Data protocols

Protocol of the IXARO Standard-transmitter

The communication between transmitter and computer is serial using the following parameters:
9600 Baud, 8 Bit, no parity
During first tests a terminal emulator like “Hyperterm” in Windows may be used. When power is applied to the transmitter it sends a startup message:
POCSAG-Transmitter 1.4 ready
>
After the character “>” the transmitter is waiting for a transmit-command whose syntax is:
P address,subaddress,call type,message <CR>

Deviations from this syntax cause an error message “ERROR“. The transmitter echoes each character. The line has to start with „P“ and a following blank character and it has to be terminated by a carriage return. Transmission starts immediately after the line has been received. No new commands are accepted during transmission. The transmitter sets the handshake line „CTS“ (Pin8) high during transmission. As long as CTS is high („1“), no characters may be sent by the computer (Hardware-Handshake). The transmissions last about four seconds. Instead of the hardware handshake the reappearance of the prompt sign “>” can be used as indicator that the transmitter is ready again.

Valid range of the parameters:

Address:	RIC of the pager between 8 and 2097151
Subaddress:	Value between 0 and 3
Call type:	“T” for tone only, “N” for numeric, “A” for alphanumeric
Message:	Number when numeric or text when alphanumeric, maximum length 90 characters

Some calls to Address 1928128 for example:

Tone call 4:	P 1928128,3,T
Numeric call:	P 1928128,0,N,1234567
Alphanumeric call:	P 1928128,2,A,Hello Jack

Protocol of the IXAROBUS transmitter

The IXAROBUS-System is based physically on the RS422 Interface which allows multiple devices to communicate on one line. The line becomes a data bus. Only one device may send data on the bus at any time, data collisions are not allowed. Therefore the bus master, the PC in the sytem has to coordinate communication on the bus. It sends commands to each of the attached devices which are identified by their bus addresses. All attached devices receive the commands however only the device which has been addressed responds. The devices generate no echoes of the sent characters. Data transmission rate is 9600 Baud. The IXAROBUS transmitters accept the following commands where „x“ stand for the busaddress from 1 to 8:

Identify:
Ix<CR>

If a transmitter having address x is attached to the bus it responds with:
POCSAG Transmitter 1.4 (RS485) ready:x<CR><LF>

This command is used by the IXARO software to check during program start how many transmitters exist within the system.

Transmit:
Px address,subaddress,call type,message <CR>
(see Standard-IXARO protocol for explanation of parameters)

The transmitter having address x transmits the specified message. The transmission is confirmed by the response:
OK:x<CR><LF>

If this response doesn´t occur within 10 seconds after the transmit command either the syntax was wrong or the transmitter did not respond (possible hardware failure.