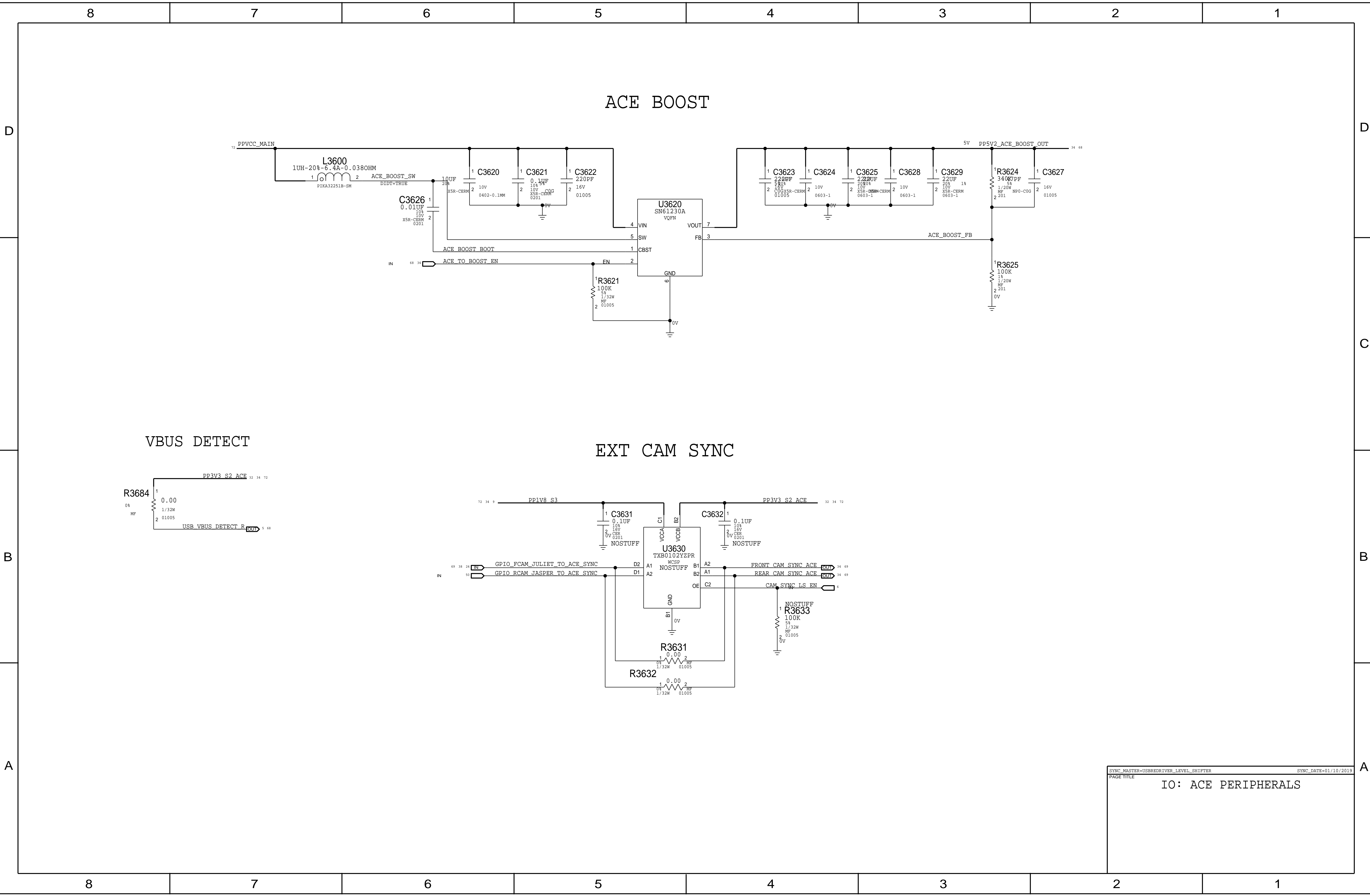
FH R TWEETER SPEAKER AMP

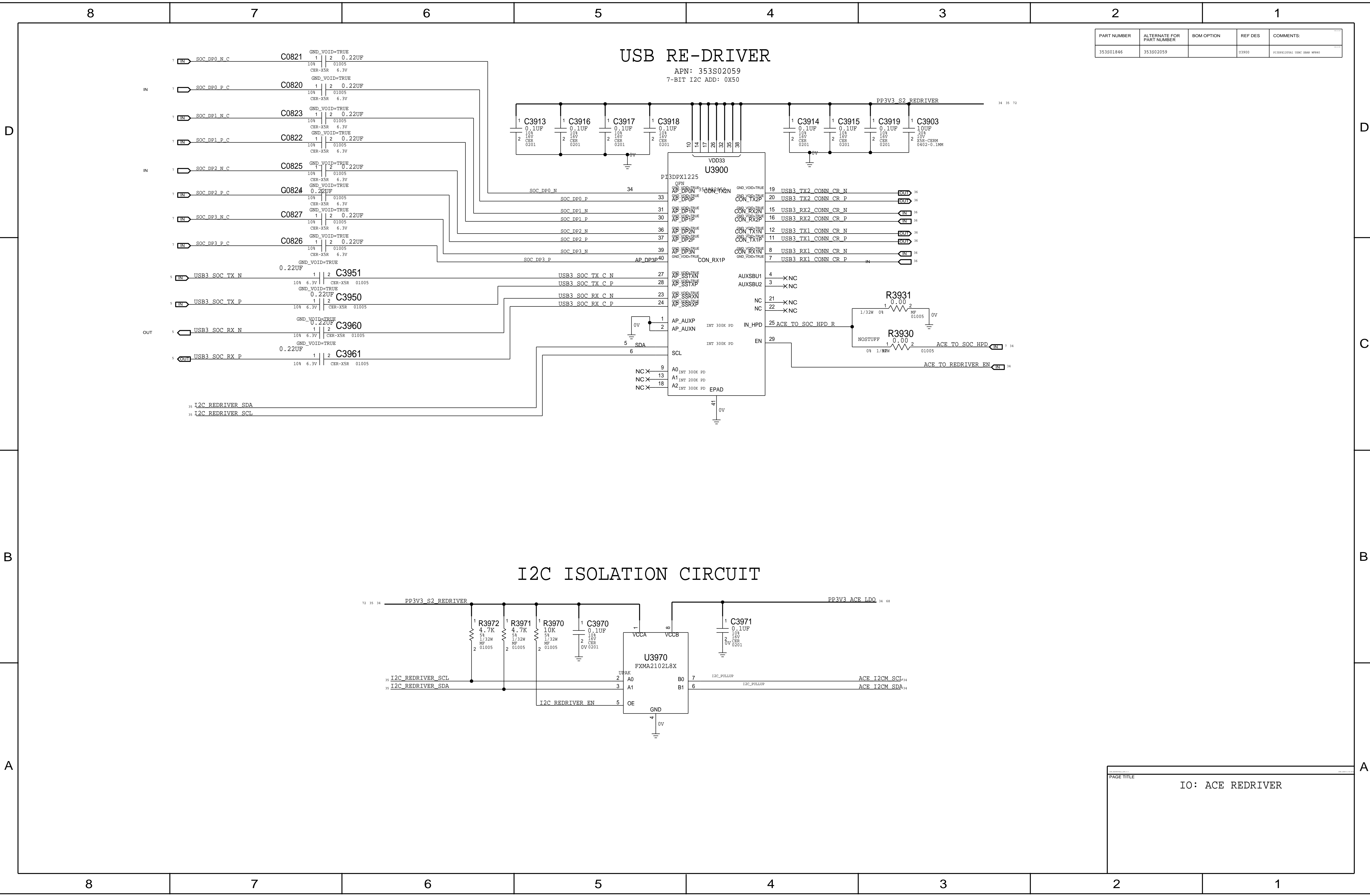


FH R WOOFER SPEAKER AMP



AUDIO: SPEAKER AMPS (FHR)





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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|

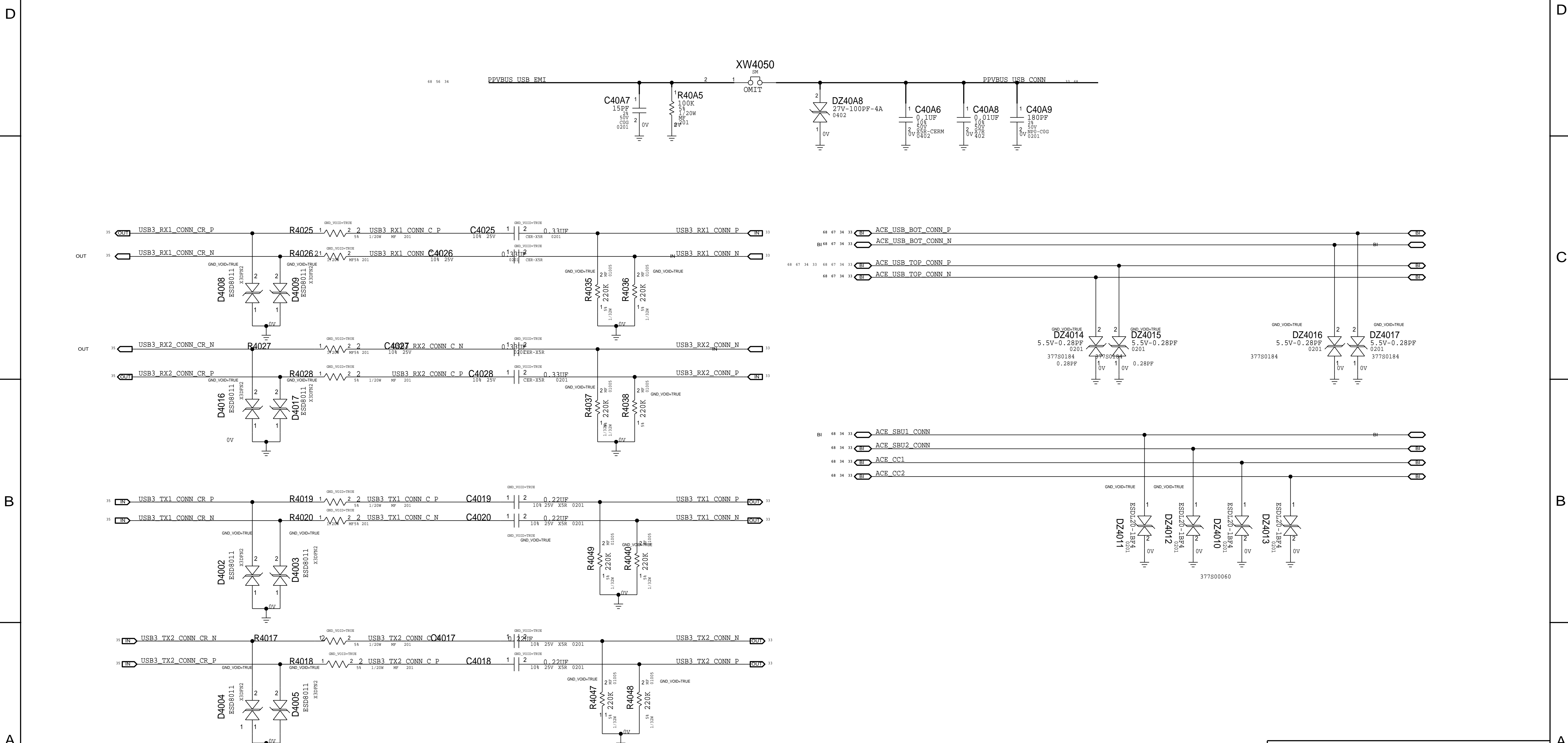
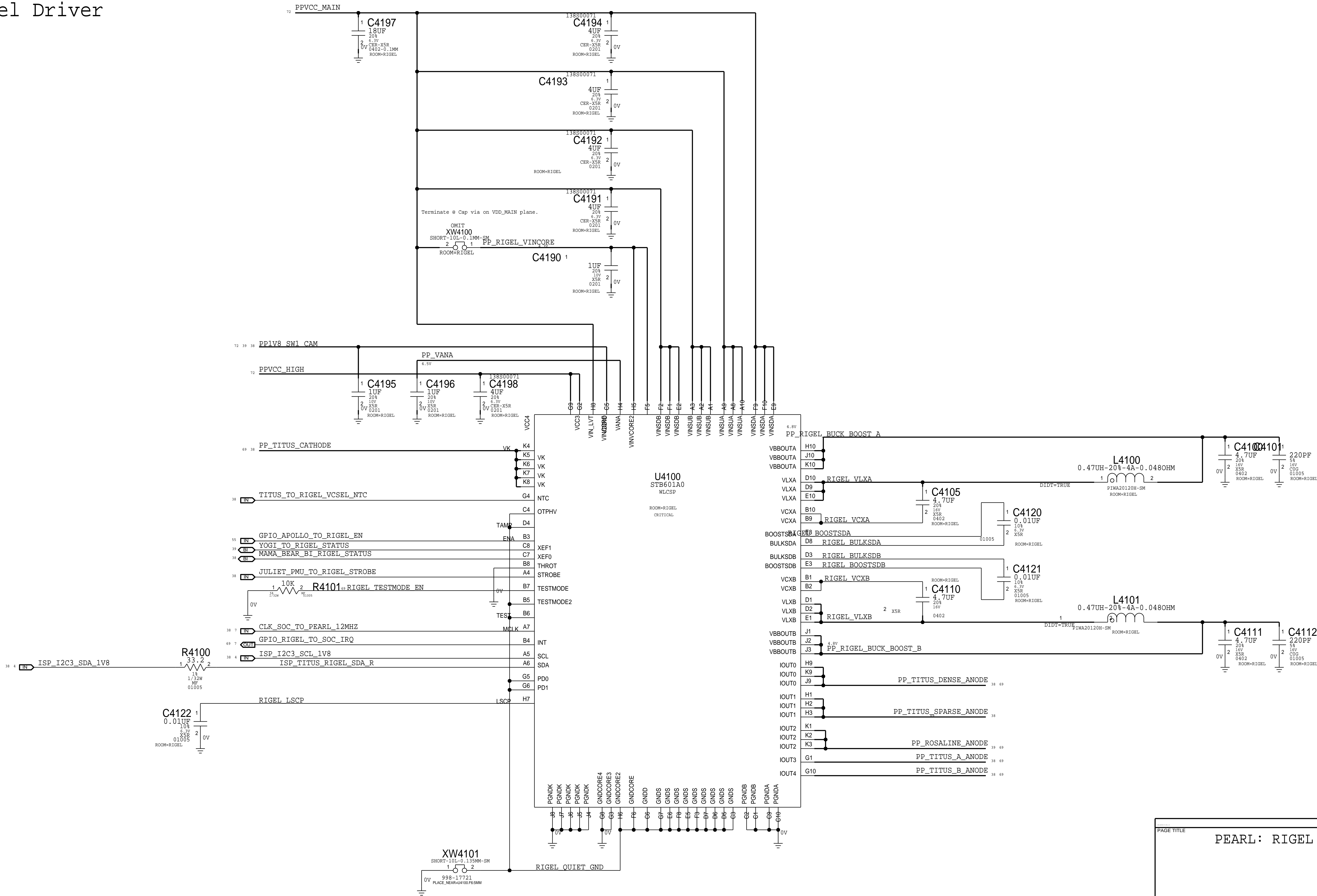


Diagram illustrating the IO: ACE FILTERS configuration. The diagram shows a horizontal bar divided into 8 segments, labeled 1 through 8 from right to left. Above the bar, there are two ground symbols (GND) and a 0V label. A box on the right side of the diagram contains the text "IO: ACE FILTERS" and a table with the following information:

| SYNC_MASTER=J320_USBDC | SYNC_DATE=11/06/2018 |
|------------------------|----------------------|
| PAGE TITLE | |

Rigel Driver



8

7

6

5

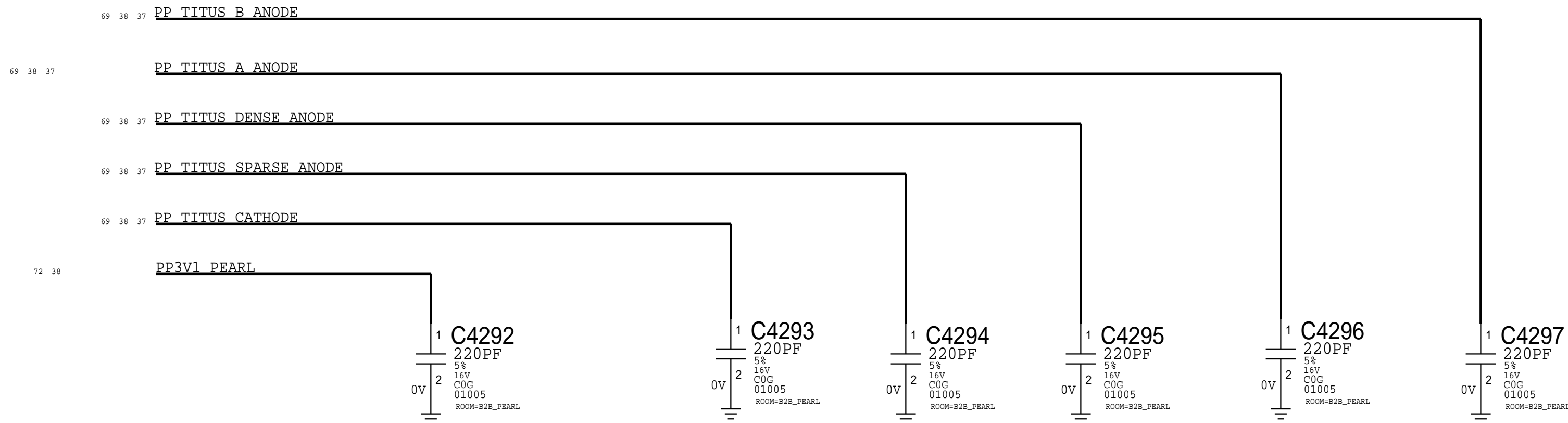
4

3

2

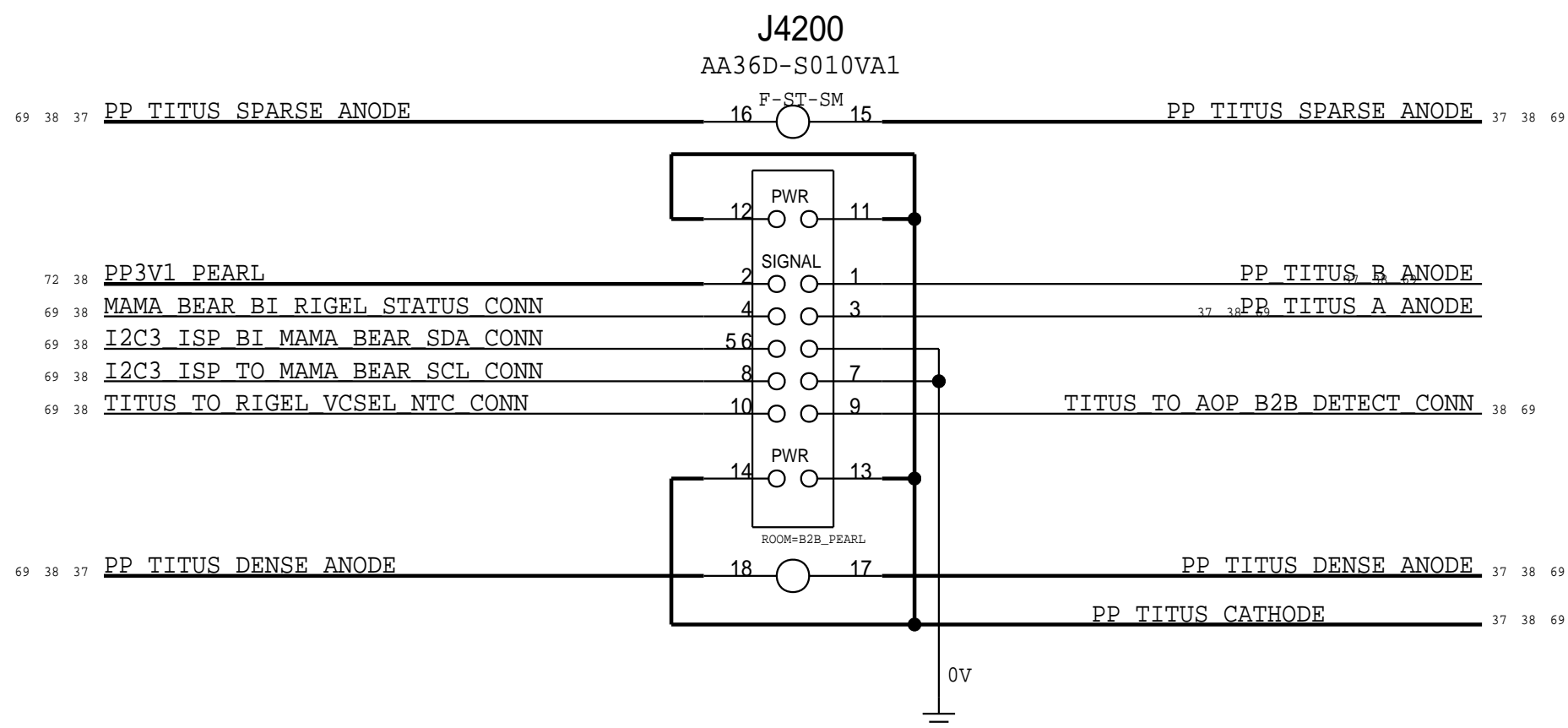
1

TITUS POWER FILTERING

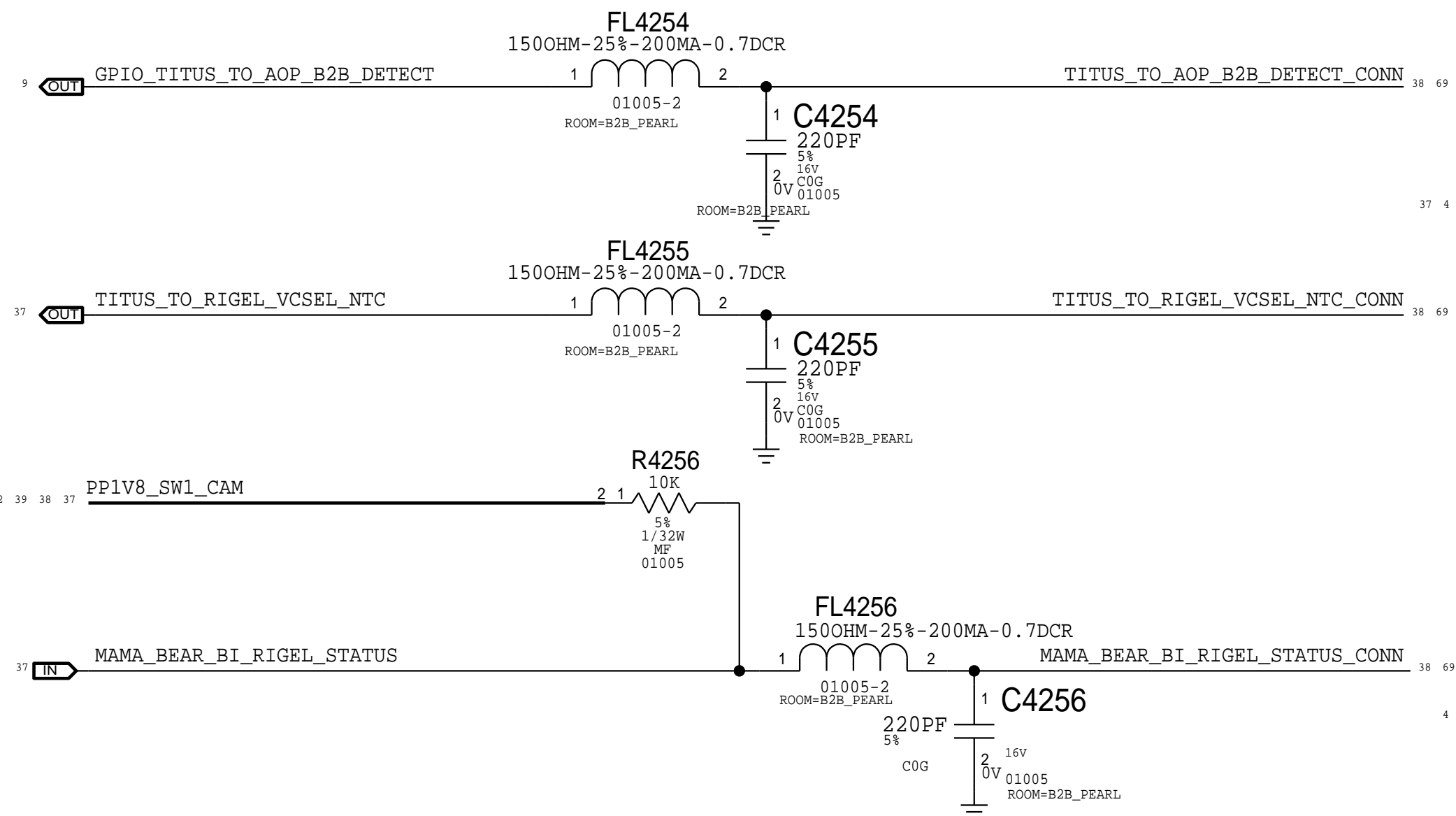


JEWEL CONNECTOR

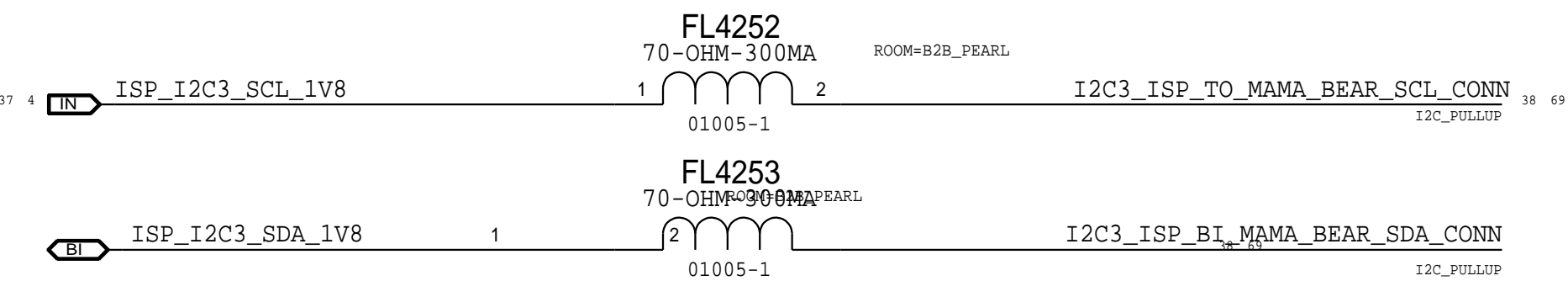
MLB: 516S00267
FLEX: 516S00268
MATCH J317_JEWEL_FLEX A.1.0



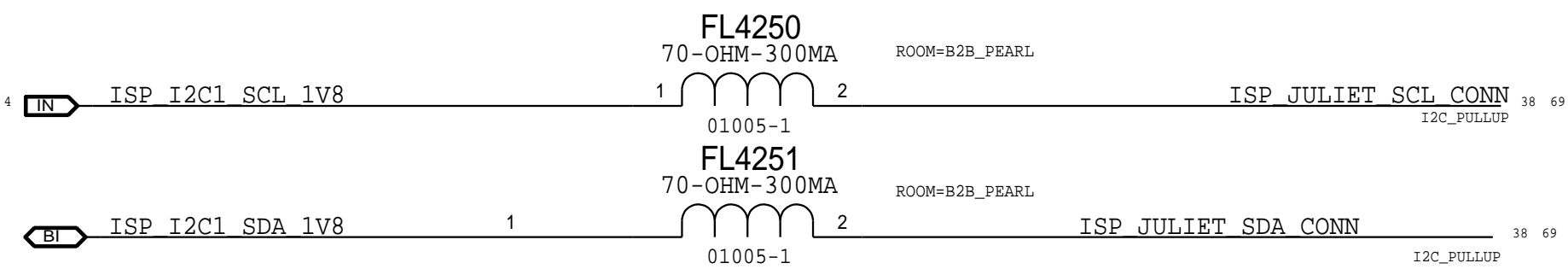
TITUS I/O



ISP TITUS_RIGEL I2C

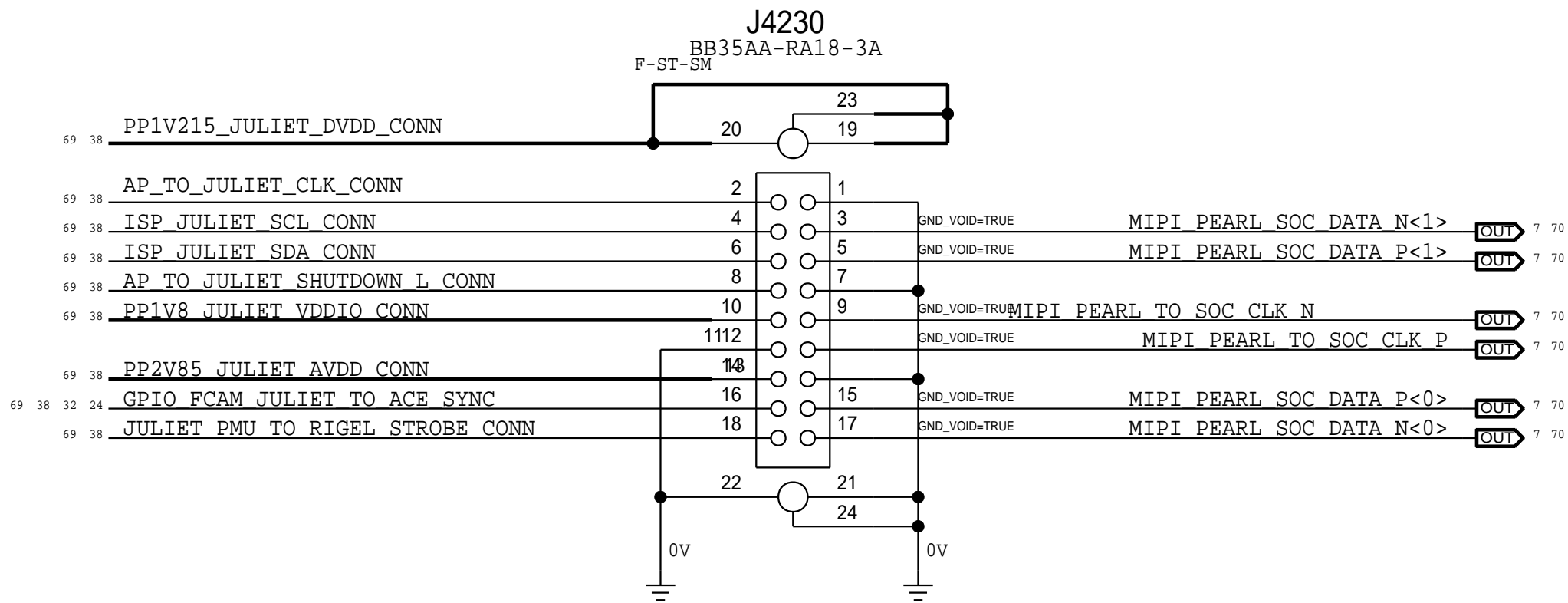


ISP JULIET I2C

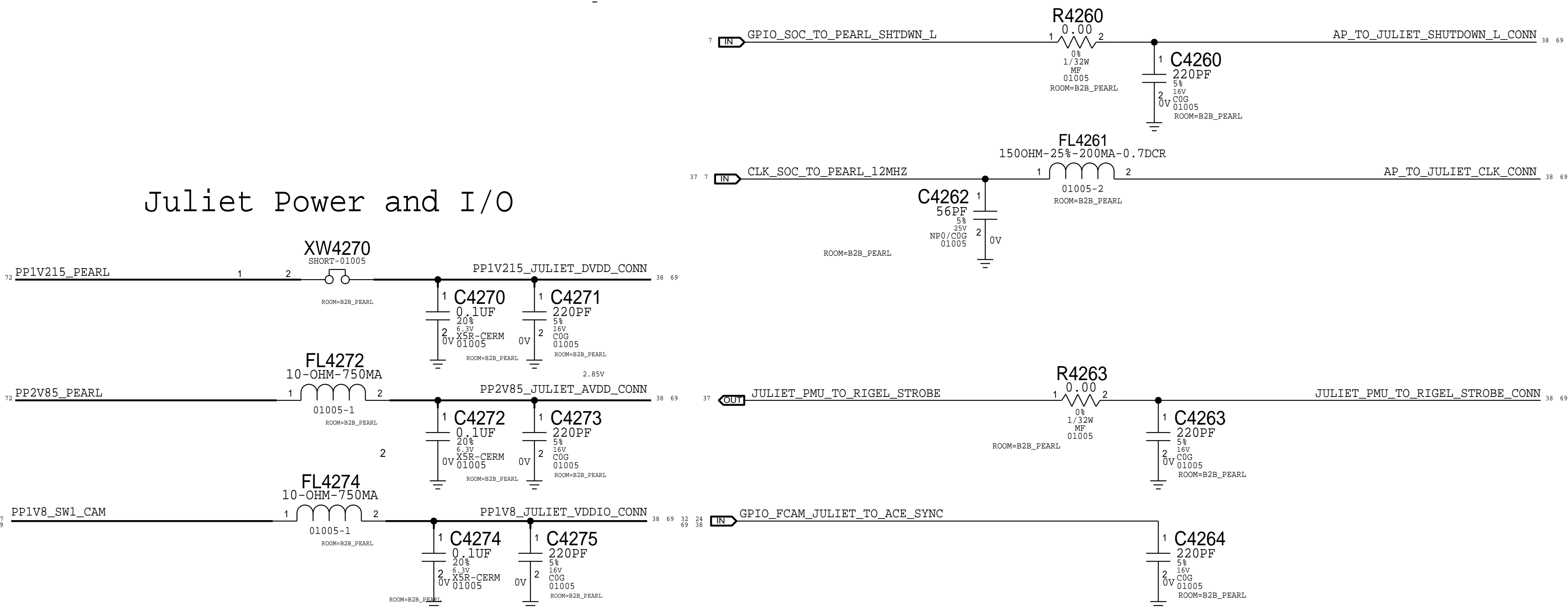


JULIET CONNECTOR

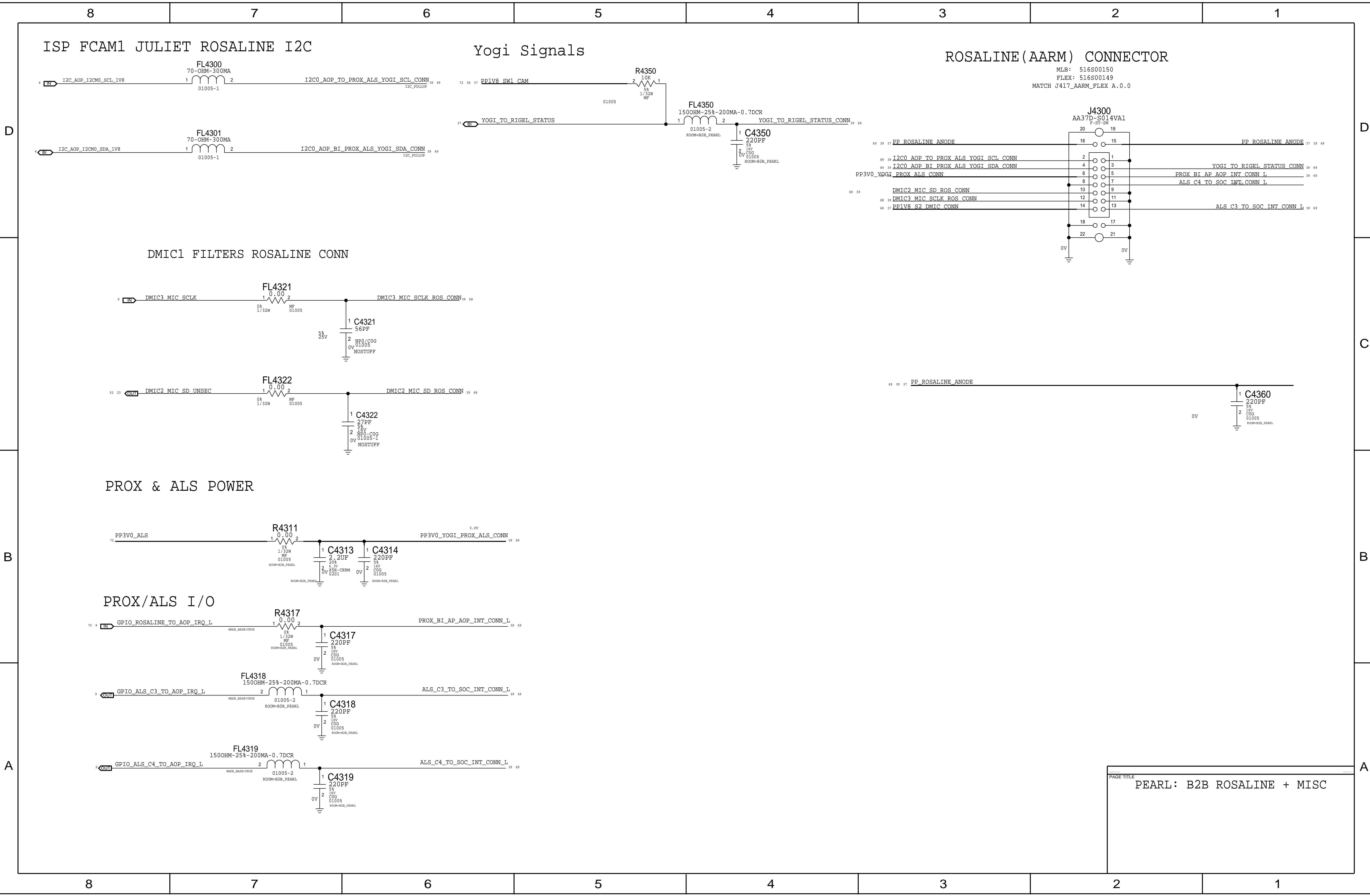
FLEX SIDE: 516S00396
MLB SIDE: 516S00395
MATCH J317_JULIET_FLEX A.0.0



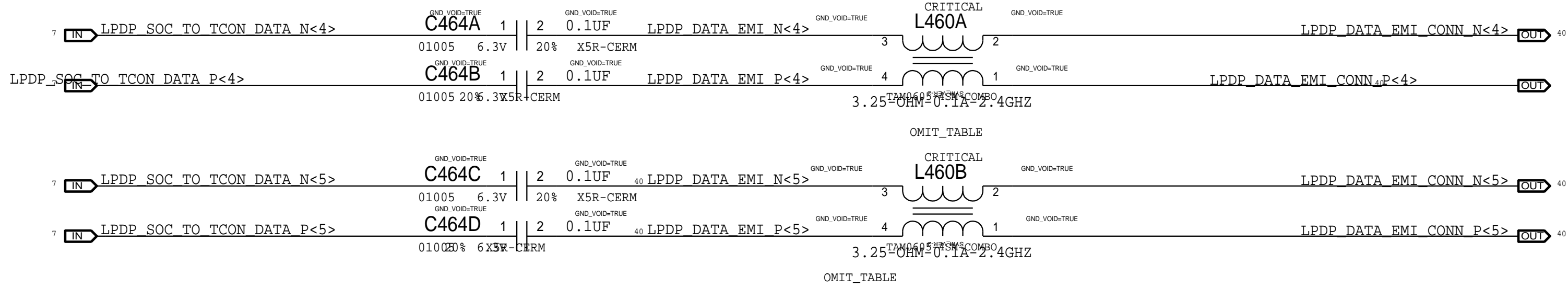
Juliet Power and I/O



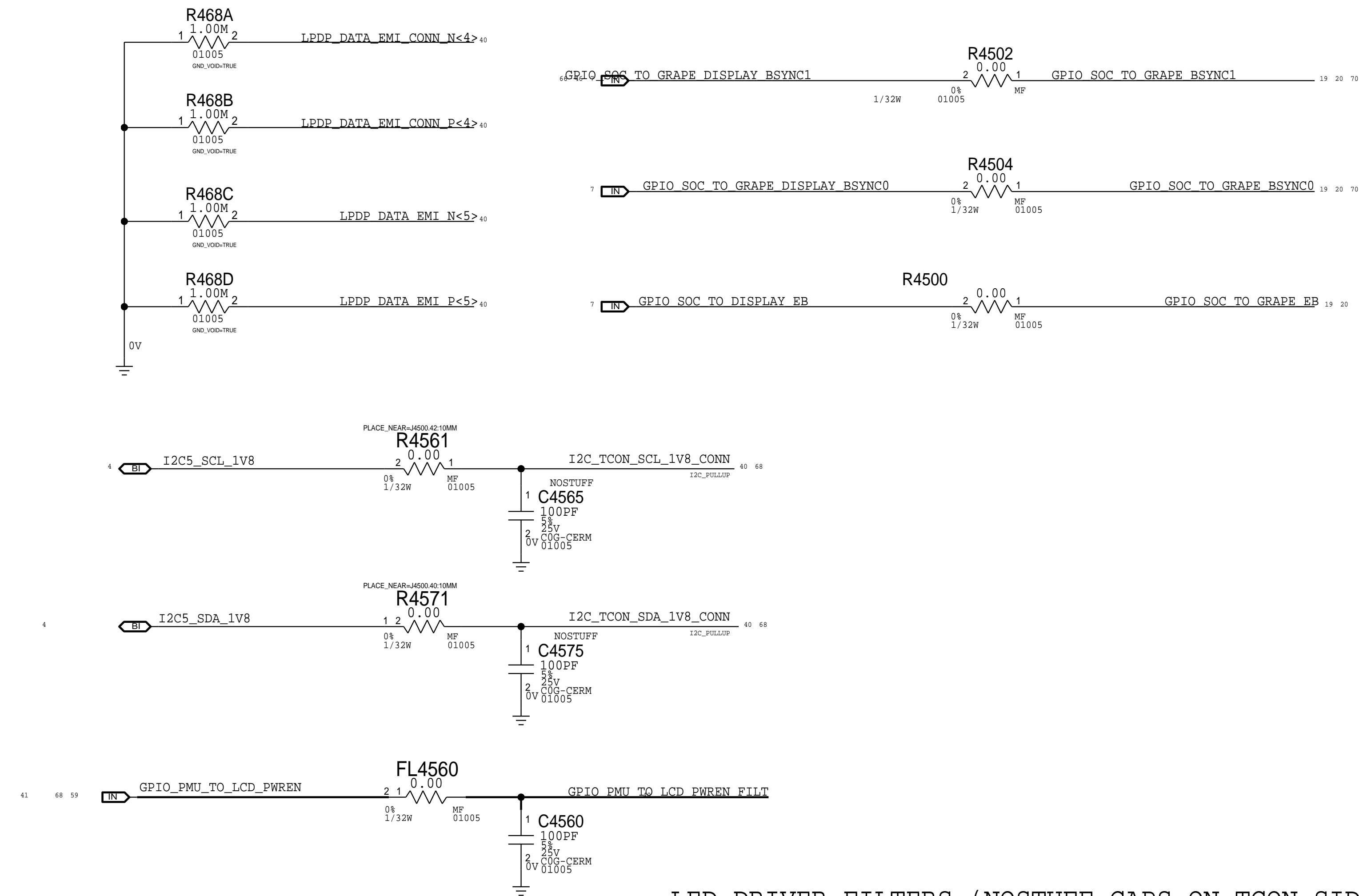
PAGE TITLE
PEARL: B2B TITUS + JULIET



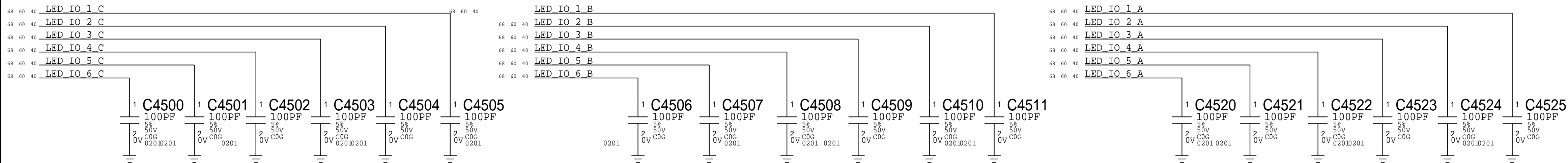
EDP AND PWR LED FLEX FILTERS AND CONNECTORS



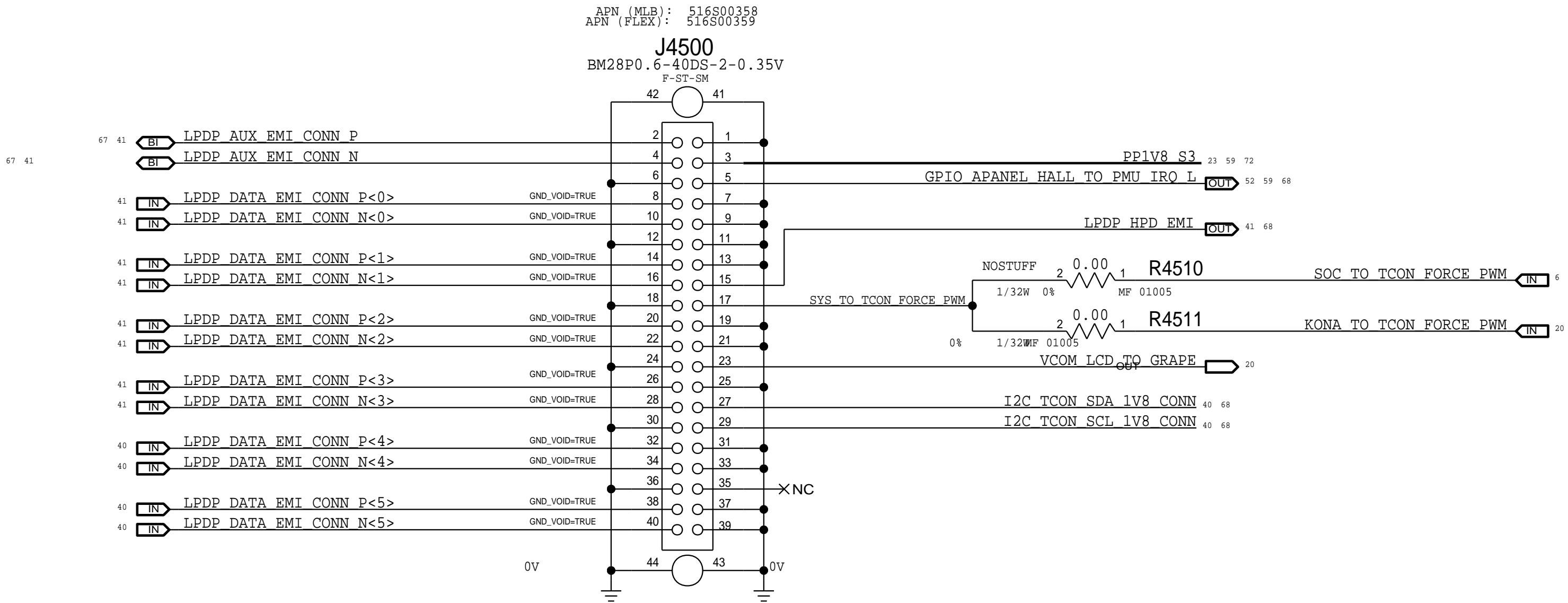
| PART# | QTY | DESCRIPTION | REFERENCE DESIGNATOR(S) | CRITICAL | BOM OPTION |
|----------|-----|-------------|-------------------------|----------|------------|
| 15550897 | 2 | TDR CMC | L460A, L460B | CRITICAL | |



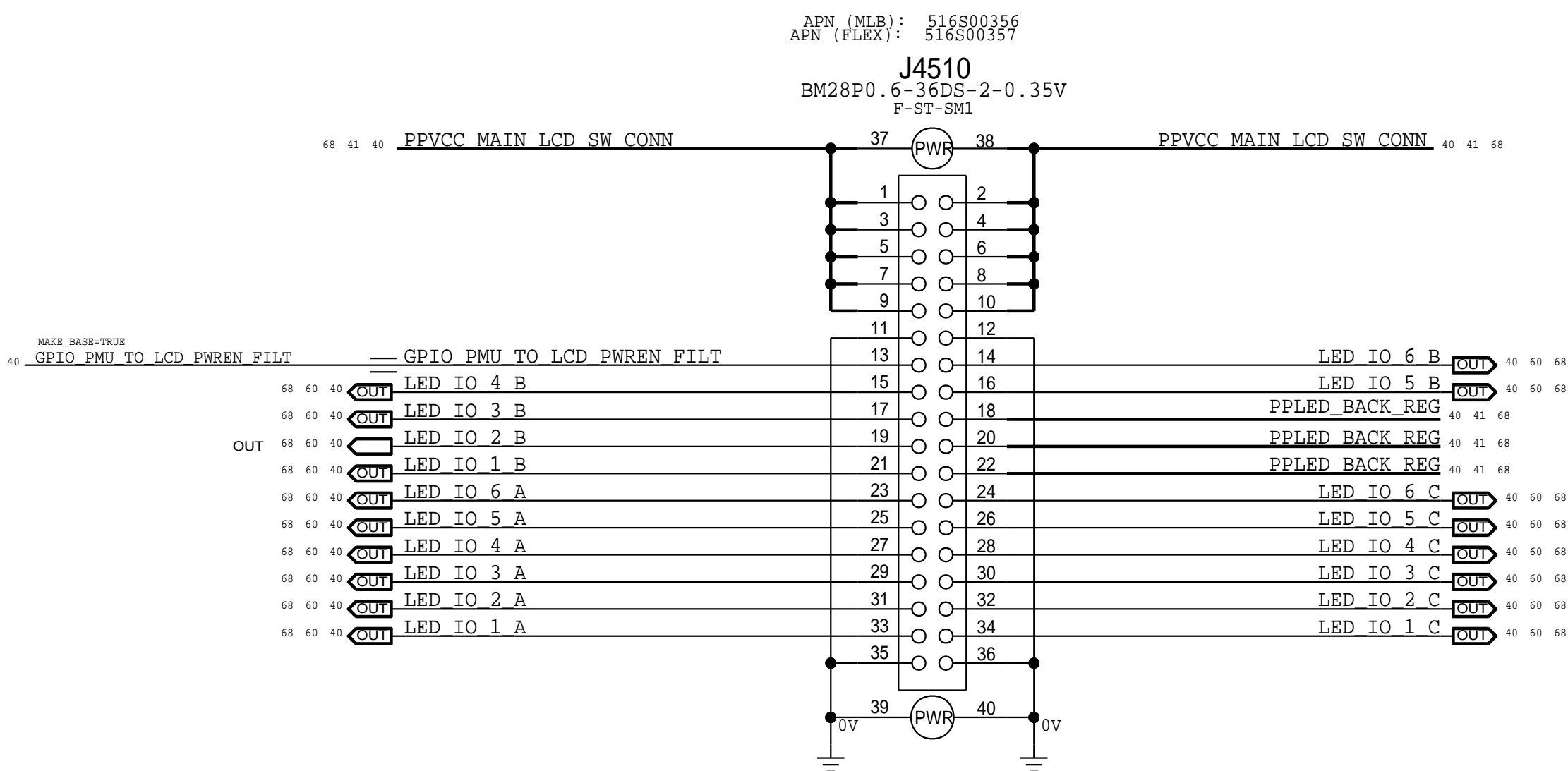
LED DRIVER FILTERS (NOSTUFF CAPS ON TCON SIDE)



EDP FLEX CONN



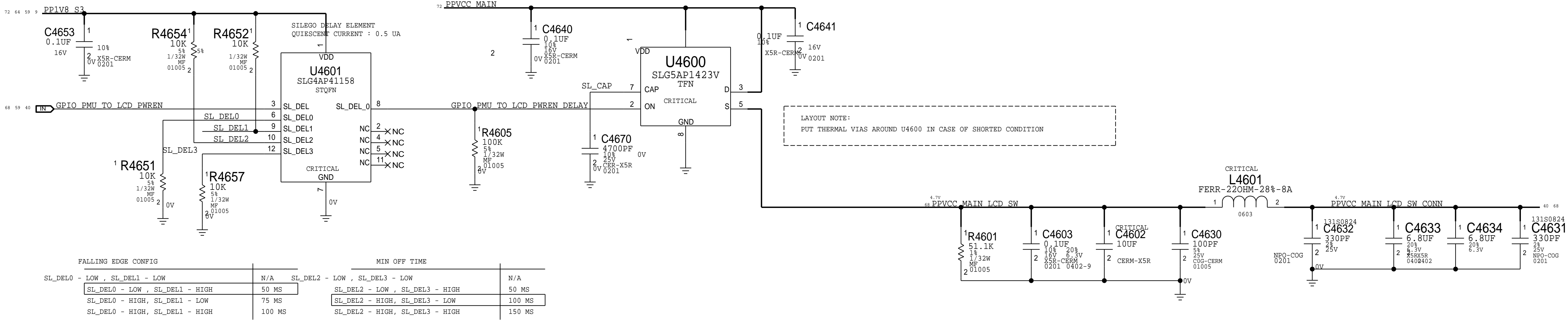
POWER LED FLEX CONN



EDP CONNECTOR SUPPORT

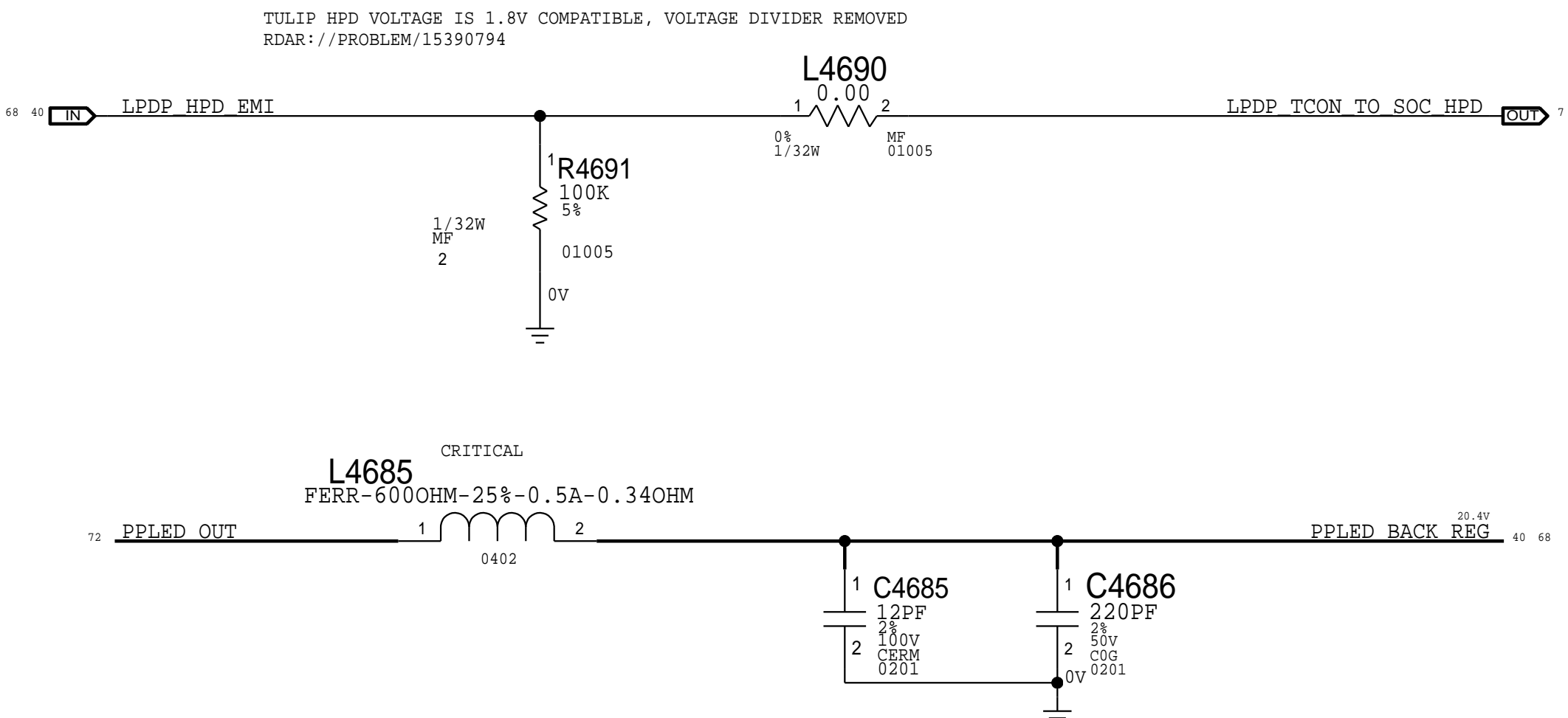
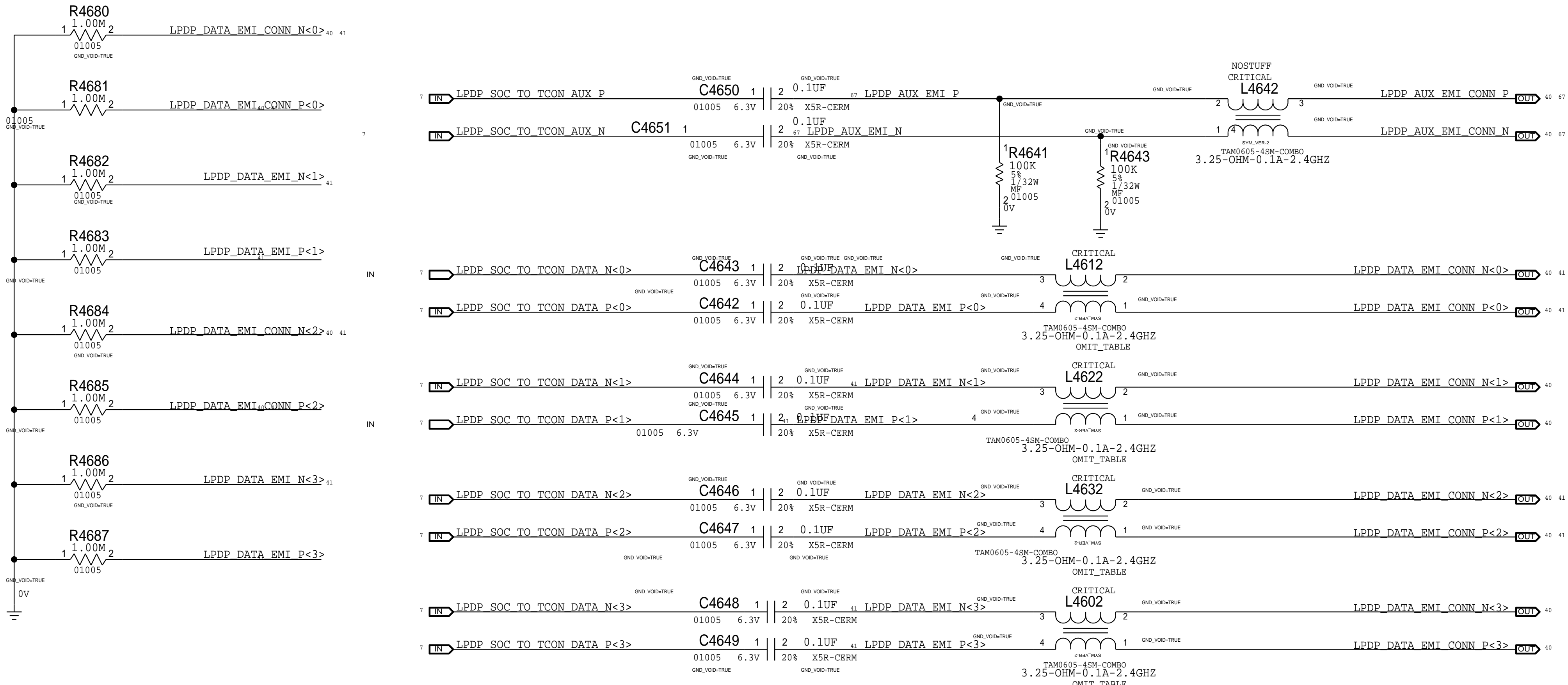
D

D



B

B



A

A

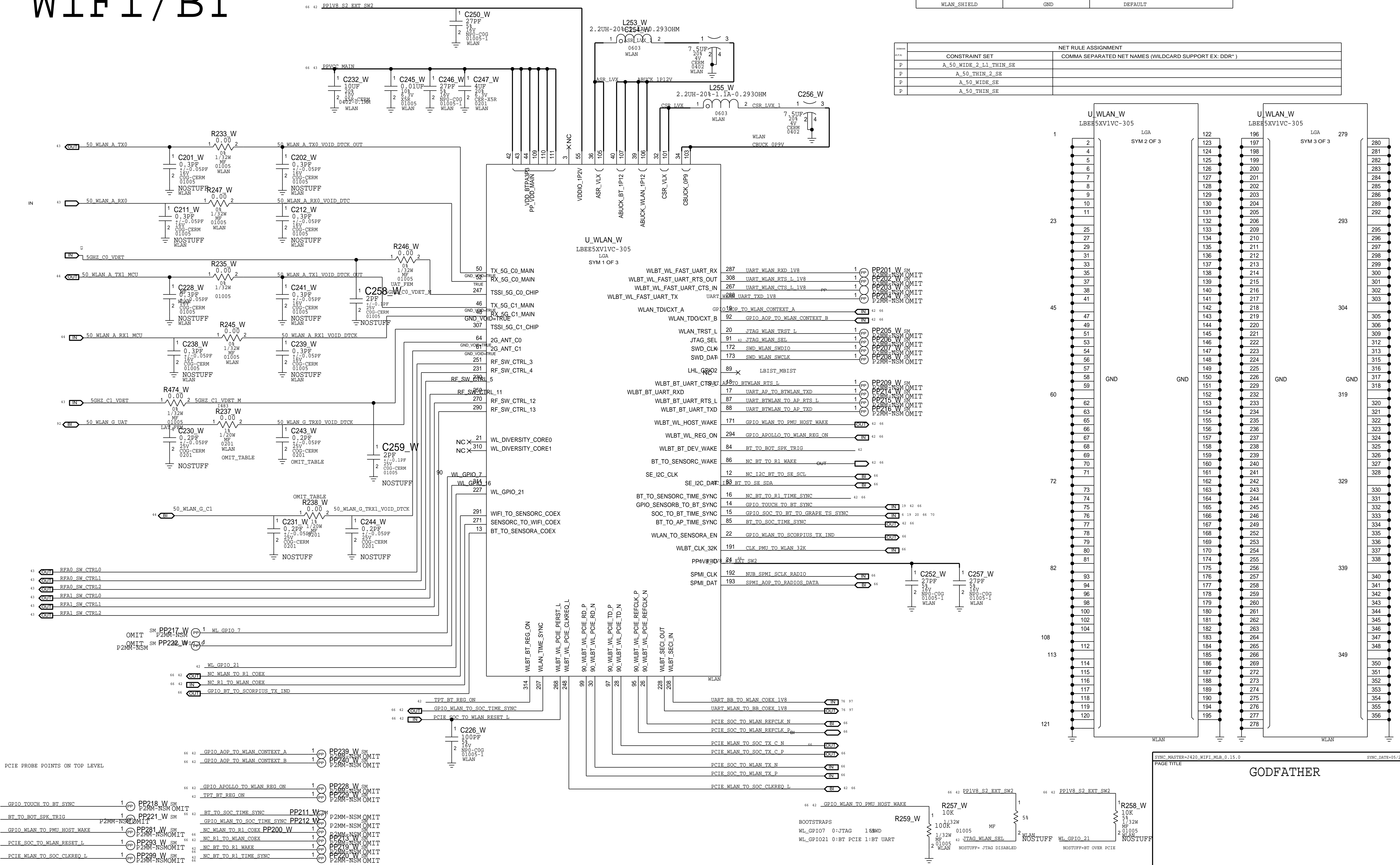
| PART# | QTY | DESCRIPTION | REFERENCE DESIGNATOR(S) | CRITICAL | BOM OPTION |
|----------|-----|-------------|-------------------------|----------|------------|
| 15550897 | 4 | TDR CMC | L4602,L4622,L4632,L4612 | CRITICAL | |

| | | |
|----------------------|--|----------------------|
| PAGE TITLE | | SYNC_DATE=03/09/2017 |
| DISPLAY: EDP SUPPORT | | |

WIFI/BT

| CLASS TO CLASS SPACING | | |
|------------------------|-------------|----------------|
| CLASS NAME | CLASS NAME | CONSTRAINT SET |
| WLAN_SHIELD | WLAN_SHIELD | DEFAULT |
| WLAN_SHIELD | GND | DEFAULT |

| NET RULE ASSIGNMENT | |
|------------------------|---|
| CONSTRAINT SET | COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*) |
| A_50_WIDE_2_L1_THIN_SE | |
| A_50_THIN_2_SE | |
| A_50_WIDE_SE | |
| A_50_THIN_SE | |



D



A

D

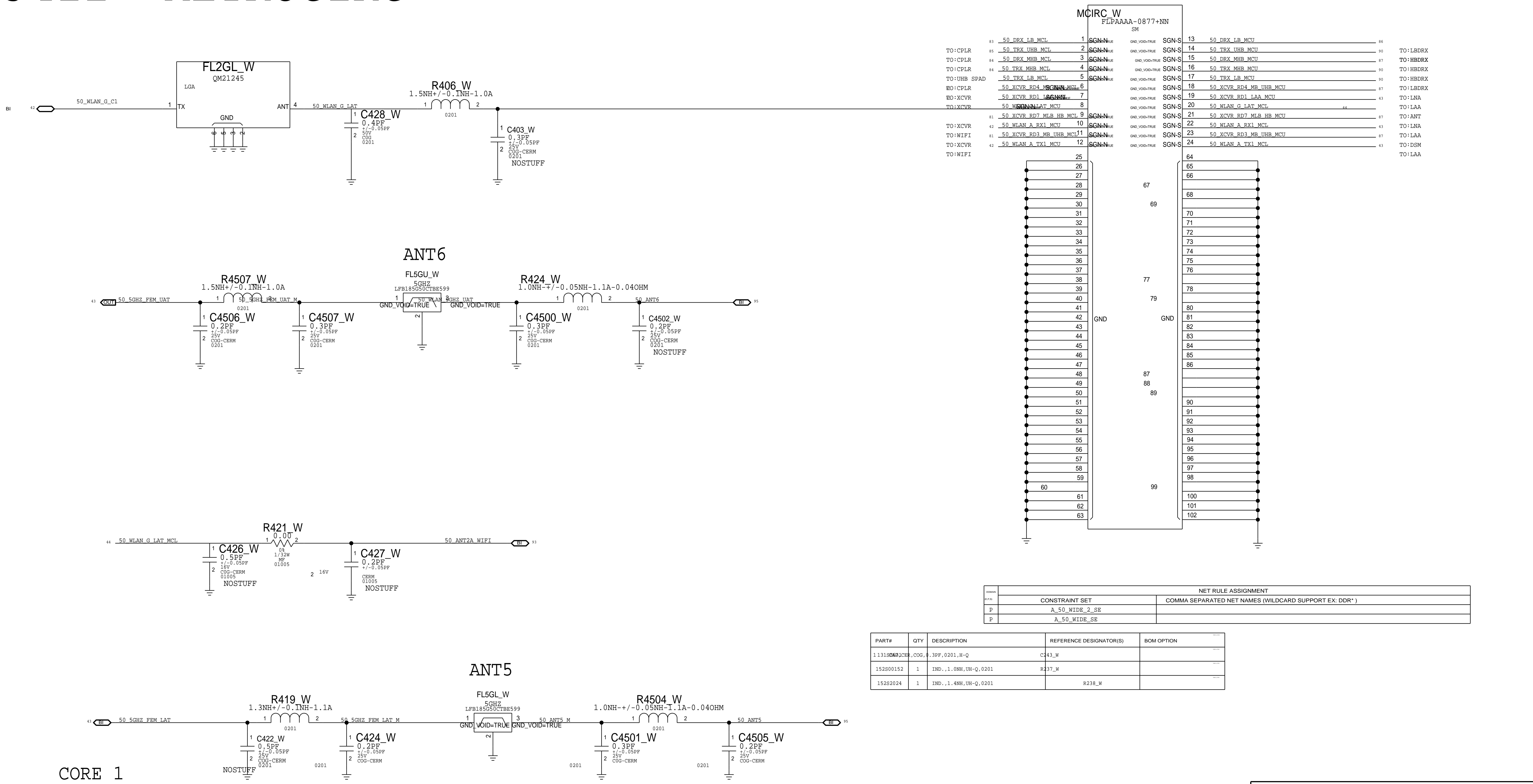
C

B

A

SYNC_MASTER=J420_WIFI_MLB_0.15.0 SYNC_DATE=05/28/2019
PAGE TITLE J421: Remote FEM

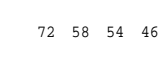
J421: METROCIRC



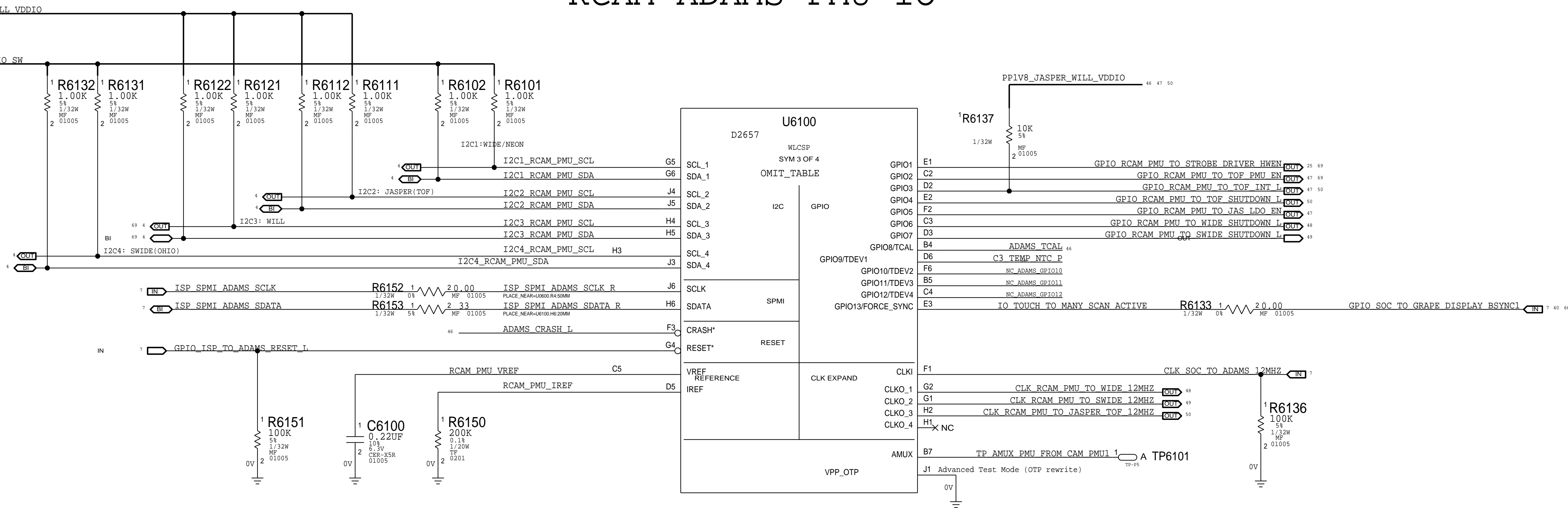
| DOESN'T EXIST | NET RULE ASSIGNMENT | |
|------------------|---------------------|---|
| | CONSTRAINT SET | COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*) |
| P | A_50_WIDE_2_SE | |
| P | A_50_WIDE_SE | |

| PART# | QTY | DESCRIPTION | REFERENCE DESIGNATOR(S) | BOM OPTION |
|-----------|-----|----------------------|-------------------------|------------|
| 113180001 | 1 | IND.,1.0NH,UH-Q,0201 | R437_W | |
| 152800152 | 1 | IND.,1.0NH,UH-Q,0201 | R437_W | |
| 15282024 | 1 | IND.,1.4NH,UH-Q,0201 | R238_W | |

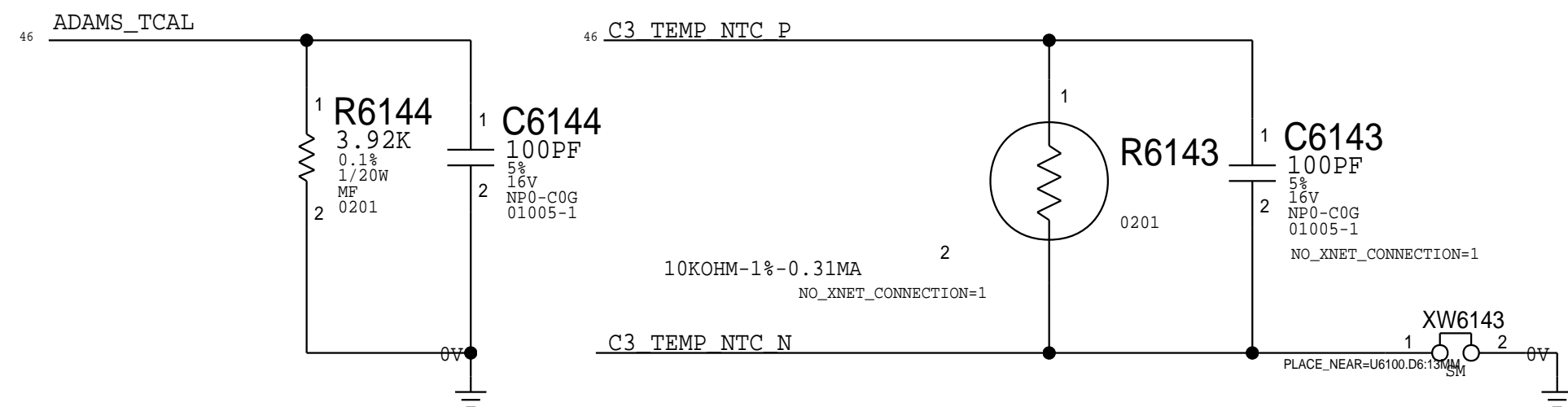
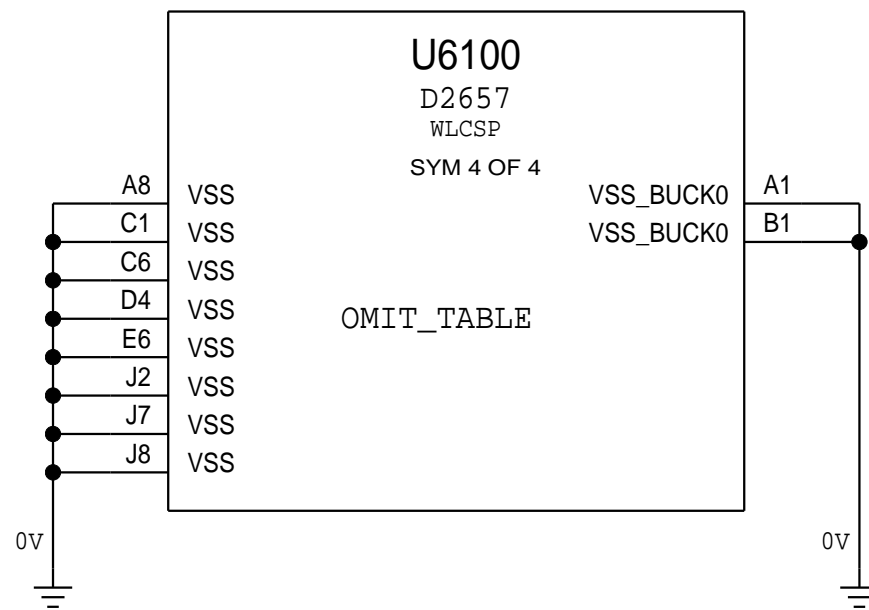
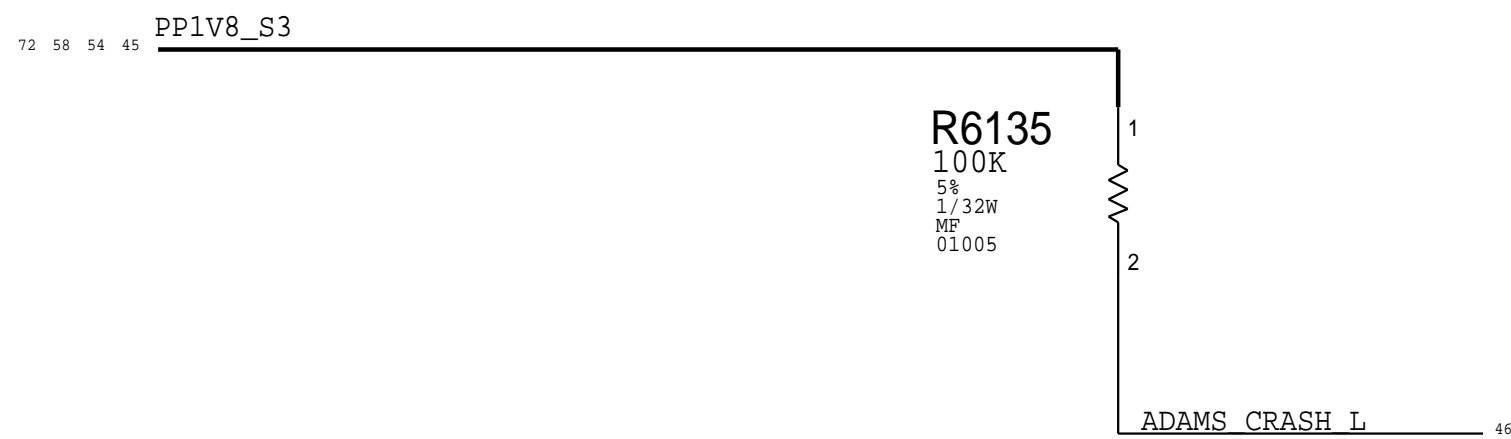
D



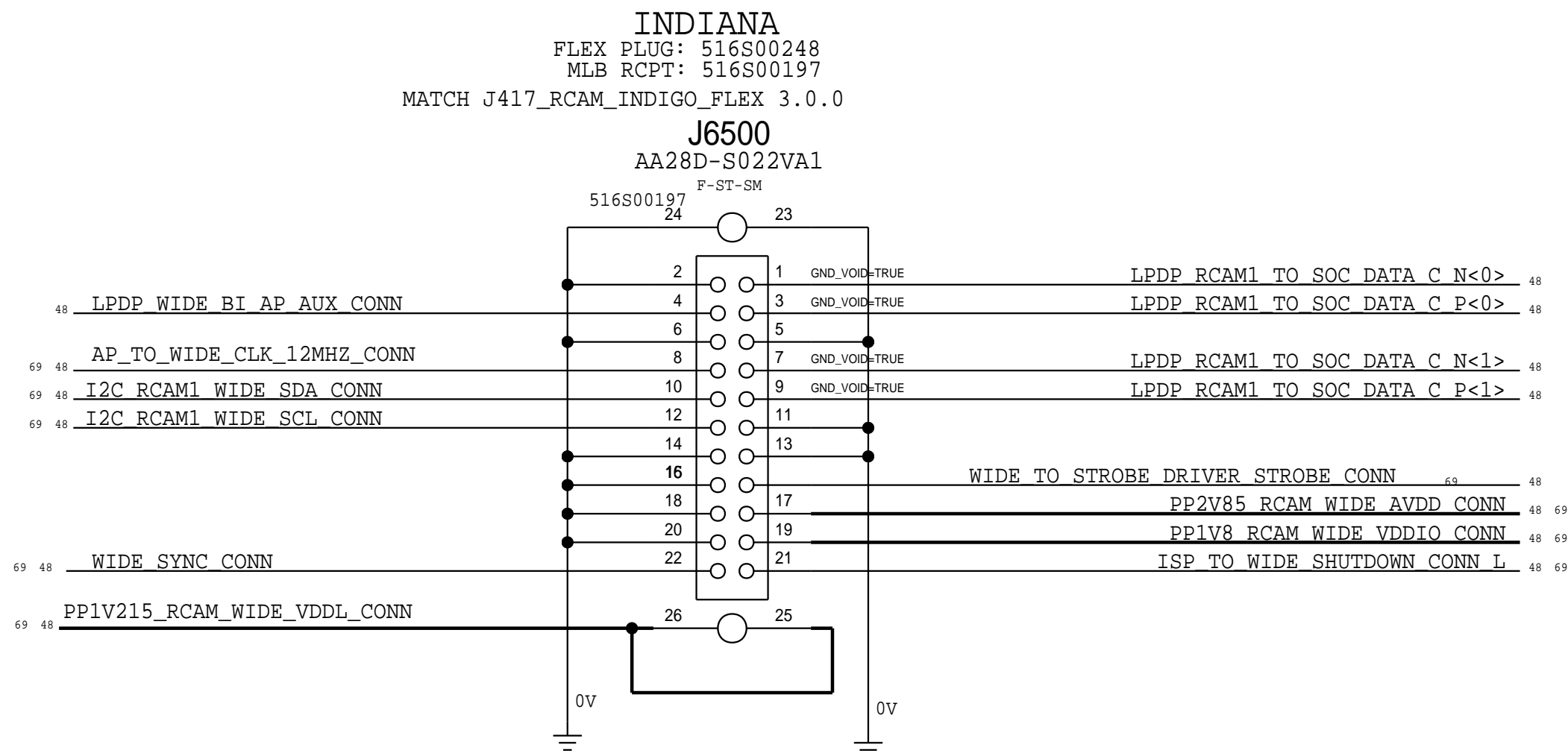
RCAM ADAMS PMU IO



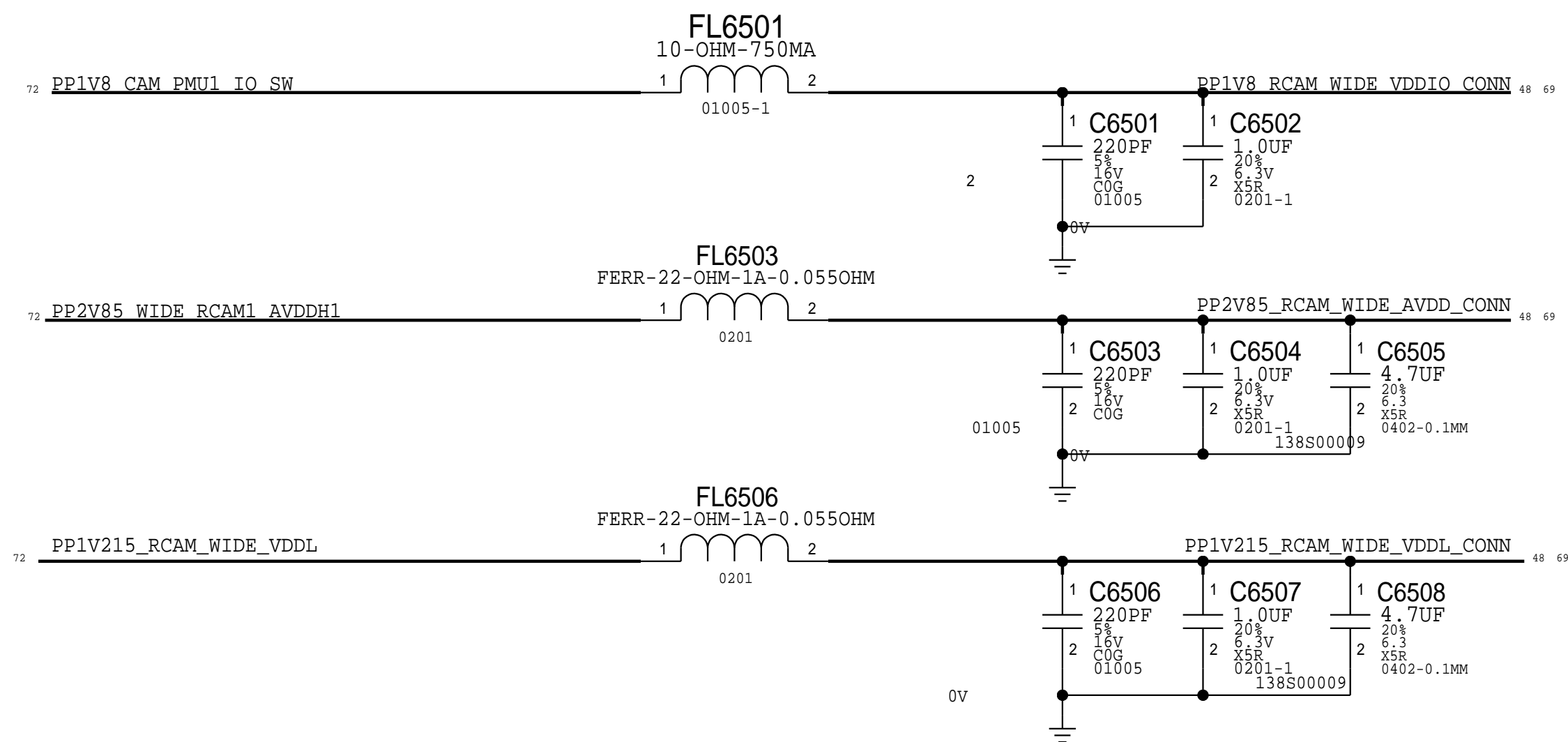
PRIVACY MODE - CRASH



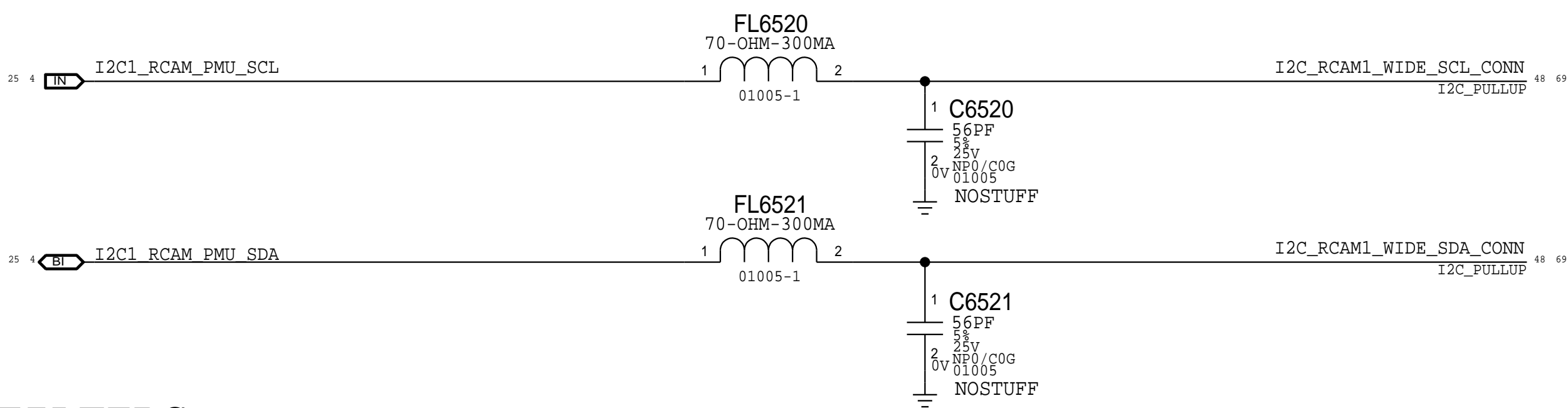
WIDE RCAM1 B2B



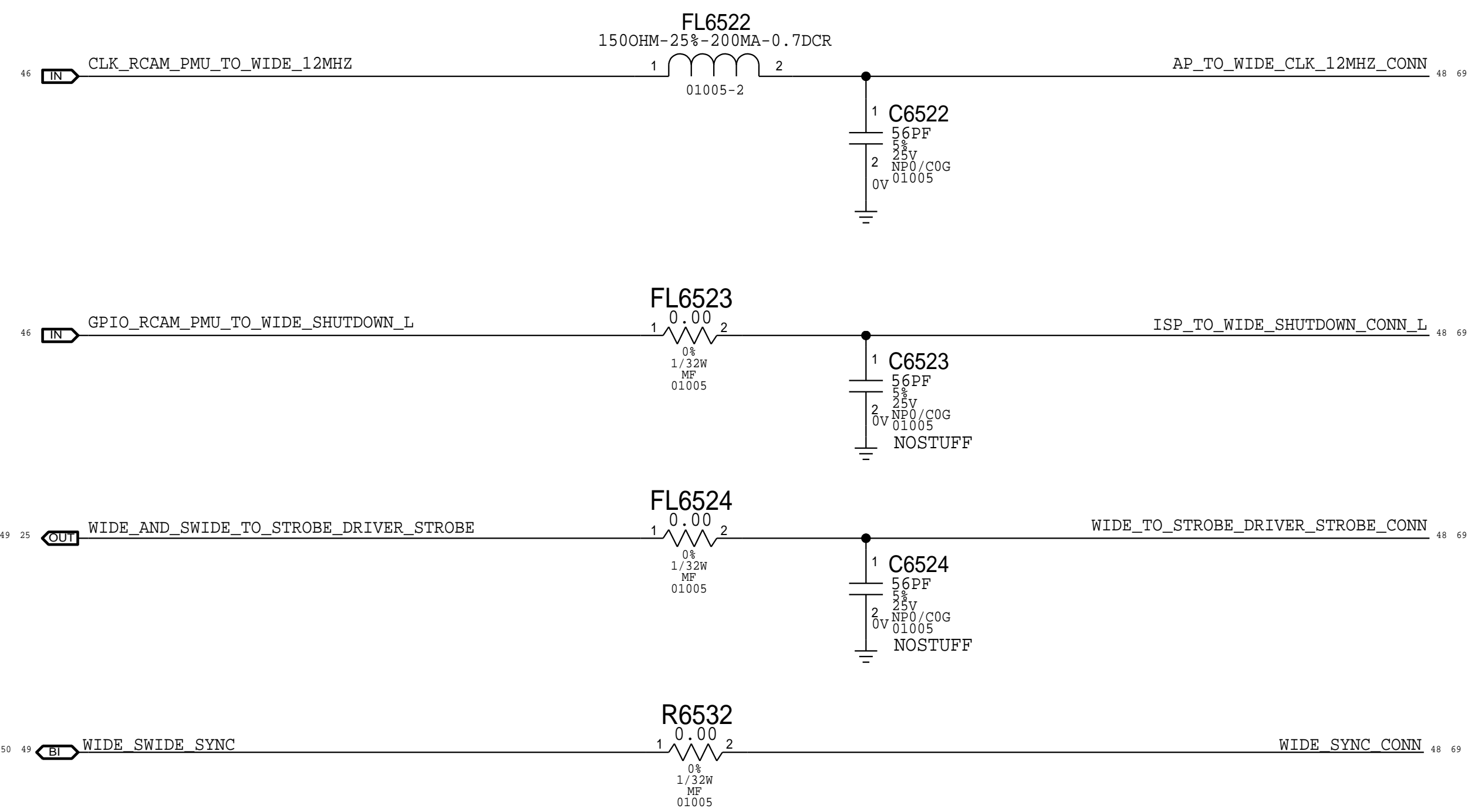
POWER FILTERING



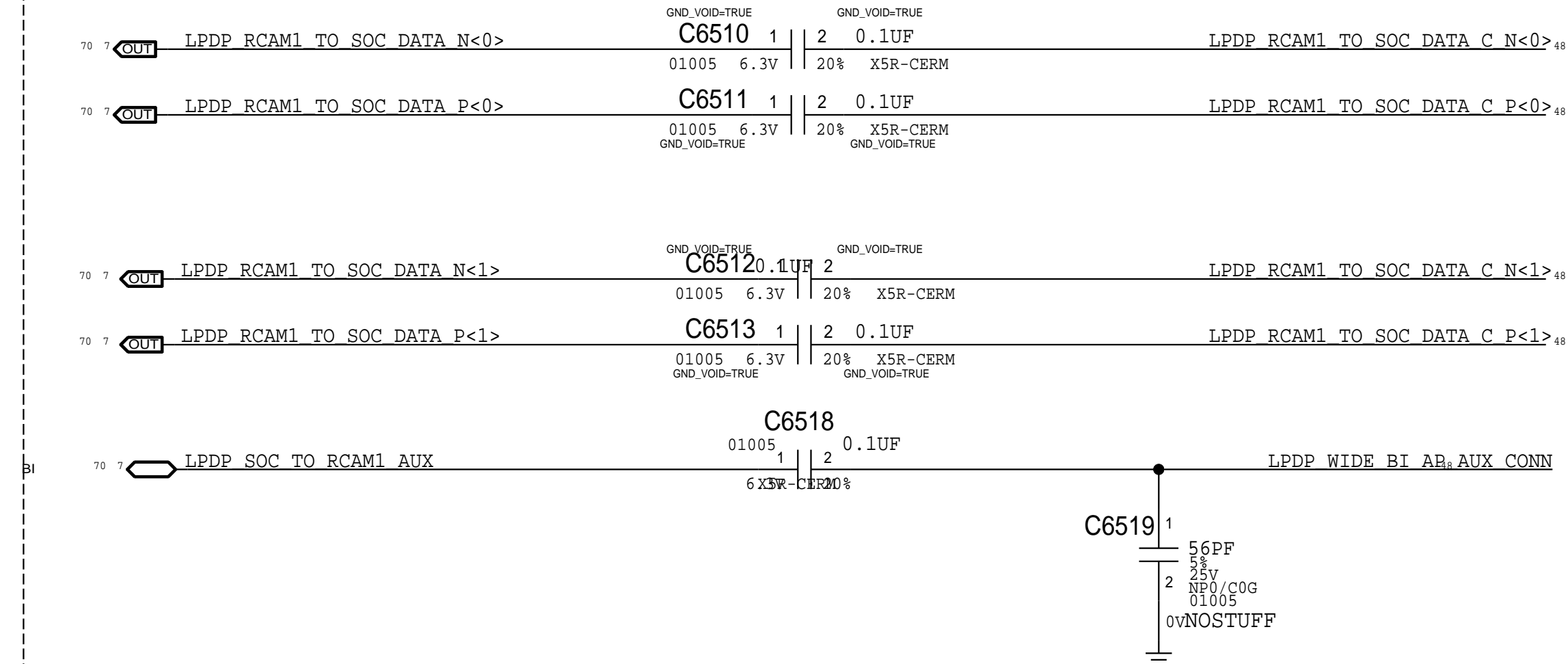
ISP I2C

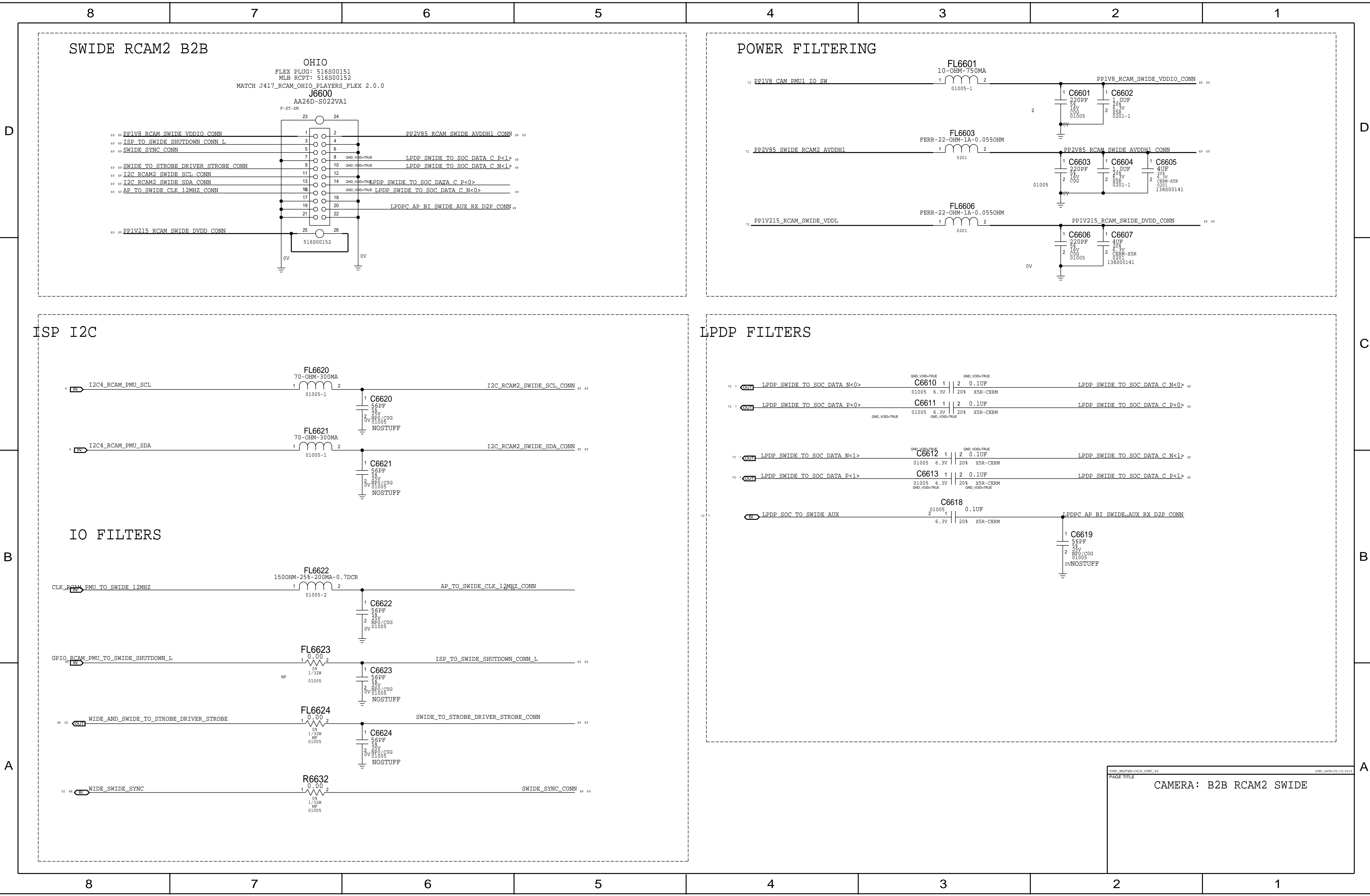


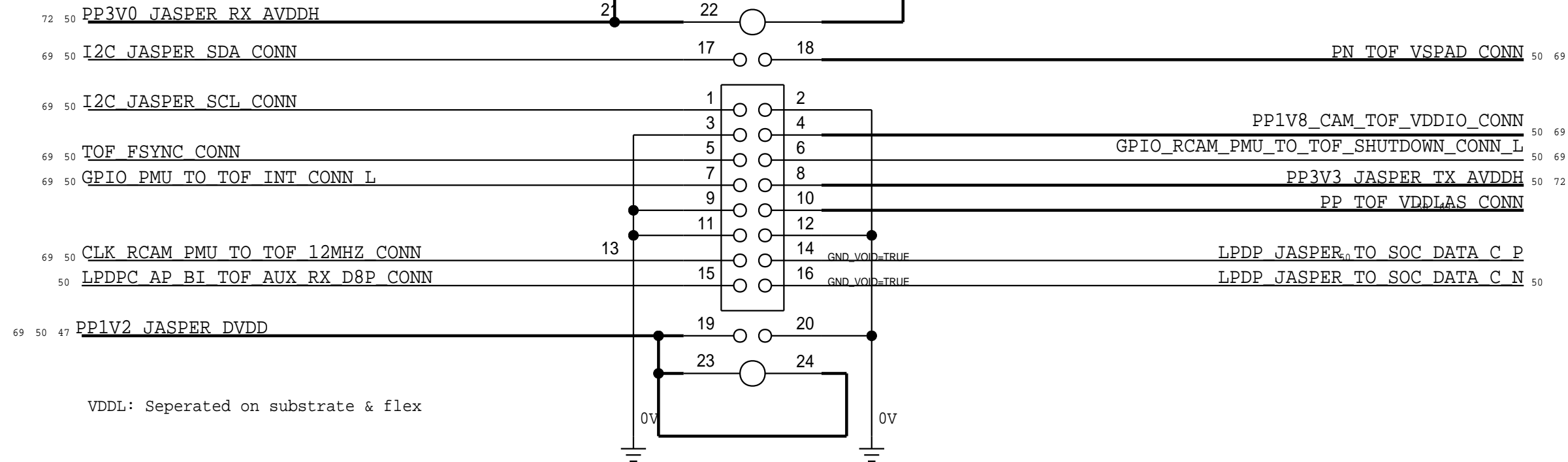
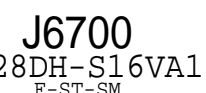
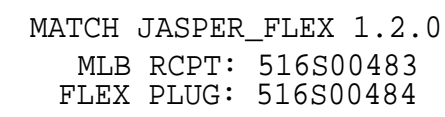
IO FILTERS



LPDP FILTERS

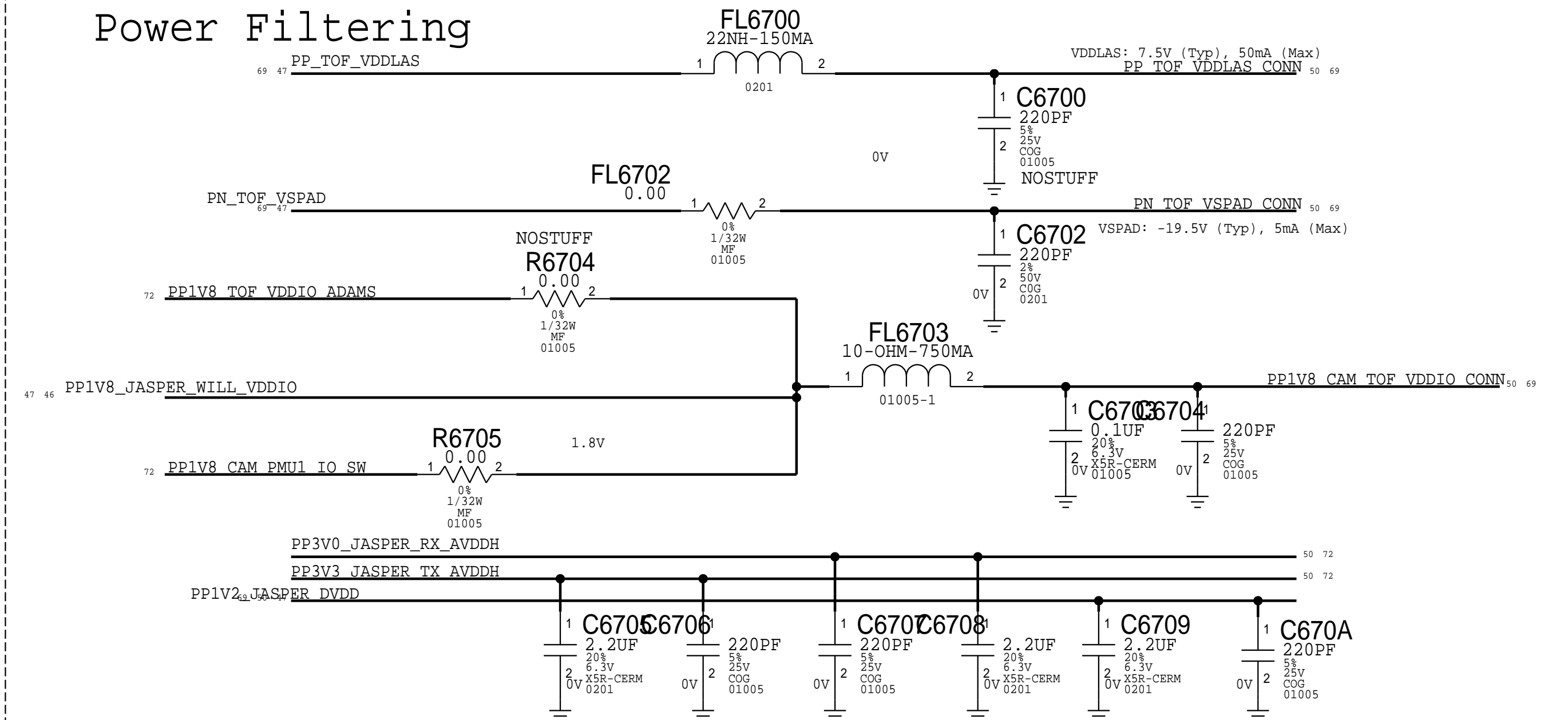




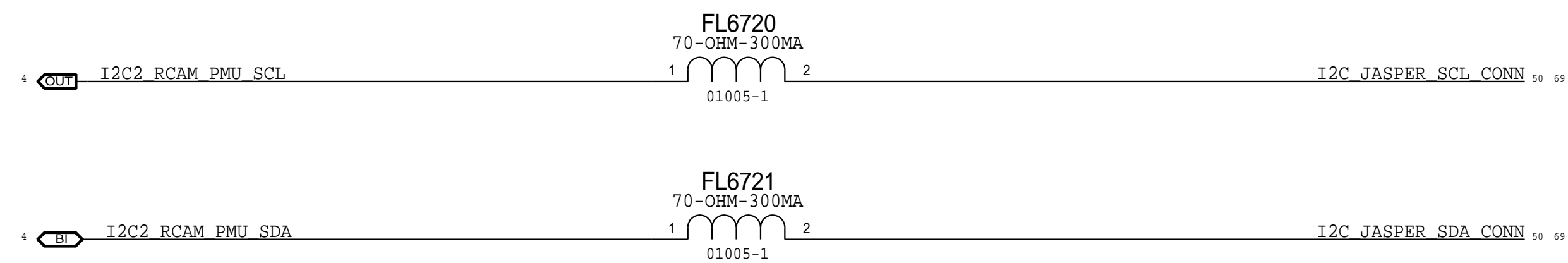


VDDL: Seperated on substrate & flex

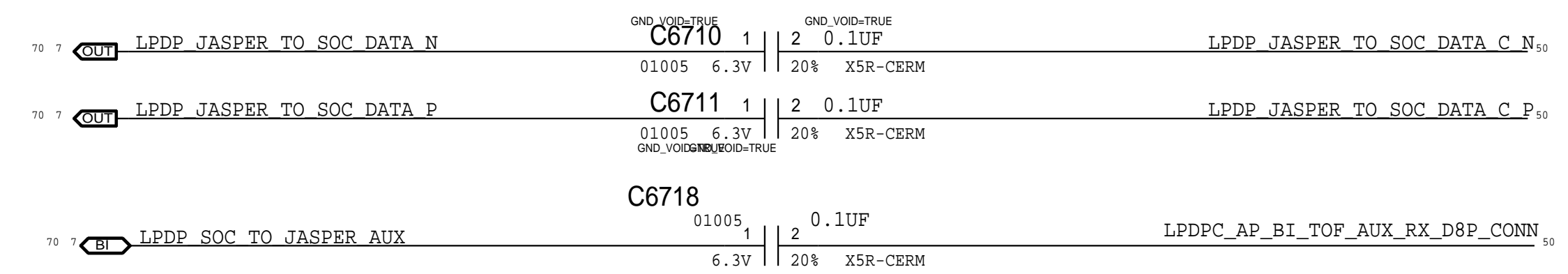
Power Filtering



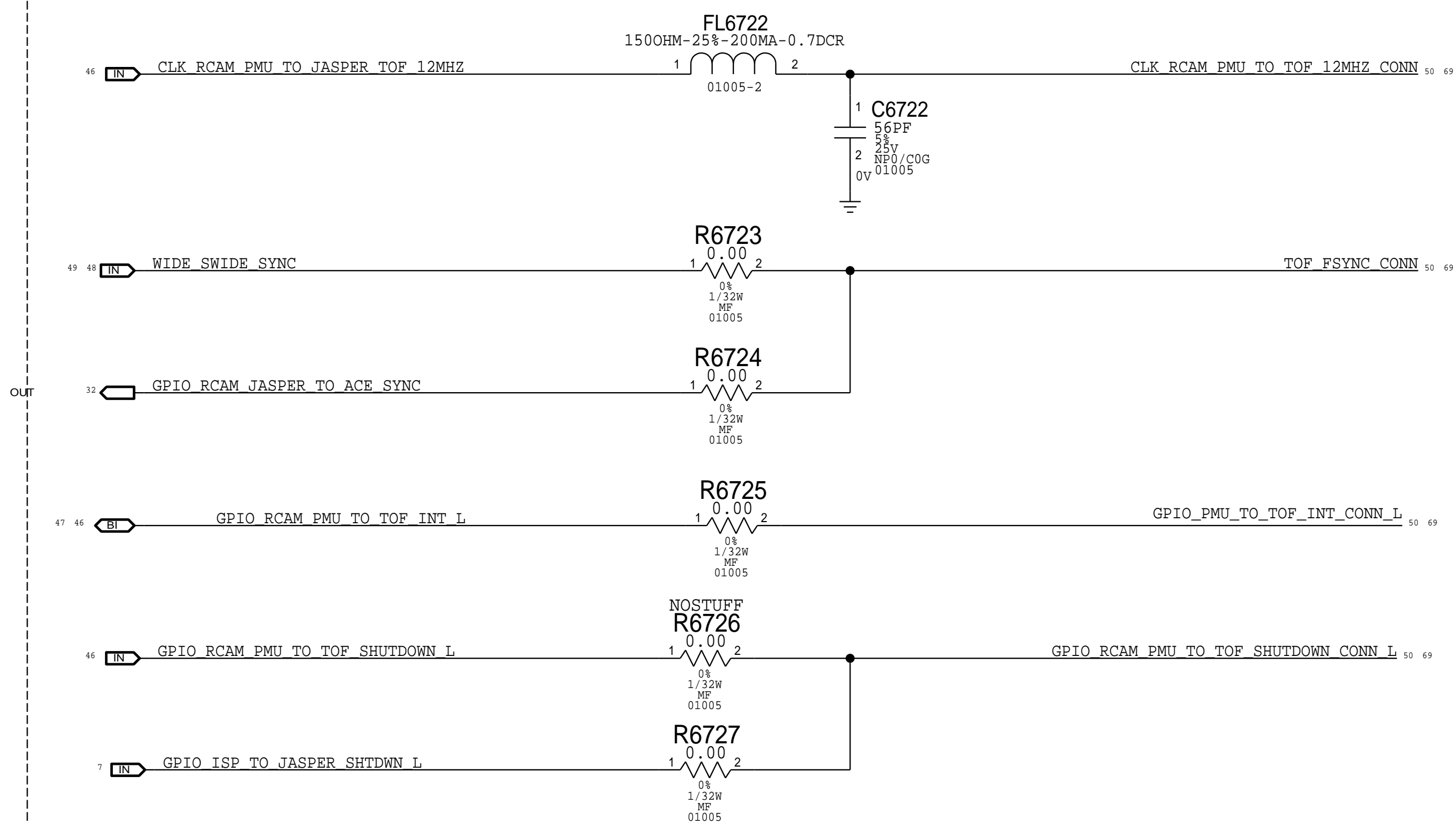
JASPER I2C



LPDP Filters



IO Filters



| | |
|--------------------------|----------------------|
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| PAGE TITLE | |

CAMERA: B2B JASPER

D

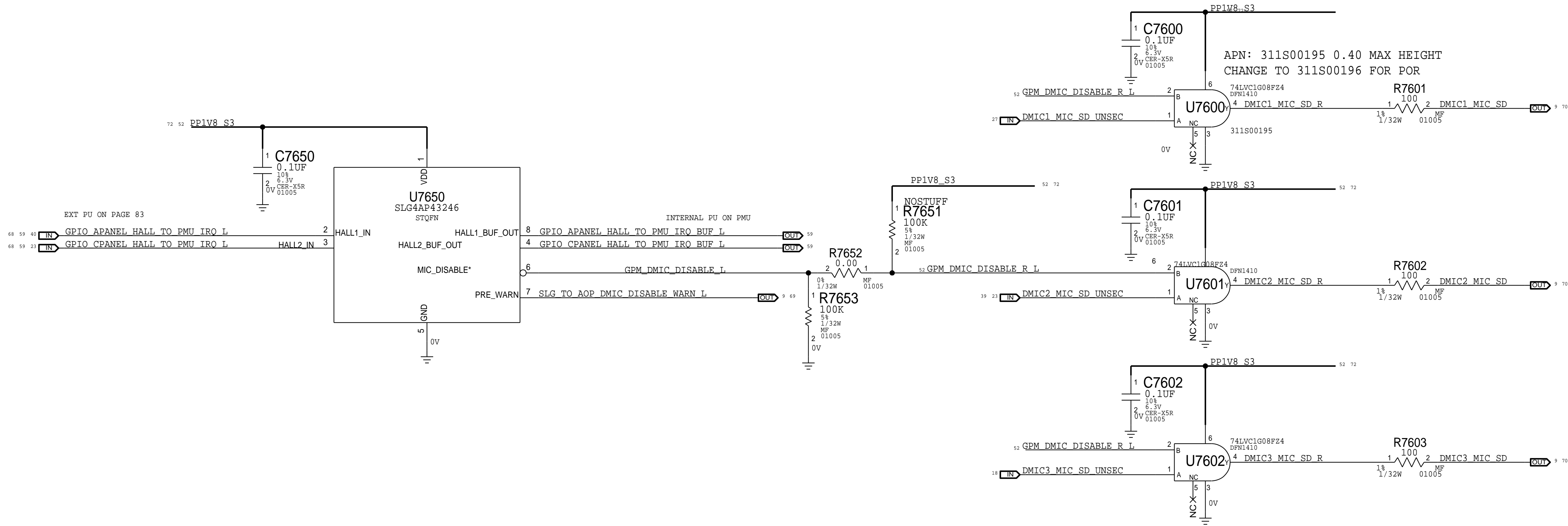
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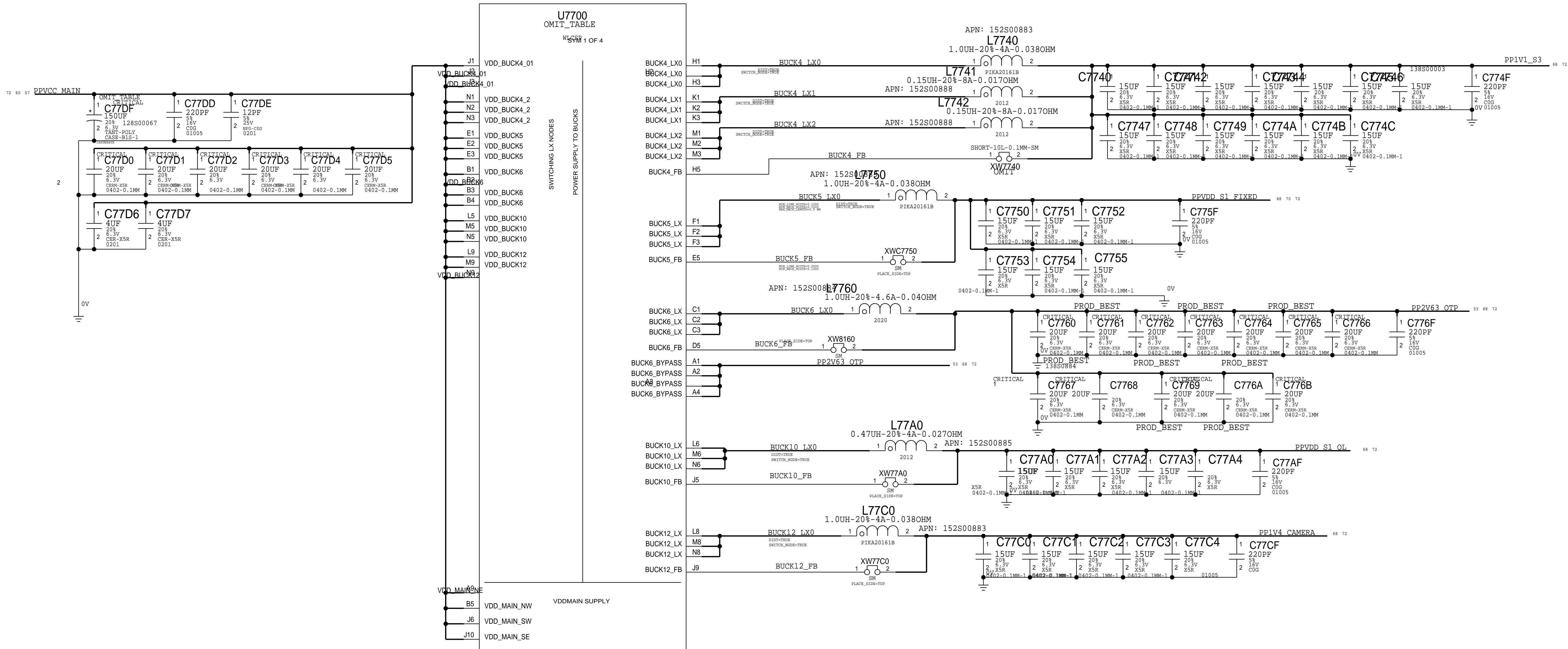
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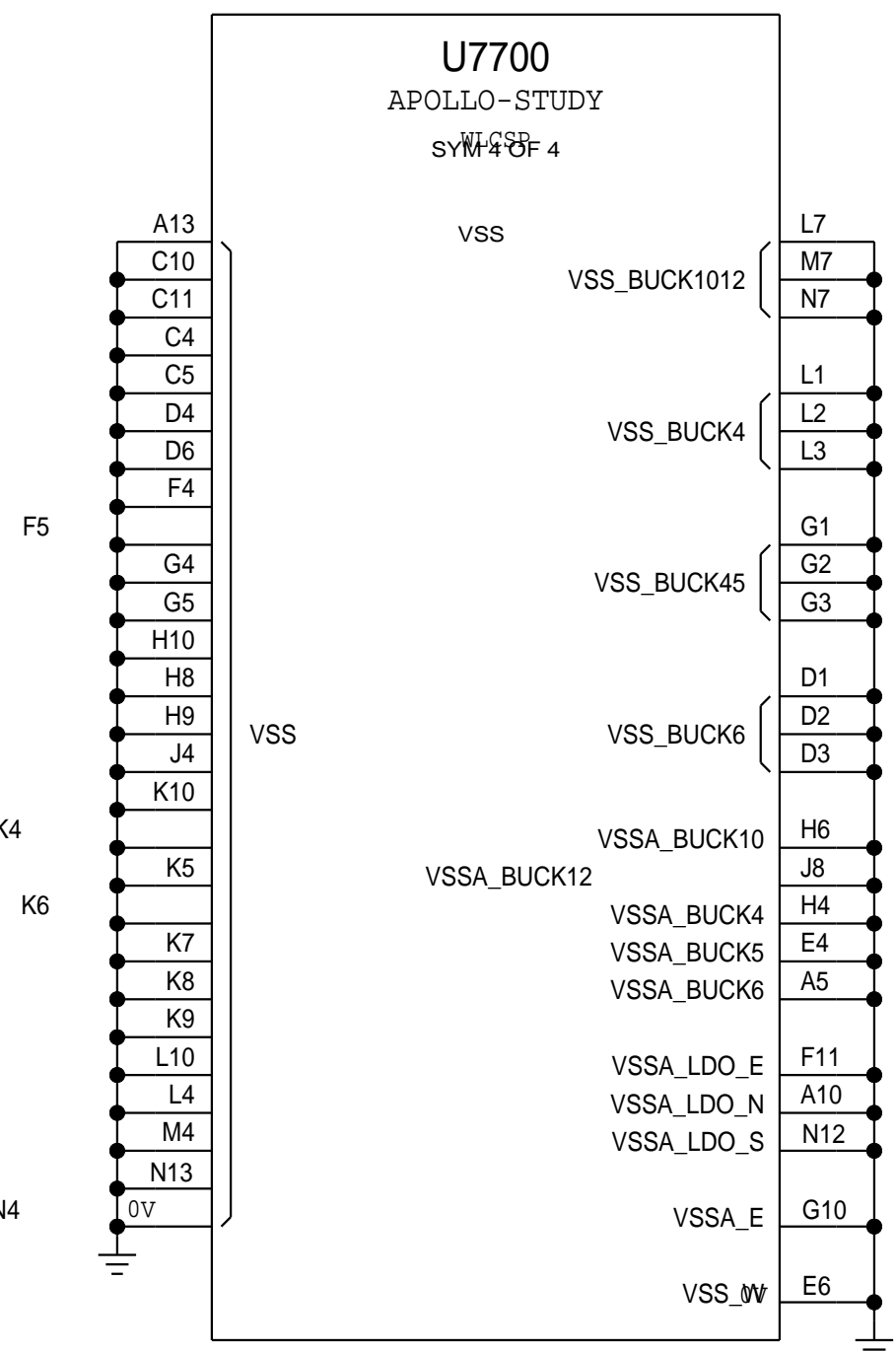


APOLLO PMU (1/3)

| PART NUMBER | ALTERNATE FOR PART NUMBER | BOM OPTION | REF DES | COMMENTS: |
|-------------|---------------------------|------------|--------------|--------------------------|
| 152S00963 | 152S00885 | | L77A0, L8490 | 0.470H 4A 0.027 OHM 2012 |
| 152S00964 | 152S00888 | | L77A1, ETC. | 0.150H 8A 0.017 OHM 2012 |
| 152S01003 | 152S00888 | | L77A1, ETC. | 0.150H 8A 0.017 OHM 2012 |

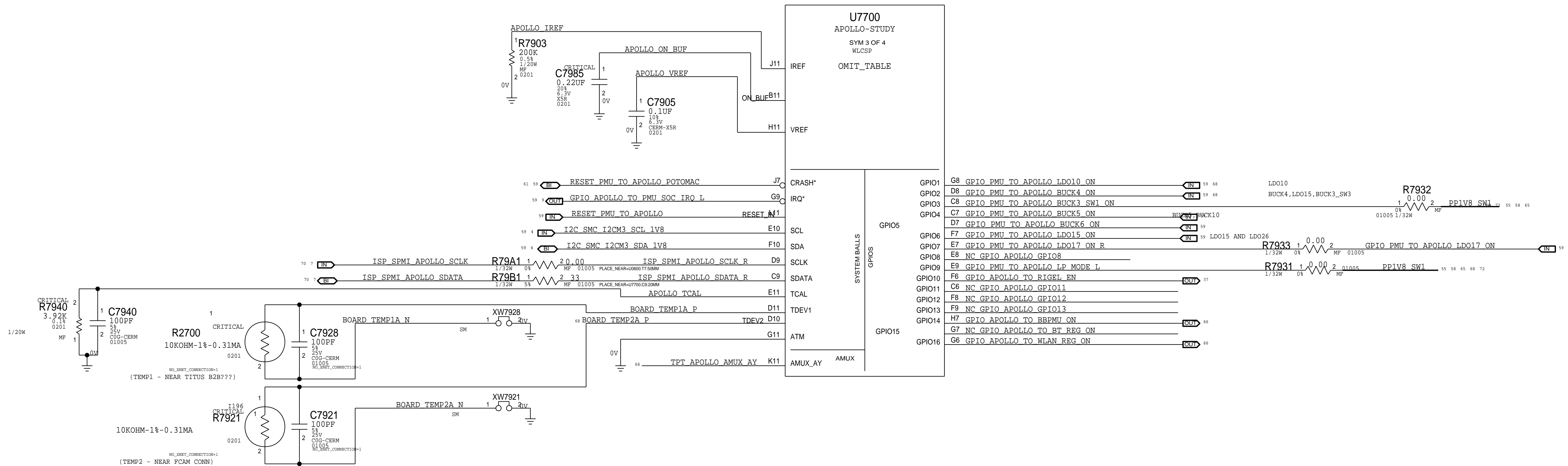


OMIT_TABLE U7700
APOLLO-STUDY
SYM 2 OF 4



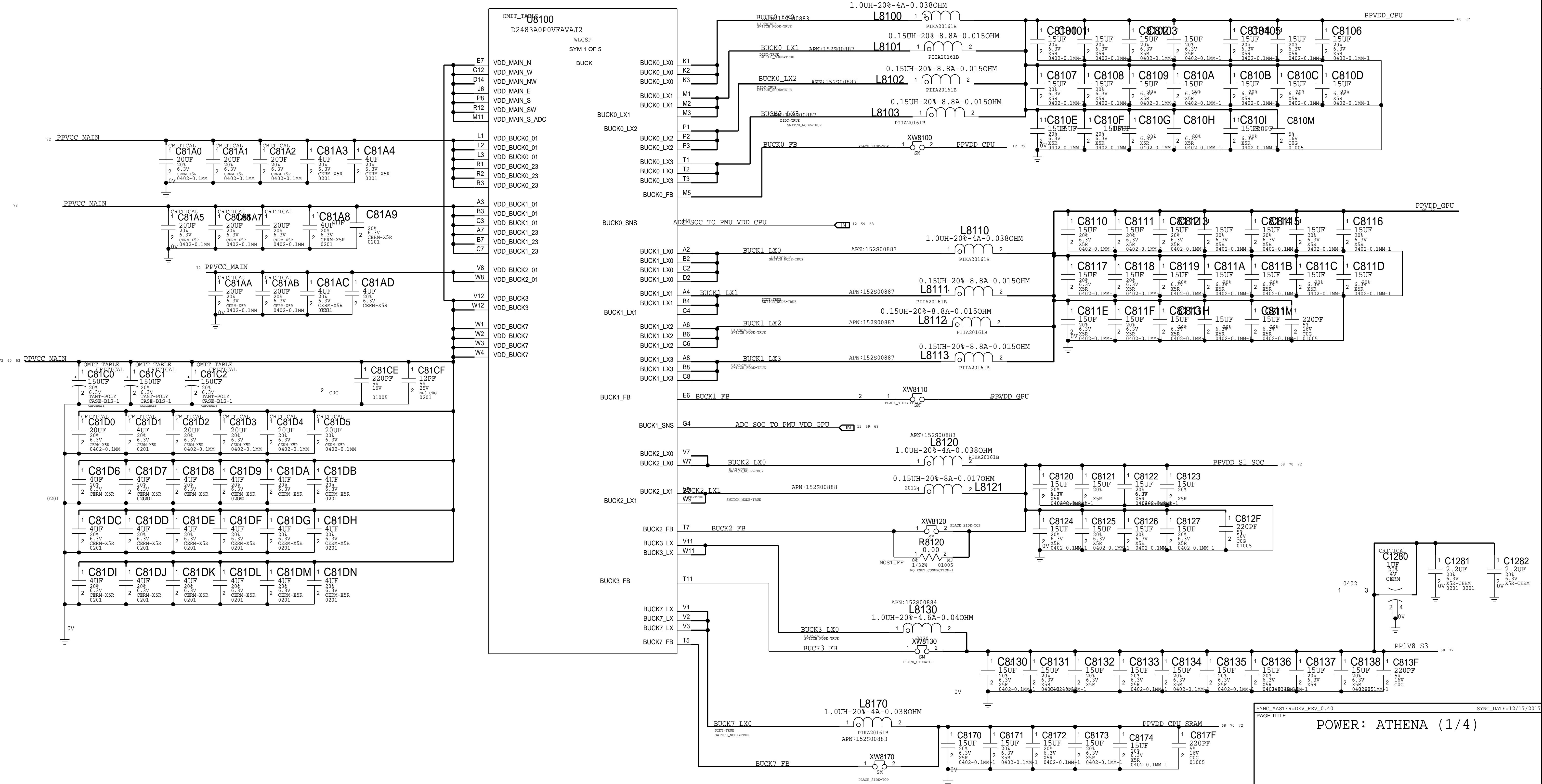
POWER: APOLLO (2/3)

APOLLO PMU (3 / 3)



ATHENA BUCKS

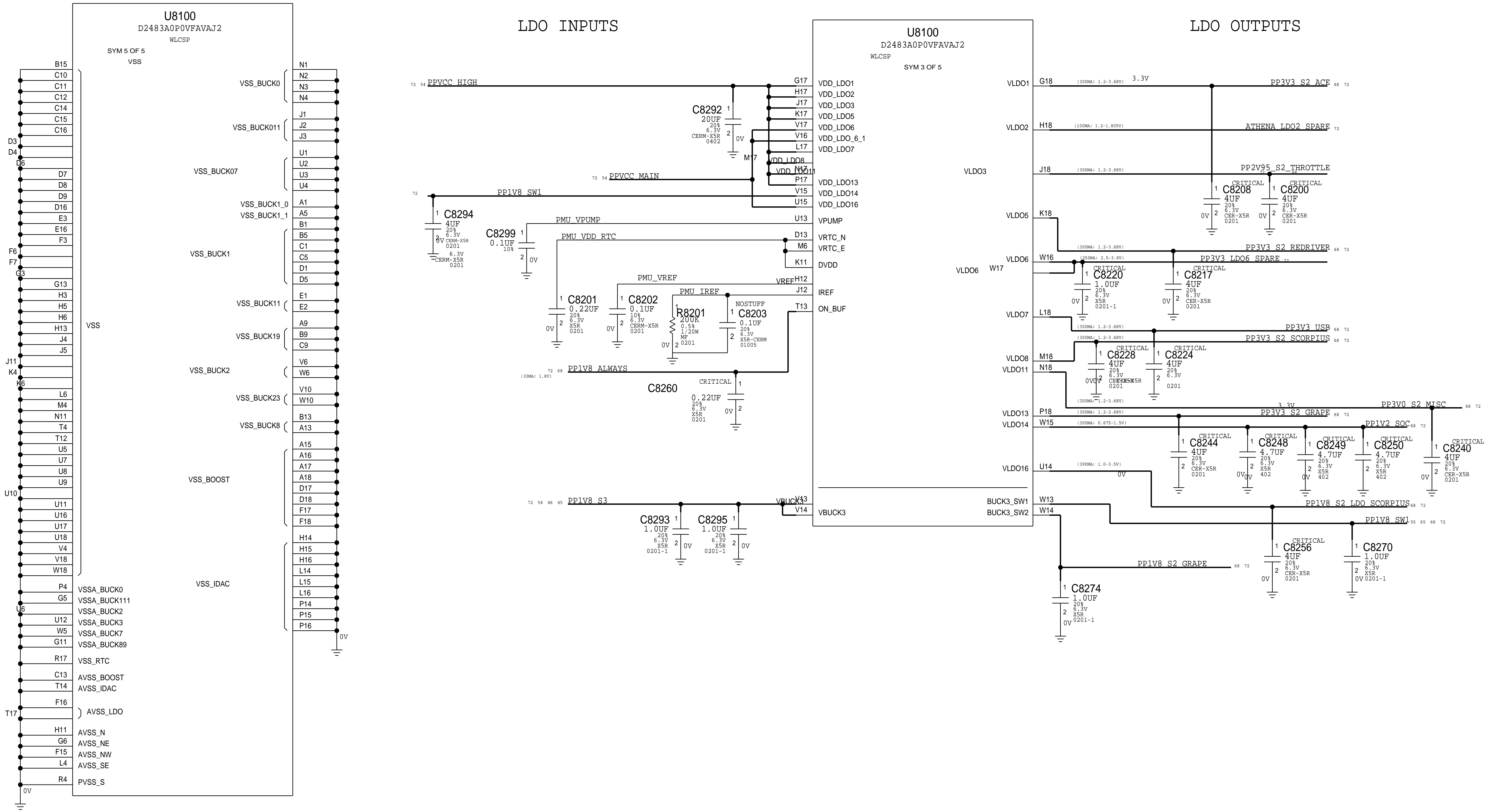
| PART# | QTY | DESCRIPTION | REFERENCE DESIGNATOR(S) | CRITICAL | BOM OPTION |
|-----------|-----|-----------------|-------------------------|----------|------------|
| 128S00067 | 4 | CAP,TANT, 150UF | C81C0,C81C1,C81C2,C77DF | CRITICAL | |



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PAGE TITLE
POWER: ATHENA (1/4)

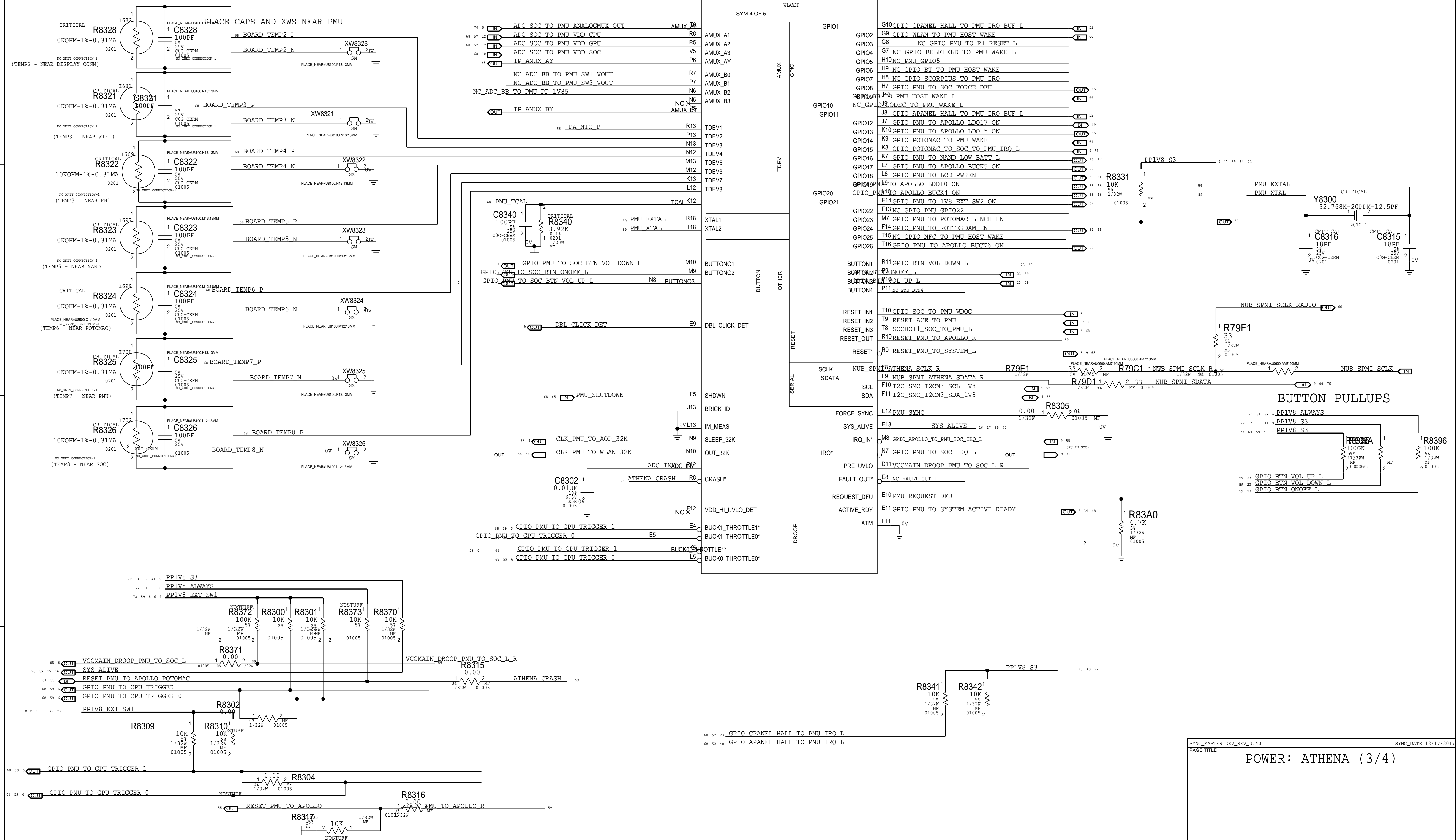
ATHENA PMU (2 / 4)

| PART NUMBER | ALTERNATE FOR PART NUMBER | BOM OPTION | REF DES | COMMENTS: |
|-------------|---------------------------|------------|-----------|---------------------------|
| 197S0399 | 197S0392 | | Y8200 | RDAR: / / PROBLEM/9936684 |
| 138S0703 | 138S0648 | | C8233_BCT | ALT FOR 4.7UF, 6.3V, 0402 |

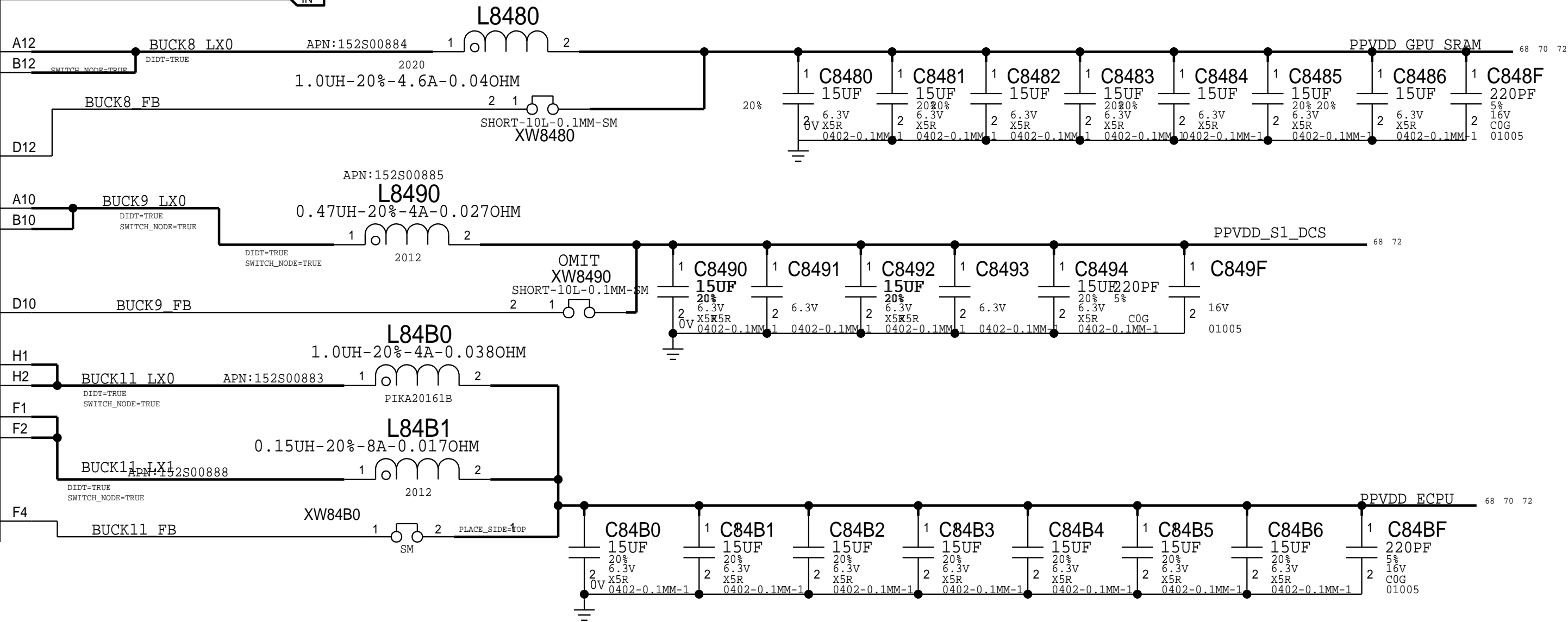
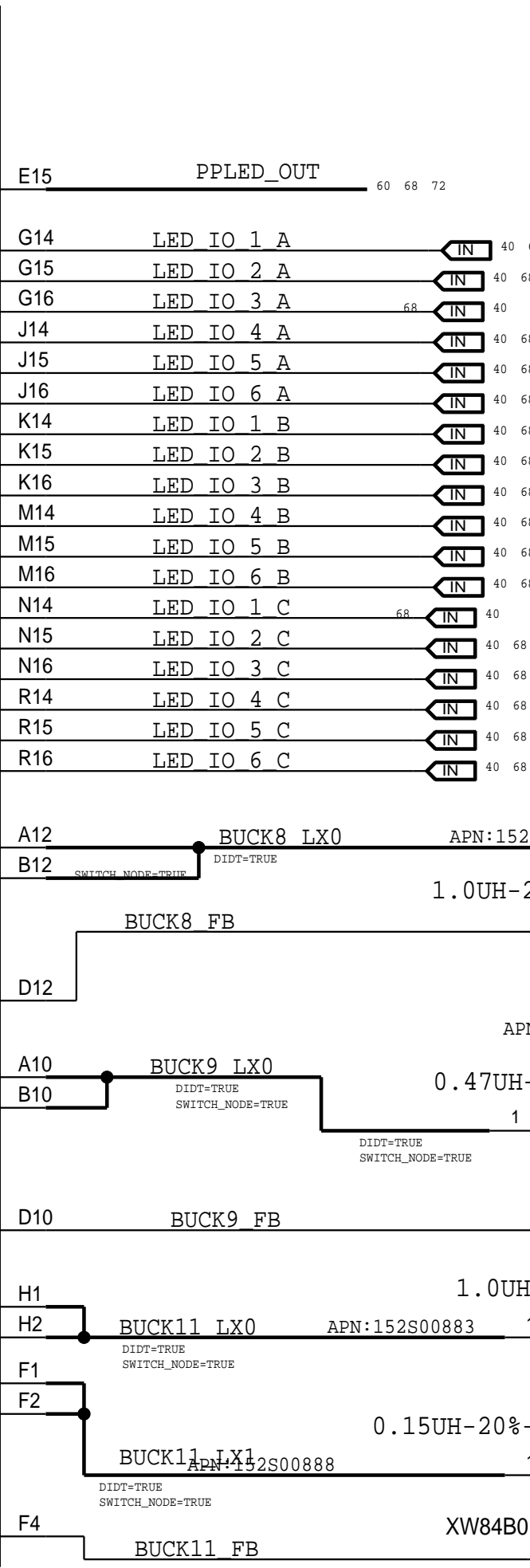
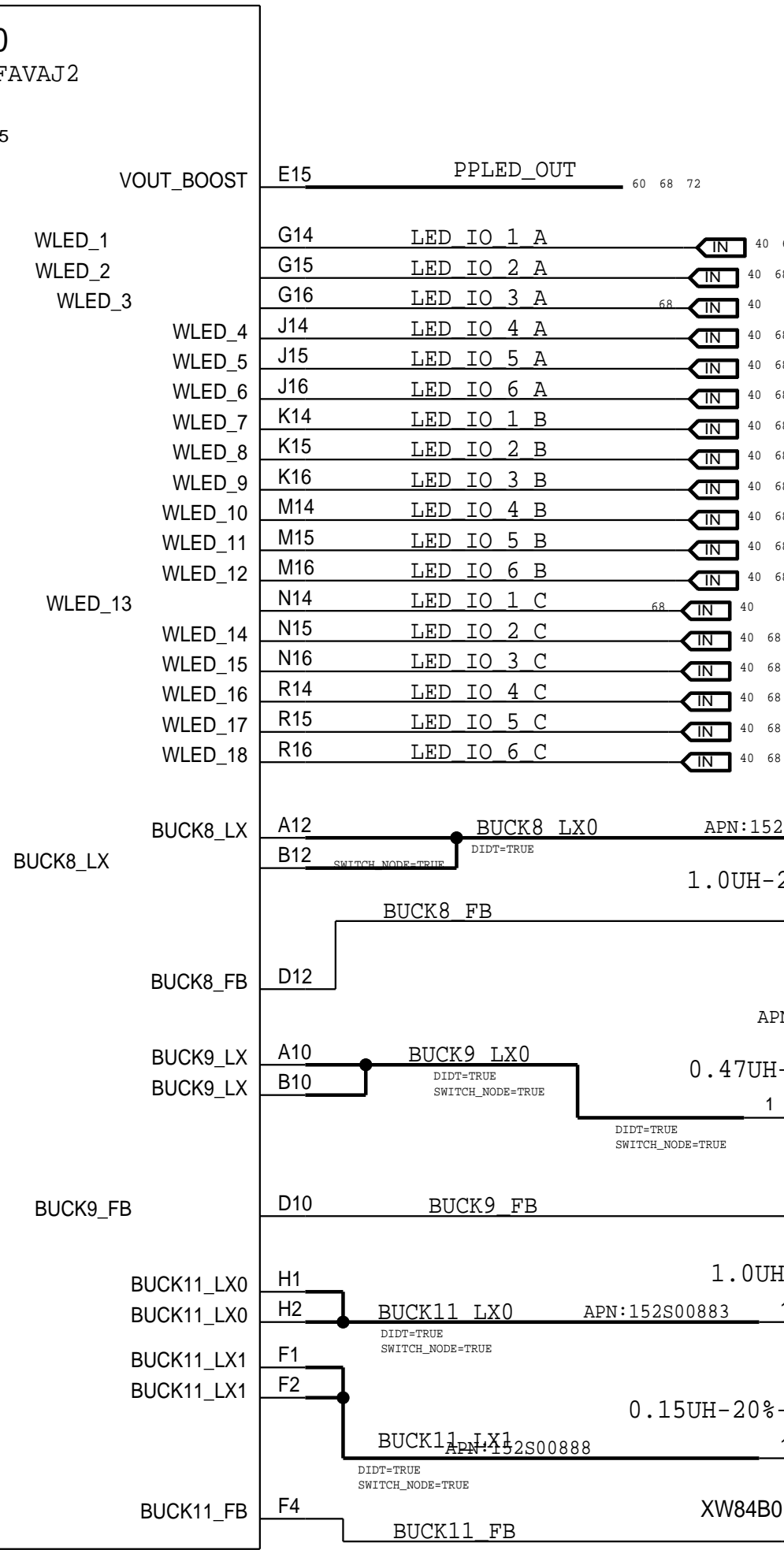
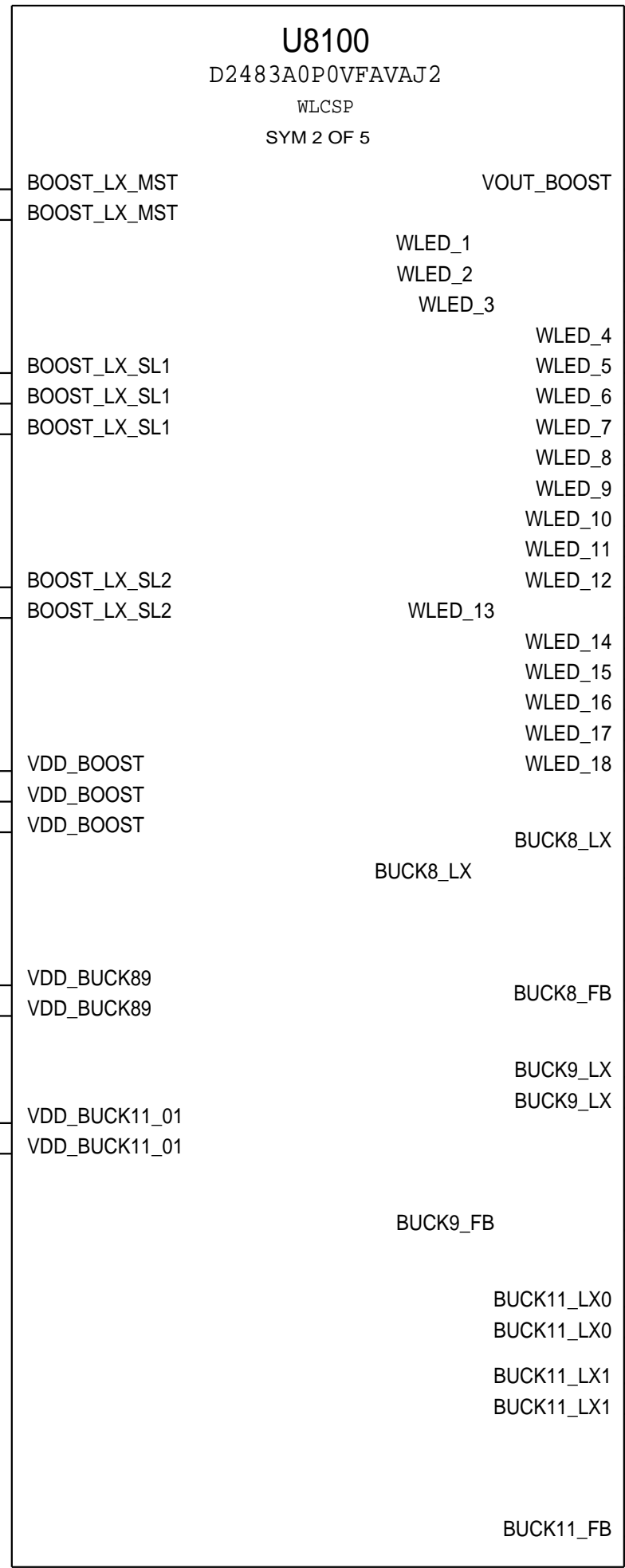
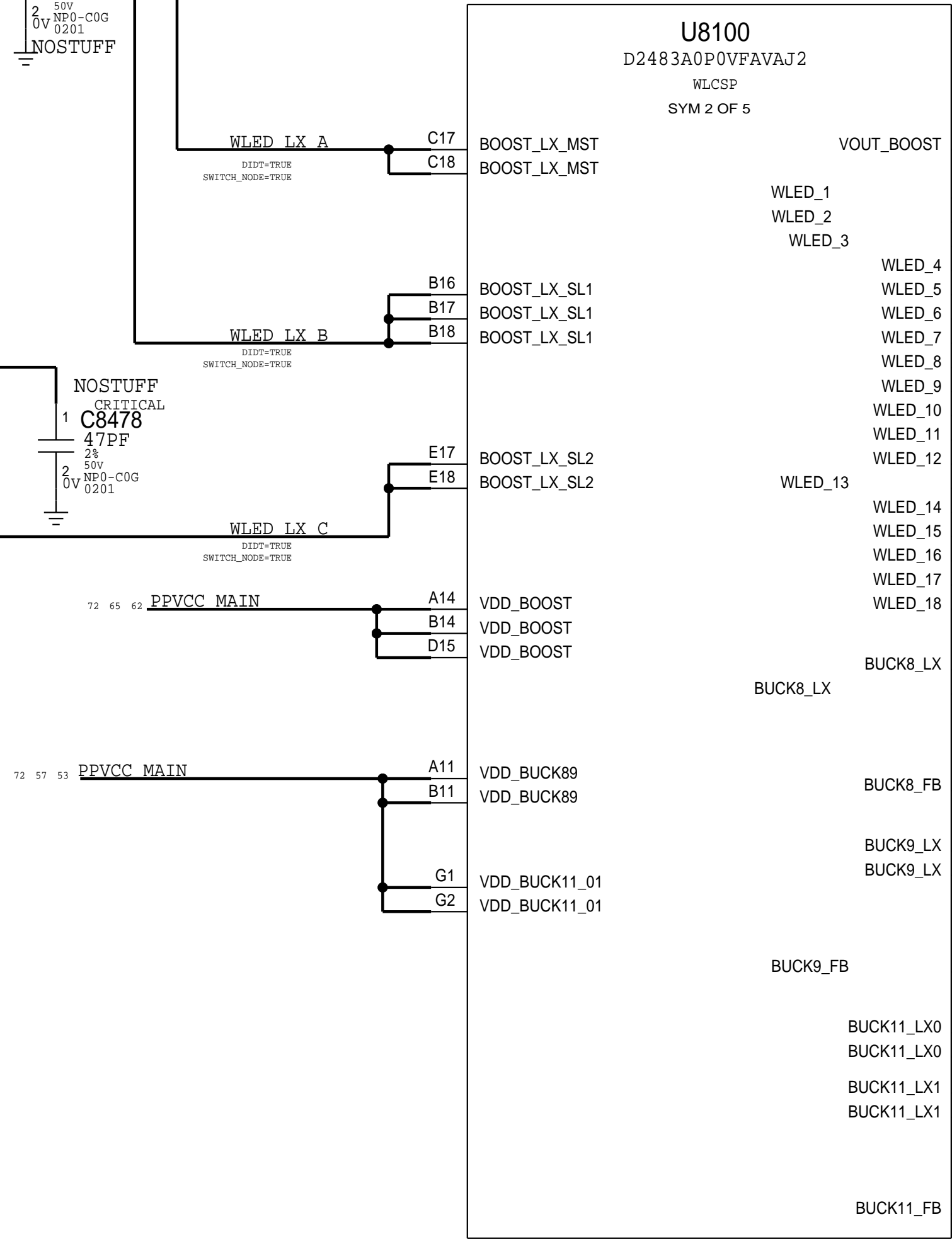
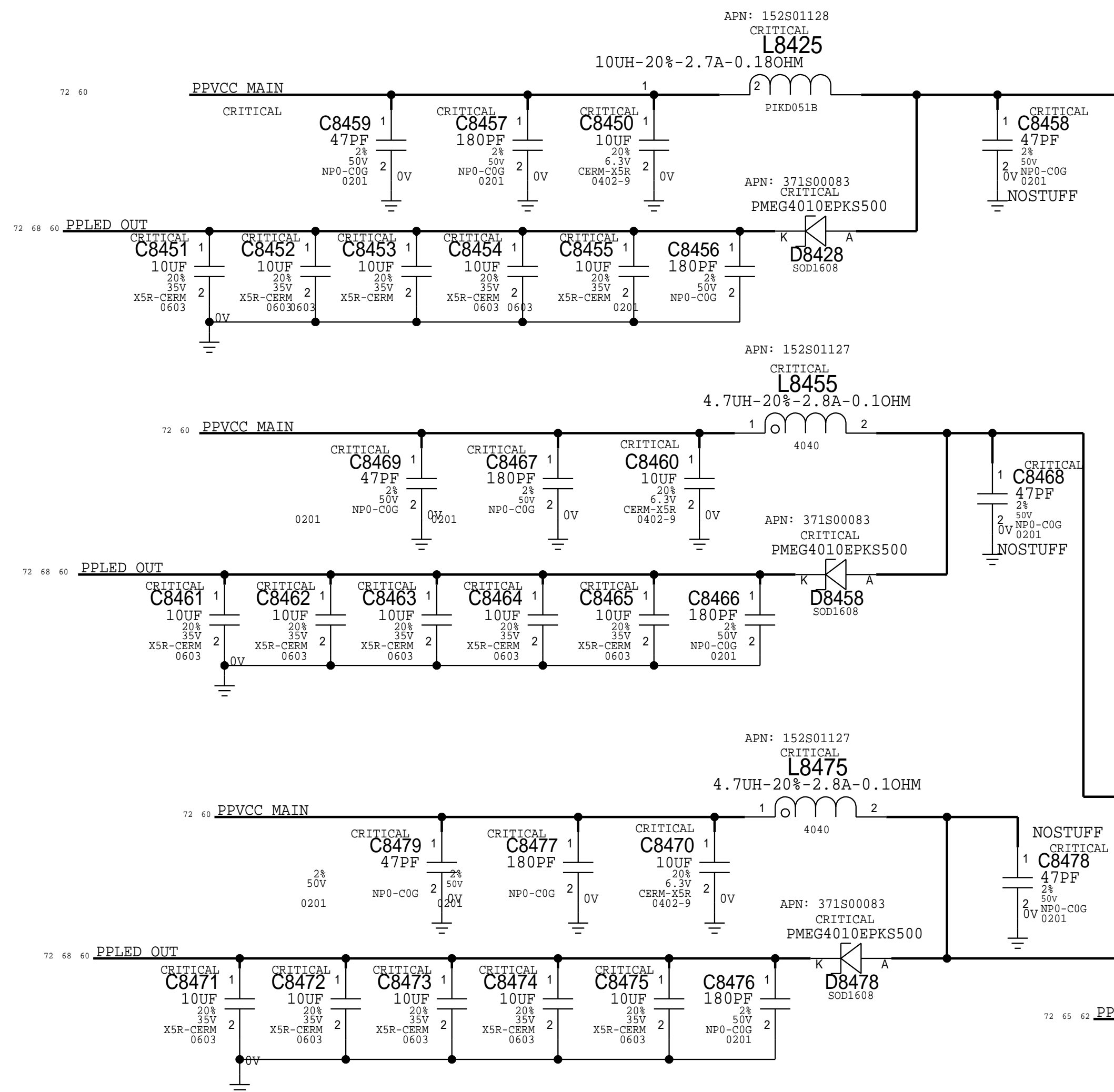


ATHENA PMU (3 / 4)

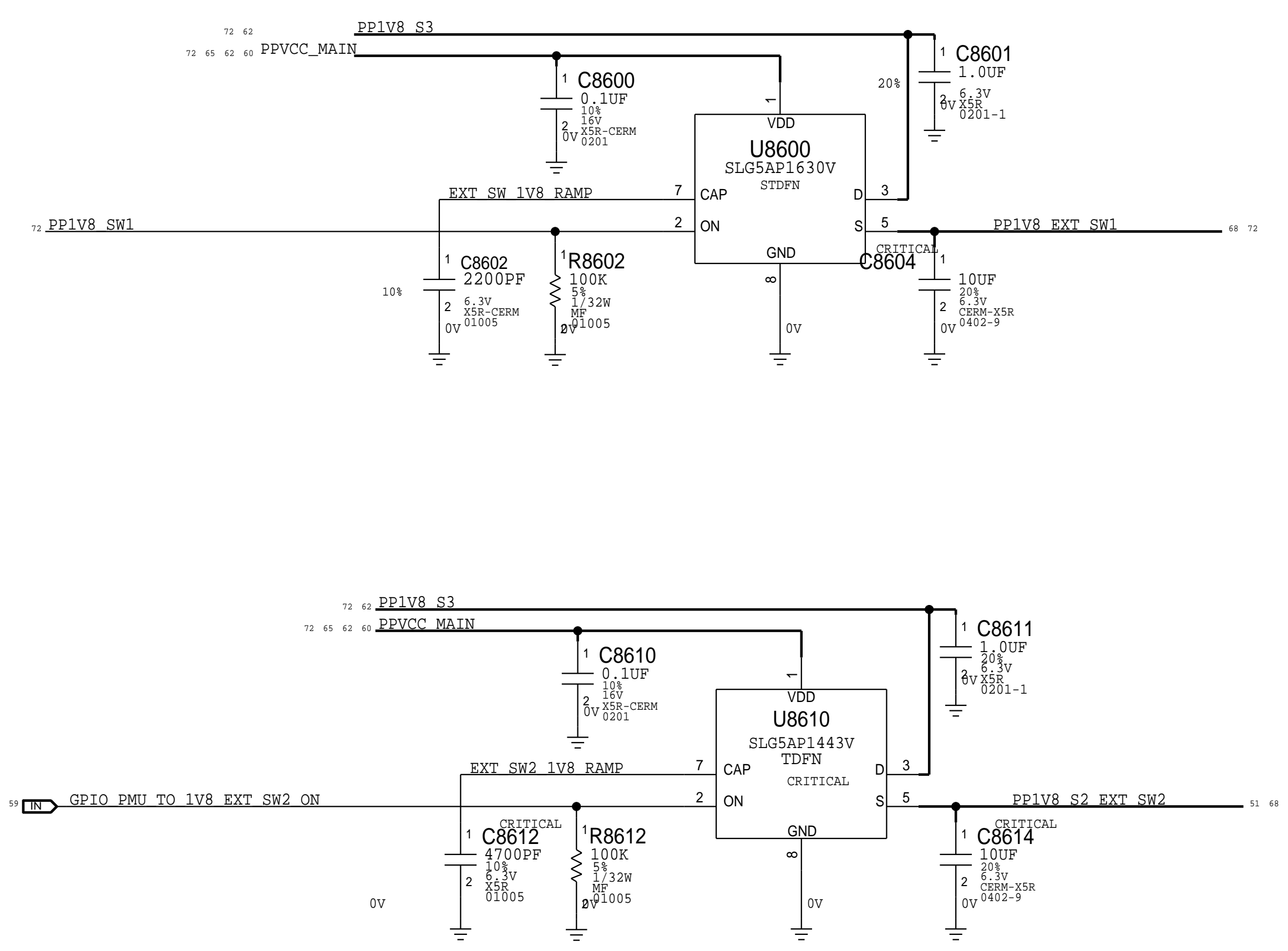
| PART NUMBER | ALTERNATE FOR PART NUMBER | BOM OPTION | REF DES | COMMENTS: |
|-------------|---------------------------|------------|-------------|------------------------|
| 118S0764 | 118S0717 | | R8340 | RDAR://PROBLEM/8380367 |
| 107S0150 | 107S0208 | | R8321-R8328 | RDAR://PROBLEM/8380367 |

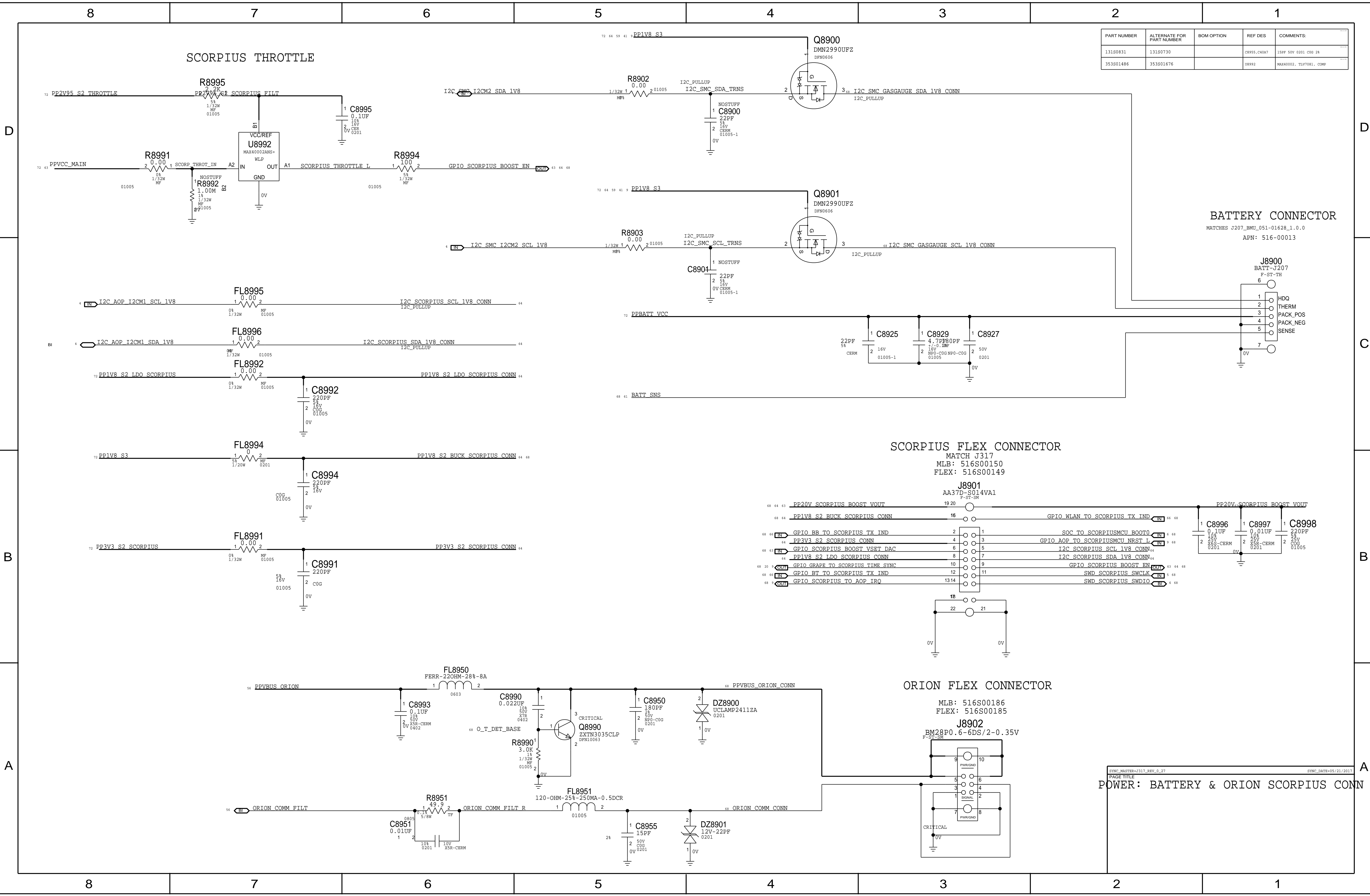


ATHENA PMU (4 / 4)



EXTERNAL POWER SWITCHES





| PART NUMBER | ALTERNATE FOR PART NUMBER | BOM OPTION | REF DES | COMMENTS: |
|-------------|---------------------------|------------|-------------|-------------------------|
| 13180831 | 13180730 | | C8955,C40A7 | 15PF 50V 0201 COG 24 |
| 353S01486 | 353S01676 | | U8992 | MAX40002, TLV7081, COMP |

BATTERY CONNECTOR

MATCHES J207_BMU_051-01628_1.0.0
APN: 516-00013

SCORPIUS FLEX CONNECTOR

MATCH J317
MLB: 516S00150
FLEX: 516S00149

ORION FLEX CONNECTOR

MLB: 516S00186
FLEX: 516S00185

POWER: BATTERY & ORION SCORPIUS CONN

D

D

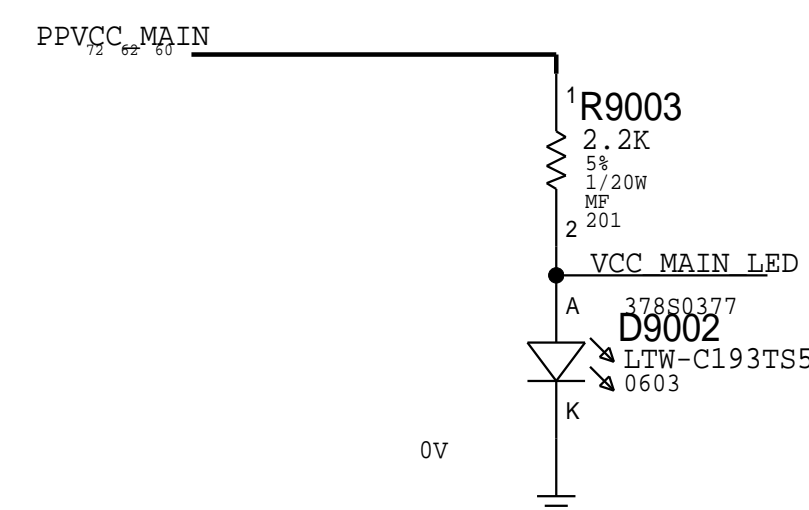
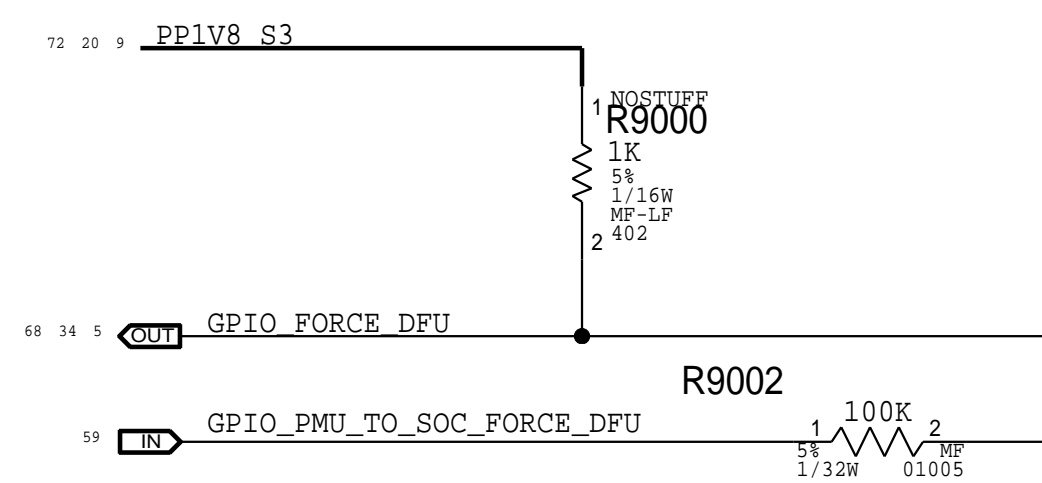
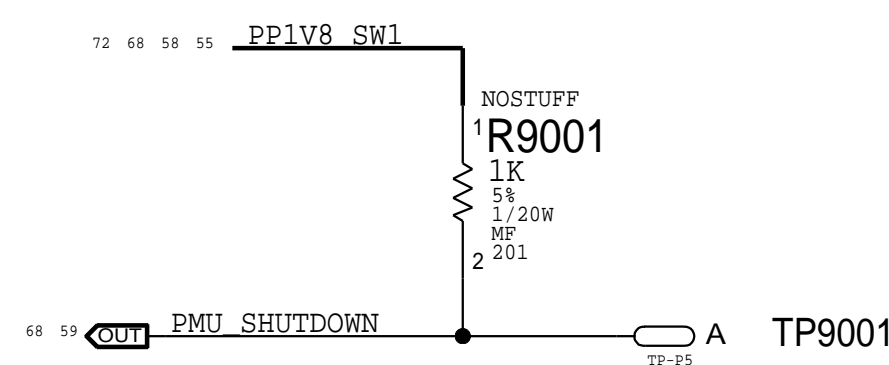
B

B

A

A

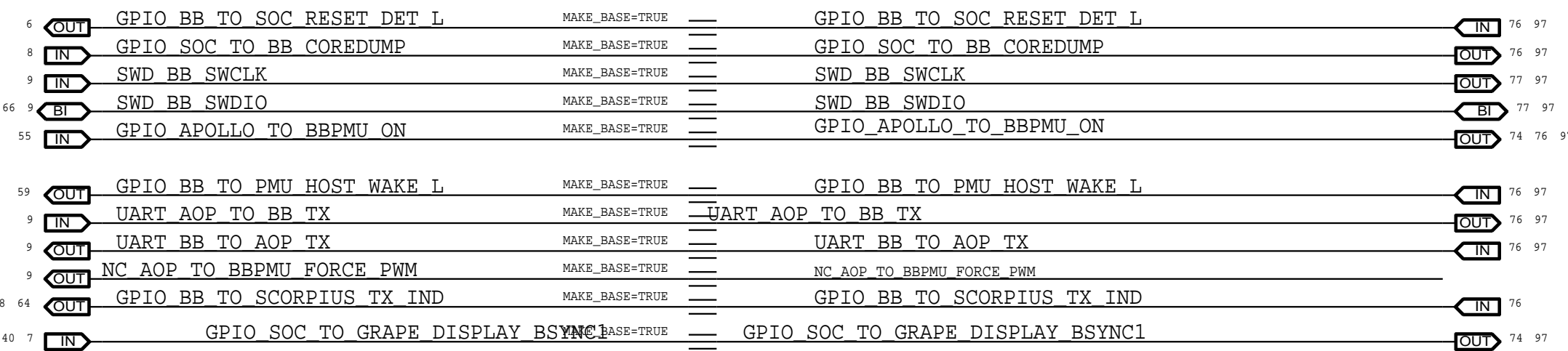
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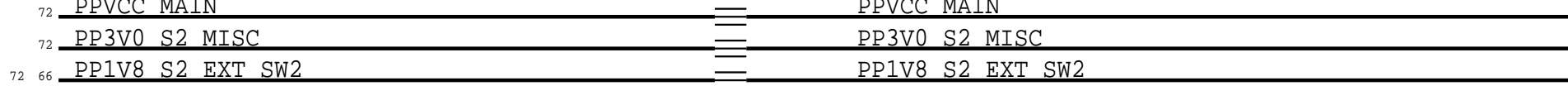
CELLULAR AND WLAN/BT ALIASES

BASEBAND

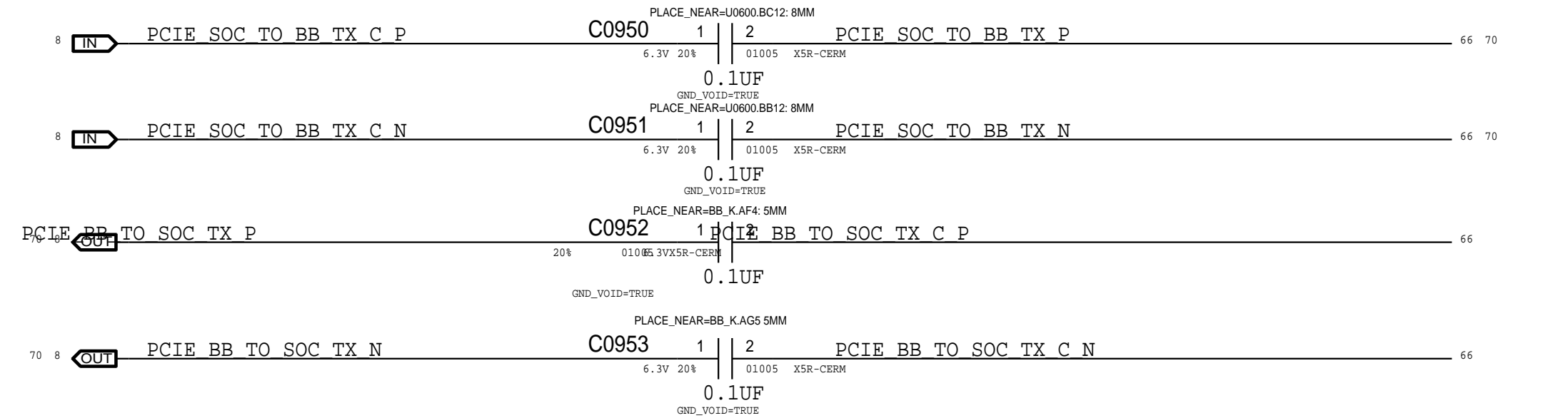
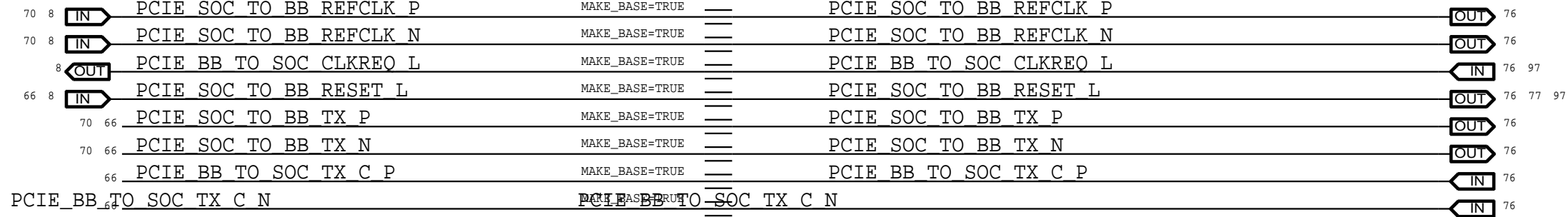
WLAN



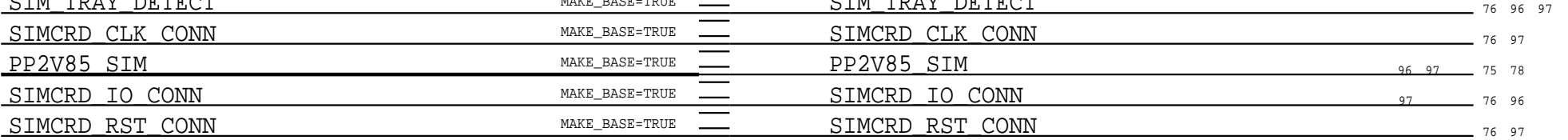
POWER



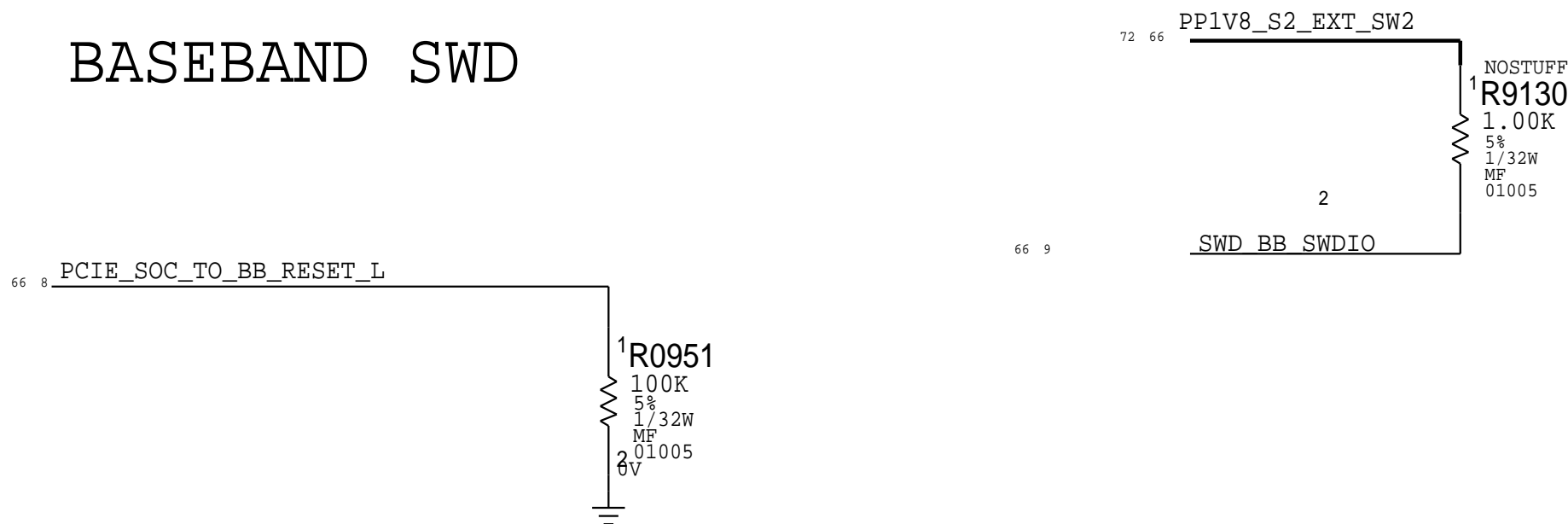
PCIE



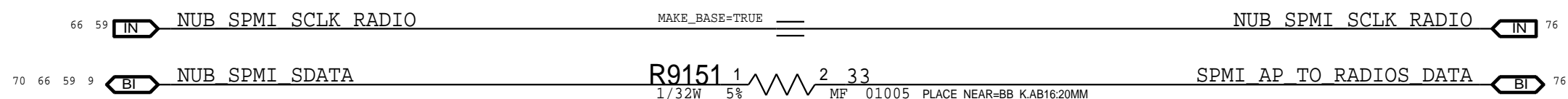
SIM CARD



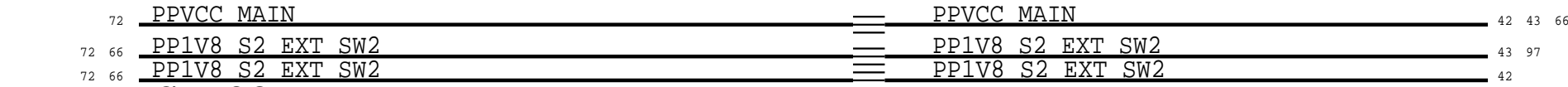
BASEBAND SWD



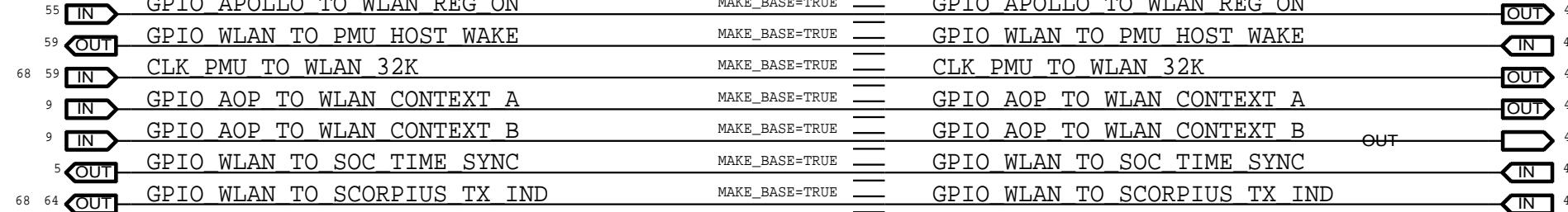
BASEBAND SPMI



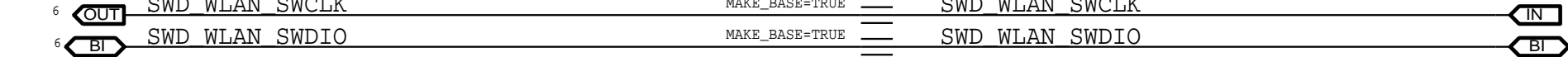
POWER



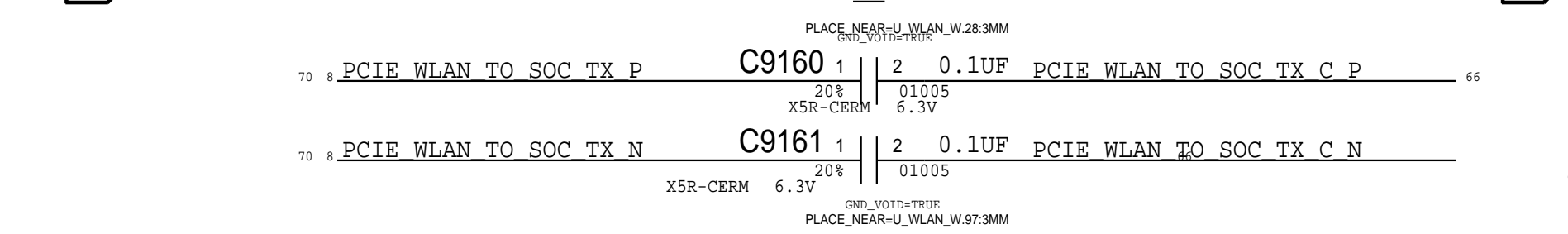
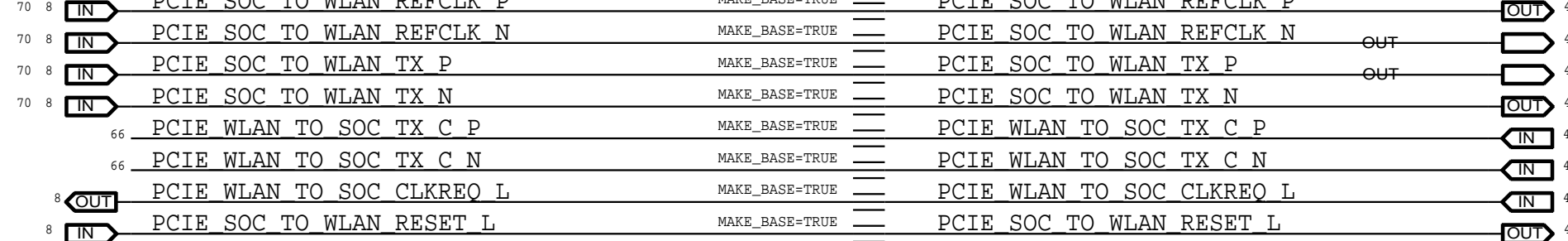
GPIOs



SWD

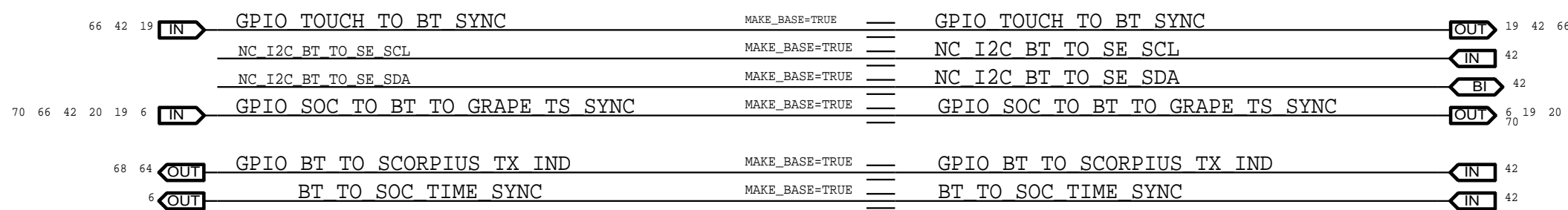


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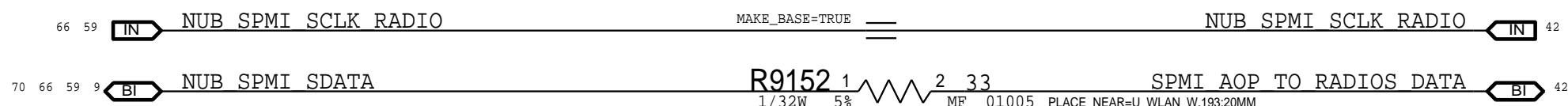


BLUETOOTH

SOC GPIOs

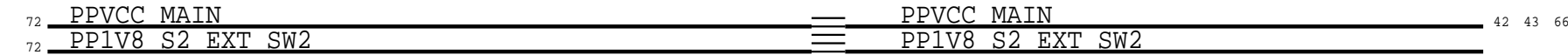


WLAN/BT SPMI

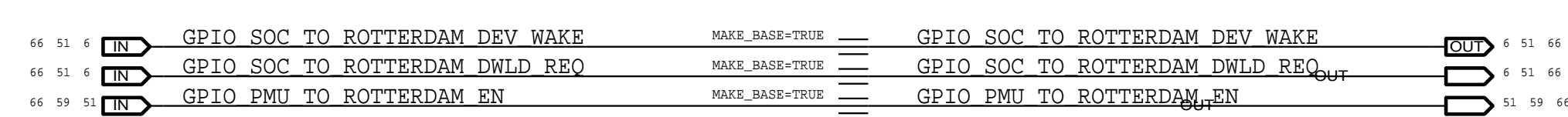


ROTTERDAM (VENUS)

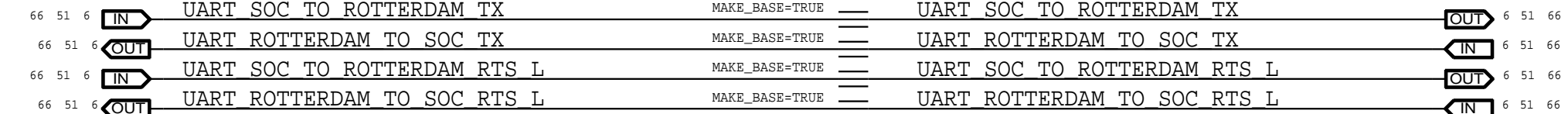
POWER



GPIOs

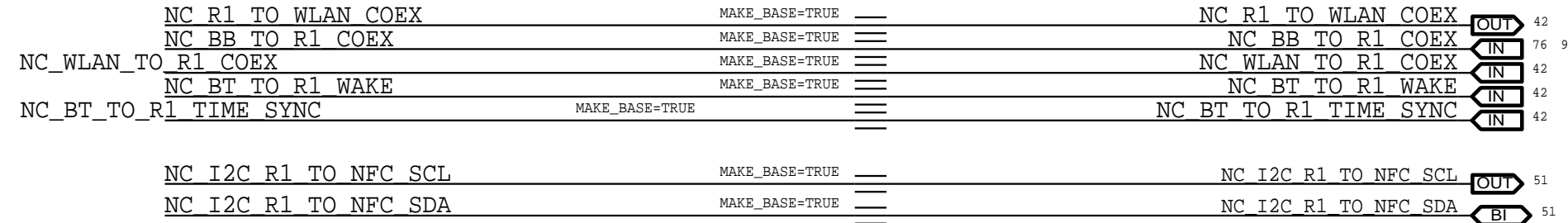


UART

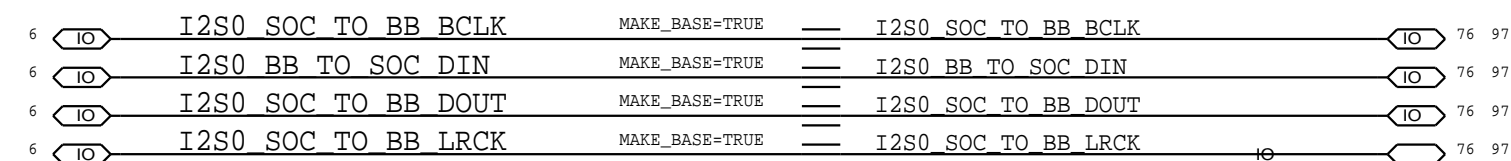
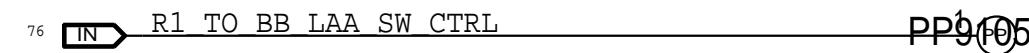


UWB - NC

COEX



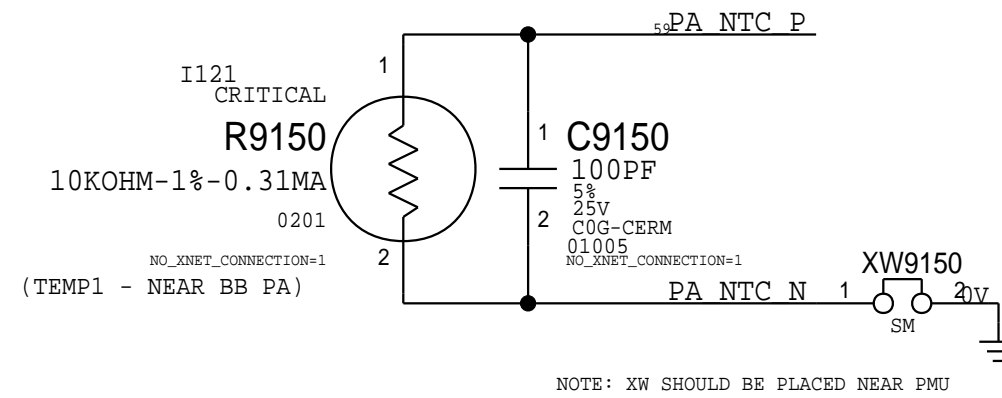
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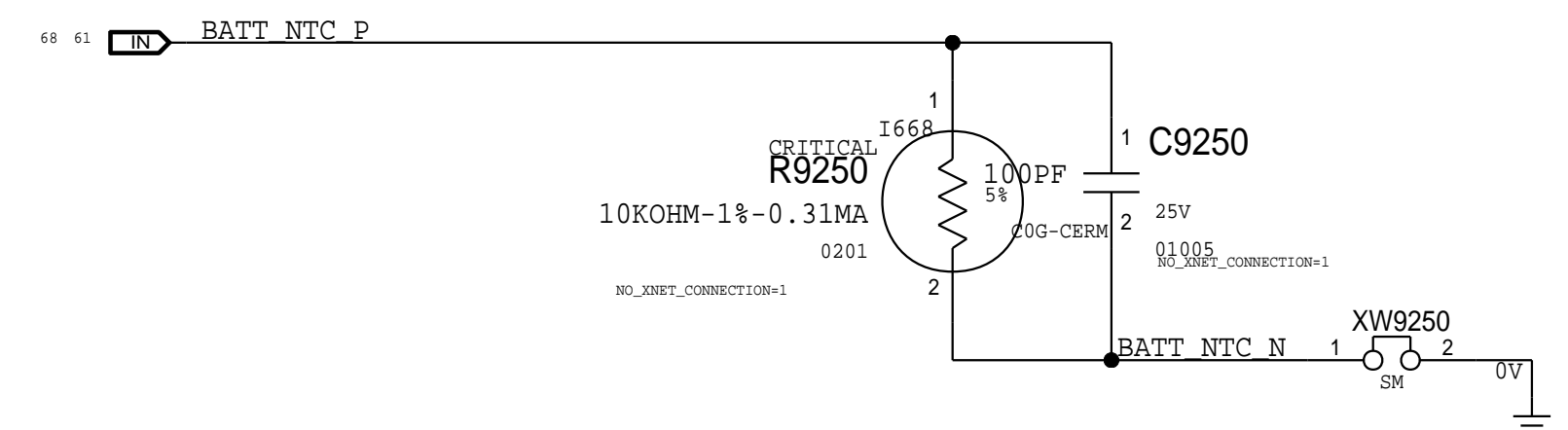
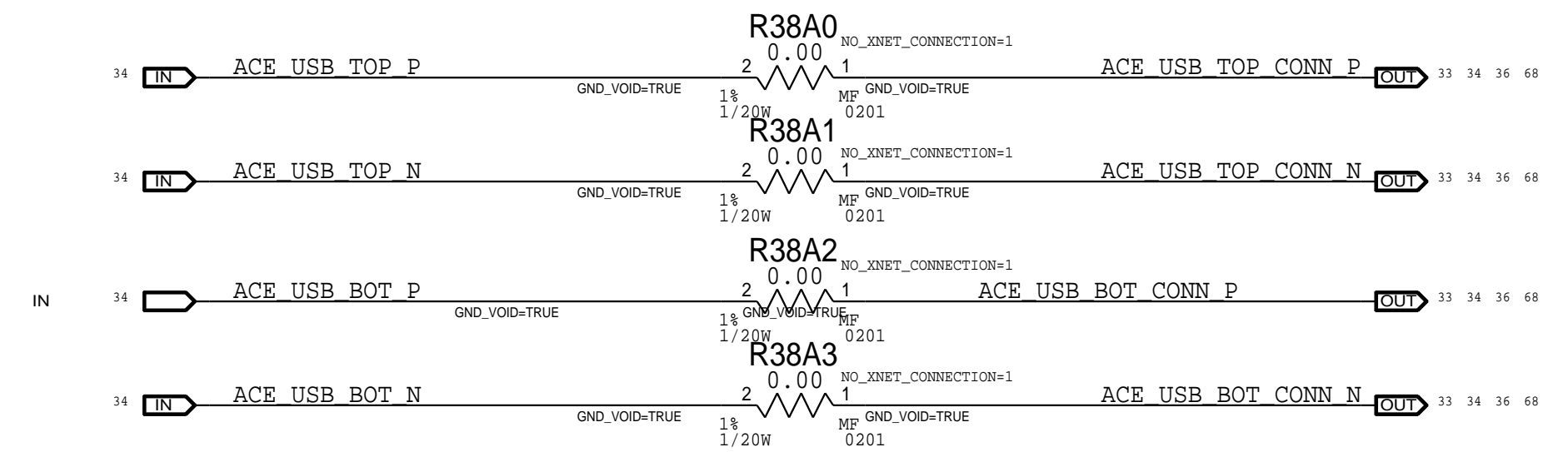
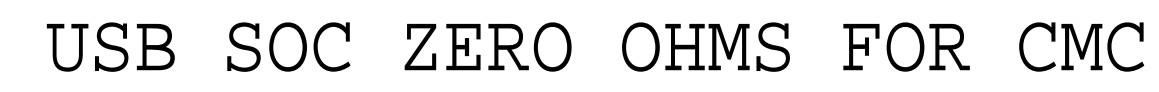
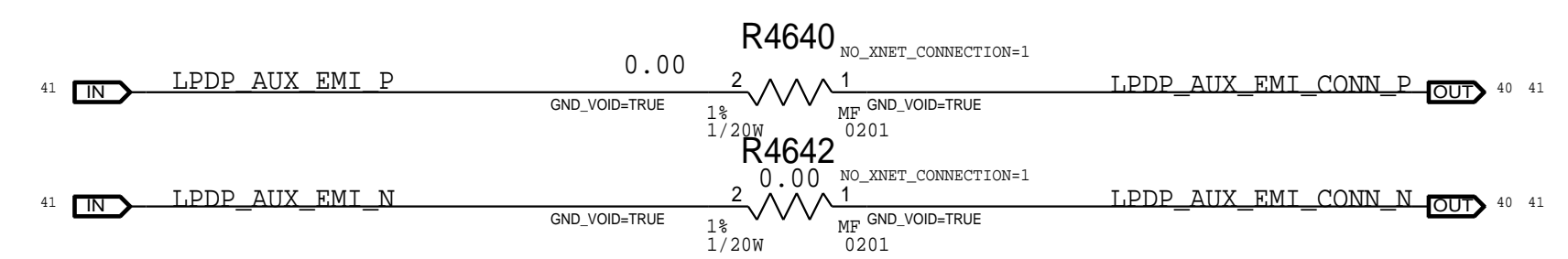
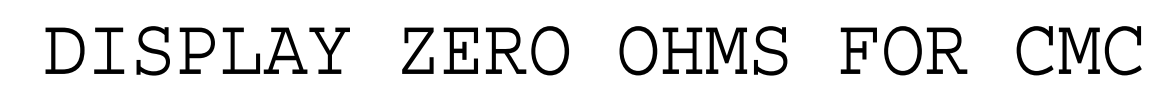
TO GODFATHER PIN15?

TO GODFATHER PIN14?

BASEBAND NTC



ALIASES: BB/WLAN/BT



SMT TEST FIXTURE TP

POWER - BUCKS/SWITCHES

| | | | | |
|--------|---|------------------|----|----------|
| TP9301 | A | PPVDD CPU | 57 | 72 |
| TP9302 | A | PPVDD GPU | 57 | 72 |
| TP9303 | A | PPVDD S1 SOC | 57 | 72 |
| TP9304 | A | PP1V8 S3 | 57 | 72 |
| TP9305 | A | PP1V8 SW1 | 55 | 58 65 72 |
| TP9306 | A | PP1V8 S2 GRAPE | 58 | 72 |
| TP9307 | A | PP1V8 SW1 CAM | 7 | 54 72 |
| TP9308 | A | PP1V8 S3 SW3 | 54 | 72 |
| TP9309 | A | PP1V8 S2 EXT SW1 | 62 | 72 |
| TP9310 | A | PP1V8 S2 EXT SW2 | 54 | 72 |
| TP9311 | A | PP1V1 S3 | 53 | 72 |
| TP9312 | A | PPVDD S1 FIXED | 53 | 72 |
| TP9313 | A | PP2V63 OTP | 53 | 72 |
| TP9314 | A | PPVDD CPU SRAM | 57 | 72 |
| TP9315 | A | PPVDD GPU SRAM | 60 | 72 |
| TP9316 | A | PPVDD S1 DCS | 53 | 72 |
| TP9317 | A | PPVDD S1 OL | 60 | 72 |
| TP9318 | A | PPVDD ECPU | 60 | 72 |
| TP9319 | A | PP1V4 CAMERA | 53 | 72 |

POWER - LDOS

| | | | | |
|--------|---|-----------------------|----|----|
| TP9320 | A | PP3V3 S2 ACE | 58 | 72 |
| TP9321 | A | PP2V95 S2 THROTTLE | 58 | 72 |
| TP9322 | A | PP3V0 ALS | 54 | 72 |
| TP9323 | A | PP3V3 S2 REDRIVER | 58 | 72 |
| TP9324 | A | PP3V3 USB | 58 | 72 |
| TP9325 | A | PP3V3 S2 SCORPIUS | 58 | 72 |
| TP9326 | A | PP1V215 FRONT CAM | 54 | 72 |
| TP9327 | A | PP0V9 NAND | 54 | 72 |
| TP9328 | A | PP3V0 S2 MISC | 58 | 72 |
| TP9329 | A | PP3V3 S2 GRAPE | 58 | 72 |
| TP9330 | A | PP1V2 SOC | 54 | 72 |
| TP9331 | A | PP0V775 S2 AOP | 58 | 72 |
| TP9332 | A | PP1V8 S2 LDO SCORPIUS | 58 | 72 |
| TP9333 | A | PP2V90 FRONT CAM | 54 | 72 |
| TP9334 | A | PP1V215 PEARL | 54 | 72 |
| TP9335 | A | PP2V85 PEARL | 54 | 72 |
| TP9336 | A | PP3V1 PEARL | 54 | 72 |
| TP9337 | A | PP1V0 S2 R1 SPARE | 54 | 72 |

POWER - OTHER

| | | | | |
|--------|---|----------------------|----|----------|
| TP9340 | A | PPVCENTER | 61 | |
| TP9341 | A | PPVBUS PROT | 72 | |
| TP9342 | A | PPVCC HIGH | 61 | 68 72 |
| TP9343 | A | PP1V8 ALWAYS | 58 | 72 |
| TP9344 | A | PPBATT VCC | 61 | 68 |
| TP9345 | A | PPLED OUT | 60 | 72 |
| TP9346 | A | PPVCC MAIN | 61 | 68 72 |
| TP9347 | A | PPBATT POS RC | 61 | 68 72 |
| TP9348 | A | PPVBUS USB EMI | 34 | 36 56 68 |
| TP9349 | A | PP1V2 GRAPE BUCK EXT | 59 | 20 |

POWER - DISPLAY

| | | | | |
|--------|---|------------------------|----|----|
| TP9360 | A | PPVCC MAIN LCD SW CONN | 40 | 41 |
| TP9361 | A | PPVCC MAIN LCD SW | 41 | |

POWER - BACKLIGHT

| | | | | |
|--------|---|----------------|----|-------|
| TP9371 | A | PPLED BACK REG | 40 | 41 68 |
| TP9372 | A | PPLED BACK REG | 40 | 41 68 |
| TP9373 | A | LED TO 1 A | 40 | 60 |
| TP9374 | A | LED TO 2 A | 40 | 60 |
| TP9375 | A | LED TO 3 A | 40 | 60 |
| TP9376 | A | LED TO 4 A | 40 | 60 |
| TP9377 | A | LED TO 5 A | 40 | 60 |
| TP9378 | A | LED TO 6 A | 40 | 60 |
| TP9379 | A | LED TO 1 B | 40 | 60 |
| TP9380 | A | LED TO 2 B | 40 | 60 |
| TP9381 | A | LED TO 3 B | 40 | 60 |
| TP9382 | A | LED TO 4 B | 40 | 60 |
| TP9383 | A | LED TO 5 B | 40 | 60 |
| TP9384 | A | LED TO 1 C | 40 | 60 |
| TP9385 | A | LED TO 2 C | 40 | 60 |
| TP9386 | A | LED TO 3 C | 40 | 60 |
| TP9387 | A | LED TO 4 C | 40 | 60 |
| TP9388 | A | LED TO 5 C | 40 | 60 |
| TP9389 | A | LED TO 6 C | 40 | 60 |

BATTERY

| | | | | |
|--------|---|-------------------------------|----|----|
| TP9391 | A | I2C SMC GASGAUGE SCL 1V8 CONN | 64 | |
| TP9392 | A | BATT SNS | 61 | 64 |
| TP9393 | A | I2C SMC GASGAUGE SDA 1V8 CONN | 64 | |
| TP9394 | A | BATT NTC P | 61 | 67 |

PMU - MISC

| | | | | |
|--------|---|-----------------------------|----|-------|
| TP93A3 | A | PMU TCAL | 59 | |
| TP93A4 | A | BOARD TEMP2 P | 59 | |
| TP93A5 | A | BOARD TEMP3 P | 59 | |
| TP93A6 | A | BOARD TEMP4 P | 59 | |
| TP93A7 | A | BOARD TEMP5 P | 59 | |
| TP93A8 | A | BOARD TEMP6 P | 59 | |
| TP93A9 | A | BOARD TEMP7 P | 59 | |
| TP93AA | A | BOARD TEMP8 P | 59 | |
| TP93AB | A | TPT APOLLO AMUX AY | 55 | |
| TP93AC | A | TPT AMUX AY | 59 | |
| TP93AD | A | GPIO PMU TO CPU TRIGGER 0 | 6 | 59 |
| TP93AE | A | GPIO PMU TO CPU TRIGGER 1 | 6 | 59 |
| TP93AF | A | VCCMAIN DROOP PMU TO SOC L | 6 | 59 |
| TP93AG | A | SOCHOT1 SOC TO PMU L | 6 | 59 |
| TP93AH | A | PMU SHUTDOWN | 6 | 59 65 |
| TP93AI | A | GPIO PMU TO GPU TRIGGER 0 | 6 | 59 |
| TP93AJ | A | GPIO PMU TO GPU TRIGGER 1 | 6 | 59 |
| TP93AK | A | BOARD TEMP2A P | 55 | |
| TP93AL | A | GPIO PMU TO APOLLO LDO10 ON | 55 | 59 |
| TP93AM | A | GPIO PMU TO APOLLO BUCK4 ON | 55 | 59 |

SOC - JTAG/RESET

| | | | | |
|--------|---|---------------------------------|---|-------|
| TP93C1 | A | JTAG SOC SEL | 4 | 9 |
| TP93C2 | A | JTAG SOC TCK | 9 | 34 |
| TP93C3 | A | JTAG SOC TMS | 9 | 34 |
| TP93C4 | A | TP JTAG SOC TDI | 9 | |
| TP93C5 | A | TP JTAG SOC TRST L | 4 | 9 |
| TP93C6 | A | TP JTAG SOC TDO | 9 | |
| TP93C7 | A | SOC TESTMODE | 4 | 9 |
| TP93C8 | A | RESET PMU TO SYSTEM L | 5 | 9 59 |
| TP93C9 | A | GPIO FORCE DPU | 5 | 34 65 |
| TP93CA | A | SOC TO ACE DPU STATUS | 5 | 34 |
| TP93CB | A | TP TEST CLKOUT | 5 | |
| TP93CC | A | GPIO PMU TO SYSTEM ACTIVE READY | 5 | 34 59 |

SOC - UART

| | | | | |
|--------|---|----------------------|---|----|
| TP93D0 | A | UART SOC TO DEBUG TX | 6 | 34 |
| TP93D1 | A | UART DEBUG TO SOC TX | 6 | 34 |

SOC - USB

| | | | | |
|--------|---|-------------------------------|---|----|
| TP93DA | A | PLACE_NEAR=J1800/J1801/1.20MM | 5 | 34 |
| TP93DB | A | PLACE_NEAR=J1800/J1801/1.20MM | 5 | 34 |

USBC - CONN

| | | | | |
|--------|---|--------------------|----|----------|
| TP93D4 | A | TRANS DET BASE | 33 | |
| TP93D5 | A | PPVBUS USB CONN | 33 | 36 68 |
| TP93D6 | A | ACE CC1 | 33 | 34 36 |
| TP93D7 | A | ACE CC2 | 33 | 34 36 |
| TP93D8 | A | ACE USB TOP CONN N | 33 | 34 36 67 |
| TP93D9 | A | ACE USB TOP CONN P | 33 | 34 36 67 |
| TP93DA | A | ACE USB BOT CONN N | 33 | 34 36 67 |
| TP93DB | A | ACE USB BOT CONN P | 33 | 34 36 67 |
| TP93DC | A | PPVBUS USB EMI | 34 | 36 56 68 |

ACE

| | | | | |
|--------|---|----------------------------------|----|-------|
| TP93E1 | A | PP3V2 ACE BOOST OUT | 32 | 34 |
| TP93E2 | A | PP3V3 ACE LDO | 34 | 25 |
| TP93E3 | A | ACE SPI CLK R | 34 | |
| TP93E4 | A | ACE SPI CS R L | 34 | |
| TP93E5 | A | ACE SPI MOSI R | 34 | |
| TP93E6 | A | ACE SPI MISO R | 34 | |
| TP93E7 | A | ACE SBUI CONN | 33 | 34 36 |
| TP93E8 | A | ACE SBUI CONN | 33 | 34 36 |
| TP93E9 | A | GPIO ACE TO SOC IRO L | 6 | 34 |
| TP93EA | A | ACE TO BOOST EN | 34 | 59 |
| TP93EB | A | ACE HRESET | 32 | 34 |
| TP93EC | A | ACE ORION TO CHARGER OVP SW EN L | 34 | 56 61 |
| TP93ED | A | GPIO ACE TO SMC IRO L | 9 | 34 |

ORION

| | | | | |
|--------|---|-------------------------------------|----|----|
| TP93EE | A | PPVBUS ORION RVP | 56 | |
| TP93EF | A | PPVBUS ORION CONN | 64 | 68 |
| TP93EG | A | ORION COMM CONN | 64 | |
| TP93EH | A | GPIO ORION TO AOP IRO | 9 | 56 |
| TP93EI | A | PP3V2 BELLATRIX2 BOOST VOUT | 56 | 63 |
| TP93EJ | A | GPIO SOC TO BELLATRIX2 BOOST EN | 6 | 63 |
| TP93EK | A | PP1V8 INT ORION | 34 | 56 |
| TP93EL | A | ACE TO BELLATRIX2 ACC PWR EN L | 34 | 56 |
| TP93EM | A | BELLATRIX2 TO ACE ACC PWR PRESENT L | 34 | 56 |
| TP93EN | A | O T DET BASE | 64 | |

SCORPIUS

| | | | | |
|--------|---|----------------------------------|----|-------|
| TP93ER | A | PP20V SCORPIUS BOOST VOUT | 63 | 64 68 |
| TP93ES | A | GPIO SCORPIUS BOOST EN | 63 | 64 68 |
| TP93ET | A | GPIO SCORPIUS BOOST VSET DAC | 63 | 64 |
| TP93EU | A | GPIO AOP TO SCORPIUSMCU NRST L | 9 | 64 |
| TP93EV | A | GPIO GRAPE TO SCORPIUS TIME SYNC | 9 | 20 64 |
| TP93EW | A | SMD SCORPIUS SWCLK | 5 | 64 |
| TP93EX | A | SMD SCORPIUS SWDIO | 5 | 64 |
| TP93EY | A | GPIO SCORPIUS TO AOP IRO | 9 | 64 |
| TP93EZ | A | SOC TO SCORPIUSMCU BOOT0 | 6 | 64 |
| TP93FA | A | PP1V8 S2 BUCK SCORPIUS CONN | 64 | |
| TP93FB | A | GPIO BT TO SCORPIUS TX IND | 64 | 66 |
| TP93FC | A | GPIO WLAN TO SCORPIUS TX IND | 64 | 66 |

AUDIO - SEE SPKR AMP PAGES FOR MORE

| | | | | |
|--------|---|---------------------------|----|----------------|
| TP93F8 | A | PPV BST AUDIO | 26 | 28 29 30 31 68 |
| TP93F9 | A | PPV BST AUDIO | 26 | 28 29 30 31 68 |
| TP93FA | A | GPIO SPKRAMF TO SOC IRO L | 6 | 38 29 30 31 |
| TP93FB | A | ARDEE SYNC | 28 | 29 30 31 |

POWER - SENSORS

| | | | | |
|--------|---|-------------------------|----|--|
| TP93G0 | A | PP1V8 S2 KOBOL BU FILT | 18 | |
| TP93G1 | A | PP1V8 PHOS FILT | 18 | |
| TP93G2 | A | PP1V8 S2 MOLY CMPS CONN | 18 | |

BUTTONS

| | | | | |
|--------|---|--------------------------|----|--|
| TP93G5 | A | GPIO BTN ONOFF L CONN | 23 | |
| TP93G6 | A | GPIO BTN VOL UP L CONN | 23 | |
| TP93G7 | A | GPIO BTN VOL DOWN L CONN | 23 | |

SOC I2C

| | | | | |
|--------|---|-----------------------|---|------|
| TP93G8 | A | I2C0 SCL 1V8 | 4 | 6 |
| TP93G9 | A | I2C0 SDA 1V8 | 4 | 6 |
| TP93GA | A | I2C1 SCL 1V8 | 4 | 6 70 |
| TP93GB | A | I2C1 SDA 1V8 | 4 | 6 70 |
| TP93GC | A | I2C2 SCL 1V8 | 4 | 6 70 |
| TP93GD | A | I2C2 SDA 1V8 | 4 | 6 70 |
| TP93GE | A | I2C AOP I2CM0 SCL 1V8 | 4 | 9 |
| TP93GF | A | I2C AOP I2CM0 SDA 1V8 | 4 | 9 |
| TP93GH | A | I2C AOP I2CM1 SCL 1V8 | 4 | 9 |
| TP93GI | A | I2C AOP I2CM1 SDA 1V8 | 4 | 9 |
| TP93GJ | A | I2C SMC I2CM0 SCL 1V8 | 4 | 9 |
| TP93GK | A | I2C SMC I2CM0 SDA 1V8 | 4 | 9 |
| TP93GL | A | I2C SMC I2CM1 SCL 1V8 | 4 | 9 |
| TP93GM | A | I2C SMC I2CM1 SDA 1V8 | 4 | 9 |
| TP93GN | A | I2C SMC I2CM2 SCL 1V8 | 4 | 9 |
| TP93GO | A | I2C SMC I2CM2 SDA 1V8 | 4 | 9 |
| TP93GP | A | I2C SMC I2CM3 SCL 1V8 | 4 | 9 |
| TP93GQ | A | I2C SMC I2CM3 SDA 1V8 | 4 | 9 |
| TP93GR | A | USB VBUS DETECT R | 5 | 32 |

SOC - BELLATRIX2 UART

| | | | | |
|--------|---|---------------------------|---|----|
| TP93N8 | A | UART SOC TO BELLATRIX2 TX | 6 | 56 |
| TP93N9 | A | UART BELLATRIX2 TO SOC TX | 6 | 56 |

SOC - GND

| | | | | |
|--------|---|--------------------|----|--|
| TP93NA | A | TPT VSS SENSE | 14 | |
| TP93NB | A | TPT VSS PCPU SENSE | 14 | |
| TP93NC | A | TPT VSS DDR SENSE | 14 | |

SOC - POWER

| | | | | |
|--------|---|------------------------|----|-------|
| TP93ND | A | ADC SOC TO PMU VDD CPU | 12 | 57 59 |
| TP93NE | A | ADC SOC TO PMU VDD GPU | 12 | 57 59 |
| TP93NF | A | ADC SOC TO PMU VDD SOC | 10 | 59 |

SOC - USB KIS

| | | | | |
|--------|---|---------------------------|---|----|
| TP93GS | A | PLACE_NEAR=J1800/J200/2MM | 5 | 34 |
| TP93GT | A | PLACE_NEAR=J1800/J220/2MM | 5 | 34 |

NAND - POWER

| | | | | |
|--------|---|--------------------|----|--|
| TP93NH | A | PP1V8 NAND1 AVDD H | 16 | |
| TP93NG | A | PP1V8 NAND2 AVDD H | 17 | |

BASEBAND - ANT/SWITCH PWR

| | | | | |
|--------|---|----------------------|----|--|
| TP93H0 | A | PPAV0 ANT3 RFFE | 23 | |
| TP93H1 | A | PP1V8 ANT3 SMT RFFE | 23 | |
| TP93H2 | A | PP TUNER 3V0 UAT B2B | 23 | |
| TP93H3 | A | PP TUNER 1V8 UAT B2B | 23 | |
| TP93H4 | A | PP TUNER 3V0 UAT B2B | 23 | |
| TP93H5 | A | PP TUNER 1V8 LAT B2B | 23 | |

BASEBAND - SIM CARD

| | | | | |
|--------|---|----------------------|----|--|
| TP93H6 | A | SIM TRAY DETECT FILT | 33 | |
| TP93H7 | A | SIMCRD CLK CONN FILT | 33 | |
| TP93H8 | A | SIMCRD RST CONN FILT | 33 | |
| TP93H9 | A | SIMCRD CLK CONN FILT | 33 | |
| TP93HA | A | PP2V85 SIM FILT | 23 | |

BASEBAND - MISC

| | | | | |
|--------|---|---------------------------------|----|----|
| TP93HB | A | BB TO UAT RFFE CLK C3 B2B | 23 | 94 |
| TP93HC | A | BB TO UAT RFFE DATA C3 B2B | 23 | 94 |
| TP93HD | A | GPIO BB TO SCORPIUS TX IND | 46 | 66 |
| TP93HE | A | BB TO UAT RFFE CLK C3 FILT B2B | 23 | |
| TP93HF | A | BB TO UAT RFFE DATA C3 FILT B2B | 23 | |

WIFI/BT

| | | | | |
|--------|---|---------------------|----|----|
| TP93I2 | A | CLK PMU TO WLAN 32K | 59 | 66 |
|--------|---|---------------------|----|----|

HALL EFFECT

| | | | | |
|--------|---|-------------------------------|----|-------|
| TP93J5 | A | GPIO APANEL HALL TO PMU IRO L | 40 | 52 59 |
| TP93J6 | A | GPIO CPANEL HALL TO PMU IRO L | 23 | 52 59 |

DISPLAY

| | | | | |
|--------|---|-----------------------|----|-------|
| TP93JC | A | LPDP HPD EMI | 40 | 41 |
| TP93JD | A | GPIO PMU TO LCD PWREN | 40 | 41 59 |
| TP93JE | A | I2C TCON SCL 1V8 CONN | 40 | |
| TP93JF | A | I2C TCON SDA 1V8 CONN | 40 | |
| TP93JG | A | SYS TO TCON FORCE PWM | 40 | |

AOP

| | | | | |
|--------|---|--------------------|---|----|
| TP93K1 | A | CLK PMU TO AOP 32K | 9 | 59 |
|--------|---|--------------------|---|----|

AUDIO - DIGITAL MICS

| | | | | |
|--------|---|------------------------------|----|----|
| TP93K2 | A | DMIC1 MIC SCLK CONN | 27 | |
| TP93K3 | A | DMIC1 MIC SD CONN | 27 | |
| TP93K4 | A | DMIC2 MIC SCLK C3 CONN | 23 | |
| TP93K5 | A | DMIC2 MIC SD C3 CONN | 23 | |
| TP93K6 | A | DMIC3 MIC SCLK ROS CONN | 39 | |
| TP93K7 | A | DMIC3 MIC SD ROS CONN | 39 | |
| TP93K8 | A | PP1V8 S2 DMIC CONN | 27 | 39 |
| TP93K9 | A | DMIC4 MIC SCLK CMPS CONN | 18 | |
| TP93KA | A | DMIC3 MIC SD CMPS CONN | 18 | |
| TP93KB | A | 1 RV PP1V8 S2 DMIC CMPS CONN | 18 | |
| TP93KC | A | PP1V8 S2 DMIC C3 CONN | 23 | |

SMT TEST FIXTURE TP

| | | | |
|---------|---|--------------------------------------|----------|
| | | POWER - ADAMS | |
| TP9401 | A | PP1V4 ADAMS1 VDDL | 45 72 |
| TP9402 | A | PP3V3 ADAMS LDO1 | 45 72 |
| TP9403 | A | PP3V0 JASPER RX AVDDH | 45 72 |
| TP9404 | A | PP3V0 PENROSE | 45 72 |
| TP9405 | A | PP3V4 JASPER TX AVDDH | 45 72 |
| TP9406 | A | PP3V3 JAS EXT LDO R2 | 45 72 |
| TP9407 | A | PP2V85 WIDE RCAM1 AVDDH1 | 45 72 |
| TP9408 | A | PP2V85 SWIDE RCAM2 AVDDH1 | 45 72 |
| TP9409 | A | PP1V215 RCAM SWIDE VDDL | 45 72 |
| TP9410A | A | PP1V215 RCAM WIDE VDDL | 45 72 |
| TP9410B | A | PP1V8 CAM PMU1 IO SW | 45 72 |
| TP9410C | A | PPN TOF VSPAD | 47 50 69 |
| TP9410D | A | PPN TOF VSPAD | 47 50 69 |
| TP9410E | A | PP TOF VDDLAS | 47 50 69 |
| TP9410F | A | PP TOF VDDLAS | 47 50 69 |
| TP9410G | A | PP1V2 JASPER DVDD | 47 50 |
| | | POWER - CAMERA (LI) | |
| TP9411 | A | PP1V215 FRONT CAM CONN | 24 |
| TP9412 | A | PP1V8 CAM FRONT CONN | 24 |
| TP9413 | A | PP2V90 FRONT CAM CONN | 24 |
| | | POWER - JULIET | |
| TP9414 | A | PP1V215 JULIET DVDD CONN | 38 |
| TP9415 | A | PP1V8 JULIET VDDIO CONN | 38 |
| TP9416 | A | PP2V85 JULIET AVDD CONN | 38 |
| | | POWER - CAMERA (IN) | |
| TP9417 | A | PP1V215 RCAM WIDE VDDL CONN | 48 |
| TP9418 | A | PP1V8 RCAM WIDE VDDIO CONN | 48 |
| TP9419 | A | PP2V85 RCAM WIDE AVDD CONN | 48 |
| | | POWER - CAMERA (OH) | |
| TP941A | A | PP1V215 RCAM SWIDE DVDD CONN | 49 |
| TP941B | A | PP1V8 RCAM SWIDE VDDIO CONN | 49 |
| TP941C | A | PP2V85 RCAM SWIDE AVDDH1 CONN | 49 |
| | | POWER - JASPER | |
| TP941D | A | PP TOF VDDLAS CONN | 50 |
| TP941E | A | PPN TOF VSPAD CONN | 50 |
| TP941F | A | PP1V8 CAM TOF VDDIO CONN | 50 |
| | | CAMERA-STROBE/PENROSE | |
| TP9421 | A | PPSTROBE LED COOL1 CONN | 23 25 69 |
| TP9422 | A | PPSTROBE LED WARM1 CONN | 23 25 69 |
| TP9423 | A | PPSTROBE LED COOL2 CONN | 23 25 69 |
| TP9424 | A | PPSTROBE LED WARM2 CONN | 23 25 69 |
| TP9425 | A | PPSTROBE LED COOL1 CONN | 23 25 69 |
| TP9426 | A | PPSTROBE LED WARM1 CONN | 23 25 69 |
| TP9427 | A | PPSTROBE LED COOL2 CONN | 23 25 69 |
| TP9428 | A | PPSTROBE LED WARM2 CONN | 23 25 69 |
| TP9429 | A | LED DRIVER NTC CONN | 23 25 |
| TP942A | A | PPSTROBE1 BST | 25 |
| TP942B | A | PPSTROBE2 BST | 25 |
| TP942C | A | PENROSE IR VOUT2 P R | 22 |
| TP942D | A | PENROSE VIS IR VOUT1 P R | 22 |
| TP942E | A | GPIO RCAM PMU TO STROBE DRIVER HWEN | 25 46 |
| TP942F | A | PP3V0 PENROSE CONN | 23 |
| TP942G | A | PP3V3 PENROSE | 54 72 |
| | | CAMERA - LI | |
| TP942H | A | ISP CAM FRONT CLK CONN | 24 |
| TP942I | A | ISP CAM FRONT SCL CONN | 24 |
| TP942J | A | ISP CAM FRONT SDA CONN | 24 |
| TP942K | A | ISP CAM FRONT SHUTDOWN L CONN | 24 |
| | | CAMERA - IN | |
| TP942L | A | AP TO WIDE CLK 12MHZ CONN | 48 |
| TP942M | A | I2C RCAM1 WIDE SCL CONN | 48 |
| TP942N | A | I2C RCAM1 WIDE SDA CONN | 48 |
| TP942P | A | ISP TO WIDE SHUTDOWN CONN L | 48 |
| TP942Q | A | WIDE SYNC CONN | 48 69 |
| TP942Q | A | WIDE TO STROBE DRIVER STROBE CONN | 48 |
| | | CAMERA - OH | |
| TP942R | A | AP TO SWIDE CLK 12MHZ CONN | 49 |
| TP942S | A | I2C RCAM2 SWIDE SCL CONN | 49 |
| TP942T | A | I2C RCAM2 SWIDE SDA CONN | 49 |
| TP942U | A | ISP TO SWIDE SHUTDOWN CONN L | 49 |
| TP942V | A | SWIDE SYNC CONN | 49 |
| TP942W | A | SWIDE TO STROBE DRIVER STROBE CONN | 49 |
| | | CAMERA - JASPER | |
| TP942X | A | CLK RCAM PMU TO TOF 12MHZ CONN | 50 |
| TP942Y | A | I2C JASPER SCL CONN | 50 |
| TP942Z | A | I2C JASPER SDA CONN | 50 |
| TP943X | A | GPIO PMU TO TOF INT CONN L | 50 |
| TP943Y | A | TOF FSYNC CONN | 50 |
| TP943Z | A | GPIO RCAM PMU TO TOF SHUTDOWN CONN L | 50 |

| | | | |
|--------|---|------------------------------------|----------|
| | | TITUS/ROSALINE/JULIET | |
| TP9431 | A | PP TITUS DENSE ANODE | 37 38 69 |
| TP9432 | A | PP TITUS DENSE ANODE | 37 38 69 |
| TP9433 | A | PP TITUS SPARSE ANODE | 37 38 69 |
| TP9434 | A | PP TITUS SPARSE ANODE | 37 38 69 |
| TP9435 | A | PP TITUS A ANODE | 37 38 69 |
| TP9436 | A | PP TITUS A ANODE | 37 38 69 |
| TP9437 | A | PP TITUS B ANODE | 37 38 69 |
| TP9438 | A | PP TITUS B ANODE | 37 38 69 |
| TP9439 | A | PP TITUS CATHODE | 37 38 69 |
| TP9440 | A | PP TITUS CATHODE | 37 38 69 |
| TP9441 | A | PP ROSALINE ANODE | 37 38 69 |
| TP9442 | A | PP ROSALINE ANODE | 37 38 69 |
| TP9443 | A | GPIO RIGEL TO SOC IRQ | 7 37 |
| TP9444 | A | RIGEL TESTMODE EN | 37 |
| TP9445 | A | JULIET PMU TO RIGEL STROBE CONN | 38 |
| TP9446 | A | I2C3 ISP BI MAMA BEAR SDA CONN | 38 |
| TP9447 | A | I2C3 ISP TO MAMA BEAR SCL CONN | 38 |
| TP9448 | A | MAMA BEAR BI RIGEL STATUS CONN | 38 |
| TP9449 | A | TITUS TO AOP B2B DETECT CONN | 38 |
| TP9450 | A | ISP JULIET SCL CONN | 38 |
| TP9451 | A | ISP JULIET SDA CONN | 38 |
| TP9452 | A | AP TO JULIET CLK CONN | 38 |
| TP9453 | A | AP TO JULIET SHUTDOWN L CONN | 38 |
| TP9454 | A | I2C0 AOP TO PROX ALS YOGI SCL CONN | 39 |
| TP9455 | A | I2C0 AOP BI PROX ALS YOGI SDA CONN | 39 |
| TP9456 | A | PP3V0 YOGI PROX ALS CONN | 39 |
| TP9457 | A | YOGI TO RIGEL STATUS CONN | 39 |
| TP9458 | A | PROX BI AP AOP INT CONN L | 39 |
| TP9459 | A | ALS C4 TO SOC INT CONN L | 39 |
| TP9460 | A | ALS C3 TO SOC INT CONN L | 39 |
| TP9461 | A | TITUS TO RIGEL VCSEL NTC CONN | 38 |
| | | DMIC GATING | |
| TP9461 | A | GPM DMIC DISABLE L | 52 |
| TP9463 | A | SLG TO AOP DMIC DISABLE WARN L | 9 52 |
| | | WILL I2C | |
| TP9464 | A | I2C3 RCAM PMU SCL | 4 46 |
| TP9465 | A | I2C3 RCAM PMU SDA | 4 46 |
| | | PENROSE ADC I2C | |
| TP9466 | A | I2C3 SCL 1V8 | 4 6 |
| TP9467 | A | I2C3 SDA 1V8 | 4 6 |
| | | CAM SYNC | |
| TP9451 | A | FRONT CAM SYNC ACE | 32 34 |
| TP9452 | A | GPIO FCAM JULIET TO ACE SYNC | 24 32 38 |
| TP9453 | A | GPIO RCAM PMU TO TOF PMU EN | 46 47 |
| TP9454 | A | WIDE SYNC CONN | 48 69 |
| TP9455 | A | REAR CAM SYNC ACE | 32 34 |

EE CHARACTERIZATION PROBE POINT

SOC

| | | | | | |
|--------|----|---|------------------------------|----|----|
| PP9504 | PP | 1 | ADC SOC TO PMU ANALOGMUX OUT | 9 | 59 |
| PP9505 | PP | 1 | ADC SOC TO PMU VDD CPU_R | 12 | |
| PP9506 | PP | 1 | ADC SOC TO PMU VDD GPU_R | 12 | |
| PP9507 | PP | 1 | ADC SOC TO PMU VDD SOC_R | 10 | |

FOR SEG, TO DELETE IN EVT AND MOVE TP HERE

| | | | | | |
|--------|----|---|----------------|----|-------|
| PP9503 | PP | 1 | PEVDD SI SOC | 57 | 68 72 |
| PP950E | PP | 1 | PEVDD SI FIXED | 53 | 68 72 |
| PP950K | PP | 1 | PEVDD ECPU | 60 | 68 72 |
| PP93T4 | PP | 1 | PEVDD CPU SRAM | 57 | 68 72 |
| PP93T6 | PP | 1 | PEVDD GPU SRAM | 60 | 68 72 |

ACE/REDRIVER

| | | | | | |
|--------|----|---|-------------|----|--|
| PP9510 | PP | 1 | ACE UART RX | 34 | |
| PP9511 | PP | 1 | ACE UART TX | 34 | |

FH SPEAKER I2S

| | | | | | |
|--------|----|---|-----------------------------|---------------------------|---------|
| PP9521 | PP | 1 | I2S2 SOC TO SPKRAMP FH BCLK | PLACE_NEAR-UJ0450.A4.50MM | 6 30 31 |
| PP9522 | PP | 1 | I2S2 SOC TO SPKRAMP FH LRCK | PLACE_NEAR-UJ0450.A3.50MM | 6 30 31 |
| PP9523 | PP | 1 | I2S2 SOC TO SPKRAMP FH DOUT | PLACE_NEAR-UJ0450.A1.50MM | 6 30 31 |
| PP9524 | PP | 1 | I2S2 SPKRAMP FH TO SOC DOUT | PLACE_NEAR-UJ0600.U3.50MM | 6 30 31 |

CN SPEAKER I2S

| | | | | | |
|--------|----|---|------------------------------|-----------------------------|---------|
| PP9525 | PP | 1 | I2S1 SOC TO SPKRBST CN MCLK | PLACE_NEAR-UJ0000.C5.50MM | 6 26 |
| PP9526 | PP | 1 | I2S1 SOC TO SPKRAMP CN BCLK | PLACE_NEAR-UJ0250.A4.50MM | 6 28 29 |
| PP9527 | PP | 1 | I2S1 SOC TO SPKRAMP CN LRCK | PLACE_NEAR-UJ0250.A3.50MM | 6 28 29 |
| PP9528 | PP | 1 | I2S1 SOC TO SPKRAMP CN DOUT | PLACE_NEAR-UJ0250.A1.50MM | |
| PP9529 | PP | 1 | I2S1 SPKRAMP CN TO SOC DOUT | PLACE_NEAR-UJ0600.BC32.50MM | |
| PP952D | PP | 1 | GPIO BST MASTER TO SOC IRQ_L | | |
| PP952E | PP | 1 | GPIO BST SLAVE TO SOC IRQ_L | | 6 26 |
| PP952F | PP | | BST CLK SYNC | 26 | |
| PP952G | PP | | BST SYNC_R | 26 | |

PENROSE

| | | | | | |
|--------|----|---|--------------------------|-----------------------------|------|
| PP952A | PP | 1 | I2S3 SOC TO PENROSE BCLK | PLACE_NEAR-R2661.2.50MM | 6 22 |
| PP952B | PP | 1 | I2S3 SOC TO PENROSE LRCK | PLACE_NEAR-R2660.2.50MM | |
| PP952C | PP | 1 | I2S3 PENROSE TO SOC DOUT | PLACE_NEAR-UJ0600.BD39.50MM | 6 22 |
| PP952H | PP | 1 | I2S3 SOC TO PENROSE MCLK | PLACE_NEAR-R2664.2.50MM | 6 22 |

ORION

| | | | | | |
|--------|----|---|------------------------|----|----|
| PP953B | PP | 1 | GPIO AOP TO ORION HWEN | 9 | 56 |
| PP953C | PP | 1 | ORION CONN STATUS | 56 | |

SENSOR SPI LINES

| | | | | | |
|--------|----|---|------------------|----------------------------|---------|
| PP9544 | PP | 1 | SPI SENSORS SCLK | PLACE_NEAR-UJ150.2.10MM | 9 18 70 |
| PP9545 | PP | 1 | SPI SENSORS MISO | PLACE_NEAR-UJ0600.AC3.10MM | 9 18 |
| PP9546 | PP | 1 | SPI SENSORS MOSI | PLACE_NEAR-UJ150.3.10MM | 9 18 70 |
| PP9547 | PP | 1 | SPI SENSORS SCLK | PLACE_NEAR-UJ120.4.10MM | 9 18 70 |
| PP9549 | PP | 1 | SPI SENSORS MOSI | PLACE_NEAR-UJ120.3.10MM | 70 9 18 |

PMU/CHARGER

| | | | | | |
|--------|----|---|-----------------------|----------|----|
| PP95G1 | PP | 1 | GPIO PMU TO SOC IRQ_L | 9 | 59 |
| PP95G7 | PP | 1 | USB VBUS DETECT | 5 | 61 |
| PP95G2 | PP | 1 | NUB SPMI SCLK | 9 | 59 |
| PP95G3 | PP | 1 | NUB SPMI SDATA | 9 59 66 | |
| PP95G4 | PP | 1 | ISP SPMI APOLLO SCLK | 7 | 55 |
| PP95G5 | PP | 1 | ISP SPMI APOLLO SDATA | 7 | 55 |
| PP9539 | PP | 1 | SYS ALIVE | 16 17 59 | |

| | | | | | |
|--------|----|---|----------------------------|---|----|
| PP95G0 | PP | 1 | GPIO ROSALINE TO AOP IRQ_L | 9 | 39 |
|--------|----|---|----------------------------|---|----|

GRAPE

| | | | | | |
|--------|----|---|-------------------------------|----|-------|
| PP9580 | PP | 1 | SPI SOC TO GRAPE SCLK | 6 | 19 |
| PP9581 | PP | 1 | SPI SOC TO GRAPE MISO | 6 | 19 |
| PP9582 | PP | 1 | SPI SOC TO GRAPE MOSI | 6 | 19 |
| PP9583 | PP | 1 | SPI SOC TO GRAPE CS_L | 6 | 19 |
| PP9584 | PP | 1 | GPIO SOC TO GRAPE RESET_L | 6 | 19 20 |
| PP9585 | PP | 1 | GPIO GRAPE TO AOP IRQ_L | 9 | 19 |
| PP9586 | PP | 1 | KONA_S TO LANAI_M RESET DET_L | 19 | 20 |
| PP9587 | PP | 1 | PSE SYNC | 19 | 20 |
| PP9588 | PP | 1 | KMSI MISO | 19 | 20 |
| PP9589 | PP | 1 | KMSI MOSI | 19 | 20 |
| PP958A | PP | 1 | KMSI STRB_IN | 19 | 20 |
| PP958B | PP | 1 | KMSI STRB_OUT | 19 | 20 |
| PP958C | PP | 1 | LANAI BOOST ATEST | 19 | |
| PP958D | PP | 1 | TESTPOINT KONA_S UART_TX | 20 | |
| PP958E | PP | 1 | TESTPOINT KONA_S UART_RX | 20 | |
| PP9593 | PP | 1 | LANAI BOOT0_M | 19 | |
| PP9594 | PP | 1 | LANAI BOOT1_M | 19 | |
| PP9595 | PP | 1 | KONA BOOT0_S | 20 | |
| PP9596 | PP | 1 | KONA BOOT1_S | 20 | |
| PP959H | PP | 1 | SWD KONA SWDIO | 20 | |
| PP958I | PP | 1 | SWD KONA SWCLK | 20 | |
| PP958J | PP | 1 | GPIO12 KONA LDO ADJ | 19 | 20 |
| PP958K | PP | 1 | GPIO13 KONA LDO_EN | 19 | 20 |
| PP958L | PP | 1 | GPIO GRAPE TO AOP_TIME_SYNC | 9 | 19 |
| PP958M | PP | 1 | CLK LANAI_M 24MHZ | 19 | |
| PP958N | PP | 1 | GPIO SOC TO GRAPE_BSYNC0 | 19 | 20 40 |
| PP958P | PP | 1 | GPIO SOC TO GRAPE_BSYNC1 | 19 | 20 40 |
| PP958X | PP | 1 | UART AOP TO GRAPE_TX | 9 | 19 |
| PP958Y | PP | 1 | UART GRAPE TO AOP_TX | 9 | 19 |
| PP958Z | PP | 1 | UART DEBUG TO GRAPE_TX | 19 | 34 |
| PP958Q | PP | 1 | SPI LANAI_M TO KONA_S MISO | 19 | 20 |
| PP958T | PP | 1 | SPI LANAI_M TO KONA_S SCLK | 19 | 20 |
| PP958U | PP | 1 | SPI LANAI_M TO KONA_S CS_L | 19 | 20 |
| PP958W | PP | 1 | SPI LANAI_M TO KONA_S MOSI | 19 | 20 |

GRAPE POWER

| | | | | | |
|--------|----|---|-----------------------|----|----|
| PP958R | PP | 1 | PP3V3 GRAPE_FILT | 19 | 20 |
| PP958S | PP | 1 | PP1V8 GRAPE_XTAL_FILT | 19 | 20 |
| PP958V | PP | 1 | PP1V8 GRAPE_AON_RC | 19 | 20 |

DMIC SECURED

| | | | | | |
|--------|----|---|--------------|---|----|
| PP9590 | PP | 1 | DMIC1_MIC_SD | 9 | 52 |
| PP9591 | PP | 1 | DMIC2_MIC_SD | 9 | 52 |
| PP9592 | PP | 1 | DMIC3_MIC_SD | 9 | 52 |

AUDIO PPS FOR I2C

| | | | | | |
|--------|----|---|--------------|---|------|
| PP95GA | PP | 1 | I2C1_SCL_1V8 | 4 | 6 68 |
| PP95GB | PP | 1 | I2C1_SDA_1V8 | 4 | 6 68 |
| PP95GC | PP | 1 | I2C2_SCL_1V8 | 4 | 6 68 |
| PP95GD | PP | 1 | I2C2_SDA_1V8 | 4 | 6 68 |

WIFI(SEE MORE ON PAGE 49)

| | | | | | |
|--------|----|---|---------------------------------|---|-------------|
| PP95BL | PP | 1 | GPIO SOC TO BT TO GRAPE_TS_SYNC | 6 | 19 20 42 66 |
|--------|----|---|---------------------------------|---|-------------|

WLAN PCIE TPS

| | | | | | | |
|--------|----|---|-------------------------------|---------------------------|---|----|
| PP95E0 | PP | 1 | PLACE_NEAR-UJ0600.BF11.100MM | PCIE WLAN TO SOC_TX_P | 8 | 66 |
| PP95E1 | PP | 1 | PLACE_NEAR-UJ0600.BE11.100MM | PCIE WLAN TO SOC_TX_N | 8 | 66 |
| PP95E2 | PP | 1 | PLACE_NEAR-UJ_WLAN_W.99.200MM | PCIE SOC TO WLAN_TX_P | 8 | 66 |
| PP95E3 | PP | 1 | PLACE_NEAR-UJ_WLAN_W.30.200MM | PCIE SOC TO WLAN_TX_N | 8 | 66 |
| PP95E4 | PP | 1 | PLACE_NEAR-UJ_WLAN_W.95.200MM | PCIE SOC TO WLAN_REFCLK_P | 8 | 66 |
| PP95E5 | PP | 1 | PLACE_NEAR-UJ_WLAN_W.26.200MM | PCIE SOC TO WLAN_REFCLK_N | 8 | 66 |

BB PCIE TPS

| | | | | | | |
|--------|----|---|------------------------------|-------------------------|----|----|
| PP95E8 | PP | 1 | PLACE_NEAR-UJ0600.BF12.100MM | PCIE_BB TO SOC_TX_P | 8 | 66 |
| PP95E9 | PP | 1 | PLACE_NEAR-UJ0600.BE12.100MM | PCIE_BB TO SOC_TX_N | 8 | 66 |
| PP95EA | PP | 1 | PLACE_NEAR-BB_KAF2.20MM | PCIE SOC TO BB_TX_P | 66 | |
| PP95EB | PP | 1 | PLACE_NEAR-BB_KAG3.20MM | PCIE SOC TO BB_TX_N | 66 | |
| PP95EC | PP | 1 | PLACE_NEAR-BB_KAF6.20MM | PCIE SOC TO BB_REFCLK_P | 8 | 66 |
| PP95ED | PP | 1 | PLACE_NEAR-BB_KAG7.20MM | PCIE SOC TO BB_REFCLK_N | 8 | 66 |

NAND

| | | | | | | |
|--------|----|---|----------------------------|---------------------------|----|-------|
| PP95D6 | PP | 1 | PLACE_NEAR-UJ1800.E8.50MM | PCIE_SOC_TO_NAND1_RESET_L | 8 | 16 17 |
| PP95DD | PP | 1 | PLACE_NEAR-UJ1800.E8.50MM | PCIE_SOC_TO_NAND2_RESET_L | 8 | 17 |
| PP95DE | PP | 1 | PLACE_NEAR-UJ1800.J4.50MM | NAND1_ANI1_VREF | 16 | |
| PP95DF | PP | 1 | PLACE_NEAR-UJ1800.G12.50MM | NAND1_ANI0_VREF | 16 | |
| PP95DG | PP | 1 | PLACE_NEAR-UJ1800.J4.50MM | NAND2_ANI1_VREF | 17 | |
| PP95DH | PP | 1 | PLACE_NEAR-UJ1800.G12.50MM | NAND2_ANI0_VREF | 17 | |
| PP95DI | PP | 1 | PLACE_NEAR-UJ1800.C4.50MM | GPIO_SOC_TO_NAND_FW_STRAP | 6 | 16 17 |
| PP95DJ | PP | 1 | PLACE_NEAR-UJ1800.L4.50MM | GPIO_SOC_TO_NAND_RESET_L | 6 | 16 17 |

IR CAMERA - JULIET

| | | | | | |
|--------|----|---|--------------------------|---|----|
| PP9550 | PP | 1 | MIPI PEARL TO SOC_CLK_P | 7 | 38 |
| PP9551 | PP | 1 | MIPI PEARL TO SOC_CLK_N | 7 | 38 |
| PP9552 | PP | 1 | MIPI PEARL SOC_DATA_P<0> | 7 | 38 |
| PP9553 | PP | 1 | MIPI PEARL SOC_DATA_N<0> | 7 | 38 |
| PP9554 | PP | 1 | MIPI PEARL SOC_DATA_P<1> | 7 | 38 |
| PP9555 | PP | 1 | MIPI PEARL SOC_DATA_N<1> | 7 | 38 |

CAMERA - FRONT

| | | | | | |
|--------|----|---|-----------------------------|---|----|
| PP9560 | PP | 1 | LPDP SOC TO FCAM2_AUX | 7 | 24 |
| PP9562 | PP | 1 | LPDP FCAM2 TO SOC_DATA_P<0> | 7 | 24 |
| PP9563 | PP | 1 | LPDP FCAM2 TO SOC_DATA_N<0> | 7 | 24 |
| PP9564 | PP | 1 | LPDP FCAM2 TO SOC_DATA_P<1> | 7 | 24 |
| PP9565 | PP | 1 | LPDP FCAM2 TO SOC_DATA_N<1> | 7 | 24 |

LPDPRX TPS

| | | | | | |
|--------|----|---|-----------------------------|---|----|
| PP95F0 | PP | 1 | LPDP RCAM1 TO SOC_DATA_P<0> | 7 | 48 |
| PP95F1 | PP | 1 | LPDP RCAM1 TO SOC_DATA_N<0> | 7 | 48 |
| PP95F2 | PP | 1 | LPDP RCAM1 TO SOC_DATA_P<1> | 7 | 48 |
| PP95F3 | PP | 1 | LPDP RCAM1 TO SOC_DATA_N<1> | 7 | 48 |
| PP95F4 | PP | 1 | LPDP SOC TO RCAM1_AUX | 7 | 48 |
| PP95F5 | PP | 1 | LPDP SWIDE TO SOC_DATA_P<0> | 7 | 49 |
| PP95F6 | PP | 1 | LPDP SWIDE TO SOC_DATA_N<0> | 7 | 49 |
| PP95F7 | PP | 1 | LPDP SWIDE TO SOC_DATA_P<1> | 7 | 49 |
| PP95F8 | PP | 1 | LPDP SWIDE TO SOC_DATA_N<1> | 7 | 49 |
| PP95F9 | PP | 1 | LPDP SOC TO SWIDE_AUX | 7 | 49 |
| PP95FA | PP | 1 | LPDP JASPER TO SOC_DATA_P | 7 | 50 |
| PP95FB | PP | 1 | LPDP JASPER TO SOC_DATA_N | 7 | 50 |
| PP95FC | PP | 1 | LPDP SOC TO JASPER_AUX | 7 | 50 |

SYNC_MASTER=TPS_EE_TP_PP SYNC_DATE=02/27/2019

PAGE TITLE

TEST: EE TP/PP

POWER CONNECTIONS

D

ATHENA BUCK0 (ACTIVE)

68 57 PPVDD_CPU == PPVDD_CPU 12 57

ATHENA BUCK1 (SW CTRL)

68 57 PPVDD_GPU == PPVDD_GPU 12 57

ATHENA BUCK2 (SLEEP1)

70 68 57 PPVDD_S1_SOC == PPVDD_S1_SOC 10

ATHENA BUCK3 (SLEEP3)

68 57 PP1V8_S3 == PP1V8_S3 10
PP1V8_S3 == PP1V8_S3 9 32 34
PP1V8_S3 == PP1V8_S3 23 40 59
PP1V8_S3 == PP1V8_S3 9 41 59 64
PP1V8_S3 == PP1V8_S3 62
PP1V8_S3 == PP1V8_S3 45 46 54 58
PP1V8_S3 == PP1V8_S3 56
PP1V8_S3 == PP1V8_S3 9 20 65
PP1V8_S3 == PP1V8_S3 9 11
PP1V8_S3 == PP1V8_S3 64
PP1V8_S3 == PP1V8_S3 18 23 27
PP1V8_S3 == PP1V8_S3 52

ATHENA BUCK3 SW1 (ACTIVE)

55 68 65 58 PP1V8_SW1 == PP1V8_SW1 26 28 29 30 31
PP1V8_SW1 == PP1V8_SW1 62
PP1V8_SW1 == PP1V8_SW1 61
PP1V8_SW1 == PP1V8_SW1 58

ATHENA BUCK3 => EXT_SW1 (ACTIVE)

68 62 PP1V8_EXT_SW1 == PP1V8_EXT_SW1 11
PP1V8_EXT_SW1 == PP1V8_EXT_SW1 11
PP1V8_EXT_SW1 == PP1V8_EXT_SW1 11
PP1V8_EXT_SW1 == PP1V8_EXT_SW1 11
PP1V8_EXT_SW1 == PP1V8_EXT_SW1 5 9 16 17
PP1V8_EXT_SW1 == PP1V8_EXT_SW1 6
PP1V8_EXT_SW1 == PP1V8_EXT_SW1 4 6 8 59
PP1V8_EXT_SW1 == PP1V8_EXT_SW1 11
PP1V8_EXT_SW1 == PP1V8_EXT_SW1 22

ATHENA BUCK3 => EXT_SW2 (SLEEP2)

68 62 51 PP1V8_S2_EXT_SW2 == PP1V8_S2_EXT_SW2 66
PP1V8_S2_EXT_SW2 == PP1V8_S2_EXT_SW2 66
PP1V8_S2_EXT_SW2 == PP1V8_S2_EXT_SW2 66

ATHENA BUCK3 SW2 (SLEEP2)

68 58 PP1V8_S2_GRAPE == PP1V8_S2_GRAPE 9 19 20

APOLLO BUCK3 SW1 (ACTIVE)

68 54 PP1V8_SW1_CAM == PP1V8_SW1_CAM 24
PP1V8_SW1_CAM == PP1V8_SW1_CAM 37 38 39

APOLLO BUCK3 SW3 (SLEEP2)

68 54 PP1V8_S3_SW3 == PP1V8_S3_SW3 18
PP1V8_S3_SW3 == PP1V8_S3_SW3 18
PP1V8_S3_SW3 == PP1V8_S3_SW3 18

APOLLO BUCK4 (SLEEP3)

68 53 PP1V1_S3 == PP1V1_S3 54
PP1V1_S3 == PP1V1_S3 54
PP1V1_S3 == PP1V1_S3 10

APOLLO BUCK4 SW1 (SPARE)

54 PP1V1_SW1_SPARE == 1.1V

APOLLO BUCK5 (SLEEP1)

70 68 53 PPVDD_S1_FIXED == PPVDD_S1_FIXED 13
PPVDD_S1_FIXED == PPVDD_S1_FIXED 13
PPVDD_S1_FIXED == PPVDD_S1_FIXED 13
PPVDD_S1_FIXED == PPVDD_S1_FIXED 13
PPVDD_S1_FIXED == PPVDD_S1_FIXED 13
PPVDD_S1_FIXED == PPVDD_S1_FIXED 13
PPVDD_S1_FIXED == PPVDD_S1_FIXED 13
PPVDD_S1_FIXED == PPVDD_S1_FIXED 13
PPVDD_S1_FIXED == PPVDD_S1_FIXED 13
PPVDD_S1_FIXED == PPVDD_S1_FIXED 13
PPVDD_S1_FIXED == PPVDD_S1_FIXED 13
PPVDD_S1_FIXED == PPVDD_S1_FIXED 13

APOLLO BUCK6 (ACTIVE)

68 53 PP2V63_OTP == PP2V63_OTP 16 17

ATHENA BUCK7 (ACTIVE)

70 68 57 PPVDD_CPU_SRAM == PPVDD_CPU_SRAM 10

ATHENA BUCK8 (SW CTRL)

70 68 60 PPVDD_GPU_SRAM == PPVDD_GPU_SRAM 10

ATHENA BUCK9 (SLEEP1)

68 60 PPVDD_S1_DCS == PPVDD_S1_DCS 10

APOLLO BUCK10 (SLEEP1)

68 53 PPVDD_S1_OL == PPVDD_S1_OL 5 10

ATHENA BUCK11 (ACTIVE)

70 68 60 PPVDD_ECPU == PPVDD_ECPU 12

APOLLO BUCK12 (ACTIVE)

68 53 PP1V4_CAMERA == PP1V4_CAMERA 54

ATHENA LD01 (SLEEP2)

68 58 PP3V3_S2_ACE == PP3V3_S2_ACE 32 34

ATHENA LDO2 (SPARE)

58 ATHENA_LDO2_SPARE == ATHENA_LDO2_SPARE

ATHENA LDO3 (SLEEP2)

68 58 PP2V95_S2_THROTTLE == PP2V95_S2_THROTTLE 64

ATHENA LDO5 (SLEEP2)

68 58 PP3V3_S2_REDRIIVER == PP3V3_S2_REDRIIVER 34 35

ATHENA LDO6 (SPARE)

58 PP3V3_LDO6_SPARE == PP3V3_LDO6_SPARE

ATHENA LDO7 (ACTIVE)

68 58 PP3V3_USB == PP3V3_USB 5 11

ATHENA LDO8 (SLEEP2)

68 58 PP3V3_S2_SCORPIUS == PP3V3_S2_SCORPIUS 54

APOLLO LDO10 (ACTIVE)

68 54 PP0V9_NAND == PP0V9_NAND 16 17

ATHENA LDO11 (SLEEP2)

68 58 PP3V0_S2_MISC == PP3V0_S2_MISC 66

ATHENA LDO13 (SW CTRL)

68 58 PP3V3_S2_GRAPE == PP3V3_S2_GRAPE 19

ATHENA LDO14 (ACTIVE)

68 58 PP1V2_SOC == PP1V2_SOC 11
PP1V2_SOC == PP1V2_SOC 10 11
PP1V2_SOC == PP1V2_SOC 11
PP1V2_SOC == PP1V2_SOC 11

APOLLO LDO15 (SLEEP2)

68 54 PP0V775_S2_AOP == PP0V775_S2_AOP 10

ATHENA LDO16 (SLEEP2)

68 58 PP1V8_S2_LDO_SCORPIUS == PP1V8_S2_LDO_SCORPIUS 64

APOLLO LDO17 (ACTIVE)

68 54 PP3V3_PENROSE == PP3V3_PENROSE 200 mA(MAX) 22

APOLLO LDO23 (SW CTRL)

68 54 PP2V85_PEARL == PP2V85_PEARL 18 mA(MAX) 38

APOLLO LDO21 (SW CTRL)

68 54 PP2V90_FRONT_CAM == PP2V90_FRONT_CAM 43 mA(MAX) 24

APOLLO LDO9 (ACTIVE)

68 54 PP1V215_FRONT_CAM == PP1V215_FRONT_CAM 24

APOLLO LDO22 (SW CTRL)

68 54 PP1V215_PEARL == PP1V215_PEARL 110 mA(MAX) 38

APOLLO LDO4 (SW CTRL)

68 54 PP3V0_ALS == PP3V0_ALS 39

APOLLO LDO18 (SPARE)

54 APOLLO_LDO18_SPARE == APOLLO_LDO18_SPARE 460 MA 115

APOLLO LDO19 (SPARE)

54 APOLLO_LDO19_SPARE == APOLLO_LDO19_SPARE

APOLLO LDO20 (SPARE)

54 APOLLO_LDO20_SPARE == APOLLO_LDO20_SPARE 1548

APOLLO LDO24 (SW CTRL)

68 54 PP3V1_PEARL == PP3V1_PEARL 25 mA(MAX) 38

APOLLO LDO26 (SPARE)

68 54 PP1V0_S2_R1_SPARE == PP1V0_S2_R1_SPARE 115

APOLLO LDO27 (SPARE)

54 APOLLO_LDO27_SPARE == APOLLO_LDO27_SPARE 11542

ADAMS:

ADAMS_BUCK0 (SW CONTROL)

69 45 PP1V4_ADAMS1_VDDL == PP1V4_ADAMS1_VDDL 45 47

ADAMS_LDO1 (SW CONTROL)

69 45 PP3V3_ADAMS_LDO1 == PP3V3_ADAMS_LDO1 47
PP3V3_ADAMS_LDO1 == PP3V3_ADAMS_LDO1 47

ADAMS_LDO2 (SW CONTROL)

69 45 PP3V0_JASPER_RX_AVDDH == PP3V0_JASPER_RX_AVDDH 50

ADAMS_LDO3 (SW CONTROL)

69 45 PP3V0_PENROSE == PP3V0_PENROSE 23

ADAMS_LDO4 (SW CONTROL)

69 45 PP3V3_JASPER_TX_AVDDH == PP3V3_JASPER_TX_AVDDH 50

ADAMS_LDO5 (SW CONTROL)

45 PP1V8_TOF_VDDIO_ADAMS == PP1V8_TOF_VDDIO_ADAMS 68

ADAMS_LDO6 (SW CONTROL)

69 45 PP2V85_WIDE_RCAM1_AVDDH1 == PP2V85_WIDE_RCAM1_AVDDH1 48

ADAMS_LDO7 (SW CONTROL)

69 45 PP2V85_SWIDE_RCAM2_AVDDH1 == PP2V85_SWIDE_RCAM2_AVDDH1 49

ADAMS_LDO8 (SW CONTROL)

69 45 PP1V215_RCAM_WIDE_VDDL == PP1V215_RCAM_WIDE_VDDL 48

ADAMS_LDO9 (SW CONTROL)

69 45 PP1V215_RCAM_WIDE_VDDL == PP1V215_RCAM_WIDE_VDDL 48

ADAMS_LDO10 (SPARE)

45 ADAMS_LDO10_SPARE == ADAMS_LDO10_SPARE 115

ADAMS_SW1 (SW CONTROL)

69 45 PP1V8_CAM_PMU1_IO_SW == PP1V8_CAM_PMU1_IO_SW 46
PP1V8_CAM_PMU1_IO_SW == PP1V8_CAM_PMU1_IO_SW 48
PP1V8_CAM_PMU1_IO_SW == PP1V8_CAM_PMU1_IO_SW 49
PP1V8_CAM_PMU1_IO_SW == PP1V8_CAM_PMU1_IO_SW 50

CHARGER MAIN

PPVCC_MAIN == PPVCC_MAIN 57
PPVCC_MAIN == PPVCC_MAIN 57
PPVCC_MAIN == PPVCC_MAIN 53 57 60
PPVCC_MAIN == PPVCC_MAIN 54 58
PPVCC_MAIN == PPVCC_MAIN 41
PPVCC_MAIN == PPVCC_MAIN 60
PPVCC_MAIN == PPVCC_MAIN 66
PPVCC_MAIN == PPVCC_MAIN 63
PPVCC_MAIN == PPVCC_MAIN 25
PPVCC_MAIN == PPVCC_MAIN 37
PPVCC_MAIN == PPVCC_MAIN 60 62 65
PPVCC_MAIN == PPVCC_MAIN 19 20
PPVCC_MAIN == PPVCC_MAIN 28 29 30 31
PPVCC_MAIN == PPVCC_MAIN 63 64
PPVCC_MAIN == PPVCC_MAIN 66
PPVCC_MAIN == PPVCC_MAIN 45
PPVCC_MAIN == PPVCC_MAIN 32
PPVCC_MAIN == PPVCC_MAIN 66
PPVCC_MAIN == PPVCC_MAIN 47
PPVCC_MAIN == PPVCC_MAIN 66

CHARGER HIGH

68 61 PPVCC_HIGH == PPVCC_HIGH 54 58
PPVCC_HIGH == PPVCC_HIGH 37
PPVCC_HIGH == PPVCC_HIGH 45

BATTERY

68 61 PPBATT_VCC == PPBATT_VCC 64
PPBATT_VCC == PPBATT_VCC 64

USB POWER INPUT

69 PPVBUS_PROT == PPVBUS_PROT 34 54 61

ON_BUF

68 58 PP1V8_ALWAYS == PP1V8_ALWAYS 6 59 61

BACKLIGHT BOOST

72 68 60 PPLED_OUT == PPLED_OUT 41 72
PPLED_OUT == PPLED_OUT 41 72
PPLED_OUT == PPLED_OUT 41 72

D

C

B

A

SYNC_MASTER=J207_MLB_B SYNC_DATE=03/09/2017

PAGE TITLE

ALIASES: POWER

A

BOM TABLES

XTAL ALTS

| PART NUMBER | ALTERNATE FOR PART NUMBER | BOM OPTION | REF DES | COMMENTS: |
|-------------|---------------------------|------------|---------|--------------------|
| 197S00156 | 197S00155 | ALT_PARTS | YA100 | XTAL, 38.4MHZ, TXC |
| 197S00179 | 197S00155 | ALT_PARTS | YA100 | XTAL, 38.4MHZ, NDK |

BBPMU ALTS

| PART NUMBER | ALTERNATE FOR PART NUMBER | BOM OPTION | REF DES | COMMENTS: |
|-------------|---------------------------|------------|--------------|-----------|
| 152S01141 | 152S01045 | ALT_PARTS | LA200, LA201 | TAIYO |
| 152S01142 | 152S01043 | ALT_PARTS | LA204 | TAIYO |

EEPROM ALTS

| PART NUMBER | ALTERNATE PART NUMBER | REF DES | | COMMENTS: |
|-------------|-----------------------|-----------|-------|--------------------|
| 335S00013 | 335S0894 | ALT_PARTS | UA301 | EEPROM, 8KBIT, I2C |

CONSTRAINTS TABLE

| DIELECTRIC BASED SPACING RULES | | |
|--|---|--------------------------------------|
| RULE DEFINITION | LIST OF VALUES | |
| A. DIELECTRIC_INDX <small>Dielectric constant is different from 1.0 and the dielectric constant is not specified in the drawing</small> | EXAMPLE 1: 1.5, 2, 3 | 1.5, 2, 2L, 3 |
| A. DIELECTRIC_INDX_0V_XV_1X <small>Dielectric constant is different from 1.0 and the dielectric constant is specified in the drawing</small> | EXAMPLE 2: 0.5, 1.0, 2.0, 3.0, 4.0, 5.0 | 2, 2D, 4D, 4.64D, 4.8D, 5.1D, 6D, 4V |
| A. DIELECTRIC_INDX_0V_1X_0V_1X_0V_1X <small>Dielectric constant is different from 1.0 and the dielectric constant is specified in the drawing</small> | EXAMPLE 3: 1.5, 2, 3 | ? |

RADIOS

| HYBRID IMPEDANCE RULE | | | |
|-----------------------|-----------------------------|------------|------------------------|
| TRACE | REFERENCE LAYER(S)IMPEDANCE | REQUIRED | TRACE WIDTH (OPTIONAL) |
| 80%TIE= | | ZONE NAME= | PRIMARY |
| TOP | ISL2 | 50 | 0.078 |
| ISL3 | TOP, ISL4 | 50 | 0.047 |
| ISL6 | ISL5, ISL8 | 50 | 0.070 |

| HYBRID IMPEDANCE RULE | | | |
|-----------------------|------------|---------------------|------------------------------|
| TRACE LAYER(S) | REFERENCE | REQUIRED IMPEDANCE | TRACE WIDTH (OPTIONAL) LAYER |
| RULE NAME= 50_WIDE | | 200_WIDE | |
| TOP | ISL3 | 50 | 0.220 |
| ISL3 | ISL2, ISL5 | 50 | 0.052 |
| ISL6 | ISL5, ISL8 | 50 | 0.070 |

| HYBRID IMPEDANCE RULE | | | |
|----------------------------|--------------------|--------------------|-------------|
| TRACE | REFERENCE LAYER(S) | REQUIRED IMPEDANCE | TRACE WIDTH |
| RULE NAME= 50_WIDE_L1_THIN | | ZONE NAME= PRIMARY | |
| TOP | ISL2 | 50 | 0.078 |
| ISL3 | ISL2, ISL5 | 50 | 0.052 |
| ISL6 | ISL5, ISL8 | 50 | 0.070 |

| HYBRID IMPEDANCE RULE | | | |
|-----------------------|--------------------------------|--------------------|---------------------------|
| TRACE | REFERENCE LAYER(S)IMPEDANCE | REQUIRED | TRACE WIDTH (OPTIONAL) |
| RULE NAME= 50_THIN_2 | | ZONE NAME= PRIMARY | |
| TOP | ISL2 | 50 | 0.078 |
| ISL3 | ISL2, ISL5 | 50 | 0.052 |
| ISL5 | ISL4, ISL6 | 50 | 0.042 |

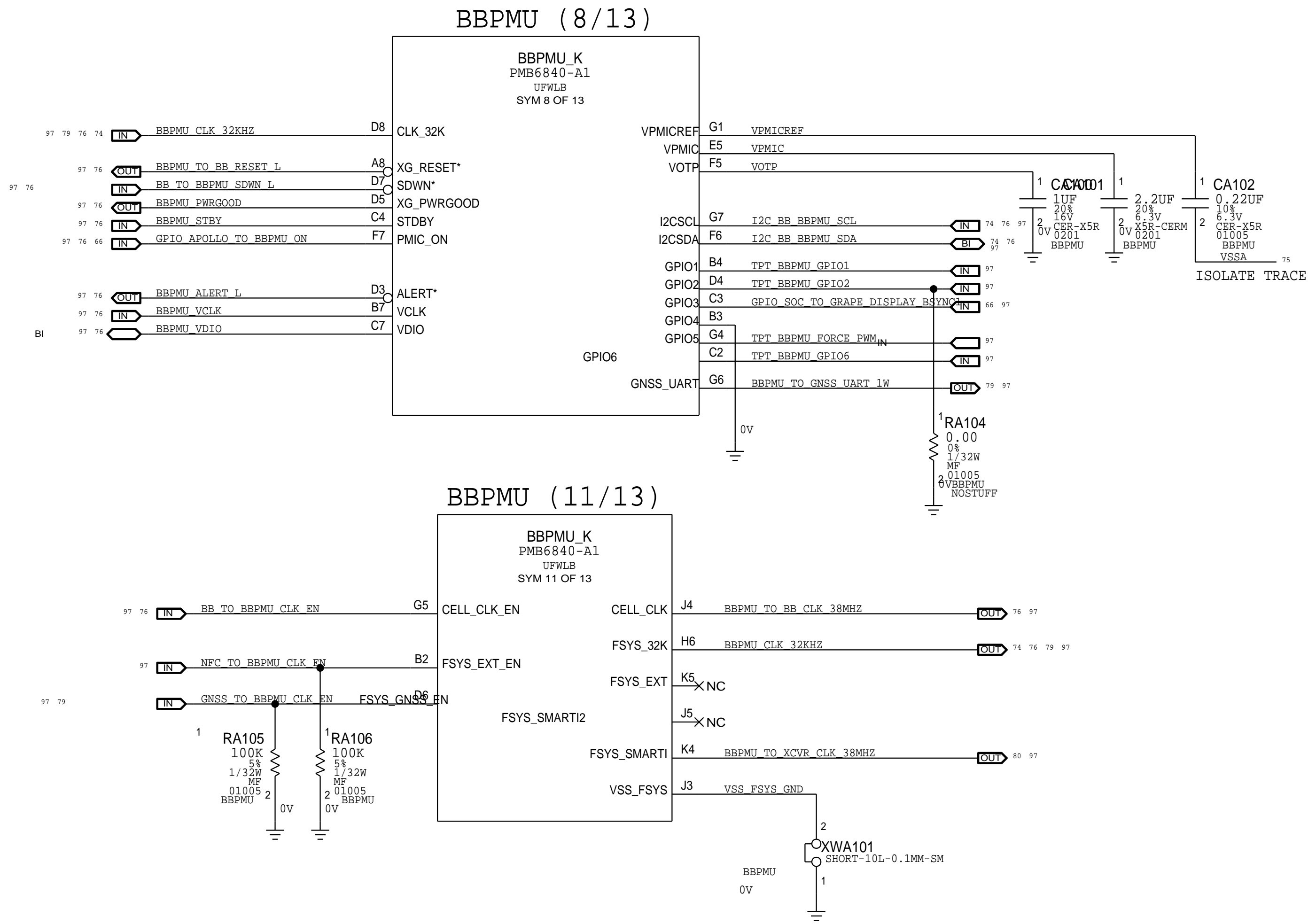
| HYBRID IMPEDANCE RULE | | | |
|-----------------------|------------|--------------------|------------------------------|
| TRACE LAYER(S) | REFERENCE | REQUIRED IMPEDANCE | TRACE WIDTH (OPTIONAL) LAYER |
| RULE NAME= 50_WIDE_2 | | ZONE NAME= PRIMARY | |
| TOP | ISL3 | 50 | 0.220 |
| ISL3 | TOP, ISL5 | 50 | 0.095 |
| ISL6 | ISL5, ISL8 | 50 | 0.070 |

| HYBRID IMPEDANCE RULE | | | |
|------------------------------|--------------------|--------------------|-------------|
| TRACE | REFERENCE LAYER(S) | REQUIRED IMPEDANCE | TRACE WIDTH |
| RULE NAME= 50_WIDE_2_L1_THIN | | ZONE NAME= PRIMARY | |
| TOP | ISL2 | 50 | 0.078 |
| ISL3 | TOP, ISL5 | 50 | 0.095 |
| ISL6 | ISL5, ISL8 | 50 | 0.070 |

| CAPPED RULE | | LAYER | VALUE (MM) | | RULE NAME(S) |
|-----------------------|---------------|-------------|------------|--------------------------|---------------------------|
| EXAMPLE: SMD04L.SMD2L | SMD04L(SMD2L) | 04L (SMD2L) | | | EXAMPLE: 2D.2V.3D.5D.3V.L |
| LINE2SMD | ? | | 0.10 | 2.2D | 4D, 4V, 4, 64D, 2L |
| | MVIA2MVIA | ? | 0.10 | 2.2D, 4D, 4V, 4, 64D, 2L | |
| | MVIA2SMD | ? | 0.10 | 2.2D, 4D, 4V, 4, 64D, 2L | |
| | MVIA2SHAPE | ? | 0.10 | 2.2D, 4D, 4V, 4, 64D, 2L | |
| | SMD2SMD | ? | 0.10 | 2.2D, 4D, 4V, 4, 64D, 2L | |
| | SMD2SHAPE | ? | 0.10 | 2.2D, 4D, 4V, 4, 64D, 2L | |
| | LINE2MVIA | ? | 0.10 | 2.2D, 4D, 4V, 4, 64D, 2L | |

BOM TABLES

BBPMU: CONTROL (1/2)

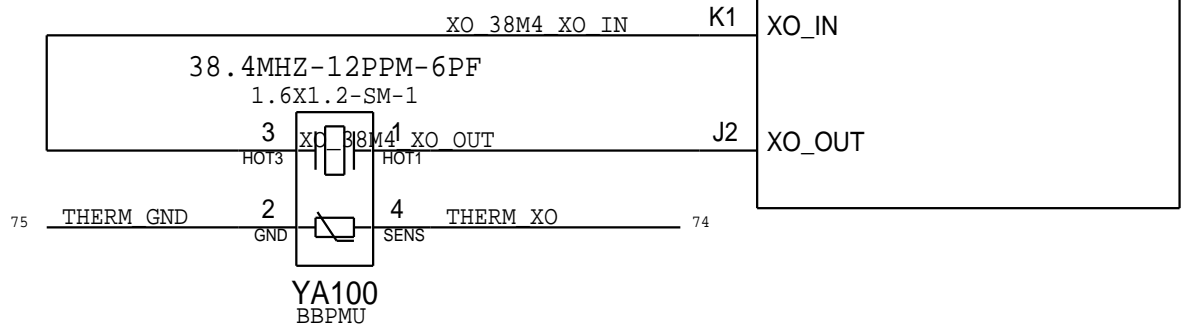


BBPMU ADC TABLES

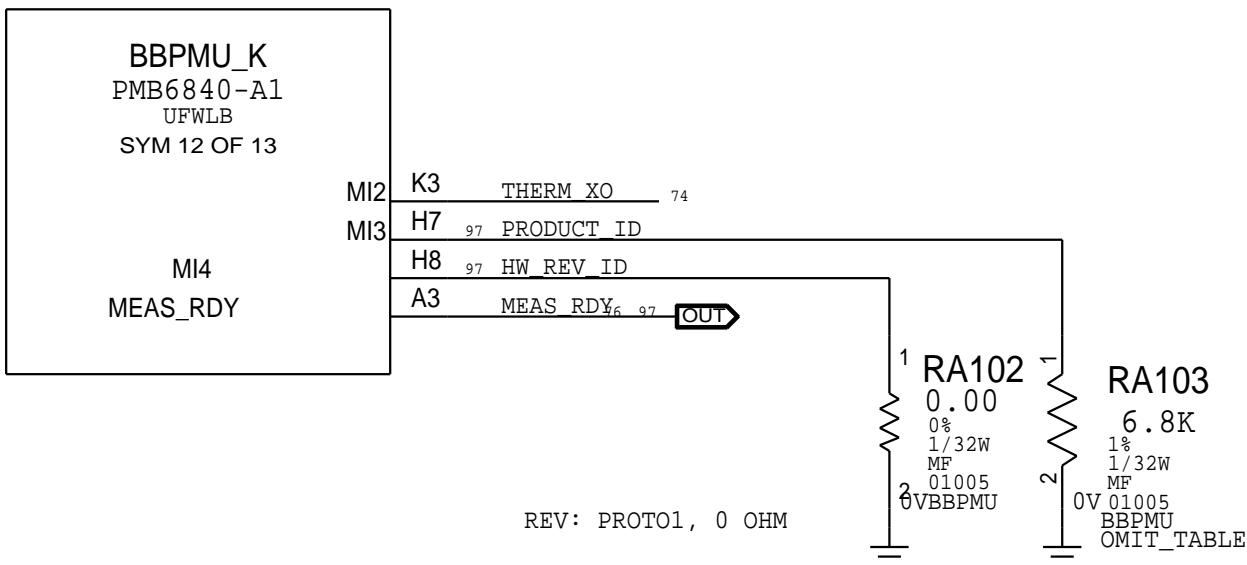
| REVISION | | | PRODUCT | | |
|----------|--------|----------|---------|--------------|--------|
| RA102 | MLB | RF DEV | RA103 | PRODUCT ID | X-CODE |
| 0.0 | PROTO1 | 0.1 | 0.0 | RFDEV 19.1/2 | |
| 1.2K | PROTO2 | 1.0 | 1.2K | RFDEV 19.0 | |
| 2.2K | | 2.0 | 2.2K | ICE19.0 MLB | X1403 |
| 3.3K | | 2.1 | 3.3K | ICE19.1 MLB | X1368 |
| 4.7K | | 3.0 | | ICE19.2 MLB | X1369 |
| 6.8K | | RESERVED | 6.8K | ICE19.5 MLB | X1639 |
| 8.2K | | 4.0 | 8.2K | ICE19.6 MLB | X1638 |
| 10K | | | 10K | | |
| 12K | | | 12K | | |
| 15K | | | 15K | | |
| 18K | | | | | |
| 22K | | | | | |
| 27K | | | 27K | | |
| 33K | | | 33K | | |
| 39K | | | 39K | | |
| 47K | | | 47K | | |
| 56K | | | 56K | | |
| 82K | | | 82K | | |
| 100K | | | | | |
| 120K | | | 120K | | |
| 150K | | | 150K | | |

HWID TABLE RDAR://36303220

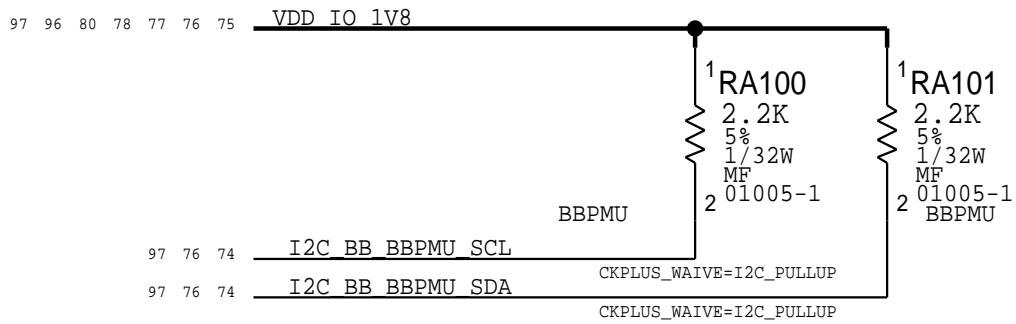
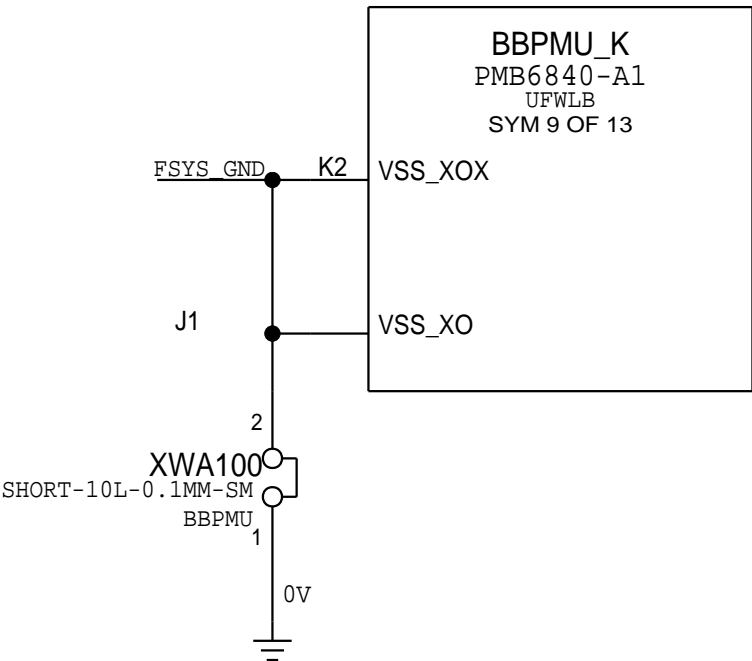
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6PF LOAD CAPACITANCE



BBPMU (12/13)



BBPMU (9/13)



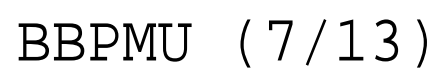
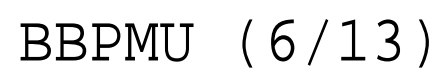
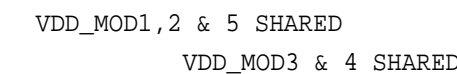
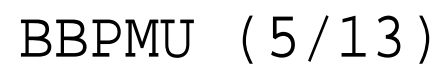
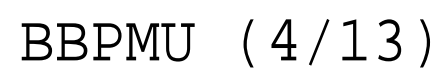
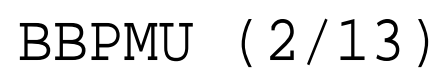
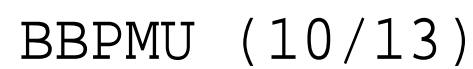
| CLASS DEFINITIONS | | COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR* DP NAMES EX: DP_DP_AA*.DP_BB* (LINE STARTS WITH FLAG DP.) | CLASS OVERRIDE |
|-------------------|----------------|--|-------------------|
| CLASS NAME | CONSTRAINT SET | | |
| RF_SHIELD | S | A_DIELECTRIC_2XD | Y |
| RF_SHIELD | S | A_DIELECTRIC_2X | Y |

| CLASS TO CLASS SPACING | | |
|------------------------|------------|------------------|
| CLASS NAME | CLASS NAME | CONSTRAINT SET |
| RF_SHIELD | GND | DEFAULT |
| RF_SHIELD | RF_SHIELD | A_DIELECTRIC_2XD |

| NET RULE ASSIGNMENT | |
|---------------------|---|
| CONSTRAINT SET | COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*) |
| P | PWR_100UM VPMICREF, VPMIC, VOTP |

| PART# | QTY | DESCRIPTION | REFERENCE DESIGNATOR(S) | BOM OPTION |
|-----------|-----|---------------|-------------------------|------------|
| 118S00120 | 1 | 6.8K 01005 1% | RA103 | ICE19.5 |
| 118S00072 | 1 | 8.2K 01005 1% | RA103 | ICE19.6 |

D

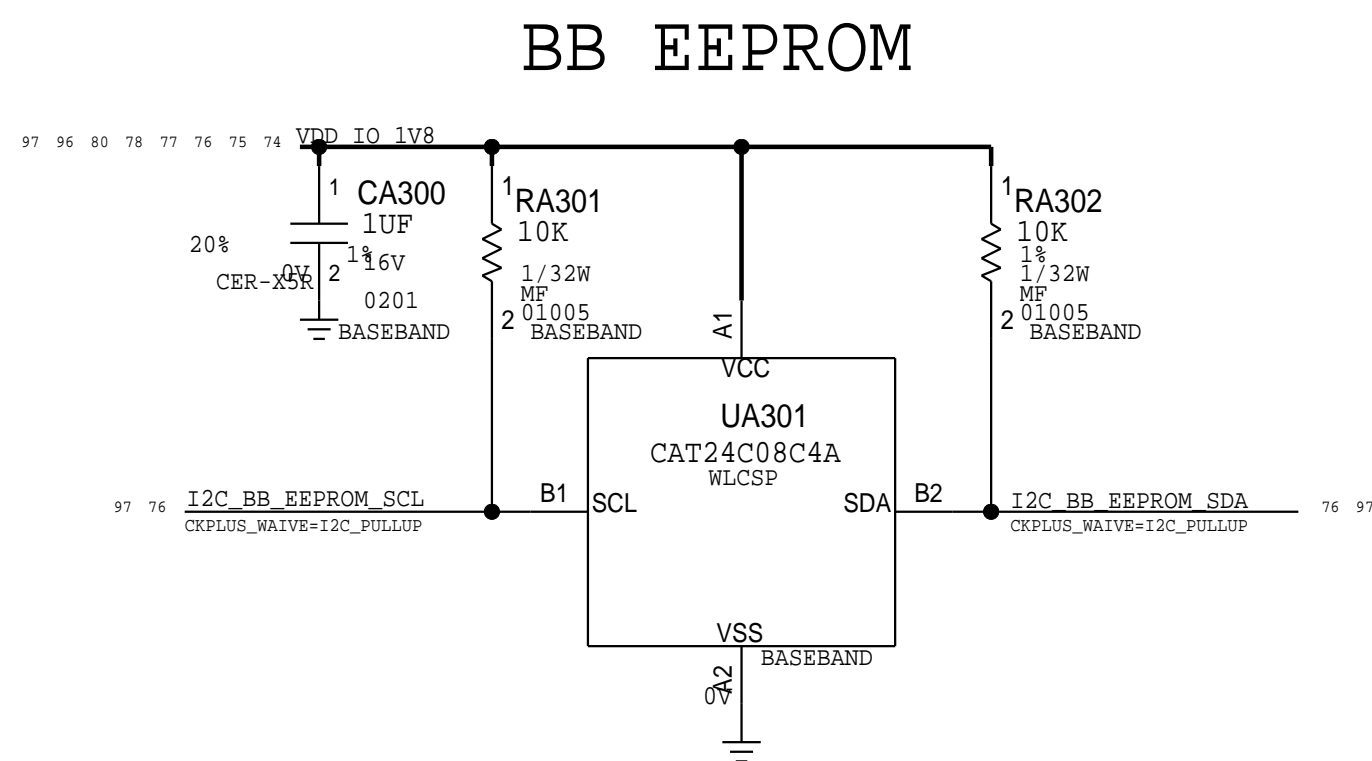
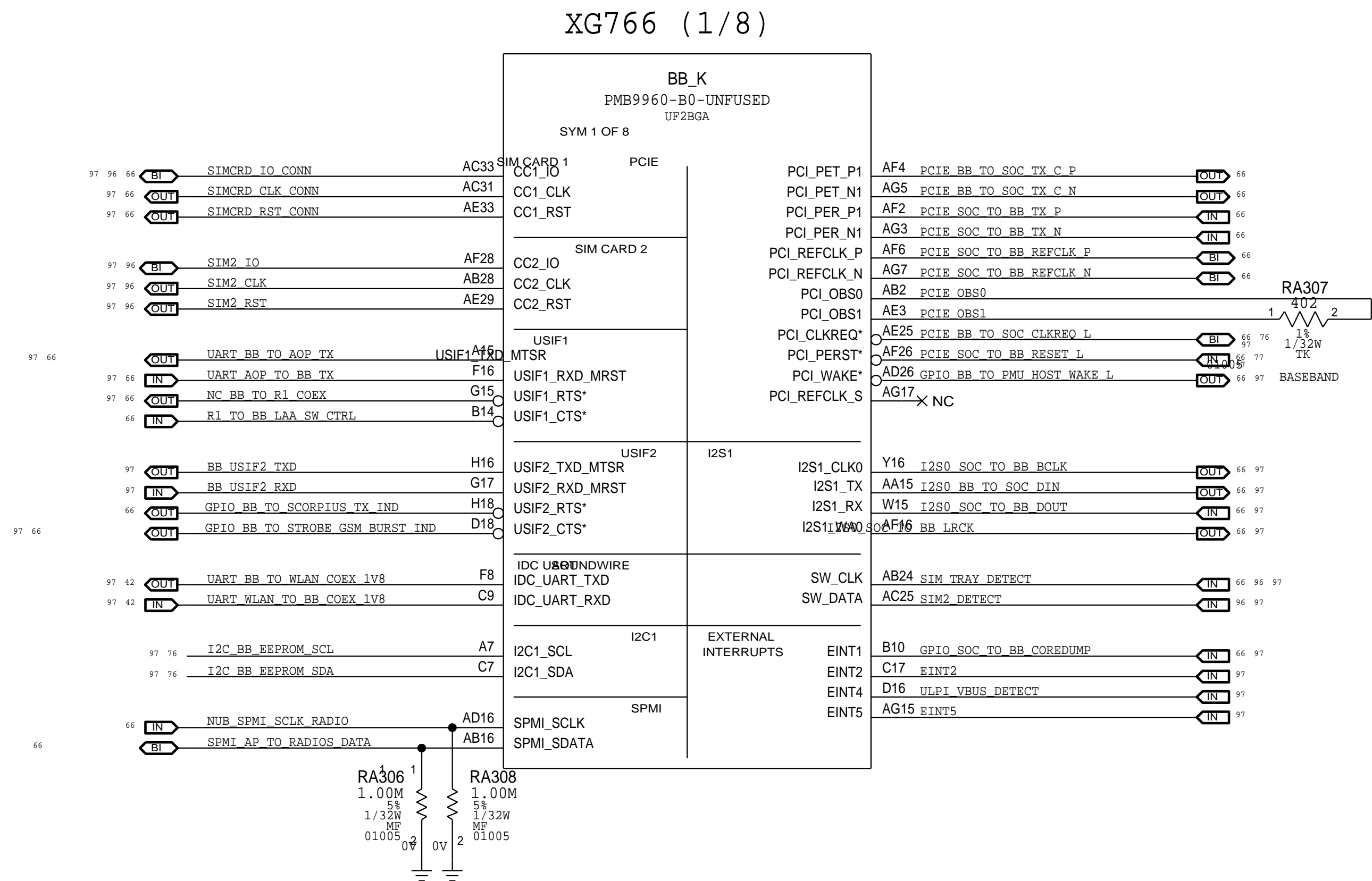
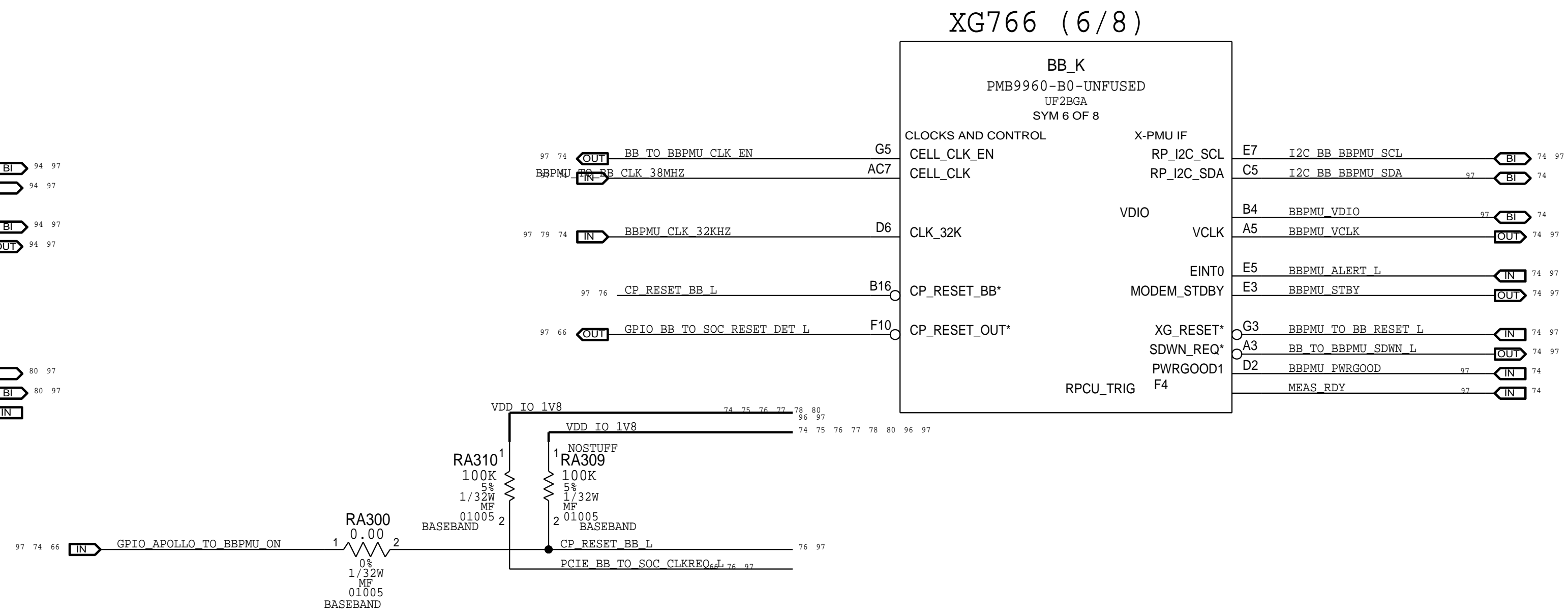
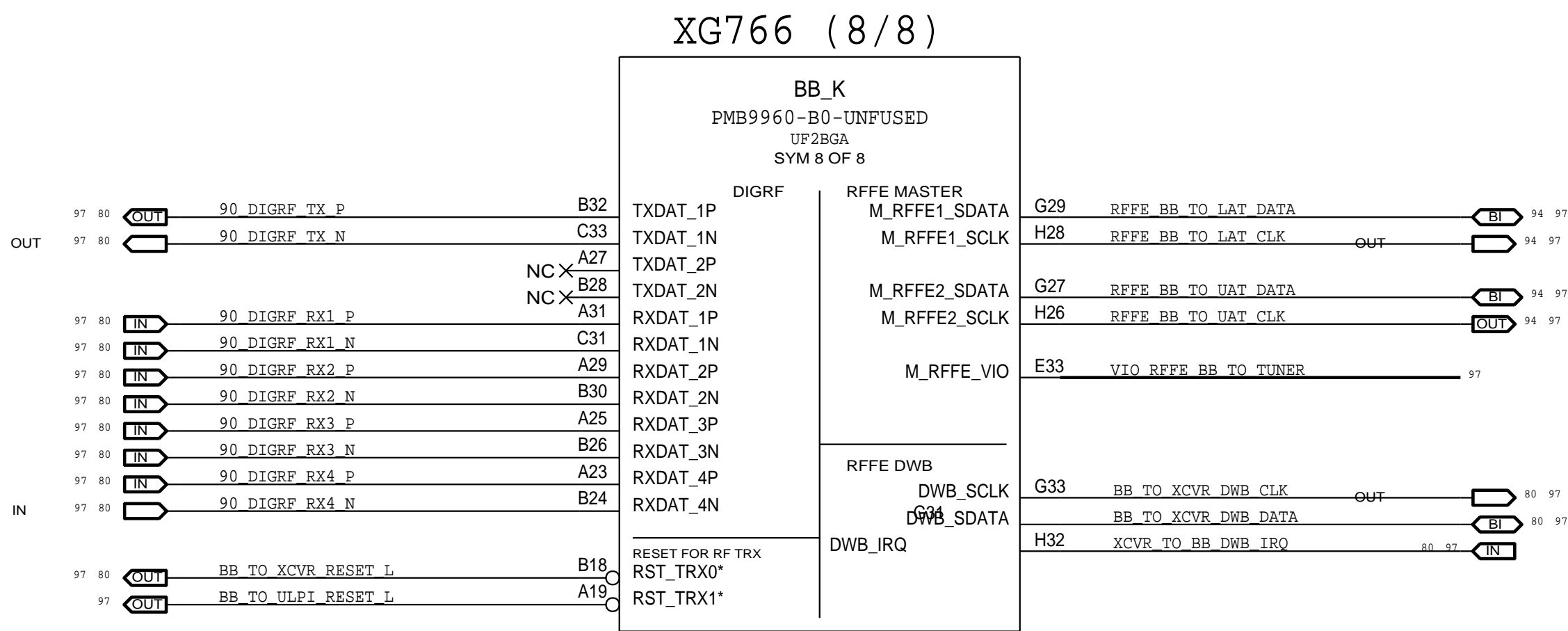


A

BA

CONFIDENTIAL AND PROPRIETARY APPLE SYSTEM DESIGN. FOR REFERENCE PURPOSE ONLY - NOT A CHANGE REQUEST

BB: INTERFACE (1/3)



| CLASS DEFINITIONS | | | COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR* | CLASS OVERIDE |
|-------------------|-----|------------------|--|------------------|
| CLASS NAME | REF | CONSTRAINT SET | DP NAMES EX: DP_DP_AA*, DP_BB* (LINE STARTS WITH FLAG DP:) | Y/N |
| RF_SHIELD | S | A_DISELECTRIC_2X | PCIE_OBS*, BBPWU_VDIO, BBPWU_VCLK | Y |
| RFFE_SHIELD | S | A_DISELECTRIC_2X | *RFFE*, *SPMI*, BB_TO_XCVR_DWB*, XCVR_TO_BB_DWB* | Y |

| CLASS DEFINITIONS | | | COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR* | OVERIDE |
|-------------------|------|-----------------|--|---------|
| CLASS NAME | UNIT | CONSTRAINT SET | DP NAMES EX: DP_DP_AA*, DP_BB* (LINE STARTS WITH FLAG DP:) | Y/N |
| DIGRF | S | A_DIELECTRIC_2X | 90_DIGRF* | |

| CLASS TO CLASS SPACING | | |
|------------------------|------------|----------------|
| CLASS NAME | CLASS NAME | CONSTRAINT SET |
| DIGRF | DIGRF | DEFAULT |
| DIGRF | GND | DEFAULT |

| CLASS TO CLASS SPACING | | |
|------------------------|-------------|----------------|
| CLASS NAME | CLASS NAME | CONSTRAINT SET |
| RFFE_SHIELD | RFFE_SHIELD | DEFAULT |
| RFFE_SHIELD | GND | DEFAULT |

| FORMAN | NET RULE ASSIGNMENT | |
|--------|---------------------|---|
| REF ID | CONSTRAINT SET | COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*) |
| P | A_90_OHM_DIFF | 90_DIGRF* |
| E | DIGRF_DP | 90_DIGRF* |

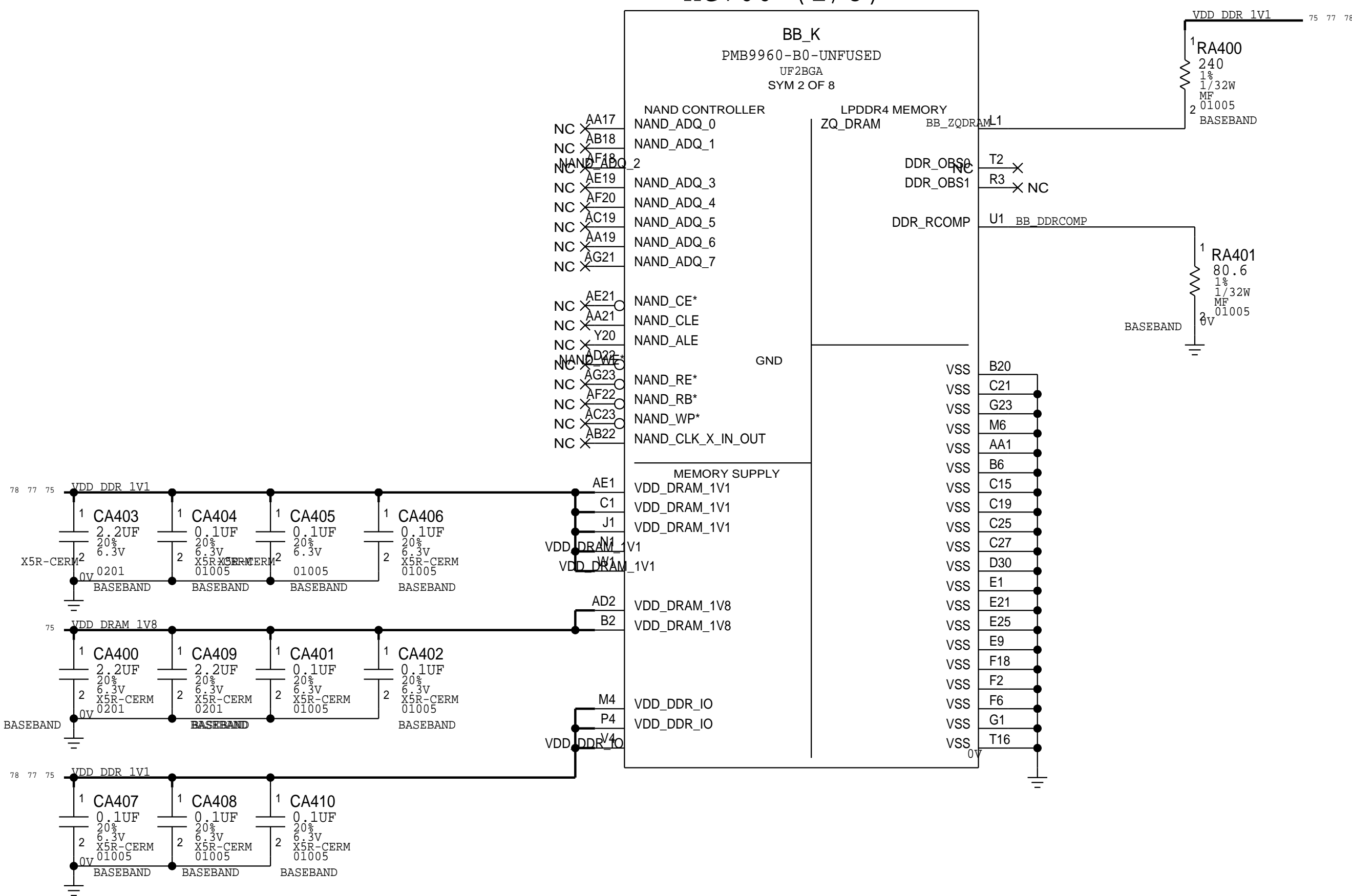
CONFIDENTIAL AND PROPRIETARY APPLE SYSTEM DESIGN. FOR REFERENCE PURPOSE ONLY - NOT A CHANGE REQUEST

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|------------------------------|----------------------|

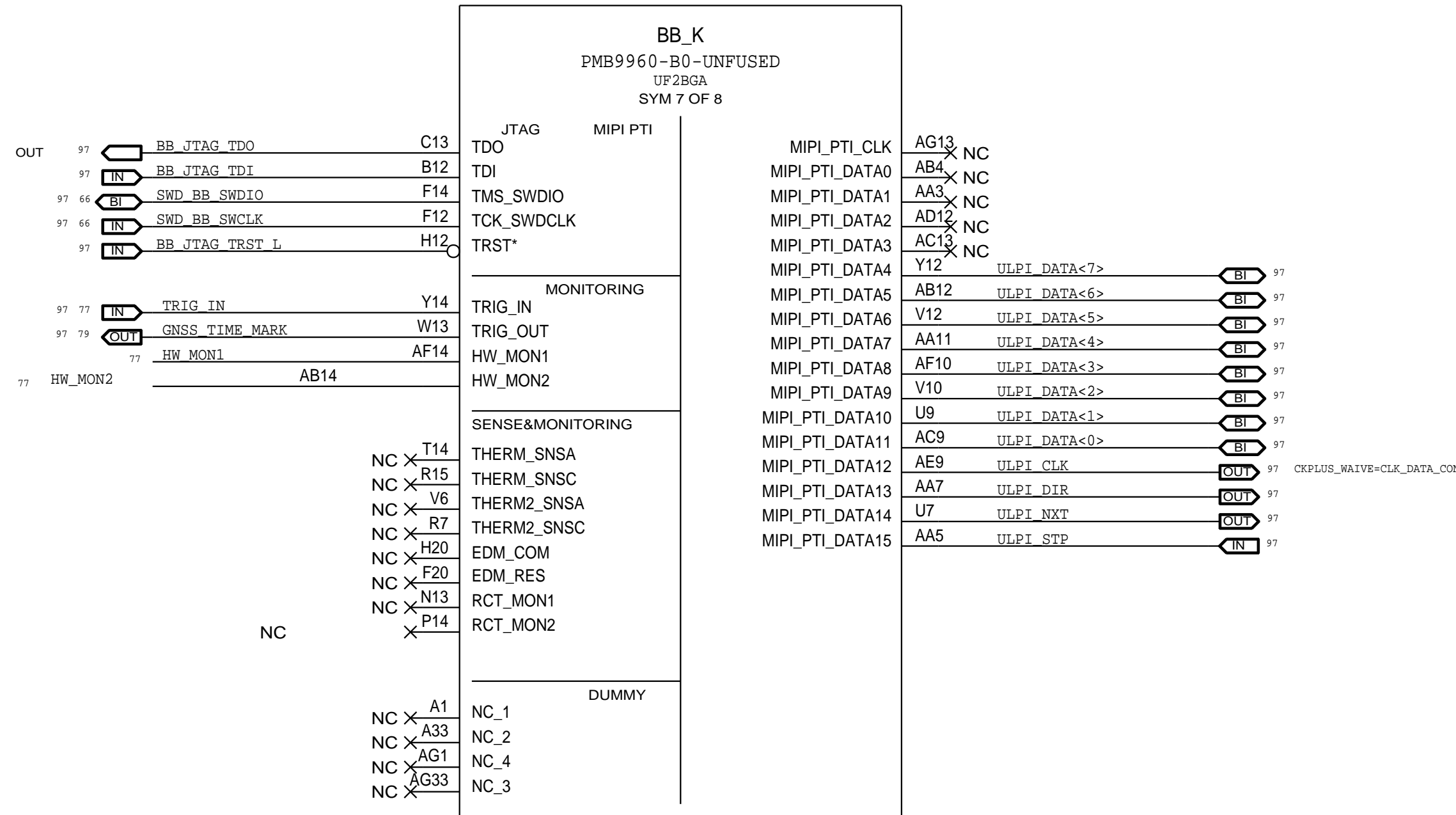
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| PAGE TITLE | BB: INTERFACE (1/3) |
|------------|---------------------|

BB: MEMORY & TRACING (2/3)

XG766 (2/8)

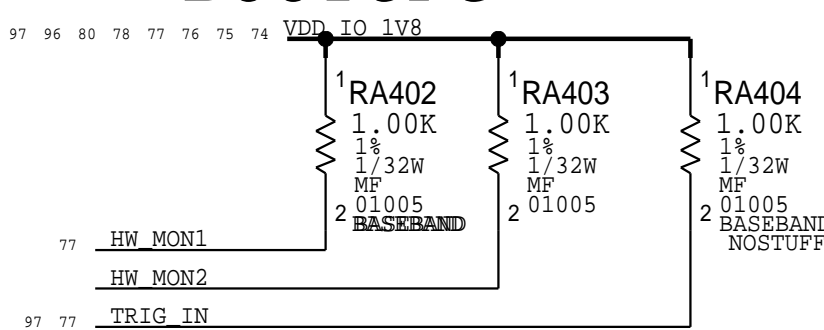


XG766 (7/8)



| | | | |
|---------------------------------------|---|---|---|
| NAND | 0 | 0 | 1 |
| FLASHLESS | 1 | 0 | 1 |
| FLASHLESS WDOG DIS | 1 | 1 | 0 |
| NAND (NON-SECURE) | 1 | 1 | 1 |
| BOOTSTRAPS ARE INTERNALLY PULLED DOWN | | | |

BOOTCFG



PERST_L IS PULLED DOWN ON AP_DEV.
BB REQUIRES PERST_L BE PULLED UP WHEN PCIE IS NOT USED
ASSUME THAT IN NAND BOOT, PCIE IS NOT USED

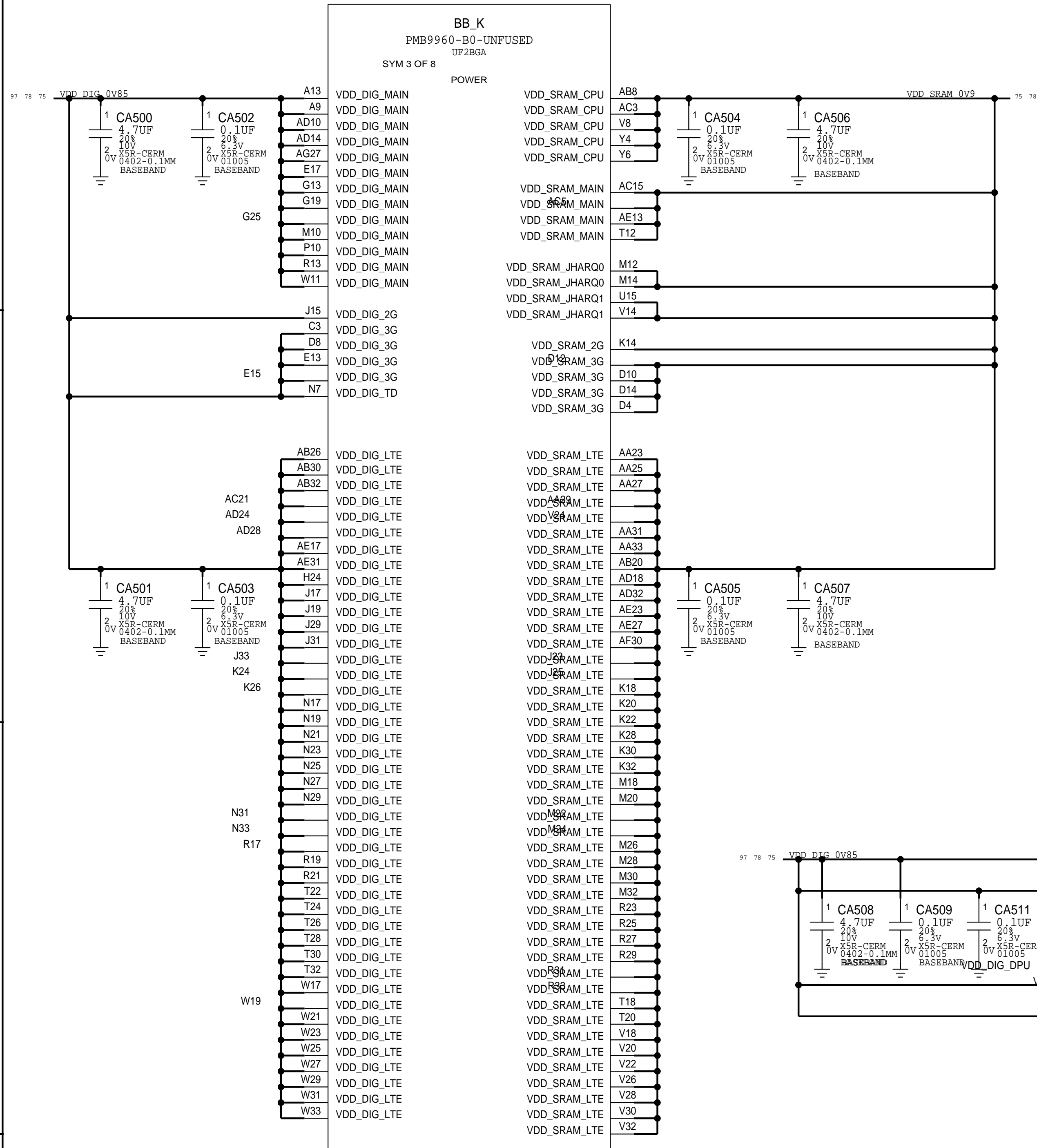
| CLASS DEFINITIONS | | COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR* | OVERRIDE | CLEAR |
|-------------------|-------------------|---|----------|-------|
| CLASS NAME | CONSTRAINT SET | | | |
| RF_SHIELD | S_A_DIELECTRIC_2X | BB_ZQDRAM, BB_DDRCOMP | | Y |

| | |
|------------------------------|----------------------------|
| SYNC_MASTER=RADIO_MLB_0.57.0 | SYNC_DATE=05/16/2019 |
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BB: POWER (3/3)

XG766 (3/8)

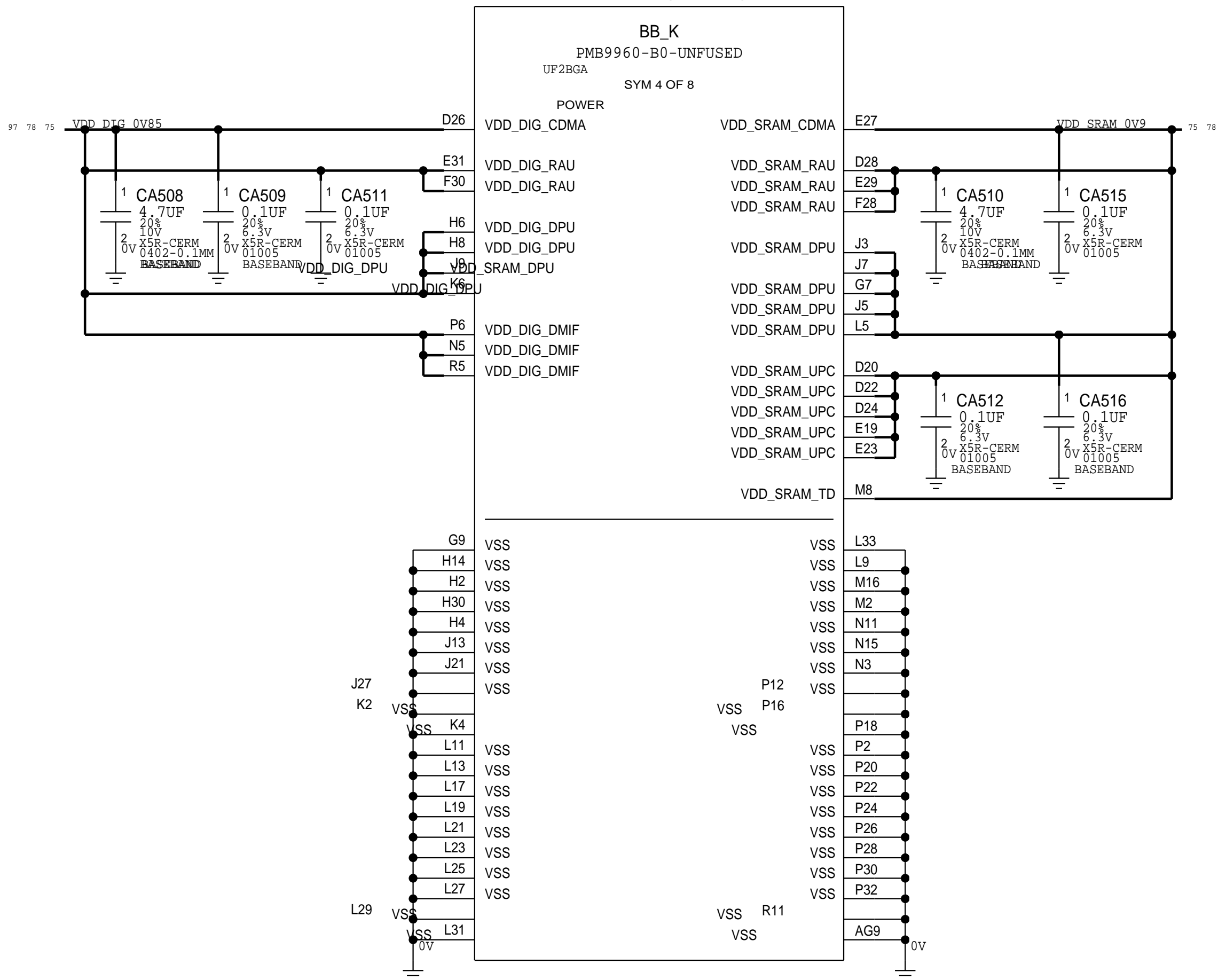
D



B

A

XG766 (4/8)

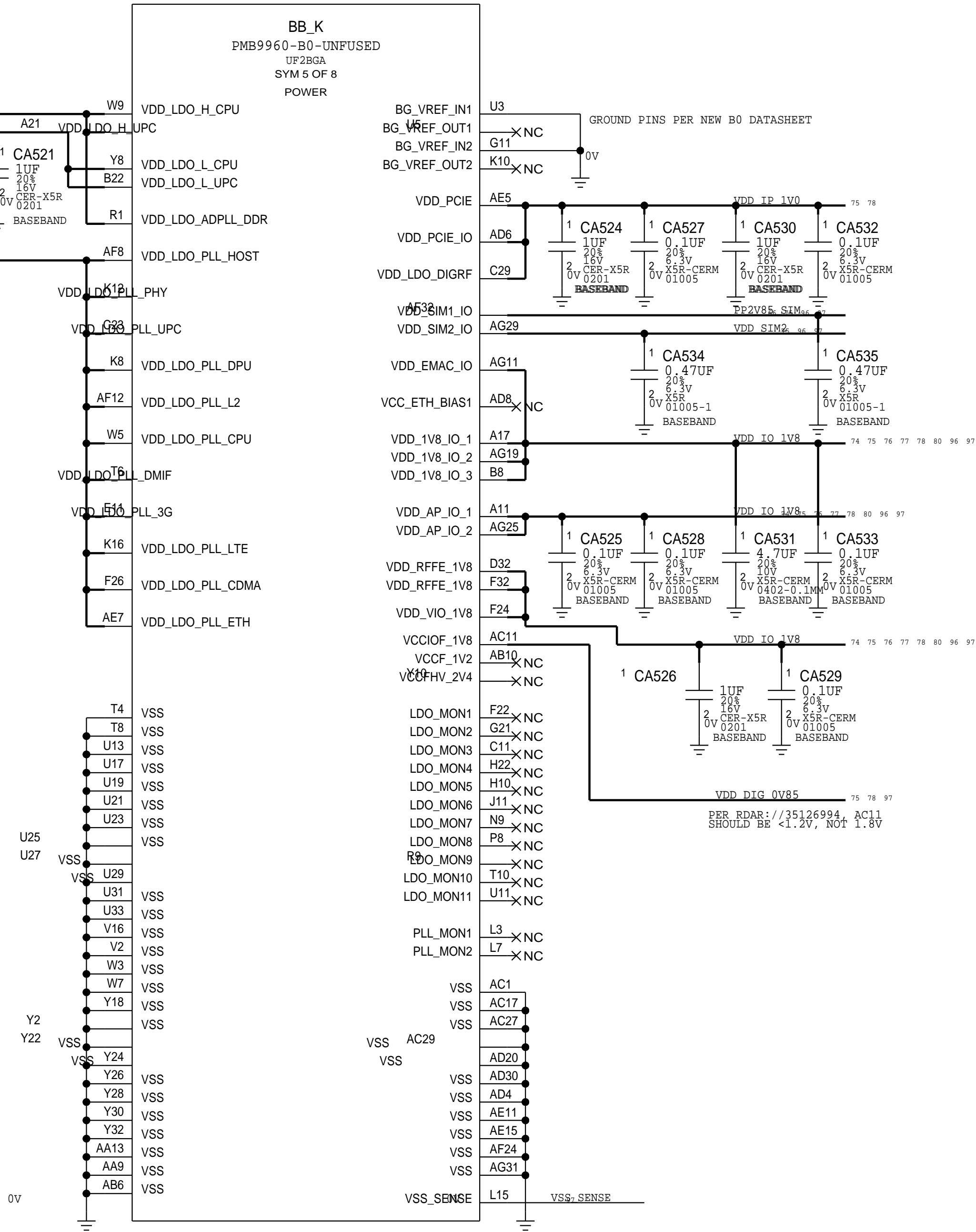


P12

P16

R11

XG766 (5/8)



VDD_AP_IO = 1.8V

D

C

B

A

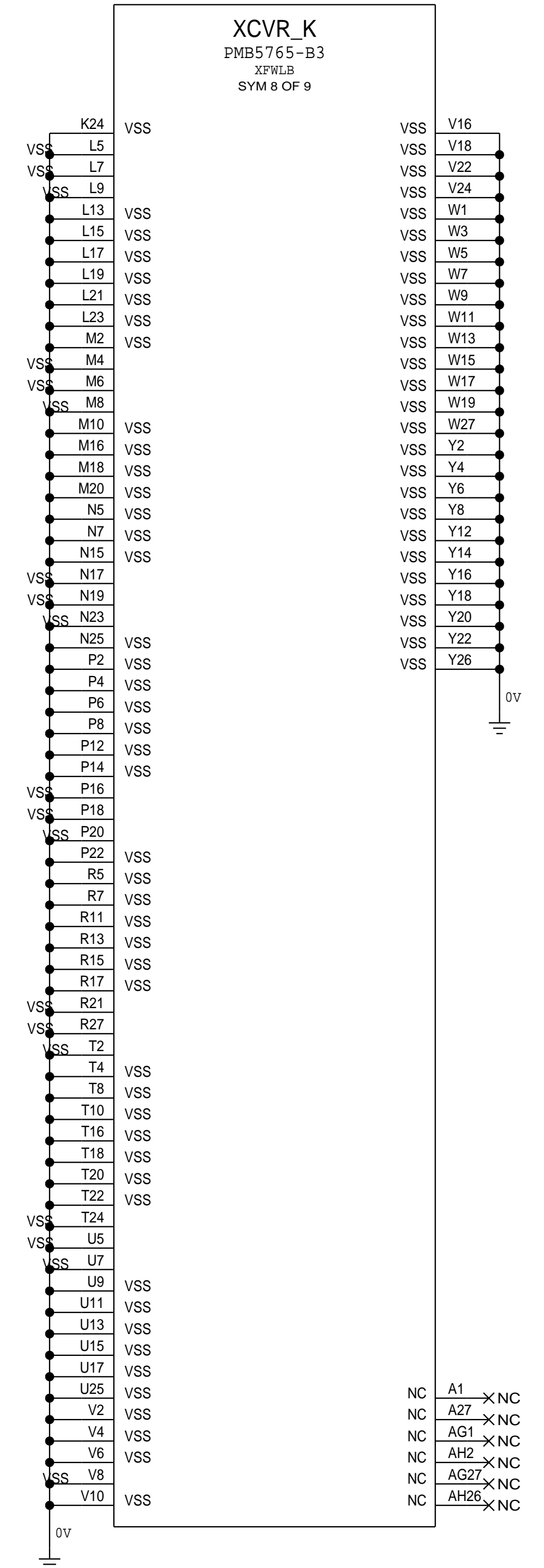
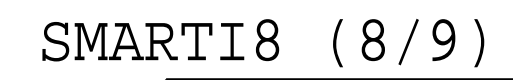
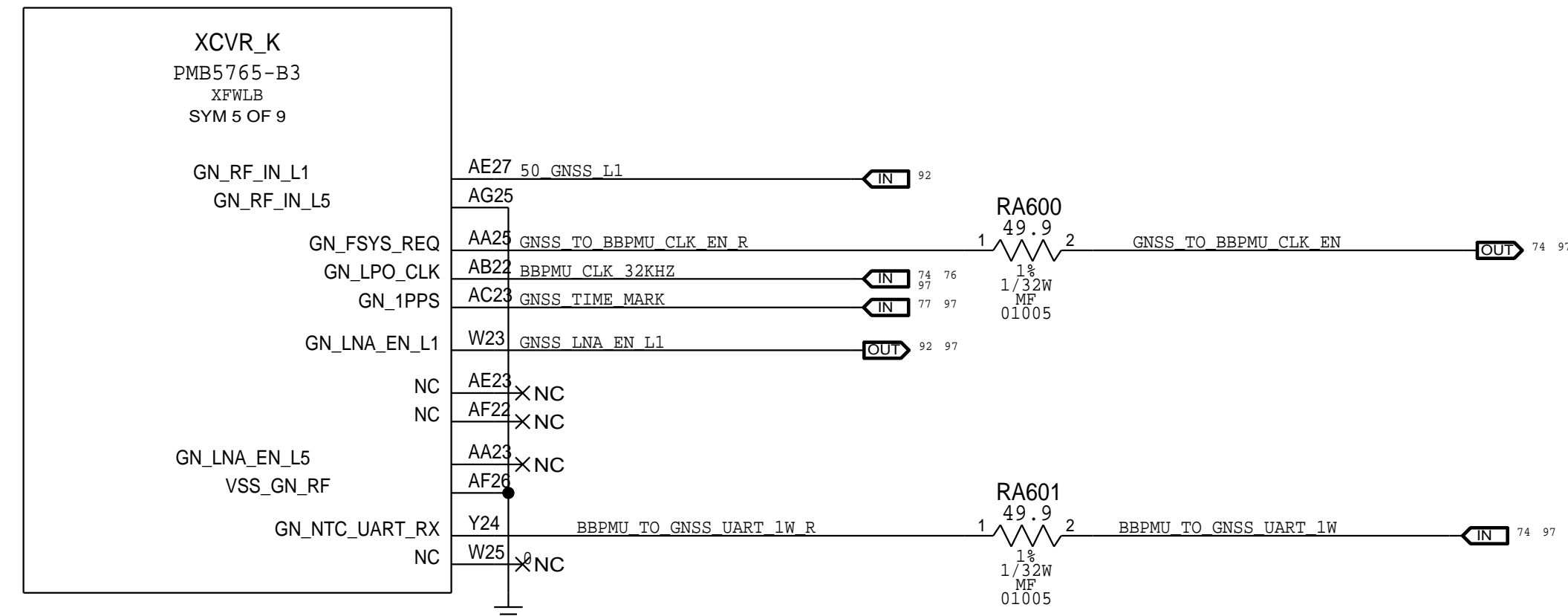
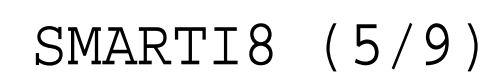
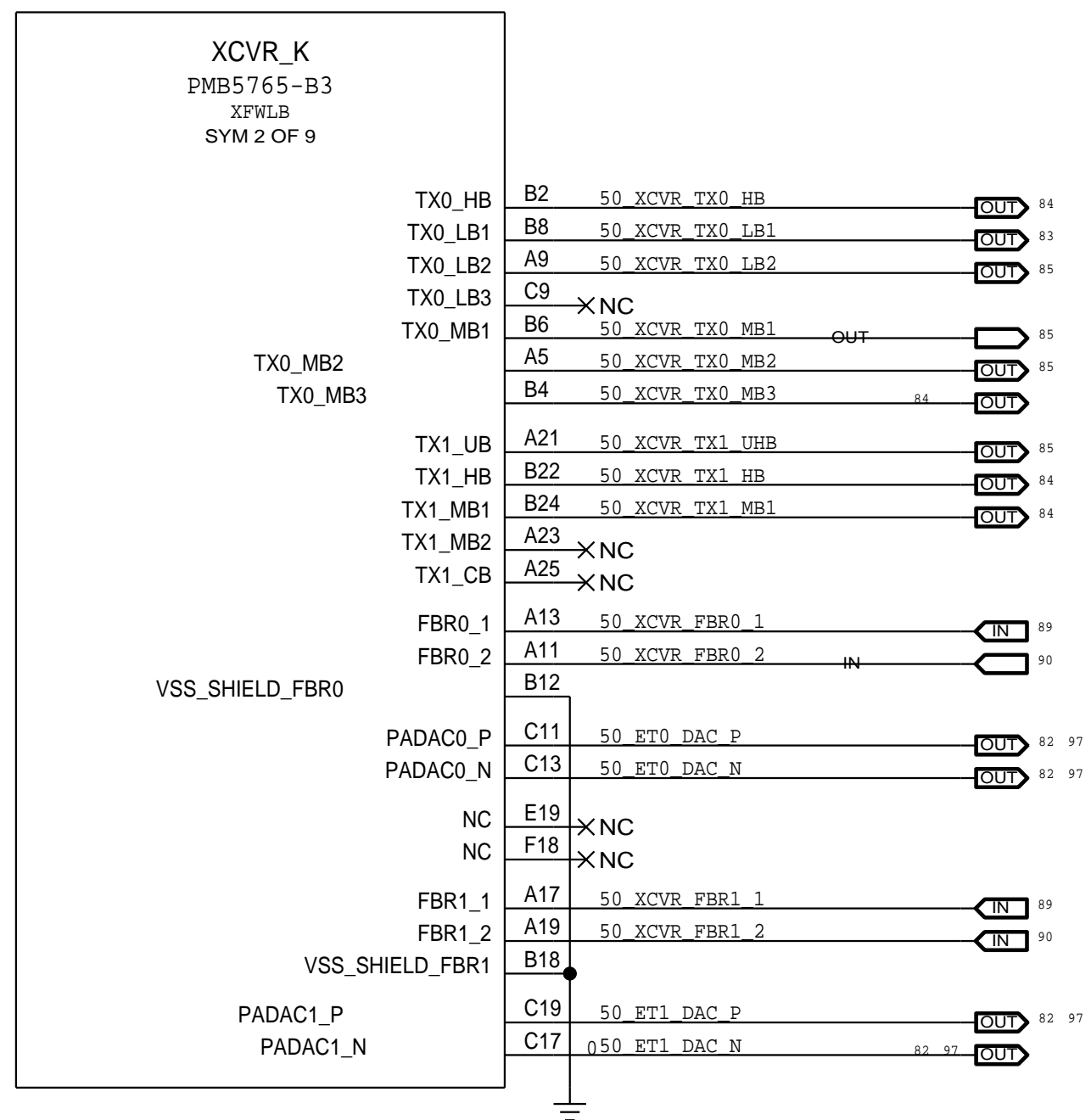
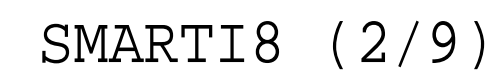
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SYNC_DATE=05/16/2019

PAGE TITLE

BB: POWER (3/3)

XCVR: TRANSMIT & GNSS (1/3)



| CLASS TO CLASS SPACING | | |
|----------------------------|----------------------------|--|
| CLASS NAME | CLASS NAME | CONSTRAINT SET |
| 50_WIDE | 50_WIDE | A_DIELECTRIC_4_6XD_50_WIDE_SF |
| 50_WIDE | 50_THIN | A_DIELECTRIC_4_64XD_50_WIDE_SF |
| 50_WIDE_L1_THIN | 50_WIDE_L1_THIN | A_DIELECTRIC_4_64XD_50_WIDE_L1_THIN_SF |
| 50_THIN | 50_THIN | A_DIELECTRIC_4_64XD_50_THIN_SF |
| 50_WIDE_L1_THIN | 50_WIDE_L1_THIN_UNSHIELDED | A_DIELECTRIC_4_64XD_50_WIDE_L1_THIN_SF |
| 50_WIDE_L1_THIN_UNSHIELDED | 50_WIDE_L1_THIN_UNSHIELDED | A_DIELECTRIC_2XL |

| FORMID | NET RULE ASSIGNMENT | |
|--------|----------------------|---|
| | CONSTRAINT SET | COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*) |
| P | A_50_WIDE_L1_THIN_SE | 50_XCVR* |
| P | GENERIC_DP | 50_ET* |
| E | GENERIC_DP | 50_ET* |

| CLASS DEFINITIONS | | | COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR* DP NAMES EX: DP_DP_AA_DP_BB* (LINE STARTS WITH FLAG DP:*) | NAME COLUMN |
|-------------------|-----|------------------------------------|--|----------------|
| CLASS NAME | ... | CONSTRAINT SET | | Y/N |
| 50_WIDE_L1_THIN | S | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE | 50_XCVR_TX0_LB2, 50_XCVR_TX0_MB2 | Y |
| 50_WIDE_L1_THIN | S | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE | 50_XCVR_TX0_TB_HB, 50_XCVR_TX0_LB1, 50_XCVR_TX0_MB1 | Y |
| 50_WIDE_L1_THIN | S | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE | 50_XCVR_TX0_MB3 | Y |
| 50_WIDE_L1_THIN | S | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE | 50_XCVR_TX1*, 50_XCVR_FBR* | Y |
| RF_SHIELD | S | A_DIELECTRIC_2X | 50_ET* | Y |
| GENERIC_DP | P | GENERIC_DP | DP:DP_50_ET* | Y |

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| | |
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| PAGE TITLE | |

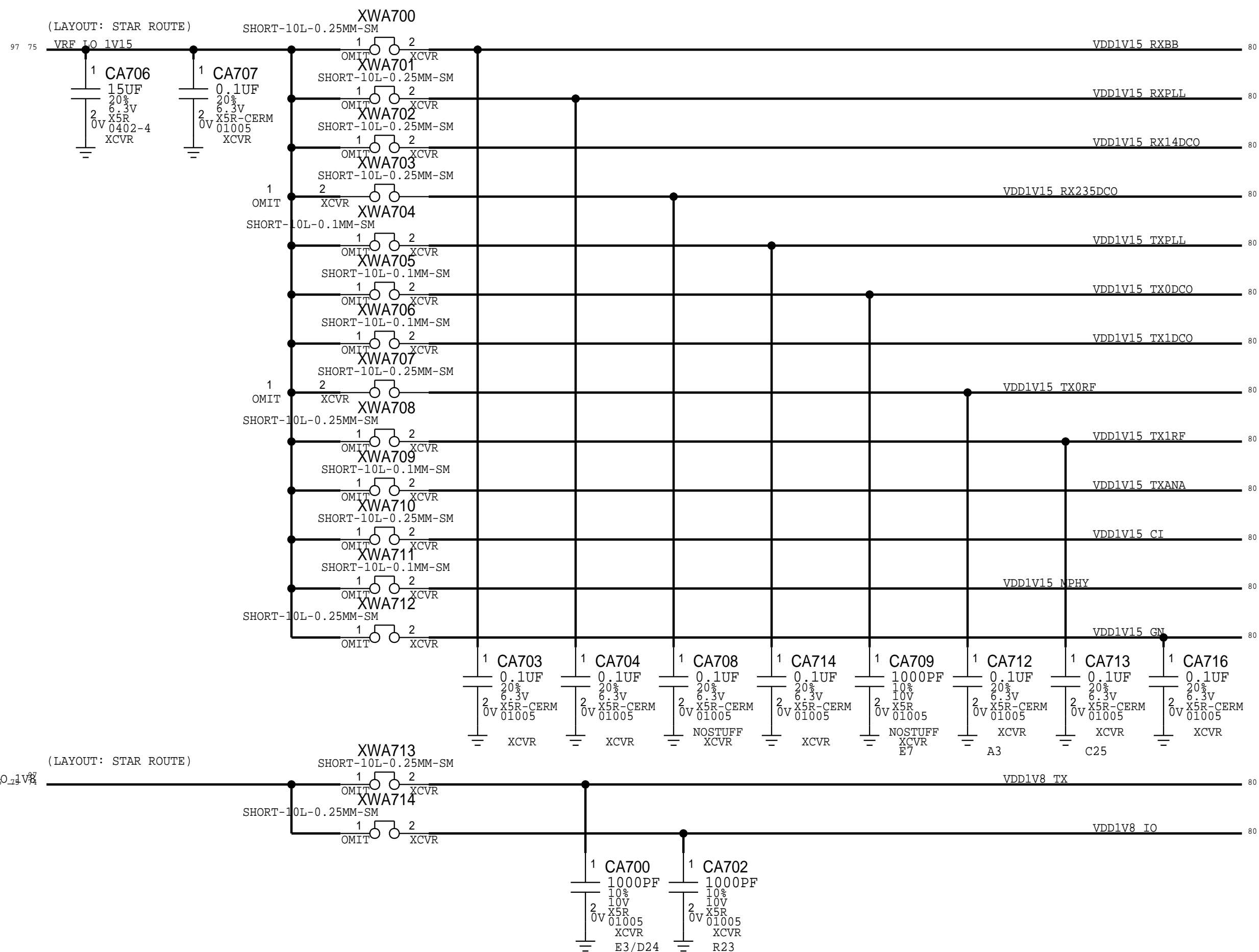
XCVR: TX & GNSS (1/3)

XCVR: INTERFACE & PWR (2/3)

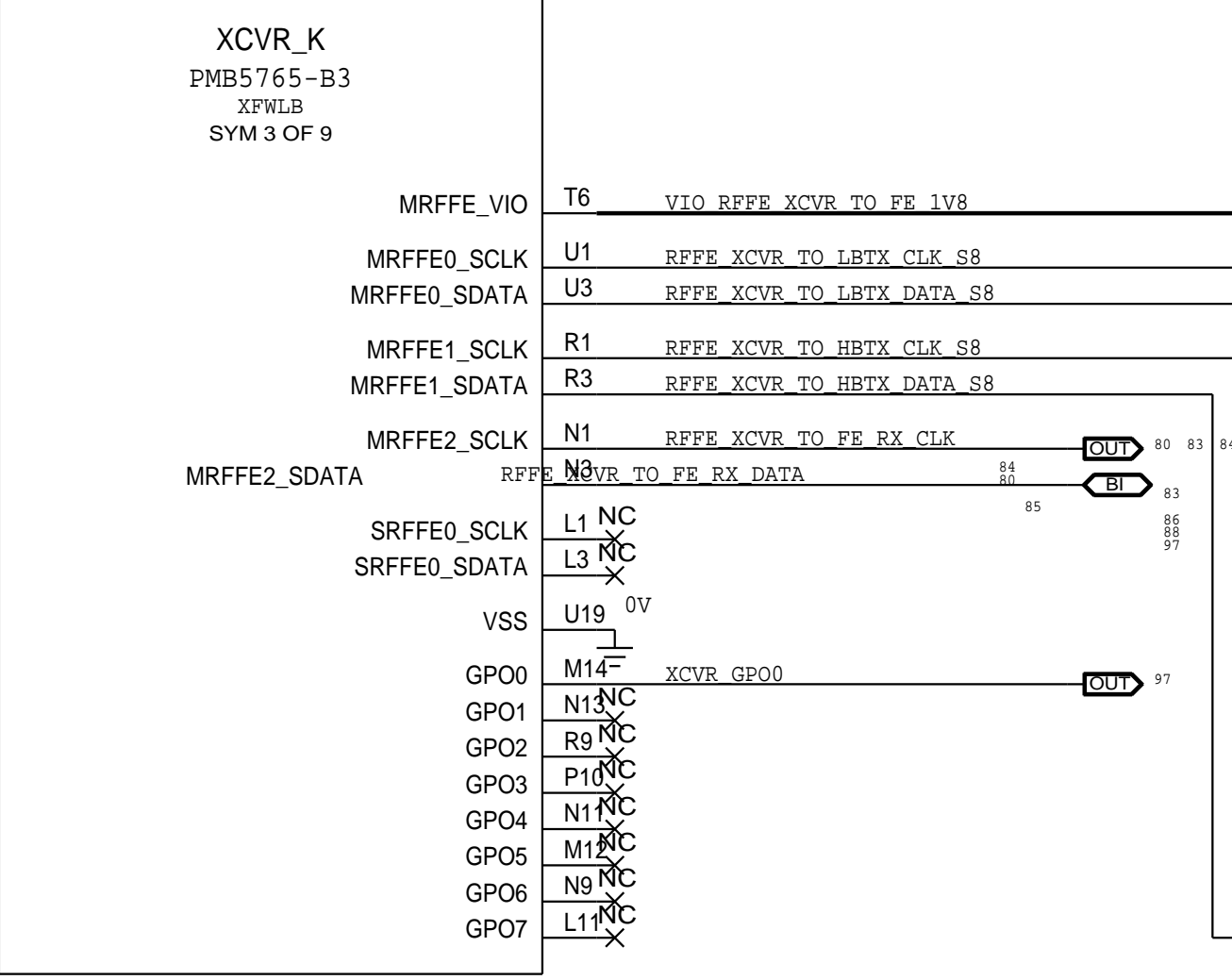
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B

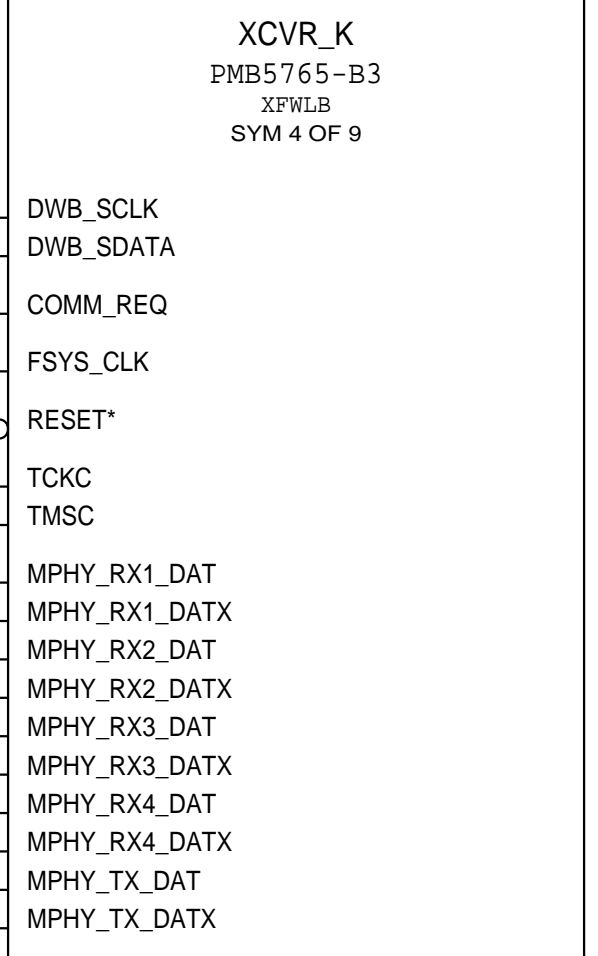
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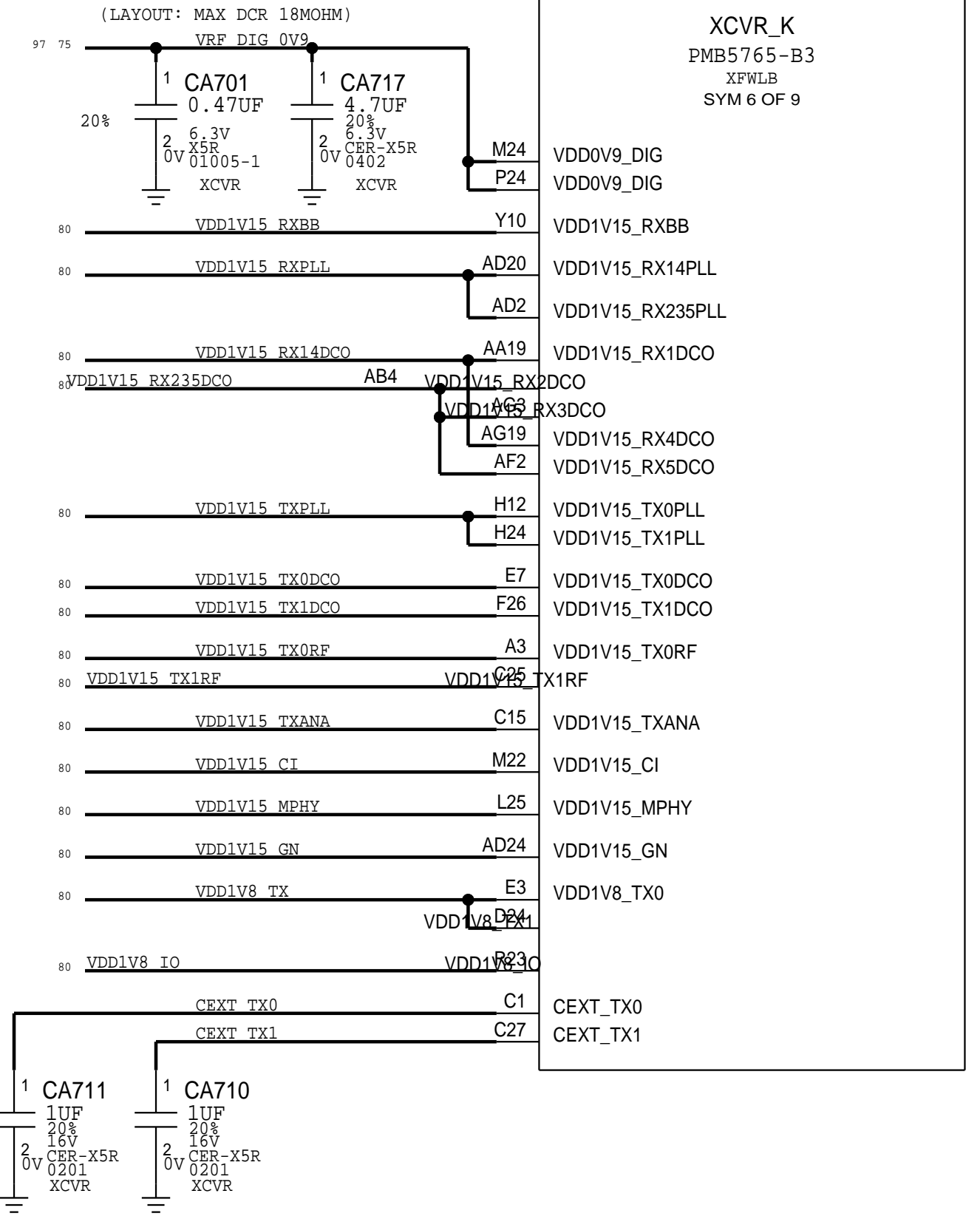
SMARTI8 (3/9)



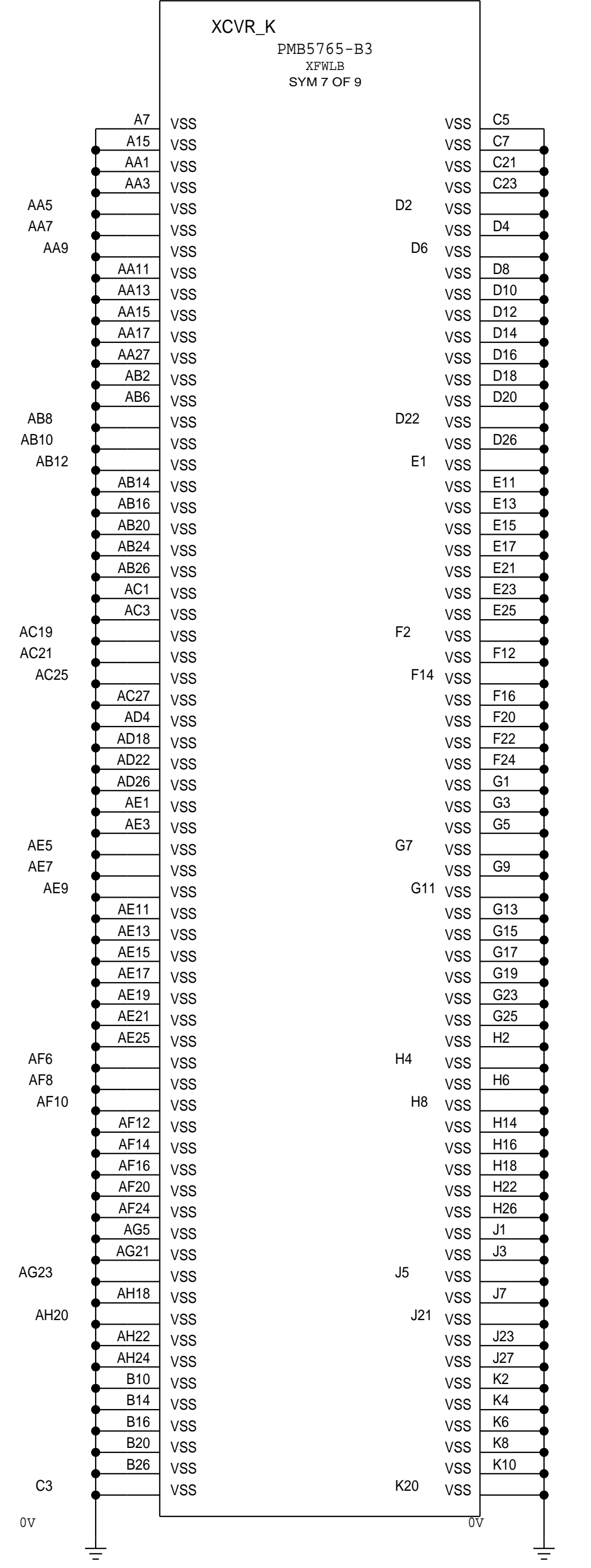
SMARTI8 (4/9)



SMARTI8 (6/9)

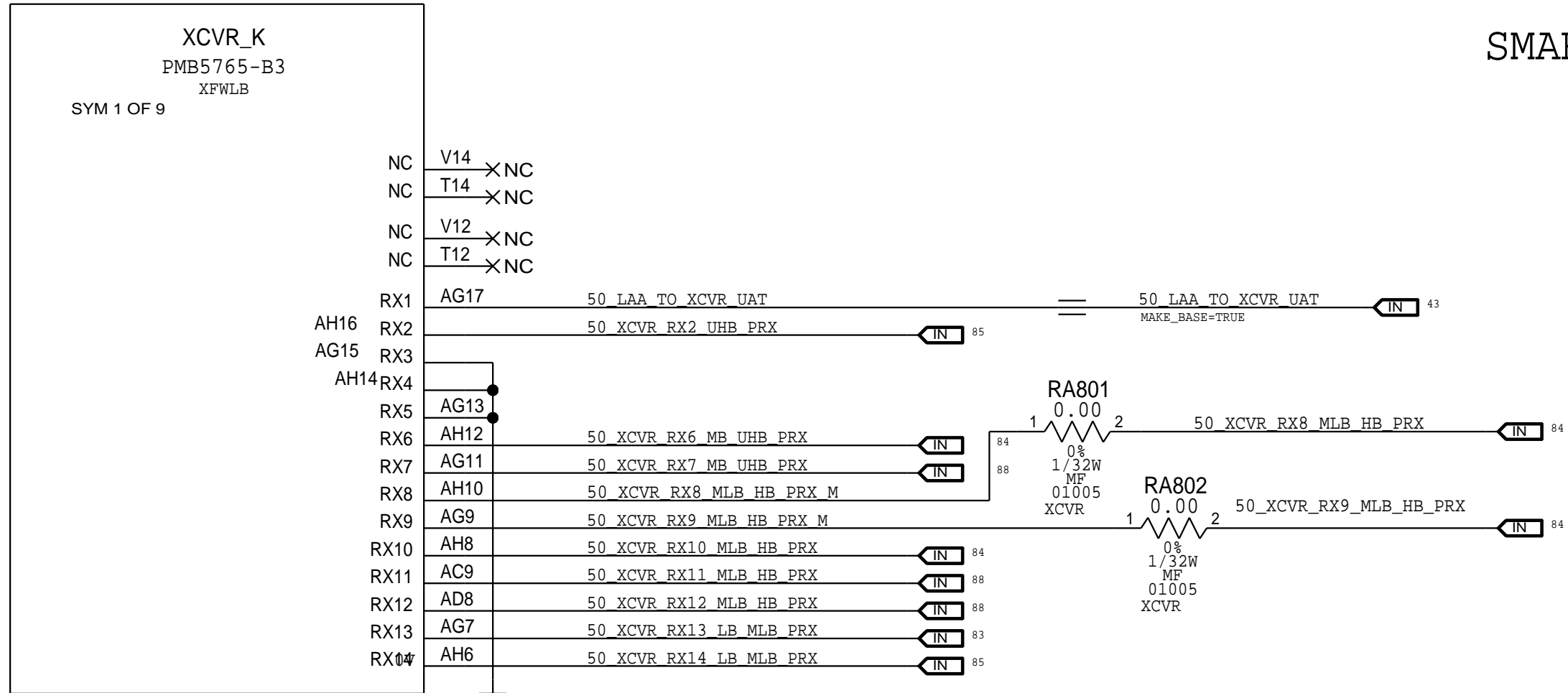


SMARTI8 (7/9)



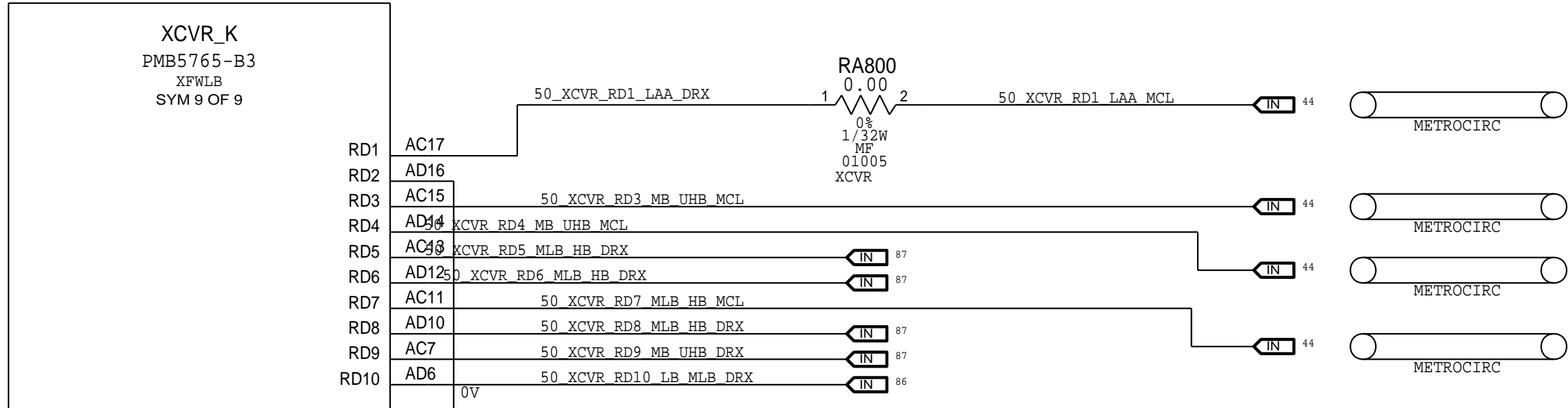
XCVR:
PRIMARY
DIVERSITY
RX (3/3)

SMARTI8 PRX (1/9)



CONNECT ALL UNUSED RX PORTS TO GND

SMARTI8 DRX (9/9)



CONNECT ALL UNUSED RD PORTS TO GND.

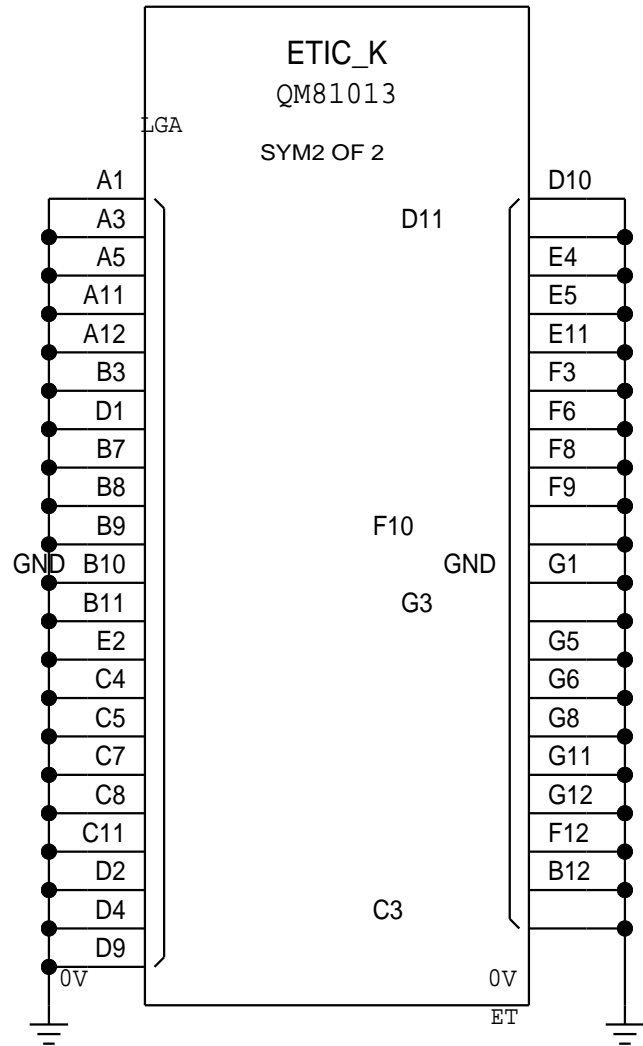
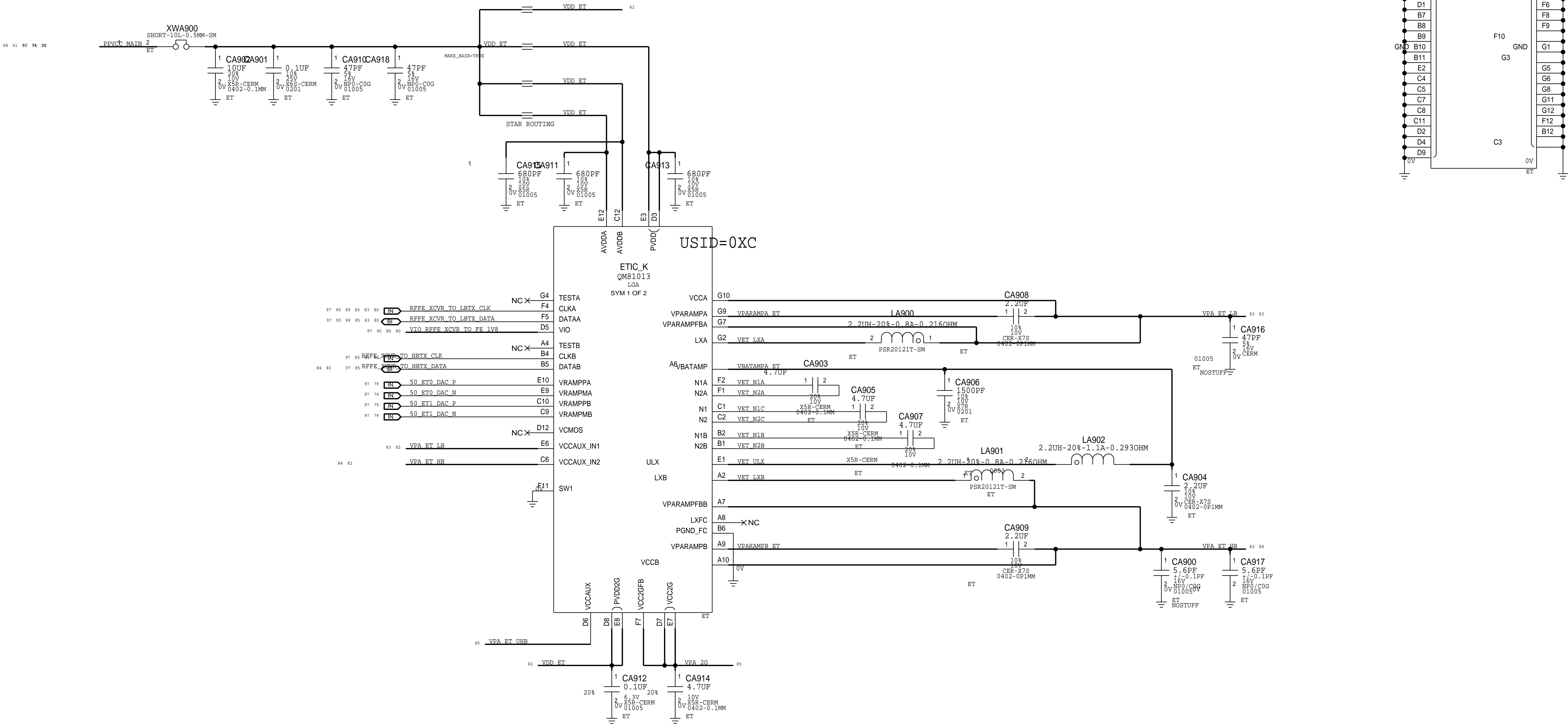
| DOMAIN | NET RULE ASSIGNMENT | |
|--------|----------------------|---|
| | CONSTRAINT SET | COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*) |
| P | A_50_WIDE_L1_THIN_SE | 50_LAA_TO_XCVR* |

| CLASS DEFINITIONS | | COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR* DP NAMES EX: DP:DP_AA*.DP_BB* (LINE STARTS WITH FLAG DP:) | | CLASS COVERAGE |
|----------------------------|------|--|--|----------------|
| CLASS NAME | TYPE | CONSTRAINT SET | | Y/N |
| 50_WIDE_L1_THIN_UNSHIELDED | S | A_DIELECTRIC_2XL | 50_LAA_TO_XCVR* | Y |
| 50_WIDE_L1_THIN | S | A_DIELECTRIC_2XL | 50_XCVR_RX2*, 50_XCVR_RX10* | Y |
| 50_WIDE_L1_THIN | S | A_DIELECTRIC_2XL | 50_XCVR_RX13*, 50_XCVR_RX14* | Y |
| 50_WIDE_L1_THIN | S | A_DIELECTRIC_2XL | 50_XCVR_RX6*, 50_XCVR_RX7*, 50_XCVR_RX8* | Y |
| 50_WIDE_L1_THIN | S | A_DIELECTRIC_2XL | 50_XCVR_RX9*, 50_XCVR_RX11*, 50_XCVR_RX12* | Y |
| 50_WIDE_L1_THIN_UNSHIELDED | S | A_DIELECTRIC_2XL | 50_XCVR_RD10* | Y |
| 50_WIDE_L1_THIN_UNSHIELDED | S | A_DIELECTRIC_2XL | 50_XCVR_RD1*, 50_XCVR_RD3*, 50_XCVR_RD4* | Y |
| 50_WIDE_L1_THIN_UNSHIELDED | S | A_DIELECTRIC_2XL | 50_XCVR_RD5*, 50_XCVR_RD6*, 50_XCVR_RD7* | Y |
| 50_WIDE_L1_THIN_UNSHIELDED | S | A_DIELECTRIC_2XL | 50_XCVR_RD8*, 50_XCVR_RD9* | Y |

| | |
|------------------------------|----------------------|
| SYNC_MASTER=RADIO_MLB_0.57.0 | SYNC_DATE=05/16/2019 |
| PAGE TITLE | |

XCVR: PRX DRX (3/3)

ET MODULATOR



| CONSTRAINT SET | NET RULE ASSIGNMENT | |
|----------------|---------------------|---|
| | CONSTRAINT SET | COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*) |
| P | PWR_SHAPE | VPA_ET_LB, VPA_ET_HB, VPA_ET_UHB, VPA_2G |
| P | PWR_SHAPE | VDD_ET*, V*_ET, VET_LX*, VET_ULX |
| P | PWR_SHAPE | VET_N* |

SYNC_MASTER=RADIO_MLB_0.57.0

PAGE TITLE

ET

LB SPAD

D

B

A

D

C

B

A

| NAME | NET RULE ASSIGNMENT |
|------------------------|---|
| CONSTRAINT SET | COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*) |
| P A_50_WIDE_L1_THIN_SE | 50_LBPA_DRX_OUT, 50_UHBPA_2G_LB* |
| P A_50_WIDE_L1_THIN_SE | 50_LBPA_ANT*, 50_LB_TX_ANT1* |
| P A_50_WIDE_L1_THIN_SE | 50_TRX_LB_MCL, 50_DRX_LB_MCL |

| CLASS DEFINITIONS | | COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR* | | CLASS |
|-------------------|-------------------------------------|---|---|---------|
| CLASS NAME | CONSTRAINT SET | DP NAMES EX: DP-DP_AA*.DP_BB* (LINE STARTS WITH FLAG DP:) | | CHANGES |
| 50_WIDE_L1_THIN | A_DIIELECTRIC_2X_50_WIDE_L1_THIN_SE | 50_LBPA_DRX_OUT, 50_UHBPA_2G_LB* | | Y |
| 50_WIDE_L1_THIN | A_DIIELECTRIC_2X_50_WIDE_L1_THIN_SE | 50_LBPA_ANT*, 50_LB_TX_ANT1* | | Y |
| 50_WIDE_L1_THIN | A_DIIELECTRIC_2X_50_WIDE_L1_THIN_SE | 50_TRX_LB_MCL, 50_DRX_LB_MCL | Y | |

| NAME | NET RULE ASSIGNMENT |
|----------------|---|
| CONSTRAINT SET | COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*) |
| P PWR_200UM | VDD_LNA_LB_PAD |

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ICE19.5 V ICE19.6 MATCHING

| PART# | QTY | DESCRIPTION | REFERENCE DESIGNATOR(S) | BOM OPTION |
|-----------|--------------|-------------|-------------------------|------------|
| 117S0161 | 0 OHM, 01005 | | RB001 ICE19.5 | |
| 152800492 | 1 NH, 01005 | | RB001 ICE19.6 | |

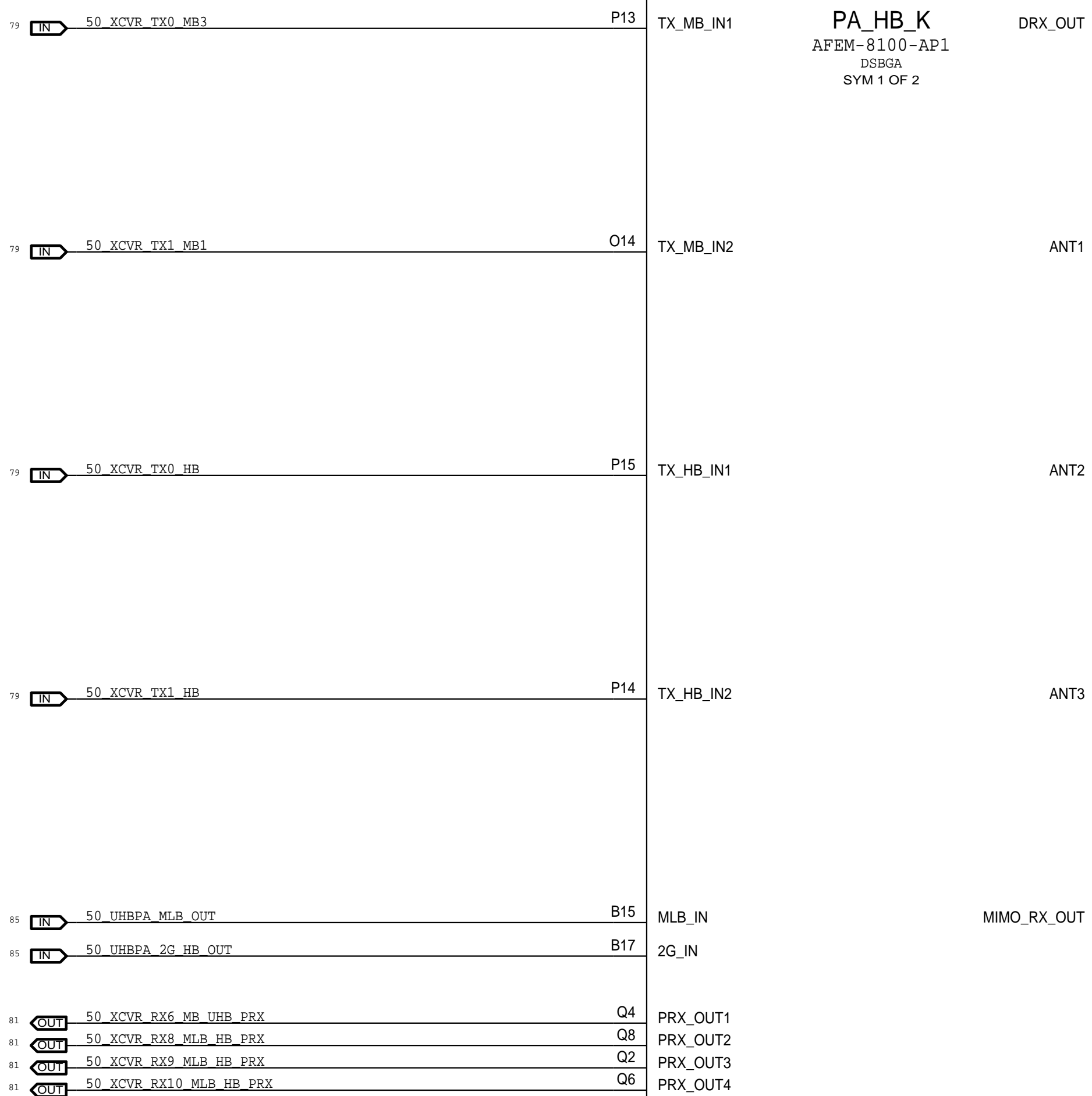
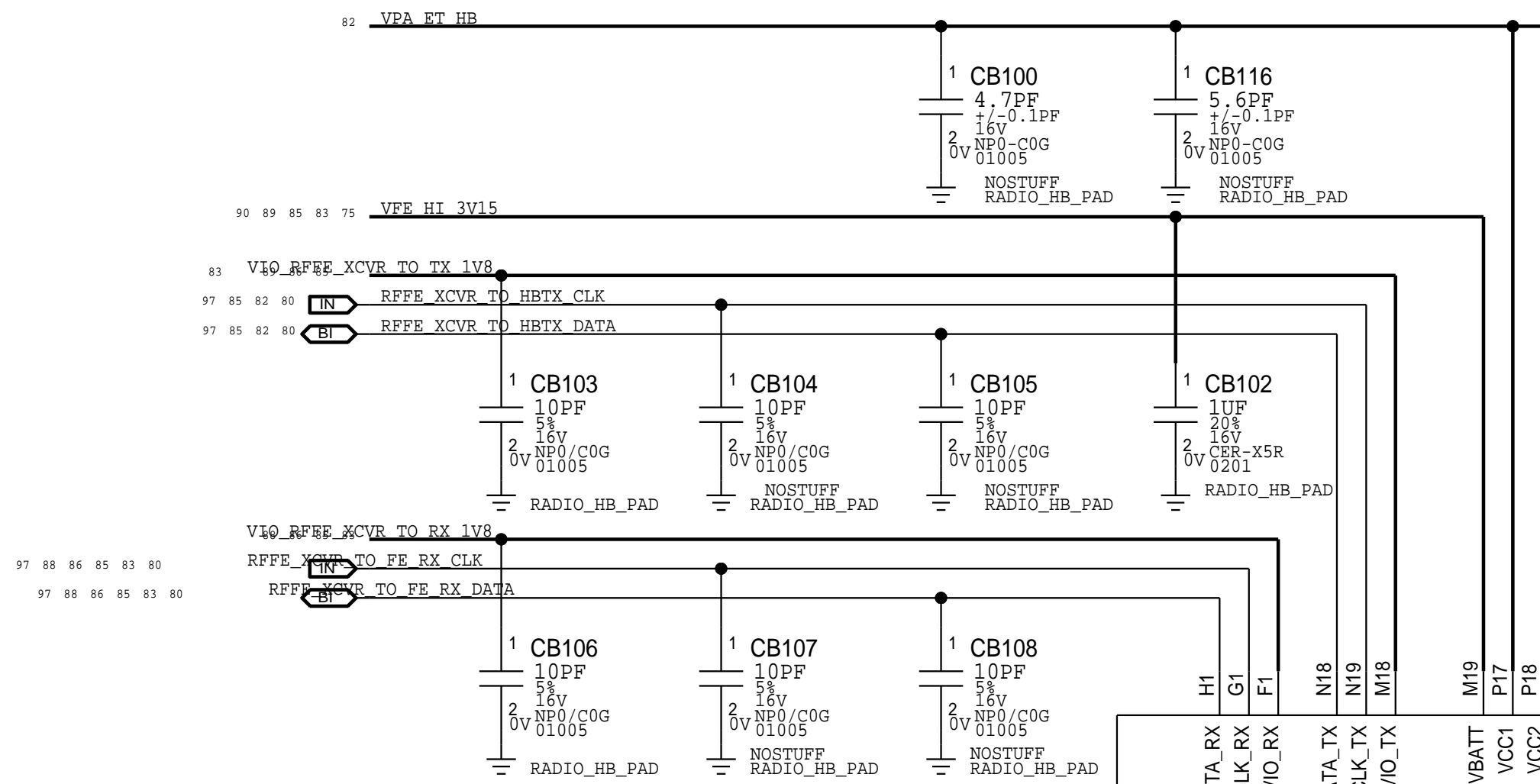
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USID TX=0X01

SYNC_MASTER=RADIO_MLB_0.57.0
PAGE TITLE

LB SPAD

| PART# | DESCRIPTION | REFERENCE DESIGNATOR(S) | BOM OPTION |
|-------------------|---------------|-------------------------|------------|
| 1353S833078220-13 | | PA_LB_K | ROW |
| 353S01908 | 1 SKY78223-13 | PA_LB_K | US |

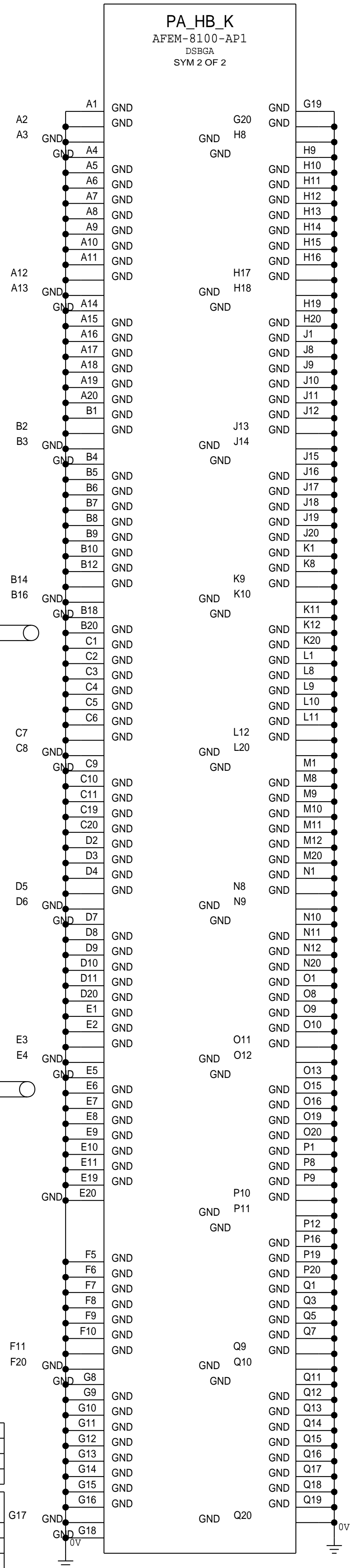
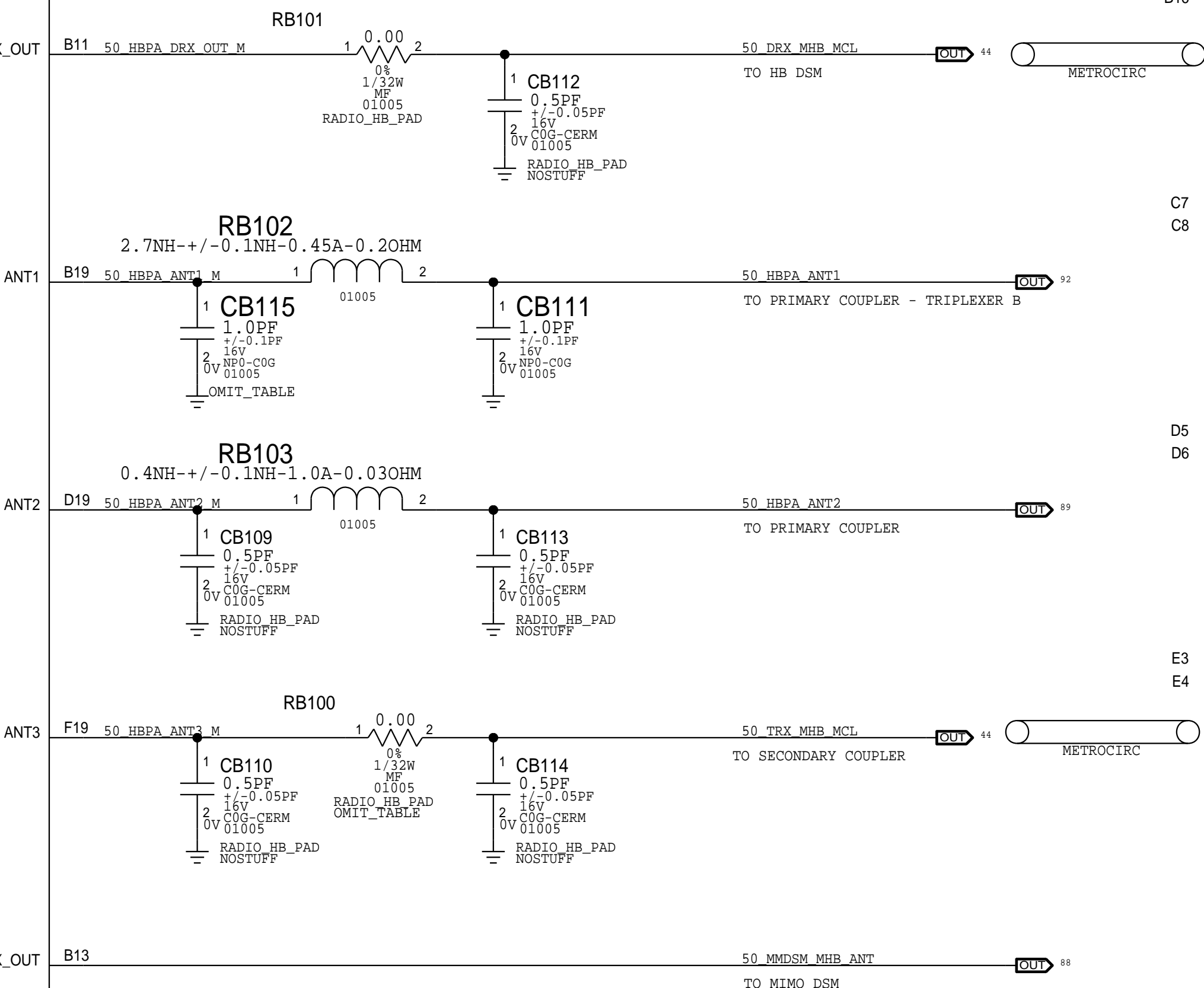
HB SPAD



ICE19.5 V ICE19.6 MATCHING

| PART# | QTY | DESCRIPTION | REFERENCE DESIGNATOR(S) | BOM OPTION |
|----------|-----|--------------|-------------------------|------------|
| | 1 | 0 OHM, 01005 | RB100 | ICE19.5 |
| | 1 | 1 NH, 01005 | RB100 | ICE19.6 |
| 13180375 | | 1.0PF, 01005 | CB115 | ICE19.5 |
| 13180639 | 1 | 0.8PF, 01005 | CB115 | ICE19.6 |

```
USID  RX=0X0E
USID  TX=0X02
```



| CLASS DEFINITIONS | | | COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR* DP NAMES EX: DP:DP_AA*, DP_BB* (LINE STARTS WITH FLAG DP:) | CLASS OVERLOAD |
|-------------------|------|----------------|---|----------------|
| CLASS NAME | TYPE | CONSTRAINT SET | | Y/N |
| RFFE_SHIELD | S | A_DIETCTRIC_2X | *RFFE*, VIO_RFFE* | Y |

| ID | NET RULE ASSIGNMENT | |
|----|---------------------|---|
| | CONSTRAINT SET | COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*) |
| P | PWR_200UM | VFE_HI_3V15, VFE_LO_1V2 |
| P | PWR_100UM | VIO_RFFE* |
| P | PWR_SHAPE | VPA_ET_HB, VPA_ET_UHB, VPA_2G |

| FINITIONS | | CONSTRAINT SET | | NET RULE ASSIGNMENT | | OVERVIEW | CLEAR |
|-----------|---|------------------------------------|--|---|--------------------------------|----------|-------|
| DP ID | | CONSTRAINT SET | | COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*) | | | |
| P | | A_50_WIDE_L1_THIN_SE | | 50_XCVR* | 50_HBPA_DRX_OUT_M | | |
| P | | A_50_WIDE_L1_THIN_SE | | 50_HBPA_ANT* | 50_TRX_MHB_MCL, 50_DRX_MHB_MCL | | |
| FINITIONS | | CONSTRAINT SET | | COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR* DP NAMES EX: DP-DP_AA*, DP-DB* (LINE STARTS WITH FLAG DP:) | | OVERVIEW | CLEAR |
| THIN | S | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE | | 50_HBPA_DRX_OUT_M | | Y | Y/N |
| THIN | S | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE | | 50_HBPA_ANT* | 50_TRX_MHB_MCL | | Y |
| THIN | S | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE | | 50_DRX_MHB_MCL | | | Y |

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SYNC_DATE=05/16/2019

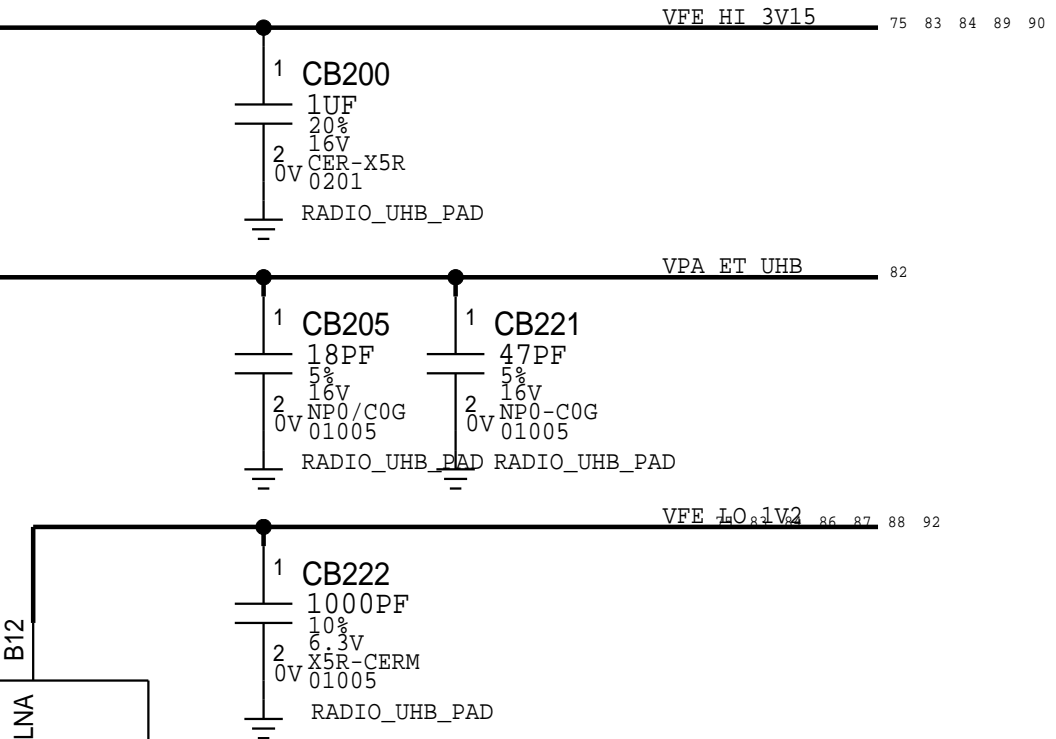
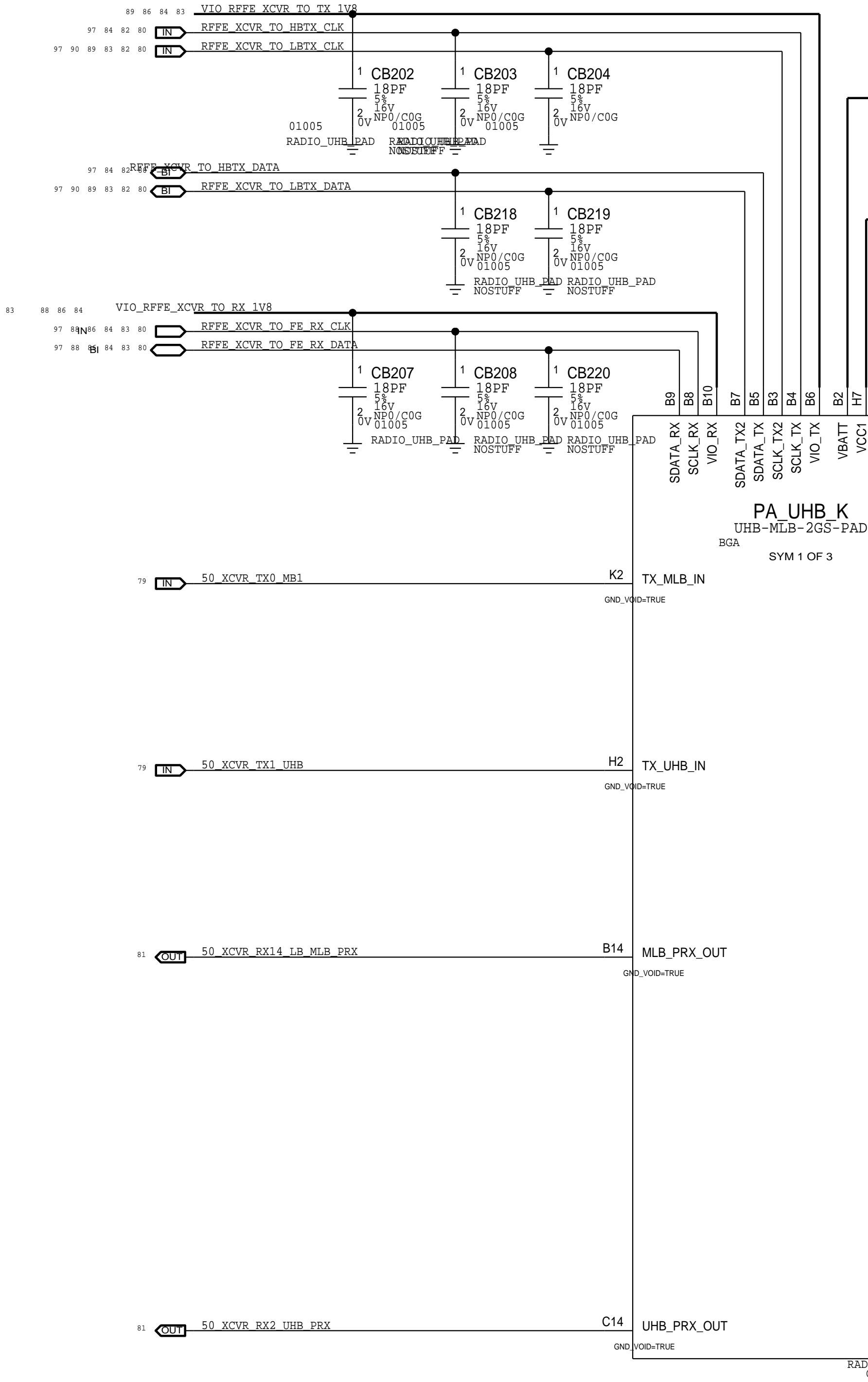
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HB SPAD

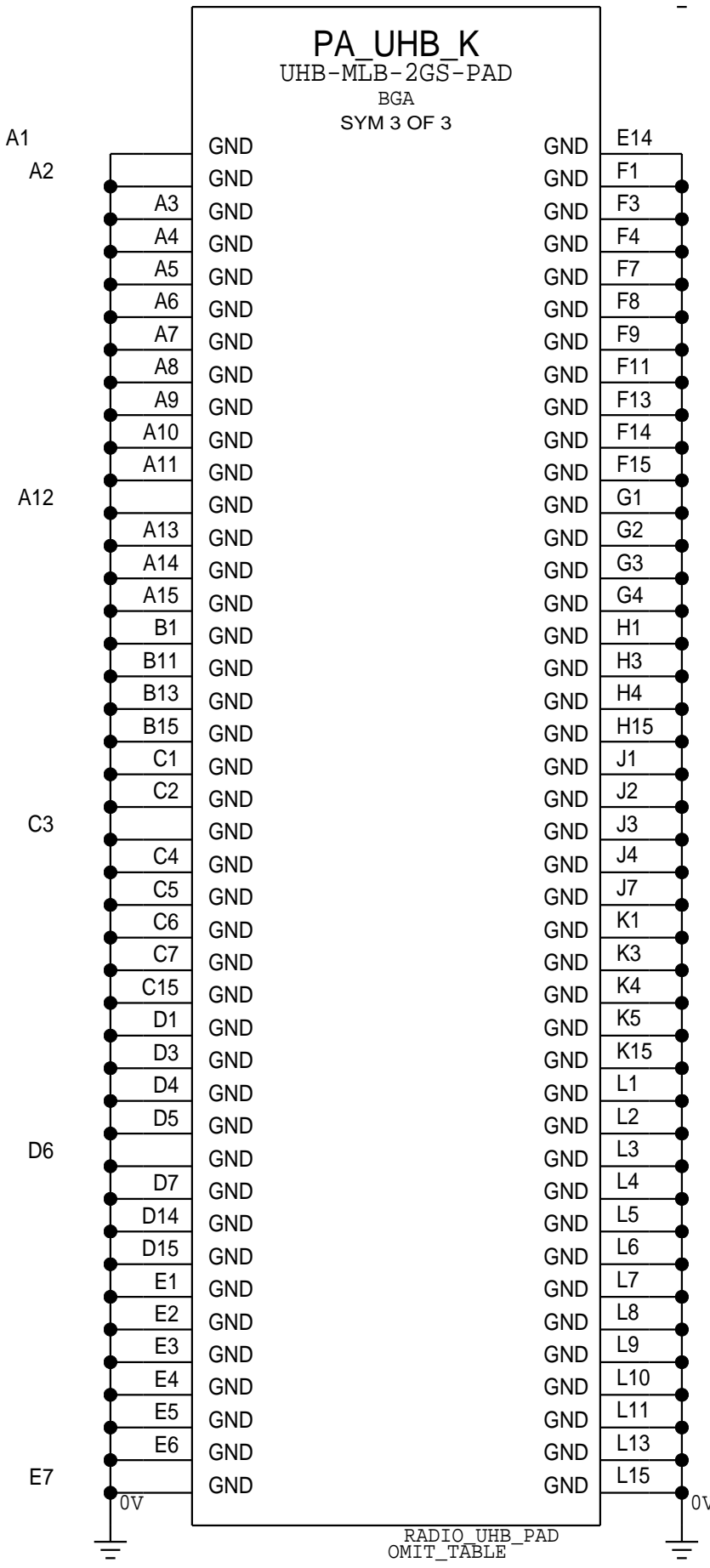
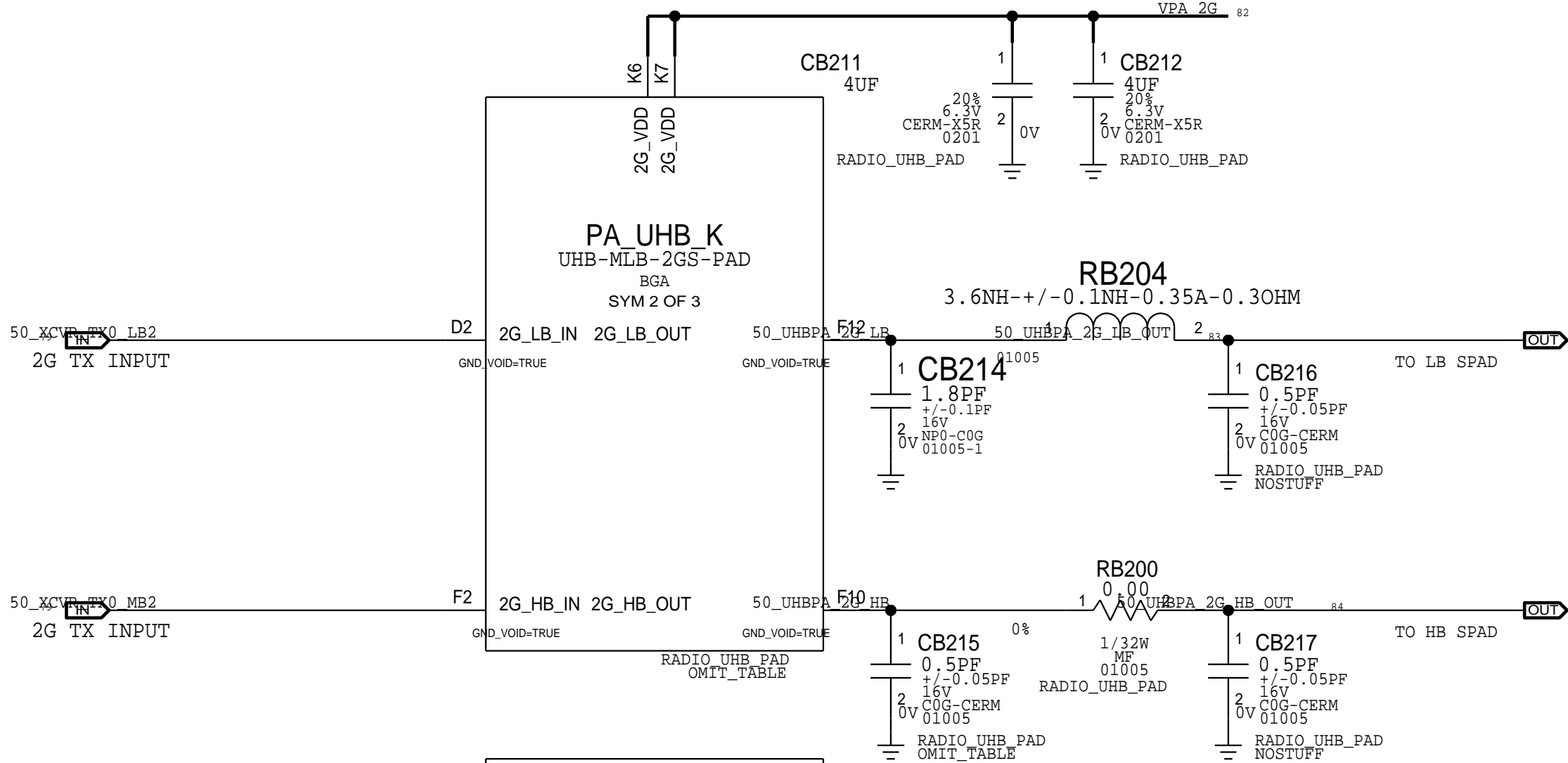
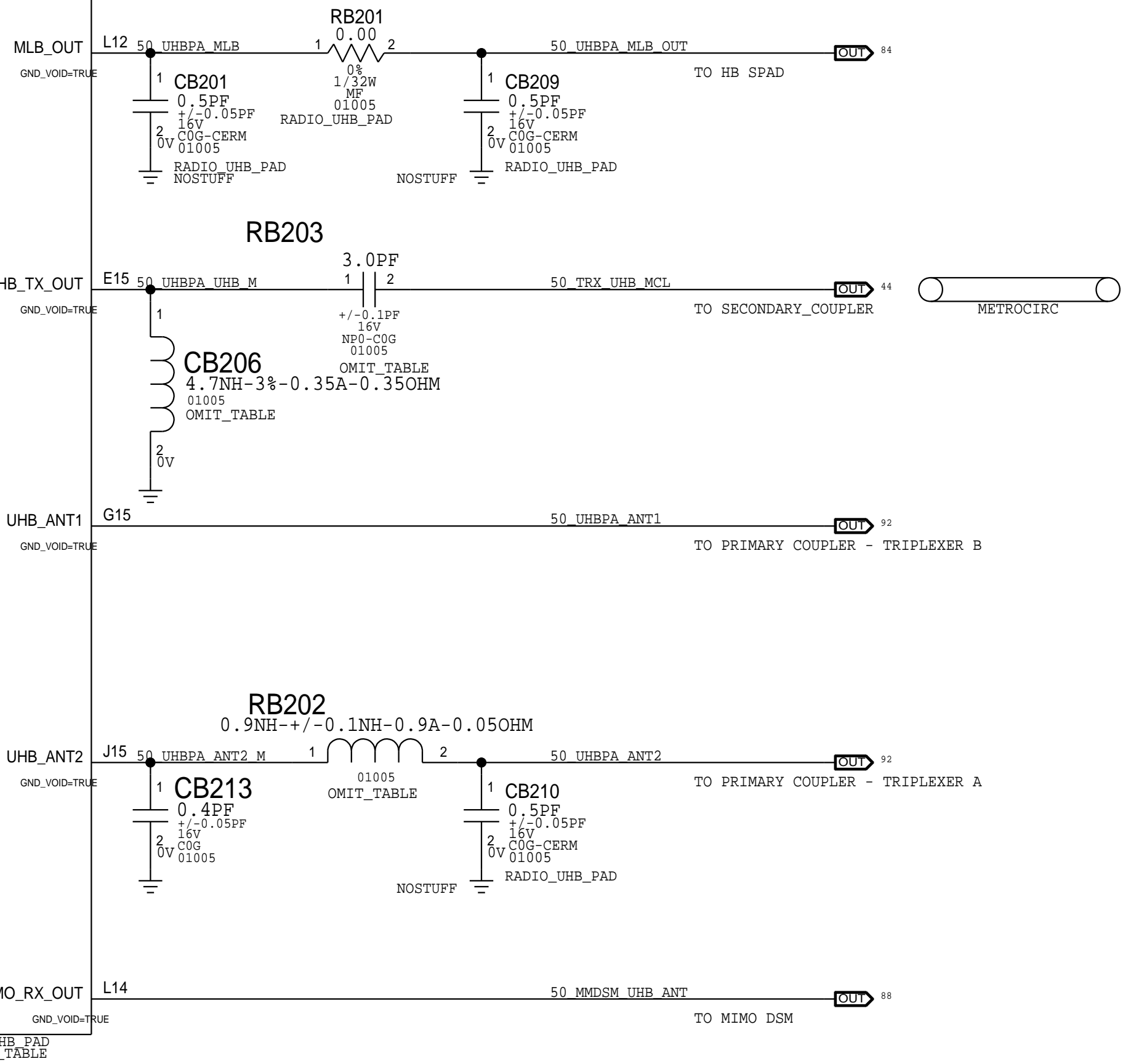
UHB MLB SPAD

| DPART | DESCRIPTION | | REFERENCE DESIGNATOR(S) | BOM OPTION |
|-----------|-------------|-------------|-------------------------|------------|
| 135383378 | 201-18 | | PA_UHB_K | ROW |
| 353801914 | 1 | SKY78221-11 | PA_UHB_K | US |

| ICE19.5 V ICE19.6 MATCHING | | | | |
|----------------------------|-----|--------------|-------------------------|------------|
| PART# | QTY | DESCRIPTION | REFERENCE DESIGNATOR(S) | BOM OPTION |
| 131S0648 | 1 | 0.3PF, 01005 | CB215 | ICE19.6 |
| 1152800520 | | 4.7NH, 01005 | CB206 | ICE19.5 |
| 1131S0395 | | 3.0PF, 01005 | RB203 | ICE19.5 |
| 152800497 | 1 | 0.5NH, 01005 | RB203 | ICE19.6 |
| 152800493 | 1 | 0.9NH, 01005 | RB202 | ICE19.5 |
| 152800494 | 1 | 0.8NH, 01005 | RB202 | ICE19.6 |



USID RX=0X0F
USID TX=0X03



SYNC_MASTER=RADIO_MLB_0.57.0
PAGE TITLE
UHB MLB SPAD

| NET RULE ASSIGNMENT | | | |
|---------------------|---|---|--|
| CONSTRAINT SET | COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*) | | |
| P | A_50_WIDE_L1_THIN_SE | 50_UHBPA_UHB_M, 50_UHBPA_ANT2 | |
| P | A_50_WIDE_L1_THIN_SE | 50_UHBPA_MLB, 50_UHBPA_MLB_OUT, 50_UHBPA_2G_LB* | |
| P | A_50_WIDE_L1_THIN_SE | 50_UHBPA_ANT2_M, 50_UHBPA_2G_HB*, 50_TRX_UHB_MCL, 50_MMDSM* | |
| P | A_50_WIDE_L1_THIN_SE | 50_UHBPA_ANT1 | |

| CLASS DEFINITIONS | | | |
|-------------------|----------------|--|---|
| CLASS NAME | CONSTRAINT SET | COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR* DP NAMES EX: DP.DP_AA*.DP_BB* (LINE STARTS WITH FLAG DP.) | |
| 50_WIDE_L1_THIN | S | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE | 50_UHBPA_UHB_M, 50_UHBPA_ANT2 |
| 50_WIDE_L1_THIN | S | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE | 50_UHBPA_MLB, 50_UHBPA_MLB_OUT, 50_UHBPA_2G_LB* |
| 50_WIDE_L1_THIN | S | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE | 50_UHBPA_ANT2_M, 50_UHBPA_2G_HB*, 50_TRX_UHB_MCL, 50_MMDSM* |
| 50_WIDE_L1_THIN | S | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE | 50_UHBPA_ANT1 |

CONFIDENTIAL AND PROPRIETARY APPLE SYSTEM DESIGN. FOR REFERENCE PURPOSE ONLY - NOT A CHANGE REQUEST

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LB DIVERSITY RECEIVE LNA

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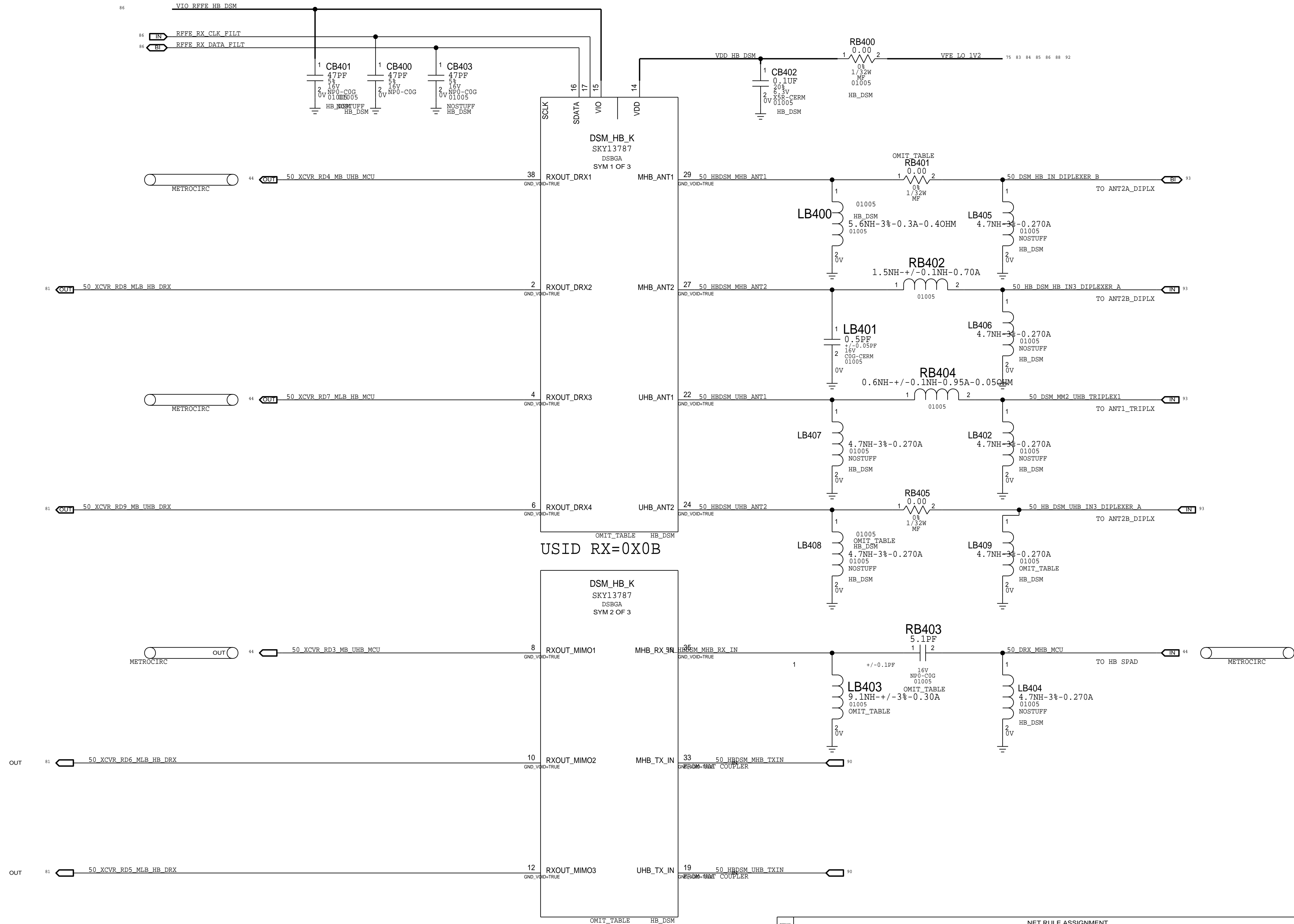
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HB DIVERSITY RECEIVE LNA



| ICE19.5 V | ICE19.6 MATCHING | | | | |
|------------|------------------|-------------------------|-------------------------|------------|---------|
| ICPART # | | DESCRIPTION | REFERENCE DESIGNATOR(S) | BOM OPTION | |
| 11750161 | 1 | 0OHM, 01005 | RB405 | ICE19.5 | UNCLASS |
| 152801108 | 1 | 0.3NH, 01005 | RB405 | ICE19.6 | UNCLASS |
| 13180648 | 1 | 0.3PF, 01005 | LB409 | ICE19.6 | UNCLASS |
| 152500418 | 1 | 9.1NH, 01005 | LB403 | ICE19.5 | UNCLASS |
| 113180418F | 01005 | | RB403 | ICE19.5 | UNCLASS |
| 1117500081 | 01005 | | RB403 | ICE19.6 | UNCLASS |
| 131800417 | 1 | 6.2PF, 01005, +/-0.05PF | RB401 | ICE19.5 | UNCLASS |
| 131800286 | 1 | 4.7PF, 01005, +/-0.05PF | RB401 | ICE19.6 | UNCLASS |

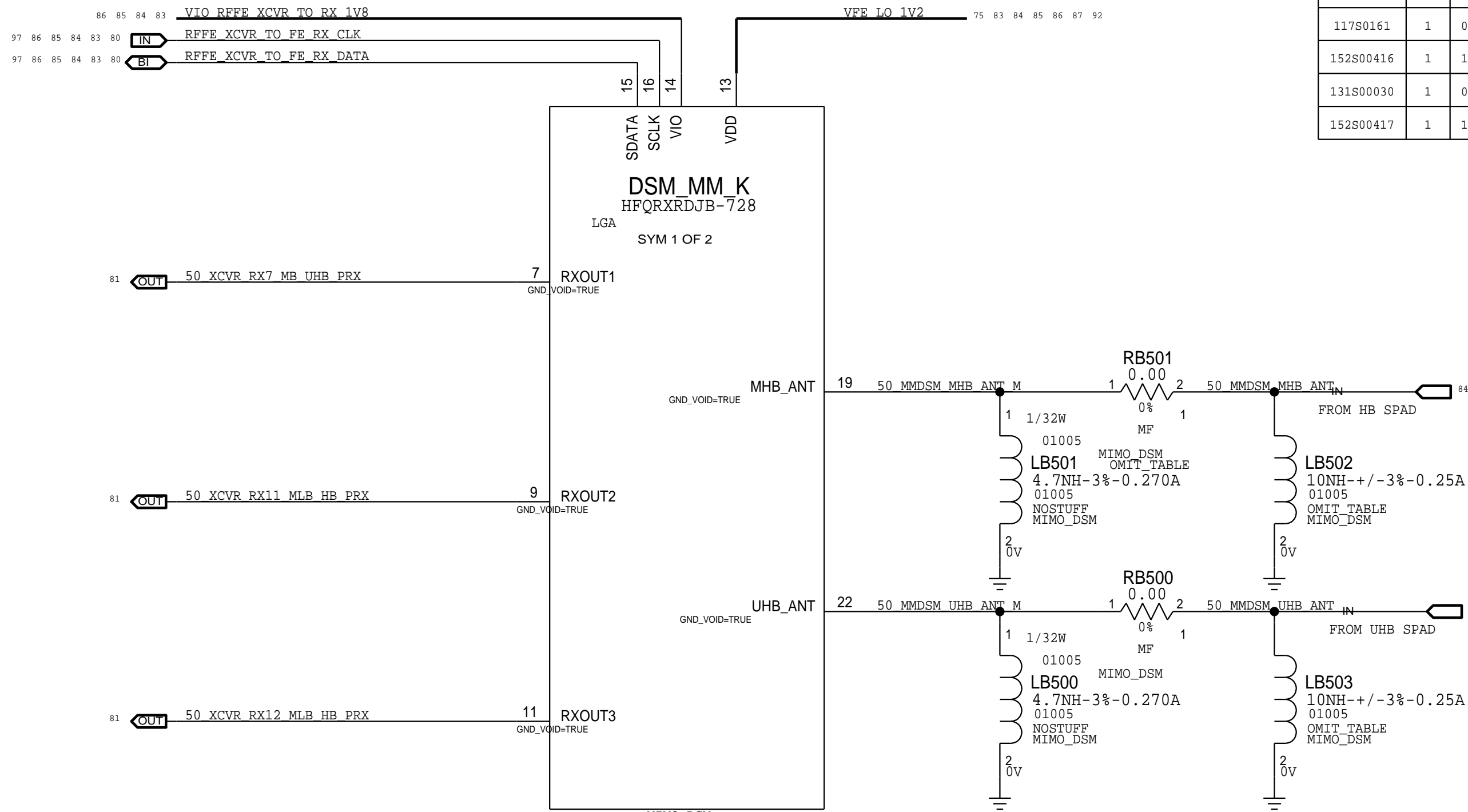
| Q | PART | DESCRIPTION | QTY | UNIT | REFERENCE DESIGNATOR(S) | BOM OPTION |
|-----------|------|------------------|-----|------|-------------------------|------------|
| 353801559 | | SKYWORX SKY13787 | | | DSM_HB_K | ROW |
| 353801928 | 1 | SKYWORX SKY13787 | | | DSM_HB_K | US |

| COMMA | | NET RULE ASSIGNMENT | |
|----------|----------------|---|--|
| EXP. (S) | CONSTRAINT SET | COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*) | |
| P | PWR_200UM | VDD_HB_DSM | |

| Schema | NET RULE ASSIGNMENT | | | |
|------------|---------------------|----------------------|---|--|
| | IP/B | CONSTRAINT SET | COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*) | |
| | P | A_50_WIDE_L1_THIN_SE | 50_HBDSM_RXOUT*, 50_HBDSM_MHB_TXIN, 50_HBDSM_UHB_TXIN, 50_XCVR* | |
| | P | A_50_WIDE_L1_THIN_SE | 50_HBDSM_MHB_ANT*, 50_HBDSM_UHB_ANT*, 50_ANT6_UHB | |
| | P | A_50_WIDE_L1_THIN_SE | 50_HBDSM_MHB_RX_IN, 50_HBPA_DRX_OUT*, 50_DRX_MHB_MCU | |
| CLASS NAME | CLASS DEFINITIONS | | COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR* DP NAMES EX: DP-DD_AA*, DP_BB* (LINE STARTS WITH FLAG DP:) | |
| | IP/B | CONSTRAINT SET | | |
| | | 50_WIDE_L1_THIN | S | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE |
| | | 50_WIDE_L1_THIN | S | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE |
| | | 50_WIDE_L1_THIN | S | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE |
| | | 50_WIDE_L1_THIN | S | 50_HBDSM_MHB_ANT*, 50_HBDSM_UHB_ANT*, 50_ANT6_UHB |
| | | 50_WIDE_L1_THIN | S | 50_HBDSM_MHB_RX_IN, 50_HBPA_DRX_OUT*, 50_DRX_MHB_MCU |

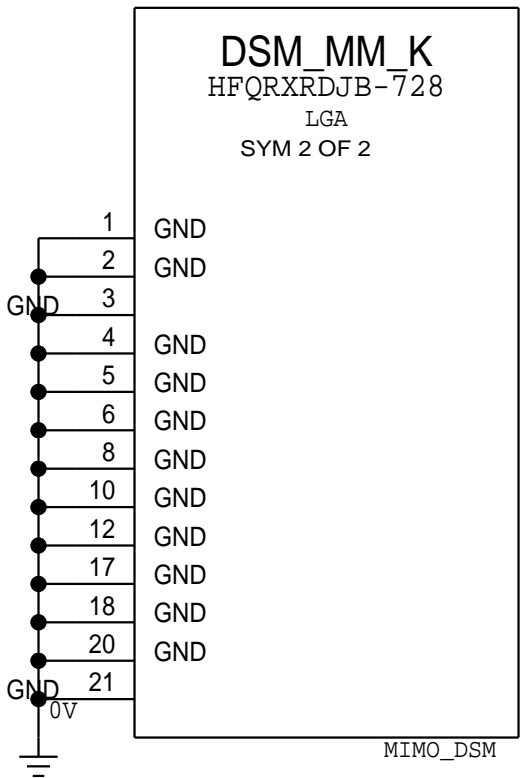
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| PAGE TITLE | | |
| HB DIVERSITY RECEIVE LNA | | |

MIMO DSM



ICE19.5 V ICE19.6 MATCHING

| PART# | QTY | DESCRIPTION | REFERENCE DESIGNATOR(S) | BOM OPTION |
|-----------|-----|--------------|-------------------------|------------|
| 11780161 | 1 | 00HM, 01005 | RB501 | ICE19.5 |
| 152800416 | 1 | 1.2NH, 01005 | RB501 | ICE19.6 |
| 131800030 | 1 | 0.4PF, 01005 | LB502 | ICE19.6 |
| 152800417 | 1 | 10NH, 01005 | LB503 | ICE19.6 |



USID RX=0X07

| NET RULE ASSIGNMENT | | |
|------------------------|---|--|
| CONSTRAINT SET | COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*) | |
| P A_50_WIDE_L1_THIN_SE | 50_MMDSM_MHB_ANT_M, 50_MMDSM_UHB_ANT_M | |
| P A_50_WIDE_L1_THIN_SE | 50_MMDSM_MHB_ANT, 50_MMDSM_UHB_ANT | |

| CLASS DEFINITIONS | | | CLASS | CHANGES |
|-------------------|--------------------------------------|--|-------|---------|
| CLASS NAME | CONSTRAINT SET | COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR* DP NAMES EX: DP:DP_AA*,DP_BB* (LINE STARTS WITH FLAG DP:) | | |
| 50_WIDE_L1_THIN | S A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE | 50_MMDSM_MHB_ANT_M, 50_MMDSM_UHB_ANT_M | Y | Y |
| 50_WIDE_L1_THIN | S A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE | 50_MMDSM_MHB_ANT, 50_MMDSM_UHB_ANT | Y | Y |

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| CLASS DEFINITIONS | | | COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR* | | CLASS OVERIDE |
|-------------------|------|------|--|--|---------------|
| NAME | DATA | UNIT | CONSTRAINT SETUP NAMES EX: DP-DP_AA*, DP_BB* (LINE STARTS WITH FLAG DP:) | | Y/N |
| 50_THIN_S | S | | A_DIELECTRIC_2X_50_THIN_SE | 50_KXVR_PBR* | |
| 50_WIDE_L1_THIN | S | | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE | 50_CPLR_ANT1 | Y |
| 50_WIDE_L1_THIN | S | | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE | 50_ANT1, 50_ANT1_CPLR_OUT, 50_ANT3_C, 50_ANT4B_C | Y |
| 50_WIDE_2_SE | S | | A_DIELECTRIC_2X_50_WIDE_2_SE | 50_ANT3, 50_ANT4B | Y |

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SECONDARY COUPLER

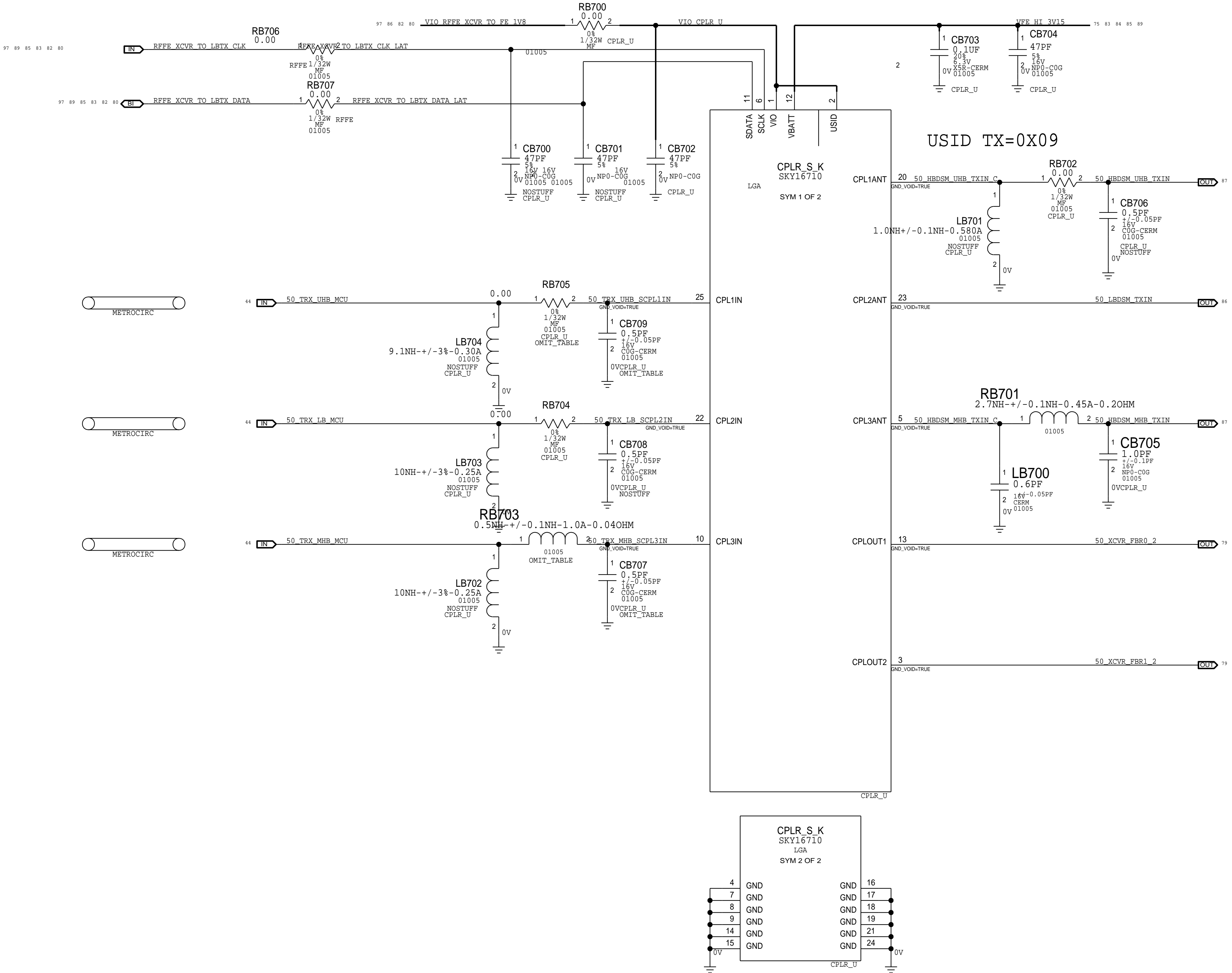
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|----------------------------|-----|--------------|-------------------------|------------|
| ICE19.5 V ICE19.6 MATCHING | | | | |
| PART# | QTY | DESCRIPTION | REFERENCE DESIGNATOR(S) | BOM OPTION |
| 131S0648 | 1 | 0.3PF, 01005 | CB709 | ICE19.6 |
| 117S0161 | 1 | 0OHM, 01005 | RB705 | ICE19.5 |
| 152S00494 | 1 | 0.8NH, 01005 | RB705 | ICE19.6 |
| 152S00497 | 1 | 0.5NH, 01005 | RB703 ICE19.5 | |
| 152S00416 | 1 | 1.2NH, 01005 | RB703 ICE19.6 | |
| 131S0893 | 1 | 0.2PF, 01005 | CB707 | ICE19.6 |

| | | |
|------------------|----------------------|---|
| DOMAIN P.F.SI | NET RULE ASSIGNMENT | |
| | CONSTRAINT SET | COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*) |
| P | A_50_WIDE_L1_THIN_SE | 50_CPLU* |
| P | A_50_WIDE_L1_THIN_SE | 50_TRX*, 50_LBDSM_TXIN_C |
| P | A_50_WIDE_L1_THIN_SE | 50_HBDSM_MHB_TXIN_C, 50_HBDSM_UHB_TXIN_C |
| P | A_50_WIDE_2_SE | 50_TRX_UHB_MCU |

| | | | | |
|-------------------|------------------------------------|--|---|-------------------|
| CLASS DEFINITIONS | | | COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR* | CLASS COVERAGE |
| CLASS NAME | CONSTRAINT SET | | DP NAMES EX: DP.DP_AA*.DP_BB* (LINE STARTS WITH FLAG DP:) | Y/N |
| 50_WIDE_L1_THIN | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE | | 50_CPLU* | Y |
| 50_WIDE_L1_THIN | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE | | 50_TRX*, 50_LBDSM_TXIN_C | Y |
| 50_WIDE_L1_THIN | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE | | 50_HBDSM_MHB_TXIN_C, 50_HBDSM_UHB_TXIN_C | Y |
| 50_WIDE_2 | A_DIELECTRIC_2X_50_WIDE_2_SE | | 50_TRX_UHB_MCU | Y |

| | | |
|------------------------|--------------------|-------------------------------------|
| CLASS TO CLASS SPACING | | |
| CLASS NAME | CLASS NAME | CONSTRAINT SET |
| 50_WIDE_L1_THIN | 50_WIDE | A_DIELECTRIC_4XV_50_WIDE_SE |
| 50_WIDE_L1_THIN | 50_THIN | A_DIELECTRIC_4XD_50_WIDE_L1_THIN_SE |
| 50_WIDE_L1_THIN | 50_THIN_UNSHIELDED | A_DIELECTRIC_4XD_50_WIDE_L1_THIN_SE |

| | | |
|------------------|---------------------|---|
| DOMAIN P.F.SI | NET RULE ASSIGNMENT | |
| | CONSTRAINT SET | COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*) |
| P | PWR_100UM | VIO_CPLR* |



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UAT/PRIMARY ANTENNA FEED

| ICE19.5 V ICE19.6 MATCHING | | | | |
|----------------------------|-----|-------------|-------------------------|------------|
| PART# | QTY | DESCRIPTION | REFERENCE DESIGNATOR(S) | BOM OPTION |
| 152S00059 | 1 | 1.6NH, 0201 | RB925 | ICE19.5 |
| 152S2024 | 1 | 1.4NH, 0201 | RB925 | ICE19.6 |
| 152S2018 | 1 | 18NH, 0201 | CB908 | ICE19.6 |
| 118S0724 | 1 | 0OHM, 0201 | RB926 | ICE19.5 |
| 152S00151 | 1 | 0.8NH, 0201 | RB926 | ICE19.6 |
| 118S0724 | 1 | 0OHM, 0201 | RB904 | ICE19.6 |
| 131S0419 | 1 | 7.5PF, 0201 | RB904 | ICE19.5 |
| 131S0425 | 1 | 0.5PF, 0201 | CB914 | ICE19.6 |

D

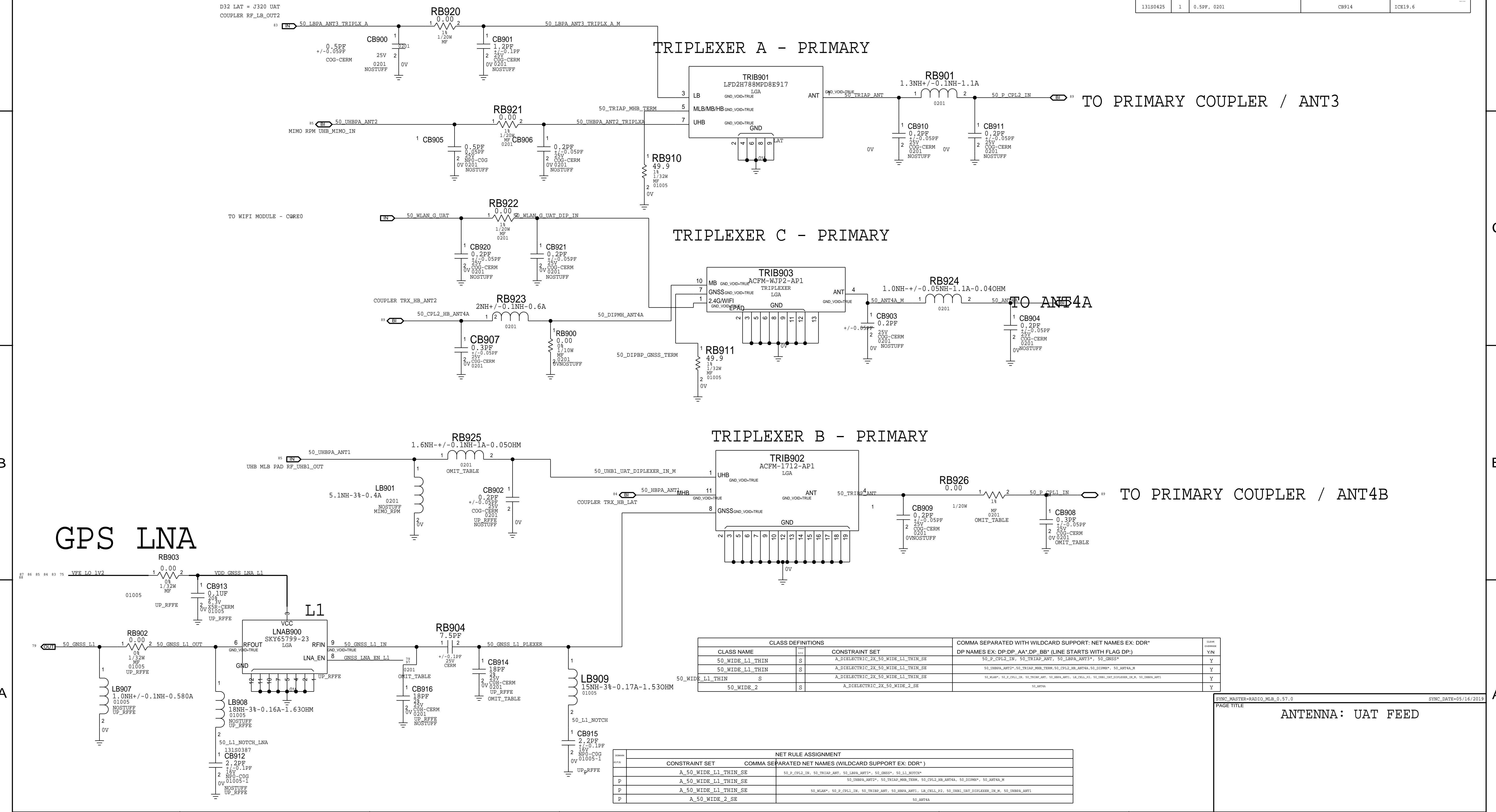
D

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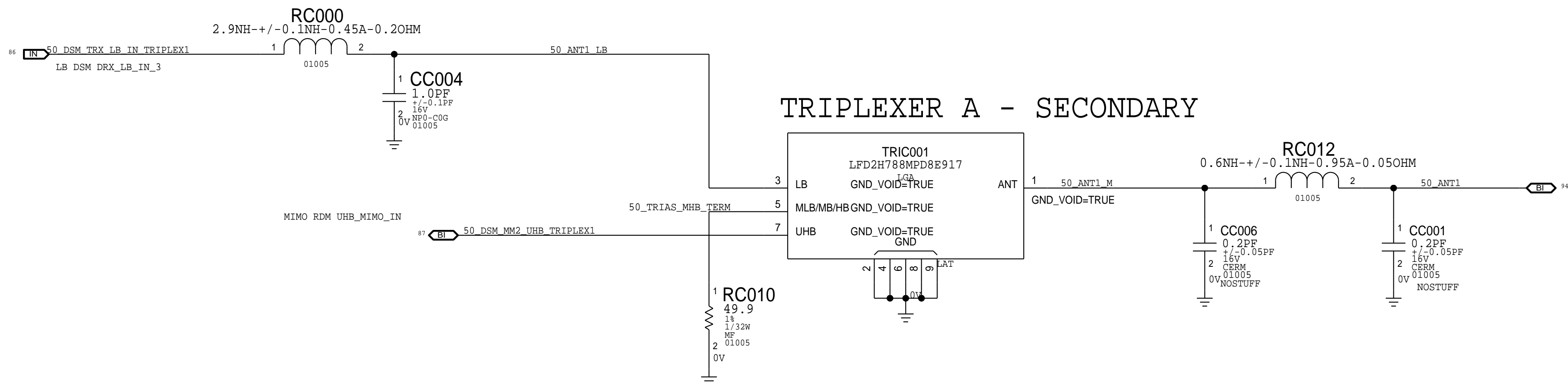


| CLASS DEFINITIONS | | | COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR* | CLEAR |
|-------------------|-----|------------------------------------|--|-------|
| CLASS NAME | *** | CONSTRAINT SET | DP NAMES EX: DP.DP_AA*,DP_BB* (LINE STARTS WITH FLAG DP:) | Y/N |
| 50_WIDE_L1_THIN | S | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE | 50_P_CPL2_IN, 50_TRIAP_ANT, 50_LBPA_ANT3*, 50_GNSS* | Y |
| 50_WIDE_L1_THIN | S | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE | 50_UHBPA_ANT2*, 50_TRIAP_MHB_TERM, 50_CPL2_HB_ANT4A, 50_DIPMH*, 50_ANT4A_M | Y |
| 50_WIDE_L1_THIN | S | A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE | 50_MLBP*, 50_P_CPL2_IN, 50_TRIAP_ANT, 50_UHBPA_ANT1, LB_CPL2_P2, 50_UHBPA_UAT_DIPLEXER_IN_M, 50_UHBPA_ANT1 | Y |
| 50_WIDE_2 | S | A_DIELECTRIC_2X_50_WIDE_2_SE | 50_ANT4A | Y |

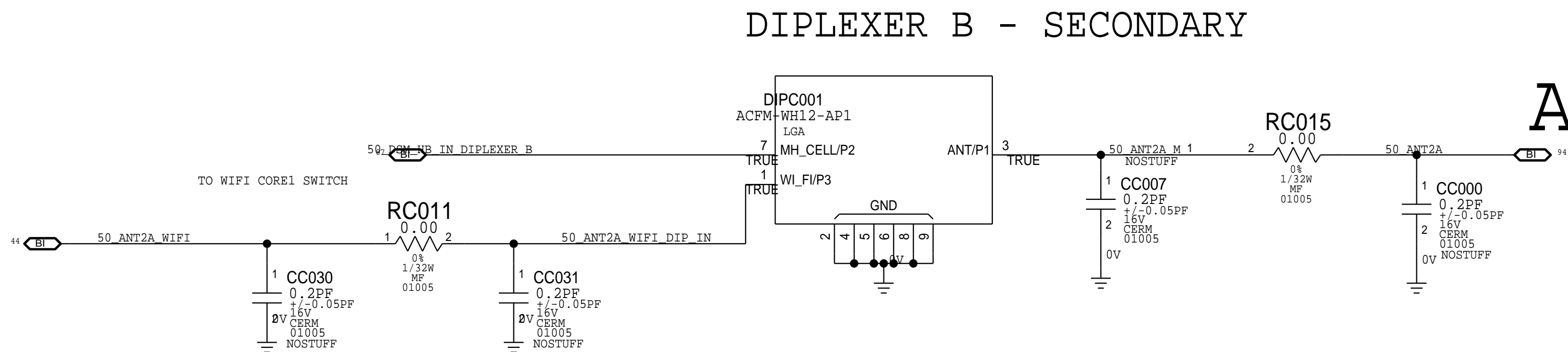
| NET RULE ASSIGNMENT | | |
|---------------------|----------------------|--|
| DOMAIN | CONSTRAINT SET | COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*) |
| RF.P | A_50_WIDE_L1_THIN_SE | 50_P_CPL2_IN, 50_TRIAP_ANT, 50_LBPA_ANT3*, 50_GNSS*, 50_L1_NOTCH* |
| P | A_50_WIDE_L1_THIN_SE | 50_UHBPA_ANT2*, 50_TRIAP_MHB_TERM, 50_CPL2_HB_ANT4A, 50_DIPMH*, 50_ANT4A_M |
| P | A_50_WIDE_L1_THIN_SE | 50_MLBP*, 50_P_CPL2_IN, 50_TRIAP_ANT, 50_UHBPA_ANT1, LB_CPL2_P2, 50_UHBPA_UAT_DIPLEXER_IN_M, 50_UHBPA_ANT1 |
| P | A_50_WIDE_2_SE | 50_ANT4A |

ANTENNA: UAT FEED

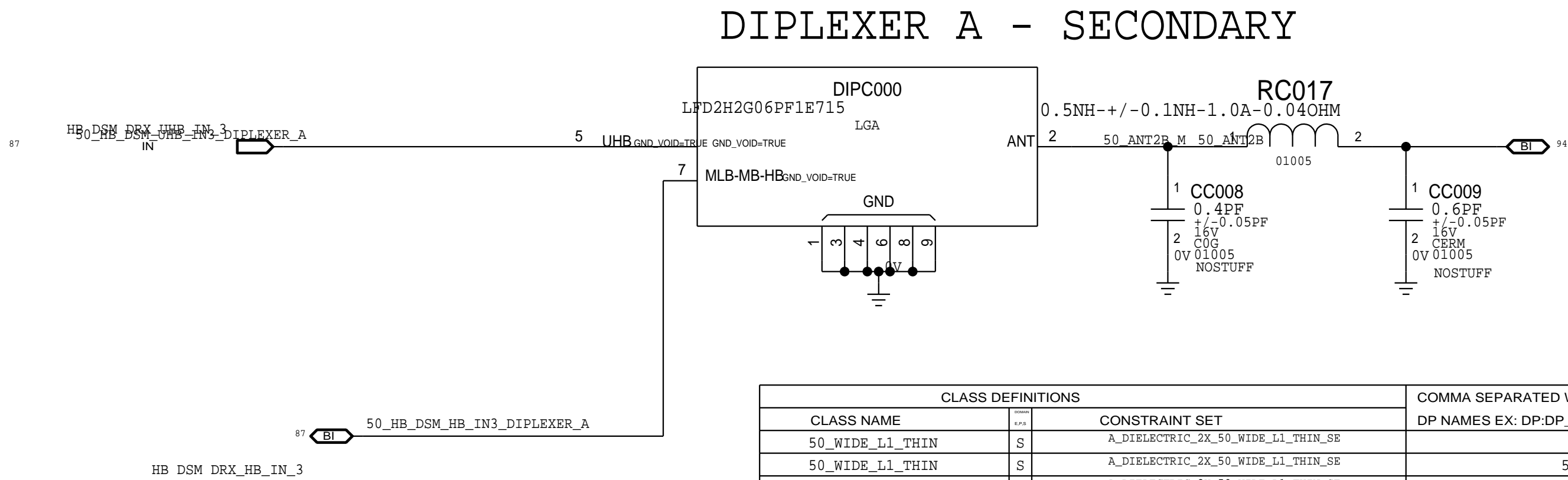
LAT/SECONDARY FEED



ANT1



ANT2A



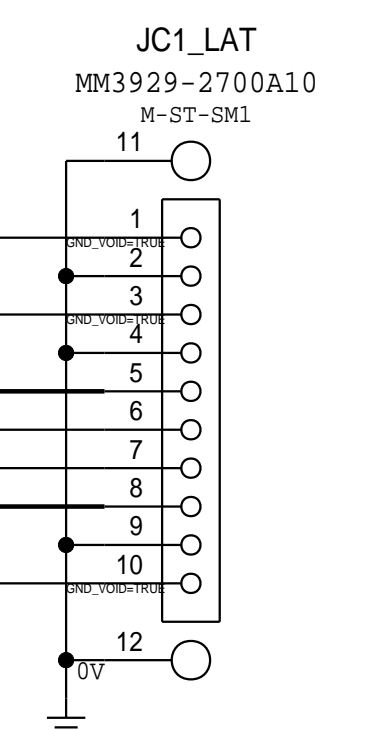
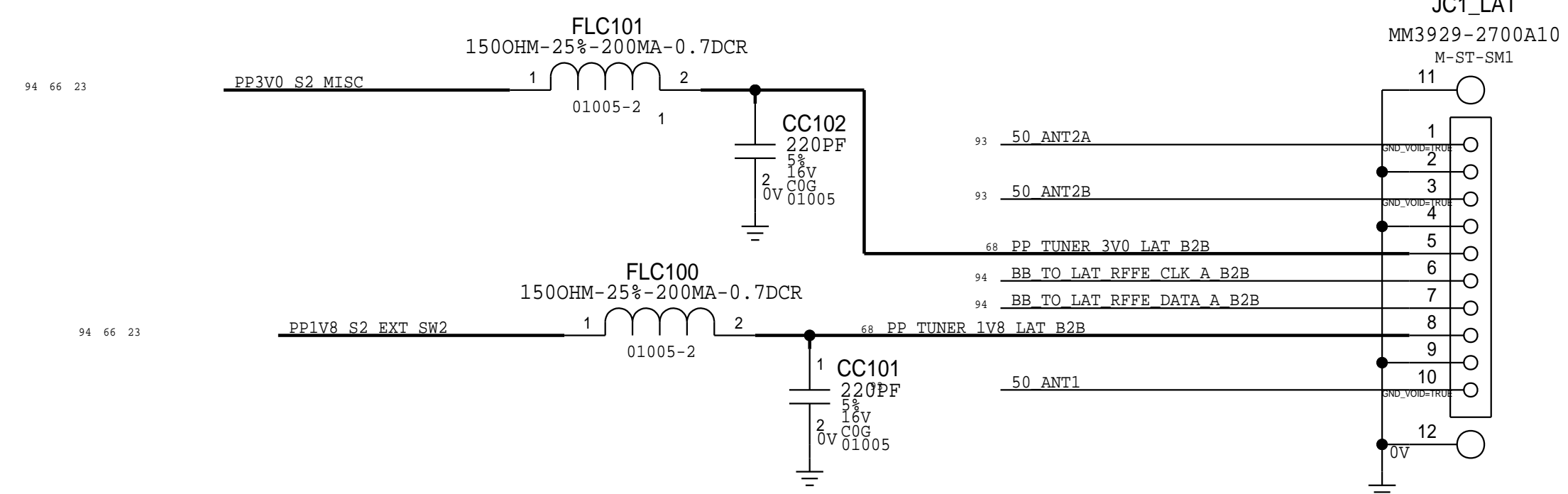
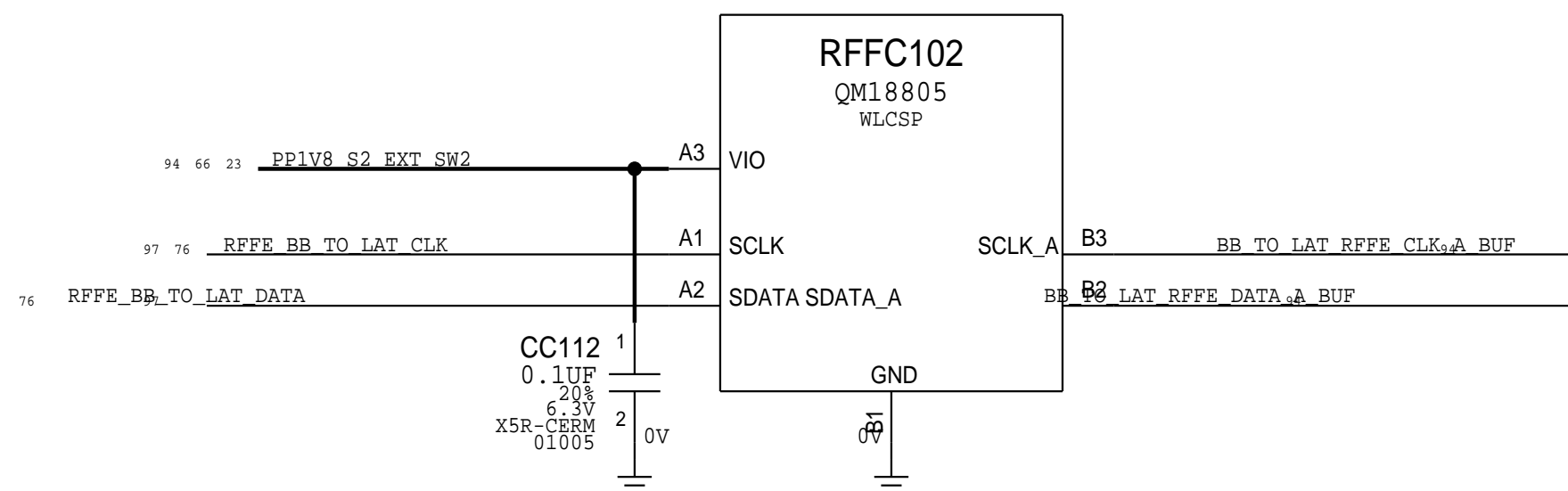
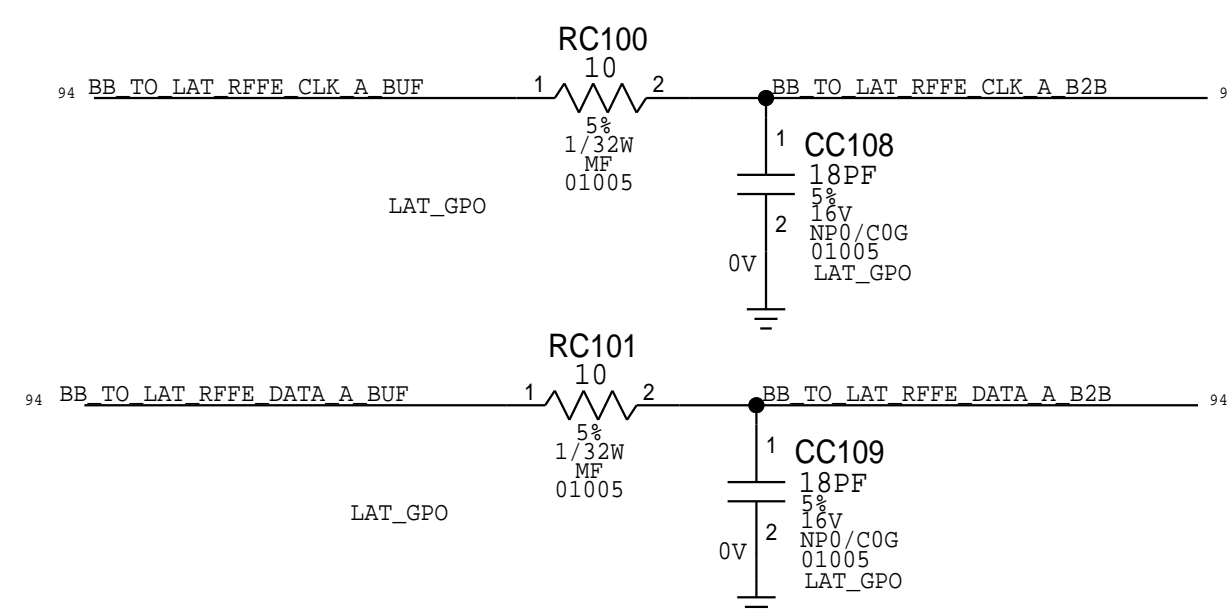
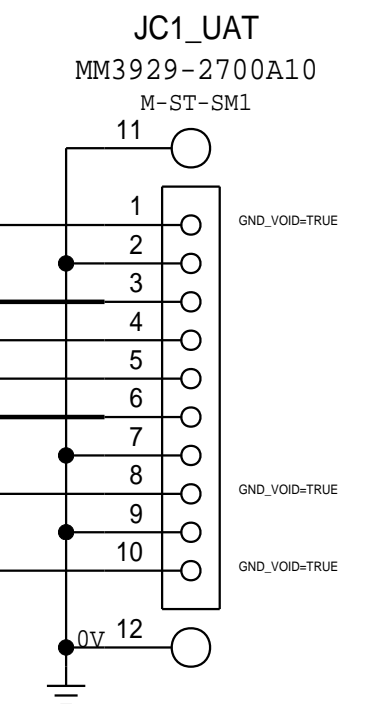
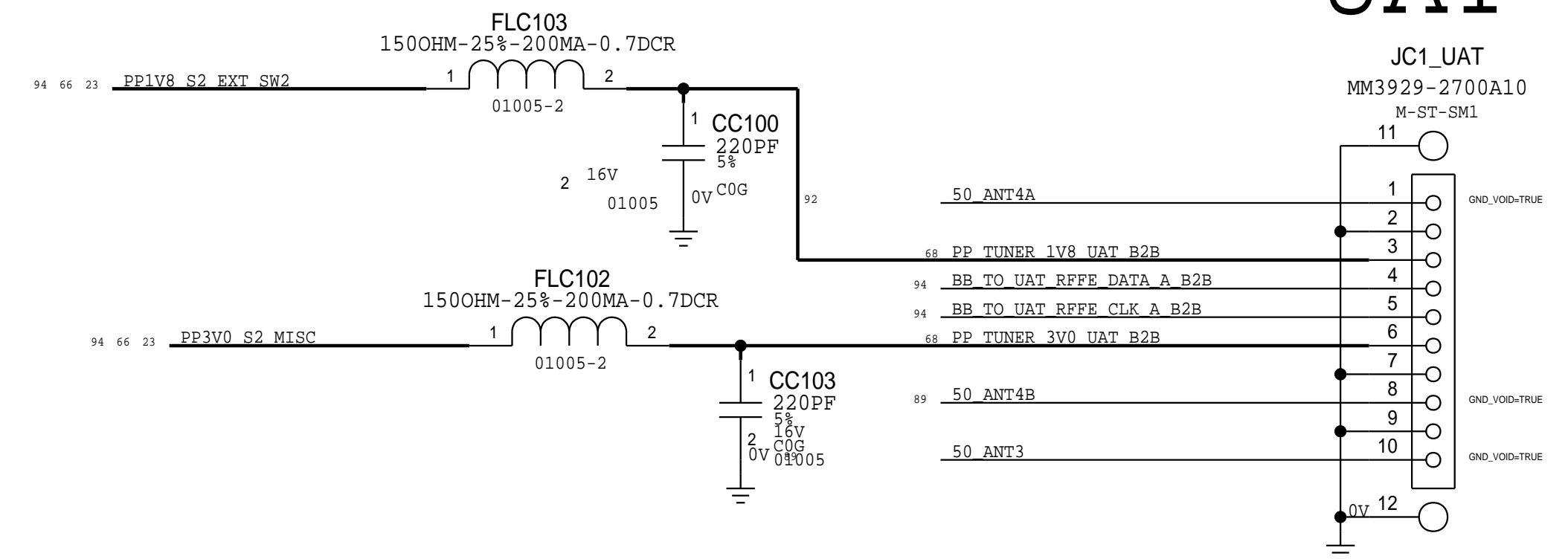
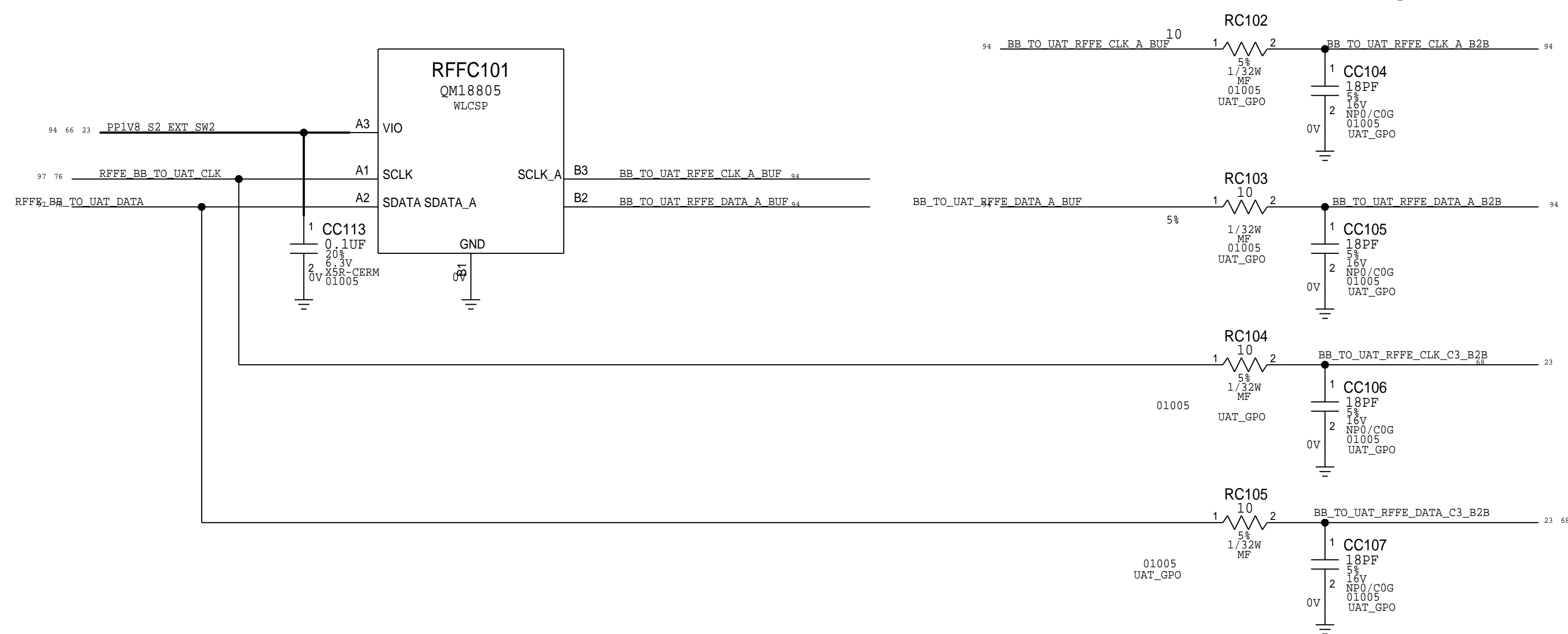
ANT2B

| CLASS DEFINITIONS | | | COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR* | CLASS | OVERRIDE |
|-------------------|-----|-------------------------------------|---|-------|----------|
| CLASS NAME | ... | CONSTRAINT SET | DP NAMES EX: DP-DP_AA*DP_BB* (LINE STARTS WITH FLAG DP) | | Y/N |
| 50_WIDE_L1_THIN | S | A_DIIELECTRIC_2X_50_WIDE_L1_THIN_SE | 50_ANT1*, 50_DSM*, 50_TRIAP_MHB_TERM | | Y |
| 50_WIDE_L1_THIN | S | A_DIIELECTRIC_2X_50_WIDE_L1_THIN_SE | 50_HB_DSM* | | Y |
| 50_WIDE_L1_THIN | S | A_DIIELECTRIC_2X_50_WIDE_L1_THIN_SE | 50_ANT2B_M, 50_ANT2A_M | | Y |
| 50_WIDE_2 | S | A_DIIELECTRIC_2X_50_WIDE_2_SE | 50_ANT2B, 50_ANT2A | | Y |

| NET RULE ASSIGNMENT | | |
|----------------------|--|--|
| CONSTRAINT SET | COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*) | |
| A_50_WIDE_L1_THIN_SE | 50_ANT1*, 50_DSM*, 50_TRIAP_MHB_TERM, 50_ANT2A_M, 50_ANT2B_M | |
| A_50_WIDE_L1_THIN_SE | 50_HB_DSM* | |
| A_50_WIDE_2_SE | 50_ANT2B, 50_ANT2A | |

SYNC_MASTER=RADIO_MLR_0.57.0
PAGE TITLE
ANTENNA: LAT FEED

ANTENNA CELLULAR CONNECTIONS

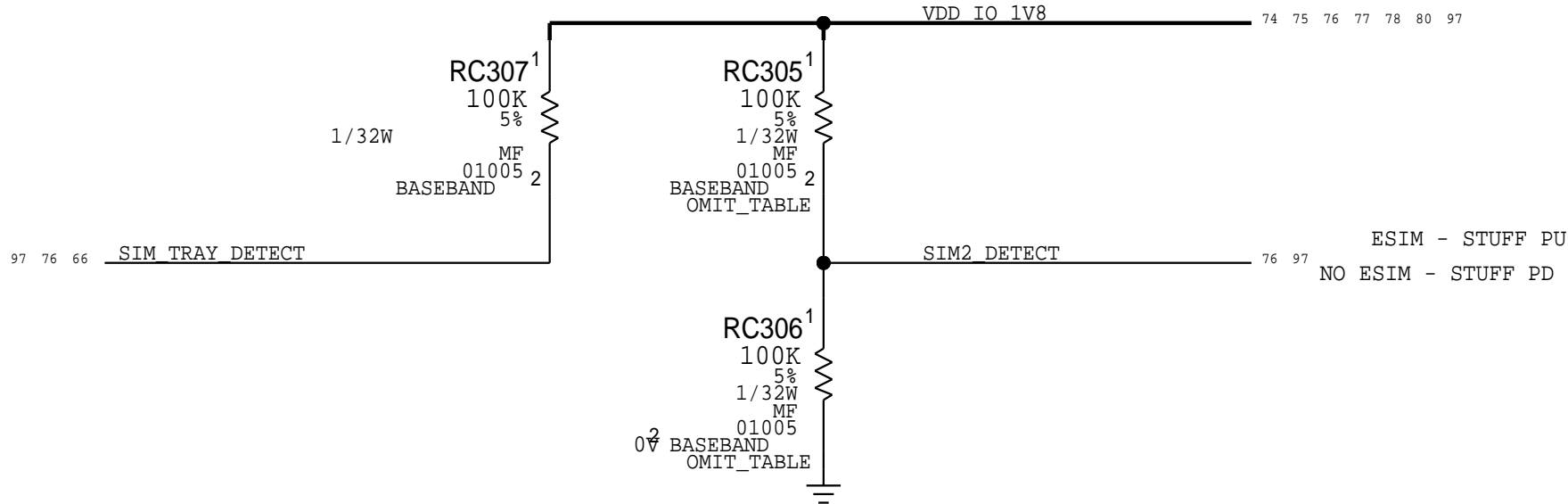
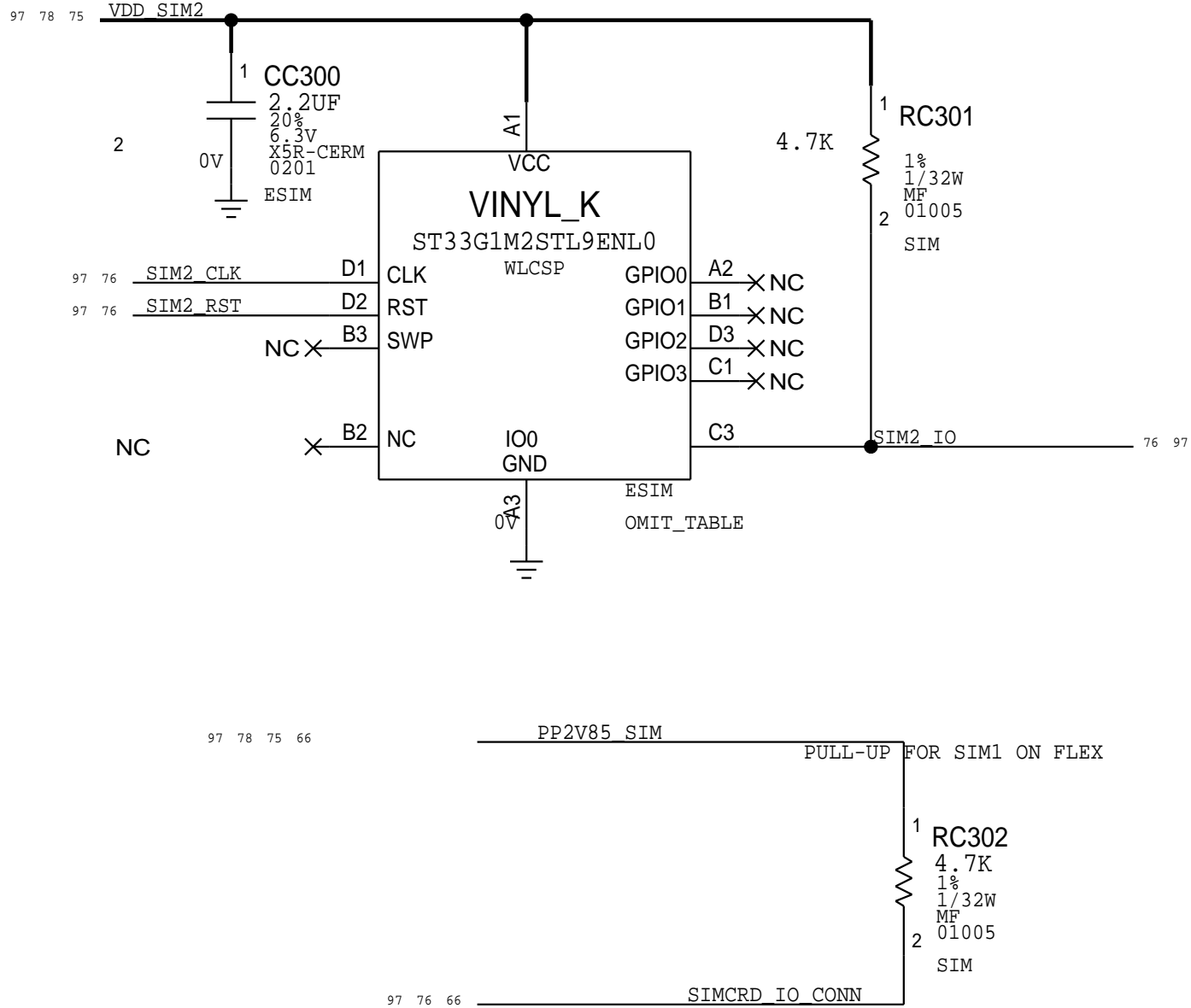


D

D

| PART# | | QTY | DESCRIPTION | REFERENCE DESIGNATOR(S) | BOM OPTION | ... |
|-----------|---|--------------------|-------------|-------------------------|------------|-----|
| 337800578 | | 1 | VINYL | VINYL_K | ESIM | ... |
| 117S0158 | 1 | 100K RES 5% 01005 | | RC305 | ESIM | ... |
| 117S0158 | 1 | 100K RES 5%, 01005 | | RC306 | NO_ESIM | ... |

E-SIM



B

B

A

A

