Bluetooth Products – Precautions for Product Installation and Operation

1. Due to the nature of Bluetooth mesh network, the number of smartphones/tablets should not exceed the number of Bluetooth devices when entering to the mesh network to control the device. E.g. If there are three smartphones attempting to control two Bluetooth products at the same time, there will be only two of the three smartphones which are able to search for Bluetooth devices and enter the mesh network when opening the app. Put it simply, the max. number of smartphones/tablets controlling the network at the same time should be no more than the max. number of Bluetooth devices.

2. We recommend the distance between a smartphone and a Bluetooth device to be around 10m. However, please kindly take note that it is very much dependent on the Bluetooth capability of a smartphone or a tablet and environmental factors.

3. The communication range between two Hytronik Bluetooth units can be affected by the surroundings and obstacles such as metals, concrete walls and sheet steel. For example, when Bluetooth dimmer (HBTD8200 series) is installed inside a junction box behind a concrete wall, the Bluetooth transmission range would be reduced. Also, the range could also be affected adversely if a Bluetooth device is installed in a metal enclosure. Other forms of interference which may affect the range include Wi-Fi routers, microwave ovens and other such sources which emit strong wireless signals should be taken into consideration when installing. The Bluetooth transmission range can be up to 30m indoor and 50m outdoor. We recommend to always carry out communication tests under conditions with various signal disturbing sources. Due to the nature of Bluetooth mesh network, communication between Bluetooth devices can be relayed to extend end-to-end communication range. Meanwhile, we still recommend the distance between Bluetooth units to be around 5m to 6m to ensure network reliability with good user experience.

4. For Bluetooth products, we highly recommend to calibrate device real time every 6 to 12 months by simply accessing to the app and connecting to the Bluetooth network. The main purpose is to eliminate accumulating time deviation error and make sure that all time-related functions to work well.

5. The maximum number of Hytronik Bluetooth devices per network should not exceed 100 units, while the number of networks does not have to be considered. Meanwhile, we have a few tips to enhance the network's performance and efficiency:
- Try to use as much dedicated light sensor as possible to reduce data transmission.
- In case of external daylight sensor is required, we suggest to be less than 20 external daylight sensors within one network.
- Try to disable the relay feature of some nodes. However, please kindly take note that in real application, it depends on the distance between Bluetooth nodes to determine how many pieces of relay nodes are needed for the space.