Neuralynx File Formats:

All Files consist of a 16k-byte (16,384 bytes) header (for versions 1.25 and later), followed by an 'array' or records of a single type. Versions 1.24 and earlier have no header info.

record[0]
...
...
record[n]

There are currently 7 record types: 3 for spikes, one for continuously sampled data (EEG), one for event data, one for video tracker data, and one for "clustered" spikes.

Tetrode data record:

int64 TimeStamp
int32 ScNumber
int32 CellNumber
int32 Param[0]
...
int32 Param[7]
int16 ChanW[0]
int16 ChanX[0]
int16 ChanX[0]
int16 ChanX[0]
int16 ChanX[31]
int16 ChanX[31]
int16 ChanX[31]
int16 ChanX[31]

Stereotrode data record:

int64 TimeStamp
int32 ScNumber
int32 CellNumber
int32 Param[0]
...
int32 Param[7]
int16 ChanW[0]
int16 ChanX[0]
...
int16 ChanW[31]
int16 ChanX[31]

Single electrode record:

int64 TimeStamp
int32 ScNumber
int32 CellNumber
int32 Param[0]
...
int32 Param[7]
int16 ChanW[0]
...
int16 ChanW[31]

Clustered electrode record:

int64 TimeStamp

Each cell will have it's own file containing only timestamp.

Continuous sampled record:

int64 TimeStamp

int32 ChanNumber

int32 SampFreq

int32 NumValidSamp

int16 Samp[0]

...

int16 Samp[511]

Event data record:

int16 PktStart
int16 PktId
int16 PktDataSize
int64 TimeStamp
int16 EventId
int16 TTLValue
int16 CRC
int32 Dummy
int32 Extra[0] int32 Extra[7]
char EventString[0] char EventString[127]

* PktStart is always 0x0800.
PktId is usually 0x1002.
PktDataSize is random data.
Dummy is random data.
CRC may contain random data.
Extra is user-defined data.
TTLValue is the value sent to the computer on a parallel input port.

Video tracker data record:

* This record type is somewhat complex and will be covered in a separate file

^{*} If NumValidSamp < 512, Samp[n], where n >= NumValidSamp, will contain random data.