RTS™ TECHNICAL BULLETIN

RTS-TB-004 **13-August-2012**

Display Corruption / Dimming on KP-12 & Related Variants

Issue Severity:	Product(s) Affected:
☒ **High:** URGENT – Immediate Action Required ☐ **Medium:** Bosch Security Systems, Inc. strongly recommends you take the action(s) described below. ☐ **Low:** Advisory	• All keypanels variants which utilized socketed AVAGO alpha-numeric displays. These include KP-12 (all variants); DKP 12; DKP 8; EKP 12; EKP 20; PAM-16; KP8T: PAM-101; LCP-102 • Seen most frequently on units manufactured AFTER the year 2005. Issue corrected on all equipment built after June 2012.
Notification Applies To:	**Access Restrictions:**
☒ Technical Support (TSS) ☒ Repair (ASA) ☒ Sales (NSO / RSO)	☐ Internal Distribution **ONLY** ☒ **No** Restrictions (Internal & External Distribution)

1.0 Issue

During the course of normal operation, the 4-character alpha-numeric displays on the affected units randomly begin to display corrupted or garbled characters. Typically all 4 characters on a single display will be left shifted by one pixel column, with portions of one character field shifted into the adjacent character field. This display corruption may be observed in conjunction with a dimming display. Power cycling of the unit or application of pressure to the affected display may cause the condition to clear for a time, but typically the corruption will re-appear. The root cause of this issue is poor contact of the ground pin on the display IC with the associated IC socket. For most of the products, the poor contact is the result of corrosion created by the mating of dis-similar metals (gold plating on the display sockets & tin-plating on the display IC itself). This raises the impedance of the ground pin on the display and causes erratic behavior on the key control signals to the display. Similar effects may be seen if solder integrity issues exist between the display IC socket and the PCBA. This issue has been seen most frequently on units manufactured after the year 2005.

2.0 Resolution / Corrective Actions

This item cannot be easily be repaired in the field. Recommended solution is that the equipment be returned to a qualified ASA repair facility. They will perform some combination of the following actions:

To fix the garbled / corrupted characters:

- Microcontroller loads on the display subassemblies will be replaced with a load which changes all control outputs from the microcontroller to the display IC with 'push/pull' outputs which have stronger drive strength to better overcome higher impedance conditions.

To also address display dimming (may not be required for all customers):

- Display socket will be replaced with a socket using similar metal contacts (tin-plated). Current socketed solution is gold plated while the display IC itself is tin-plated. Dissimilar metals result in corrosion and degrading contacts. Replacement of the sockets will require replacement of the entire display sub-assembly.

The new microcontroller firmware was instituted in May 2012. Beginning in August 2012, all new builds will have not only the new microcontroller firmware but also the correct sockets.

NOTICE!

Unique YSPR replacements are available through ASA which have the correct sockets but do not have the displays populated. There is no risk in re-use of the existing displays in the new sockets.