

# Switcher Unit SU-110-01

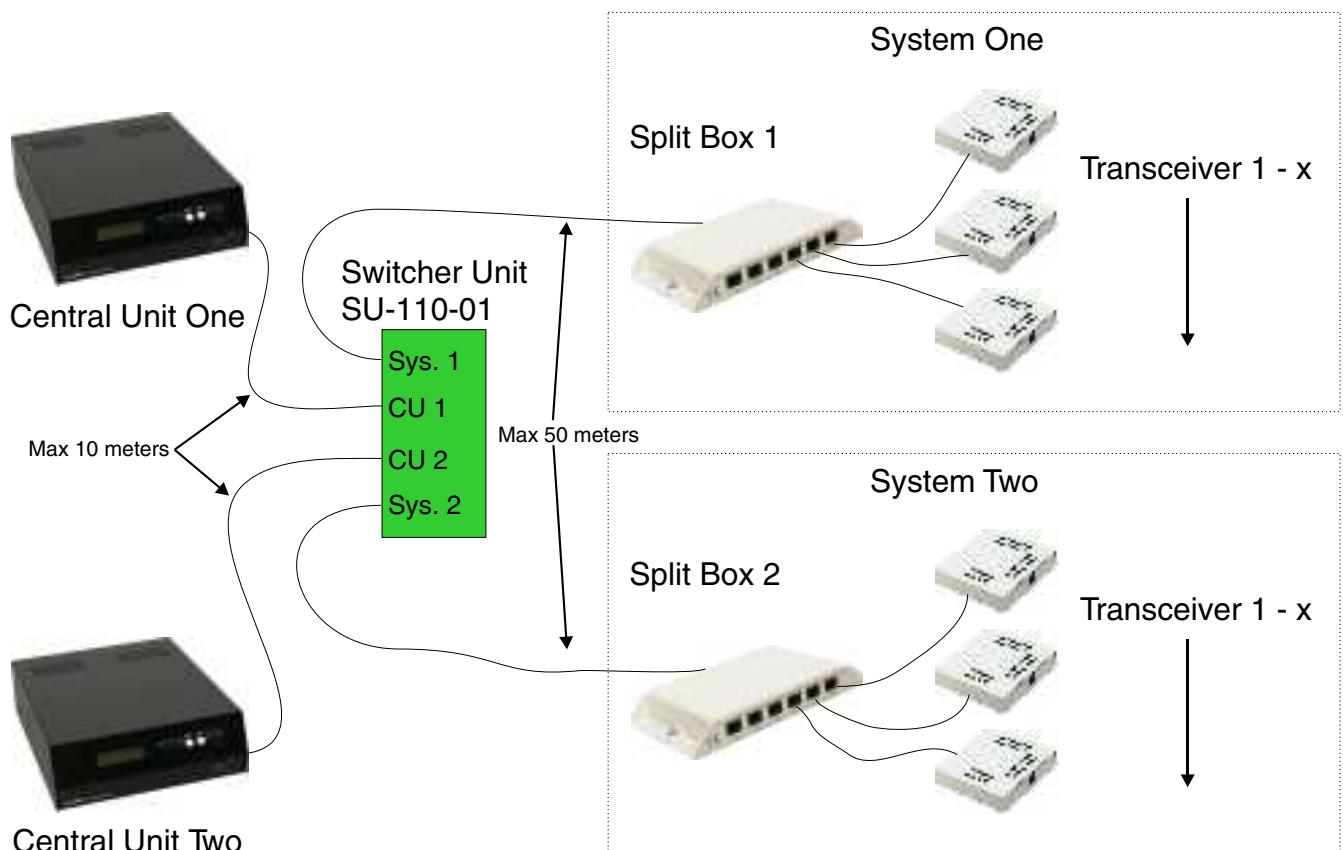
## Dual System Automatic Switcher

The *SU-110-01* Switcher Unit is designed for automatic switching between two physically adjacent systems, e.g. a room with a removable divider wall, where the systems need to be used as two individual systems in separate rooms and as one system in both rooms with very little setup time.

Two Central Unit's are required which are connected to the *SU-110-01 Central Unit One* input and *SU-110-01 Central Unit Two* input respectively. The transceiver section of the area to be controlled by Central Unit One is connected to the *SU-110-01 System One* output and the second area is connected to the *SU-110-01 System Two* output. Although it is possible to connect a Transceiver Unit directly to the Switcher Unit outputs, it is recommended to use a Split Box to connect the transceivers.

With both Central Unit's turned on the two systems works independently. Turning off either Central Unit connects the transceivers from both areas to the remaining active Central Unit. Any of the two Central Unit's can be shut down making special applications possible using different Central Unit setups.

The *SU-110-01* Switcher Unit is self-powered by the Central Unit's via the signal cables. Power consumption maximum 6W. Both Central Unit's should be connected to the same safety ground reference to avoid ground loops and interference. See diagram below for cable length restrictions.



**Step 1:** Determine the actual operating area, i.e. the area where the Delegate Units are used.

**Step 2:** Determine the ceiling height at the operating area and use a diagram similar to figure 2 to get the coverage diameter. At ceiling heights below 4 metres, multiply the diameter with 0.9 for angular compensation.

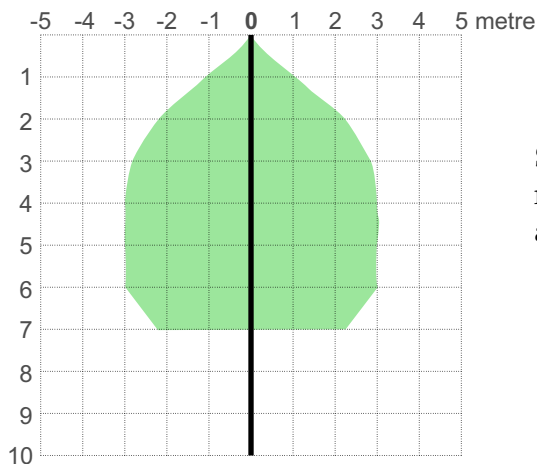


Fig.2: Use the ceiling height to find the IR signal coverage for a single transceiver, for example, at 3.5 metres ceiling height, the diameter is 6 metres.  $6 \times 0.9$  is 5.4 metres.

It is normally enough to connect the area borders when placing the transceivers, the area in between will be "filled" by the co-operation of the transceivers. In our example we have an overlap vertically but only since two transceivers would not be enough.

**Step 4:** We now have the positions for the transceivers. Determine where the Central Unit and, if used, the Split Boxes will be placed. Ground rule one: *Each transceiver must have the same cable length within a one metre margin between the Transceiver and the Central Unit.* When using Split Boxes, simply ignore the box and add the length of cable for the Transceiver and the length of the cable between the Split Box and Central Unit.

When using more than one Split Box in the same room, it is only the *total length* of the cable that matter, i.e. if the cables between Split Box 1 and the Transceivers is 5 metres and the cable between Split Box 1 and the Central Unit is 10 metres, a total cable length of 15 metres, the total length for Split Box 2 must be the same *but* can be a different configuration, for example 10 + 5 metres.

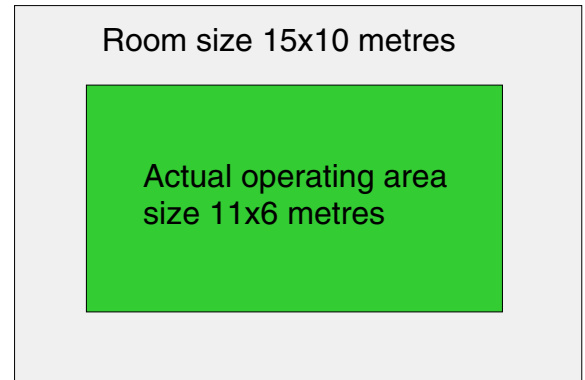


Fig.1: It is rarely necessary to have complete wall-to-wall coverage, determine the actual operating area and its location

**Step 3:** Use the coverage area diameter and layout all the necessary transceivers and their positions to cover the operating area.

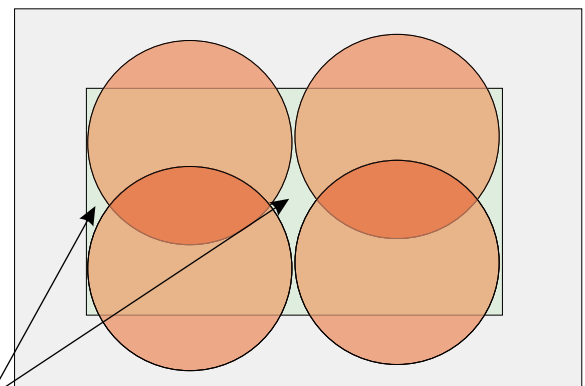


Fig.3: Use the resulting coverage diameter and fill the operating area with the necessary number of transceivers. In our example, with a ceiling height of 3.5 metres, a single line of transceivers will not completely cover the area so a dual row adds plenty of safety margin.

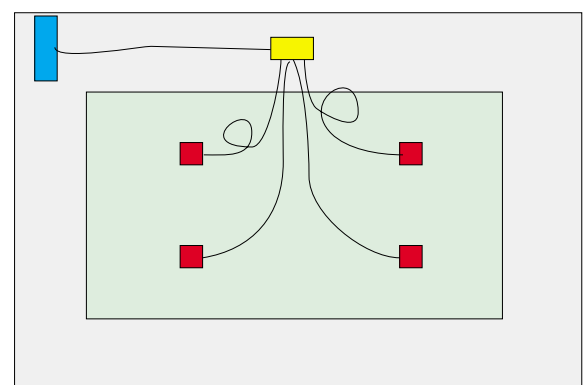


Fig.4: The Transceivers (red) are connected to the Split Box (yellow) using 10 metre cables. The cable slack for the two upper Transceivers have been rolled together. The Split Box is then connected to the Central Unit (blue) using another 10 metre cable.

Ground rule two: *A cable connected to a Transceiver cannot be longer than 30 metres.*

Ground rule three: *The cable between a Split Box and the Central Unit cannot be longer than 50 metres.*