Mates Studio User Manual

Introduction

Mates Studio is an Integrated Development Environment designed to be used with Breadboard Mates products. This software application is developed for Windows PCs.

The application includes multiple environments that users can utilize to design and develop simple and complex GUI applications for their prototyping needs.

Commander

Commander is the simplest among all Mates Studio environments. It allows users to select and utilize different page designs/layouts from a built-in collection provided by the Breadboard Mates team and its community. This allows development of GUI applications in seconds.

This environment is designed to program Breadboard Mates modules to be used with a host controller using the Mates Controller Command Protocol. This allows users to control the display using their favorite microcontrollers through Serial UART.

This environment also includes a Mates Controller Interface that simulates a microcontroller controlling the display module programmed with a Commander project.

Architect

Similar to Commander, the Architect environment was designed to program modules to be used with a host controller and features Mates Controller Command Protocol. It also provides the Mates Controller Interface to simulate a host controller.

The main advantage of Architect over Commander is the increased flexibility with designing their projects by featuring a Graphics Editor which allows custom widget and page designs.

Genius

The Genius environment is designed to allow user to write their own custom programs for Breadboard Mates module. This allows Breadboard Mates modules to work as standalone devices.

It features a Graphics Editor allowing custom widget and page designs and a Code Editor to write the program in 4D Graphics Language (4DGL). This provides direct control of the widgets and the unused device peripherals allowing custom functionalities that users need which Commander and Architect are not able to provide.

Builder

Similar to Genius, the Builder environment is designed to allow user to develop custom programs for their Breadboard Mates modules.

It also features a Graphics Editor allowing custom widget and page designs. But instead of a code editor, it features a Blocks Editor. This also provides direct control of the widgets and the unused device peripherals allowing custom functionalities that users need which Commander and Architect are not able to provide.

This environment is designed mainly for inexperienced 4DGL developers but can also be used by seasoned developers. This environment can be used to develop varying complexity of projects. However, as the project becomes increasingly complicated, writing the code in Genius can prove to be more managable for experience developers.

System Requirements

Mates Studio is currently available for 64-bit Windows PCs. Here are the requirements for installing the application:

- Windows 7 and later are supported, older operating systems are not supported (and do not work). Please note that the ARM version of Windows is not supported.
- An Intel Pentium 4 processor or later that's SSE3 capable.
- At least 300 MB of storage space
- Minimum 1GB of RAM (*depends on usage*)

Installation

Mates Studio can be installed for all users (system wide) or only for the current user.
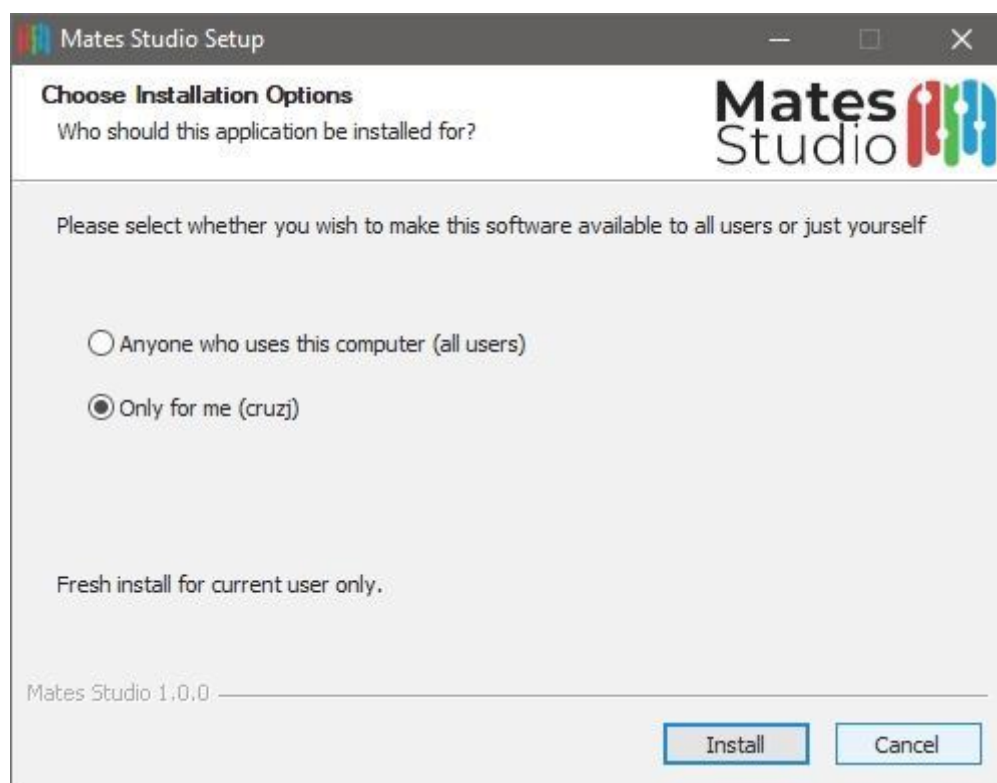
By choosing to install for all users, the install will prompt for administrator privileges.

Once approved, the application will be installed in Program Files directory. The full path is typically:

```
C:\Program Files\Mates Studio
```

If the application is installed only for the current user, the application will be in the current user's AppData Local Programs directory. In that case, the full path is:

```
C:\Users\%USERNAME%\AppData\Local\Programs\Mates Studio
```

The installer will provide a visual progress bar until the installation completes.

After successfully installing Mates Studio, the installer will prompt to optionally launch the application.
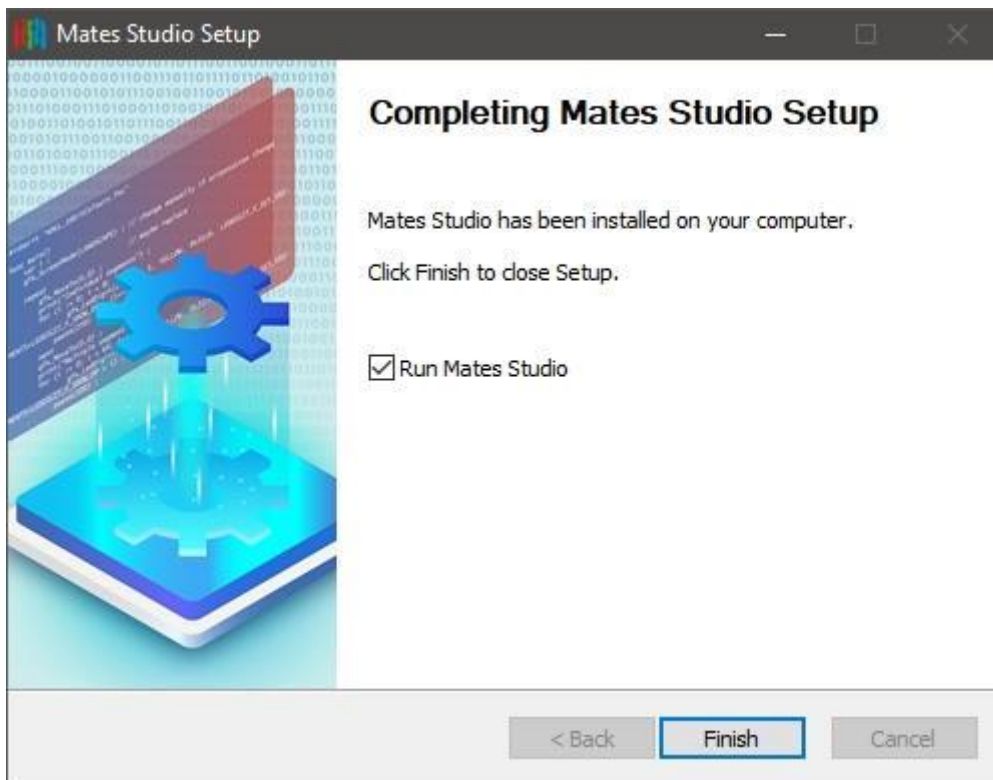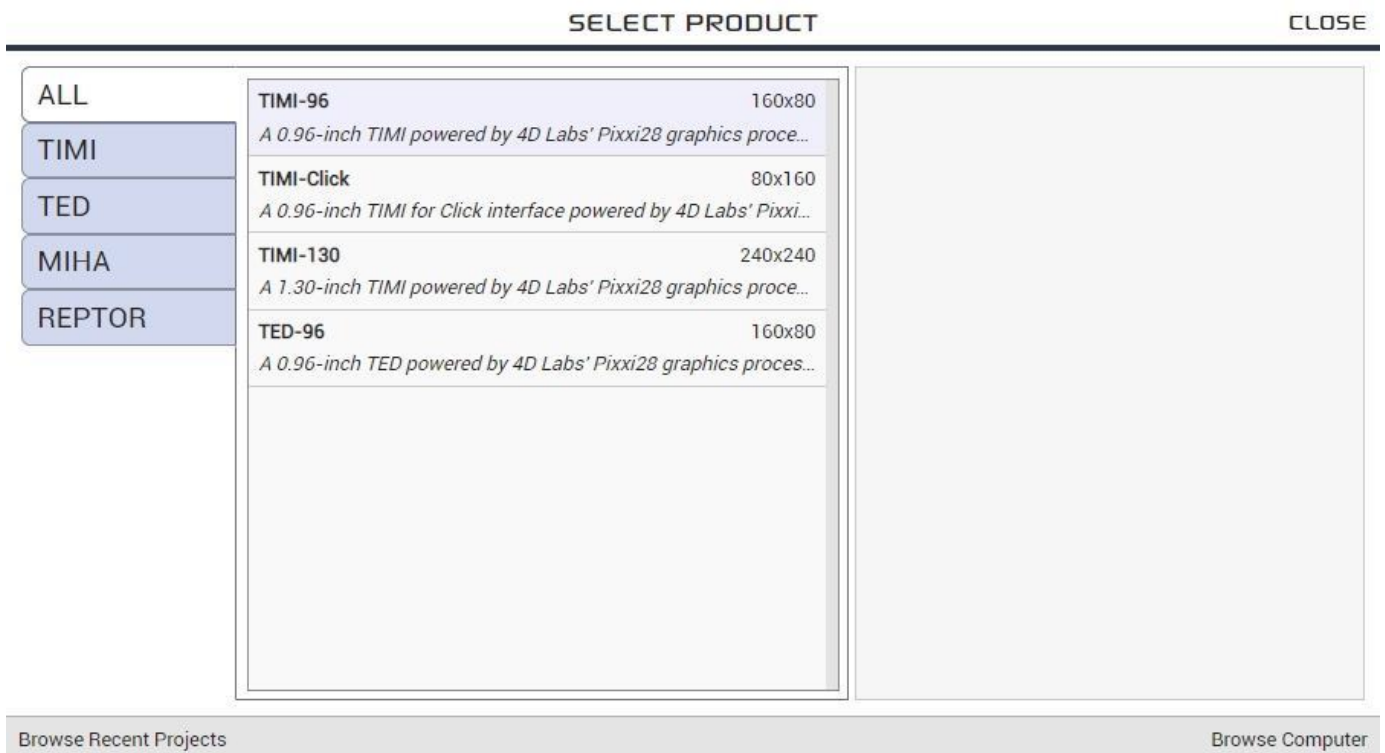
Tick *Run Mates Studio* to launch Mates Studio after installation if desired.

Creating a New Project

Selecting Product and Orientation

When the application opens, it will show the splash screen followed by the setup window.

Products can be filtered by choosing the category tabs on the left-hand side. The center column provides a filtered selection of products. By selecting a product from the list shown in the center column of the window, a preview of the product will be shown on the right-hand side.
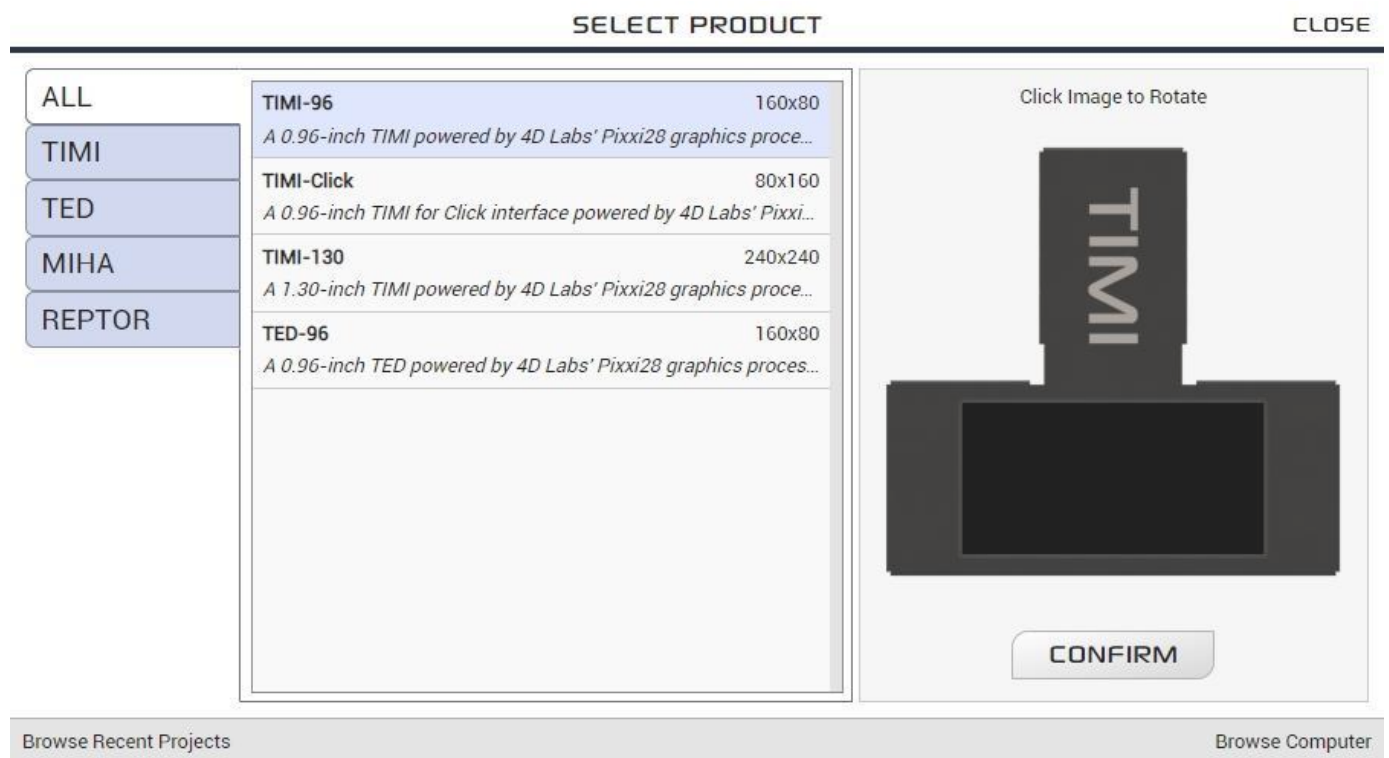
By clicking on the preview, the project orientation can be set.
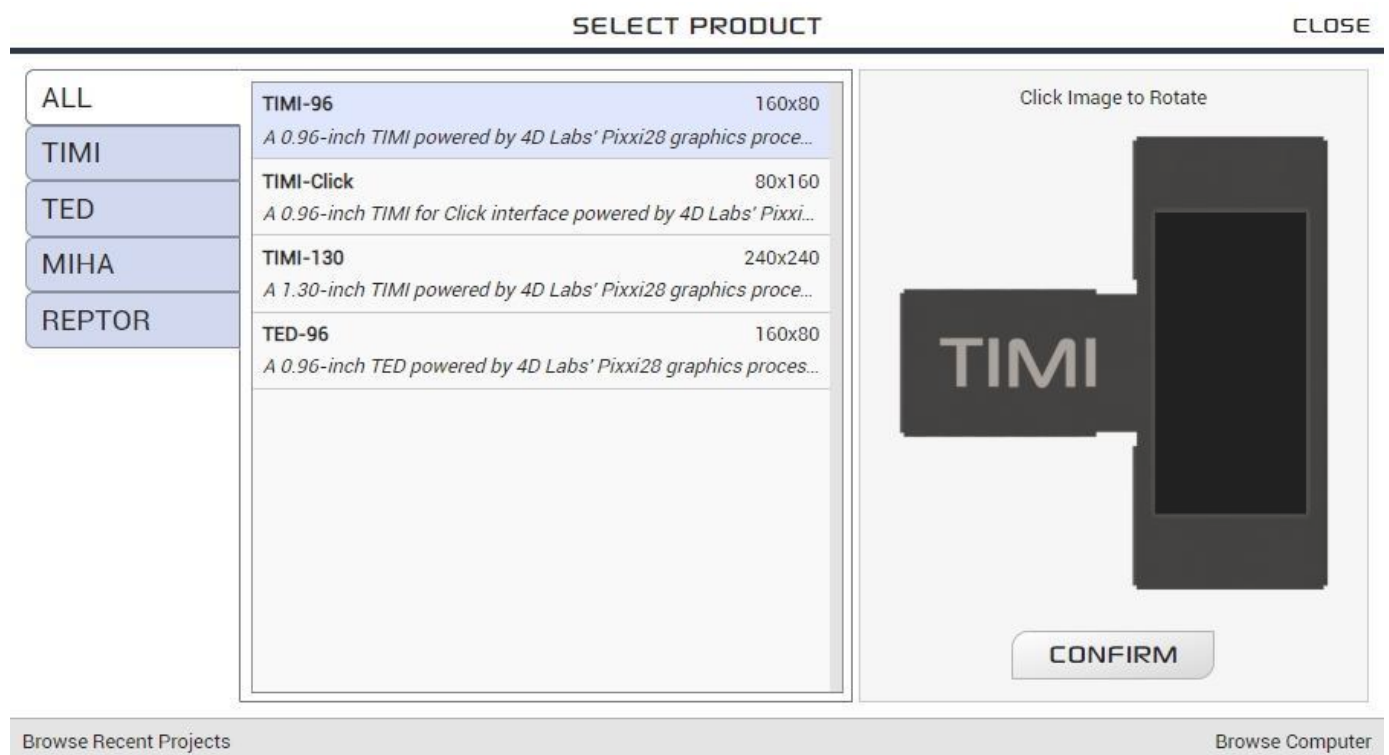
After selecting the product and desired orientation, continue by clicking on the **CONFIRM** button.

Selecting Environment

After confirming the product, the target environment needs to be selected to start a new project.

The Commander environment enables the user to create projects by selecting page layouts from a selection of predesigned user interfaces from Breadboard Mates team and community.

The Architect environment enables the user to design projects with custom pages and widgets. This gives more designing capabilities than the Commander environment.

The Genius environment enables the user to design projects with custom pages and widgets and write code. This removes the need for an external host to control with the display.

The Builder environment enables the user to design projects with custom pages and widgets and build the process flow using graphical/block programming. This removes the need for an external host to control with the display.

Browse Recent Projects   Browse Computer

Opening Projects

Browsing Recent Projects

While in the setup window, recent projects can be browsed by clicking on the Browse Recent Projects button.

ALL		
TIMI	**TIMI-96**	160x80
TED	A 0.96-inch TIMI powered by 4D Labs' Pixxi28 graphics proce…	
MIHA	**TIMI-Click**	80x160
REPTOR	A 0.96-inch TIMI for Click interface powered by 4D Labs' Pixxi…	
	TIMI-130	240x240
	A 1.30-inch TIMI powered by 4D Labs' Pixxi28 graphics proce…	
	TED-96	160x80
	A 0.96-inch TED powered by 4D Labs' Pixxi28 graphics proces…	

Browse Recent Projects   Browse Computer

Recent projects can be filtered by choosing the category tabs on the left-hand side.

All		
Commander		
Architect		
Genius		

VARIOUS GAUGES	Commander - TIMI-96
C:\Users\cruzj\Documents\Mates Studio Projects\Various Ga...	
VARIOUS DIGITS	Commander - TIMI-96
C:\Users\cruzj\Documents\Mates Studio Projects\Various Di...	
UPDATING SCOPE	Commander - TIMI-96
C:\Users\cruzj\Documents\Mates Studio Projects\Updating S...	
PRINT TO DOT MATRIX	Commander - TIMI-96
C:\Users\cruzj\Documents\Mates Studio Projects\Print to Do...	
PRINT STRINGS	Commander - TIMI-96
C:\Users\cruzj\Documents\Mates Studio Projects\Print Strin...	
PRINT HEX VALUES	Commander - TIMI-96
C:\Users\cruzj\Documents\Mates Studio Projects\Print Hex V...	
PAGE NAVIGATION	Commander - TIMI-96
C:\Users\cruzj\Documents\Mates Studio Projects\Page Navi...	
NUMBERED LEDS	Commander - TIMI-96
C:\Users\cruzj\Documents\Mates Studio Projects\Numbered ...	

Browse Computer

By selecting a project from the list shown in the middle column of the window, a preview of the project will be shown on the right-hand side.

All		
Commander		
Architect		
Genius		

VARIOUS GAUGES	Commander - TIMI-96
C:\Users\cruzj\Documents\Mates Studio Projects\Various Ga...	
VARIOUS DIGITS	Commander - TIMI-96
C:\Users\cruzj\Documents\Mates Studio Projects\Various Di...	
UPDATING SCOPE	Commander - TIMI-96
C:\Users\cruzj\Documents\Mates Studio Projects\Updating S...	
PRINT TO DOT MATRIX	Commander - TIMI-96
C:\Users\cruzj\Documents\Mates Studio Projects\Print to Do...	
PRINT STRINGS	Commander - TIMI-96
C:\Users\cruzj\Documents\Mates Studio Projects\Print Strin...	
PRINT HEX VALUES	Commander - TIMI-96
C:\Users\cruzj\Documents\Mates Studio Projects\Print Hex V...	
PAGE NAVIGATION	Commander - TIMI-96
C:\Users\cruzj\Documents\Mates Studio Projects\Page Navi...	
NUMBERED LEDS	Commander - TIMI-96
C:\Users\cruzj\Documents\Mates Studio Projects\Numbered ...	

Click to Check Previews

80   00   00

MONDAY

CONFIRM

Browse Computer

By clicking on the preview, the other project pages can be browsed.

All		
Commander		
Architect		
Genius		

VARIOUS GAUGES	Commander - TIMI-96	
C:\Users\cruzj\Documents\Mates Studio Projects\Various Ga...		
VARIOUS DIGITS	Commander - TIMI-96	
C:\Users\cruzj\Documents\Mates Studio Projects\Various Di...		
UPDATING SCOPE	Commander - TIMI-96	
C:\Users\cruzj\Documents\Mates Studio Projects\Updating S...		
PRINT TO DOT MATRIX	Commander - TIMI-96	
C:\Users\cruzj\Documents\Mates Studio Projects\Print to Do...		
PRINT STRINGS	Commander - TIMI-96	
C:\Users\cruzj\Documents\Mates Studio Projects\Print Strin...		
PRINT HEX VALUES	Commander - TIMI-96	
C:\Users\cruzj\Documents\Mates Studio Projects\Print Hex V...		
PAGE NAVIGATION	Commander - TIMI-96	
C:\Users\cruzj\Documents\Mates Studio Projects\Page Navi...		
NUMBERED LEDS	Commander - TIMI-96	
C:\Users\cruzj\Documents\Mates Studio Projects\Numbered ...		

Click to Check Previews

CONFIRM

Browse Computer

After confirming the project, it can be opened by clicking on the CONFIRM button.

Browsing the Computer

While in the setup window, the computer can be browsed for projects by clicking on the Browse Computer button.

ALL		
TIMI		
TED		
MIHA		
REPTOR		

TIMI-96	160x80	
A 0.96-inch TIMI powered by 4D Labs' Pixxi28 graphics proce...		
TIMI-Click	80x160	
A 0.96-inch TIMI for Click interface powered by 4D Labs' Pixxi...		
TIMI-130	240x240	
A 1.30-inch TIMI powered by 4D Labs' Pixxi28 graphics proce...		
TED-96	160x80	
A 0.96-inch TED powered by 4D Labs' Pixxi28 graphics proces...		

Browse Recent Projects   Browse Computer

Mates Studio will open a file selection window which can be utilized to find and open a project anywhere in the computer.

Open Mates Studio Project   ×

← → ∨ ↑ 📁 > This PC > Documents > Mates Studio Projects   ∨   ↻   🔍 Search Mates Studio Projects

Organize ▼   New folder   ▤▤ ▼   ▯ ❓

	Name ︿	Date modified	Type
⭐ Quick access	🔖 Audio Spectrum.mates	2/21/2021 9:26 PM	Mates Studio Project
☁ OneDrive	🔖 Compass.mates	2/21/2021 9:06 PM	Mates Studio Project
🖥 This PC	🔖 Digital Clock.mates	2/21/2021 9:05 PM	Mates Studio Project
🌐 Network	🔖 Temperature Monitor.mates	2/21/2021 9:02 PM	Mates Studio Project

File name: Audio Spectrum.mates   ∨   Mates Studio Projects (*.mates) ∨

Open   Cancel