

Le Max2

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TEARDOWN



PennEngineering®

Le Max2 Overview



- 5.7-inch Super AMOLED display with 2560 × 1440 resolution (Quad HD /2K)
- 2.21-megapixel rear camera with dual pixel autofocus, 4K video capture; 8-megapixel selfie camera
- Full solid aluminum metal body
- Nice cosmetic appearance

Le Max2

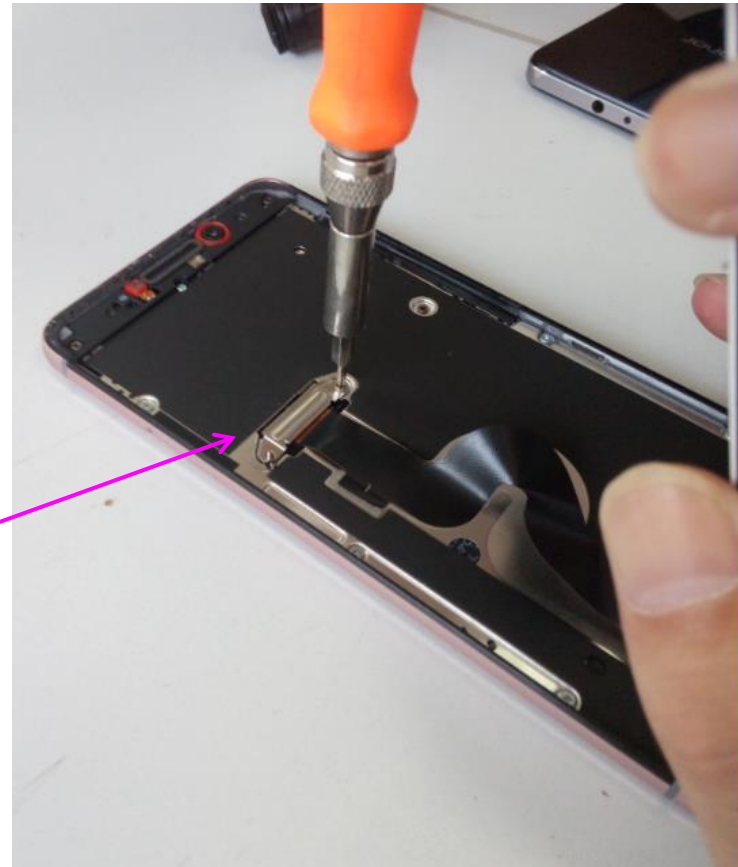
Details & Findings

Pictures and Description of the
Le Max2 and the Disassembly
Process.

Le Max2 Teardown

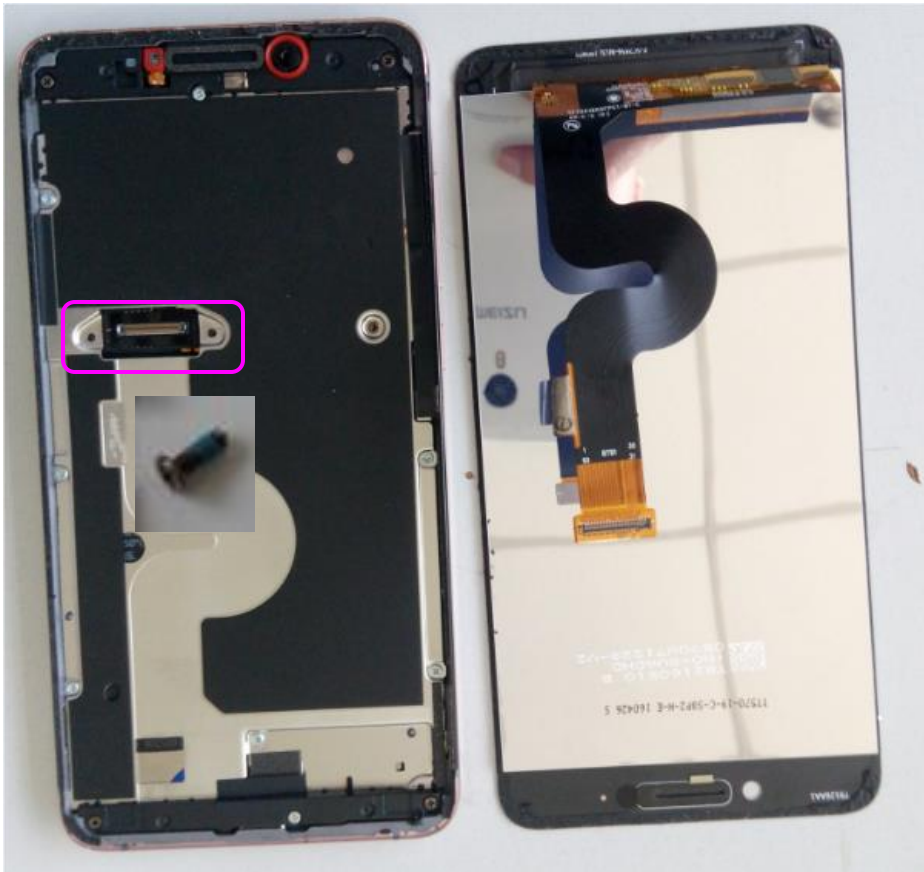
Step1: Remove the screen

Using a heat gun we heat the screen for 30s and then use the suction cup to lift the screen from the main body. The screen can be completely removed after detaching the soft panel connector.



Le Max2 Teardown

Step1: Remove the screen



Two Phillips screws are used to fix the soft panel connector.

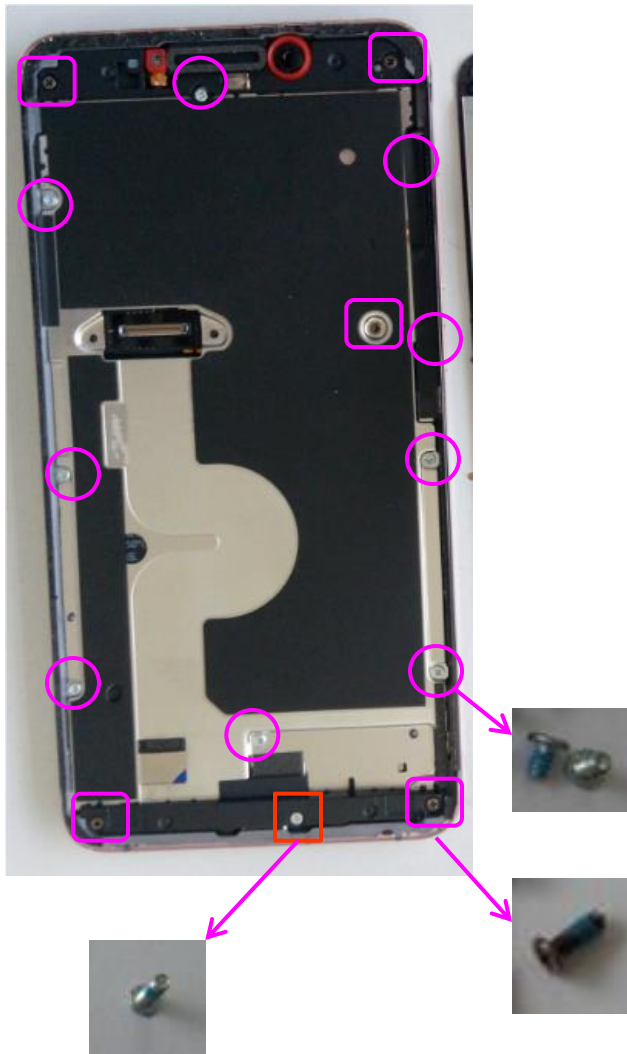
The screw details –

- Thread: M1.4
- QTY: 2pcs
- OAL: 4.05mm
- Head Thickness: 0.45mm
- Head Diameter: 2.45mm
- Plating: Black Nickel
- Driver: Phillips
- Material: Carbon Steel
- Patch: Yes
- Color: Blue

Both screws are threaded into the internal thread inserts molded in middle plastic panel.

Le Max2 Teardown

Step2: Remove the middle stamped panel.



There are total 15 screws with details as below:

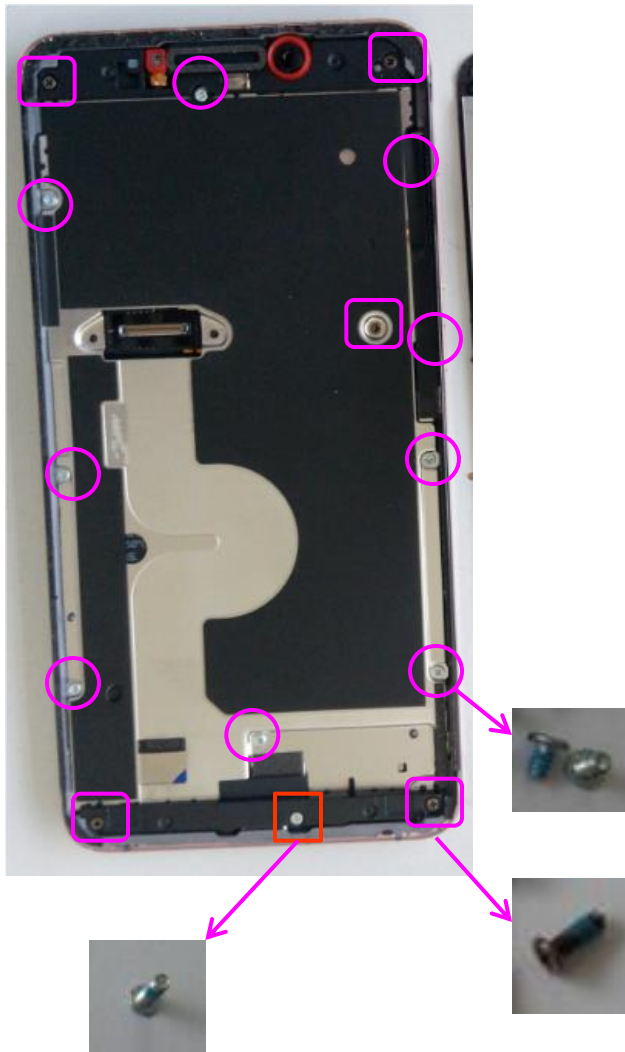
- 5 screws marked in purple rectangle are same as page5.

- 1 screw marked in red rectangle is as below.

- Thread: M1.4
- QTY: 1pcs
- OAL: 5.15mm
- Head Thickness: 0.45mm
- Head Diameter: 2.4mm
- Plating: Bright Nickel
- Driver: Phillips
- Material: Carbon Steel
- Patch: Yes
- Color: Blue

Le Max2 Teardown

Step2: Remove the middle stamping panel.



There are total 15 screws with details as below:

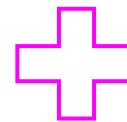
- 9 screws marked in purple circle are as below.

- Thread: M1.4
- QTY: 7pcs
- OAL: 2.75mm
- Head Thickness: 0.5mm
- Head Diameter: 2.45mm
- Plating: Bright Nickel
- Driver: Phillips
- Material: Carbon Steel
- Patch: Yes
- Color: Blue

All these screws are threaded into the internal threaded inserts molded in middle plastic panel.

Le Max2 Teardown

Step2: Remove the middle stamping panel.



Le Max2 Teardown

Step2: Remove the middle stamping panel.



There are in total 3 screws and 3 SMT bushings with details as below:

- 3 screws marked in purple circle are same as page 7.

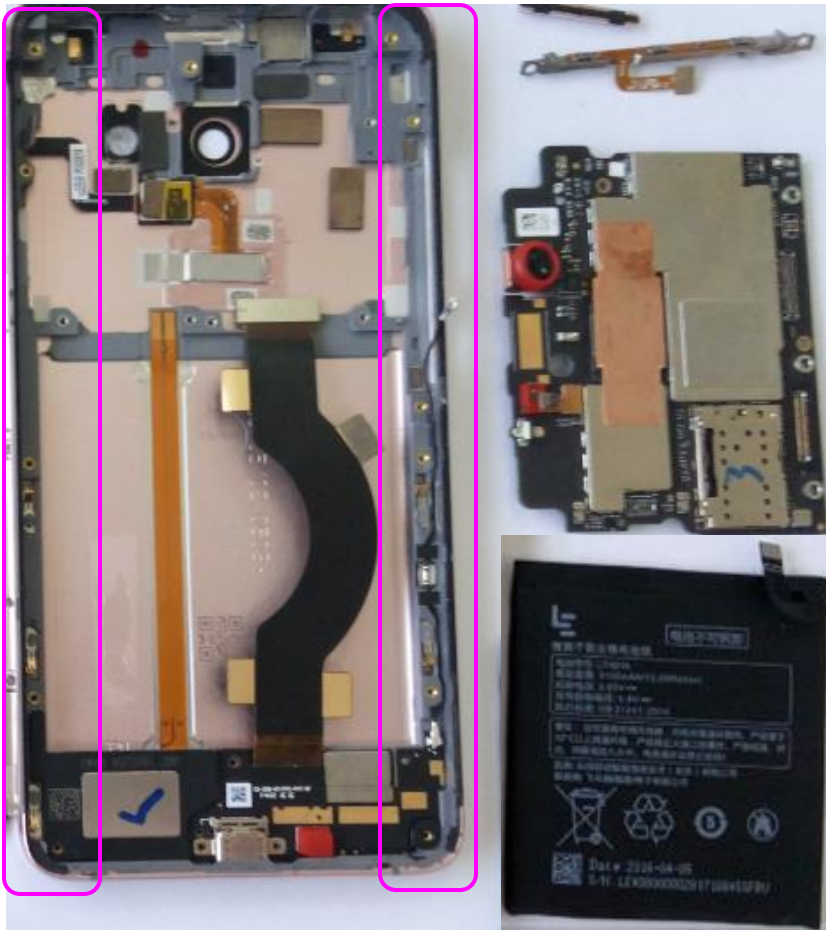
- 3 SMT bushings

- OD: 3.4mm
- ID: 1.8mm
- OAL: 1.5mm
- Barrel Height: 1.2mm
- Plating: Tin



Le Max2 Teardown

Step3: Remove battery and PCB from mail body.



There are total 20 inserts molded in the plastic frame with details as below:

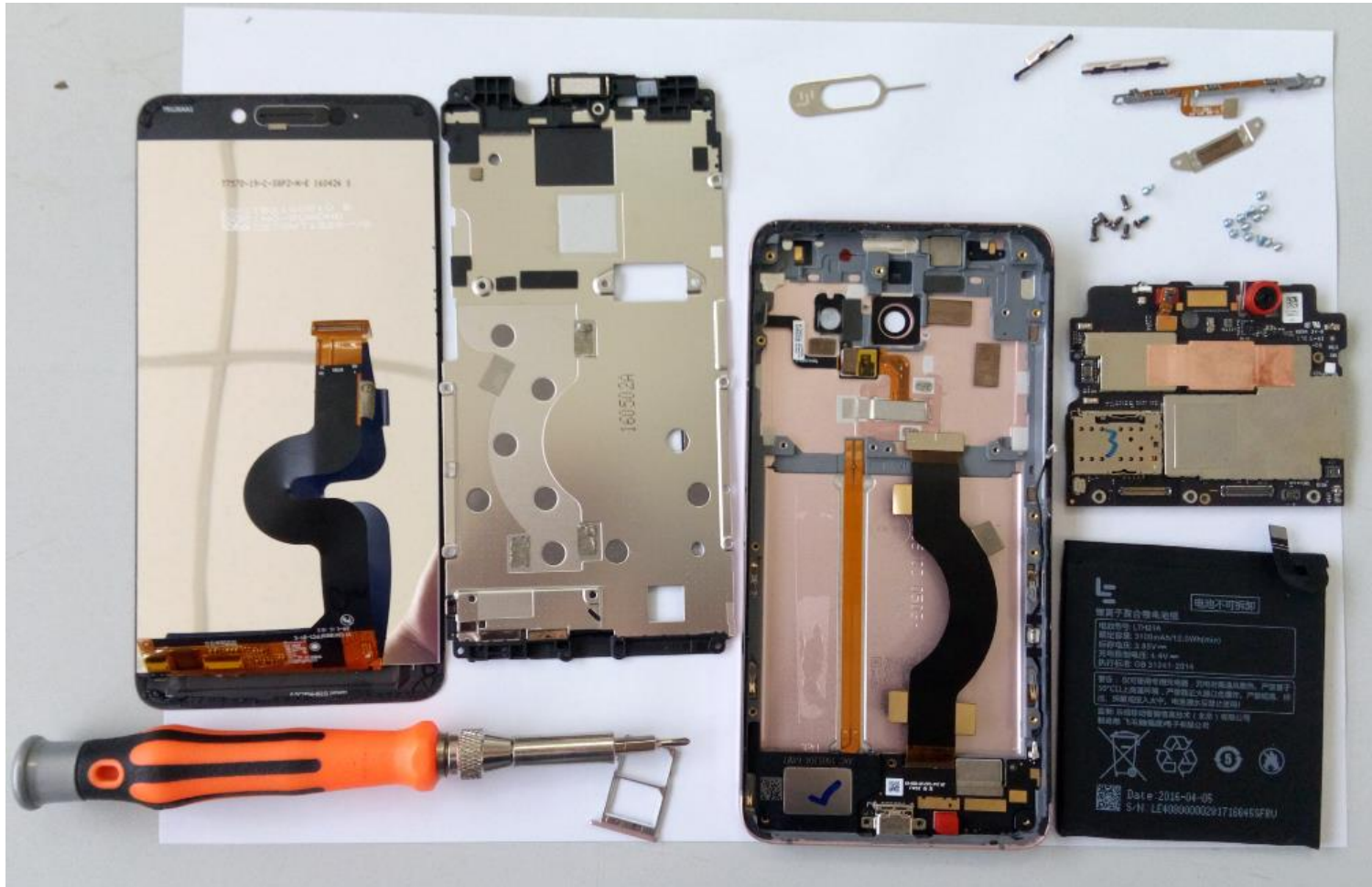
- Barrel Dia: 2.2mm
- Thread: M1.4
- OAL: 1.8mm
- Style: PEM MSIB

Note: 7 inserts of total 20 are plated with Tin.



Le Max2 Teardown

Overview-All Components





Fasteners Summary

Total 43 fasteners are used in the Le Max2 phone.

The list is as below:

- **Screws, total 20pcs**
 - Type1, QTY:7PCS, see slide #5
 - Type2, QTY:1PCS, see slide #6
 - Type3, QTY:12PCS, see slide #7
- **Brass Inserts, total 20pcs**
 - See slide #10
- **SMT Standoffs, total 3pcs**
 - See slide #9

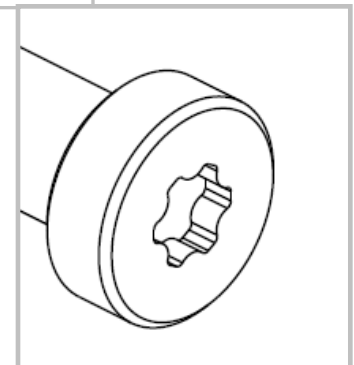
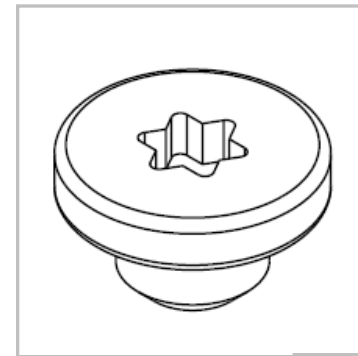
Alternate Solutions

PennEngineering® recommendations of alternate hardware and cost savings opportunities.

Alternate Solutions

- Micro Screws alternative solution:

PEM has license with Torx[®], Torx Plus[®] driver and self-tapping thread patent such as TAPTITE[®], FASTITE[®], REMFORM[®], and REMFORM "F"[®], PT[®] and Delta PT[®].

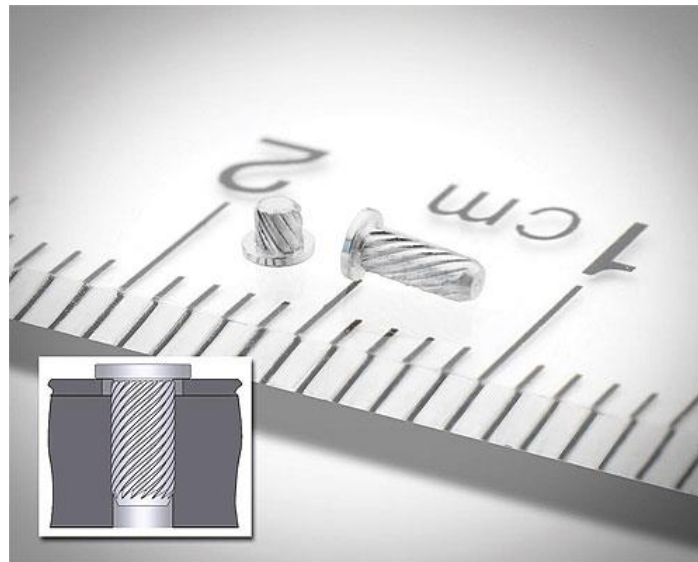


Alternate Solutions

PEM TackSert Parts:

In the Le Max2 disassembly process, the screws are used to fix & connect PC board with brass inserts.

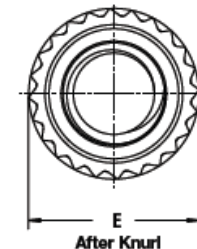
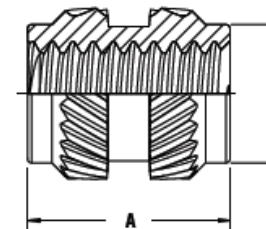
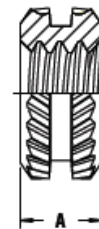
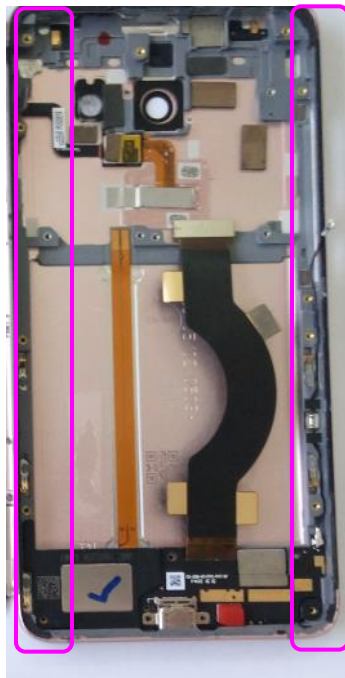
In the case, PEM TackSert parts can be used to replace these screws. However, this is a permanent connection and cannot be reworked. By simply pressing in the fastener, the installation process becomes quicker.



Alternate Solutions

Brass & Carbon Steel Inserts:

PEM provides any of the inserts in different materials. Installation method can be heat staking, press-in and mold-in with high volume and excellent quality. Switching to brass inserts with black plating instead of carbon steel as is more economic. PEM also provides aluminum SI inserts as an excellent lead free option for considerable weight reduction.



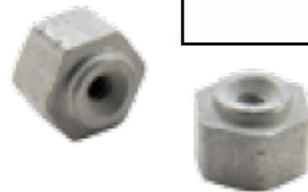
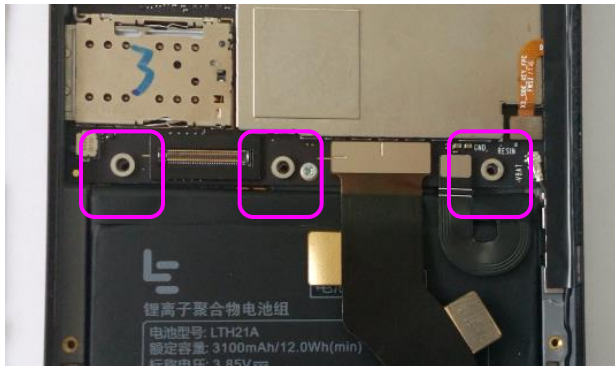


Alternate Solutions

PEM Designed Micro SMT Parts:

The two SMT parts in the picture below can be replaced with PEM designed Micro SMT parts.

The minimum panel thickness is 0.5mm for the PEM SMT part, and can be specially designed for thinner panels. The hex design also can achieve better Torque-out than a round barrel design.





Conclusions and Summary

The Le Max2 phone is a great smart phone device with color anodize aluminum body. The assembly process is simple and thus repairing and the teardown process in total were quite easy as well. Throughout the device structure there are 43 fasteners used.

PEM can provide alternative solutions for all the aforementioned fasteners. The TackSert can be used to simplify the assembly process and improve efficiency.