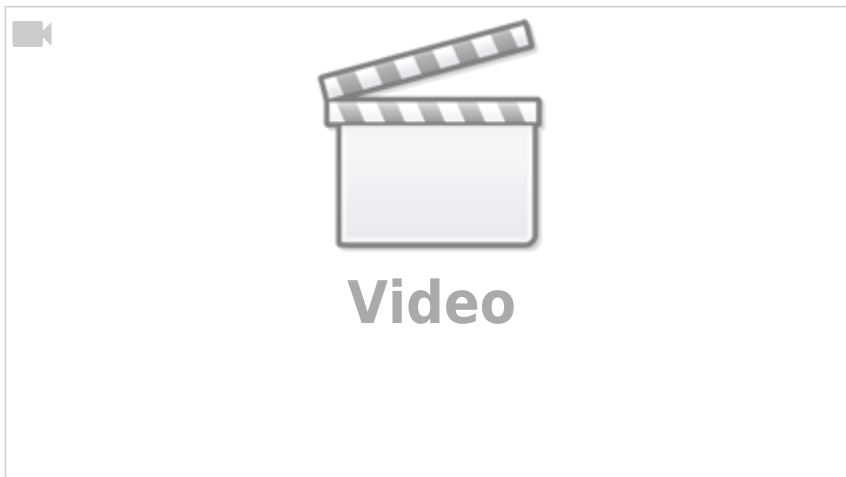


# Sending Timecode from Reaper to Titan on another PC

This is an example of how to use Reaper - a much more powerful DAW (digital audio workstation) than Winamp - to send timecode to Titan, assuming both are installed on two separate PCs. MIDI is being sent over network using rtpMIDI.



## Prerequisites

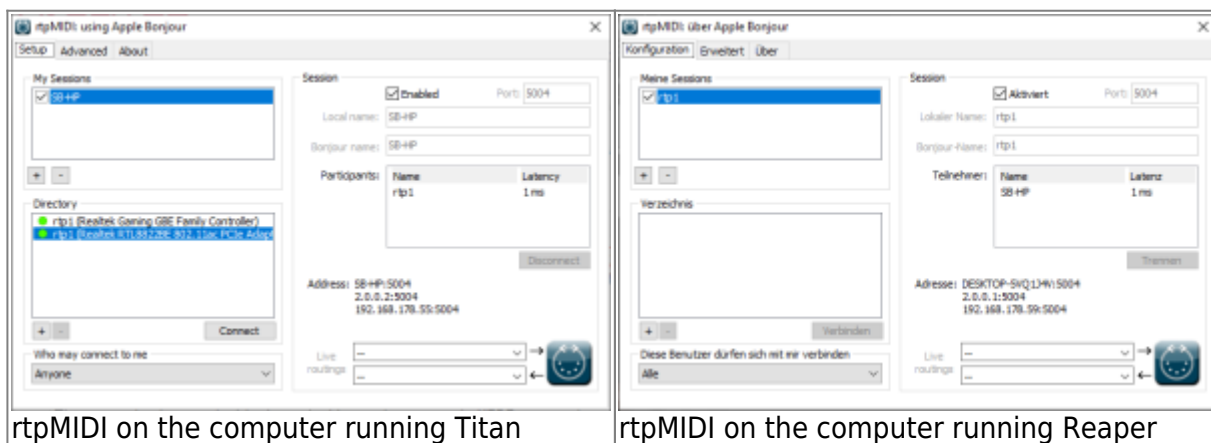
1. of course both computers need to be networked and configured properly (same network mask, correct IP addresses etc.)
2. Titan PC-Suite, from v12 on (External AvoKey or T2 required - T1 or Editor Avokey does not work)
3. rtpMIDI (see [Software List](#), to route the MIDI signal from one computer to the other)
4. Reaper (see [Software List](#))

## Make it run

### 1. rtpMIDI

This needs to be installed on both machines. rtpMIDI provides a virtual MIDI port which is then being forwarded over the network to other participants of this session. There is a compact tutorial provided at the rtpMIDI website. Usually setting this up is as easy as checking the session is enabled in both machines, and both see each other.

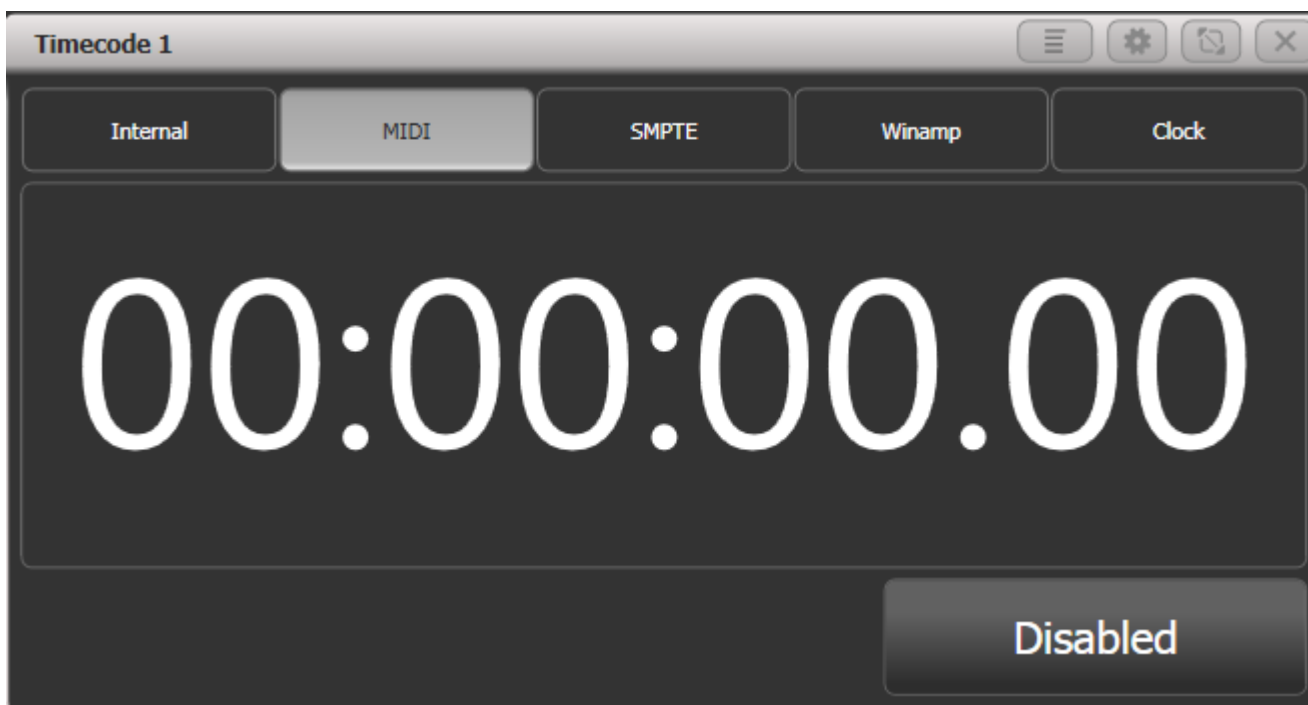
The two pictures show the setup which was used in the a.m. youtube video - SB-HP is the laptop running Titan while rtp1 is the session on the laptop running Reaper.



**I found that Titan is allergic to MIDI ports being added or removed while Titan is running. The safest route is, after installing and configuring rtpMIDI, to completely restart the computer which runs Titan.**

## 2. Titan PC Suite

In order to initially watch the timecode open a timecode workspace window (e.g. Timecode 1) and select MIDI as timecode source.

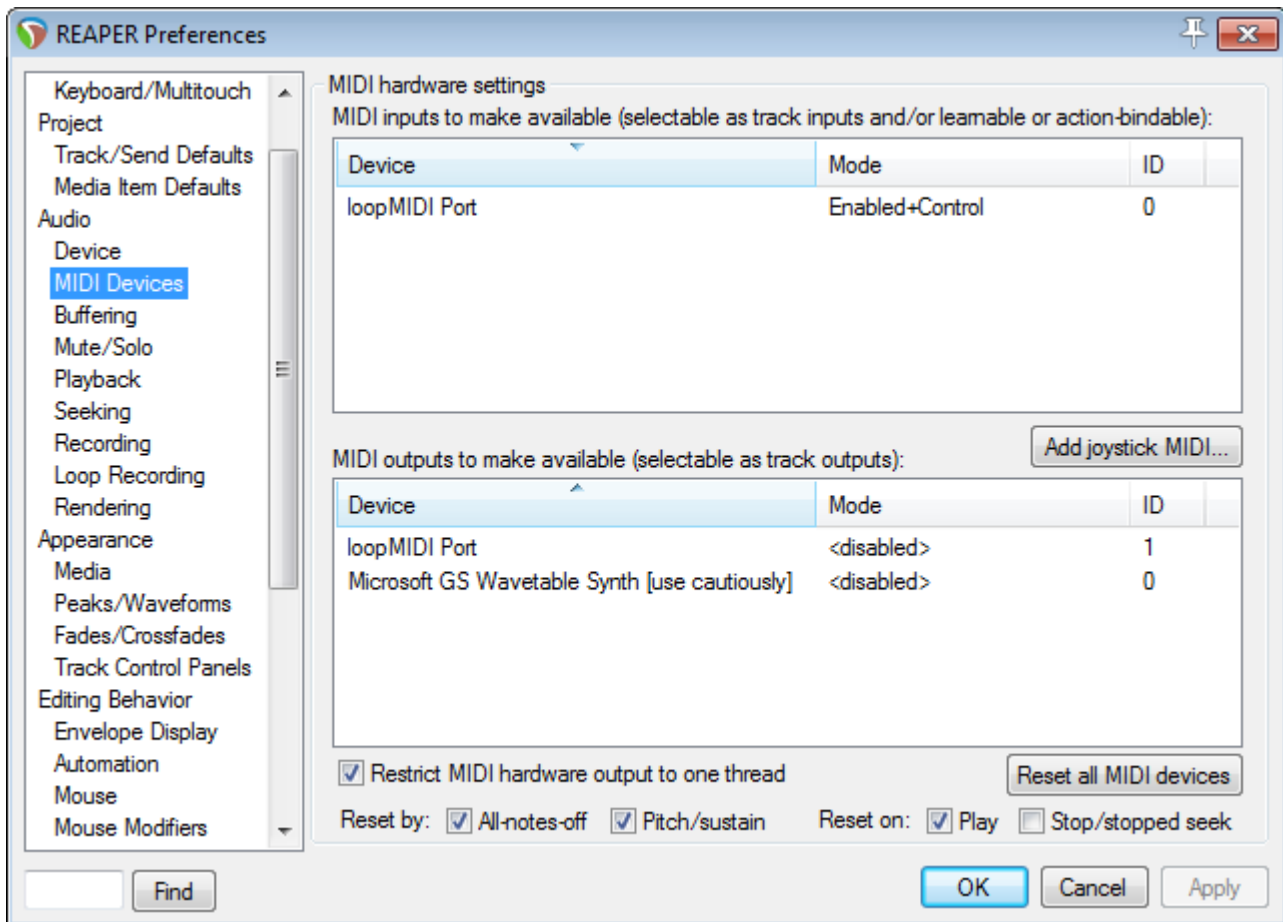


## 3. Reaper

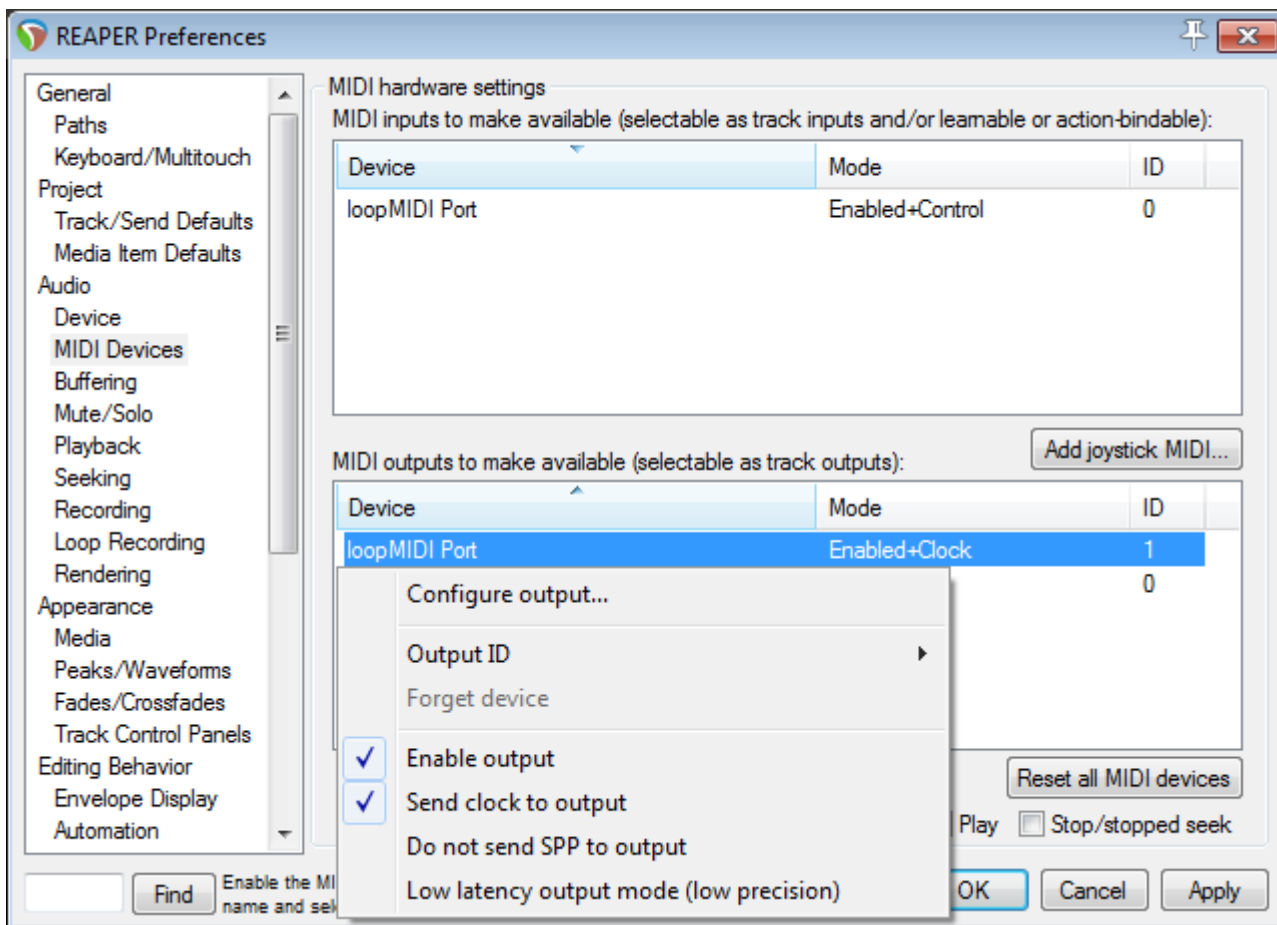
Launch Reaper. Load a track if you want (not required for this to function). However here are the steps to configure Reaper correctly:

### 3.1 Enable MIDI Output

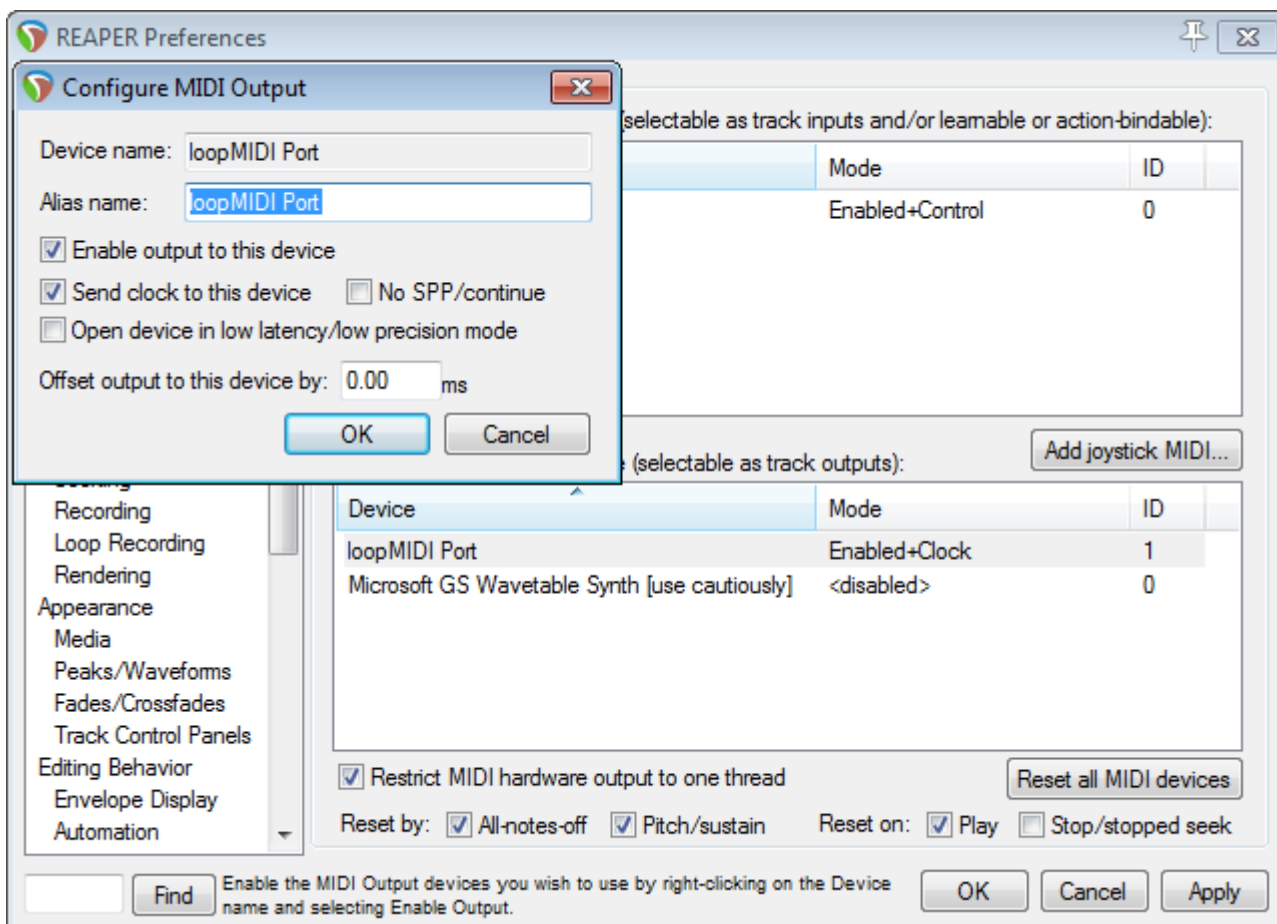
In the Options menu select Preferences - this opens the preferences window. Find MIDI devices in the Audio section. This should list loopMIDI Port as MIDI output:



Right-click on loopMIDI Port output and either enable output and Send c\lock... from the menu...



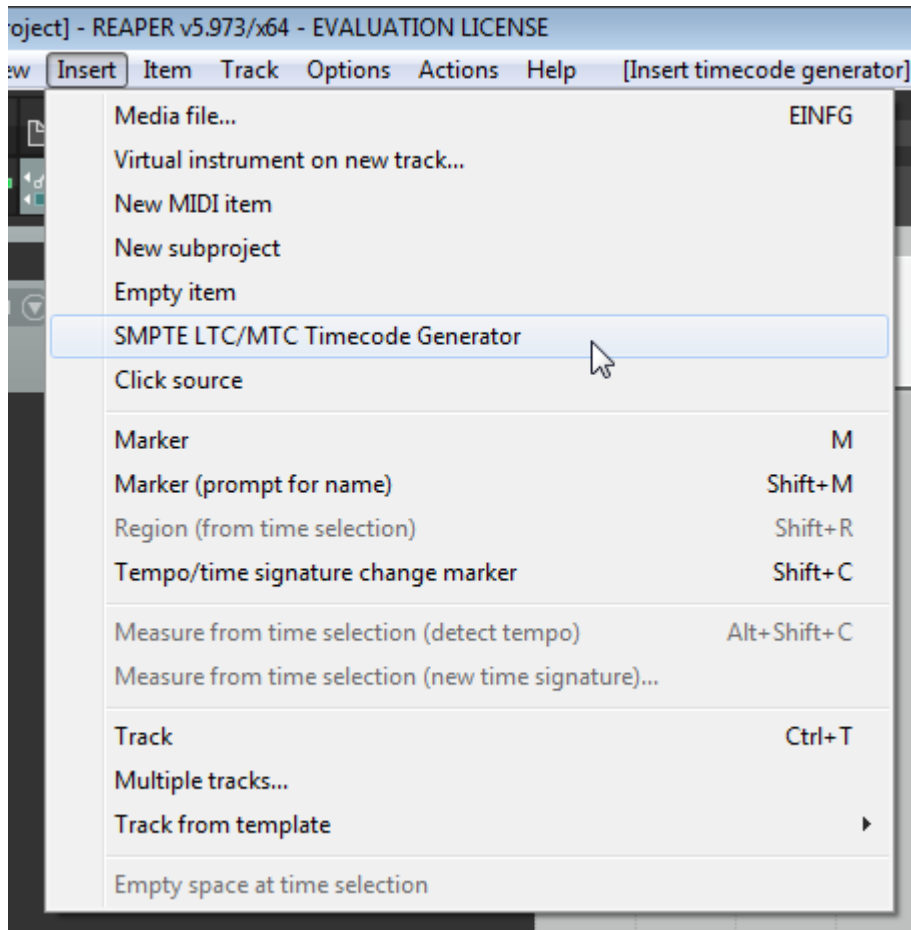
... or select Configure output... and make the settings there:



Confirm the settings with OK to close the preferences window.

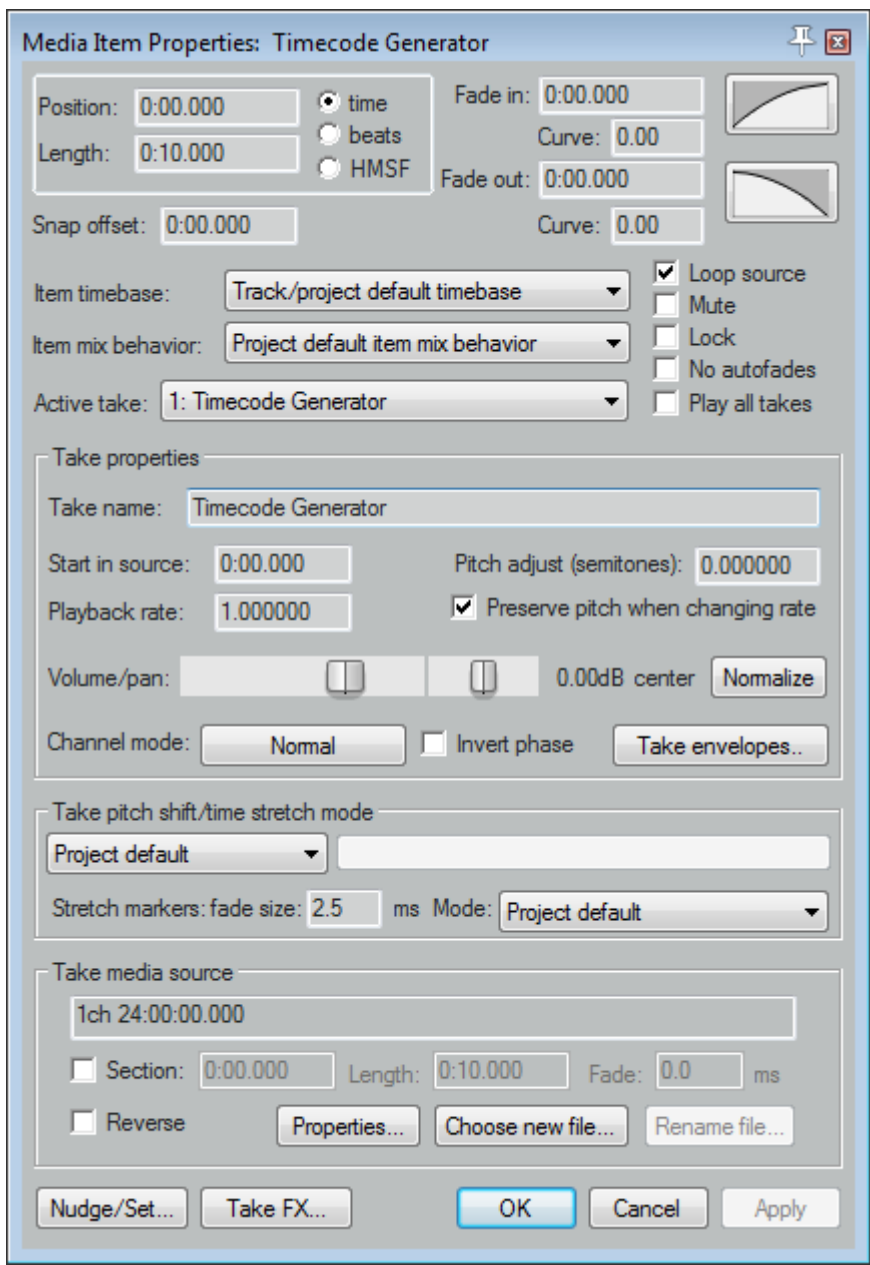
### 3.2 Insert Timecode Generator

Rewind the timeline to 0:00:00 (simply press <Pos 1>). From the Insert menu select SMPTE LTC/MTC Timecode Generator. This inserts this generator as new track.

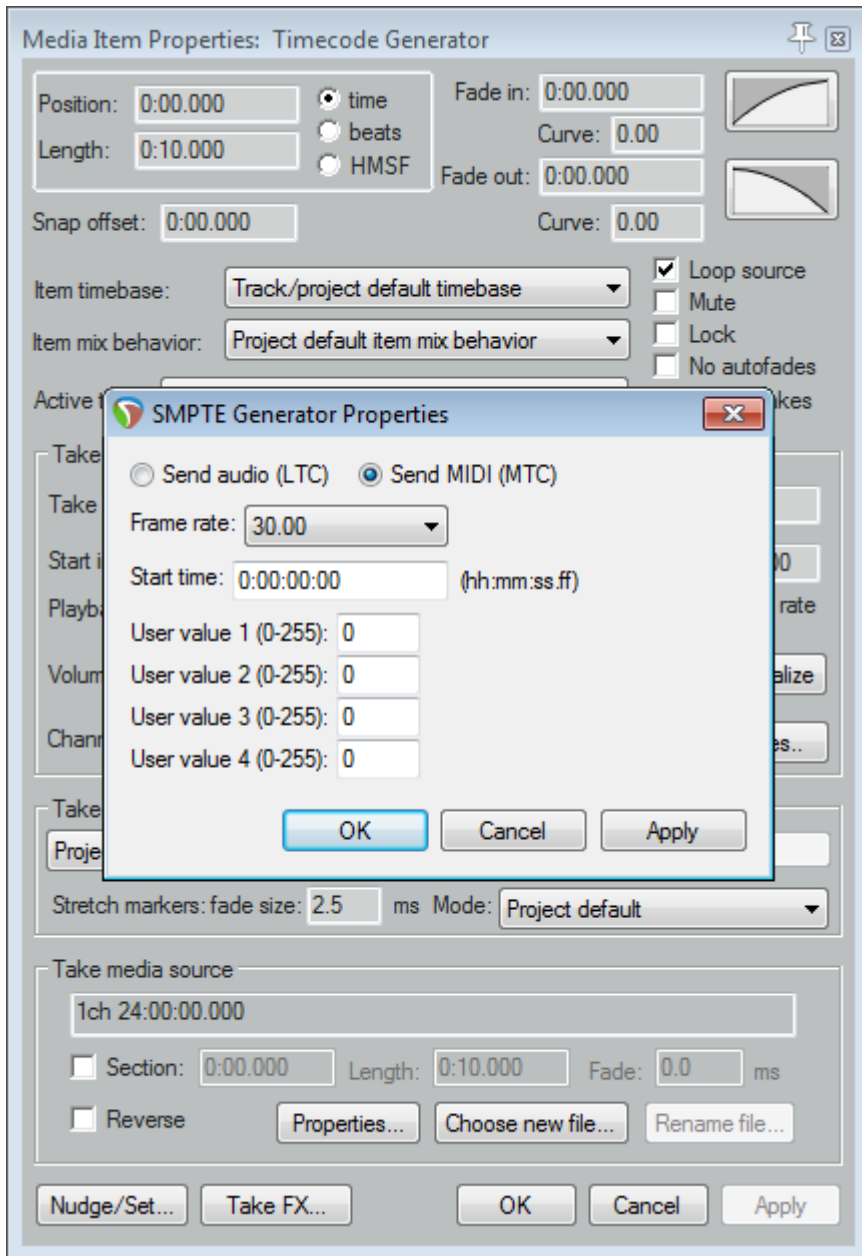


### 3.3 Adjust Timecode Generator

Right-click on the new timecode track, and from the context menu select Item properties. This opens the Media Item Properties window:



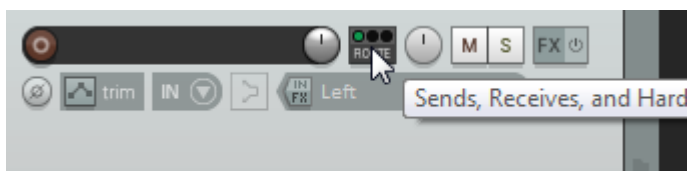
If you want then you can change length, position and other details. In any case you need to make sure it is MTC (MIDI timecode): click on the Properties button (at the bottom). In the new little window set the properties to Send MIDI (MTC):



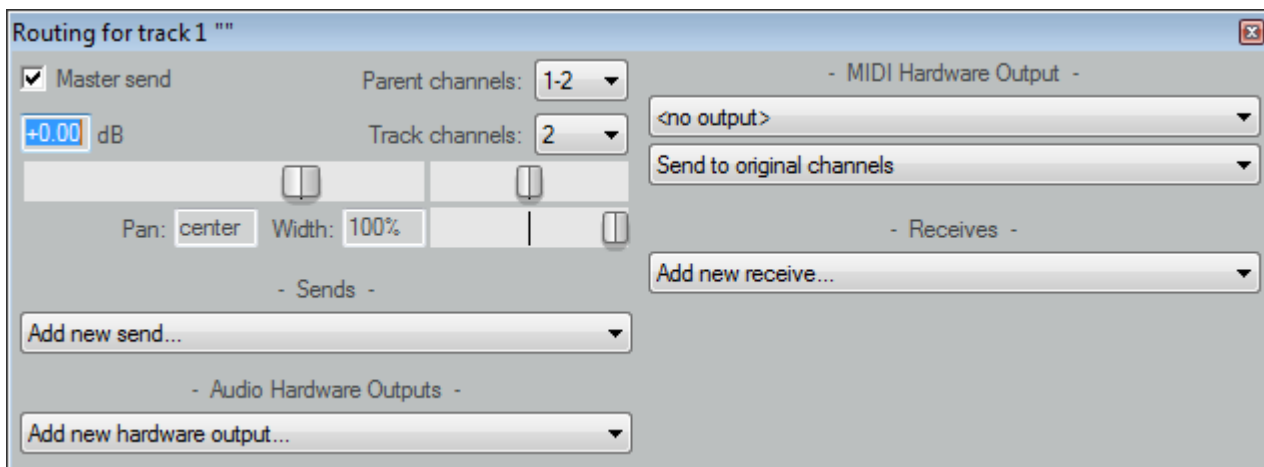
Confirm/close both windows by clicking OK.

### 3.4 Route the MTC signal

Click on the routing button in the track controls (left to the timecode track):



This opens the routing window for this track:



Under MIDI Hardware Output (top-right) select loop MIDI Port:

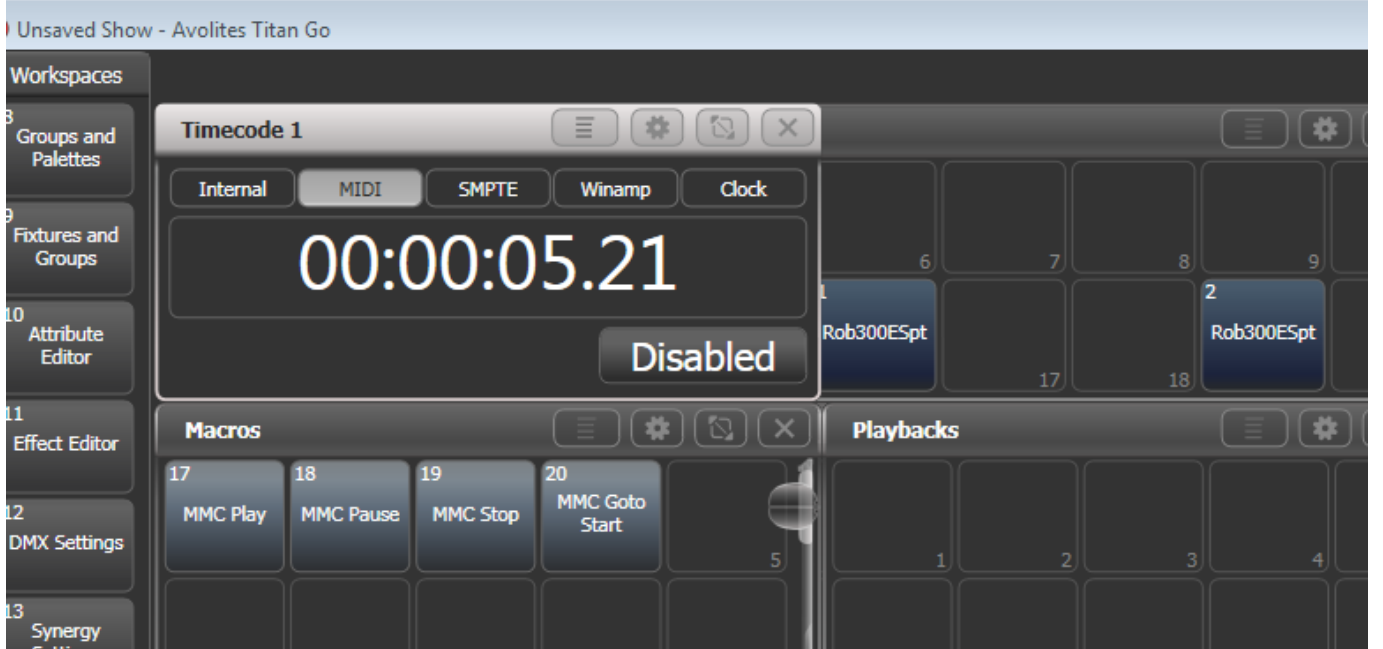
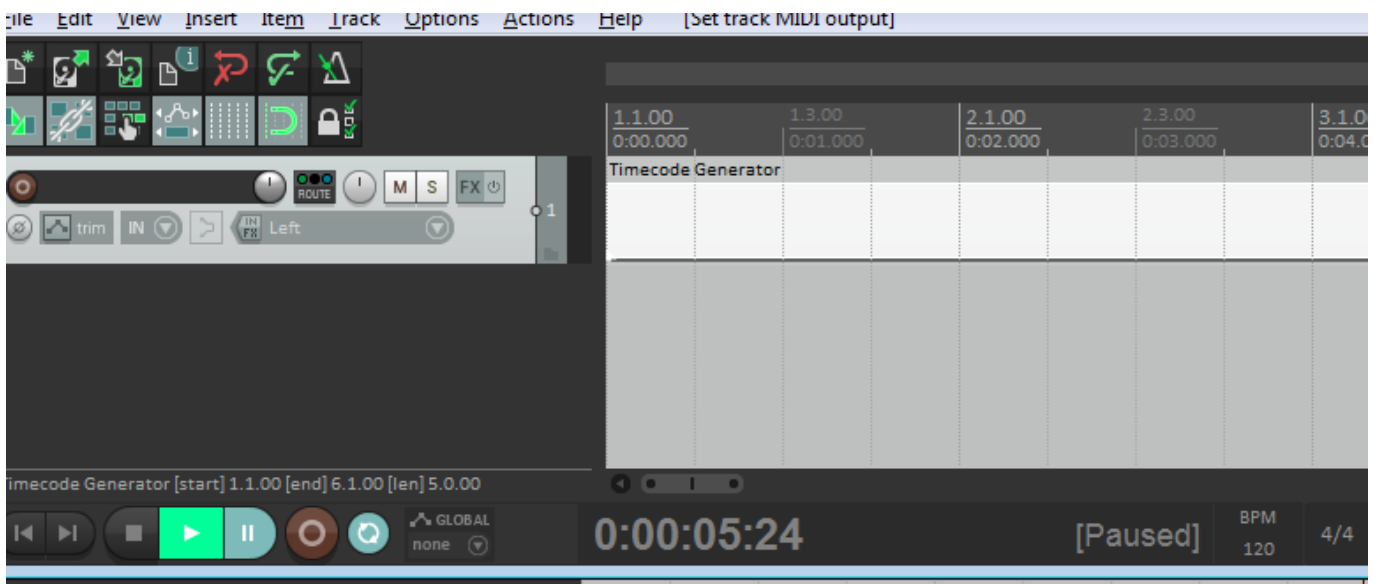


Close the routing window.

## 4. Try it out

Essentially this should work straight away: as soon as you hit Play in Reaper, the timecode value in Titan starts to run. It is advisable to change the time units in Reaper: right-click on the timeline or the displayed time, and from the context menu select Hours : Minutes : Seconds : Frames.

This also works together with Reaper being controlled by Titan via MMC, like described in [Controlling Reaper from Titan on the same PC](#)



You can now use this as timecode source to sync cuelists to music coming from Reaper.

I noticed a gap between the timestamps in Reaper and in Titan. This seems to be due to both, Reaper, as well as Titan/USB Expert, and needs to be investigated further.

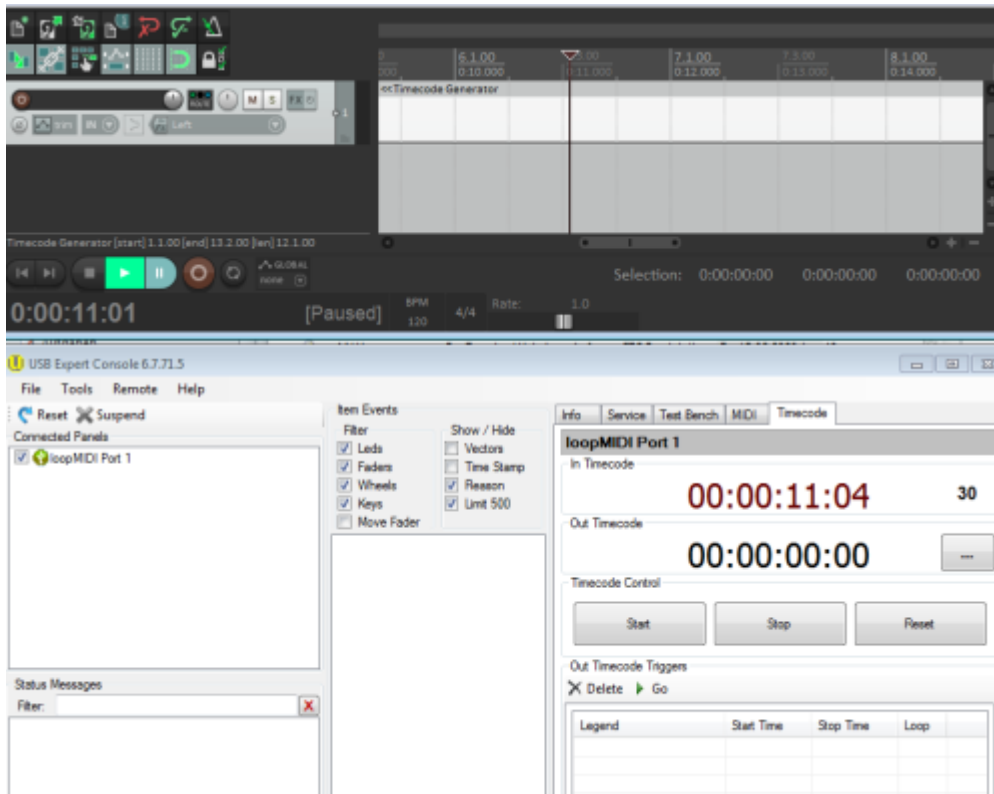
### 5. How to debug

If things do not work as expected then there are some tools which help finding the fault:

#### 5.1 loopMIDI

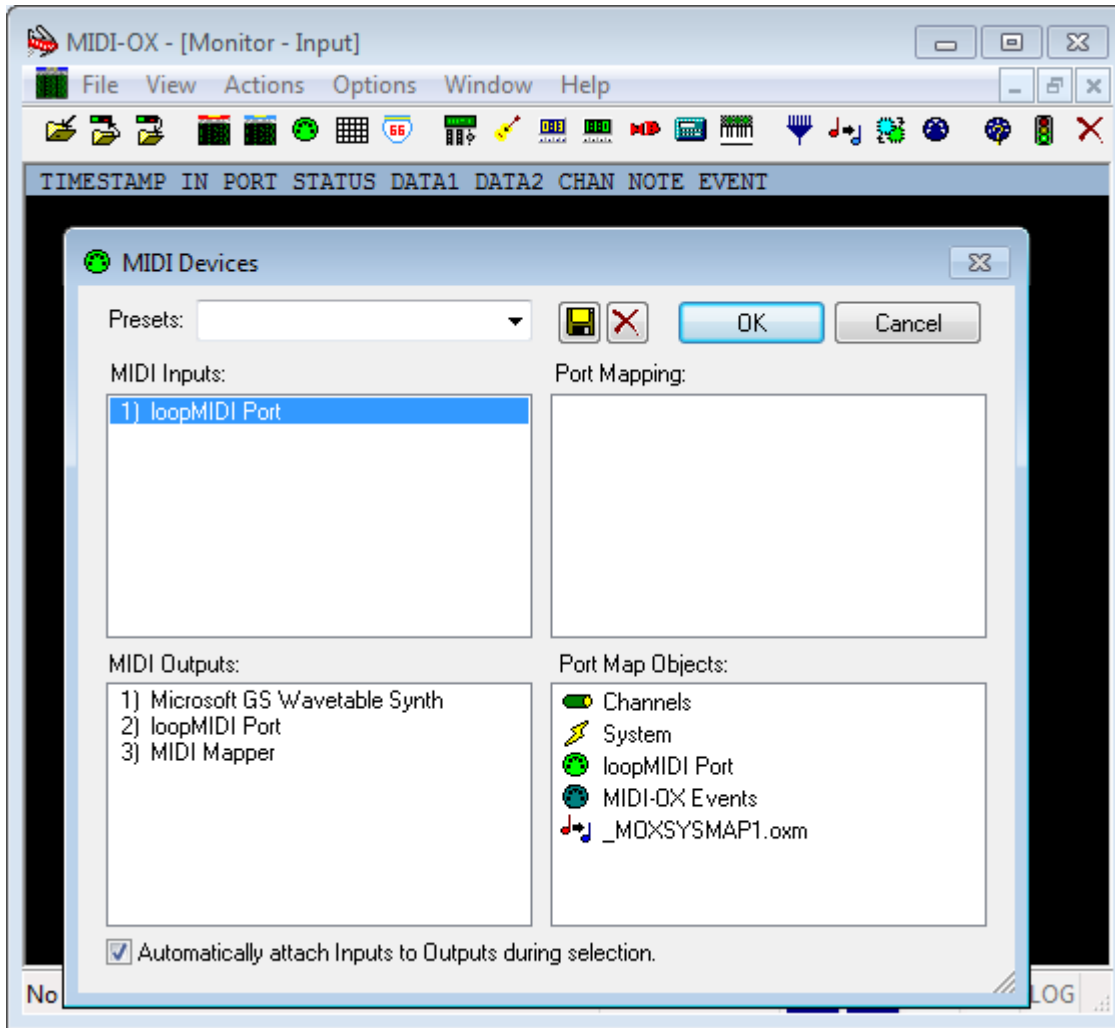
loopMIDI shows the number of transmitted data. This number increases with every command, note or message. With timecode, this number increases continuously and rather fast.





### 5.3 MIDI-OX

Install and launch MIDI-OX (see [Software List](#)). From the Options menu select MIDI Devices. Make sure loopMIDI Port is listed as MIDI Input but isn't mapped to any output (yes, you can create a feedback loop, and yes, you do not want to do this...)



From the View menu select Input Monitor.... In this window, all incoming MIDI data are shown. You will see the continuous stream of MTC Quarter Frame messages:

The screenshot shows the MIDI-OX application window titled "MIDI-OX - [Monitor - Input]". The interface includes a menu bar (File, View, Actions, Options, Window, Help) and a toolbar with various icons. The main display area is a black window with yellow text showing a list of MIDI events. The columns are labeled: TIMESTAMP, IN, PORT, STATUS, DATA1, DATA2, CHAN, NOTE, and EVENT. The events listed are a sequence of Timing Clock and MTC Quarter Frame messages. At the bottom of the window, there is a status bar with "No Output Device" on the left, "1 Input Device" in the center, and several buttons: REC, SYX, MAP, KYB, and LOG.

TIMESTAMP	IN	PORT	STATUS	DATA1	DATA2	CHAN	NOTE	EVENT
000076D7	1	--	F8	--	--	--	---	Timing Clock
000076DB	1	--	F1	30	--	--	---	MTC Quarter Frame
000076E4	1	--	F1	40	--	--	---	MTC Quarter Frame
000076EA	1	--	F8	--	--	--	---	Timing Clock
000076EA	1	--	F1	50	--	--	---	MTC Quarter Frame
000076F3	1	--	F1	60	--	--	---	MTC Quarter Frame
000076FB	1	--	F1	76	--	--	---	MTC Quarter Frame
000076FC	1	--	F8	--	--	--	---	Timing Clock
00007701	1	--	F1	02	--	--	---	MTC Quarter Frame
00007709	1	--	F1	10	--	--	---	MTC Quarter Frame
00007711	1	--	F8	--	--	--	---	Timing Clock
00007711	1	--	F1	25	--	--	---	MTC Quarter Frame
0000771C	1	--	F1	30	--	--	---	MTC Quarter Frame
00007724	1	--	F1	40	--	--	---	MTC Quarter Frame
00007728	1	--	F8	--	--	--	---	Timing Clock
0000772C	1	--	F1	50	--	--	---	MTC Quarter Frame
00007734	1	--	F1	60	--	--	---	MTC Quarter Frame
0000773D	1	--	F8	--	--	--	---	Timing Clock
0000773D	1	--	F1	76	--	--	---	MTC Quarter Frame
00007744	1	--	F1	04	--	--	---	MTC Quarter Frame
0000774C	1	--	F1	10	--	--	---	MTC Quarter Frame
00007750	1	--	F8	--	--	--	---	Timing Clock
00007754	1	--	F1	25	--	--	---	MTC Quarter Frame
0000775F	1	--	F1	30	--	--	---	MTC Quarter Frame

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