WHAT IS RVON?

RTS Voice Over Network, or RVON for short, is a Voice Over IP (VoIP) solution for RTS products. RVON allows keypanel audio and data to be carried over long distances, using standard Ethernet. There is no distance limitation for RVON: it can be transmitted over the public internet from one end of the world to the other. To achieve this, the audio is compressed, to reduce the required bitrate. Three levels of compression are available. The compression algorithms are known as codecs. You may read more about these in the Application Note called "RTS Voice Over Network – RVON".

RVON FOR KP-SERIES

RVON firmware is available free of charge for all the RTS KP-Series keypanels. It may be downloaded from the RTS web page. The only keypanel that does not support RVON is the KP-3016A, because it is analog only. We will look at two use cases for RVON.
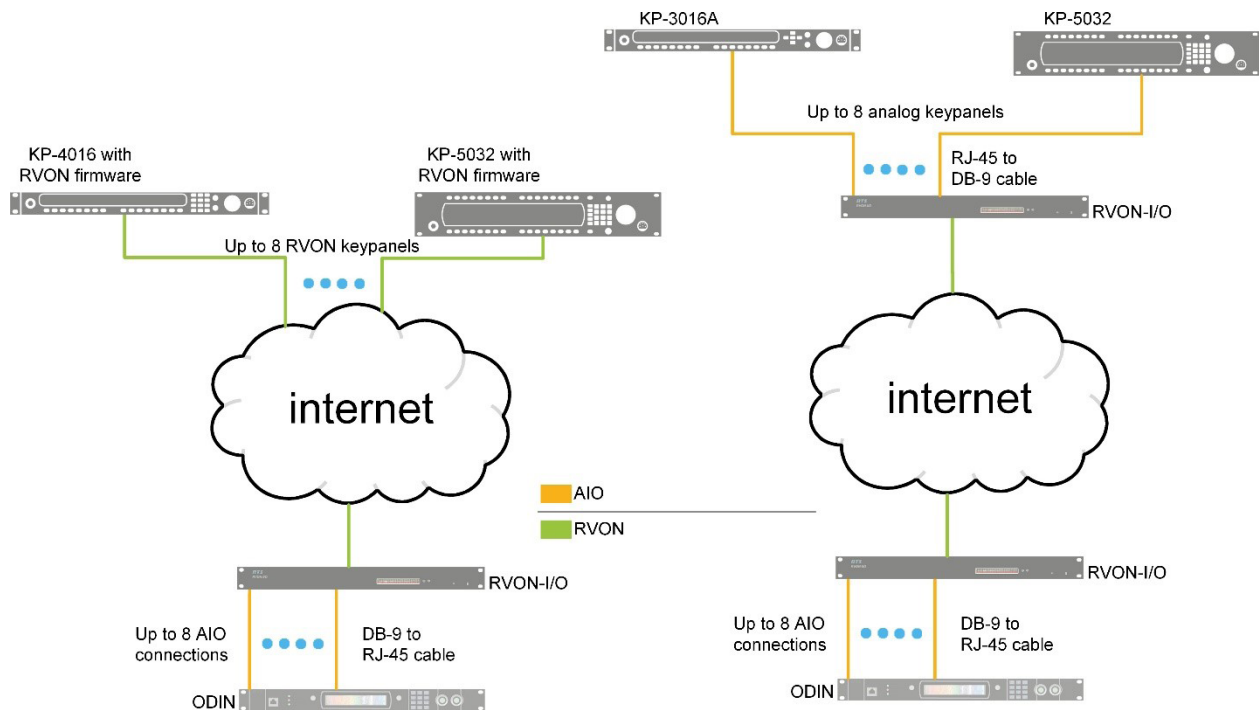
RVON AS A LONG-DISTANCE VOIP SOLUTION

Figure 1. RVON solutions for ODIN

Two use cases are shown in Figure 1: ODIN communicating with RVON-enabled keypanels (left) and ODIN communicating with analog keypanels (right). Both cases require the RVON-I/O, which translates between AIO and RVON.

RVON-ENABLED KEYPANELS

RVON-enabled keypanels may be connected directly to the Ethernet connection (internet in this case). A special cable is required to connect the matrix (ODIN) to the RVON-I/O box. The required cable has an RJ-45 connector on the matrix side, and a male DB-9 connector on the other. The way pins are numbered is shown in Figure 2 and Figure 3.
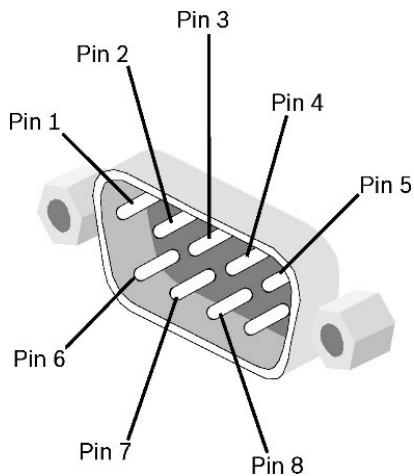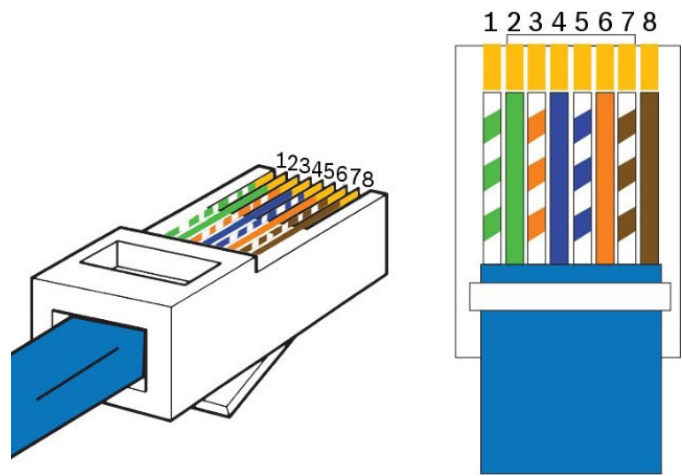

Figure 2. DB-9 cable pinout

Figure 3. RJ-45 cable pinout

Referencing the numbering in the two figures above, the required connections are shown in Figure 4.

```
RJ-45 to              DB-9 male to
Matrix                 RVON-I/O
  1           NC
  2 ———Data-·———— 2
  3 –Audio-from-MX+– 4
  4 —Audio-to-MX+— 8
  5 —Audio-to-MX-— 7
  6 –Audio-from-MX-– 5
  7 ————Data-+———— 1
  8           NC
```

Figure 4. Connections for the cable between matrix and RVON-I/O box

ANALOG KEYPANELS

Keypanels that do not have RVON require an RVON-I/O box as a translator. Up to eight analog keypanels may be connected, as shown on the right hand side of Figure 1. A special DB-9 to RJ-45 cable must be used. Referencing the numbering in Figure 2 and Figure 3, the required connections are shown in Figure 5.

```
RJ-45 to              DB-9 male to
keypanel               RVON-I/O
  1           NC
  2 ———Data-·——— 2
  3 –Audio-from-MX+– 8
  4 —Audio-to-MX+— 4
  5 —Audio-to-MX-— 5
  6 –Audio-from-MX-– 7
  7 ————Data-+———— 1
  8           NC
```

Figure 5. Connections for cable between RVON-I/O box and analog keypanels