

# Bill of Materials

TI DESIGNS

TIDA-00988

| Item | Qty | Reference  | Value          | Part Description | Manufacturer         | Manufacturer Part Number     | Alternate Part | PCB Footprint           | Note |
|------|-----|--|----------------|------------------|----------------------|------------------------------|----------------|-------------------------|------|
| 1    | 5   | VIN+1,VIN+2,VIN-,VIN+,CLK  | SMA END LAUNCH | SMA END LAUNCH   | Johnson Components   | 142-0701-851                 | N/A            | EL_DUAL_PSF-S01_250x215 |      |
| 2    | 23  | C1,C7,C9,C11,C18,C34,C44,C61,C80,C81,C84,C119,C152,C160,C164,C199,C200,C201,C202,C203,C204,C205,C206 | 0.1u           | 0.1u             | MURATA               | GRM155R61C104KA88D           | N/A            | C0402_NO_SS             |      |
| 3    | 6   | C2,C8,C10,C12,C24,C35  | 0.01u          | 0.01u            | MURATA               | GRM033R60J103KA0             | N/A            | 201                     |      |
| 4    | 5   | C4,C32,C213,C214,C215  | 10u            | 10u              | TDK Corp             | C1632X5R0J106M               | N/A            | 612                     |      |
| 5    | 7   | C13,C15,C25,C68,C69,C70,C71  | 0.1u           | 0.1u             | MURATA               | GRM033R60J104KE19            | N/A            | 201                     |      |
| 6    | 0   | R4,R8,C14,C16,R243,R279  | A/R            | A/R              | DNI                  | DNI                          | N/A            | 402                     | DNI  |
| 7    | 2   | C20,C21  | 0.01uF         | 0.01uF           | MURATA               | GRM155R71C103KA0             | N/A            | 402                     |      |
| 8    | 1   | C22  | 1u             | 1u               | Electro-Mechanics Am | C103A105KQ3CSNC              | N/A            | 201                     |      |
| 9    | 1   | C26  | 1u             | 1u               | TDK Corp             | C1220X5R1A105K               | N/A            | 508                     |      |
| 10   | 1   | C27  | 10u            | 10u              | AVX Corp             | TAJA106M016RNJ0603YC104KAT2A | N/A            | cap_a-case              |      |
| 11   | 11  | C31,C59,C65,C99,C111,C113,C123,C128,C134,C140,C308   | 0.1u           | 0.1u             | AVX Corp             | GRM155R61C104KA8             | N/A            | 603                     |      |
| 12   | 6   | C36,C37,C43,C207,C208,C211   | 0.01u          | 0.01u            | MURATA               | GRM033R71A103KA0             | N/A            | 201                     |      |
| 13   | 8   | C47,C57,C58,C66,C67,C195,C197,C198   | 0.1u           | 0.1u             | MURATA               | GRM155R61C104KA8             | N/A            | 402                     |      |
| 14   | 2   | C48,C92  | 10u            | 10u              | TDK Corp             | C2012X5R1E106M               | N/A            | 805                     |      |
| 15   | 1   | C60  | 10u            | 10u              | AVX Corp             | TAJA106M016RNJ               | N/A            | smd_size3216            |      |
| 16   | 0   | R32,R33,C63,R92,R93,R94,R95  | A/R            | A/R              | DNI                  | DNI                          | N/A            | C0402_NO_SS             | DNI  |
| 17   | 1   | C64  | 100p           | 100p             | TDK Corp             | C1608C0G1H101J               | N/A            | 603                     |      |
| 18   | 2   | C75,C223   | .01uF          | .01uF            | MURATA               | GRM155R71H103KA8             | N/A            | 402                     |      |
| 19   | 2   | C76,C224   | 2200pF         | 2200pF           | MURATA               | GRM155R71H222KA0             | N/A            | 402                     |      |
| 20   | 7   | C82,C83,C87,C110,C117,C209,C210  | 0.1u           | 0.1u             | MURATA               | GRM155R61C104KA8             | N/A            | smd_size0402            |      |
| 21   | 2   | C86,C158   | 47p            | 47p              | Murata               | GRM1555C1H470JZ0             | N/A            | C0402_NO_SS             |      |
| 22   | 3   | C93,C118,C141  | 1u             | 1u               | TDK Corp             | C1005X5R1A105K               | N/A            | C0402_NO_SS             |      |
| 23   | 1   | C95  | 0.1u           | 0.1u             | AVX                  | 0603YC104KAT2A               | N/A            | 603                     |      |
| 24   | 7   | C96,C102,C109,C122,C132,C145,C314  | 10u            | 10u              | MURATA               | GRM31CR61E106KA1             | N/A            | smd_size1206            |      |
| 25   | 13  | C103,C104,C112,C114,C115,C125,C126,C133,C136,C137,C146,C309,C310                                     | 10uF           | 10uF             | AVX Corp             | TAJA106M016RNJ               | N/A            | cap_a-case              |      |
| 26   | 6   | C105,C106,C116,C127,C139,C311  | 1u             | 1u               | KEMET                | C1206C105K4RACTU             | N/A            | smd_size1206            |      |
| 27   | 4   | C107,C129,C142,C313  | 2.2n           | 2.2n             | TDK Corp             | C1608X7R1H222K               | N/A            | smd_size0603            |      |
| 28   | 7   | C108,C121,C131,C144,C161,C162,C312   | 0.01u          | 0.01u            | MURATA               | GRM155R71C103KA0             | N/A            | C0402_NO_SS             |      |
| 29   | 1   | C120   | 2.2n           | 2.2n             | TDK Corp             | C1608X7R1H22K                | N/A            | smd_size0603            |      |
| 30   | 1   | C153   | .1uF           | .1uF             | TDK                  | C1005X7R1C104K050            | N/A            | 402                     |      |
| 31   | 1   | C154   | 1uF            | 1uF              | TDK                  | C1005X5R1C105K050            | N/A            | 402                     |      |
| 32   | 1   | C155   | .01uF          | .01uF            | TDK                  | C1005X7R1E103K050            | N/A            | 402                     |      |
| 33   | 0   | C179   | 0.1u           | 0.1u             | MURATA               | GRM155R61C104KA8             | N/A            | 201                     | DNI  |
| 34   | 2   | C186,C187  | 0.1u           | 0.1u             | MURATA               | GRM155R61C104KA8             | N/A            | 201                     |      |
| 35   | 0   | C196   | 0.1u           | 0.1u             | MURATA               | GRM155R61C104KA8             | N/A            | 402                     | DNI  |
| 36   | 1   | C212   | 0.1u           | 0.1u             | TDK                  | C0603X5R1C104K030            | N/A            | 201                     |      |
| 37   | 5   | C216,C217,C235,C236,C237   | 0.1uF          | 0.1uF            | MURATA               | GCM155R71C104KA5             | N/A            | 402                     |      |
| 38   | 0   | C220,C232,C233,C234  | .01uF          | .01uF            | MURATA               | GRM155R71H103KA8             | N/A            | 402                     | DNI  |
| 39   | 2   | C221,C222  | 10pF           | 10pF             | MURATA               | GRM1555C1H100GA0             | N/A            | 402                     |      |
| 40   | 4   | C227,C228,C229,C230  | 4pF            | 4pF              | MURATA               | GRM1555C1H4R0WA              | N/A            | 402                     |      |
| 41   | 1   | C231   | 9pF            | 9pF              | MURATA               | GRM1555C1H9R0BA0             | N/A            | 402                     |      |
| 42   | 1   | C238   | 47uF           | 47uF             | KEMET                | T494B476M010AT               | N/A            | TANT_B                  |      |
| 43   | 1   | C253   | 10uF           | 10uF             | Taiyo Yuden          | TMK325B106MN-T               | N/A            | 1210                    |      |
| 44   | 1   | C254   | .1uF           | .1uF             | AVX                  | 0603YC104KAT2A               | N/A            | 603                     |      |
| 45   | 1   | C256   | 3300pF         | 3300pF           | KEMET                | C0603C332K3RACTU             | N/A            | 603                     |      |

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|------|-----|---|------------------------------|-------------------------------|------------------------|--------------------------|----------------|---------------------|---------------|
| 46   | 3   | C303,C306,C307  | 22uF                         | 22uF                          | SAMSUN                 | CL21A226KQNNNE           | N/A            | 805                 |               |
| 47   | 0   | C315,C316   | 0.1uF                        | 0.1uF                         | MURATA                 | GCM155R71C104KA5         | N/A            | 402                 | DNI           |
| 48   | 1   | D2  | Blue                         | Blue                          | kingbright Company Ltd | APHCM2012QBC/D-          | N/A            | LED 0805            |               |
| 49   | 1   | EXTREF  | EXTREF                       | EXTREF                        | Johnson Components     | 142-0701-851             | N/A            | EL_DUAL_PSF-501     | 250x215       |
| 50   | 1   | FB20  | 60 OHM @ 100MHz              | 60 OHM @ 100MHz               | Taiyo Yuden            | FBMJ3216HM600-T          | N/A            | 1206                |               |
| 51   | 1   | FMC   | SEAM-40-02.0-S-10-2-A-K-TR   | SEAM-40-02.0-S-10-2-A-K-TR    | SAMTEC                 | SEAM-40-02.0-S-10-2-     | N/A            | conn_SEAM_040       |               |
| 52   | 0   | F3  | 2 AMP 63V FAST SMD           | 2 AMP 63V FAST SMD            | TE CONNECTIVITY        | 1206SFF200F/63-2         | N/A            | 1206                | DNI           |
| 53   | 0   | GND1,GND3,GND1.2,GND1.8,GND3.0,GND                              | HDR-1x1_0                    | HDR-1x1_0                     | KEYSTONE               | 5006                     | N/A            | tp_500x_50          | DNI           |
| 54   | 0   | GND2  | HDR-1x1_0                    | HDR-1x1_0                     |                        |                          | N/A            | tp_500x_50          | DNI           |
| 55   | 3   | JP3,JP8,JP11  | HDR, 2PIN                    | HDR, 2PIN                     | SAMTEC                 | HMTSW-102-07-G-S-        | N/A            | R_THVT_1x2_100      | SHORTED       |
| 56   | 1   | JP10  | HDR, 3PIN                    | HDR, 3PIN                     | SAMTEC                 | HMTSW-103-07-G-S-        | N/A            | R_THVT_1x3_100      | SHUNT 1-2     |
| 57   | 1   | JP1   | HDR, 4PIN                    | HDR, 4PIN                     | SAMTEC                 | HTSW-104-07-G-S          | N/A            | R_THVT_1x4_100_M    |               |
| 58   | 1   | J6  | CONN JACK PWR                | CONN JACK PWR                 | Switchcraft            | RAPC722                  | N/A            | RAPC722 JACK_THVT_3 |               |
| 59   | 1   | LF1_C1  | 8200p                        | 8200p                         | TDK Corp               | C1608C0G1E822J           | N/A            | 603                 |               |
| 60   | 1   | LF1_C2  | 0.39u                        | 0.39u                         | KEMET                  | C0603C394K4RACTU         | N/A            | 603                 |               |
| 61   | 1   | LF1_R2  | 4.7K                         | 4.7K                          | YAGEO                  | RC0402FR-074K7L          | N/A            | 402                 |               |
| 62   | 1   | LF2_C1  | 33pF                         | 33pF                          | Murata                 | GRM1555C1H330FA0         | N/A            | 402                 |               |
| 63   | 1   | LF2_C2  | 3300pF                       | 3300pF                        | Kemet                  | C0402C332J5RACTU         | N/A            | 402                 |               |
| 64   | 1   | LF2_R2  | 560                          | 560                           | YAGEO                  | RC0402FR-07560RL         | N/A            | 402                 |               |
| 65   | 2   | LMK_SYNC,LMK_RESET  | WITCH, PUSHBUTTON, SPST-NO   | SWITCH, PUSHBUTTON, SPST-NO   | C&K Components         | PTS6355K255MTR LFS       | N/A            | evqppd              |               |
| 66   | 9   | L3,L4,L5,L9,L10,L11,L12,L13,L14                                 | FILTER CHIP 330 OHM 1.5A 060 | FILTER CHIP 330 OHM 1.5A 0603 | MURATA                 | BLM185G331TN1D           | N/A            | r0603               |               |
| 67   | 1   | L8  | 100uH                        | 100uH                         | API Delevan Inc        | 1812R-104J               | N/A            | smd_size1812r       |               |
| 68   | 2   | L15,L21   | 33nH                         | 33nH                          | COILCRAFT              | 0603CS-33NXGL            | N/A            | IND_0603            |               |
| 69   | 4   | L16,L17,L18,L19   | 43nH                         | 43nH                          | COILCRAFT              | 0603CS-43NXGL            | N/A            | IND_0603            |               |
| 70   | 1   | L20   | 16nH                         | 16nH                          | COILCRAFT              | 0603CS-16NXGL            | N/A            | IND_0603            |               |
| 71   | 1   | L38   | 2.2uH                        | 2.2uH                         | COILCRAFT              | XAL4020-222ME            | N/A            | SM_169x169_XFL4020  |               |
| 72   | 6   | MT1,MT2,MT3,MT4,MT5,MT6   | TP                           | TP                            | DNI                    | DNI                      | N/A            | VIA85D55            | POUNTING HOLE |
| 73   | 1   | Q1  | SSM3K37MFV,L3F               | SSM3K37MFV,L3F                | Toshiba                | SSM3K37MFV,L3F           | N/A            | sot-723             |               |
| 74   | 1   | Q2  | CSD18532Q5                   | CSD18532Q5                    | TI                     | CSD18532Q5B              | N/A            | SON_Q5B_8           |               |
| 75   | 1   | REFCLK  | REFCLK                       | REFCLK                        | Johnson Components     | 142-0701-851             | N/A            | EL_DUAL_PSF-501     | 250x215       |
| 76   | 3   | R7,R9,R29   | 100                          | 100                           | PANASONIC              | ERJ-1GEF1000X            | N/A            | 201                 |               |
| 77   | 1   | R16   | 10                           | 10                            | PANASONIC              | ERJ-2RKF10R0X            | N/A            | 402                 |               |
| 78   | 0   | R18,R40,R41,R271,R272   | 0                            | 0                             | Yageo                  | RC0201JR-070RL           | N/A            | 201                 | DNI           |
| 79   | 5   | R20,R22,R24,R226,R227   | 24K                          | 24K                           | Vishay Dale            | CRCW040224K0JNED         | N/A            | smd_size0402        |               |
| 80   | 5   | R21,R23,R25,R224,R225   | 15K                          | 15K                           | PANASONIC              | ERJ-2RKF1502X            | N/A            | smd_size0402        |               |
| 81   | 8   | R27,R60,R84,R85,R87,R102,R120,R228                              | 10K                          | 10K                           | Vishay Dale            | CRCW040210K0FKED         | N/A            | C0402_NO_SS         |               |
| 82   | 2   | R28,R215  | 100                          | 100                           | PANASONIC              | ERJ-2RKF1000X            | N/A            | 402                 |               |
| 83   | 4   | R31,R220,R263,R264  | 0                            | 0                             | Yageo                  | RC0402JR-070RL           | N/A            | 402                 |               |
| 84   | 0   | R34   | 200                          | 200                           | Vishay Dale            | CRCW0402200RFKED         | N/A            | C0402_NO_SS         | DNI           |
| 85   | 1   | R35   | 49.9                         | 49.9                          | PANASONIC              | ERJ-2RKF49R9X            | N/A            | C0402_NO_SS         |               |
| 86   | 3   | R36,R38,R39   | 200                          | 200                           | Vishay Dale            | CRCW0402200RFKED         | N/A            | C0402_NO_SS         |               |
| 87   | 6   | R37,R42,R116,R157,R158,R274                                     | 0                            | 0                             | PANASONIC              | ERJ-3GEY0R00V            | N/A            | 603                 |               |
| 88   | 8   | R43,R50,R51,R61,R248,R249,R252,R253                             | 0                            | 0                             | Yageo                  | RC0201JR-070RL           | N/A            | 201                 |               |
| 89   | 4   | R46,R47,R48,R49   | 121                          | 121                           | Vishay Dale            | CRCW0402121RFKED         | N/A            | C0402_NO_SS         |               |
| 90   | 15  | R57,R58,R59,R70,R71,R72,R73,R74,R75,R76,R77,R230,R231,R232,R233 | 22                           | 22                            | Yageo                  | RC0402JR-0722RL          | N/A            | C0402_NO_SS         |               |
| 91   | 10  | R63,R66,R68,R69,R79,R81,R96,R110,R111,R265                      | 1K                           | 1K                            | PANASONIC              | ERJ-2RKF1001X            | N/A            | smd_size0402        |               |
| 92   | 1   | R64   | 200                          | 200                           | Vishay Dale            | CRCW0402200RFKED         | N/A            | smd_size0402        |               |
| 93   | 1   | R65   | 10K                          | 10K                           | Vishay Dale            | CRCW040210K0FKED         | N/A            | smd_size0402        |               |
| 94   | 1   | R67   | 806                          | 806                           | PANASONIC              | ERJ-2RKF8060X            | N/A            | smd_size0402        |               |
| 95   | 1   | R78   | 2K                           | 2K                            | PANASONIC              | ERJ-2RKF2001X            | N/A            | smd_size0402        |               |
| 96   | 1   | R80   | 2.32K                        | 2.32K                         | Vishay Dale            | CRCW04022K32FKED         | N/A            | smd_size0402        |               |
| 97   | 0   | R82,R89,R90,R97,R266  | A/R                          | A/R                           | DNI                    | DNI                      | N/A            | smd_size0402        | DNI           |
| 98   | 2   | R112,R115   | 0                            | 0                             | Yageo                  | RC0402JR-070RL           | N/A            | C0402_NO_SS         |               |
| 99   | 0   | R113,R114   | A/R                          | A/R                           | Yageo                  | RC0402JR-070RL           | DNI            | C0402_NO_SS         | DNI           |
| 100  | 0   | R119  | A/R                          | A/R                           | DNI                    | DNI                      | N/A            | 201                 | DNI           |
| 101  | 1   | R129  | 100K                         | 100K                          | PANASONIC              | ERJ-3EKF1003V            | N/A            | 603                 |               |
| 102  | 1   | R131  | 180K                         | 180K                          | PANASONIC              | ERJ-3EKF1803V            | N/A            | 603                 |               |
| 103  | 1   | R133  | 715K                         | 715K                          | PANASONIC              | ERJ-3EKF7153V            | N/A            | 603                 |               |
| 104  | 1   | R143  | 10K                          | 10K                           | Panasonic              | ERJ-3EKF1002V            | N/A            | 603                 |               |

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| 105  | 2   | R155,R156                                       | 10K                            | 10K                              | PANASONIC             | ERJ-3GEY103V             | N/A            | r0603                |                  |
| 106  | 2   | R222,R223                                       | 0                              | 0                                | Yageo                 | RC0402JR-070RL           | N/A            | smd_size0402         |                  |
| 107  | 2   | R241,R242                                       | 49.9                           | 49.9                             | PANASONIC             | ERJ-2RKF49R9X            | N/A            | 402                  |                  |
| 108  | 2   | R244,R245                                       | 174                            | 174                              | PANASONIC             | ERJ-2RKF1740X            | N/A            | 402                  |                  |
| 109  | 2   | R246,R247                                       | 39                             | 39                               | PANASONIC             | ERJ-2RKF39R0X            | N/A            | 402                  |                  |
| 110  | 0   | R256,R257,R261,R269,R273,R277,R278              | 0                              | 0                                | Yageo                 | RC0402JR-070RL           | N/A            | 402                  | DNI              |
| 111  | 3   | R258,R259,R267                                  | 1K                             | 1K                               | PANASONIC             | ERJ-2RKF1001X            | N/A            | 402                  |                  |
| 112  | 0   | R260,R262,R270                                  | 49.9                           | 49.9                             | PANASONIC             | ERJ-2RKF49R9X            | N/A            | 402                  | DNI              |
| 113  | 1   | R268  | 4.02K                          | 4.02K                            | PANASONIC             | ERJ-2RKF4021X            | N/A            | 402                  |                  |
| 114  | 0   | R275  | 0                              | 0                                | PANASONIC             | ERJ-6GEY0R00V            | N/A            | 805                  | DNI              |
| 115  | 1   | R276  | 0                              | 0                                | PANASONIC             | ERJ-6GEY0R00V            | N/A            | 805                  |                  |
| 116  | 1   | SYNC  | GREEN LED                      | GREEN LED                        | LITEON                | LTST-C170KGKT            | N/A            | LED_0805             |                  |
| 117  | 1   | SYSREF_SW                                       | PUSH_BUTTON                    | PUSH_BUTTON                      | C&K Components        | PTS6355K25SMTR LFS       | N/A            | EVQPPD               |                  |
| 118  | 0   | TP1,TP2,TP3,TP4                                 | Testloop_White                 | Testloop_White                   | KEYSTONE              | 5007                     | N/A            | testpoint_62dia      | DNI              |
| 119  | 1   | TP5   | Testloop_Red                   | Testloop_Red                     | Keystone              | 5010                     | N/A            | testpoint_62dia      |                  |
| 120  | 1   | TP6   | Testloop_Black                 | Testloop_Black                   | KEYSTONE              | 5011                     | N/A            | testpoint_62dia      |                  |
| 121  | 0   | TP7,TP9,TP10,TP11,TP16                          | Testloop_red                   | Testloop_red                     | Keystone              | 5005                     | N/A            | testpoint_62dia      | DNI              |
| 122  | 6   | TP8,TP12,TP13,TP14,TP15,TP17                    | Testloop_red                   | Testloop_red                     | Keystone              | 5005                     | N/A            | testpoint_62dia      |                  |
| 123  | 3   | T1,T2,T3  | MABA-007159-000000             | MABA-007159-000000               | COM Technology Solu   | MABA-007159-             | N/A            | ABA-007159-000000    |                  |
| 124  | 1   | T5  | ADT2-1T-1P+                    | ADT2-1T-1P+                      | MINI-CIRCUITS         | ADT2-1T-1P+              | N/A            | ADT1-1WT             |                  |
| 125  | 2   | T6,T7   | ADTL2-18                       | ADTL2-18                         | Minicircuits          | ADT4-1T                  | N/A            | MR_6_220x310_100     |                  |
| 126  | 1   | USB   | CONN, USB MINI, AB             | CONN, USB MINI, AB               | MOLEX                 | 678038020                | N/A            | SMRT_USBMNE20_F      |                  |
| 127  | 1   | U1  | ADC31JB68                      | ADC31JB68                        | Texas Instruments     | ADC31JB68                | N/A            | n40_RTA_RT_B_RHA     |                  |
| 128  | 1   | U2  | LMH5401                        | LMH5401                          |                       |                          | N/A            | QFN_14_102x102       |                  |
| 129  | 1   | U3  | LMK04828BISQ                   | LMK04828BISQ                     | Texas Instruments     | LMK04828BISQ/NOPB        | N/A            | 60X360_0P50MM_PWRPAD |                  |
| 130  | 2   | U5,U14  | SN74AVC4T774                   | SN74AVC4T774                     | Texas Instruments     | SN74AVC4T774PWR          | N/A            | tssop16_pw           |                  |
| 131  | 1   | U6  | FT245RL                        | FT245RL                          | FTDI Chip             | FT245L-REEL              | N/A            | FT245RL              |                  |
| 132  | 1   | U7  | LP5900SD-1.8/NOPB              | LP5900SD-1.8/NOPB                | Texas Instruments     | LP5900SD-1.8/NOPB        | N/A            | c-mkt-sdb06a_6llp    |                  |
| 133  | 5   | U8,U9,U10,U11,U22                               | LP3878SD-ADJ                   | LP3878SD-ADJ                     | Texas Instruments     | LP3878SD-ADJ/NOPB        | N/A            | sc-mkt-sdc08a_1llp   |                  |
| 134  | 1   | U16   | TPS62130A                      | TPS62130A                        | TI                    | TPS62130ARGTT            | N/A            | 16_124x124_PWRPAD    |                  |
| 135  | 1   | U21   | TPS2400                        | TPS2400                          | Texas Instruments     | TPS2400DBVT              | N/A            | DBV5                 |                  |
| 136  | 0   | Y1  | 9X14 25PPM                     | 9X14 25PPM                       | Crystek Corporation   | CCHD-950-25-61.440_DNI   | N/A            | c6_100_wg272_15      | DNI              |
| 137  | 0   | Y2  | 10.000MHz                      | 10.000MHz                        | Connor-Winfield       | CWX813-010.0M            | N/A            | CWX813               | DNI              |
| 138  | 0   | Y3  | CVHD-950-100.000               | CVHD-950-100.000                 | Crystek Corporation   | CVHD-950-100.000         | N/A            | c6_100_wg272_15      | DNI              |
| 139  | 1   | Z_BOARD1  | BARE BOARD, TSW14X500          | BARE BOARD, TSW14X500            | GORGILLA CIRCUITS     | TSW14X500 REV A          | N/A            |                      |                  |
| 140  | 4   | Z_SCREW1,Z_SCREW2,Z_SCREW3,Z_SCREW4             | SCREW PANHEAD 4-40 x 3/4"      | SCREW PANHEAD 4-40 x 3/4"        | BUILDING FASTENERS    | PMSS5 440 0075 PH        | N/A            |                      | OR EQUIVALENT    |
| 141  | 1   | Z_SH-H12  | SHUNT-HEADER                   | SHUNT-HEADER                     | TE CONNECTIVITY       | 382811-8                 | N/A            |                      | SHUNT FOR HEADER |
| 142  | 4   | Z_STANDOFF1,Z_STANDOFF2,Z_STANDOFF3,Z_STANDOFF4 | ANDOFF ALUM HEX 4-40 x 1 3/16" | STANDOFF ALUM HEX 4-40 x 1 3/16" | AF Electronic Hardwar | 1648-440-AL              | N/A            |                      | STANDOFF         |
| 143  | 11  | Z1,Z2,Z3,Z4,Z5,Z6,Z7,Z8,Z9,Z10,Z11              | NFM41PC204F1H3                 | NFM41PC204F1H3                   | MURATA                | NFM41PC204F1H3L          | N/A            | nfm41p               |                  |
| 144  | 1   | uWire   | HDR2x5                         | HDR2x5                           | SAMTEC                | TSW-105-07-G-D           | N/A            | blkcon_5x2           |                  |

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