



Shenzhen Yuhong Industrial Co., Ltd

# Parts Acknowledgment

|                |                                                                    |
|----------------|--------------------------------------------------------------------|
| Customer name: | Minami Acoustics Limited                                           |
| Product Model: | E105D                                                              |
| Risuntek P/N:  | 216-000076-0                                                       |
| Version:       | A                                                                  |
| Prodcut Name:  | FPC antenna                                                        |
| Description:   | 22.80*4.60*0.11mm Length * width *<br>thickness one side back glue |
| date:          | 2022/10/8                                                          |

(Customer Signatures)

|      |      |      |
|------|------|------|
| (PM) | (ME) | (QE) |
|      |      |      |

(Inner Signatures)

|       |       |      |
|-------|-------|------|
| (QE)  | (ME)  | (RF) |
| ASTON | Cindy | Jake |

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<http://www.yuhong-co.com/>

# catalogue

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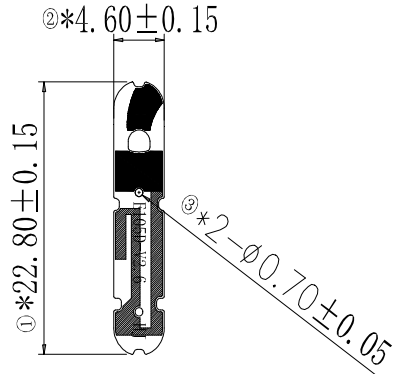
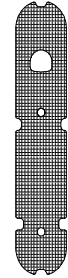
seven Reliability test report

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one、Preparation / revision change resume

| editi<br>on | Revision<br>page | Change time | Changed<br>by | Reason and content of change      | remarks |
|-------------|------------------|-------------|---------------|-----------------------------------|---------|
| A0          | —                | 2022/10/8   | Cindy         | Antenna form of the first version |         |
| A1          |                  |             |               |                                   |         |
| A2          |                  |             |               |                                   |         |
| A3          |                  |             |               |                                   |         |
| A4          |                  |             |               |                                   |         |
| A5          |                  |             |               |                                   |         |
| A6          |                  |             |               |                                   |         |

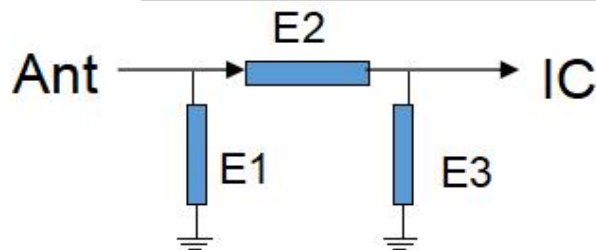
## two、Product drawings

| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2                  | 3                                                                                     | 4               | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 6                       | 7                                    | 8       |                               |                                          |       |  |                                                                                       |           |       |      |            |  |      |       |                                                                                       |      |                                                                                       |              |                                 |        |       |  |       |       |                                                                                       |       |             |  |       |    |       |       |       |                                                                                       |      |                                                                                       |                         |                                      |         |    |      |       |       |                                                                                       |      |                   |  |  |  |  |                                                                                       |      |                          |  |  |      |    |                                          |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------------------------------------|---------|-------------------------------|------------------------------------------|-------|--|---------------------------------------------------------------------------------------|-----------|-------|------|------------|--|------|-------|---------------------------------------------------------------------------------------|------|---------------------------------------------------------------------------------------|--------------|---------------------------------|--------|-------|--|-------|-------|---------------------------------------------------------------------------------------|-------|-------------|--|-------|----|-------|-------|-------|---------------------------------------------------------------------------------------|------|---------------------------------------------------------------------------------------|-------------------------|--------------------------------------|---------|----|------|-------|-------|---------------------------------------------------------------------------------------|------|-------------------|--|--|--|--|---------------------------------------------------------------------------------------|------|--------------------------|--|--|------|----|------------------------------------------|---|
| <div>Black matte ink printed in bright white lettering<br/>Half cutting process</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                                                                                       |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                                      |         |                               |                                          |       |  |                                                                                       |           |       |      |            |  |      |       |                                                                                       |      |                                                                                       |              |                                 |        |       |  |       |       |                                                                                       |       |             |  |       |    |       |       |       |                                                                                       |      |                                                                                       |                         |                                      |         |    |      |       |       |                                                                                       |      |                   |  |  |  |  |                                                                                       |      |                          |  |  |      |    |                                          |   |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                                                                                       |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                                      |         | A                             |                                          |       |  |                                                                                       |           |       |      |            |  |      |       |                                                                                       |      |                                                                                       |              |                                 |        |       |  |       |       |                                                                                       |       |             |  |       |    |       |       |       |                                                                                       |      |                                                                                       |                         |                                      |         |    |      |       |       |                                                                                       |      |                   |  |  |  |  |                                                                                       |      |                          |  |  |      |    |                                          |   |
| <div>positive</div> <div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |                                                                                       |                 | <div>The reverse</div> <div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                         |                                      |         | B                             |                                          |       |  |                                                                                       |           |       |      |            |  |      |       |                                                                                       |      |                                                                                       |              |                                 |        |       |  |       |       |                                                                                       |       |             |  |       |    |       |       |       |                                                                                       |      |                                                                                       |                         |                                      |         |    |      |       |       |                                                                                       |      |                   |  |  |  |  |                                                                                       |      |                          |  |  |      |    |                                          |   |
| B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                                                                                       |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                                      |         | B                             |                                          |       |  |                                                                                       |           |       |      |            |  |      |       |                                                                                       |      |                                                                                       |              |                                 |        |       |  |       |       |                                                                                       |       |             |  |       |    |       |       |       |                                                                                       |      |                                                                                       |                         |                                      |         |    |      |       |       |                                                                                       |      |                   |  |  |  |  |                                                                                       |      |                          |  |  |      |    |                                          |   |
| <div>NOTES:</div> <div>1.  Red is the copper part;  Blank for the substrate;;  The yellow part is the gold-plated area;  Blue is the adhesive area;</div> <div>2. The cutter die shall not hurt the line, and the gold-plated area shall conduct with the line;</div> <div>3. The surface shall not have dirt, scratches, black spots, broken and falling off after gold plating and other undesirable phenomena;</div> <div>4. Material: FPC single panel [PI(ED) one-half base material + glue (3M 9471 0.05mm)+ black ink (superior)(&gt;0.01mm)];</div> <div>5. The back glue is 3M 9471;</div> <div>6. Gold finger surface gilded (thickness: ≥1u"), no oxidation phenomenon (need salt spray test);<br/>After 48±1 hour salt spray test, no corrosion spots and coating fall off on the surface;</div> <div>7. Marked * is the key dimension, and if the tolerance is not marked, please check according to the tolerance of class B.</div> <div>8. Meet ROHS,Reach and halogen-free requirements of our company</div> |                    |                                                                                       |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                                      |         | C                             |                                          |       |  |                                                                                       |           |       |      |            |  |      |       |                                                                                       |      |                                                                                       |              |                                 |        |       |  |       |       |                                                                                       |       |             |  |       |    |       |       |       |                                                                                       |      |                                                                                       |                         |                                      |         |    |      |       |       |                                                                                       |      |                   |  |  |  |  |                                                                                       |      |                          |  |  |      |    |                                          |   |
| <div>Note: This drawing is issued by Shenzhen Yuhong Industrial Co., LTD<br/>No one shall copy, alter or take away from the company without permission.</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                                                                                       |                 | <div>Shenzhen Yuhong Industrial Co., LTD</div> <div><table><tr><td colspan="2">One-stop RF solution provider</td><td colspan="2">RF PA</td><td></td><td>Machine a</td><td>E105D</td><td>Date</td><td colspan="2">2022.10.08</td></tr><tr><td>0~10</td><td>±0.10</td><td></td><td>0.02</td><td rowspan="2"></td><td>Product name</td><td>FPC Bluetooth headphone antenna</td><td>design</td><td colspan="2">Cindy</td></tr><tr><td>10~20</td><td>±0.12</td><td></td><td>∅0.03</td><td>Material no</td><td></td><td>audit</td><td>ME</td><td>Cindy</td></tr><tr><td>20~40</td><td>±0.15</td><td></td><td>0.02</td><td rowspan="2"></td><td>Material is qualitative</td><td>PI one pair half electrolytic copper</td><td rowspan="2">confirm</td><td>RF</td><td>Jake</td></tr><tr><td>40~50</td><td>±0.20</td><td></td><td>0.04</td><td>Surface treatment</td><td></td><td></td></tr><tr><td colspan="2"></td><td></td><td>0.02</td><td>Appearance of processing</td><td></td><td></td><td>unit</td><td>mm</td><td><div>The proportion</div>FITversionV2.6</td></tr></table></div> |                         |                                      |         | One-stop RF solution provider |                                          | RF PA |  |  | Machine a | E105D | Date | 2022.10.08 |  | 0~10 | ±0.10 |  | 0.02 |  | Product name | FPC Bluetooth headphone antenna | design | Cindy |  | 10~20 | ±0.12 |  | ∅0.03 | Material no |  | audit | ME | Cindy | 20~40 | ±0.15 |  | 0.02 |  | Material is qualitative | PI one pair half electrolytic copper | confirm | RF | Jake | 40~50 | ±0.20 |  | 0.04 | Surface treatment |  |  |  |  |  | 0.02 | Appearance of processing |  |  | unit | mm | <div>The proportion</div> FITversionV2.6 | D |
| One-stop RF solution provider                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    | RF PA                                                                                 |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Machine a               | E105D                                | Date    | 2022.10.08                    |                                          |       |  |                                                                                       |           |       |      |            |  |      |       |                                                                                       |      |                                                                                       |              |                                 |        |       |  |       |       |                                                                                       |       |             |  |       |    |       |       |       |                                                                                       |      |                                                                                       |                         |                                      |         |    |      |       |       |                                                                                       |      |                   |  |  |  |  |                                                                                       |      |                          |  |  |      |    |                                          |   |
| 0~10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ±0.10              |  | 0.02            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Product name            | FPC Bluetooth headphone antenna      | design  | Cindy                         |                                          |       |  |                                                                                       |           |       |      |            |  |      |       |                                                                                       |      |                                                                                       |              |                                 |        |       |  |       |       |                                                                                       |       |             |  |       |    |       |       |       |                                                                                       |      |                                                                                       |                         |                                      |         |    |      |       |       |                                                                                       |      |                   |  |  |  |  |                                                                                       |      |                          |  |  |      |    |                                          |   |
| 10~20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ±0.12              |  | ∅0.03           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Material no             |                                      | audit   | ME                            | Cindy                                    |       |  |                                                                                       |           |       |      |            |  |      |       |                                                                                       |      |                                                                                       |              |                                 |        |       |  |       |       |                                                                                       |       |             |  |       |    |       |       |       |                                                                                       |      |                                                                                       |                         |                                      |         |    |      |       |       |                                                                                       |      |                   |  |  |  |  |                                                                                       |      |                          |  |  |      |    |                                          |   |
| 20~40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ±0.15              |  | 0.02            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Material is qualitative | PI one pair half electrolytic copper | confirm | RF                            | Jake                                     |       |  |                                                                                       |           |       |      |            |  |      |       |                                                                                       |      |                                                                                       |              |                                 |        |       |  |       |       |                                                                                       |       |             |  |       |    |       |       |       |                                                                                       |      |                                                                                       |                         |                                      |         |    |      |       |       |                                                                                       |      |                   |  |  |  |  |                                                                                       |      |                          |  |  |      |    |                                          |   |
| 40~50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ±0.20              |  | 0.04            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Surface treatment       |                                      |         |                               |                                          |       |  |                                                                                       |           |       |      |            |  |      |       |                                                                                       |      |                                                                                       |              |                                 |        |       |  |       |       |                                                                                       |       |             |  |       |    |       |       |       |                                                                                       |      |                                                                                       |                         |                                      |         |    |      |       |       |                                                                                       |      |                   |  |  |  |  |                                                                                       |      |                          |  |  |      |    |                                          |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |  | 0.02            | Appearance of processing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |                                      | unit    | mm                            | <div>The proportion</div> FITversionV2.6 |       |  |                                                                                       |           |       |      |            |  |      |       |                                                                                       |      |                                                                                       |              |                                 |        |       |  |       |       |                                                                                       |       |             |  |       |    |       |       |       |                                                                                       |      |                                                                                       |                         |                                      |         |    |      |       |       |                                                                                       |      |                   |  |  |  |  |                                                                                       |      |                          |  |  |      |    |                                          |   |
| Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Modify the content |                                                                                       | Version of this | Repair order                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                         |                                      |         |                               |                                          |       |  |                                                                                       |           |       |      |            |  |      |       |                                                                                       |      |                                                                                       |              |                                 |        |       |  |       |       |                                                                                       |       |             |  |       |    |       |       |       |                                                                                       |      |                                                                                       |                         |                                      |         |    |      |       |       |                                                                                       |      |                   |  |  |  |  |                                                                                       |      |                          |  |  |      |    |                                          |   |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2                  | 3                                                                                     | 4               | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 6                       | 7                                    | 8       |                               |                                          |       |  |                                                                                       |           |       |      |            |  |      |       |                                                                                       |      |                                                                                       |              |                                 |        |       |  |       |       |                                                                                       |       |             |  |       |    |       |       |       |                                                                                       |      |                                                                                       |                         |                                      |         |    |      |       |       |                                                                                       |      |                   |  |  |  |  |                                                                                       |      |                          |  |  |      |    |                                          |   |

## three、Description of electrical and mechanical properties

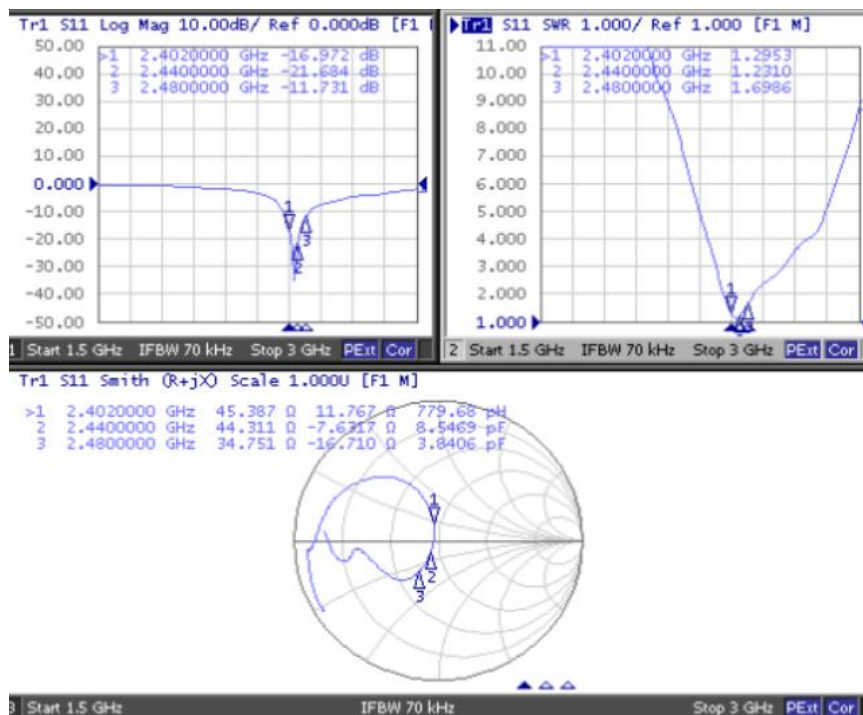
### 1、Match the circuit diagram

Description of antenna matching circuit



| Element | Value     |
|---------|-----------|
| E1      | N/C       |
| E2      | $0\Omega$ |
| E3      | N/C       |

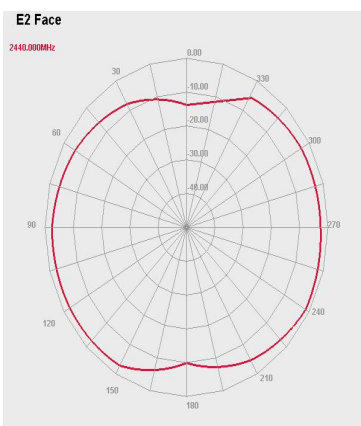
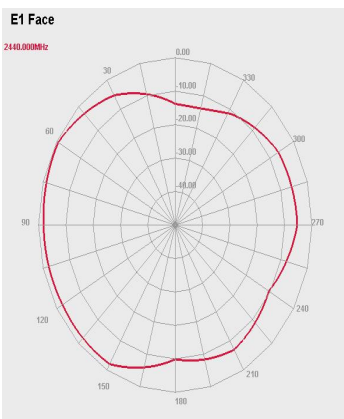
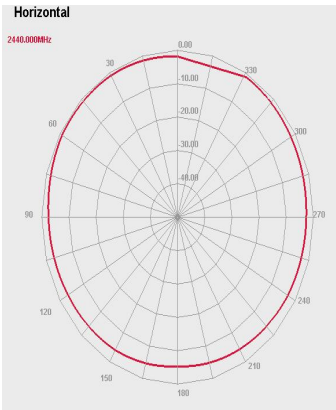
### 2、S11 parameter



3、The efficiency of passive

| Freq[MHz] | Efficiency(%) | Gain(dBi)  |
|-----------|---------------|------------|
|           | free space    | free space |
| 2400      | 27.4          | 0.1        |
| 2410      | 28.5          | 0.2        |
| 2420      | 28.6          | 0.2        |
| 2430      | 29.4          | 0.3        |
| 2440      | 32.4          | 0.2        |
| 2450      | 32.9          | 0.2        |
| 2460      | 31.4          | 0.3        |
| 2470      | 31.8          | 0.3        |
| 2480      | 29.7          | 0.1        |
| 2490      | 28.4          | -0.1       |
| 2500      | 28.1          | -0.2       |

4、Gain figure



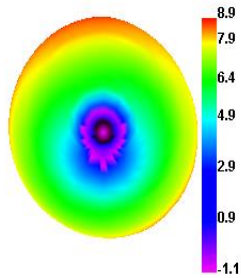
## 5、 Active OTA data

| L    | channel | TRP (dbm) | TRP (dBm) |
|------|---------|-----------|-----------|
| free | 0       | 7.4       | -88.9     |
|      | 39      | 8.0       | -90.1     |
|      | 78      | 8.2       | -89.7     |
| R    | channel | TRP (dbm) | TRP (dBm) |
| free | 0       | 6.3       | -88.7     |
|      | 39      | 7.5       | -89.9     |
|      | 78      | 7.6       | -89.4     |

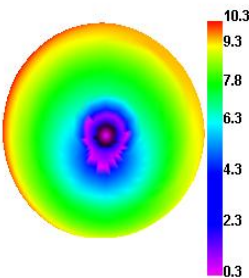
| L        | channel | TRP (dbm) | TRP (dBm) |
|----------|---------|-----------|-----------|
| Die head | 0       | -2.0      | -79.3     |
|          | 39      | -1.8      | -80.2     |
|          | 78      | -1.7      | -79.5     |
| R        | channel | TRP (dbm) | TRP (dBm) |
| Die head | 0       | -2.4      | -79.1     |
|          | 39      | -2.1      | -79.5     |
|          | 78      | -1.8      | -80.0     |

Free 3D orientation

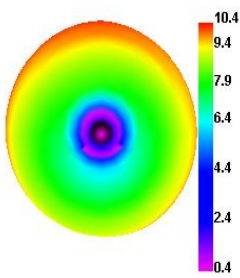
Bluetooth 0 TRP



Bluetooth 39 TRP

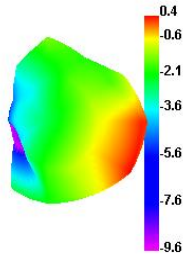


Bluetooth 78 TRP

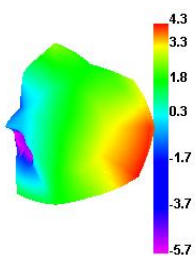


Head mold 3D orientation diagram

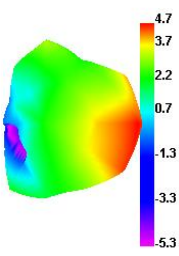
Bluetooth 0 TRP



Bluetooth 39 TRP



Bluetooth 78 TRP



## four、Full-size measurement report

|       |           |              |        |                 |             |                    |            |                |                   |            |            |            |                     |                                       |
|-------|-----------|--------------|--------|-----------------|-------------|--------------------|------------|----------------|-------------------|------------|------------|------------|---------------------|---------------------------------------|
|       | code      | 216-000076-0 |        | Part name       |             | FPC antenna        |            | Specifications | E105D FPC antenna |            |            |            | Material Science    | One pair and half electrolytic copper |
|       | supplier  | Yuhong       |        | Measuring tools |             | Quadratic element, |            | Measurement    |                   | MM         |            |            | Date of measurement | 2022.10.08                            |
| NO.   | DIMENSION | upper limit  | + TOL. | - TOL.          | lower limit | Measured 1         | Measured 2 | Measured 3     | Measured 4        | Measured 5 | Measured 6 | Measured 7 | UPPER≤100%          | LOWER≤100%                            |
| E105D | 22.80     | 22.95        | 0.15   | 0.15            | 22.65       | 22.820             | 22.780     | 22.830         | 22.760            | 22.840     | 22.750     | 22.820     | 27%                 | 33%                                   |
|       | 4.60      | 4.75         | 0.15   | 0.15            | 4.45        | 4.620              | 4.630      | 4.570          | 4.620             | 4.580      | 4.610      | 4.620      | 20%                 | 20%                                   |
|       | 0.70      | 0.75         | 0.05   | 0.05            | 0.65        | 0.680              | 0.720      | 0.670          | 0.710             | 0.720      | 0.680      | 0.720      | 40%                 | 60%                                   |
|       |           |              |        |                 |             |                    |            |                |                   |            |            |            |                     |                                       |
|       |           |              |        |                 |             |                    |            |                |                   |            |            |            |                     |                                       |
|       |           |              |        |                 |             |                    |            |                |                   |            |            |            |                     |                                       |
|       |           |              |        |                 |             |                    |            |                |                   |            |            |            |                     |                                       |
|       |           |              |        |                 |             |                    |            |                |                   |            |            |            |                     |                                       |
|       |           |              |        |                 |             |                    |            |                |                   |            |            |            |                     |                                       |
|       |           |              |        |                 |             |                    |            |                |                   |            |            |            |                     |                                       |

Prepared by: Zhang Qinghua

Reviewed by: maoluping

Date 2022/10/8

# five、CPK Report

## Shenzhen Yuhong Industrial Co., Ltd

|                        |                                       |      |      |                  |                          |  |  |  |  |
|------------------------|---------------------------------------|------|------|------------------|--------------------------|--|--|--|--|
| <b>Project name</b>    | E105D                                 |      |      | <b>Customer</b>  | Minami Acoustics Limited |  |  |  |  |
| <b>Description</b>     | antenna                               |      |      | <b>Inspected</b> | Cindy                    |  |  |  |  |
| <b>Material</b>        | One pair and half electrolytic copper |      |      | <b>Inches/MM</b> | mm                       |  |  |  |  |
| <b>Revision</b>        | A                                     |      |      | <b>Date</b>      | 2022/10/08               |  |  |  |  |
| <b>Dim. Designator</b> | 22.80                                 | 4.60 | 0.70 |                  |                          |  |  |  |  |
| <b>Upper Limit</b>     | 22.95                                 | 4.75 | 0.75 |                  |                          |  |  |  |  |
| <b>Lower Limit</b>     | 22.65                                 | 4.45 | 0.65 |                  |                          |  |  |  |  |
| 1                      | 22.78                                 | 4.60 | 0.70 |                  |                          |  |  |  |  |
| 2                      | 22.85                                 | 4.60 | 0.71 |                  |                          |  |  |  |  |
| 3                      | 22.84                                 | 4.64 | 0.70 |                  |                          |  |  |  |  |
| 4                      | 22.83                                 | 4.62 | 0.69 |                  |                          |  |  |  |  |
| 5                      | 22.82                                 | 4.61 | 0.70 |                  |                          |  |  |  |  |
| 6                      | 22.83                                 | 4.64 | 0.69 |                  |                          |  |  |  |  |
| 7                      | 22.84                                 | 4.64 | 0.70 |                  |                          |  |  |  |  |
| 8                      | 22.81                                 | 4.62 | 0.70 |                  |                          |  |  |  |  |
| 9                      | 22.80                                 | 4.62 | 0.71 |                  |                          |  |  |  |  |
| 10                     | 22.82                                 | 4.57 | 0.70 |                  |                          |  |  |  |  |
| 11                     | 22.82                                 | 4.58 | 0.69 |                  |                          |  |  |  |  |
| 12                     | 22.77                                 | 4.60 | 0.71 |                  |                          |  |  |  |  |
| 13                     | 22.79                                 | 4.61 | 0.70 |                  |                          |  |  |  |  |
| 14                     | 22.83                                 | 4.64 | 0.70 |                  |                          |  |  |  |  |
| 15                     | 22.85                                 | 4.60 | 0.69 |                  |                          |  |  |  |  |
| 16                     | 22.83                                 | 4.58 | 0.71 |                  |                          |  |  |  |  |
| 17                     | 22.77                                 | 4.62 | 0.69 |                  |                          |  |  |  |  |
| 18                     | 22.80                                 | 4.61 | 0.72 |                  |                          |  |  |  |  |
| 19                     | 22.77                                 | 4.56 | 0.70 |                  |                          |  |  |  |  |
| 20                     | 22.84                                 | 4.64 | 0.69 |                  |                          |  |  |  |  |
| 21                     | 22.77                                 | 4.63 | 0.71 |                  |                          |  |  |  |  |
| 22                     | 22.83                                 | 4.64 | 0.72 |                  |                          |  |  |  |  |
| 23                     | 22.84                                 | 4.64 | 0.69 |                  |                          |  |  |  |  |
| 24                     | 22.84                                 | 4.63 | 0.71 |                  |                          |  |  |  |  |
| 25                     | 22.85                                 | 4.65 | 0.72 |                  |                          |  |  |  |  |
| 26                     | 22.78                                 | 4.64 | 0.70 |                  |                          |  |  |  |  |
| 27                     | 22.85                                 | 4.61 | 0.71 |                  |                          |  |  |  |  |
| 28                     | 22.82                                 | 4.57 | 0.69 |                  |                          |  |  |  |  |
| 29                     | 22.83                                 | 4.61 | 0.71 |                  |                          |  |  |  |  |
| 30                     | 22.77                                 | 4.63 | 0.69 |                  |                          |  |  |  |  |
| 31                     | 22.80                                 | 4.65 | 0.69 |                  |                          |  |  |  |  |
| 32                     | 22.80                                 | 4.59 | 0.71 |                  |                          |  |  |  |  |
| MAX.                   | 22.85                                 | 4.65 | 0.72 |                  |                          |  |  |  |  |
| MIN.                   | 22.77                                 | 4.56 | 0.69 |                  |                          |  |  |  |  |
| AVERAGE                | 22.81                                 | 4.61 | 0.70 |                  |                          |  |  |  |  |
| STDEV                  | 0.03                                  | 0.02 | 0.01 |                  |                          |  |  |  |  |
| CP                     | 1.87                                  | 2.03 | 2.04 |                  |                          |  |  |  |  |
| Cpk                    | 1.69                                  | 1.83 | 1.95 |                  |                          |  |  |  |  |
| <b>TOOLING(测量工具)</b>   | 卡尺                                    | 卡尺   | 卡尺   |                  |                          |  |  |  |  |

Prepared by : aston      Checked by : Cindy      Approved by : Jake

## six、Environmental management substance component deployment table

The Parts List of Enviromental Management Substances

| Product Information |              | Supplier Contact Information |                                     | Report type                                   | Confirm the result       | remarks                                        |
|---------------------|--------------|------------------------------|-------------------------------------|-----------------------------------------------|--------------------------|------------------------------------------------|
| Part name           | FPC天线        | Compony Name                 | Shenzhen Yuhong Industrial Co., Ltd | <input checked="" type="checkbox"/> RoHS 2.0  | <input type="checkbox"/> | Metal provides RoHS 4 items and other 10 items |
| Risuntek P/N        | 216-000076-0 | Contact Name/Title           | Aston                               | <input checked="" type="checkbox"/> HF        | <input type="checkbox"/> | Cl&br for non-metallic parts                   |
| Supplier's P/N      | E105D        | Date:YY/MM/DD                | 2022/10/8                           | <input checked="" type="checkbox"/> CP65      | /                        | Parts in contact with skin                     |
| Manufacurering site | Dongguan     | E-mail address               |                                     | <input checked="" type="checkbox"/> REACH     | <input type="checkbox"/> | According to the latest SVHC list              |
| Total weight (g)    |              | Tel. No.                     | 13714345069                         | <input checked="" type="checkbox"/> other ( ) | /                        | Such as be, pops, pfos/pfoa, etc               |
|                     |              |                              |                                     | <input checked="" type="checkbox"/> MSDS      | <input type="checkbox"/> | Article 17. Seal and validity                  |

| No. | Customer item number | Part name         | Homogeneous material    | Test Report No.    | Test Date (YY/MM/DD) | Test result (ppm) |    |    |       |     |      |     |    |      |     |     |      |                                                                                                                  | Test report                                                                                                     | MSDS                                                                                                     |
|-----|----------------------|-------------------|-------------------------|--------------------|----------------------|-------------------|----|----|-------|-----|------|-----|----|------|-----|-----|------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
|     |                      |                   |                         |                    |                      | Pb                | Cd | Hg | Cr6 + | PBB | PBDE | Cl  | Br | DEHP | DBP | BBP | DIBP |                                                                                                                  |                                                                                                                 |                                                                                                          |
| 1   | 216-000076-0         | Base material     | Fubon base material     | A2220120187101006E | 2022. 4. 08          | ND                | ND | ND | ND    | ND  | ND   | ND  | ND | ND   | ND  | ND  | ND   |  A2220120187101006E ROHS卤素    |  基材MSDS.pdf                  |                                                                                                          |
| 2   |                      | Solder resist ink | High interest black oil | ETR22705905        | 2022/8/5             | ND                | ND | ND | ND    | ND  | ND   | 434 | ND | ND   | ND  | ND  | ND   |  ETR22705905 PSM-800黑色阻焊     |  ETR22705913 PSM-800黑色阻焊    |  MSDS_PS-800黑色油墨.pdf |
| 3   |                      | Gummed paper      | 3 m9471                 | CANEC2200386501    | 2022/1/12            | ND                | ND | ND | ND    | ND  | ND   | 162 | ND | ND   | ND  | ND  | ND   |  CANEC2200386501 3M9471LE背  |  CANEC2200386502 3M9471LE背 |  MSDS_3M9471白色.pdf  |
| 4   |                      | Gold plated       | Gen da                  | A2210415672101002E | 2021/10/15           | ND                | ND | ND | ND    | ND  | ND   | 124 | ND | ND   | ND  | ND  | ND   |  A2210415672101002E镀金ROHS   |  跃电金MSDS报告 2021013009242   |                                                                                                          |
| 5   |                      | White ink         | Chuan yu                | ETR21A04957M01     | 2021/10/29           | ND                | ND | ND | ND    | ND  | ND   | 625 | ND | ND   | ND  | ND  | ND   |  ETR21A04957M01 ZSR-150白色油墨 |  MSDS_ZSR-150白色文字油墨.pdf    |                                                                                                          |

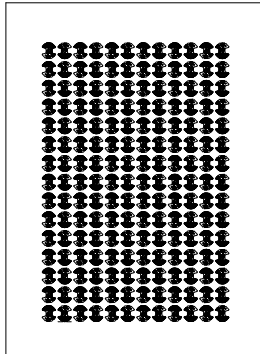
seven、Reliability test report

|                   |                    |                                       |                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                   |                         |
|-------------------|--------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| customer          |                    |                                       | Minami Acoustics Limited                                                                                                                                                                                                                                                                                                                                          | entry name                                                                                                                                                                        | E105D FPC antenna       |
| Test time:        |                    |                                       | 2022/10/06---2022/10/08                                                                                                                                                                                                                                                                                                                                           | Number of tests                                                                                                                                                                   | 5PCS for each test item |
| Serial number     | Test items         | Test instrument                       | test method                                                                                                                                                                                                                                                                                                                                                       | Criteria:                                                                                                                                                                         | determine               |
| 1                 | Salt spray test    | Salt spray test machine               | The tested products were placed in the salt spray testing machine containing 5%±1%Nacl solution. The laboratory temperature was 35° , the pressure barrel temperature was 47° , and the pressure was 1kgf/cm2. The test lasted for 48 hours. The product shall be placed at 45° . After the test, the product shall be taken out, washed and dried for inspection | Appearance after test: The appearance is intact without significant change. Coating: no peeling, no corrosion. Surface spraying, screen printing: no off, no bubbles to determine | PASS                    |
| 2                 | Cold and hot shock | Constant temperature and humidity box | Put the test product flat in the testing machine, set the test conditions, high temperature is 85℃, a cycle test for 24 hours; The low temperature was -30℃, and the test was conducted for 2 cycles. The test was started after setting. At the end of the test, the product was removed for inspection after 2 hours of recovery.                               | There is no change in color, gloss, surface appearance, hardness, scratch, crack, warping or electrical damage.<br><br>Be judged as qualified                                     | PASS                    |
| 备注:               |                    |                                       |                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                   |                         |
| Tabulation: Aston |                    | Reviewed by: Cindy                    |                                                                                                                                                                                                                                                                                                                                                                   | Approved by: Jake                                                                                                                                                                 |                         |

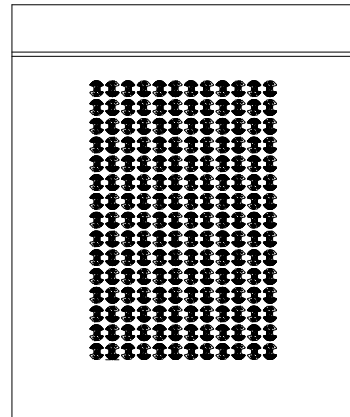
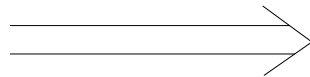
## eight、Packing

|                        |                   |                      |                                            |
|------------------------|-------------------|----------------------|--------------------------------------------|
| Material no:           | 216-000076-0      | The product name:    | FPC antenna                                |
| Product specification: | E105D FPC antenna | Packaging materials: | Seal pockets, cartons                      |
| Number of packages:    | 5000PCS/package   | The packing way:     | 5000pcs/ package, one box of 1-16 packages |
| Packing quantity:      | 80000PCS          |                      |                                            |

### 1、Small package

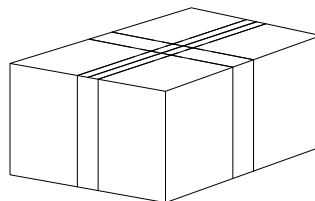
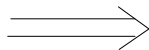
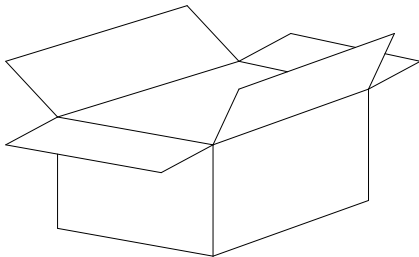


FPC antenna (full plate half cut shipment): 250\*200



PE bag 5000PCS antenna

### 2、The big package



一箱 1-8袋 (5000-80000PCS天线)

3、Note: FPC products are manufactured by half cutting,  
Small package quantity: 5000pcs / bag;  
Large package quantity: 5000-80000pcs / box

### 4. Precautions:

4.1 the storage of products shall ensure that the ambient temperature is between  $-10^{\circ}\text{C} \sim +24^{\circ}\text{C}$ , the humidity is less than 90%, the warehouse is free of rain leakage, the ground is moisture-proof, and the surrounding of the warehouse is protected from acid fog and salt fog. The storage period of the product is 180 days;

4.2 the products can be transported by land, water and air, and shall be protected from rain during transportation;

4.3 stacking requirements: XXX;

(other requirements, such as: no throwing from height, etc.)

Draw up: Aston

to examine: Cindy

approval: Jake