

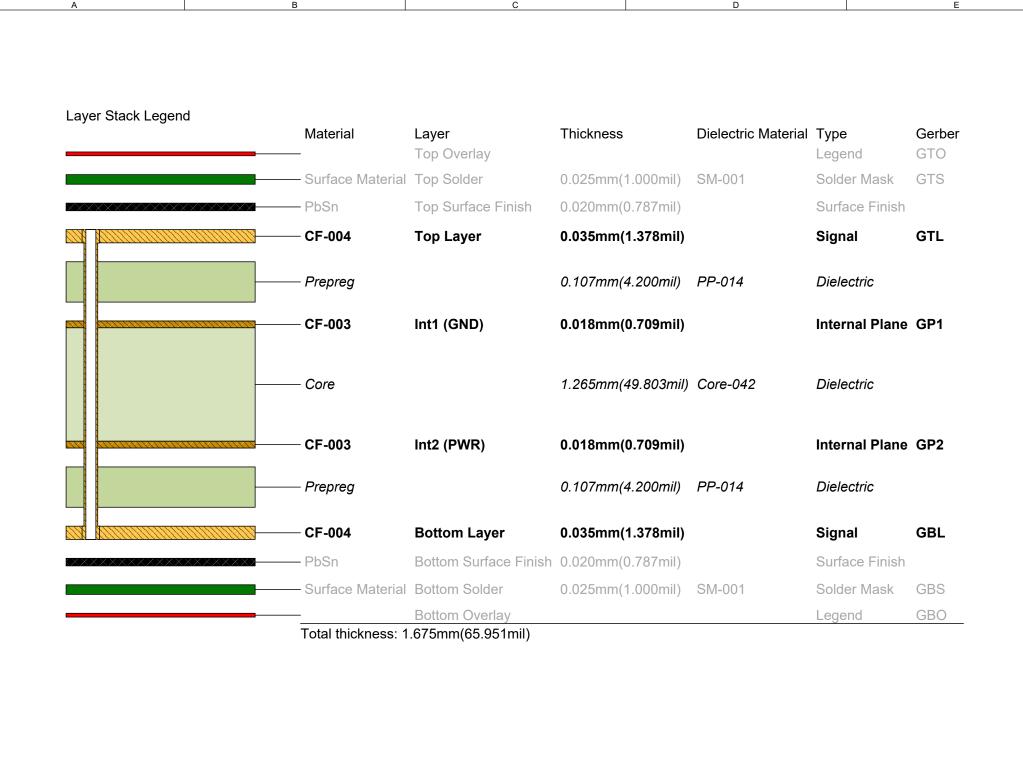
Top Layer (Scale 1:1) **-00** 99 209 00000000 Int1 (GND) (Scale 1:1) ©1000000 ©1000000 °0000000 ° 

Int2 (PWR) (Scale 1:1) Bottom Layer (Scale 1:1) 00000000000 OO 00 O ث ۵ 00 OO °O 🗖 000 00 00 00 00 0 0 0000000 00 000 00 00 О *....* 000

В С D **√√√** °°1 32F429Z6T6 ARM KORHPUZO \* Ð D ∀ Θ R81 R81 R80 R80 R78 R78 R78 R78 R78 R78 R78 R78 פ אדח PRAXIS

Hardware Multidisciplinario **HOOOHOOO** PRAXIS TEAM COLL DIEGO INSTITUTION UTN - FRLR C44: ING. ELECTRÓNICA VDD 🌘 ••• ••• ••• ••• 00000000 +5V\_SPI 🔴 00 0000 +3V3\_SPI ••• +12V\_F

A B C D



Drill Drawing View (Scale 1:1)  $\otimes \otimes \otimes \otimes \otimes$  $\Diamond$ ¹⊚ 🕱 0 0  $\circ$ A O O 08 00 C © \$\$ C  $\bigcirc$ **Drill Table** Symbol Count Hole Size Plated Hole Tolerance 8 0.20mm Plated 182 0.30mm  $\Diamond$ Plated  $\bigcirc$ 184 0.40mm Plated 0.45mm Plated 40 Non-Plated  $\boxtimes$ 0.60mm 0.71mm Plated 111 Σ,⁄Ζ 0.76mm \* 2 Plated 32 0.90mm Δ Plated 2 1.00mm Non-Plated  $\diamondsuit$  $\triangle$ 64 1.02mm Plated Plated 24 1.80mm 0 3.00mm Non-Plated Plated 4 3.00mm 3.25mm Non-Plated 2 667 Total

Rill Of Materials

| Bill Of Materials |   |                                    |          |  |  |  |
|-------------------|---|------------------------------------|----------|--|--|--|
| Line #            | Designator  | Comment                            | Quantity |  |  |  |
| 1                 | C1  | Cap Semi                           | 1        |  |  |  |
| 2                 | C2, C9, C10, C13, C15, C16,<br>C30  | Cap Semi                           | 7        |  |  |  |
| 3                 | C3, C6, C7, C8, C11, C14,<br>C19, C22, C25, C26, C27,<br>C28, C29, C36, C38, C39,<br>C40, C41, C42, C43, C44,<br>C45, C46, C47, C48, C49,<br>C50, C51, C52, C53, C54,<br>C62, C63, C67, C68, C69,<br>C70, C71 | Cap Semi                           | 38       |  |  |  |
| 4                 | C4, C5  | EEEFC1E471P                        | 2        |  |  |  |
| 5                 | C12   | EEEFK1H221P                        | 1        |  |  |  |
| 6                 | C17   | Cap Semi                           | 1        |  |  |  |
| 7                 | C18, C72, C73   | Cap Semi                           | 3        |  |  |  |
| 8                 | C20, C21  | Cap Semi                           | 2        |  |  |  |
| 9                 | C23, C24  | TANT                               | 2        |  |  |  |
| 10                | C31   | Cap Semi                           | 1        |  |  |  |
| 11                | C32, C33  | Cap Semi                           | 2        |  |  |  |
| 12                | C34, C35  | Cap Semi                           | 2        |  |  |  |
| 13                | C37   | Cap Semi                           | 1        |  |  |  |
| 14                | C55, C56  | CAP CER 2.2UF 10V X7R<br>1206      | 2        |  |  |  |
| 15                | C57, C64, C65, C66  | Cap Semi                           | 4        |  |  |  |
| 16                | C58, C59  | TANT                               | 2        |  |  |  |
| 17                | C60, C61  | Tant                               | 2        |  |  |  |
| 18                | CON1  | PWR JACK                           | 1        |  |  |  |
| 19                | CON2, CON3, CON4, CON5  | CONN_HEADER_RA_6POS                | 4        |  |  |  |
| 20                | CON6  | ARJE-0034                          | 1        |  |  |  |
| 21                | CON7  | USB SOHANTECH                      | 1        |  |  |  |
| 22                | CON8, CON9, CON10,<br>CON11   | Header - 16 pins - 2.54mm<br>pitch | 4        |  |  |  |
| 23                | CON12   | Micro SD socket                    | 1        |  |  |  |
| 24                | CON13   | USB SOHANTECH                      | 1        |  |  |  |
| 25                | D1, D2  | SS26SHE3 A/H                       | 2        |  |  |  |
| 26                | D3  | P6SMB13CA                          | 1        |  |  |  |
| 27                | D4  | Diodo schottky                     | 1        |  |  |  |
| 28                | D5, D6, D11   | PMEG1030EJ                         | 3        |  |  |  |
| 29                | D7, D8, D9, D10   | LTST-C191KRKT                      | 4        |  |  |  |
| 30                | D12, D14, D16, D18  | LTST-C191TGKT                      | 4        |  |  |  |
| 31                | D13, D15, D17, D19  | LTST-C191KRKT                      | 4        |  |  |  |
| 32                | D20, D23  | PMEG1030EJ                         | 2        |  |  |  |
| 33                | D21   | LTST-C191TGKT                      | 1        |  |  |  |
| 34                | D22   | LTST-C191KRKT                      | 1        |  |  |  |
| 35                | D24, D25, D26, D27, D28,<br>D29, D30, D31   | LTST-C191KRKT                      | 8        |  |  |  |

Bill Of Materials

| Line # | Designator  | Comment                            | Quantity |
|--------|---|------------------------------------|----------|
| 1      | C1  | Cap Semi                           | 1        |
| 2      | C2, C9, C10, C13, C15, C16,<br>C30  | Cap Semi                           | 7        |
| 3      | C3, C6, C7, C8, C11, C14,<br>C19, C22, C25, C26, C27,<br>C28, C29, C36, C38, C39,<br>C40, C41, C42, C43, C44,<br>C45, C46, C47, C48, C49,<br>C50, C51, C52, C53, C54,<br>C62, C63, C67, C68, C69,<br>C70, C71 | Cap Semi                           | 38       |
| 4      | C4, C5  | EEEFC1E471P                        | 2        |
| 5      | C12   | EEEFK1H221P                        | 1        |
| 6      | C17   | Cap Semi                           | 1        |
| 7      | C18, C72, C73   | Cap Semi                           | 3        |
| 8      | C20, C21  | Cap Semi                           | 2        |
| 9      | C23, C24  | TANT                               | 2        |
| 10     | C31   | Cap Semi                           | 1        |
| 11     | C32, C33  | Cap Semi                           | 2        |
| 12     | C34, C35  | Cap Semi                           | 2        |
| 13     | C37   | Cap Semi                           | 1        |
| 14     | C55, C56  | CAP CER 2.2UF 10V X7R<br>1206      | 2        |
| 15     | C57, C64, C65, C66  | Cap Semi                           | 4        |
| 16     | C58, C59  | TANT                               | 2        |
| 17     | C60, C61  | Tant                               | 2        |
| 18     | CON1  | PWR JACK                           | 1        |
| 19     | CON2, CON3, CON4, CON5  | CONN_HEADER_RA_6POS                | 4        |
| 20     | CON6  | ARJE-0034                          | 1        |
| 21     | CON7  | USB_SOHANTECH                      | 1        |
| 22     | CON8, CON9, CON10,<br>CON11   | Header - 16 pins - 2.54mm<br>pitch | 4        |
| 23     | CON12   | Micro SD socket                    | 1        |
| 24     | CON13   | USB_SOHANTECH                      | 1        |
| 25     | D1, D2  | SS26SHE3_A/H                       | 2        |
| 26     | D3  | P6SMB13CA                          | 1        |
| 27     | D4  | Diodo schottky                     | 1        |
| 28     | D5, D6, D11   | PMEG1030EJ                         | 3        |
| 29     | D7, D8, D9, D10   | LTST-C191KRKT                      | 4        |
| 30     | D12, D14, D16, D18  | LTST-C191TGKT                      | 4        |
| 31     | D13, D15, D17, D19  | LTST-C191KRKT                      | 4        |
| 32     | D20, D23  | PMEG1030EJ                         | 2        |
| 33     | D21   | LTST-C191TGKT                      | 1        |
| 34     | D22   | LTST-C191KRKT                      | 1        |
| 35     | D24, D25, D26, D27, D28,<br>D29, D30, D31   | LTST-C191KRKT                      | 8        |

## Bill Of Materials

| 68         R555         Res3         1           69         R566         Res3         1           70         R69         Res3         1           71         R72, R73, R74, R75         Res3         4           72         R84         Pull_Up_Res         1           73         R88         1         1           74         R91         Res3         1           75         R92, R93, R94, R95, R96         Res3         5           76         R97         Res3         1           77         S1, S2, S3, S4, S5         Switch         5           78         U1         SPI-8001TW         1           79         U2         MCP1825S-3302E         1           80         U3         IC PWR SWITCH N-CHAN 1:1         1           PDSO-8         1         1           81         U4         MIC5301-3.3YD5-TR         1           82         U5         LD3985M33R         1           83         U6         IC TRANSCEIVER 1/1 8SOIC         1           84         U7         LAN8742A-CZ         1           85         U8         STM32F103CBT6         1   | Line # | Designator              | Comment                  | Quantity |
|---|--------|-------------------------|--------------------------|----------|
| 69         R56         Res3         1           70         R69         Res3         1           71         R72, R73, R74, R75         Res3         4           72         R84         Pull_Up_Res         1           73         R88         1         1           74         R91         Res3         1           75         R92, R93, R94, R95, R96         Res3         5           76         R97         Res3         1           77         S1, S2, S3, S4, S5         Switch         5           78         U1         SPI-8001TW         1           79         U2         MCP1825S-3302E         1           80         U3         IC PWR SWITCH N-CHAN 1:1         1           81         U4         MIC5301-3.3YD5-TR         1           82         U5         LD3985M33R         1           83         U6         IC TRANSCEIVER 1/1 8SOIC         1           84         U7         LAN8742A-CZ         1           85         U8         STM32F103CBT6         1           86         U9         STM32F746ZGT6         1           87         U10         IC PWR SWITCH N-C   |        |                         |                          |          |
| 70         R69         Res3         1           71         R72, R73, R74, R75         Res3         4           72         R84         Pull_Up_Res         1           73         R88         1         1           74         R91         Res3         1           75         R92, R93, R94, R95, R96         Res3         5           76         R97         Res3         1           77         S1, S2, S3, S4, S5         Switch         5           78         U1         SPI-8001TW         1           79         U2         MCP1825S-3302E         1           80         U3         IC PWR SWITCH N-CHAN 1:1         1           PDSO-8         1         1           81         U4         MIC5301-3.3YD5-TR         1           82         U5         LD3985M33R         1           83         U6         IC TRANSCEIVER 1/1 8SOIC         1           84         U7         LAN8742A-CZ         1           85         U8         STM32F103CBT6         1           86         U9         STM32F103CBT6         1           1         IC PWR SWITCH N-CHAN 1:1         PDSO-8     <   |        |                         |                          | 1        |
| 72         R84         Pull_Up_Res         1           73         R88         1           74         R91         Res3         1           75         R92, R93, R94, R95, R96         Res3         5           76         R97         Res3         1           77         S1, S2, S3, S4, S5         Switch         5           78         U1         SPI-8001TW         1           79         U2         MCP1825S-3302E         1           80         U3         IC PWR SWITCH N-CHAN 1:1 PDSO-8         1           81         U4         MIC5301-3.3YD5-TR         1           82         U5         LD3985M33R         1           83         U6         IC TRANSCEIVER 1/1 8SOIC         1           84         U7         LAN8742A-CZ         1           85         U8         STM32F103CBT6         1           86         U9         STM32F746ZGT6         1           87         U10         IC PWR SWITCH N-CHAN 1:1 PDSO-8         1           88         XT1         Crystal 25MHz         1           89         XT2         NX3225GD-8MHZ         1           90         XT3 <td< td=""><td></td><td></td><td></td><td>1</td></td<> |        |                         |                          | 1        |
| 72         R84         Pull_Up_Res         1           73         R88         1           74         R91         Res3         1           75         R92, R93, R94, R95, R96         Res3         5           76         R97         Res3         1           77         S1, S2, S3, S4, S5         Switch         5           78         U1         SPI-8001TW         1           79         U2         MCP1825S-3302E         1           80         U3         IC PWR SWITCH N-CHAN 1:1 PDSO-8         1           81         U4         MIC5301-3.3YD5-TR         1           82         U5         LD3985M33R         1           83         U6         IC TRANSCEIVER 1/1 8SOIC         1           84         U7         LAN8742A-CZ         1           85         U8         STM32F103CBT6         1           86         U9         STM32F746ZGT6         1           87         U10         IC PWR SWITCH N-CHAN 1:1 PDSO-8         1           88         XT1         Crystal 25MHz         1           89         XT2         NX3225GD-8MHZ         1           90         XT3 <td< td=""><td></td><td></td><td></td><td></td></td<>  |        |                         |                          |          |
| 73         R88         1           74         R91         Res3         1           75         R92, R93, R94, R95, R96         Res3         5           76         R97         Res3         1           77         S1, S2, S3, S4, S5         Switch         5           78         U1         SPI-8001TW         1           79         U2         MCP1825S-3302E         1           80         U3         IC PWR SWITCH N-CHAN 1:1         1           81         U4         MIC5301-3.3YD5-TR         1           82         U5         LD3985M33R         1           83         U6         IC TRANSCEIVER 1/1 8SOIC         1           84         U7         LAN8742A-CZ         1           85         U8         STM32F103CBT6         1           86         U9         STM32F746ZGT6         1           87         U10         IC PWR SWITCH N-CHAN 1:1         PDSO-8           88         XT1         Crystal 25MHz         1           89         XT2         NX3225GD-8MHZ         1           90         XT3         NX3215SA-32.768K-STD-MUA-8         1           91         XT4  | 72     |                         | Pull Up Res              | 1        |
| 75         R92, R93, R94, R95, R96         Res3         5           76         R97         Res3         1           77         S1, S2, S3, S4, S5         Switch         5           78         U1         SPI-8001TW         1           79         U2         MCP1825S-3302E         1           80         U3         IC PWR SWITCH N-CHAN 1:1 PDSO-8         1           81         U4         MIC5301-3.3YD5-TR         1           82         U5         LD3985M33R         1           83         U6         IC TRANSCEIVER 1/1 8SOIC         1           84         U7         LAN8742A-CZ         1           85         U8         STM32F103CBT6         1           86         U9         STM32F746ZGT6         1           87         U10         IC PWR SWITCH N-CHAN 1:1 PDSO-8         1           88         XT1         Crystal 25MHz         1           89         XT2         NX3225GD-8MHZ         1           90         XT3         NX3215SA-32.768K-STD-MUA-8         1           91         XT4         NX3225GD-8MHZ         1  |        | R88                     |                          | 1        |
| 76         R97         Res3         1           77         S1, S2, S3, S4, S5         Switch         5           78         U1         SPI-8001TW         1           79         U2         MCP1825S-3302E         1           80         U3         IC PWR SWITCH N-CHAN 1:1 pDSO-8         1           81         U4         MIC5301-3.3YD5-TR         1           82         U5         LD3985M33R         1           83         U6         IC TRANSCEIVER 1/1 8SOIC         1           84         U7         LAN8742A-CZ         1           85         U8         STM32F103CBT6         1           86         U9         STM32F746ZGT6         1           87         U10         IC PWR SWITCH N-CHAN 1:1 pDSO-8         1           88         XT1         Crystal 25MHz         1           89         XT2         NX3225GD-8MHZ         1           90         XT3         NX3215SA-32.768K-STD- MUA-8         1           91         XT4         NX3225GD-8MHZ         1   |        |                         | Res3                     |          |
| 77         S1, S2, S3, S4, S5         Switch         5           78         U1         SPI-8001TW         1           79         U2         MCP1825S-3302E         1           80         U3         IC PWR SWITCH N-CHAN 1:1 PDSO-8         1           81         U4         MIC5301-3.3YD5-TR         1           82         U5         LD3985M33R         1           83         U6         IC TRANSCEIVER 1/1 8SOIC         1           84         U7         LAN8742A-CZ         1           85         U8         STM32F103CBT6         1           86         U9         STM32F746ZGT6         1           87         U10         IC PWR SWITCH N-CHAN 1:1 PDSO-8         1           88         XT1         Crystal 25MHz         1           89         XT2         NX3225GD-8MHZ         1           90         XT3         NX3215SA-32.768K-STD-MUA-8         1           91         XT4         NX3225GD-8MHZ         1  | 75     | R92, R93, R94, R95, R96 | Res3                     | 5        |
| 77         \$1, \$2, \$3, \$4, \$5         Switch         5           78         U1         \$PI-8001TW         1           79         U2         MCP1825S-3302E         1           80         U3         IC PWR SWITCH N-CHAN 1:1 PDSO-8         1           81         U4         MIC5301-3.3YD5-TR         1           82         U5         LD3985M33R         1           83         U6         IC TRANSCEIVER 1/1 8SOIC         1           84         U7         LAN8742A-CZ         1           85         U8         STM32F103CBT6         1           86         U9         STM32F746ZGT6         1           87         U10         IC PWR SWITCH N-CHAN 1:1 PDSO-8         1           88         XT1         Crystal 25MHz         1           89         XT2         NX3225GD-8MHZ         1           90         XT3         NX3215SA-32.768K-STD-MUA-8         1           91         XT4         NX3225GD-8MHZ         1  | 76     | R97                     | Res3                     | 1        |
| 78         U1         SPI-8001TW         1           79         U2         MCP1825S-3302E         1           80         U3         IC PWR SWITCH N-CHAN 1:1 PDSO-8         1           81         U4         MIC5301-3.3YD5-TR         1           82         U5         LD3985M33R         1           83         U6         IC TRANSCEIVER 1/1 8SOIC         1           84         U7         LAN8742A-CZ         1           85         U8         STM32F103CBT6         1           86         U9         STM32F746ZGT6         1           87         U10         IC PWR SWITCH N-CHAN 1:1 PDSO-8         1           88         XT1         Crystal 25MHz         1           89         XT2         NX3225GD-8MHZ         1           90         XT3         NX3215SA-32.768K-STD-MUA-8         1           91         XT4         NX3225GD-8MHZ         1   |        | S1, S2, S3, S4, S5      | Switch                   | 5        |
| 79         U2         MCP1825S-3302E         1           80         U3         IC PWR SWITCH N-CHAN 1:1 PDSO-8         1           81         U4         MIC5301-3.3YD5-TR         1           82         U5         LD3985M33R         1           83         U6         IC TRANSCEIVER 1/1 8SOIC 1           84         U7         LAN8742A-CZ 1           85         U8         STM32F103CBT6 1           86         U9         STM32F746ZGT6 1           87         U10         IC PWR SWITCH N-CHAN 1:1 PDSO-8           88         XT1         Crystal 25MHz 1           89         XT2         NX3225GD-8MHZ 1           90         XT3         NX3215SA-32.768K-STD-MUA-8           91         XT4         NX3225GD-8MHZ 1  | 78     |                         |                          |          |
| B0  |        |                         |                          | 1        |
| 81         U4         MIC5301-3.3YD5-TR         1           82         U5         LD3985M33R         1           83         U6         IC TRANSCEIVER 1/1 8SOIC         1           84         U7         LAN8742A-CZ         1           85         U8         STM32F103CBT6         1           86         U9         STM32F746ZGT6         1           87         U10         IC PWR SWITCH N-CHAN 1:1 PDSO-8         1           88         XT1         Crystal 25MHz         1           89         XT2         NX3225GD-8MHZ         1           90         XT3         NX3215SA-32.768K-STD-MUA-8         1           91         XT4         NX3225GD-8MHZ         1   |        | U3                      | IC PWR SWITCH N-CHAN 1:1 | 1        |
| 82         U5         LD3985M33R         1           83         U6         IC TRANSCEIVER 1/1 8SOIC 1           84         U7         LAN8742A-CZ         1           85         U8         STM32F103CBT6         1           86         U9         STM32F746ZGT6         1           87         U10         IC PWR SWITCH N-CHAN 1:1 PDSO-8         1           88         XT1         Crystal 25MHz         1           89         XT2         NX3225GD-8MHZ         1           90         XT3         NX3215SA-32.768K-STD-MUA-8         1           91         XT4         NX3225GD-8MHZ         1   | 81     | U4                      |                          | 1        |
| 83         U6         IC TRANSCEIVER 1/1 8SOIC 1           84         U7         LAN8742A-CZ 1           85         U8         STM32F103CBT6 1           86         U9         STM32F746ZGT6 1           87         U10         IC PWR SWITCH N-CHAN 1:1 PDSO-8           88         XT1         Crystal 25MHz 1           89         XT2         NX3225GD-8MHZ 1           90         XT3         NX3215SA-32.768K-STD-MUA-8           91         XT4         NX3225GD-8MHZ 1  |        |                         |                          |          |
| 84         U7         LAN8742A-CZ         1           85         U8         STM32F103CBT6         1           86         U9         STM32F746ZGT6         1           87         U10         IC PWR SWITCH N-CHAN 1:1 PDSO-8         1           88         XT1         Crystal 25MHz         1           89         XT2         NX3225GD-8MHZ         1           90         XT3         NX3215SA-32.768K-STD-MUA-8         1           91         XT4         NX3225GD-8MHZ         1   |        |                         |                          |          |
| 85         U8         STM32F103CBT6         1           86         U9         STM32F746ZGT6         1           87         U10         IC PWR SWITCH N-CHAN 1:1 pDSO-8         1           88         XT1         Crystal 25MHz         1           89         XT2         NX3225GD-8MHZ         1           90         XT3         NX3215SA-32.768K-STD- MUA-8         1           91         XT4         NX3225GD-8MHZ         1  |        |                         |                          |          |
| 86         U9         STM32F746ZGT6         1           87         U10         IC PWR SWITCH N-CHAN 1:1 PDSO-8         1           88         XT1         Crystal 25MHz         1           89         XT2         NX3225GD-8MHZ         1           90         XT3         NX3215SA-32.768K-STD-MUA-8         1           91         XT4         NX3225GD-8MHZ         1   |        |                         |                          | 1        |
| 87         U10         IC PWR SWITCH N-CHAN 1:1 PDSO-8         1           88         XT1         Crystal 25MHz         1           89         XT2         NX3225GD-8MHZ         1           90         XT3         NX3215SA-32.768K-STD-MUA-8         1           91         XT4         NX3225GD-8MHZ         1   |        |                         |                          | 1        |
| 89         XT2         NX3225GD-8MHZ         1           90         XT3         NX3215SA-32.768K-STD-MUA-8         1           91         XT4         NX3225GD-8MHZ         1   |        |                         | IC PWR SWITCH N-CHAN 1:1 | 1        |
| 90 XT3 NX3215SA-32.768K-STD-<br>MUA-8<br>91 XT4 NX3225GD-8MHZ 1   | 88     | XT1                     | Crystal 25MHz            | 1        |
| 90 XT3 MUA-8<br>91 XT4 NX3225GD-8MHZ 1  | 89     | XT2                     | NX3225GD-8MHZ            | 1        |
|   | 90     | XT3                     |                          | 1        |
| 92 XT5 ASCO-25MHZ-EK-T3 1   | 91     | XT4                     | NX3225GD-8MHZ            | 1        |
|   | 92     | XT5                     | ASCO-25MHZ-EK-T3         | 1        |
|   |        |                         |                          |          |
|   |        |                         |                          |          |
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|   |        | 1                       | -                        | 1        |