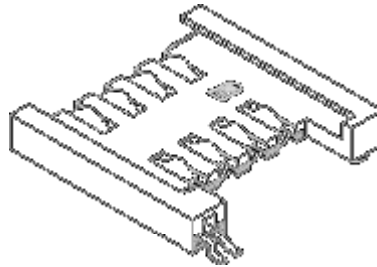


## SIM card holders

SIM card connector CON-HAM-311/6.....	2
1.General Characteristics .....	2
SIM card connector CON-HAM-560/6.....	4

## **SIM card connector CON-HAM-311/6**

High performance SIM card connectors for mobile phone applications.



### **1. General Characteristics**

Dimensions: 15.70L x 16.40W x 2.60H mm

Weight: Approx. 0.45 g

Contact principle: Friction technology

Operating position: Shaft up / Down / Horizontal

Mounting System: SMT (Post optional)

Durability: 100,000 cycles min.

### **2. Mechanical Characteristics**

Insulation material: Thermoplastic, UL 94V-0

### **3. Electrical Characteristics**

Number of contacts: 6 pins

Contact resistance: 50 m $\Omega$  typical, 100 m $\Omega$  max.

Insulation resistance: > 1000 M $\Omega$ / 500 VDC

Switch Type: Blade

Operation: Normally Open

### **4. Solderability**

Wave: Not applicable

Vapor phase: 215 degree Celsius, 30 sec. max.

IR reflow: 230 degree Celsius, 15 sec. max.

Manual soldering: 360 degree Celsius, 3 sec. max.

### **5. Environmental Characteristics**

Operating temperature: - 40, ~ + 85 degree Celsius,

Operating humidity: 10 % ~ 95 % RH

Storage temperature: - 40 ~ + 85 degree Celsius,

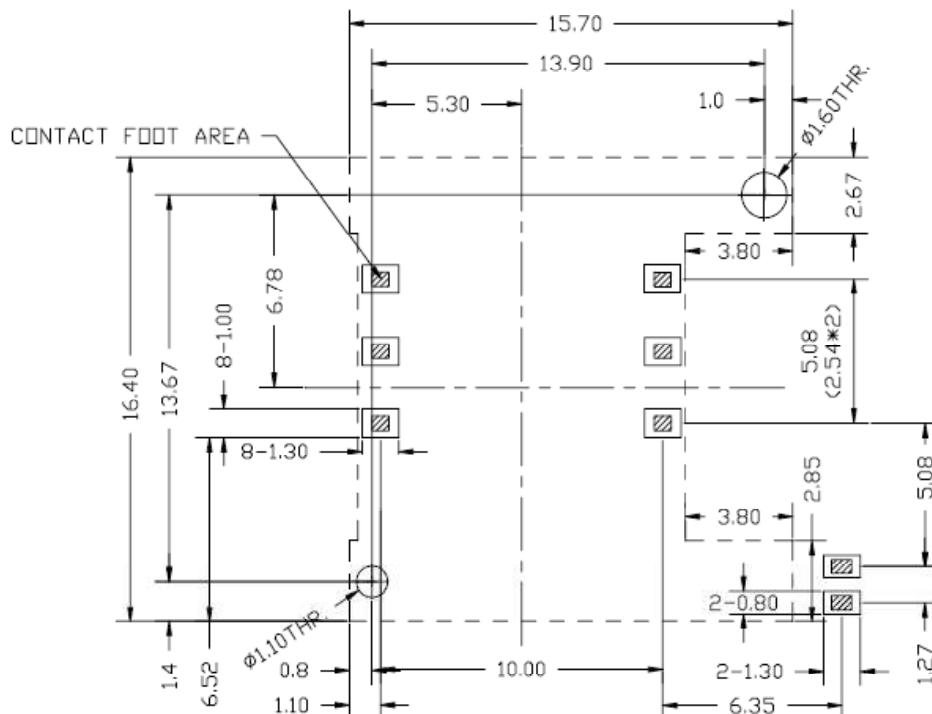
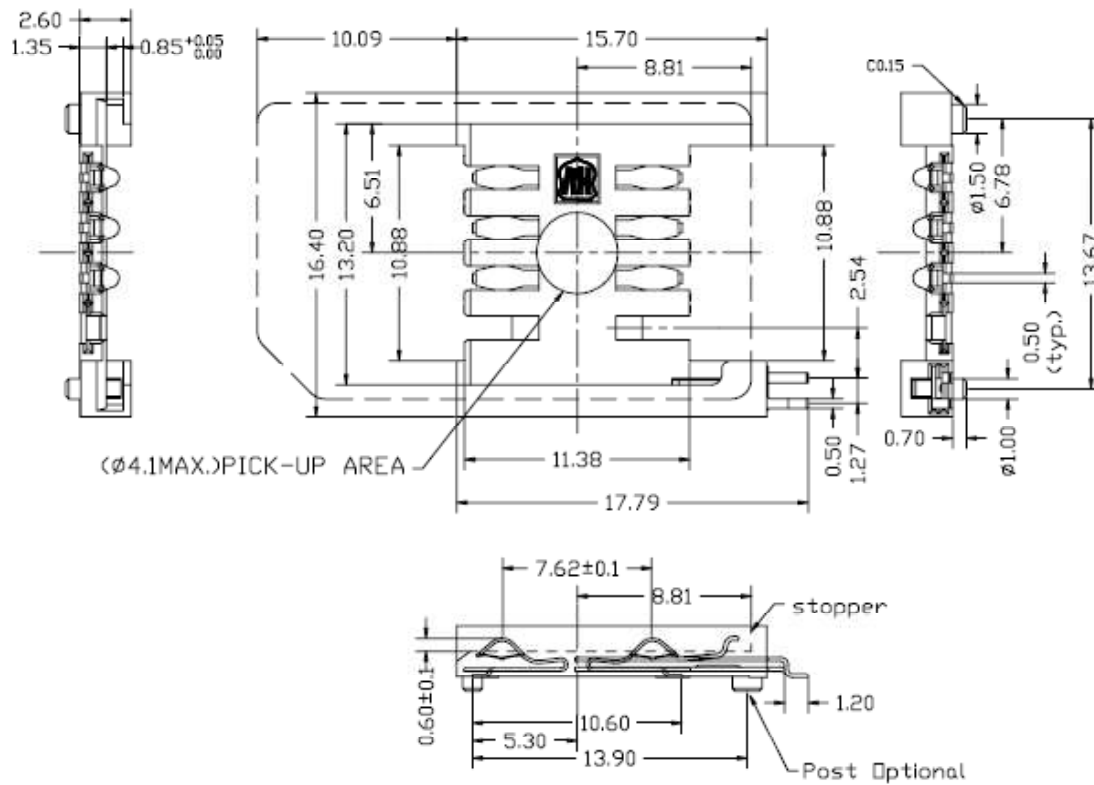
Storage humidity: 10 % ~ 95 % RH

Thermal shock: - 40 ~ + 85 degree Celsius, 5 cycles

Damp Heat: 40 degree Celsius, 90 % RH, 500HR.

Salt-mist: 35 degree Celsius, 5%, NaCl , 48HR.

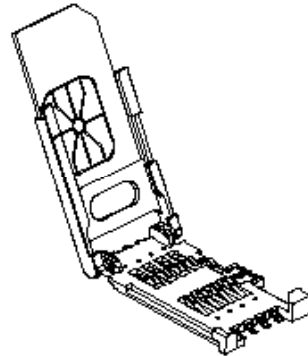
## 6. Drawings



Unit: mm; Tolerances:  $\pm 0.10$ mm  
**Reference dimension for PCB layout**

## **SIM card connector CON-HAM-560/6**

High performance SIM card connectors for mobile phone applications.



### **1. General Characteristics**

Dimensions: 29.60L x 17.2W x 3.00H mm

Weight: Approx. 1.4g

Contact principle: Friction technology

Operating position: Shaft up / Down / Horizontal

Mounting System: SMT with post

Durability contact: 10,000 cycles min.

### **2. Mechanical Characteristics**

Insulation material: Thermoplastic, UL 94V-0

### **3. Electrical Characteristics**

Number of contacts: 6 pins

Contact resistance: 50 m $\Omega$  typical, 100 m $\Omega$  max.

Insulation resistance: > 1000 M $\Omega$ / 500 VDC

Switch Type: Blade

Operation: Closed on lock position

### **4. Solderability**

Wave: Not applicable

Vapor phase: 215 degree Celsius, 30 sec. max.

IR reflow: 230 degree Celsius, 15 sec. max.

Manual soldering: 360 degree Celsius, 3 sec. max.

### **5. Environmental Characteristics**

Operating temperature: - 40, ~ + 85 degree Celsius,

Operating humidity: 10 % ~ 95 % RH

Storage temperature: - 40 ~ + 85 degree Celsius,

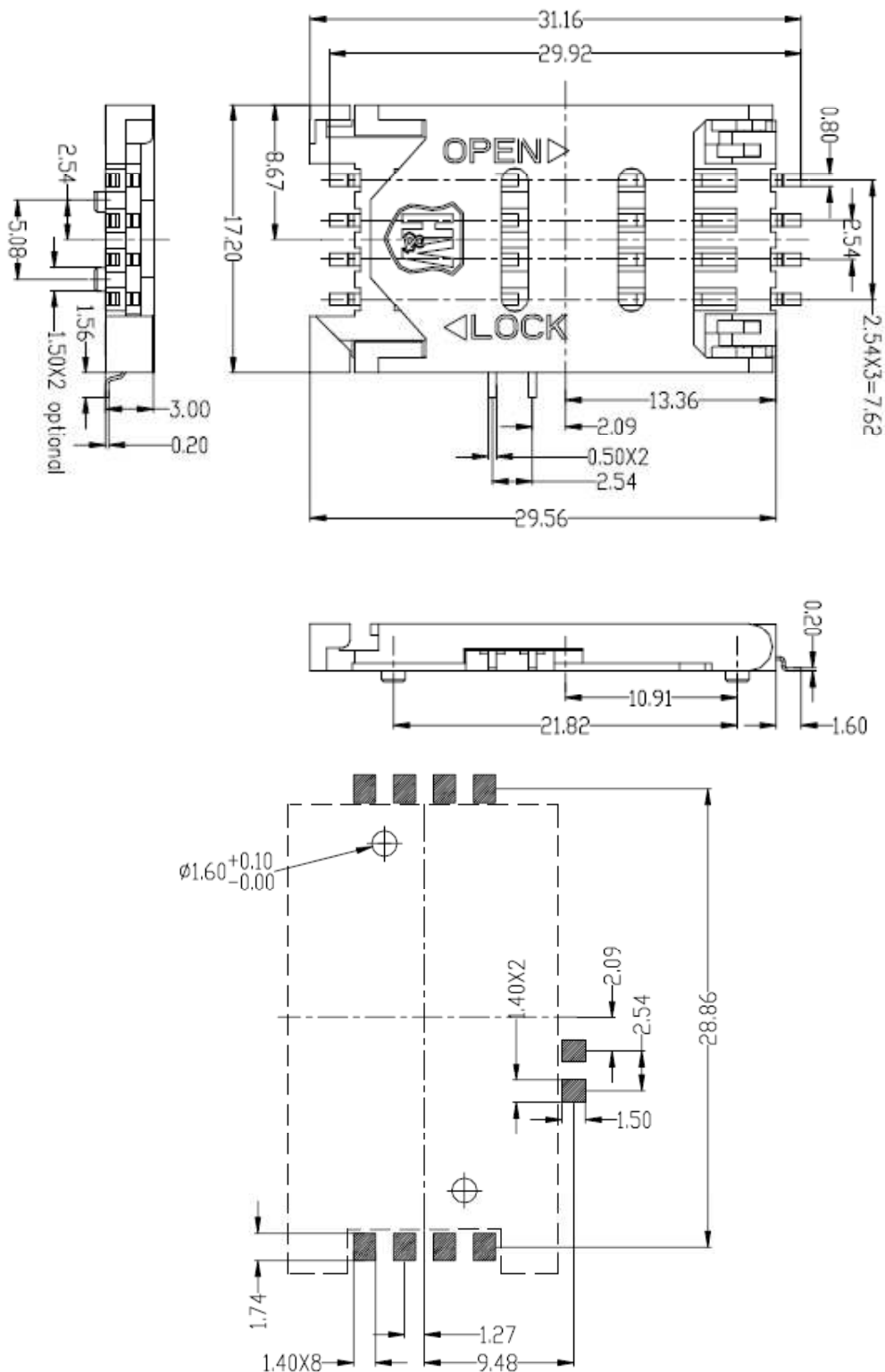
Storage humidity: 10 % ~ 95 % RH

Thermal shock: - 40 ~ + 85 degree Celsius, 5 cycles

Damp Heat: 40 degree Celsius, 90 % RH, 500HR.

Salt-mist: 35 degree Celsius, 5%, NaCl , 48HR.

## 6. Drawings



Unit: mm; Tolerances:  $\pm 0.10$ mm  
**Reference dimension for PCB layout**

## SIM card connector design guide

### AIM

Aim of this document is to give basic design guide lines to integrate a SIM holder in applications that uses GPRS modules

### APPLICATION

These guide lines are applicable to all the applications that use GPRS modules, especially for those application which use GEXXX families modules.

### ABBREVIATION SYMBOLS

**SIM:** Subscriber Identity Module

**EMI:** Electromagnetic Interference

**EMC:** Electromagnetic Compatibility

**ESD:** Electrostatic Discharge

### DESIGN GUIDES

In all GPRS modules there are five pins for SIM card holder connection  
These lines are:

- **SIMVCC** (SIM Power supply)
- **SIMRST** (SIM Reset)
- **SIMIO** (SIM Data)
- **SIMIN** (SIM Presence/Absence)
- **SIMCLK** (SIM Clock)

SIM connection must take in account of **four** key issues:

**1) Data Integrity:** standard rules for digital layout and routing must be followed taking in consideration that SIMCLK has frequency of 3.57 MHz and SIMIO has 9600Bps baud rate.

**2) EMI/EMC:** this is a key aspect to consider designing an application based on GPRS module with internal antenna and/or without a proper-shielded box. Some of these conditions may occur:

- Antenna picks-up digital noise coming from SIM card lines.
- Antenna radiated field may interfere digital lines.
- Digital lines (in particular clock) may radiate spurious in the surrounding
- space.

To overcome all these potential problems, connection lines must be kept as short as possible and shielded. SIM-holder position has to be as far as possible from antenna. RF bypass capacitors (10pF...33pF) closed to SIM card SIM-holder are another good care. When connection is not short, insertion of 10..100ohm resistor with 10..33pF capacitor (RC filter) is a good caution to improve EMI from SIMCLK line. Do not insert resistor on SIMVCC, SIMRST and SIMIO lines, their use is not supported by SIM electrical interface.

**3) ESD:** take standard ESD caution if application based on TELIT module has SIM holder with contacts reachable from human body.

**4) SIM supply:** do not connect capacitance greater than 10nF to SIMVCC line. Other notes:

- SIMIN doesn't require any pull-up resistor. It is built in.
- SIM card is detected inserted when this line is short to ground.
- If in the application the SIM holder doesn't foresee the switch for the presence/absence of the SIM card, the **SIMIN** line must be connected to ground.

### RESPONSIBILITY

For any case not cover in this guideline, please contact our Technical Support.

