TECHNICAL BULLETIN

RTS-TB-033 **10-May-2016**

KP Series Panel Microphone Input Impedance can cause Inconsistent Output Levels

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 KP-4016 and KP-5032 panels produced prior to 1 May 2016. • Does not affect DKP-4016, KP-3016 or KP-3016A panels.
Notification Applies To:	**Access Restrictions:**
☒ Technical Support (TSS) ☒ Repair (ASA) ☒ Sales (NSO / RSO)	☐ Internal Distribution **ONLY** ☒ **No** Restrictions (Internal & External Distribution)

1.0 Issue

Several customers have identified that the front and rear panel microphone circuits on the KP-4016 and KP-5032 panels produce inconsistent and unpredictable output levels. Engineering believes that this increased sensitivity and variation in levels is due to the input impedance of the KP Series panel microphone circuits. The input impedance is higher than previous key panel designs.

Note that this issue only affects the front and rear panel microphone audio paths. The headset microphone paths are not impacted.

2.0 Resolution / Corrective Actions

The initial production value of the panel microphone input impedance was 21.5 kOhms for both the front and rear panel microphone circuits on the KP Series panels. In order to correct the level inconsistency, the input impedance needs to be reduced to 2 kOhms. This is done by replacing two SMT resistors on the Main PCBA of the KP Series panels.

3.0 Rework for Input Impedance Change

Necessary tools and parts:

- Phillips Head screw driver
- 2 pieces of Bosch SAP # 4998149308. This is a 2 kOhm 0402 SMR resistor corresponding to supplier part numbers:

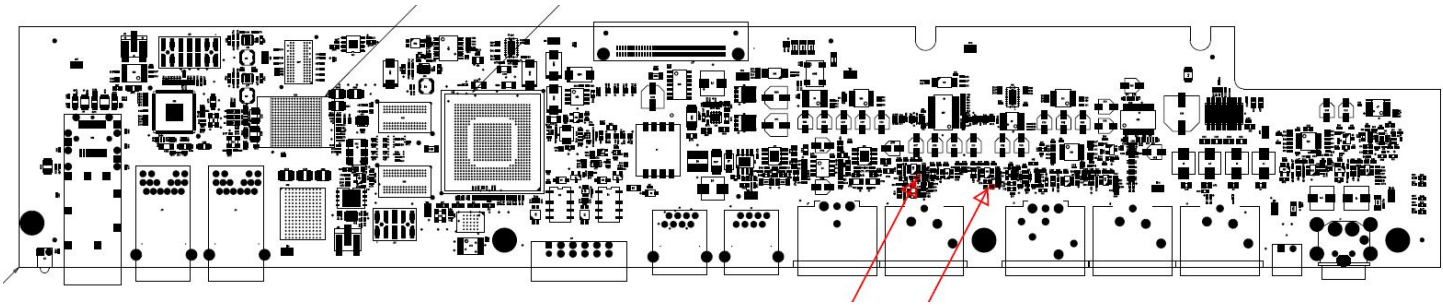
CRCW04022K00FKED	VISHAY
MCR01MZP5F2001	ROHM

Any equivalent 2 kOhm 1% 1/16W 0402 SMT resistor is acceptable.

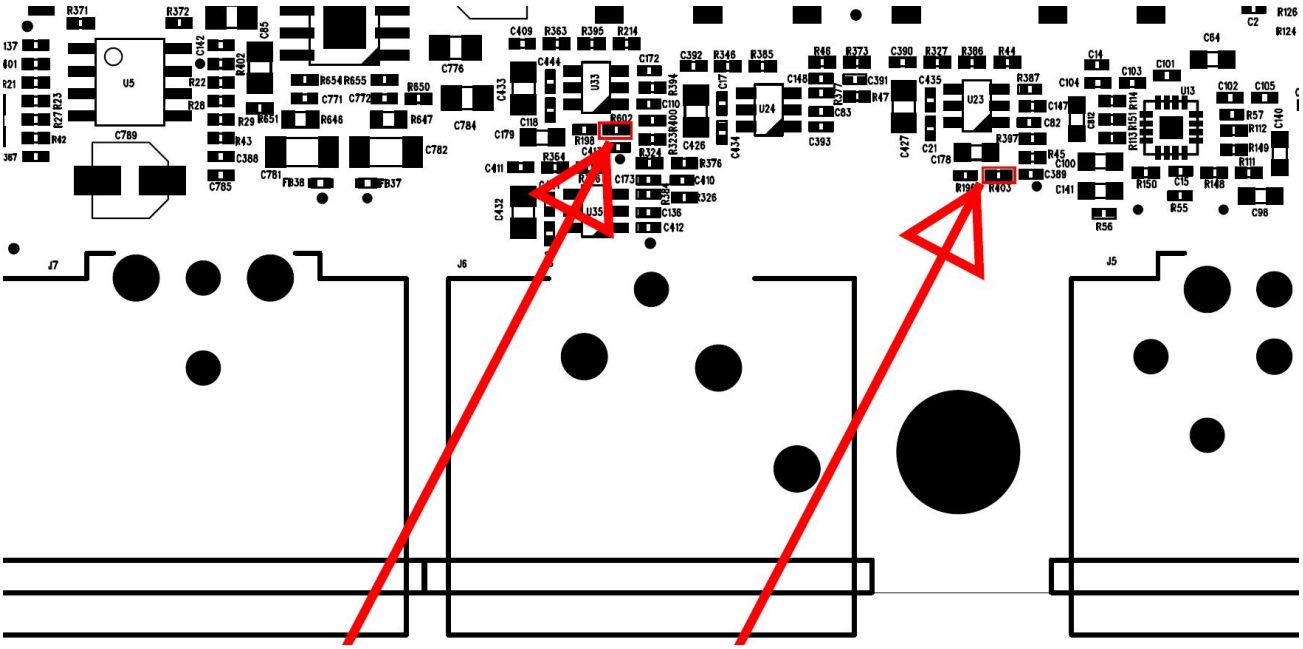
NOTICE:
Rework should only be performed by qualified personnel who observe proper ESD and handling procedures.

Rework steps:

1. Remove AC power from the KP series panel and place the panel onto an ESD safe work surface.
2. Remove the top cover from the KP series panel.
3. Disengage all cable connections to the Main PCBA and remove all screws securing the Main PCBA to the base chassis.
4. Remove the Main PCBA and place this onto a static protective work surface.
5. Identify resistor locations R403 and R602 on the Main PCBA. These are shown with the red arrows in the following diagram of the Main PCBA:



Close-up View of resistor locations R403 and R602:



6. Carefully unsolder resistors R403 and R602. These 21.5 kOhm parts can be discarded.
7. Replace R403 and R602 with the 2 kOhm 0402 SMT parts specified earlier in this document (SAP# 4998149308 or equivalent).
8. Reinstall the Main PCBA into the chassis. Make sure to properly mate all cable assemblies and install all screws securing the Main PCBA to the base chassis.
9. Reinstall the top chassis cover and secure with screws.

This rework should reduce the input impedance of both front and rear panel microphone circuits from 21.5 kOhms to 2 kOhms. This should eliminate any output level inconsistencies due to microphones.

NOTICE:

The DKP-4016 desktop panels and KP-3016 model panels are not affected by the panel microphone level issue described in this bulletin. These products were introduced with 2 kOhm input impedance on the panel microphone circuits. The KP-5032 and KP-4016 panels had the input impedance changed on ECN F03X036259 from 21.5 kOhms to 2 kOhms. This ECN can be consulted for specific dates of effectivity.