

A

B

C

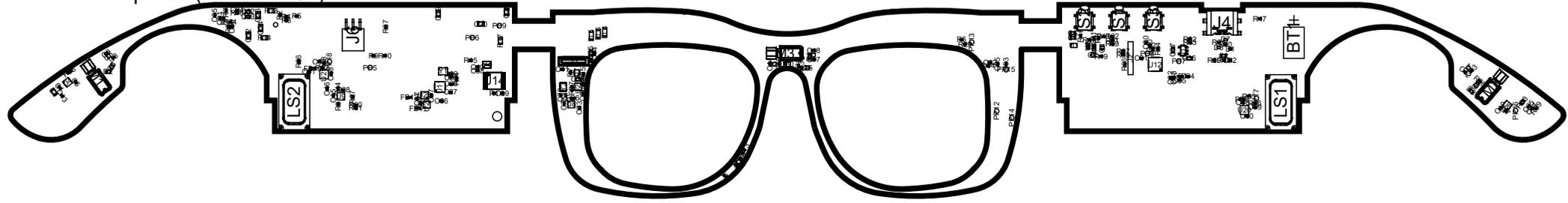
D

E

1

1

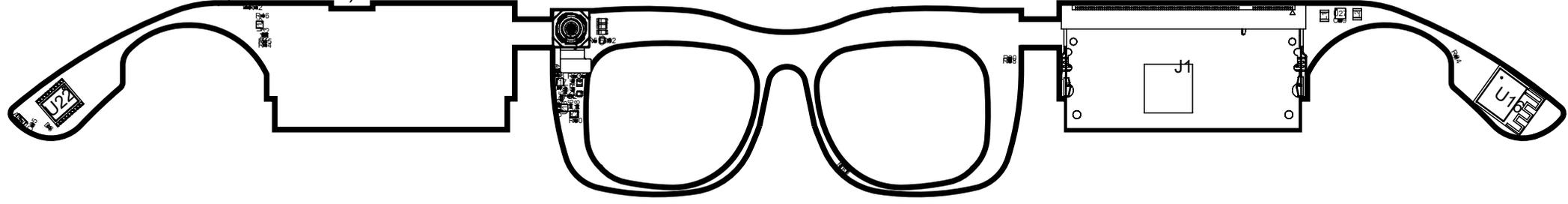
View from Top side (Scale 1:1.64)



2

2

View from Bottom side (Scale 1:1.64)



3

3

4

4

A

B

C

D

E

A

B

C

D

E

1

1

Top Layer (Scale 1:1.64)



2

2

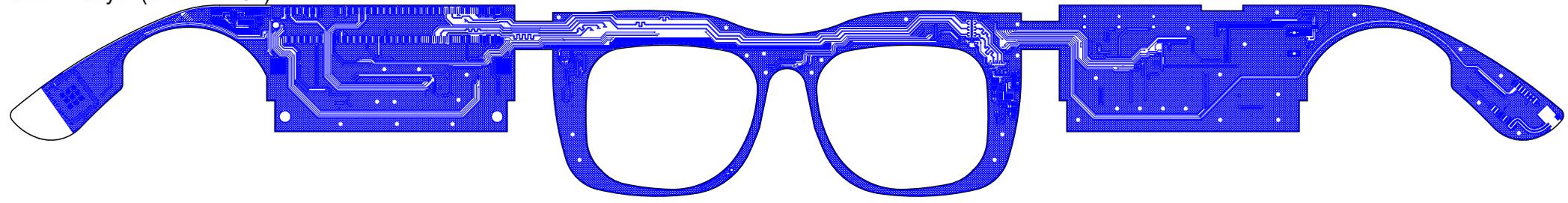
STIFFENER BOT (Scale 1:1.64)



3

3

Bottom Layer (Scale 1:1.64)



4

4

A

B

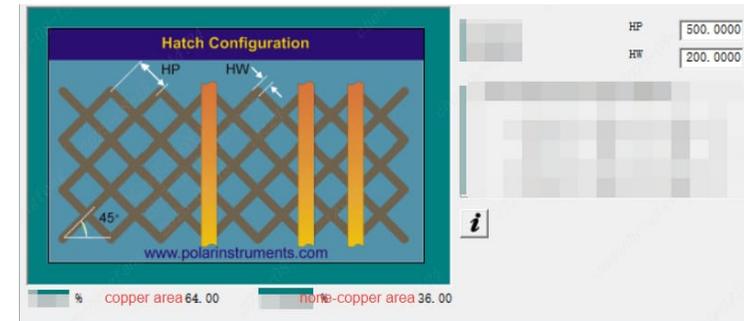
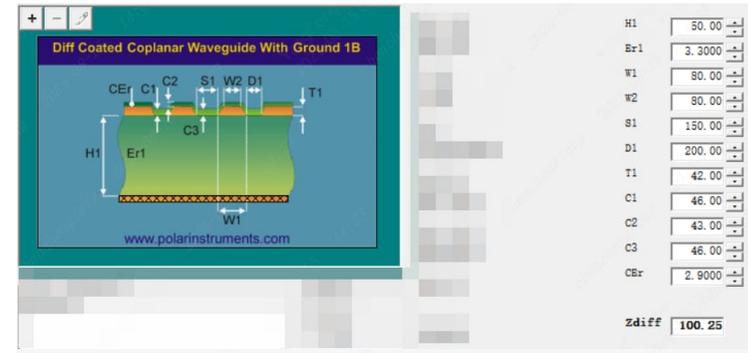
C

D

E

### Drill Table

| Symbol    | Count | Hole Size | Plated     | Hole Tolerance |
|-----------|-------|-----------|------------|----------------|
| ⊙         | 682   | 0.15mm    | Plated     |                |
| ○         | 2     | 0.20mm    | Plated     |                |
| ⊕         | 1     | 0.60mm    | Non-Plated |                |
| ⊞         | 2     | 0.76mm    | Plated     |                |
| ◇         | 6     | 0.90mm    | Plated     |                |
| ▽         | 1     | 1.12mm    | Plated     |                |
| □         | 2     | 1.20mm    | Non-Plated |                |
| ⊗         | 46    | 1.20mm    | Plated     |                |
| ☆         | 1     | 1.60mm    | Plated     |                |
| ⊛         | 2     | 3.00mm    | Plated     |                |
| 745 Total |       |           |            |                |



### Transmission Line Structure Table

| Transmission Line              | Target Impedance | Trace layer  | Wide Trace Width | Narrow Trace Width | Gap    | Reference layers | Clearance | Target Tolerance |
|--------------------------------|------------------|--------------|------------------|--------------------|--------|------------------|-----------|------------------|
| Edge-Coupled Coated Microstrip | 100              | Top Layer    | 0.08mm           | 0.08mm             | 0.15mm | Int1 (GND)       | 0.13mm    | 10%              |
| Edge-Coupled Coated Microstrip | 100              | Bottom Layer | 0.08mm           | 0.08mm             | 0.15mm | Int2 (GND)       | 0.13mm    | 10%              |

### Layer Stack Legend

| Material         | Layer                             | Thickness     | Dielectric Material | Type          | Gerber     |
|------------------|-----------------------------------|---------------|---------------------|---------------|------------|
| Surface Material | Board Layer Stack Top Coverlay    | 0.05mm        | FC-001              | Solder Mask   | GCT1       |
| <b>CF-004</b>    | <b>Top Layer</b>                  | <b>0.04mm</b> |                     | <b>Signal</b> | <b>GTL</b> |
| PP-017           | Dielectric 1                      | 0.05mm        |                     | Adhesive      |            |
| <b>CF-004</b>    | <b>Int1 (GND)</b>                 | <b>0.02mm</b> |                     | <b>Signal</b> | <b>G1</b>  |
| Core-039         | Dielectric 3                      | 0.02mm        |                     | Adhesive      |            |
| <b>CF-004</b>    | <b>Int2 (GND)</b>                 | <b>0.02mm</b> |                     | <b>Signal</b> | <b>G2</b>  |
| Prepreg          |                                   | 0.05mm        | PP-017              | Dielectric    |            |
| <b>CF-004</b>    | <b>Bottom Layer</b>               | <b>0.04mm</b> |                     | <b>Signal</b> | <b>GBL</b> |
| Surface Material | Board Layer Stack Bottom Coverlay | 0.05mm        | FC-001              | Solder Mask   | GCB1       |

Total thickness: 0.33mm

Bill Of Materials

| Line # | Designator  | Comment              | Quantity |
|--------|---|----------------------|----------|
| 1      | ANT1  | W3011                | 1        |
| 2      | BT1   | Battery Soldered     | 1        |
| 3      | C1, C6, C7, C10, C26, C27, C46, C47, C48, C49, C50, C51, C52, C53, C55, C59, C60, C62, C63, C71, C72, C73, C79, C86 | 1uF/6V3              | 24       |
| 4      | C2, C4, C5, C75, C78  | 22uF/6V3             | 5        |
| 5      | C3, C19, C20, C21, C22, C23, C24  | 47uF/6V3             | 7        |
| 6      | C8, C12, C17, C56   | 22uF/6V3             | 4        |
| 7      | C9, C13, C14, C18, C44, C45, C57, C58, C61, C64, C66, C67, C68, C87, C88, C89                                       | 4.7uF/6V3            | 16       |
| 8      | C11, C15, C16, C28, C30, C32, C34, C35, C38, C39, C40, C43, C54, C65, C69, C70, C74, C76, C77, C81                  | 100nF                | 20       |
| 9      | C25   | 2.2pF                | 1        |
| 10     | C29, C31, C84   | 100pF                | 3        |
| 11     | C33, C80, C85   | 10uF/6V3             | 3        |
| 12     | C36, C37  | 1uF/6V3              | 2        |
| 13     | C41, C42  | 1uF/6V3              | 2        |
| 14     | C82, C83  | 10uF                 | 2        |
| 15     | D1  | ESD9B5.0ST5G         | 1        |
| 16     | D2, D3, D4  | RB520S30T1G          | 3        |
| 17     | D5  | 155060VS73200        | 1        |
| 18     | D6  | PESD5V0S1UL,315      | 1        |
| 19     | D7, D8  | TPD1E05U06DPYT       | 2        |
| 20     | FB1, FB2, FB4, FB5, FB6, FB7, FB8, FB9, FB10, FB11, FB12, FB13  | BLM18SG121TN1D       | 12       |
| 21     | FB3   | BLM18AG601SN1D       | 1        |
| 22     | FL1, FL2, FL3, FL4, FL5, FL6  | CMA0805A900R-1A      | 6        |
| 23     | J1  | CM3P_CM4S            | 1        |
| 24     | J3  | DF37NC-30DS-0.4V(51) | 1        |
| 25     | J4  | USB4135-GF-A         | 1        |
| 26     | J5  | 505550-3420          | 1        |
| 27     | J6  | M22-6540342R         | 1        |
| 28     | L1, L2  | DFE322520F-2R2M=P2   | 2        |
| 29     | L4  | DFE201612P-1R0M=P2   | 1        |
| 30     | LS1, LS2  | CMS-16093-078SP-67   | 2        |
| 31     | M1, M2, M3  | HD-EMB1104-SM-2      | 3        |
| 32     | MK1   | AMM-2738-2-B         | 1        |
| 33     | Q1, Q2, Q3, Q4, Q5  | NTK3134NT5G          | 5        |
| 34     | Q6, Q7  | DMG1024UV-7          | 2        |
| 35     | R1, R36, R66, R79   | 10K                  | 4        |

Bill Of Materials

| Line # | Designator   | Comment            | Quantity |
|--------|--|--------------------|----------|
| 36     | R2, R3, R4, R5, R7, R21, R22, R35, R50, R51, R52, R64, R65 | 2K2                | 13       |
| 37     | R6, R27, R29, R30, R31, R38, R60, R61, R62, R63            | 0R                 | 10       |
| 38     | R8, R12, R20   | 47K                | 3        |
| 39     | R9, R10, R67, R68, R73                                     | 100K               | 5        |
| 40     | R11, R16   | 1K5                | 2        |
| 41     | R13, R14, R17  | 0R                 | 3        |
| 42     | R15, R18, R19, R37   | 1K0                | 4        |
| 43     | R24, R26, R33  | 240R               | 3        |
| 44     | R28  | 4K7                | 1        |
| 45     | R34  | 1M                 | 1        |
| 46     | R39  | 330                | 1        |
| 47     | R40, R49, R59  | 10K                | 3        |
| 48     | R41, R44, R45  | 27K                | 3        |
| 49     | R42, R43, R46  | 680R               | 3        |
| 50     | R47  | 10K                | 1        |
| 51     | R48  | 33                 | 1        |
| 52     | R53  | 12K1               | 1        |
| 53     | R54  | 14K5               | 1        |
| 54     | R55, R56, R57, R58   | 22K                | 4        |
| 55     | R70, R71   | 5K1                | 2        |
| 56     | R72  | 680K               | 1        |
| 57     | R74, R76   | 150K               | 2        |
| 58     | R75  | 300K               | 1        |
| 59     | S1, S2, S3   | TL3901AGQF180      | 3        |
| 60     | U1   | SIP32411DNP-T1-GE4 | 1        |
| 61     | U2   | 74LVC1G08GM-Q100X  | 1        |
| 62     | U3   | 74LVC1G32GM-Q100H  | 1        |
| 63     | U4, U6, U24, U25   | TLV75533PDRVR      | 4        |
| 64     | U5, U7, U10  | TLV74228PDQNR      | 3        |
| 65     | U8, U17  | TLV75518PDRVR      | 2        |
| 66     | U9   | MC6470             | 1        |
| 67     | U11  | SGTL5000XNLA3      | 1        |
| 68     | U12  | PIC16LF1829-I ML   | 1        |
| 69     | U13  | TLV74333PDBVR      | 1        |
| 70     | U14  | SC16IS741AIPWJ     | 1        |
| 71     | U15  | BQ25170DSGR        | 1        |
| 72     | U16  | ESP8684-MINI-1-H2  | 1        |
| 73     | U18  | TLV75528PDRVR      | 1        |
| 74     | U19  | TPS62A02DRLR       | 1        |
| 75     | U20, U21   | LM4819LD_NOPB      | 2        |
| 76     | U22  | MAX-M10M-00B       | 1        |
| 77     | U23  | TLV75512PDRVR      | 1        |
| 78     | U26  | TLV74330PDQNR      | 1        |
| 79     | U27  | PAM2319AYAA        | 1        |
| 80     | U28  | TPS7A2027PDQNR     | 1        |
| 81     | U30  | VCNL36825T         | 1        |

