

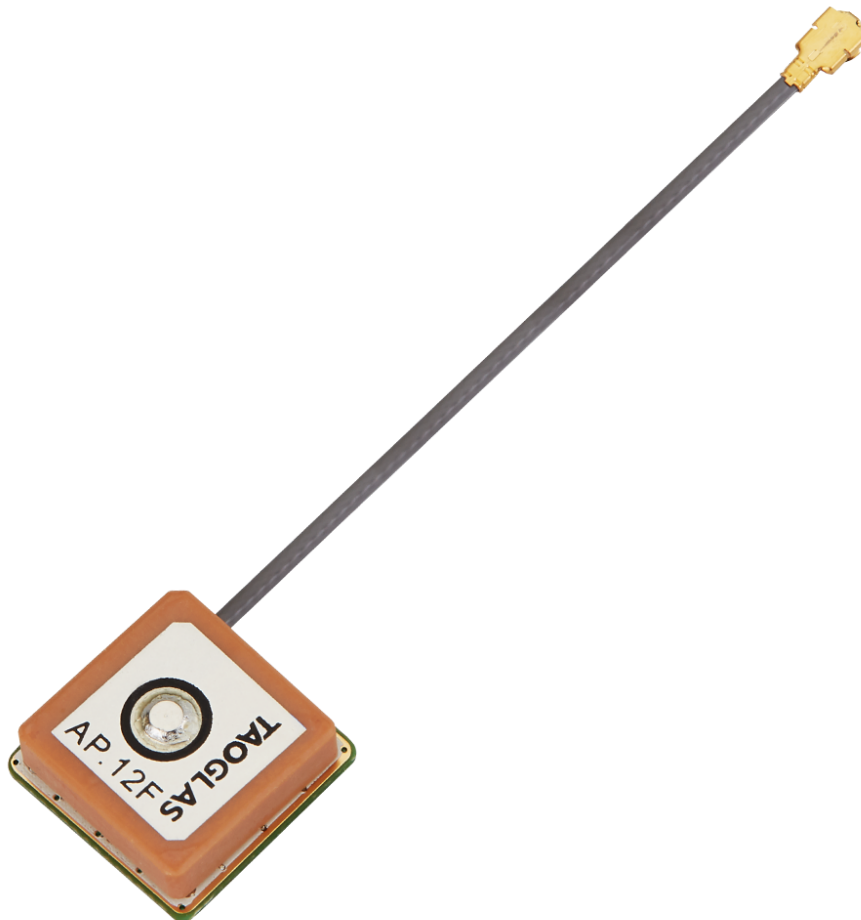


THE DATASHEET OF
AP.12F.07.0045A



SPECIFICATION

- Part No. : **AP.12F.07.0045A**
- Product Name : 12mm Two Stage 25dB GPS/GALILEO Active Patch Antenna Module with front-end Saw Filter
- Features : 13.4*13.4*6mm (Ground Plane)
45mm Ø1.13 cable IPEX MHFI (U.FL)
28dB LNA
Wide Input Voltage 1.8V to 5.5V
Low Power Consumption
RoHS & Reach compliant

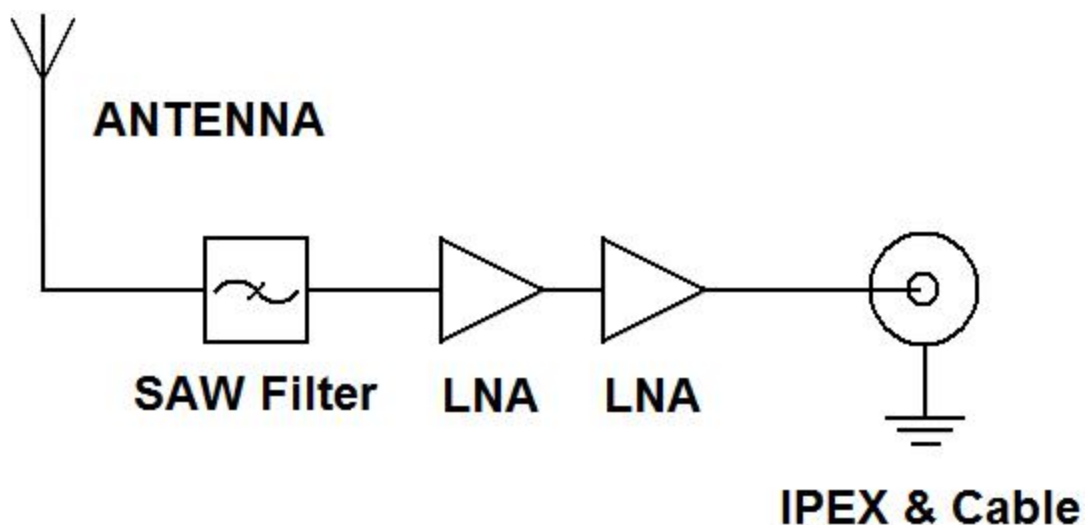


1. Introduction

The AP.12F has been designed specifically for embedded (inside device) integration with GPS/GALILEO receiver modules where there is a GSM transmitter nearby and risk of interference and saturation.

The AP.12F combines a 12*12*3.5mm advanced low profile ceramic patch antenna with a two stage LNA and a front-end SAW filter with ultra thin coaxial cable.

Only 5.6mm in height, this Taoglas active antenna module utilises XtremeGain™ technology for the highest industry sensitivity. The AP.12F consists of 2 functional blocks – the LNA and also the patch antenna.

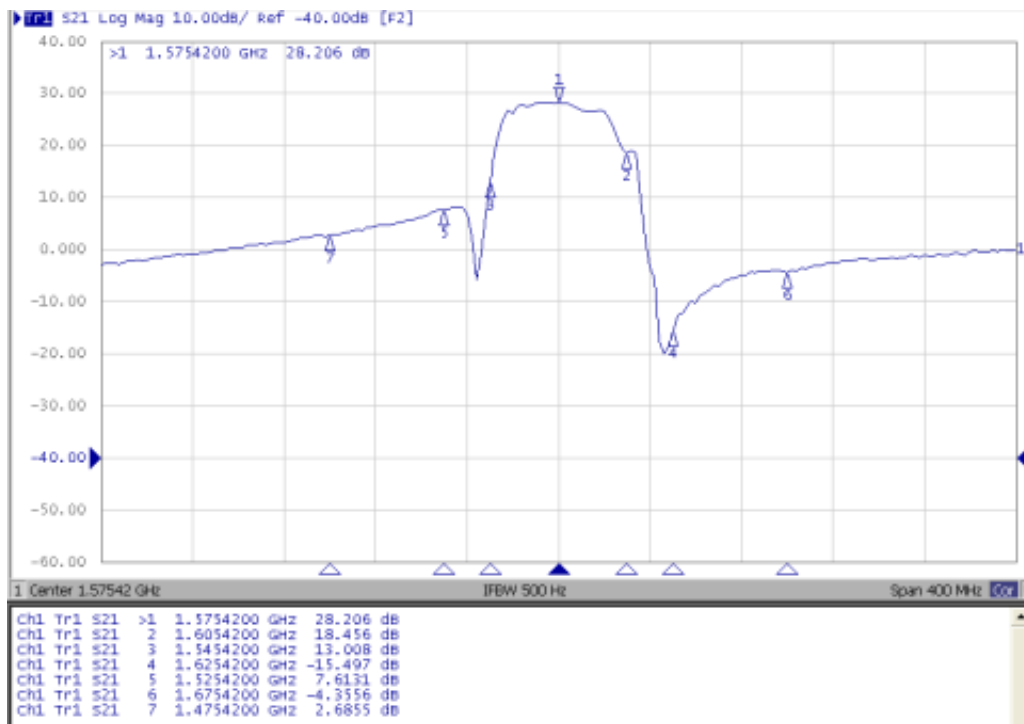


The AP.12F has a SAW filter on the front of it. The main use of the AP.12F would be for small devices where the GSM transmitter is close to the GPS/GALILEO antenna, it helps avoid burn-out of the LNA or the module due to interference from the GSM transmitter at out band frequencies.

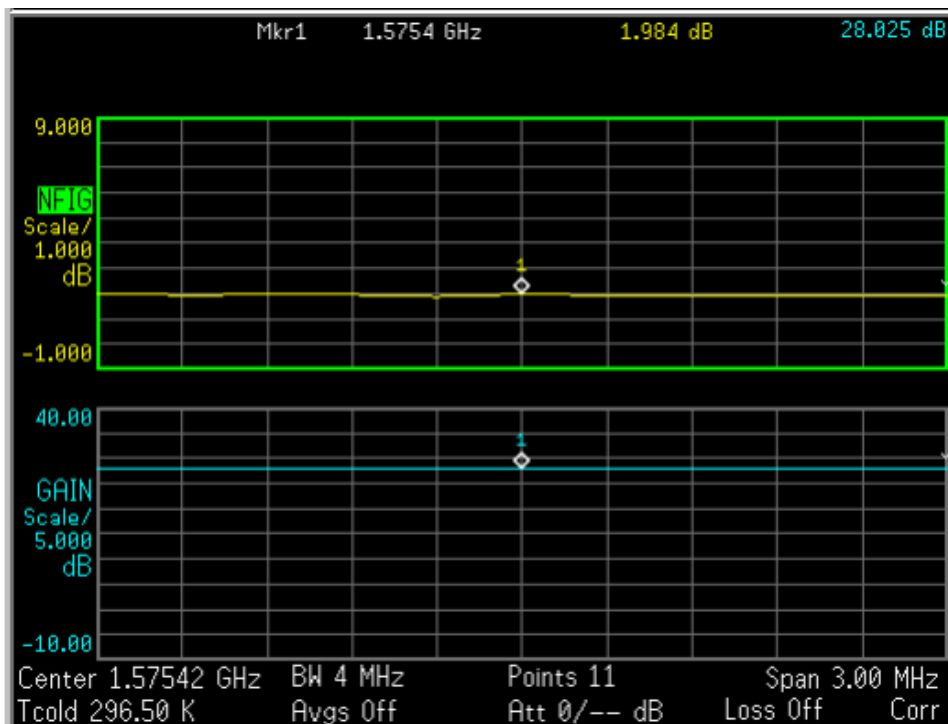
2. Specification

| ELECTRICAL | | | |
|--|--|---------------------------|------------------|
| Frequency | 1575.42 ± 1.023MHz | | |
| Gain @ Zenith | -5 dBic Typ. @ Zenith | | |
| Gain (with LNA) | At 3V: 23 ± 4dBi@90° | | |
| Impedance | 50Ω | | |
| Polarization | RHCP | | |
| Axial Ratio | 4.0dB max. @Zenith | | |
| Input Voltage | Min. 1.8V Typ 3.0V Max. 5.5V | | |
| LNA | | | |
| Frequency | 1575.42 ± 1.023MHz | | |
| Outer Band Attenuation | F0=1575.42MHz | | |
| | F0□30MHz | 8dB min. | |
| | F0□50MHz | 20dB min. | |
| | F0□100MHz | 25dB min. | |
| Output Impedance | 50Ω | | |
| Output VSWR | 2.0 Max | | |
| Pout at 1dB Gain | Typ. 11dBm | | |
| Compression point | Min. 5dBm | | |
| LNA Gain, Power Consumption and Noise Figure | | | |
| Voltage | LNA Gain (Typ) | Power Consumption(mA) Typ | Noise Figure Typ |
| Min. 1.8V | 20dB | 4mA | 2.0dB |
| Typ. 3.0V | 28dB | 9mA | 2.0dB |
| Max. 5.5V | 29dB | 20mA | 2.0dB |
| Input Voltage | Min. 1.8V | Typ. 3.0V | Max. 5.5V |
| MECHANICAL | | | |
| Dimension | 12mm x 12mm x 3.5mm | | |
| RF Cable | Coaxial Cable Ø1.13 ± 0.1mm, length 45 ± 2.5mm | | |
| Connector | IPEX MHFI (U.FL) | | |
| ENVIRONMENTAL | | | |
| Operation Temperature | -40°C to + 85°C | | |
| Storage Temperature | -40°C to + 85°C | | |
| Relative Humidity | 40% to 95% | | |

2.1. LNA Gain and Out Band Rejection @3.0V

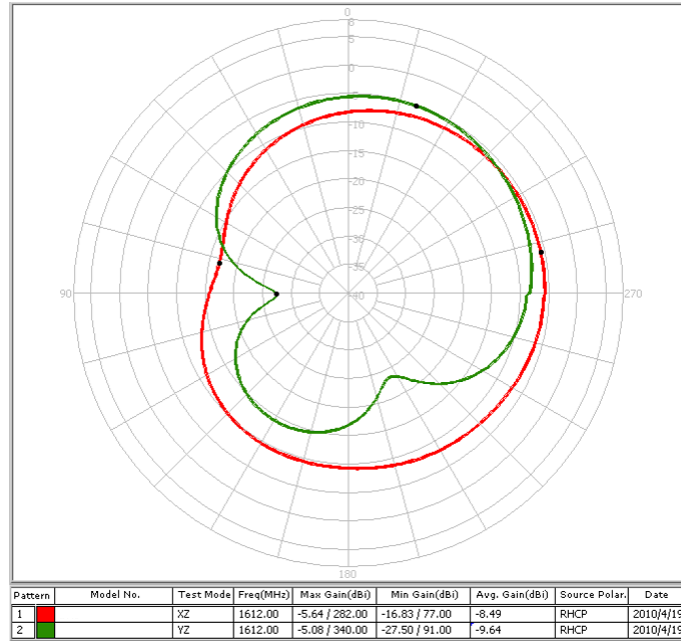


2.2. LNA Noise Figure @3.0V

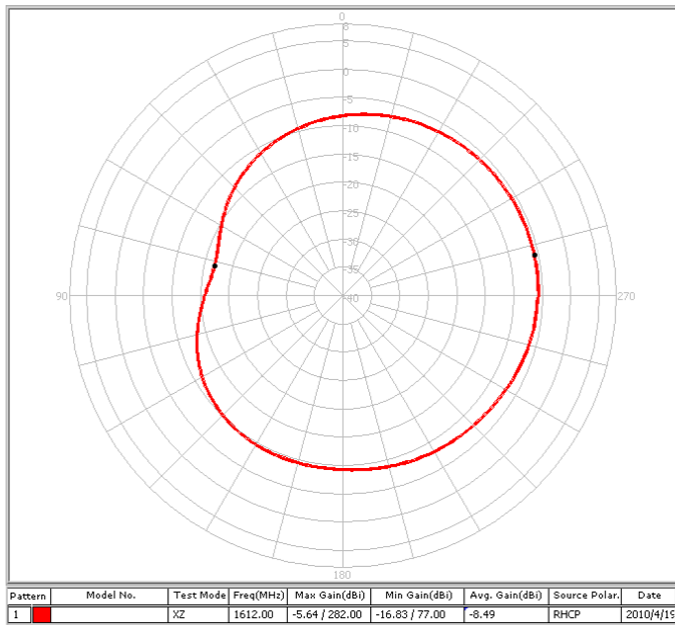


3. Radiation Patterns

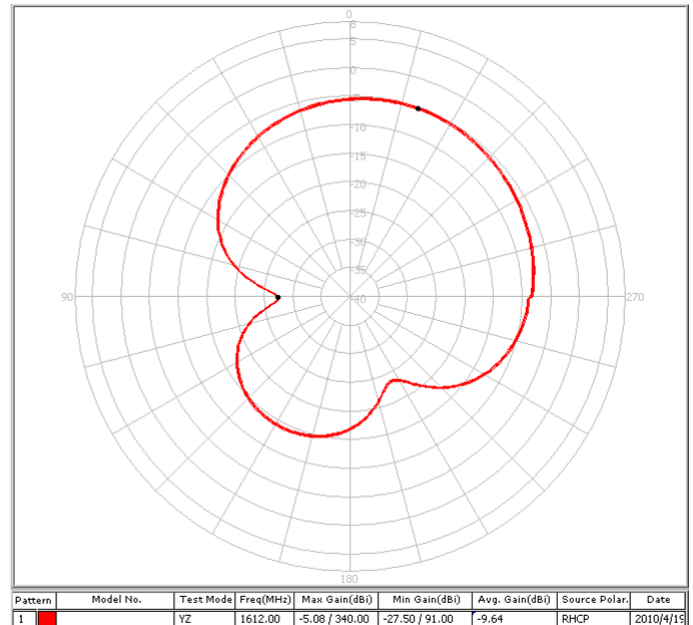
XY Plane



XZ Plane



YZ Plane

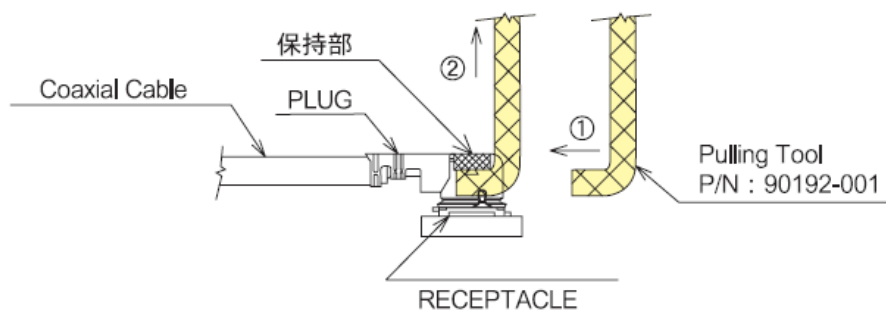


4. Plugs Usage and Precautions

4.1. Mating / Un-mating

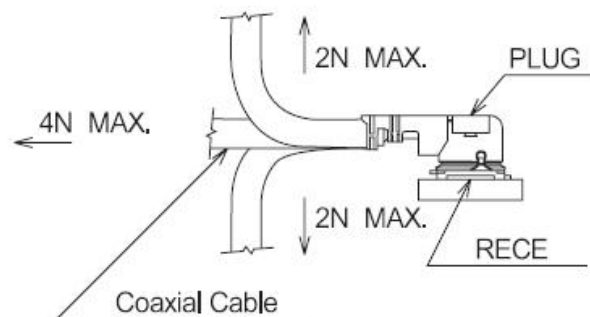
(1) To disconnect connectors, insert the end portion of I-PEX under the connector flanges and pull off vertically, in the direction of the connector mating axis.

(2) To mate the connectors, the mating axes of both connectors must be aligned and the connectors can be mated. The "click" will confirm fully mated connection. Do not attempt to insert on an extreme angle.

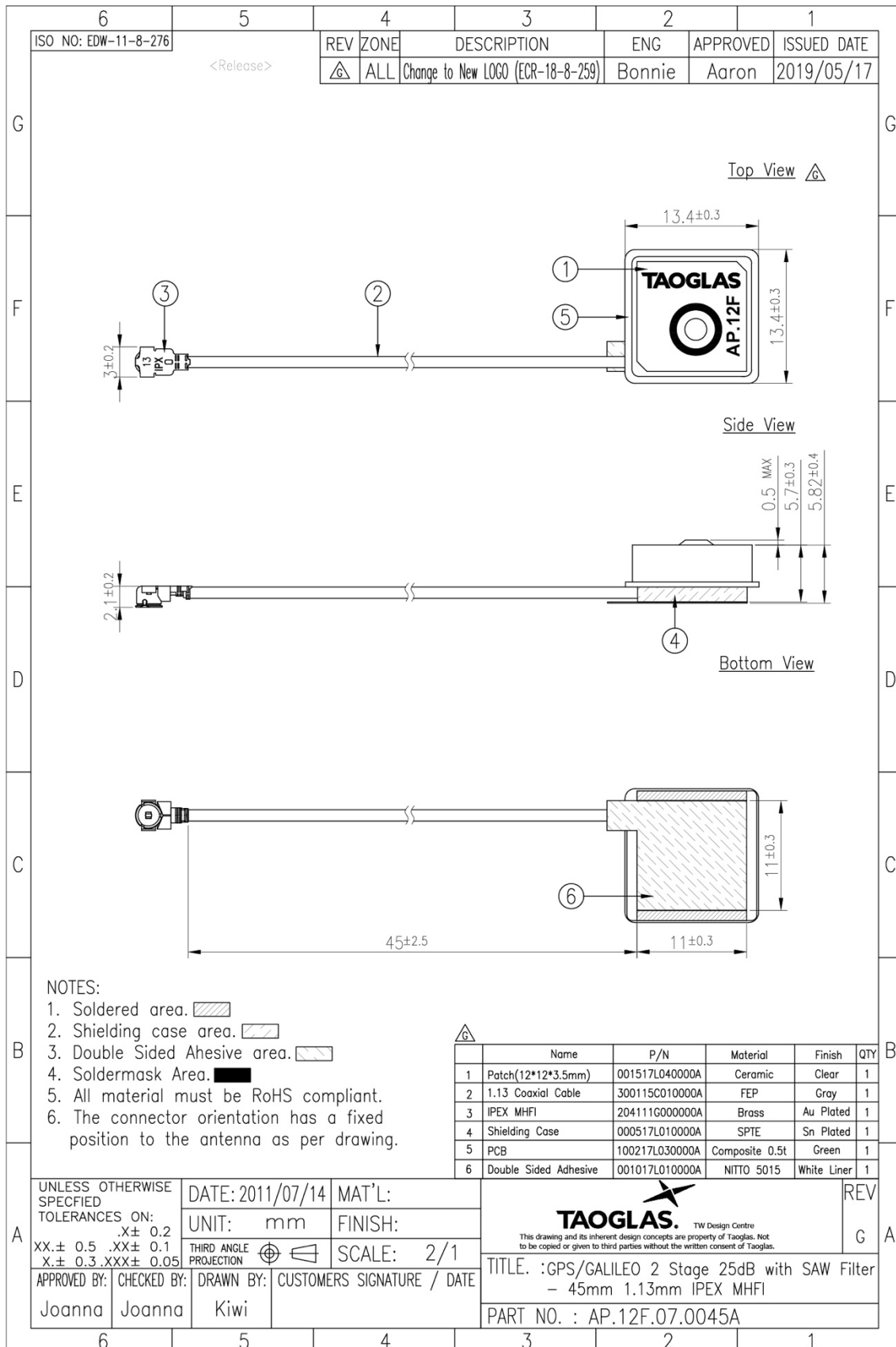


4.2. Pull forces on the cable after connectors are mated

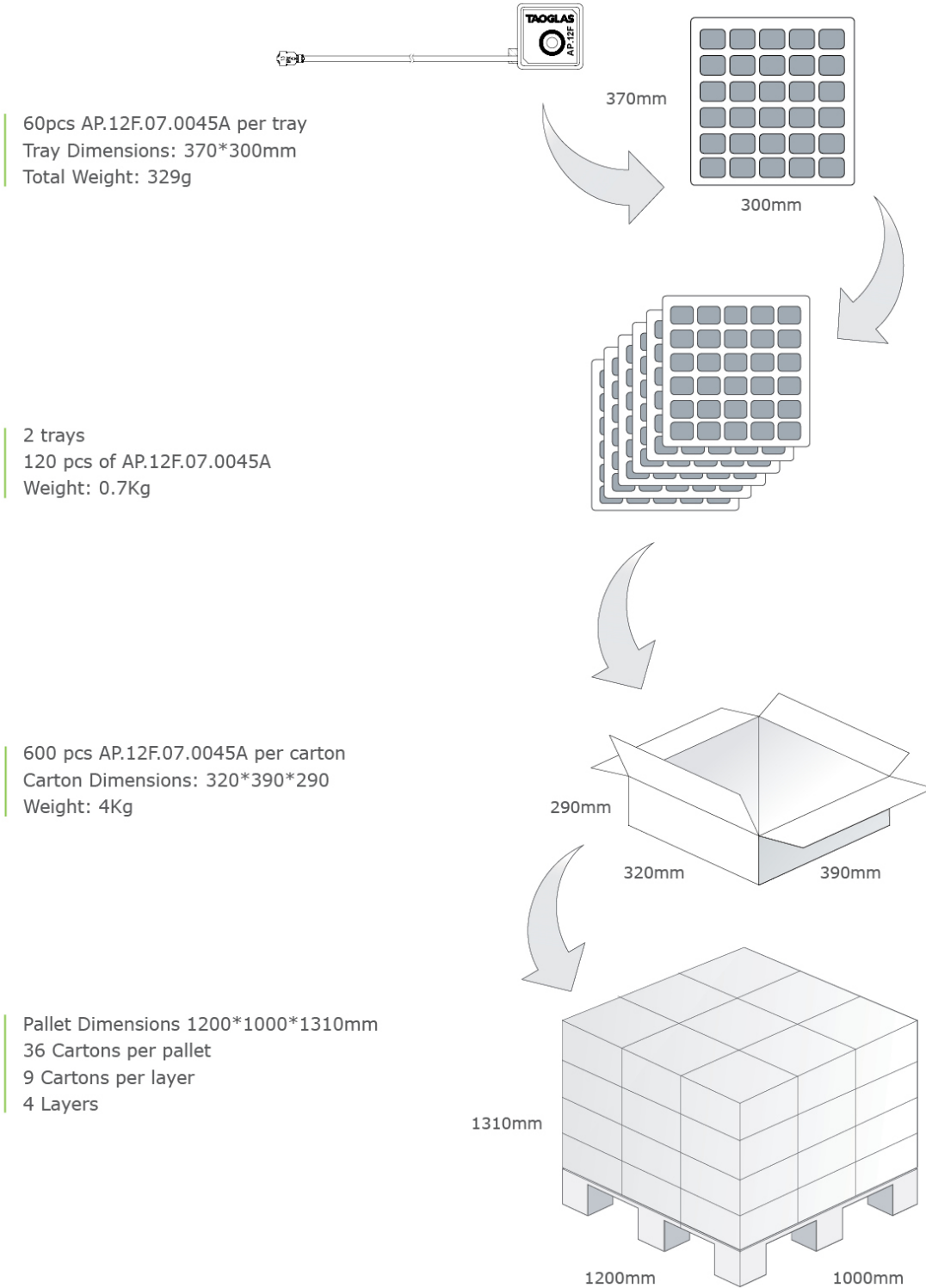
After the connectors are mating, do not apply a load to the cable in excess of the values indicated in the diagram below.



5. Technical Drawing



6. Packaging



60pcs AP.12F.07.0045A per tray
 Tray Dimensions: 370*300mm
 Total Weight: 329g

2 trays
 120 pcs of AP.12F.07.0045A
 Weight: 0.7Kg

600 pcs AP.12F.07.0045A per carton
 Carton Dimensions: 320*390*290
 Weight: 4Kg

Pallet Dimensions 1200*1000*1310mm
 36 Cartons per pallet
 9 Cartons per layer
 4 Layers

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