

## USING T-GEN2 IN MX1

*This bulletin describes using the T-Gen2 Grade 3 Evacuation Warning System in MX1 panels.*

The newly released T-Gen2 product range is described in Product Bulletin PBG0203 and the 100V Splitter Board is in PBG0205. A complete Building Occupant Warning System (BOWS) is described in PBG0206.

The various MX1 panels – 8U, 15U and larger, support various arrangements of the T-Gen2 products.

### 8U MX1

The 8U MX1 supports a single T-Gen 60 or T-Gen 120 module on the gearplate – but nothing else. There is no room for 100V Splitter or 100V Switching Modules – so the T-Gen2 output is limited to a single floor or area <2000m<sup>2</sup> (AS 1670.1:2015). An empty 8U cabinet with an MX1 gearplate could be used to house some 100V Splitter/Switching Modules, allowing additional 100V outputs.

The 8U cabinet does not support a 3U User Interface, nor the FP1121 T-Gen 60 mounted on the User Interface – as parts of the MX1 outer door obscure LEDs and buttons on the User Interface – making them unviewable when the door is closed.

### 15U MX1

The 15U MX1 supports:

- A T-Gen 60 or T-Gen 120 on the gearplate LHS.
- A T-Gen 60 on the gearplate RHS return fold.
- An FP1121 3U User Interface complete with a T-Gen 60 on the 19" rack.
- An FP1122 3U User Interface with no T-Gen2 on the 19" rack, connected to a T-Gen2 mounted on the gearplate.
- Up to 3 100V Switching or Splitter Modules on the gearplate upper LHS with a T-Gen2 mounted below them.
- Up to 6 100V Switching or Splitter Modules on the gearplate LHS if no T-Gen2 is fitted on the gearplate.

Note: the positions for the 100V Switching/Splitter Modules on the gearplate are the same as for MX Loop Cards and similar mounting brackets.



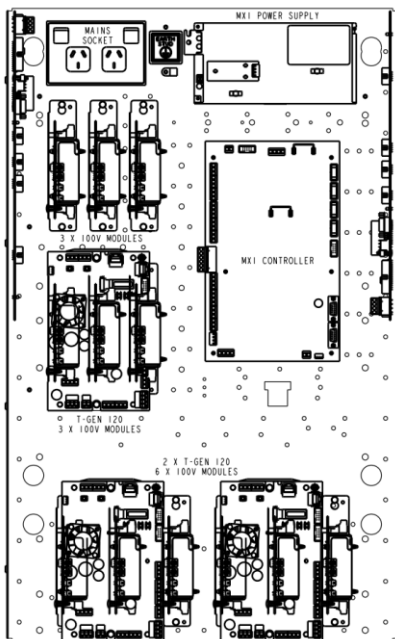
MX1 15U with FP1121/FP1122



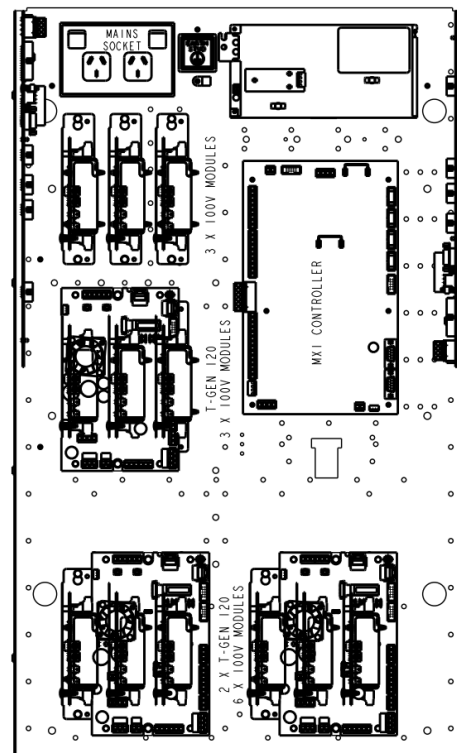
15U Gearplate with T-Gen2 & Splitter/Switching Modules

Larger MX1 Cabinets

The BTO MX1 cabinets (28U/40U) can fit up to 3 x T-Gen 60 or T-Gen 120 units on the gearplate and a number of 100V Switching or Splitter Modules – depending on what else is fitted. Note that the T-Gen2 positions and 100V Switching /Splitter Module positions overlap, and the T-Gen2 units should not be mounted on the sides of the gearplate.



18U Gearplate T-Gen2 & Splitter Positions



Large Gearplate T-Gen2 & Splitter Positions

The 19" rack can house the FP1121 3U Door complete with a T-Gen 60, or the FP1122 3U User Interface connected to a T-Gen2 mounted inside the cabinet.

### MX1 Power Supplies

The standard *MX1* PSU is 5A. Under AS 1670.1:2015 the PSU must be able to supply the full alarm load of the panel and any connected EWS without any batteries.

Therefore it is necessary to do a design check to make sure the *MX1* PSU is able to power the *MX1* in alarm, plus what the T-Gen2 requires in alarm, without exceeding the 5A rating.

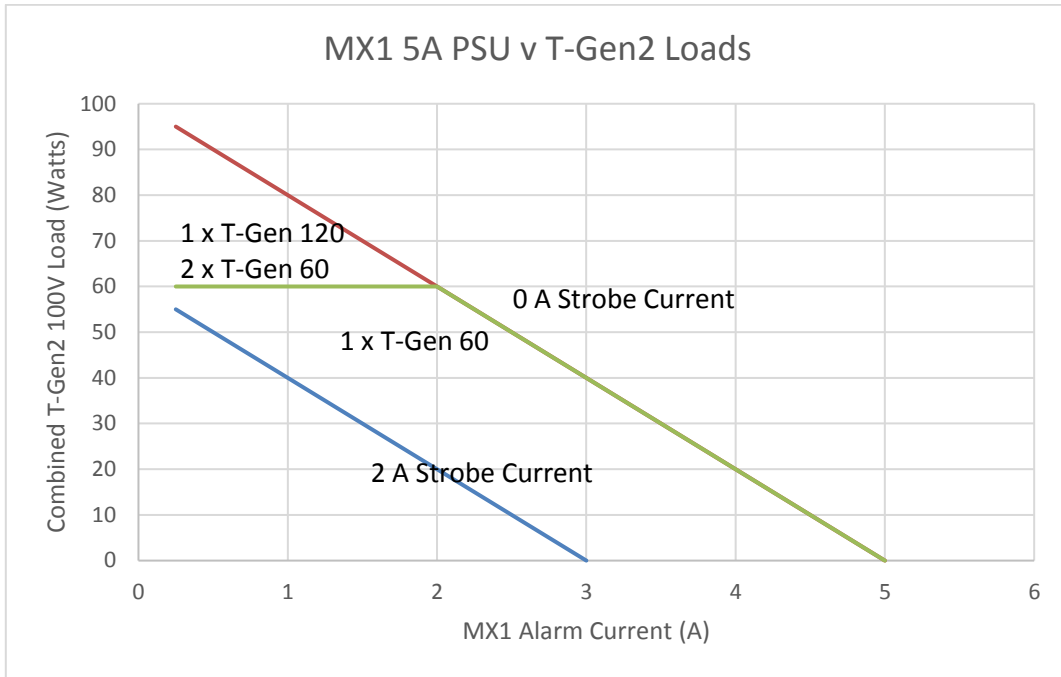
As the T-Gen2 can draw 3A @ 60W load, 6A at 120W load, plus the connected strobe load up to 2A, the total load on the T-Gen2 may need to be less than the maximum.

Figure 1 shows the connectable 100V load on a T-Gen 60 or T-Gen 120 for various alarm currents on the *MX1*, taking into account the T-Gen2 strobe current from 0 to 2A.

Basically the *MX1* can support:

- One T-Gen 60 with no strobe current fully loaded (60W) on the 100V output, if the *MX1* alarm current is less than 2A; decreasing to 0W on the 100V output as the *MX1* alarm current increases to 5A.
- One T-Gen 60 with 2A of Strobe current and 55W of 100V load, if the *MX1* has no extra alarm load; decreasing to 0W on the 100V output as the *MX1* alarm current increases to 3A.
- Two T-Gen 60 units with a combined 100V load of 95W and no strobe load if the *MX1* has no extra alarm load, decreasing to 0W as the *MX1* alarm current increase to 5A.
- One T-Gen 120 with no strobe current loaded to 95W on the 100V output, decreasing to 0W as the *MX1* alarm current increases to 5A.

To determine the supportable load, calculate the *MX1* panel alarm current (excluding the T-Gen2 requirements); Use the graph to determine the T-Gen2 100V load that is supported for that *MX1* alarm current. Extrapolate between the 0A strobe current and 2A strobe current lines to determine the actual 100V load that can be supported based on the strobe current that must also be supplied.



Permissible T-Gen2 100V Load v MX1 Alarm Current and Strobe Current

If the required load cannot be supported by the MX1 PSU, options are:

- Use a separate PSU (and battery) to power the T-Gen2. The PSU2406 6A and 12A PSUs are suitable. Empty 8U or 15U expansion cabinets could house the PSU, battery and T-Gen2 units, or providing power back to the T-Gen2 mounted in the MX1.
- Use a BTO panel with multiple PSUs.
- Use an external BOWS (FP1136 or FP1137) as these contain their own PSU, T-Gen2 unit(s) and battery space.