Neoway Industrial modules

Description of humidity sensitive device control

Version 1.3

有 物 联　　方 智 能

GET CONNECTED GET SMART

Copyright

Notice

Module Type adaptation of this document are：N710, N703, WM620, N10, M590E, M660, CM180, GM650.

This document is intended for system engineers (SEs), development engineers, and test engineers.
The information in this document is subject to change without notice due to product version update or other reasons.
Every effort has been made in preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

Neoway provides customers complete technical support. If you have any question, please contact your account manager or email to the following email addresses:

      Sales@neoway.com

      Support@neoway.com

Website: http://www.neoway.com

Revision Record		
Version	**Changes**	**Date**
V1.0	Initial draft	201010
V1.1	supplement other modules	201206
V1.2	Add the GM650 module	201211
V1.3	Add N10, WM620, N703, N710, N720 module	201610

Neoway industrial modules

Description of humidity sensitive device control

Adapt the module model no as following：

N710\N703\WM620\N10\M590E\M660\CM180\GM650

With the development of M2M communication equipments, requirement for smaller size and low cost modules are getting popular. Using stamp hole or BGA or SMD technology of module is accepted by the market gradually. Using SMT technolgy, module applications can save a pair of connector cost, and also it can get rid of traditional antenna feeder line (RF extension cable), at the same time, it can reduce the board size smaller than before. Signal connection is more reliable for a long time. However, SMT module is same as SMT chip, so production need reflow soldering, and it should withstand the high temperatures around 250℃ , so it also needs improvement in the SMT module packaging, storage, production and maintenance requirements.

Neoway launched below products

N710\N703\WM620\N10\M590E\M660\CM180\GM650 already accepted by the most of

market. Especially for M590E with pure data applications, because of less number of pins, The stamp hole of solder pad big distance, small size, it can save the RF adapter cable, it already applied in power industry with large-scale.

SMT module is the humidity-sensitive device, if needs to reflow for production, follow-up demolition and maintenance, it must strictly comply to the requirements of humidity sensitive devices which is in the finished product storage, production and maintenance process. If the module be damp, following reflow or air gun repair, it will be lead to the ICs on the module or crack on the module PCB due to the expansion of water vapor, it causes physical damage to the components on the PCB and other defects, the typical failure is the blister on the PCB board and also RF component group will burst.

Neoway SMT module which in the production and packaging process is very strict, it is based on operation of the humidity-sensitive device process. Factory packaging is the vacuum aluminum foil bag + desiccant + humidity indicator card packaging and packaging is strict in humidity control.

Neoway SMT module is class 3 moisture-proof, label on outer box and inner packaging of aluminum foil has significant humidity-sensitive information. This document describes the humidity control and process requirements for the standard modules as following.

Please take note while using this module:

1. Storage conditions: original aluminum vacuum packaging is in good condition (no damage, leakage), the storage period is 120 days, the storage environment temperature is between 18℃ ~ 28℃, humidity is less than 60%.

2. On-line inspection: check if the vacuum packaging is in good condition, and storage period is not expired. Open the package and look for the humidity indicator card at 10%, color not changed, it indicates that the modules is in good condition, it can be used directly for SMT reflow. If storage period is expired, or humidity indicate card at 10%, color changed, then, modules need to be baked, then use it for SMT reflow.

3. Baking conditions: pay attention to the original anti-static tray temperature cannot exceed 50℃, otherwise the tray will be deformed.

Bake condition	125℃	90℃ / 5%RH	40℃ / 5%RH
Bake time	24hour	48hour	30day
Description	Cannot use the original tray	Cannot use the original tray	Can use the original tray

Customers also can choose the bake conditions based on their own baking methods, but please refer to class three device thickness between 1.4 ~ 2.0mm.

4. Workshop life: Module in good humidity control, please use all modules within 48 hours after open the package, if not please do vacuum packaging in a timely, and put it in drying oven. If it exposed to air more than 48 hours, it needs to be baked before using it. Because if module is size bigger, when it damp, it needs to bake longer time, which costs high, so please try to use up all modules once package is opened.

5. Maintenance: If it is post-furnace of maintenance, disassemble the related module within 48 hours after SMT. After return back from the customer maintenance, it needs to bake based on the conditions of three, and then disassemble the module, and repair it. If the module is exposed to humid conditions for long time, please extend the bake time appropriately, such as 125℃ within 48 hours.

Description of humidity sensitive device control