

## Block diagram of the Compact Indoor Unit

The function of the Indoor unit is evident from the block diagram in Figure 4.

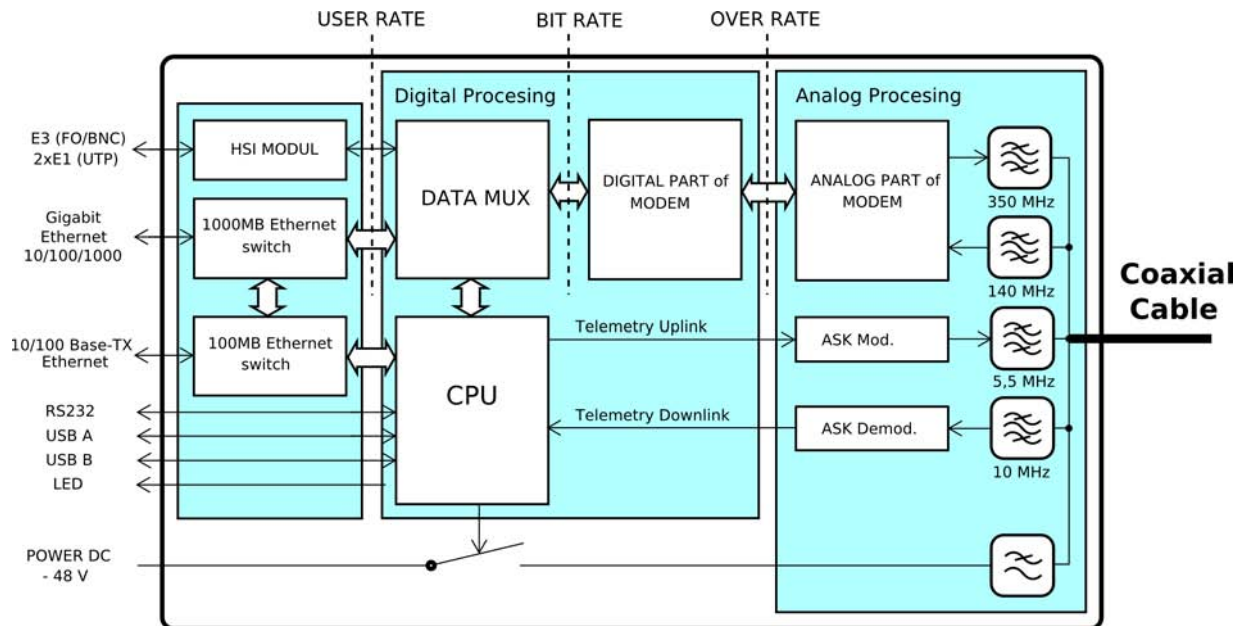


Figure 4: Block diagram of the Indoor unit

The circuits of Ethernet interface and the circuits of the HSI module together with digital multiplexer (DATA MUX), digital modem (DSP block), CPU and block of Analog signal processing make up the essential functional blocks of the Compact Indoor Unit.

Data are first processed by circuits of Ethernet physical layer eventually by HSI block interface and prepared data are directed into the data multiplexer. Digital modem then adds synchronization marks, FEC to the data stream and creates a digitally modulated signal, which is led to the block of Analog signal processing. All these parts are interconnected inside the device with high-speed bus and are controlled from the central processor unit CPU. This block (CPU) is also accessible via management interfaces and allows the user to perform all the settings both locally and remotely through the IP interface in the Compact Indoor Unit.

Digital multiplexer (block DATA MUX) is from a user's perspective divided into 2 parts (for details see Figure 5):

- RFI side which processes the data coming into the modem from HSI part and from Ethernet
- HSI side which processes data coming from the HSI module

The RFI side is the own digital multiplexer based on technology of Packet Based Priority System (PBPS), whose function is to create a single data stream for Modem block containing all the permitted input user data. Signals from the internal bus brought from HSI interface, Ethernet data and data from the internal BER tester are the data sources for digital multiplexer. System PBPS first transmits data with the highest priority and then data streams with lower priority - from Ethernet block and