Data and Configuration App -> Modem

send an UDP message to the Modem-IP to port 40132 with the following contents:

Byte 0 ... File Type
Byte 1 ... Frame Information
Byte 2 - 221 ... payload with length 219 bytes. If less space is needed then fill the rest with 0x00.

File Type:

Data transfer types (will be sent to the receiver):

- 1 ... BER Test Pattern
- 2 ... Image
- 3 ... Ascii File
- 4 ... HTML File
- 5 ... Binary File
- 6 ... Voice Audio (for Codec 2 or Opus)
- 7 ... UserInfo

Configuration types (for internal use, not sent over the air):

- 16 ... (reserved for future use)
- 17 ... (reserved for future use)
- 18 ... (reserved for future use)
- 19 ... shutdown (if modem runs on a linux computer, the a “shutdown” command will be executed). No payload for this command.
- 20 ... reset modem receiver. Can be used to resync the receiver in case of RX problems. Usually not used because the modem does this automatically. No payload for this command.
- 21 ... set playback volume (modem→transceiver) 0..100%
- 22 ... set capture volume (transceiver→modem) 0..100%
- 23 ... set playback volume (modem→loudspeaker) 0..100%
- 24 ... set capture volume (microphone→modem) 0..100%
- 25 ... voice mode
- 26 ... terminate hsmodem (can be called when app is closed). No payload for this command.
- 27 ... send tuning tones
- 28 ... send tuning marker
- 29 ... (reserved for future use)
- 30 ... write a letter or number to RTTY modem for transmission
- 31 ... send RTTY string
- 32 ... RTTY TX:on/off
- 33 ... stop running RTTY transmission immediately. No payload for this command.

Frame Information:

- 0 ... first frame of a file
- 1 ... next frame
- 2 ... last frame
- 3 ... single frame (file needs only one frame)

Payload contents for file types 1 - 7 :

common values in Byte 0 and 1:

Byte 0 ... file type (as specified above)
Byte 1 ... frame information (as specified above)

BER Test Pattern

complete payload is filled with Ascii characters from A..zA..z as many as fit into one payload

Images, Ascii and other Files

Images and file transfer uses the same format with one exception: files are always ZIP compressed while images are not. The format of the file/image transfer is documented in another chapter

Voice Audio (for Codec 2 or Opus)

not used for the application program. Voice is handled by the modem without interaction from the application. The app just switches digital voice mode on/off

UserInfo

used to send personal information to the modem which will automatically transmit if with every new file/image payload contents:
20 bytes: callsign
10 bytes: qth locator
20 bytes: name

Payload contents for file types 16 ...

common values in Byte 0:

Byte 0 ... file type (as specified above)
Byte 1 - n ... contains following data

Transmission Speed Selection

set the modem's speed. Implemented values:
one byte:
0 ... 1200 BPSK BW: 1300 Hz

1 ... 2400 BPSK BW: 2500 Hz
2 ... 3000 QPSK BW: 1700 Hz
3 ... 4000 QPSK BW: 2400 Hz
4 ... 4410 QPSK BW: 2500 Hz (QO-100 Standard)
5 ... 4800 QPSK BW: 2700 Hz
6 ... 5500 8APSK BW: 2300 Hz
7 ... 6000 8APSK BW: 2500 Hz (QO-100 Transceiver)
8 ... 6600 8APSK BW: 2600 Hz
9 ... 7200 8APSK BW: 2700 Hz (QO-100 SDR)
10 .. 45.45 Baud RTTY

playback and capture volume

one byte 0-100% to specify the volume

voice mode

one byte with these values:

0 ... switch off the following commands
1 ... listed the transceiver audio with the loudspeaker
2 ... directly connect microphone to loudspeaker (internal audio loop)
3 ... like 2, but route it via the selected codec (internal audio loop via codec)
4 ... DV mode, speak and receive digital auio
5 ... like 4, but RX only (monitoring mode)
6 ... start recording the PCM file: intro.pcm
7 ... start playback the PCM file: intro.pcm

send tuning tones

one byte specifying:

0 ... switch off tuning tones
1 ... send pattern with a peak every 200 Hz
7 ... send 1500 Hz peak

send tuning marker

one byte specifying:

0 ... switch OFF the 100 Hz marker
1 ... switch ON the 100 Hz marker

the tuning tone is ON by default, you should leave it ON, it helps the receiver to set the frequency correctly

write a letter or number to RTTY modem for transmission

one byte containing the letter or number to be sent

send RTTY string

used to send predefined messages.
message as ASCII text

RTTY TX:on/off

one byte 0 or 1: switch on/off the RTTY transmission. If switched on then the RTTY idle pattern will be sent.