

MAYAH Communications

Application Note 17

Difficulties with connecting two Centauri with X.21

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1 Connecting Centauri with other devices

The problem with high-quality digital sound transmission is the different setting of the transmitting and the receiving interface concerning Encoder/Decoder algorithm, sample rate and supported maximum bit rate. If the receiving interface is working e. g. with G.722, it refuses all incoming data not encoded with this particular algorithm. With the encoder/decoder-parameter *Dependency*, MAYAH Communications has been developing a way to solve this problem by providing a possibility to synchronize the different codec algorithms automatically.

This parameter can be configured as *local* or *remote*. *Local* means that the encoder respectively decoder uses its own settings. If, for example, the Centauri's encoder is set to local and the far-end device's decoder-settings are configured in another way, accurate data transmission is impossible. This can be avoided by setting the *dependency* parameter to *remote*. In this case, for example, the Centauri's encoder examines which values are chosen for the far-end device's decoder, and then changes its own settings to an identical configuration.

2 Connecting two Centauri

This works fine with nearly all devices from other manufacturers except for a few special situations described in chapter 5.1.1 of the Centauri User Manual. But what if the far-end device is also a Centauri whose value for *dependency* is *remote*?

In this situation each Centauri is waiting for the other to send its settings for to establish its own identical configuration. Though there will be a connection established (yellow LED) the framing (blue LED) doesn't work, so nothing would happen but waiting.

3 Requirement for connecting two Centauris

Two different configurations are possible for solving the problem mentioned above.

3.1 Symmetrical connection

To use Centauris solely within a X.21 net, at least one of the encoder-dependency-value has to be local. This device doesn't wait for the specifications of the other Centauri but immediately starts to send data in its own configured format. The Centauri on the far end with the dependency *remote* now gets the required information and configures its own settings identically.

3.2 Asymmetrical connection

If the far-end Centauri is also configured *local*, an asymmetrical connection is possible.

Example: Centauri-A is connected to Centauri-B

```
Settings Centauri-A: Encoder: MPEGL2, 128kBit, "Local"
                    Decoder: unimportant, "Remote"
```

```
Settings Centauri-B: Encoder: MPEGL3, 128kBit, "Local"
                    Decoder: unimportant, "Remote"
```

Then, after connection, following configuration is established:

```
Centauri-A:        Encoder: MPEGL2, 128kBit
                   Decoder: MPEGL3, 128kBit
Centauri-B:        Encoder: MPEGL3, 128kBit
                   Decoder: MPEGL2, 128kBit
```

4 Frontpanel display

Note: In the status display of the Centauri front panel normally the currently working encoder/decoder values are indicated. If there is no framing, such as during the problematic situation described above, the values configured in the setup section are indicated.