The following extract of the *External Mode target debug message log* (level 2) is analyzed to determine the cause of a deadlock situation observed when a parameter set is downloaded from the host to the target. Note that, with debug messaging switched on (level 2), the target does not have enough time in the background task to upload every packet individually. Every upload thus includes an entire set of packets (e.g. 0x00000120 = 288 log data bytes, see below). On the host, this manifests itself in a “slightly jumpy” display of the scope blocks.

Then upload of log data commences on [p. 18](#endOfStartPhase). For details about how the deadlock situation occurs [see page 19 ff](#explanation).

-[2] CheckExtSerialPacket: Suspending processing until there are 17 bytes in the comms line buffer / RX ring buffer.<LF>

<1 0x7E 0x7E 0x1 0x8 0x0 0x0 0x0 0x65 0x78 0x74 0x2D 0x6D 0x6F 0x64 0x65 0x3 0x3><LF>

[ 0x7E 0x7E 0x1 0x0 0x0 0x0 0x8 0x65 0x78 0x74 0x2D 0x6D 0x6F 0x64 0x65 0x3 0x3 ]<LF>

-[2] ExtGetPktBlocking: Storing received EXTMODE\_PACKET in FIFO buffer<LF>

-[2] ExtGetPktBlocking: Sending ACK\_PACKET to acknowledge the receipt of the received EXTMODE\_PACKET...<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x2<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] ExtGetPktBlocking: ... ACK\_PACKET sent.<LF>

[1] ExtSetPkt: waitForAck = FALSE -> clear to send<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x8<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x10<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x8<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

[1] ExtSetPktWithACK: ExtMode packet sent, setting waitForAck to TRUE<LF>

-[2] ExtModeMalloc: Current request: 100 bytes<LF>

-[2] ExtModeMalloc: Bytes allocated: 1686, bytes free: 4814<LF>

<2 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3><LF>

[ 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3 ]<LF>

[1] ExtGetPktBlocking: Received ACK\_PACKET -> waitForAck = FALSE;<LF>

[1] ExtSetPkt: waitForAck = FALSE -> clear to send<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x8<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x10<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x5C<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

[1] ExtSetPktWithACK: ExtMode packet sent, setting waitForAck to TRUE<LF>

<2 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3><LF>

[ 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3 ]<LF>

[1] ExtGetPktBlocking: Received ACK\_PACKET -> waitForAck = FALSE;<LF>

[1] ExtSetPkt: waitForAck = FALSE -> clear to send<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x5C<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0xCB<LF>

-[2] serial\_set\_string: Sending 0xEF<LF>

-[2] serial\_set\_string: Sending 0xB4<LF>

-[2] serial\_set\_string: Sending 0x74<LF>

-[2] serial\_set\_string: Sending 0x88<LF>

-[2] serial\_set\_string: Sending 0xAB<LF>

-[2] serial\_set\_string: Sending 0x22<LF>

-[2] serial\_set\_string: Sending 0x7C<LF>

-[2] serial\_set\_string: Sending 0x4E<LF>

-[2] serial\_set\_string: Sending 0x7<LF>

-[2] serial\_set\_string: Sending 0x45<LF>

-[2] serial\_set\_string: Sending 0xF9<LF>

-[2] serial\_set\_string: Sending 0xE4<LF>

-[2] serial\_set\_string: Sending 0xF8<LF>

-[2] serial\_set\_string: Sending 0xF5<LF>

-[2] serial\_set\_string: Sending 0x12<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x4<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0xF<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x4<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x4<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x2<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x2<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x4<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x4<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x4<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x2<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x2<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x4<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x8<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

[1] ExtSetPktWithACK: ExtMode packet sent, setting waitForAck to TRUE<LF>

-[2] ExtModeFree: Bytes allocated: 1586, bytes free: 4914<LF>

-[2] mergeMemBuf: IN<LF>

-[2] mergeWithMemBufOnRight: Largest free buffer size: 4914 bytes<LF>

-[2] mergeMemBuf: OUT<LF>

<1 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3><LF>

[ 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3 ]<LF>

[1] ExtGetPktBlocking: Received ACK\_PACKET -> waitForAck = FALSE;<LF>

-[2] CheckExtSerialPacket: Suspending processing until there are 17 bytes in the comms line buffer / RX ring buffer.<LF>

<1 0x7E 0x7E 0x1 0x8 0x0 0x0 0x0 0x0 0x0 0x0 0x4 0x0 0x0 0x0 0x4B 0x3 0x3><LF>

[ 0x7E 0x7E 0x1 0x0 0x0 0x0 0x8 0x0 0x0 0x0 0x4 0x0 0x0 0x0 0x4B 0x3 0x3 ]<LF>

-[2] ExtGetPktBlocking: Storing received EXTMODE\_PACKET in FIFO buffer<LF>

-[2] ExtGetPktBlocking: Sending ACK\_PACKET to acknowledge the receipt of the received EXTMODE\_PACKET...<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x2<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] ExtGetPktBlocking: ... ACK\_PACKET sent.<LF>

-[2] GetPkt: IN<LF>

-[2] ExtModeMalloc: Current request: 83 bytes<LF>

-[2] ExtModeMalloc: Unaligned allocation address: 0x2415<LF>

-[2] ExtModeMalloc: Need 1 alignment byte(s)<LF>

-[2] ExtModeMalloc: Adjusted size: 84<LF>

-[2] ExtModeMalloc: Aligned allocation address: 0x2414<LF>

-[2] ExtModeMalloc: Bytes allocated: 1670, bytes free: 4830<LF>

<LF>

-[2] CheckExtSerialPacket: Suspending processing until there are 84 bytes in the comms line buffer / RX ring buffer.<LF>

<1 0x7E 0x7E 0x1 0x4B 0x0 0x0 0x0 0x0 0x0 0x0 0x4 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x0 0x3D 0xCC 0xCC 0xCD 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x7D 0x23 0x0 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x7D 0x23 0x1 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x2 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x7D 0x23 0xF 0x3 0x3><LF>

[ 0x7E 0x7E 0x1 0x0 0x0 0x0 0x4B 0x0 0x0 0x0 0x4 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x0 0x3D 0xCC 0xCC 0xCD 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x3 0x0 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x3 0x1 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x2 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x3 0xF 0x3 0x3 ]<LF>

-[2] ExtGetPktBlocking: Storing received EXTMODE\_PACKET in FIFO buffer<LF>

-[2] ExtGetPktBlocking: Sending ACK\_PACKET to acknowledge the receipt of the received EXTMODE\_PACKET...<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x2<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] ExtGetPktBlocking: ... ACK\_PACKET sent.<LF>

-[2] GetPkt: OUT<LF>

-[2] SendPktToHost: Sending action Packet type is EXT\_SETPARAM\_RESPONSE (18) with size 4<LF>

[1] ExtSetPkt: waitForAck = FALSE -> clear to send<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x8<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x12<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x4<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

[1] ExtSetPktWithACK: ExtMode packet sent, setting waitForAck to TRUE<LF>

-[2] SendPktToHost: ... action and size sent.<LF>

-[2] SendPktToHost: Sending data...<LF>

<2 0x7E 0x7E 0x1 0x8 0x0 0x0 0x0 0x0 0x0 0x0 0x6 0x0 0x0 0x0 0x30 0x3 0x3 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3><LF>

[ 0x7E 0x7E 0x1 0x0 0x0 0x0 0x8 0x0 0x0 0x0 0x6 0x0 0x0 0x0 0x30 0x3 0x3 ]<LF>

-[2] ExtGetPktBlocking: Storing received EXTMODE\_PACKET in FIFO buffer<LF>

-[2] ExtGetPktBlocking: Sending ACK\_PACKET to acknowledge the receipt of the received EXTMODE\_PACKET...<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x2<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] ExtGetPktBlocking: ... ACK\_PACKET sent.<LF>

<2 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3><LF>

[ 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3 ]<LF>

[1] ExtGetPktBlocking: Received ACK\_PACKET -> waitForAck = FALSE;<LF>

[1] ExtSetPkt: waitForAck = FALSE -> clear to send<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x4<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

[1] ExtSetPktWithACK: ExtMode packet sent, setting waitForAck to TRUE<LF>

-[2] SendPktToHost: ... data sent.<LF>

-[2] ProcessSelectSignalsPkt: IN<LF>

-[2] GetPkt: IN<LF>

<LF>

<1 0x7E 0x7E 0x1 0x30 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x1 0x38 0xA0 0x3 0x3 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3><LF>

[ 0x7E 0x7E 0x1 0x0 0x0 0x0 0x30 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x1 0x38 0xA0 0x3 0x3 ]<LF>

-[2] ExtGetPktBlocking: Storing received EXTMODE\_PACKET in FIFO buffer<LF>

-[2] ExtGetPktBlocking: Sending ACK\_PACKET to acknowledge the receipt of the received EXTMODE\_PACKET...<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x2<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] ExtGetPktBlocking: ... ACK\_PACKET sent.<LF>

-[2] GetPkt: OUT<LF>

-[2] UploadLogInfoInit: IN<LF>

-[2] UploadLogInfoInit: Allocating memory for uploadInfo->sysTables (updown.c)<LF>

-[2] ExtModeMalloc: Current request: 12 bytes<LF>

-[2] ExtModeMalloc: Bytes allocated: 1682, bytes free: 4818<LF>

-[2] Unknown Function: Allocating memory for sysTable->uploadMap (updown.c)<LF>

-[2] ExtModeMalloc: Current request: 12 bytes<LF>

-[2] ExtModeMalloc: Bytes allocated: 1694, bytes free: 4806<LF>

-[2] Unknown Function: Allocating memory for sysTable->uploadMap[tid] (updown.c)<LF>

-[2] ExtModeMalloc: Current request: 16 bytes<LF>

-[2] ExtModeMalloc: Bytes allocated: 1710, bytes free: 4790<LF>

-[2] Unknown Function: Allocating memory for map->sections (updown.c)<LF>

-[2] ExtModeMalloc: Current request: 12 bytes<LF>

-[2] ExtModeMalloc: Bytes allocated: 1722, bytes free: 4778<LF>

-[2] UploadLogInfoInit: Allocating memory for uploadInfo->circBufs (updown.c)<LF>

-[2] ExtModeMalloc: Current request: 40 bytes<LF>

-[2] ExtModeMalloc: Bytes allocated: 1762, bytes free: 4738<LF>

-[2] UploadBufInit: Allocating memory for circBuf->buf (updown.c)<LF>

-[2] ExtModeMalloc: Current request: 2008 bytes<LF>

-[2] ExtModeMalloc: Bytes allocated: 3770, bytes free: 2730<LF>

-[2] UploadLogInfoInit: Allocating memory for uploadInfo->bufMemList.bufs (updown.c)<LF>

-[2] ExtModeMalloc: Current request: 16 bytes<LF>

-[2] ExtModeMalloc: Bytes allocated: 3786, bytes free: 2714<LF>

-[2] UploadLogInfoInit: Allocating memory for uploadInfo->bufMemList.tids (updown.c)<LF>

-[2] ExtModeMalloc: Current request: 10 bytes<LF>

-[2] ExtModeMalloc: Unaligned allocation address: 0x1BC6<LF>

-[2] ExtModeMalloc: Need 2 alignment byte(s)<LF>

-[2] ExtModeMalloc: Adjusted size: 12<LF>

-[2] ExtModeMalloc: Aligned allocation address: 0x1BC4<LF>

-[2] ExtModeMalloc: Bytes allocated: 3798, bytes free: 2702<LF>

-[2] UploadLogInfoInit: OUT, error status: 0<LF>

-[2] SendResponseStatus: IN<LF>

-[2] SendResponseStatus: Response status: 0 (upInfoIdx = 0)<LF>

<LF>

-[2] SendPktToHost: Sending action Packet type is EXT\_SELECT\_SIGNALS\_RESPONSE (27) with size 8<LF>

<2 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3 0x7E 0x7E 0x1 0x8 0x0 0x0 0x0 0x0 0x0 0x0 0x9 0x0 0x0 0x0 0x4 0x3 0x3><LF>

[ 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3 ]<LF>

[1] ExtGetPktBlocking: Received ACK\_PACKET -> waitForAck = FALSE;<LF>

[1] ExtSetPkt: waitForAck = FALSE -> clear to send<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x8<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x1B<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x8<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

[1] ExtSetPktWithACK: ExtMode packet sent, setting waitForAck to TRUE<LF>

-[2] SendPktToHost: ... action and size sent.<LF>

-[2] SendPktToHost: Sending data...<LF>

<2 0x7E 0x7E 0x1 0x8 0x0 0x0 0x0 0x0 0x0 0x0 0x9 0x0 0x0 0x0 0x4 0x3 0x3 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3><LF>

[ 0x7E 0x7E 0x1 0x0 0x0 0x0 0x8 0x0 0x0 0x0 0x9 0x0 0x0 0x0 0x4 0x3 0x3 ]<LF>

-[2] ExtGetPktBlocking: Storing received EXTMODE\_PACKET in FIFO buffer<LF>

-[2] ExtGetPktBlocking: Sending ACK\_PACKET to acknowledge the receipt of the received EXTMODE\_PACKET...<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x2<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] ExtGetPktBlocking: ... ACK\_PACKET sent.<LF>

<2 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3 0x7E><LF>

[ 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3 ]<LF>

[1] ExtGetPktBlocking: Received ACK\_PACKET -> waitForAck = FALSE;<LF>

[1] ExtSetPkt: waitForAck = FALSE -> clear to send<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x8<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

[1] ExtSetPktWithACK: ExtMode packet sent, setting waitForAck to TRUE<LF>

-[2] SendPktToHost: ... data sent.<LF>

-[2] SendResponseStatus: OUT, error status: 0<LF>

-[2] ProcessSelectSignalsPkt: OUT, error status: 0<LF>

-[2] ProcessCancelLoggingPkt: IN<LF>

-[2] GetPkt: IN<LF>

<LF>

<1 0x7E 0x7E 0x1 0x4 0x0 0x0 0x0 0x0 0x0 0x0 0x1 0x3 0x3><LF>

[ 0x7E 0x7E 0x1 0x0 0x0 0x0 0x4 0x0 0x0 0x0 0x1 0x3 0x3 ]<LF>

-[2] ExtGetPktBlocking: Storing received EXTMODE\_PACKET in FIFO buffer<LF>

-[2] ExtGetPktBlocking: Sending ACK\_PACKET to acknowledge the receipt of the received EXTMODE\_PACKET...<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x2<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] ExtGetPktBlocking: ... ACK\_PACKET sent.<LF>

-[2] GetPkt: OUT<LF>

-[2] DisplayTriggerStateOnLCD: trigInfo.state = TRIGGER\_UNARMED<LF>

-[2] SendResponseStatus: IN<LF>

-[2] SendResponseStatus: Response status: 0 (upInfoIdx = 1)<LF>

<LF>

-[2] SendPktToHost: Sending action Packet type is EXT\_CANCEL\_LOGGING\_RESPONSE (30) with size 8<LF>

<2 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3 0x7E 0x7E 0x1 0x8 0x0 0x0 0x0 0x0 0x0 0x0 0x7 0x0 0x0 0x0 0x20 0x3 0x3><LF>

[ 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3 ]<LF>

[1] ExtGetPktBlocking: Received ACK\_PACKET -> waitForAck = FALSE;<LF>

[1] ExtSetPkt: waitForAck = FALSE -> clear to send<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x8<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x1E<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x8<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

[1] ExtSetPktWithACK: ExtMode packet sent, setting waitForAck to TRUE<LF>

-[2] SendPktToHost: ... action and size sent.<LF>

-[2] SendPktToHost: Sending data...<LF>

<2 0x7E 0x7E 0x1 0x8 0x0 0x0 0x0 0x0 0x0 0x0 0x7 0x0 0x0 0x0 0x20 0x3 0x3 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3><LF>

[ 0x7E 0x7E 0x1 0x0 0x0 0x0 0x8 0x0 0x0 0x0 0x7 0x0 0x0 0x0 0x20 0x3 0x3 ]<LF>

-[2] ExtGetPktBlocking: Storing received EXTMODE\_PACKET in FIFO buffer<LF>

-[2] ExtGetPktBlocking: Sending ACK\_PACKET to acknowledge the receipt of the received EXTMODE\_PACKET...<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x2<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] ExtGetPktBlocking: ... ACK\_PACKET sent.<LF>

<2 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3><LF>

[ 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3 ]<LF>

[1] ExtGetPktBlocking: Received ACK\_PACKET -> waitForAck = FALSE;<LF>

[1] ExtSetPkt: waitForAck = FALSE -> clear to send<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x8<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

[1] ExtSetPktWithACK: ExtMode packet sent, setting waitForAck to TRUE<LF>

-[2] SendPktToHost: ... data sent.<LF>

-[2] SendResponseStatus: OUT, error status: 0<LF>

-[2] ProcessCancelLoggingPkt: OUT, error status: 0<LF>

-[2] ProcessSelectTriggerPkt: IN<LF>

-[2] GetPkt: IN<LF>

<LF>

<1 0x7E 0x7E 0x1 0x20 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x13 0x88 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x3 0x3 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0><LF>

[ 0x7E 0x7E 0x1 0x0 0x0 0x0 0x20 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x13 0x88 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x3 0x3 ]<LF>

-[2] ExtGetPktBlocking: Storing received EXTMODE\_PACKET in FIFO buffer<LF>

-[2] ExtGetPktBlocking: Sending ACK\_PACKET to acknowledge the receipt of the received EXTMODE\_PACKET...<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x2<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] ExtGetPktBlocking: ... ACK\_PACKET sent.<LF>

-[2] GetPkt: OUT<LF>

-[2] SendResponseStatus: IN<LF>

-[2] SendResponseStatus: Response status: 0 (upInfoIdx = 0)<LF>

<LF>

-[2] SendPktToHost: Sending action Packet type is EXT\_SELECT\_TRIGGER\_RESPONSE (28) with size 8<LF>

<2 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3><LF>

[ 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3 ]<LF>

[1] ExtGetPktBlocking: Received ACK\_PACKET -> waitForAck = FALSE;<LF>

[1] ExtSetPkt: waitForAck = FALSE -> clear to send<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x8<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x1C<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x8<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

[1] ExtSetPktWithACK: ExtMode packet sent, setting waitForAck to TRUE<LF>

-[2] SendPktToHost: ... action and size sent.<LF>

-[2] SendPktToHost: Sending data...<LF>

<2 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3><LF>

[ 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3 ]<LF>

[1] ExtGetPktBlocking: Received ACK\_PACKET -> waitForAck = FALSE;<LF>

[1] ExtSetPkt: waitForAck = FALSE -> clear to send<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x8<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

[1] ExtSetPktWithACK: ExtMode packet sent, setting waitForAck to TRUE<LF>

-[2] SendPktToHost: ... data sent.<LF>

-[2] SendResponseStatus: OUT, error status: 0<LF>

-[2] ProcessSelectTriggerPkt: OUT, error status: 0<LF>

<1 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3><LF>

[ 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3 ]<LF>

[1] ExtGetPktBlocking: Received ACK\_PACKET -> waitForAck = FALSE;<LF>

-[2] CheckExtSerialPacket: Suspending processing until there are 17 bytes in the comms line buffer / RX ring buffer.<LF>

<1 0x7E 0x7E 0x1 0x8 0x0 0x0 0x0 0x0 0x0 0x0 0x8 0x0 0x0 0x0 0x4 0x3 0x3><LF>

[ 0x7E 0x7E 0x1 0x0 0x0 0x0 0x8 0x0 0x0 0x0 0x8 0x0 0x0 0x0 0x4 0x3 0x3 ]<LF>

-[2] ExtGetPktBlocking: Storing received EXTMODE\_PACKET in FIFO buffer<LF>

-[2] ExtGetPktBlocking: Sending ACK\_PACKET to acknowledge the receipt of the received EXTMODE\_PACKET...<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x2<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] ExtGetPktBlocking: ... ACK\_PACKET sent.<LF>

-[2] GetPkt: IN<LF>

<LF>

-[2] CheckExtSerialPacket: Suspending processing until there are 13 bytes in the comms line buffer / RX ring buffer.<LF>

<1 0x7E 0x7E 0x1 0x4 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x3 0x3><LF>

[ 0x7E 0x7E 0x1 0x0 0x0 0x0 0x4 0x0 0x0 0x0 0x0 0x3 0x3 ]<LF>

-[2] ExtGetPktBlocking: Storing received EXTMODE\_PACKET in FIFO buffer<LF>

-[2] ExtGetPktBlocking: Sending ACK\_PACKET to acknowledge the receipt of the received EXTMODE\_PACKET...<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x2<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] ExtGetPktBlocking: ... ACK\_PACKET sent.<LF>

-[2] GetPkt: OUT<LF>

-[2] DisplayTriggerStateOnLCD: trigInfo.state = TRIGGER\_ARMED<LF>

-[2] SendResponseStatus: IN<LF>

-[2] SendResponseStatus: Response status: 0 (upInfoIdx = 0)<LF>

<LF>

-[2] SendPktToHost: Sending action Packet type is EXT\_ARM\_TRIGGER\_RESPONSE (29) with size 8<LF>

[1] ExtSetPkt: waitForAck = FALSE -> clear to send<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x8<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x1D<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x8<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

[1] ExtSetPktWithACK: ExtMode packet sent, setting waitForAck to TRUE<LF>

-[2] SendPktToHost: ... action and size sent.<LF>

-[2] SendPktToHost: Sending data...<LF>

<2 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3><LF>

[ 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3 ]<LF>

[1] ExtGetPktBlocking: Received ACK\_PACKET -> waitForAck = FALSE;<LF>

[1] ExtSetPkt: waitForAck = FALSE -> clear to send<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x8<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

[1] ExtSetPktWithACK: ExtMode packet sent, setting waitForAck to TRUE<LF>

-[2] SendPktToHost: ... data sent.<LF>

-[2] SendResponseStatus: OUT, error status: 0<LF>

<1 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3><LF>

[ 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3 ]<LF>

[1] ExtGetPktBlocking: Received ACK\_PACKET -> waitForAck = FALSE;<LF>

-[2] CheckExtSerialPacket: Suspending processing until there are 17 bytes in the comms line buffer / RX ring buffer.<LF>

<1 0x7E 0x7E 0x1 0x8 0x0 0x0 0x0 0x0 0x0 0x0 0xA 0x0 0x0 0x0 0x0 0x3 0x3><LF>

[ 0x7E 0x7E 0x1 0x0 0x0 0x0 0x8 0x0 0x0 0x0 0xA 0x0 0x0 0x0 0x0 0x3 0x3 ]<LF>

-[2] ExtGetPktBlocking: Storing received EXTMODE\_PACKET in FIFO buffer<LF>

-[2] ExtGetPktBlocking: Sending ACK\_PACKET to acknowledge the receipt of the received EXTMODE\_PACKET...<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x2<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] ExtGetPktBlocking: ... ACK\_PACKET sent.<LF>

-[2] SendPktToHost: Sending action Packet type is EXT\_MODEL\_START\_RESPONSE (22) with size 0<LF>

[1] ExtSetPkt: waitForAck = FALSE -> clear to send<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x8<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x16<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

[1] ExtSetPktWithACK: ExtMode packet sent, setting waitForAck to TRUE<LF>

-[2] SendPktToHost: ... action and size sent.<LF>

[1] model\_init: START\_PACKAGE received. Starting Model...<LF>

[1] main: Starting RT processes ---------------------------------<LF>

This concludes the connecting/startup phase. Model code execution as well as the uploading of log data starts here.

<ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><1 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3><LF>

[ 0x7E 0x7E 0x2 0x0 0x0 0<ISR>x0 0x0 0x3 0x3 ]<LF>

[1] ExtGetPktBlocking: **Received ACK\_PACKET -> waitForAck = FALSE**;<LF>

[1] ExtSetPkt: waitForAck <ISR>= FALSE -> **clear to send**<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] seri<ISR>al\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] se<ISR>rial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] s<ISR>erial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x1A<LF>

-[2]<ISR> serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2<ISR>] serial\_set\_string: Sending 0x18<LF>

**(...)**

-[2] serial\_set\_string: Sending 0x3E<LF>

-[2] serial\_set\_string: Sending 0x<ISR>F<LF>

-[2] serial\_set\_string: Sending 0x5C<LF>

-[2] serial\_set\_string: Sending 0x28<LF>

-[2] serial\_set\_string: Sending <ISR> 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sendin<ISR>g 0x0<LF>

-[2] serial\_set\_string: Sending 0x3F<LF>

-[2] serial\_set\_string: Sending 0x33<LF>

-[2] serial\_set\_string: Sen<ISR>ding 0x33<LF>

-[2] serial\_set\_string: Sending 0x33<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: <ISR>Sending 0x3<LF>

[1] ExtSetPktWithACK: **ExtMode packet sent, setting waitForAck to TRUE**<LF>

<2 0x7E 0x<ISR>7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3><LF>

[ 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3 ]<LF>

[1] ExtGetPktBlocking: **Received ACK\_**<ISR>**PACKET -> waitForAck = FALSE**;<LF>

[1] ExtSetPkt: waitForAck = FALSE -> **clear to send**<LF>

-[2] serial\_set\_string: Send<ISR>ing 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: S<ISR>ending 0x20<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string:<ISR> Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_strin<ISR>g: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x1A<LF>

**(...)**

-[2] serial\_set\_string: Sending 0x3E<LF>

-[<ISR>2] serial\_set\_string: Sending 0x4C<LF>

-[2] serial\_set\_string: Sending 0xCC<LF>

-[2] serial\_set\_string: Sending 0xCC<LF>**<ISR**<LF>

**[1] UploadBufAssignMem: WARNING: circBuf full! \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***<LF>

**>**

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_st<ISR>ring: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x3F<LF>

-[2] serial\_set\_<ISR>string: Sending 0x80<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_se<ISR>t\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_s<ISR>et\_string: Sending 0x1A<LF>

**(...)**

-[2] serial\_set\_string: Sending 0x3D<LF>

-[2] serial\_set\_string: Sending 0xCC<LF>

-[2] serial\_set\_s<ISR>tring: Sending 0xCC<LF>

-[2] serial\_set\_string: Sending 0xCC<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_se<ISR>t\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x1A<LF>

-[2] serial\_<ISR>set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial<ISR>\_set\_string: Sending 0x18<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] seri<ISR>al\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] seri<ISR>al\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] ser<ISR>ial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] se<ISR>rial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x3F<LF>

-[2] serial\_set\_string: Sending 0x2E<LF>

-[2]<ISR> serial\_set\_string: Sending 0x14<LF>

-[2] serial\_set\_string: Sending 0x7A<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-<ISR>[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

<ISR>-[2] serial\_set\_string: Sending 0x3E<LF>

-[2] serial\_set\_string: Sending 0x4C<LF>

-[2] serial\_set\_string: Sending 0x<ISR>CC<LF>

-[2] serial\_set\_string: Sending 0xCC<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending <ISR>0x3<LF>

[1] ExtSetPktWithACK: ExtMode packet sent, setting waitForAck to TRUE<LF>

<ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><2 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3><LF>

[<ISR> 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3 ]<LF>

[1] ExtGetPktBlocking: Received ACK\_PACKET -> waitForAck = FALSE;<LF>

[1<ISR>] ExtSetPkt: waitForAck = FALSE -> clear to send<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: <ISR>Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x20<LF>

-[2] serial\_set\_string<ISR>: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_strin<ISR>g: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_stri<ISR>ng: Sending 0x1A<LF>

**(...)**

-[2] serial\_set\_string: Sending 0x3F<LF>

-[2] serial\_set\_string: Sending 0xA6<LF>

-[2] serial\_set\_string: Send<ISR>ing 0x66<LF>

-[2] serial\_set\_string: Sending 0x66<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: S<ISR>ending 0x3<LF>

[1] ExtSetPktWithACK: ExtMode packet sent, setting waitForAck to TRUE<LF>

While waiting for the ACK\_PACKET from the host, an incoming EXT\_PACKET is intercepted: **EXT\_SETPARAM (4)**, announcing the download of a parameter set of size **0x18** = 24 bytes). The intercepted EXT\_SETPARAM packet is stored in the *FIFOPkt* queue and acknowledged by sending an **ACK\_PACKET** to the host.

<2 0x7E 0x7E 0x1 0x8 0x0 0x0 <ISR>0x0 0x0 0x0 0x0 0x4 0x0 0x0 0x0 0x18 0x3 0x3 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3><LF>

[ 0x7E 0x7E 0x1 0x0 0x0 0x0 0x<ISR>8 **0x0 0x0 0x0 0x4** **0x0 0x0 0x0 0x18** 0x3 0x3 ]<LF>

-[2] ExtGetPktBlocking: Storing received EXTMODE\_PACKET in FIFO buf<ISR>fer<LF>

Note that, acknowledgement of the receipt of the intercepted packet is conditioned on the availability of space in the local *FIFOPkt* queue. Should the latter be full, the direct sending of an ACK\_PACKET will be deferred until a deadlock has been detected *(ExtSetPkt)* and is being resolved.

TODO: The proper functioning of this mechanism should be investigated / verified!!  
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The remainder of this document portrays the situation in which the target *FIFOPkt* queue is not full – the ACK\_PACKET response to the intercepted EXT\_SETPARAM packet is thus being sent right away.

-[2] ExtGetPktBlocking: **Sending ACK\_PACKET** to acknowledge the receipt of the received EXTMODE\_PACKET...<LF>

-[2<ISR>] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x2<LF>

<ISR>-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

<ISR>-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF><ISR>

-[2] ExtGetPktBlocking: ... **ACK\_PACKET sent**.<LF>

Eventually the anticipated ACK\_PACKET from the host is intercepted and processed – target variable *waitForAck* is reset to *false*:

<2 **0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3**><LF>

[ 0x7E 0x7E 0x2 0x0 0x<ISR>0 0x0 0x0 0x3 0x3 ]<LF>

[1] ExtGetPktBlocking: Received ACK\_PACKET -> **waitForAck = FALSE**;<LF>

[1] ExtSetPkt: waitForAc<ISR>k = FALSE -> **clear to send**<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] se<ISR>rial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x1<LF>

-[2] s<ISR>erial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] <ISR>serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x1A<LF>

**(...)**

-[2] serial\_set\_s<ISRtring: Sending 0x3F<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_s<ISR>tring: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

[1] ExtSetPktWit<ISR>hACK: ExtMode packet sent, setting waitForAck to TRUE<LF>

At this point, the target has reached a scope trigger point, which it communicates to the host by initiating the transmission of an **EXT\_TERMINATE\_LOG\_EVENT** packet (31 = **0x1F**, event data size **4**). This is done through a call to function *SendPktHdrToHost* which in turn calls *ExtSetPkt:*

-[2] SendPktToHost: Sending action Packet type is **EXT\_TERM**<ISR>**INATE\_LOG\_EVENT** (**31**) with size **4**<LF>

However, the EXT\_TERMINATE\_LOG\_EVENT packet can only be sent once local variable *waitForAck* has been reset to *false*, i.e. once the next ACK\_PACKET has been received from the host. Waiting for this ACK\_PACKET, the parameter set from the host is intercepted and stored in the local *FIFOPkt* queue:

<2 0x7E 0x7E 0x1 **0x18** 0x0 0x0 0x0 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0<ISR>x0 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x0 **0x3E 0x19 0x99 0x9A** 0x3 0x3><LF>

[ 0x7E 0x7E 0x1 0x0 0x0 0x0 0x18 0x0 0x0 0<ISR>x0 0x1 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x0 0x3E 0x19 0x99 0x9A 0x3 0x3 ]<LF>

-[2] ExtGetP<ISR>ktBlocking: Storing received EXTMODE\_PACKET in FIFO buffer<LF>

The receipt of the parameter set is acknowledged by sending an **ACK\_PACKET** to the host:

-[2] ExtGetPktBlocking: Sending ACK\_PACKET to acknowl<ISR>edge the receipt of the received EXTMODE\_PACKET...<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string<ISR>: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x2<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_stri<ISR>ng: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_str<ISR>ing: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] ExtGetPktBlocking: ... **ACK\_PACKET sent**.<LF>

<ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR>

At this stage the External Mode communication gets stuck. A look at a debug message log of the [communication line data](ExtModeLog_deadlock_upon_setParam_Host.docx#commsLine) (TX/RX) reveals that this ACK\_PACKET never actually gets transmitted to the host.

OLD

OLD

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The still pending **ACK\_PACKET** in the RX ring buffer is now read and processed – this is the host response to the latest log data upload. Consequently, target variable *waitForAck* is reset (*false*).

<2 **0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3**><LF>

[ 0x7E 0x7E 0x2 0x<ISR>0 0x0 0x0 0x0 0x3 0x3 ]<LF>

[1] ExtGetPktBlocking: Received ACK\_PACKET -> waitForAck = FALSE;<LF>

With *waitForAck* set to *false*, the target is now clear to send the **EXT\_TERMINATE\_LOG\_EVENT** packet (31 = **0x1F**, event data size **4**). This is done through a call to function *SendPktHdrToHost* which in turn calls *ExtSetPkt:*

[1] ExtSetPkt: waitFo<ISR>rAck = FALSE -> clear to send<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2] serial\_set\_string: Sending 0x7E<LF>

-[2]<ISR> serial\_set\_string: Sending 0x1<LF>

-[2] serial\_set\_string: Sending 0x8<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2<ISR>] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending 0x0<LF>

-[2] serial\_set\_string: Sending **0x0**<LF>

-[<ISR>2] serial\_set\_string: Sending **0x0**<LF>

-[2] serial\_set\_string: Sending **0x0**<LF>

-[2] serial\_set\_string: Sending **0x1F**<LF>

-<ISR>[2] serial\_set\_string: Sending **0x0**<LF>

-[2] serial\_set\_string: Sending **0x0**<LF>

-[2] serial\_set\_string: Sending **0x0**<LF>

<ISR>-[2] serial\_set\_string: Sending **0x4**<LF>

-[2] serial\_set\_string: Sending 0x3<LF>

-[2] serial\_set\_string: Sending 0x3<LF><ISR>

[1] ExtSetPktWithACK: ExtMode packet sent, setting waitForAck to TRUE<LF>

-[2] SendPktToHost: ... action and size s<ISR>ent.<LF>

The correct reception of the EXT\_TERMINATE\_LOG\_EVENT packet (“action and size”) needs to be acknowledged by the host. To await this acknowledgement, target variable *waitForAck* is set to *true*. This prevents the target from sending any further data until the reception of the next ACK\_PACKET.

-[2] SendPktToHost: Sending data...

To transmit the actual event data of the EXT\_TERMINATE\_LOG\_EVENT (🡪 event data size: 4 bytes), target function *SendPktToHost* (ext\_svr.c) continues by making a call to *SendPktDataToHost* which, in turn, calls *ExtSetHostPkt* which calls *ExtSetPktWithACK* which finally passes control back to blocking function *ExtSetPkt*.

At this stage, **the target is waiting for an ACK\_PACKET** (response to the previously transmitted EXT\_TERMINATE\_LOG\_EVENT) as well as for an EXT\_PACKET (the still outstanding parameter set packet). ***The order in which these two packets are sent by the host is undetermined, as it depends on an asynchronous event (🡪 the initiation of the SET\_PARAM telegram on the host).***

With no space in the *FIFOPkt* queue, the target soon detects the prevailing *deadlock* situation (both, host and target are waiting for an ACK\_PACKET – see p. 9) and resolves it by allocating 2 more *FIFOFree* entries followed by the sending of an ACK\_PACKET to the host:

-[2] ExtModeMalloc:<ISR> Current request: 318 bytes

-[2] ExtModeMalloc: Unaligned allocation address: 0x1A86

-[2] ExtModeMalloc: Need 2<ISR> alignment byte(s)

-[2] ExtModeMalloc: Adjusted size: 320

-[2] ExtModeMalloc: Aligned allocation address: 0x1A8<ISR>4

-[2] ExtModeMalloc: Bytes allocated: 4118, bytes free: 2382

-[2] ExtModeMalloc: Current request: 318 bytes

<ISR>-[2] ExtModeMalloc: Unaligned allocation address: 0x1946

-[2] ExtModeMalloc: Need 2 alignment byte(s)

-[2] ExtM<ISR>odeMalloc: Adjusted size: 320

-[2] ExtModeMalloc: Aligned allocation address: 0x1944

-[2] ExtModeMalloc: Bytes <ISR>allocated: 4438, bytes free: 2062

-[2] ExtModeMalloc: Current request: 318 bytes

-[2] ExtModeMalloc: Unaligned <ISR>allocation address: 0x1806

-[2] ExtModeMalloc: Need 2 alignment byte(s)

-[2] ExtModeMalloc: Adjusted size: 320

<ISR>-[2] ExtModeMalloc: Aligned allocation address: 0x1804

-[2] ExtModeMalloc: Bytes allocated: 4758, bytes free: 1<ISR>742

-[2] serial\_set\_string: Sending 0x7E

-[2] serial\_set\_string: Sending 0x7E

-[2] serial\_set\_string: Sendi<ISR>ng 0x2

-[2] serial\_set\_string: Sending 0x0

-[2] serial\_set\_string: Sending 0x0

-[2] serial\_set\_string: Send<ISR>ing 0x0

-[2] serial\_set\_string: Sending 0x0

-[2] serial\_set\_string: Sending 0x3

-[2] serial\_set\_string: Sen<ISR>ding 0x3

While the transmission of this ACK\_PACKET unblocks the host, the target remains blocked. At some point, the ACK\_PACKET sent by the host (see [host log, p. 16](ExtModeLog_deadlock_upon_setParam_Host.docx#acknowledgement)) arrives at the target.

<2 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3>

[ 0x7E 0x7E 0x2 0x0 0x0 0x0 0x0 0x3 0x3 ]

[1] ExtGetPktBlo<ISR>cking: Received ACK\_PACKET -> waitForAck = FALSE;

[1] ExtSetPkt: waitForAck = FALSE -> clear to send

Target variable *waitForAck* is thus set to *false* – the target is finally clear to send the data of the EXT\_TERMINATE\_LOG\_EVENT (4 bytes).

-[2] seria<ISR>l\_set\_string: Sending 0x7E

-[2] serial\_set\_string: Sending 0x7E

-[2] serial\_set\_string: Sending 0x1

-[2] se<ISR>rial\_set\_string: Sending 0x4

-[2] serial\_set\_string: Sending 0x0

-[2] serial\_set\_string: Sending 0x0

-[2] s<ISR>erial\_set\_string: Sending 0x0

-[2] serial\_set\_string: Sending **0x0**

-[2] serial\_set\_string: Sending **0x0**

-[2] s<ISR>erial\_set\_string: Sending **0x0**

-[2] serial\_set\_string: Sending **0x0**

-[2] serial\_set\_string: Sending 0x3

-[2] <ISR>serial\_set\_string: Sending 0x3

[1] ExtSetPktWithACK: ExtMode packet sent, setting waitForAck to TRUE

-[2] Send<ISR>PktToHost: ... data sent.

Having dealt with the EXT\_TERMINATE\_LOG\_EVENT (transmission of event packet as well as event data packet), the target continues to respond to the host action EXT\_SETPARAM. Function *SendPktToHost* is called to transmit an EXT\_SETPARAM\_RESPONSE packet. Note that the model state has changed to “TRIGGER\_ARMED” – this is displayed on the LCD.

-[2] GetPkt: IN

-[2] GetPkt: OUT

-[2] SendPktToHost: Sending action Packet type is<ISR-[2] DisplayTriggerStateOnLCD: trigInfo.state = TRIGGER\_ARMED

> EXT\_SETPARAM\_RESPONSE (18) with size 4

The transmission of the EXT\_SETPARAM\_RESPONSE packet can only start once target variable *waitForAck* is reset to *false*. This requires the reception of an ACK\_PACKET from the host.

While waiting for this ACK\_PACKET, function *ExtSetPkt* intercepts the still outstanding parameter set packet (**0x18** bytes, the last 4 data bytes represent the modified gain value: **0x3E19999A** = 0.15). The packet is retrieved from the RX ring buffer by a call to *ExtGetPktBlocking* which in turn calls *GetExtSerialPkt* (ext\_serial\_pkt.c) returning the received packet in variable *InBuffer*. As the packet is EXT\_PACKET (not ACK\_PACKET), it is stored in the *FIFOPkt* queue for later processing (🡪 call to *SavePkt)*.

<2 0x7E 0x7E 0x1 **0x18 0x0 0x0 0x0 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x0 0x0 <ISR>0x0 0x0 0x0 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x0 0x3E 0x19 0x99 0x9A** 0x3 0x3>

[ 0x7E 0x7E 0x1 0x0 0x<ISR>0 0x0 0x18 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x1 0x0 0x0 0x0 0x0 0x3E 0x19 0x99 0x9A 0x<ISR>3 0x3 ]

-[2] ExtGetPktBlocking: Storing received EXTMODE\_PACKET in FIFO buffer

Provided the *FIFOFree* queue is not empty, i.e. the *FIFOPkt* queue is not full (= at least one more packet can be intercepted and stored), function *ExtSetPkt* is called again (recursion) to send an ACK\_PACKET, thereby acknowledging the receipt of the intercepted parameter set packet.

Note: *ExtSetPkt* must never be called when the *FIFOPkt* queue is full, as this function blocks until variable *waitForAck* assumes the value *false*, which occurs when an ACK\_PACKET is received. However, as the possibility of intercepting an incoming EXT\_PACKET can never be ruled out, there needs to be space in the *FIFOPkt* queue to store this packet.

-[2] ExtGetPktBlocking: Sending <ISR>ACK\_PACKET to acknowledge the receipt of the received EXTMODE\_PACKET...

-[2<ISR>] serial\_set\_string: Sending **0x7E**<LF>

-[2] serial\_set\_string: Sending **0x7E**<LF>

-[2] serial\_set\_string: Sending **0x2**<LF>

<ISR>-[2] serial\_set\_string: Sending **0x0**<LF>

-[2] serial\_set\_string: Sending **0x0**<LF>

-[2] serial\_set\_string: Sending **0x0**<LF><ISR>

-[2] serial\_set\_string: Sending **0x0**<LF>

-[2] serial\_set\_string: Sending **0x3**<LF>

-[2] serial\_set\_string: Sending **0x3**<ISR><LF>

-[2] ExtGetPktBlocking: ... ACK\_PA<ISR>CKET sent.

<ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR><ISR>

The debug message log indicates that the **ACK\_PACKET** acknowledging the receipt of the parameter set packet is in fact written to the TX ring buffer (= sent to the host). **However, it seems that the host does not receive/notice this latest ACK\_PACKET**, thereby entering into a deadlock situation from where there is no recovery.

(OLD) This constitutes the following deadlock situation:

In order to get clearance for the transmission of the event data (event data size: 4 bytes), the target still requires reception of an ACK\_PACKET, acknowledging the error-free reception on the host of the previously sent EXT\_TERMINATE\_LOG\_EVENT packet.

The host on the other hand also awaits an ACK\_PACKET from the target (in response to the parameter set packet sent by Simulink): Following the user action of changing a model parameter, SL invokes callback function *ExtSendGenericPkt* which in turn calls upon *ExtSetTargetPkt* to send the **EXT\_SETPARAM (4)** packet, thereby announcing the download of a parameter set of size **0x18** = 24 bytes). Since *ExtSetTargetPkt* calls *ExtSetPktWithACK* – which, in turn, calls *ExtSetPkt –* the host now requires an ACK\_PACKET from the target before proceeding with the sending of the actual parameter set packet. This is the ACK\_PACKET which has been sent by the target (see above), yet it is not received or noticed on the host.

Note that, symmetrically to the program flow on the target, the blockage of the host transmission occurs in function *ExtSetPkt* which is entered when the Simulink callback function *ExtSendGenericPkt* calls upon *ExtSetTargetPkt* (🡪 calling *ExtSetPktWithACK*, 🡪 calling *ExtSetPkt)* to send the actual parameter set data. However, function *ExtSetPkt* cannot transmit anything until an ACK\_PACKET is received from the target.