

Acorn MIDI

Release Note

This leaflet describes Acorn MIDI version 3.14.

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Version 3.14 of the Acorn MIDI firmware (supplied in ROM) is issued with the following products:

- A3000 User Port/MIDI expansion card
- Archimedes MIDI expansion card
- Archimedes I/O expansion card fitted with the MIDI module.

The Acorn MIDI package

The following items are included in the Acorn MIDI package:

- MIDI firmware — version 3.14
- MIDILog — version 0.04.

These items are incorporated into the ROM chips on the expansion card.

Changes in the function of the MIDI firmware from version 3.11 to version 3.14.

MIDI version 3.11 was previously supplied with the A3000 User Port/MIDI expansion card.

- SWI MIDI_RxByte and SWI MIDI_RxCommand now report the buffer overflow only when interrogating the specific port that suffered the error.
- SWI MIDI_FastClock does not now clear the scheduler.
- SWI MIDI_FastClock now sets the Fast Clock time correctly. See the *MIDI User Guide* for details.

Notes for programmers

This section only applies to programmers who are writing MIDI application software or driving the MIDI directly with SWI calls. It lists information that you should be aware of:

- A transmit buffer overflow occurs if too many events are scheduled in the MIDI scheduler for one time. The scheduler is then unable to empty and repeatedly transmits the same commands.

Never schedule too many commands to occur at the same time (150 is a reasonable limit).

If the problem occurs it can be stopped by flushing the queue using SWI `MIDI_Init`.

- Receive buffer overflow (Error &20404) is not reported reliably by SWIs `MIDI_RxByte` and `MIDI_RxCommand` when called with `R0=-1`, if the overflow did not occur in MIDI port 0.

Never use `MIDI_RxByte` or `MIDI_RxCommand` with `R0=-1` except to find which port is receiving data. Interrogating a specific port will return the error correctly.

- If `*MidiStart` is called with a numeric parameter it can set the Fast Clock time to an unexpected value.

Don't use `*MidiStart` if you are using the Fast Clock time (in scheduling of timestamps of incoming data).

Use SWI `MIDI_FastClock` to control the Fast Clock and SWI `MIDI_TxStart` to start timing clock transmission.

`*MidiStart`, `*MidiContinue` and `*MidiStop` are intended for simple OSCLI control of external instruments. They should never be used while any MIDI software is running on the computer, as they will interfere with its correct function. For serious use the SWI interface to the MIDI should always be used.

- MIDI interpreter ``V'` and error bytes returned by SWI `MIDI_InqError` are always in the least significant byte of the error word. That is, as they occurred in MIDI port 0, regardless of which port actually caused the error.

These errors will have been triggered by data coming from the MIDI port that the MIDI interpreter is connected to.

- SWI `MIDI_IgnoreTiming` does not cause timing messages to be ignored if SWI `MIDI_Init` is called with bit 30 set (this sets the special mode to cause timing messages to be stored in the receive buffer).

Do not attempt to set two conflicting states or unexpected results can occur.

- Most MIDI SWIs do not return any error value if given bad arguments. In general an obviously bad register value causes the SWI to return immediately with no error.

The MIDI SWIs should always be passed valid arguments.

Unreliability of data reception when using the Archimedes I/O expansion card (with MIDI module upgrade).

As with previous versions, the MIDI firmware is fully software-compatible with the Archimedes I/O expansion card (with MIDI module upgrade). However, it cannot be guaranteed to receive MIDI data reliably under all circumstances. This is because the worst-case interrupt latency required by the hardware cannot be met by RISC OS, and received data can be lost (overrun errors will occur under such circumstances). There is no solution to this problem without changing the hardware. Other Acorn MIDI products are unaffected by this problem.

Required modules

The following modules are required for the proper function of MIDI with RISC OS:

- IrqUtils – version 0.09
- HourGlass – version 2.02
- SoundScheduler – version 1.13.

These modules are normally incorporated as part of any MIDI software product available for the Archimedes and A3000 computers; they are therefore not needed by end users. However they are available on the RISC OS 2.00 Extras disc, which is available from Acorn Authorised Dealers. The modules can also be obtained from the Acorn Support Information Database (SID).

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