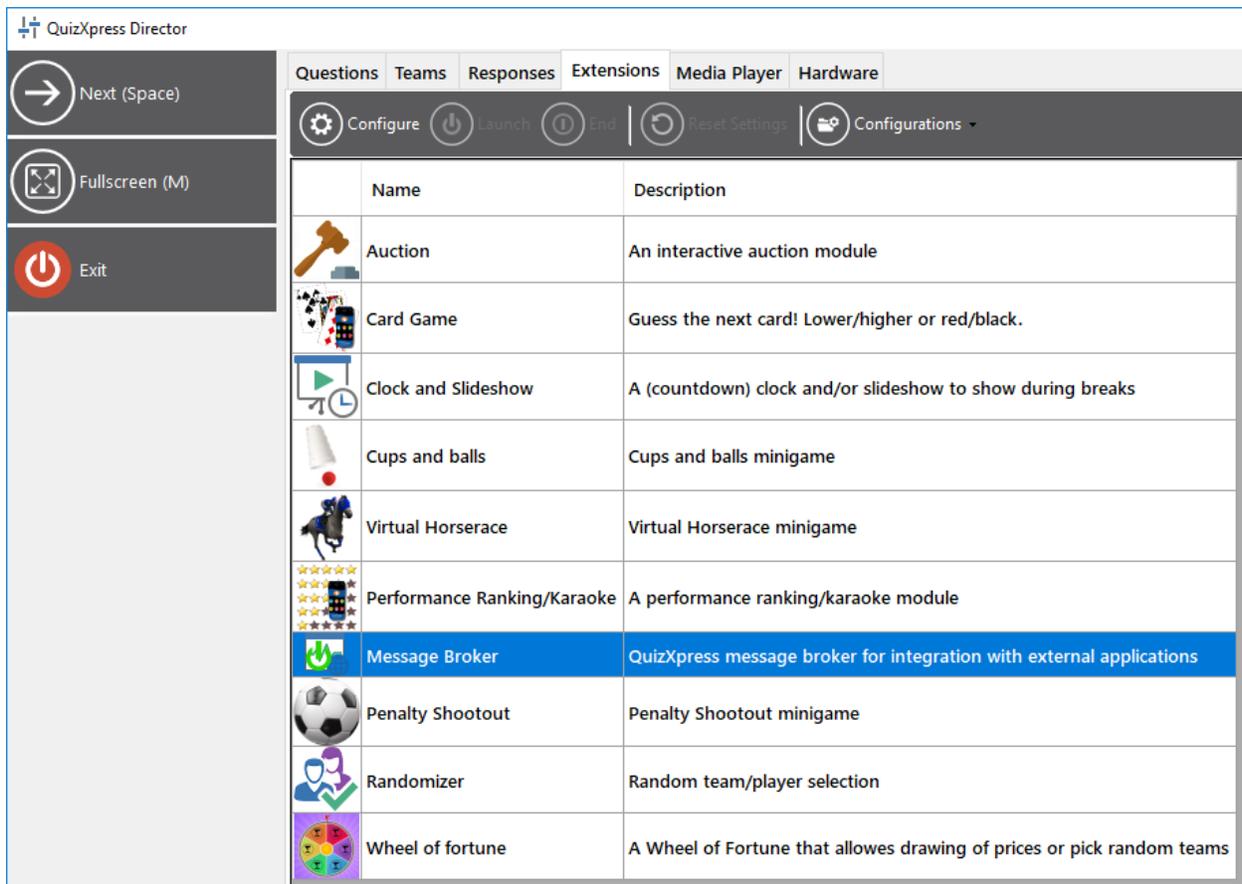


## DMX support via the MIDI protocol

As of version 6, QuizXpress supports integration with external devices via MIDI. One example of a device that you can now integrate with QuizXpress is a DMX light controller.

In QuizXpress there is a special plugin module named MessageBroker. This component is the middle man between events happening in QuizXpress (like going to the next slide, ending of countdown, buzzer is hit etc.) and an external computer/device using a mapping that can be configured. MessageBroker supports two protocols for outgoing messages: TCP/UDP (ASCII and OSC, for the Max programming environment) and MIDI, and one for incoming messages: TCP/UDP ASCII.

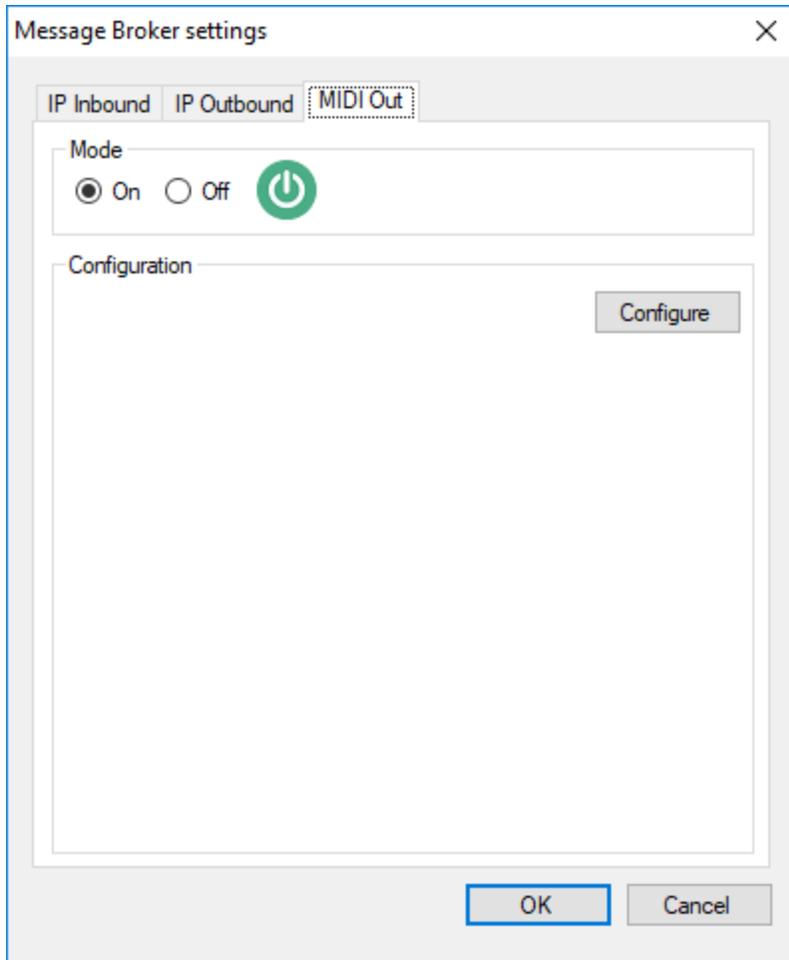
MessageBroker is accessible for configuration from the QuizXpress Director screen in a running quiz player:



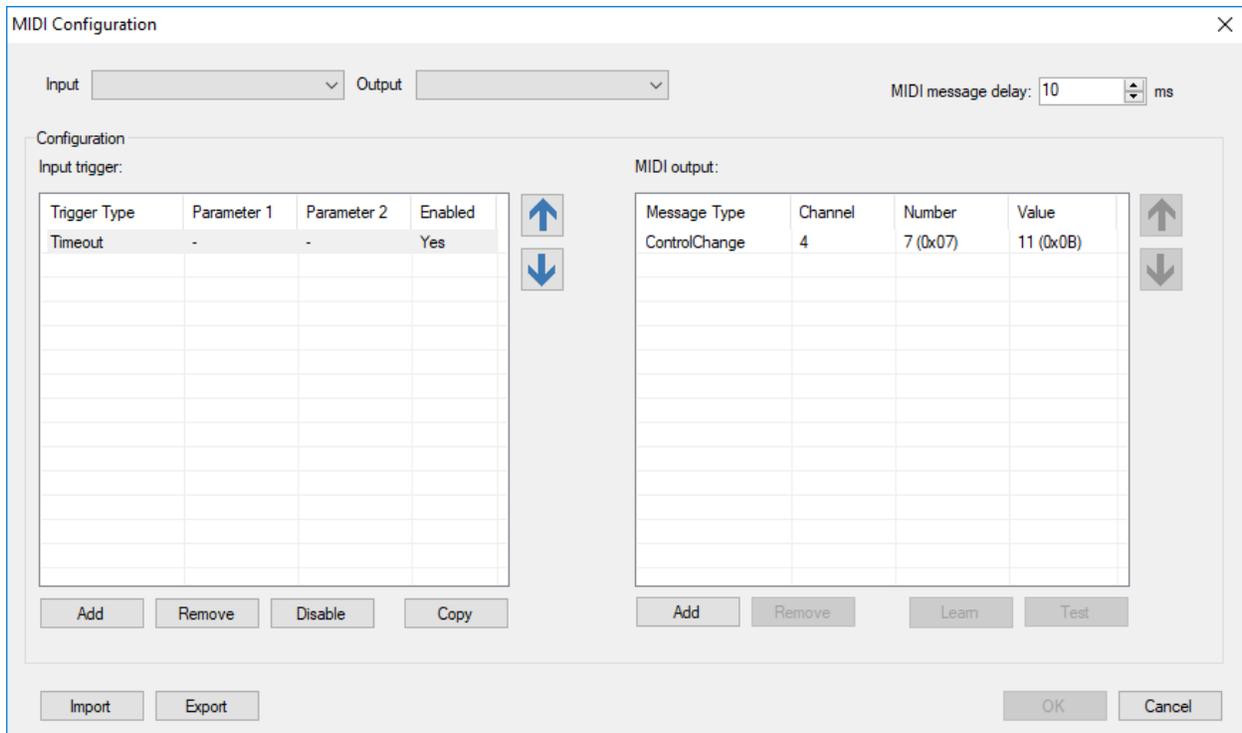
The screenshot shows the QuizXpress Director interface. On the left, there are three buttons: 'Next (Space)', 'Fullscreen (M)', and 'Exit'. The main area has tabs for 'Questions', 'Teams', 'Responses', 'Extensions', 'Media Player', and 'Hardware'. The 'Hardware' tab is active, showing a table of modules. The 'Message Broker' module is highlighted in blue.

	Name	Description
	Auction	An interactive auction module
	Card Game	Guess the next card! Lower/higher or red/black.
	Clock and Slideshow	A (countdown) clock and/or slideshow to show during breaks
	Cups and balls	Cups and balls minigame
	Virtual Horserace	Virtual Horserace minigame
	Performance Ranking/Karaoke	A performance ranking/karaoke module
	Message Broker	QuizXpress message broker for integration with external applications
	Penalty Shootout	Penalty Shootout minigame
	Randomizer	Random team/player selection
	Wheel of fortune	A Wheel of Fortune that allows drawing of prices or pick random teams

To enable MIDI support go the configuration screen of MessageBroker:



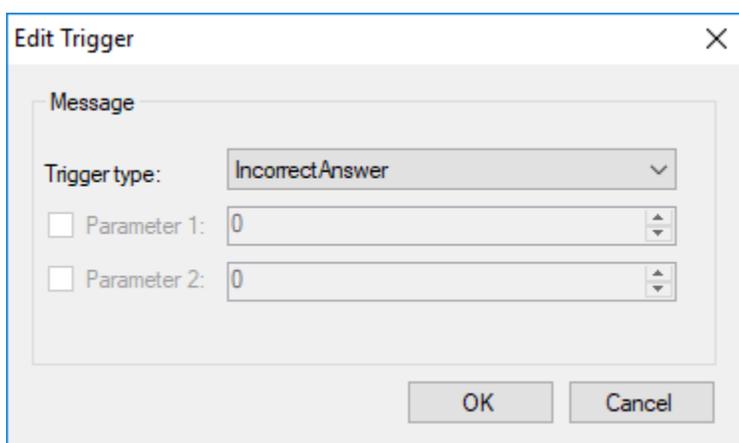
Turn MIDI support on and hit the Configure button:



In the top of the screen you can select the MIDI in- and output device to be used. The input device is currently only used for the learn function which will help in getting the right commands into the definition easily. The output device is where QuizXpress will send MIDI messages when events happen in the quiz.

In the middle section you see a list of triggers on the left (triggers are the events that happen inside QuizXpress) and the configured MIDI output for each trigger on the right.

To add a trigger click the *Add* button and configure your input trigger:



There are several types of triggers you can use. Some triggers may have a parameter that you can optionally use to specialize your trigger.

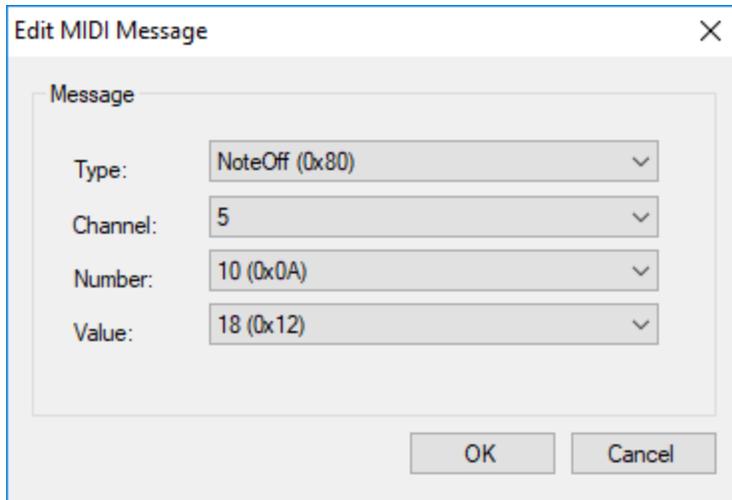
For example; in the following case the trigger fires when a fastest finger event occurs on buzzer 2:

The following table explains all the available triggers:

Trigger type	Explanation
Timeout	A timeout occurred on the current question (e.g. nobody answered in time)
Correct Answer	A question was judged correct by the quizmaster
Incorrect Answer	A question was judged incorrect by the quizmaster
Start Countdown	The countdown timer starts
End Countdown	The countdown timer ends
Pause Countdown	The countdown timer is paused by the quizmaster
Countdown Tick	The countdown timer advanced, you can filter on seconds left
Restart	The quiz restarted (goes back to welcome screen)
Fastest Finger	A player responds to a fastest finger question (and was the first). You can filter on the device number (keypad/buzzer)
Screen Changed	Screen transition (e.g. welcome screen -> buzzer sign-on screen -> quiz screen -> score screen). You can filter on the type of screen being activated.
Slide Changed	Quiz advanced to the next slide. Optionally you can filter on from/to slide number
Remote Command	Command received from the quizmaster remote control
Receive Keypad	Received a signal from a keypad/buzzer. You can filter on specific keypad number and key received (A = 1, B = 2 et., fastest finger = 0)

When a trigger is defined, you need to tell the system what MIDI messages should be send to the selected MIDI output device (the list on the right side). These sequences of MIDI messages can be configured manually or can be 'learned' from the connected MIDI device (like a physical light controller).

To define a message manually click the right Add button:



To edit an existing message you can double-click the message in the list (this way you can also edit a trigger)

A better way is to let the system figure it out. To do so hitting the Learn button (it will turn green). Put your light controller in the desired light configuration (MIDI messages should appear in the list while you do so) and when you're done, click Learn again to turn learn mode off.

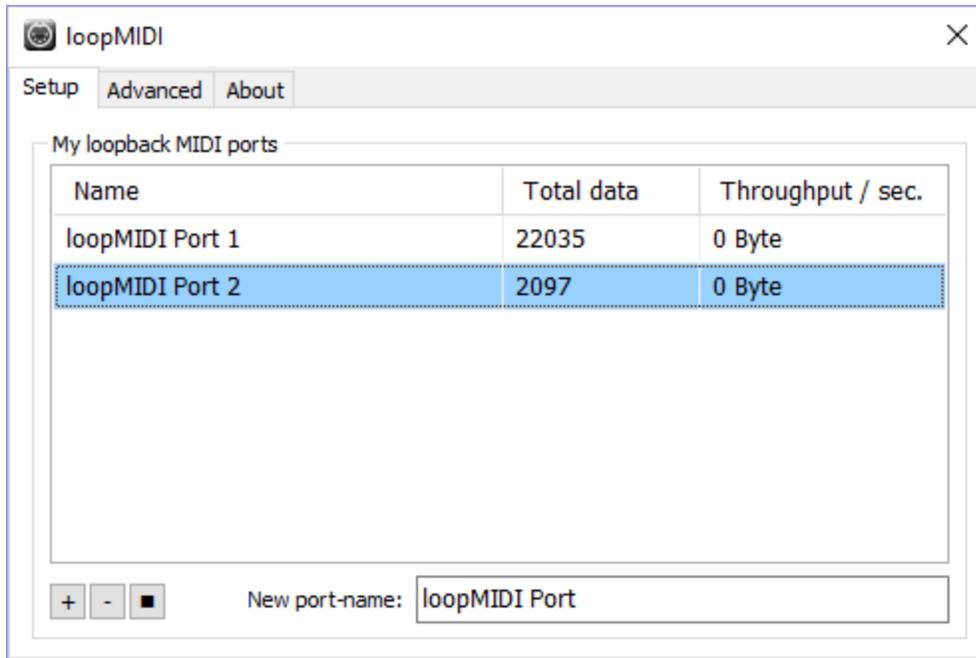
Once a MIDI output sequence has been entered you can use the *Test* button to actually send those messages to the output device and see if it correctly sets the values in the controller.

When you have configured all your triggers/MIDI sequences this way you can close the configuration dialog, then close the MessageBroker settings dialog (with *OK* and not *Cancel* otherwise your changes will be discarded) and from that point on QuizXpress will send the MIDI messages to the selected MIDI output device.

To test the system without any MIDI devices there are two tools to consider:

MIDI loopback driver: <https://www.tobias-erichsen.de/software/loopmidi.html>

Needed to make virtual MIDI device communicate without any physical connections.



Virtual MIDI Sliders: <http://www.granucon.com/SoftwarePages/Vms.aspx>

You can use this software to see how QuizXpress drives a generic MIDI controller. The learn function also works with this virtual MIDI device:

