

RTS-TB-018**23-April -2013****Audible Hum / Noise Emitted from KP-32 Family Displays**

Issue Severity:	Product(s) Affected:
<input type="checkbox"/> High: URGENT – Immediate Action Required <input type="checkbox"/> Medium: Bosch Security Systems, Inc. strongly recommends you take the action(s) described below. <input checked="" type="checkbox"/> Low: Advisory	<ul style="list-style-type: none">• All KP-32 family variants produced since January 2011 with graphical Noritake graphical displays GU280X16G-7000. This includes:<ul style="list-style-type: none">- KP-32- KP-632- KP-832- KP-32/16- EKP-32
Notification Applies To:	Access Restrictions:
<input checked="" type="checkbox"/> Technical Support (TSS) <input checked="" type="checkbox"/> Repair (ASA) <input checked="" type="checkbox"/> Sales (NSO / RSO)	<input type="checkbox"/> Internal Distribution <u>ONLY</u> <input checked="" type="checkbox"/> <u>No</u> Restrictions (Internal & External Distribution)

1.0 Issue

A small number of customers have registered complaints that the KP-32 family of products using graphical Noritake displays emit a low volume hum / noise during normal operation. In certain quiet environments depending upon concentration of these units, this hum / noise may become bothersome. Although this noise does not seem to impact the vast majority of customers, it is possible to modify the field units to reduce this noise level if customers complain about the problem.

Note that the graphical Noritake displays were only introduced in late 2010 / early 2011 as a feature enhancement to support Cyrillic character sets.

2.0 Resolution / Corrective Actions

During discussions with the display vendor for the KP-32 family (Noritake), it was proposed that the cause of the noise is a 6.7 kHz scanning frequency associated with the Noritake display. The vendor proposed that the addition of a 10 uF 63Vdc electrolytic capacitor would attenuate this noise. When this was tested in manufacturing, results were that this lowered the noise level to a level that was not significant on the units (and comparable to the traditional noise level associated with operation).

This capacitor is part of the Noritake PCBA assembly (not an assembly Bosch manufactures). As such, the addition of the capacitor must be reworked on each display assembly impacted by this issue. Note that this capacitor location (C35 on the Noritake PCBA) is currently not populated.

In parallel with this rework, Bosch is working with the vendor Noritake to have the vendor populate this capacitor on all new display assemblies going forward. This should take effect on shipments beginning in 3Q2013.

3.0 Detailed Rework Instructions

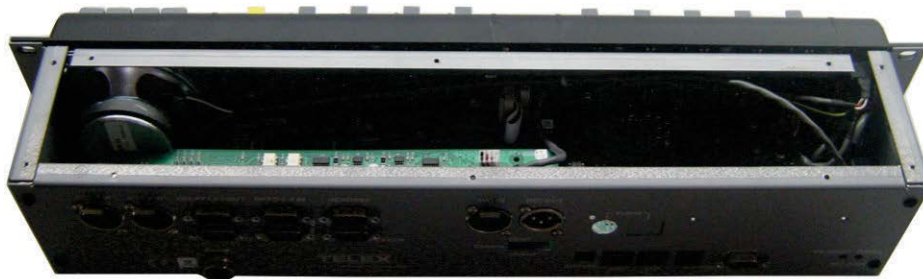
Necessary tools and parts:

- Phillips head screwdriver
- Soldering iron and solder
- One 10 uF 63 Vdc electrolytic capacitor per display board: United Chemi-Con EMVE630ADA100MF55G or equivalent. These parts are readily available from multiple online distributors such as Digi-Key and Mouser.

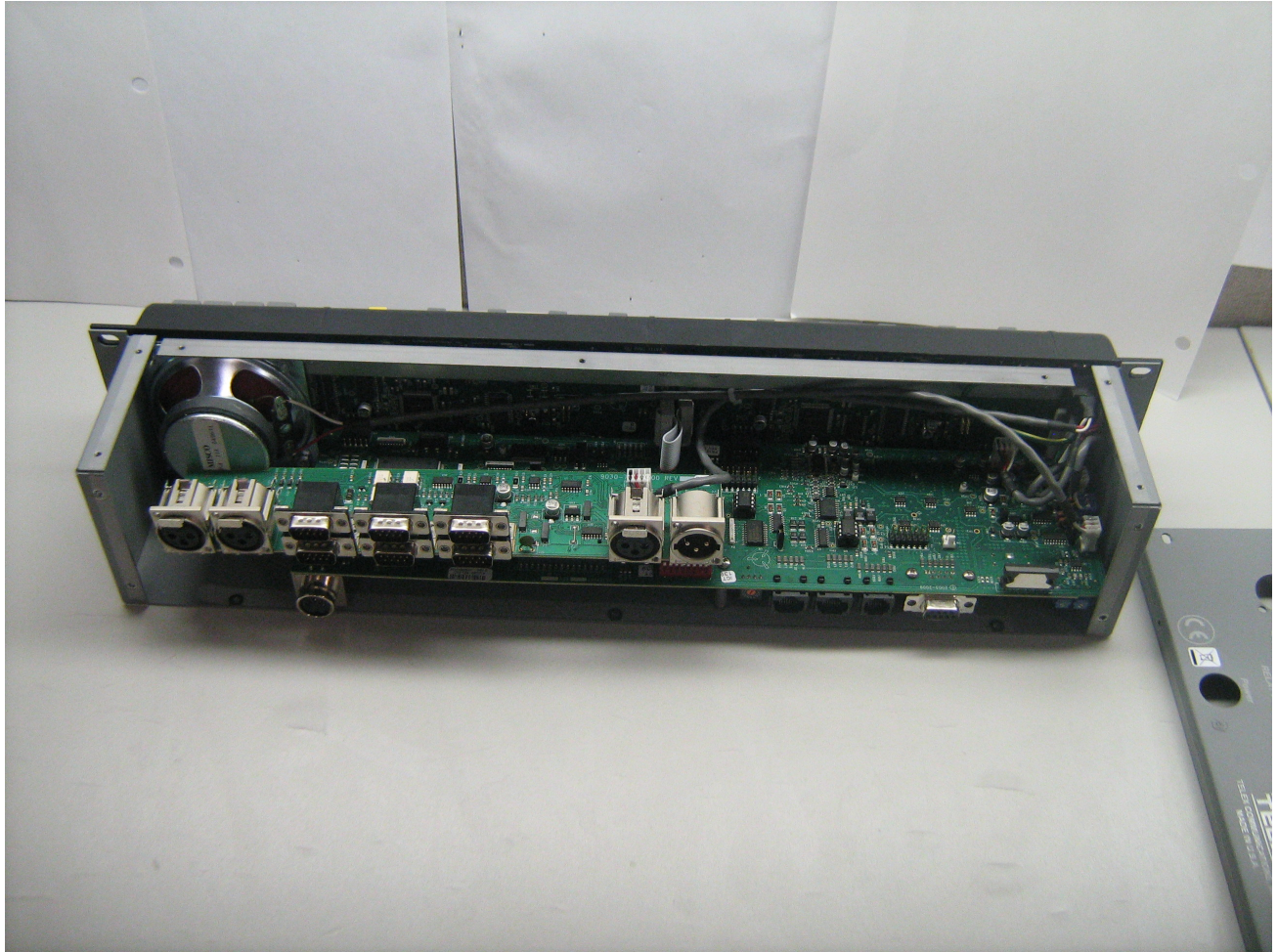
1. Remove DC power from unit before proceeding with any rework.

Unscrew the locking connector to the external AC / DC power supply.

2. Using a Phillips screwdriver, remove the top cover and rear cover of the keypanel.

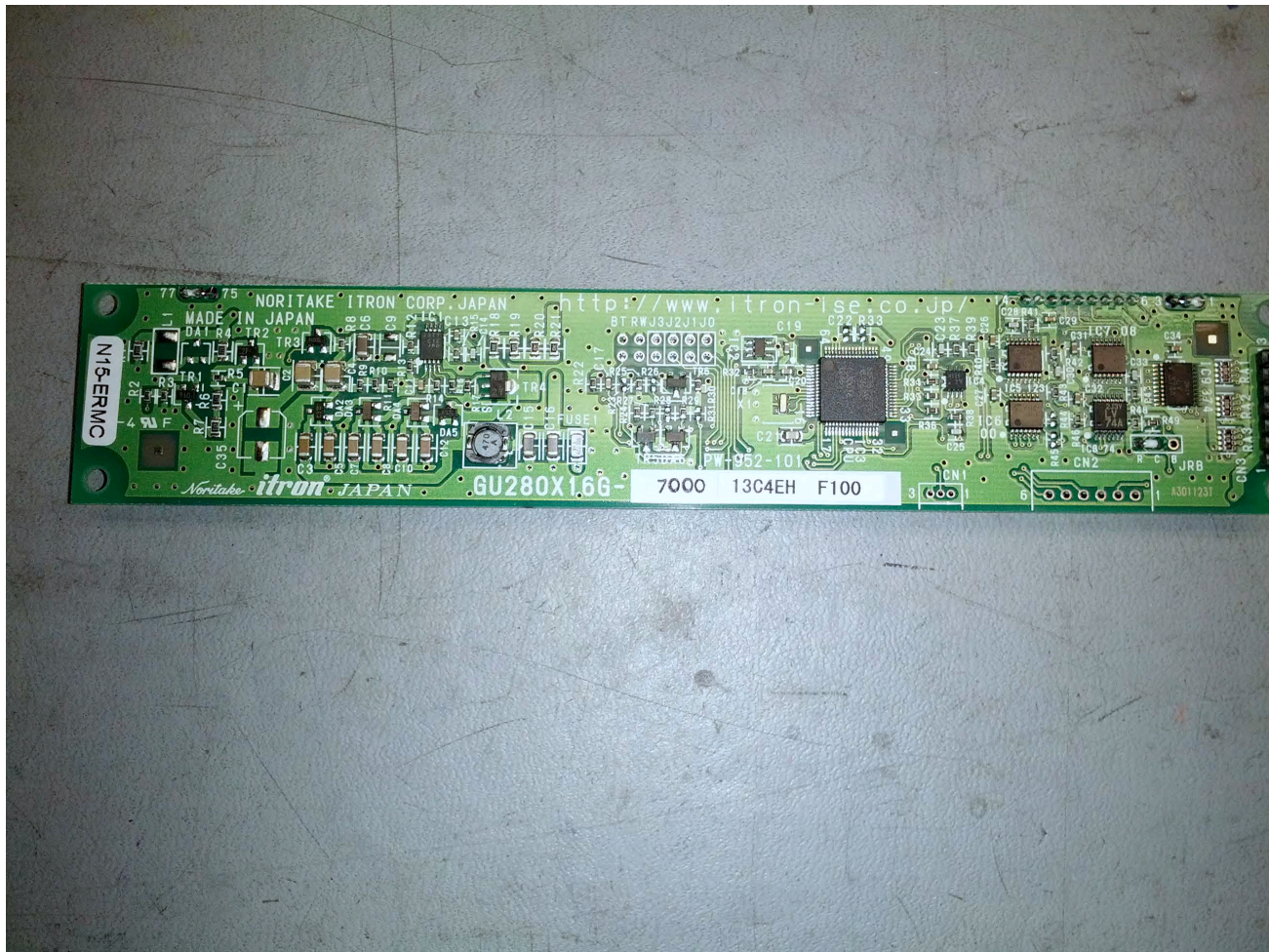


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3. Continue disassembly process and remove the Noritake display boards from the front panel.

4. Verify that the display boards are the graphical models with the GU280X16G-7000 designation in silkscreen on the back of the board.



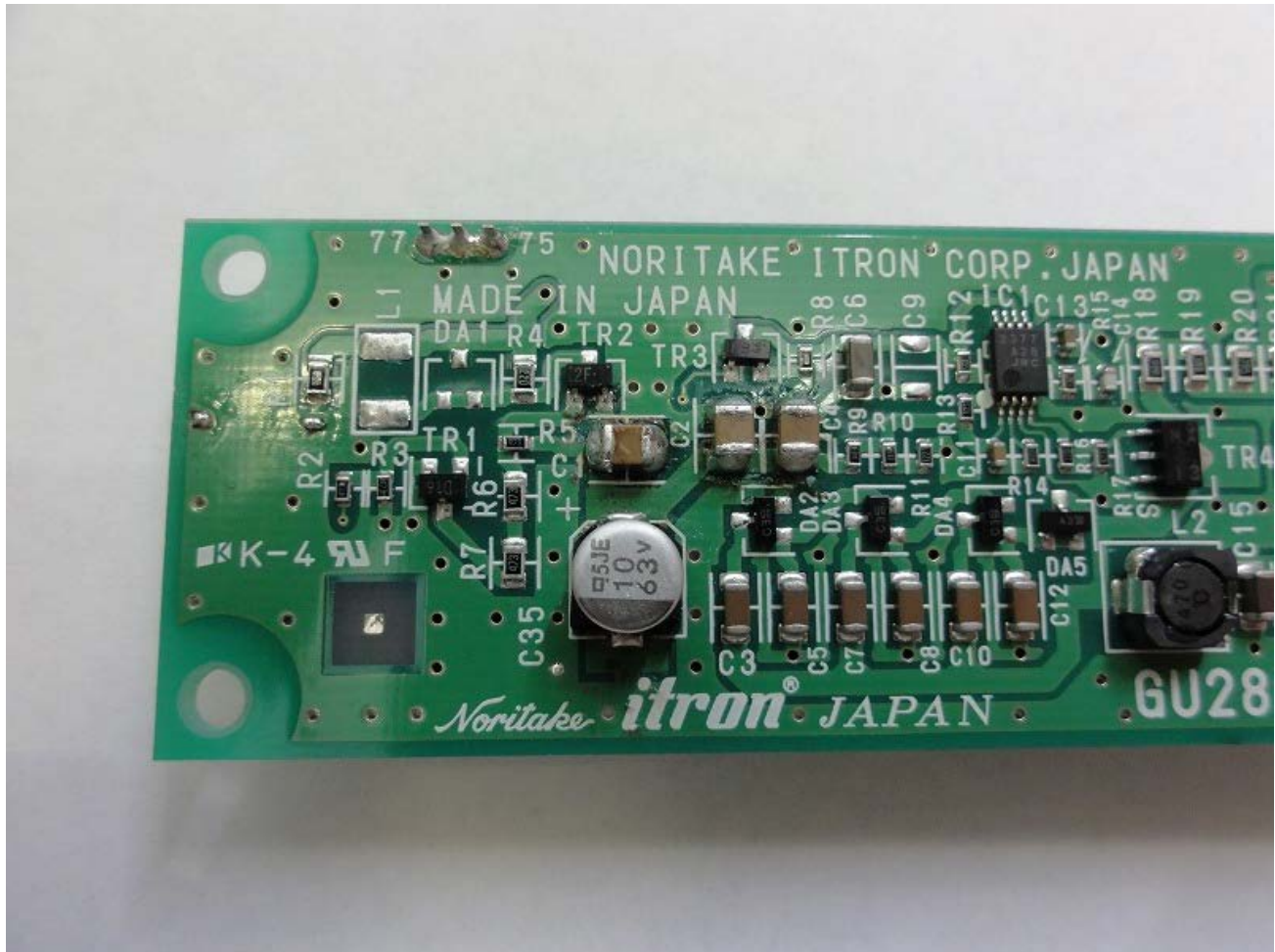
Note the part number GU280X16G-7000 marked on the display PCBA and on the lower left side of the board notice the pads for capacitor C35.

5. On the backside of the Noritake board locate reference designator C35. This location should be unpopulated on the PCBA.

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6. Take the 10 uF 63 Vdc electrolytic capacitor (**United Chemi-Con EMVE630ADA100MF55G or equivalent**) and solder to each Noritake PCBA.

Note that this is a polarized capacitor and the polarity must be maintained in the same orientation as shown in the following photo:



7. Re-assemble PCBA into chassis and re-apply power connection. Noise should be reduced from original configuration.