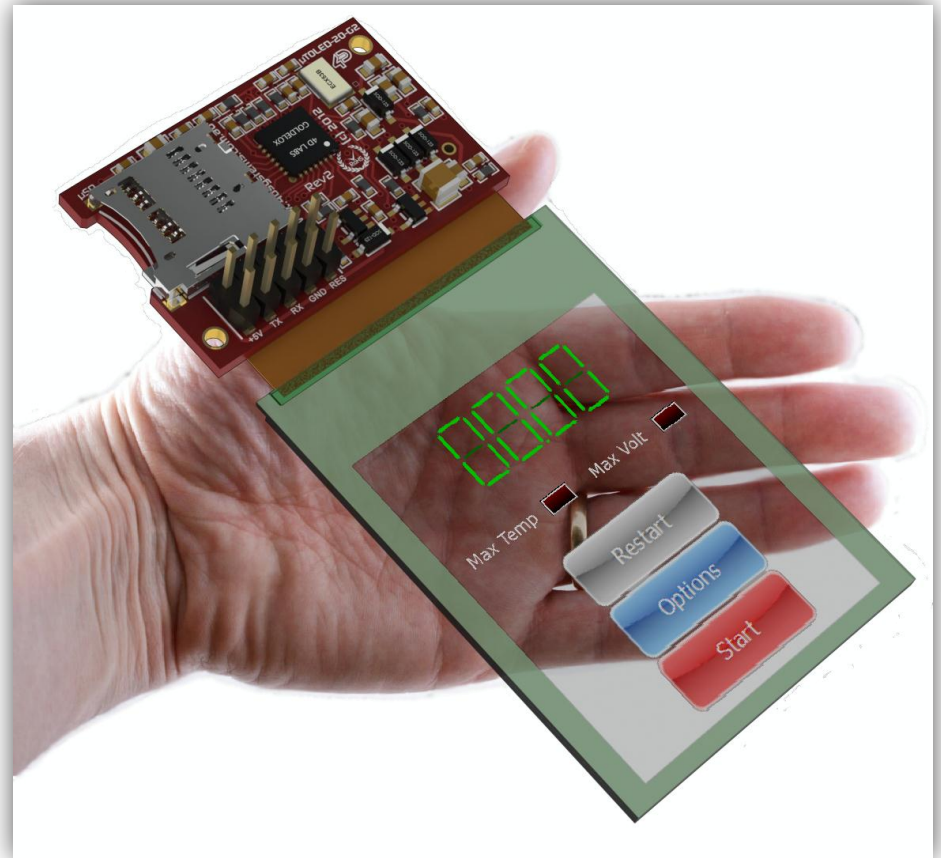


## 2.0" microTOLED

Intelligent GOLDELOX Display Module

$\mu$ TOLED-20-G2



**4D SYSTEMS**  
*TURNING TECHNOLOGY INTO ART*

# MESSAGE FROM THE CEO

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To our valued customers,

Thank you for your interest in 4D Systems and the products we have to offer.

We are constantly looking for ways to improve our customer experience and it is hoped that a Product Brief such as this, can instil confidence in choosing 4D Systems as your supplier of superior embedded electronic products.

We invite you to showcase our latest release and thank you again for your continued support.

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Atilla Aknar  
Founder & CEO

# Table of Contents

|                                      |    |
|--------------------------------------|----|
| 1. Overview of the $\mu$ TOLED-20-G2 | 4  |
| 2. Module Features                   | 5  |
| 3. GOLDELOX Processor                | 6  |
| 4. 2.0" Transparent PMOLED Display   | 7  |
| 5. micro-SD Card Slot                | 8  |
| 6. Powering Your Device              | 9  |
| 7. What you Need                     | 10 |
| 8. Development Environment           | 11 |
| 9. Getting Started                   | 12 |
| 10. Mechanical Dimensions            | 13 |

# 1. Overview of the $\mu$ TOLED-20-G2

The  $\mu$ TOLED-20-G2 is an amazing Intelligent Display Module that serves as the perfect embedded display solution for any product design that requires an impressive 2.0" Transparent OLED display.

Embedded at the heart of the design is the **GOLDELOX** Graphics Processor, which is driven by a highly optimised virtual core engine; EVE (Extensible Virtual Engine).

An extensive range of hardware and software peripherals have been integrated into the design, to give the user freedom to adapt the module to suit almost any application, such as; a **2.0" Transparent PMOLED** display, micro-SD card connector, GPIOs that can be used for Digital Input/Output, Analogue Input, One-Wire and Sound Generation.

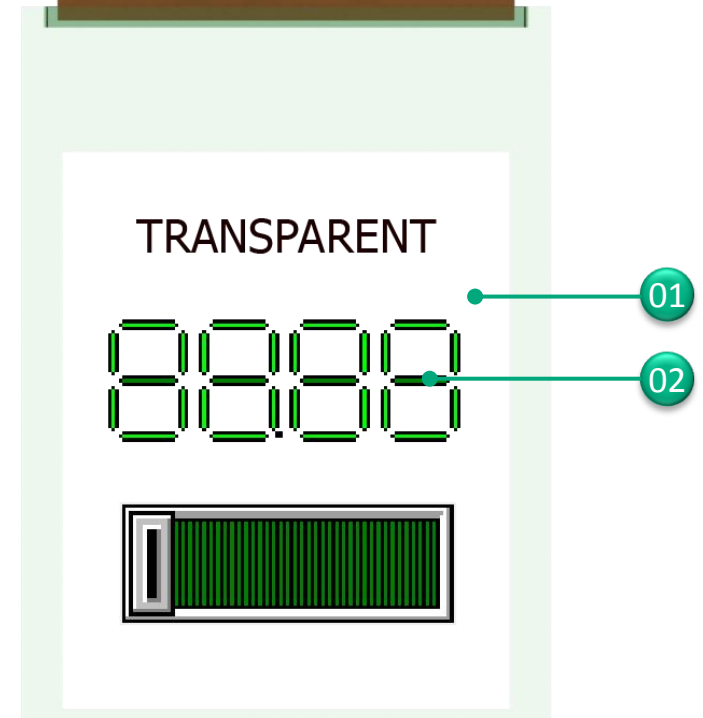
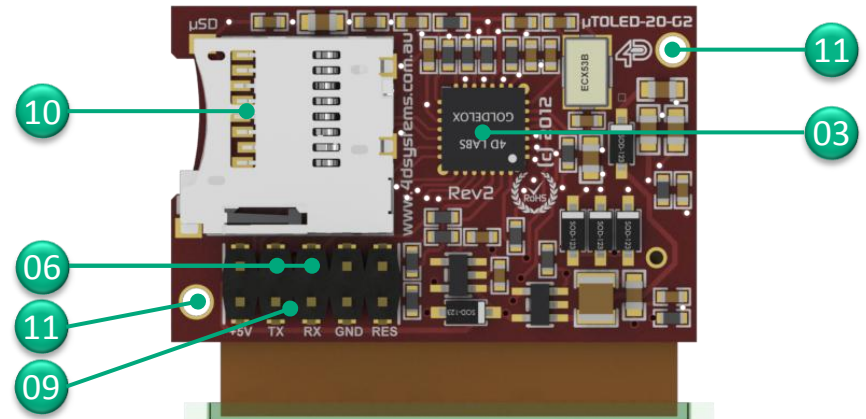


# 2. Module Features

- 01 2.0" Transparent PMOLED Screen
- 02 160 x 128 Resolution with 65K True to Life Colours
- 03 GOLDELOX Graphics Processor
- 04 10KB FLASH Memory, 510Bytes RAM
- 05 1 x UART Serial port
- 06 2 x GPIOs

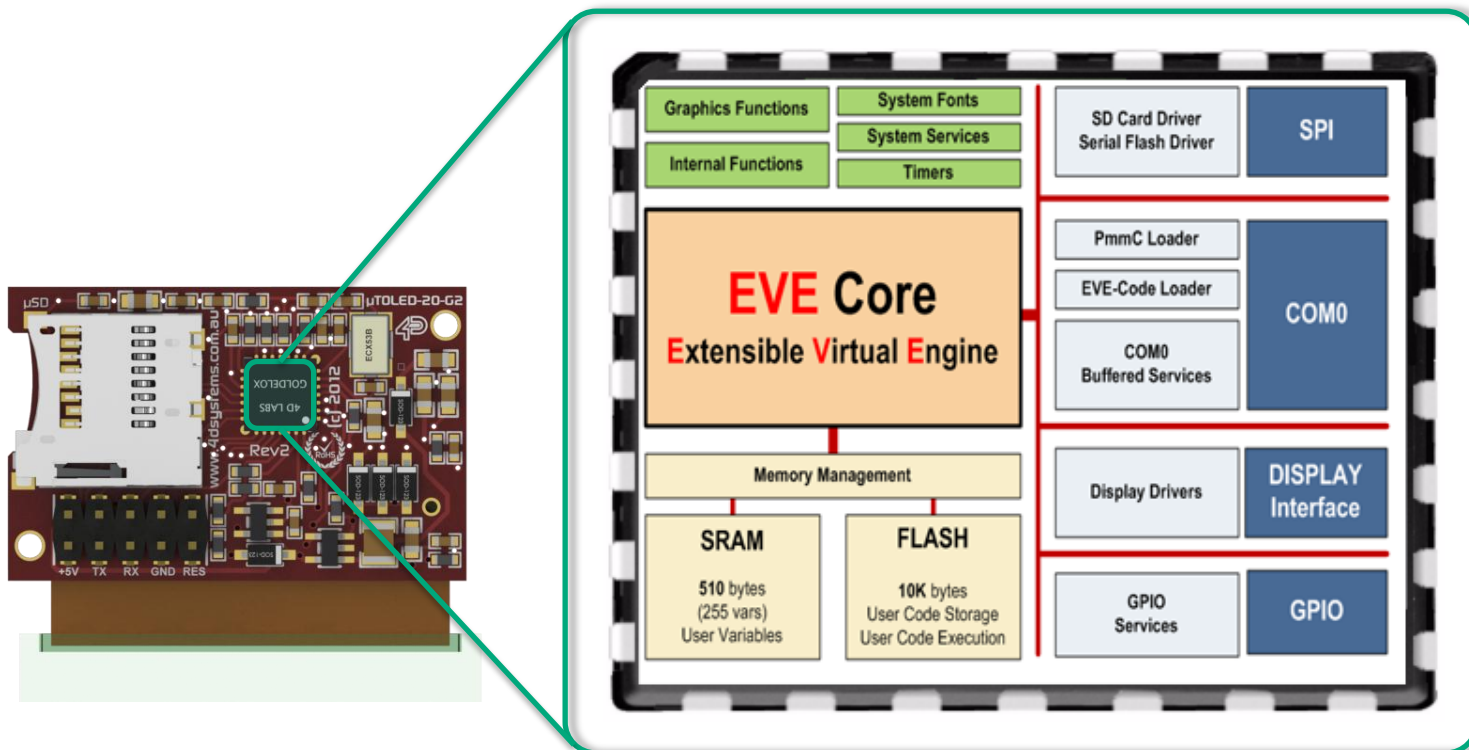
| Function                          | IO1 | IO2 |
|-----------------------------------|-----|-----|
| Digital Input                     | Yes | Yes |
| Digital Output                    | Yes | Yes |
| A/D Conversion 8/10 bits          | Yes | No  |
| Dallas 1-Wire Support             | Yes | Yes |
| Sound Generation, RTTL Tunes      | Yes | Yes |
| Joystick – 5 Position Multiswitch | Yes | No  |

- 07 1 x 32 bit free running System timer with 1ms resolution
- 08 4 x 16 bit timers with 1ms resolution
- 09 2 x 5 Pin Interface
- 10 micro-SD Card Slot
- 11 2 x Mounting tabs with 2mm holes
- 12 Light weight at only ~12gm



# 3. GOLDELOX Processor

At the core of the **μTOLED-20-G2** design lies the **GOLDELOX** Graphics Processor. It has an array of dedicated graphics controls, supported by an ample supply of integrated peripherals.



The GOLDELOX offers a complete suite of features, crafted to be at the forefront of any product requiring colour, animation, images and sound. The GOLDELOX is also powerful enough to control and communicate with peripheral devices over SPI, One Wire or Serial Port.

## 4. 2.0'' Transparent PMOLED Display

The **μTOLED-20-G2** has an impressive **Transparent 2.0''** PMOLED display that exhibits the power and capabilities of the GOLDELOX processor.

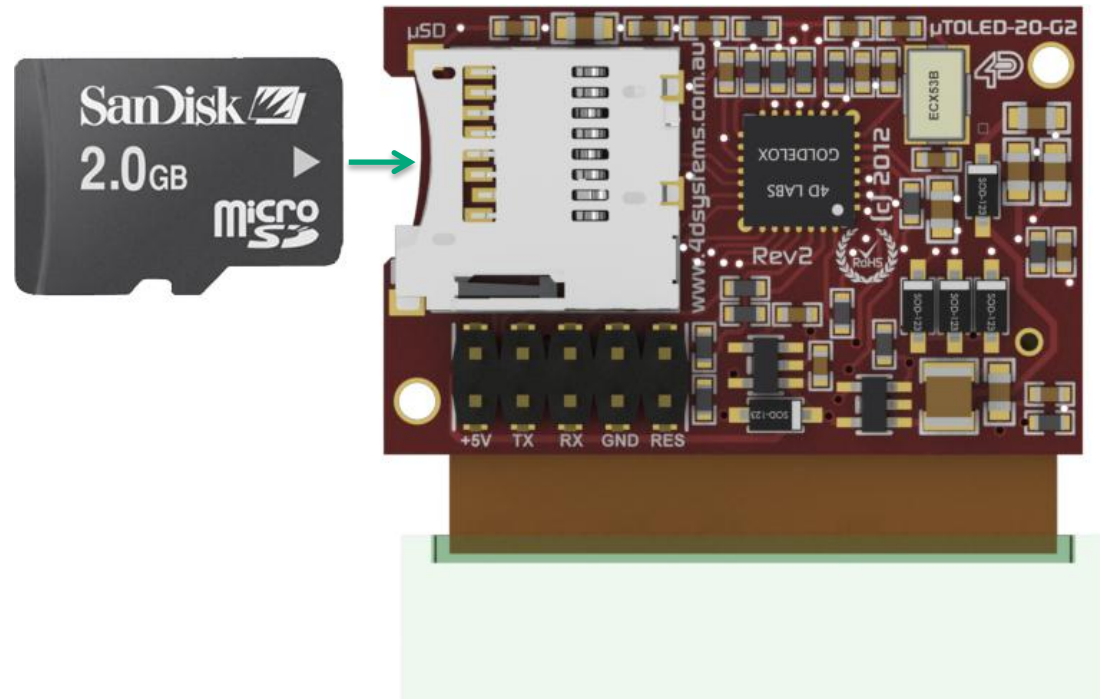
Combining a resolution of **160x128** pixels with **65K** True to Life colours, the **μTOLED-20-G2** delivers amazing colours and features perfect for any application requiring a transparent intelligent display.



## 5. micro-SD Card Slot

The **μTOLED-20-G2** supports **micro-SD** memory cards via the on-board micro-SD connector. This provides the user with expandable memory space suitable for all multimedia file retrieval; such as images, animations and movie clips, as well as data logging applications.

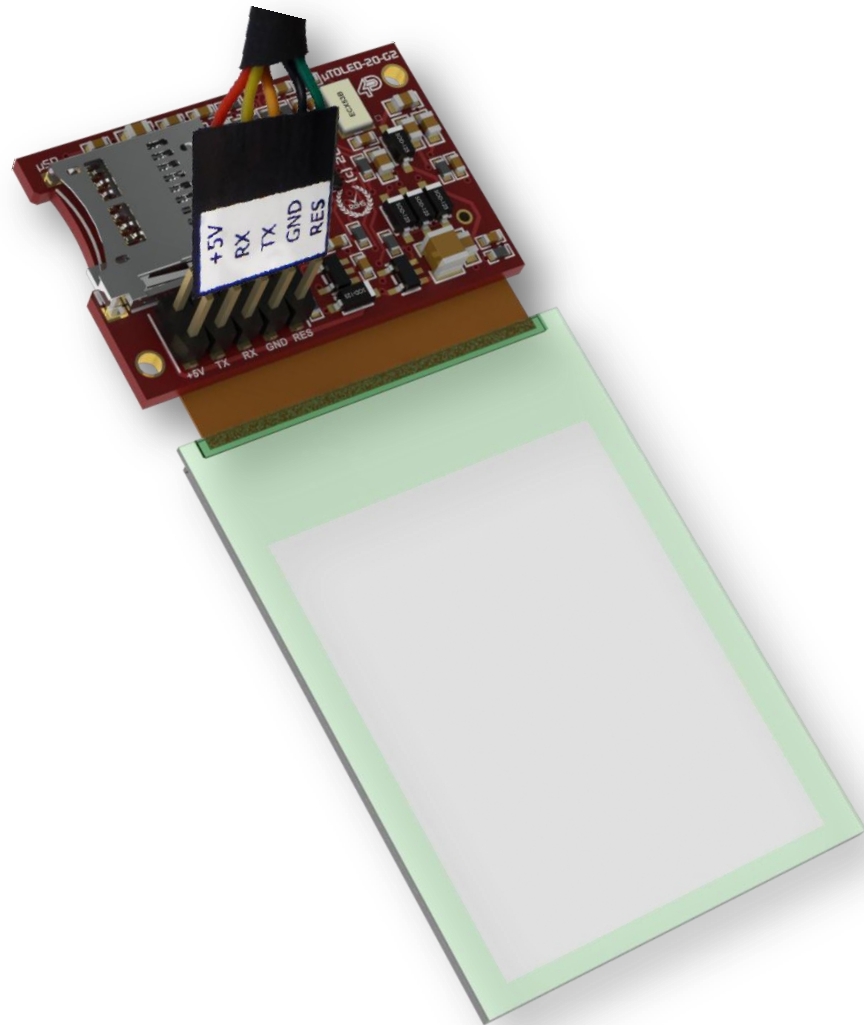
Supports up to 2GB micro-SD as well as micro-SDHC memory cards starting from 4GB and above.



## 6. Powering Your Device

Powering the **μTOLED-20-G2** is as simple as connecting to a PC via a 4D Programming Cable.

Alternatively, power can be supplied by a regulated 5V DC source.



# 7. What you Need

## Essential items



4D Programming Cable



Windows Based PC



4D Workshop4 IDE Software Tool

## Optional Items



micro-SD Card & SD Adaptor

# 8. Development Environment

**Workshop4** is a comprehensive software IDE tool suite that provides an integrated software development platform for all of the 4D family of processors and modules. The Workshop4 IDE supports three different **Development Environments** for the user, to cater for different requirements and skill level.



**Designer:** The Designer environment enables the user to write 4DGL code in its natural form to program the  $\mu$ TOLED-20-G2.



**ViSi:** A visual programming experience, suitably called ViSi, enables drag-and-drop type placement of objects to assist with 4DGL code generation and allows the user to visualise how the display will look while being developed.

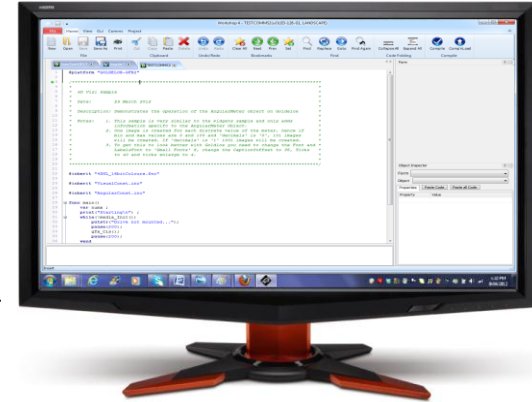
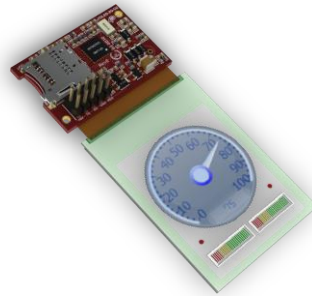


**Serial:** A Serial environment is also provided to transform the  $\mu$ TOLED-20-G2 into a slave serial module, allowing the user to control the display from any host microcontroller or device with a serial port.

# 9. Getting Started

Getting started is as simple as connecting the 4D Programming Cable to the Display Module, and choosing your Product and Development Environment in the **4D Workshop4 IDE**.

4D Workshop4 IDE guides you through the relevant Aid Tools with adequate explanation to get your Application up and running in no time.





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For additional information on the  $\mu$ TOLED-20-G2, please refer to the  $\mu$ TOLED-20-G2 Datasheet or visit 4D Systems website at [www.4dsystems.com.au](http://www.4dsystems.com.au)

If you require specific help with a 4D Systems product, information can be sourced from the FAQ and relevant forum threads on the website, or by contacting a direct member of our Tech Support team at 4D Systems at [support@4dsystems.com.au](mailto:support@4dsystems.com.au)

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