

FREEMASTER 3.0

EDGE PROCESSING & AUTOMOTIVE PROCESSING
SOFTWARE TOOLS & ENGINEERING

January 2020



EXTERNAL USE



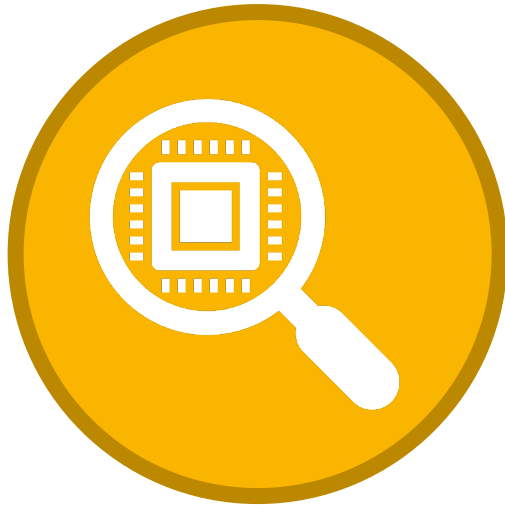
SECURE CONNECTIONS
FOR A SMARTER WORLD

FreeMASTER

Real-Time Data Visualization Tool

Debug and tune embedded algorithms during development

Use visual widgets to monitor and demo final embedded applications



Monitor

Watch target application variables in real time at individual sampling rates



Visualize

Use built-in charts or create custom controls for complex dashboards and interactive demos



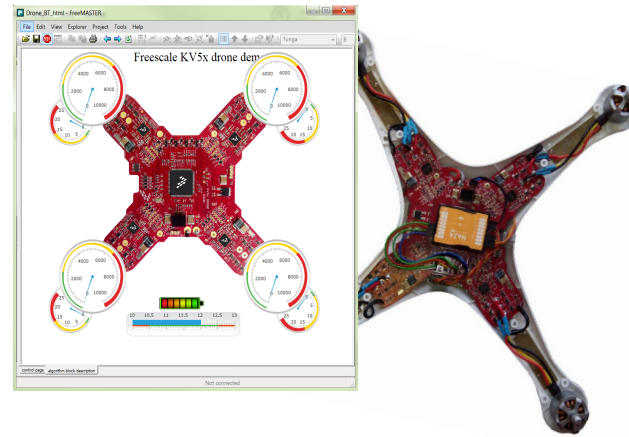
Control

Tune variables values and send commands to the hardware

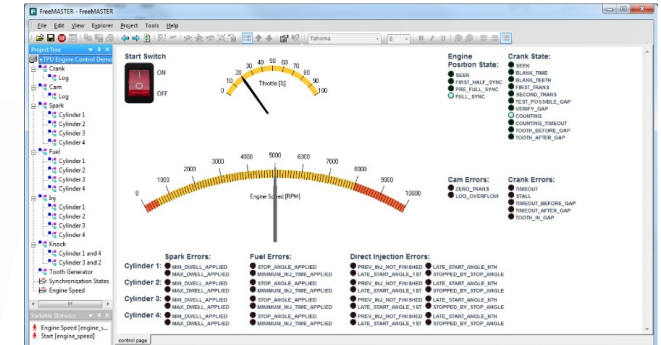
Example Applications

- Real-time visualization of system output
- Prototyping complex data visualization HMIs
- Automated, script-based control systems
- Sensor processing
- Motor control parameter tuning
- Display and tuning
- Sensor processing
- Wireless charging control and configuration UI
- Tuning of touch-sensing HMIs
- Drone control development
- Reliability monitoring data analysis and display

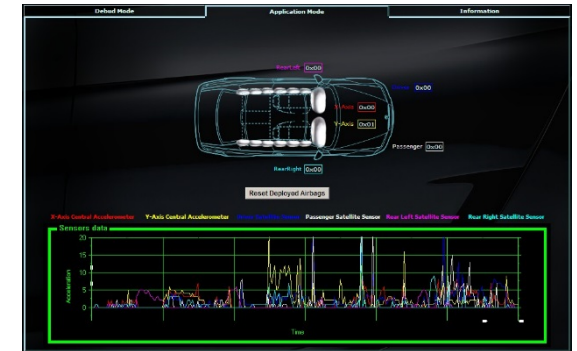
Drone Demo



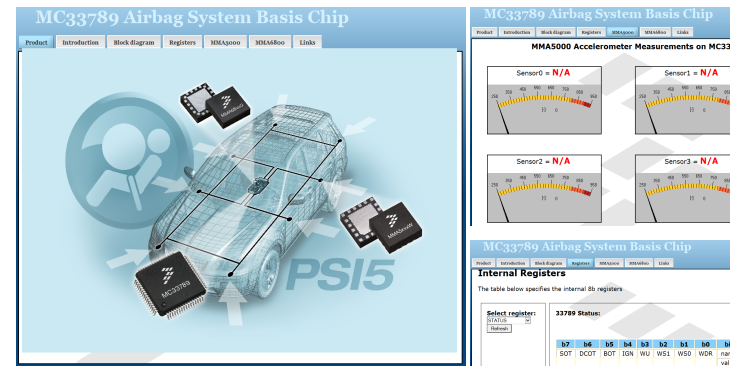
eTPU Engine Control



Airbag Reference Design



Sensor Rapid Evaluation Tool

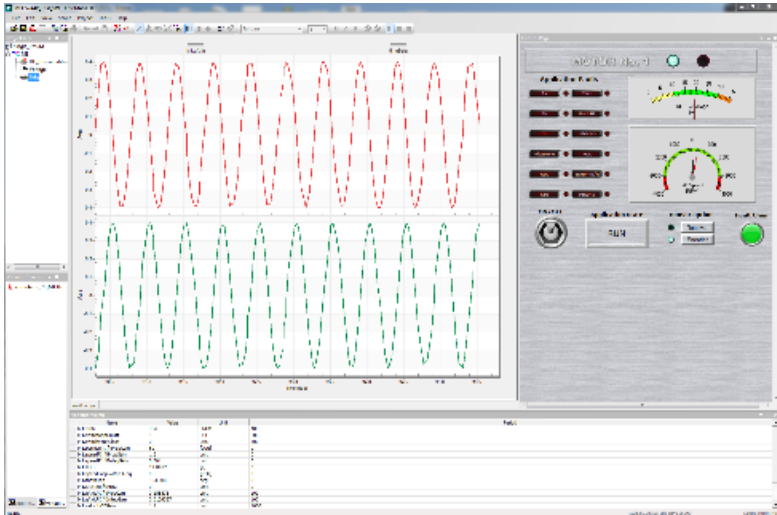


Easy to Use and Flexible

HOST PC

FreeMASTER 3.0

- Communication library & plug-ins
- Windows native charts, table views
- Integrated IE 11 and Chromium
- Light weight service with JSON-RPC API



COMMUNICATION LAYER



UART / USB-CDC

Plain serial line or on board USB port

USB to CAN

USB to CAN convertor

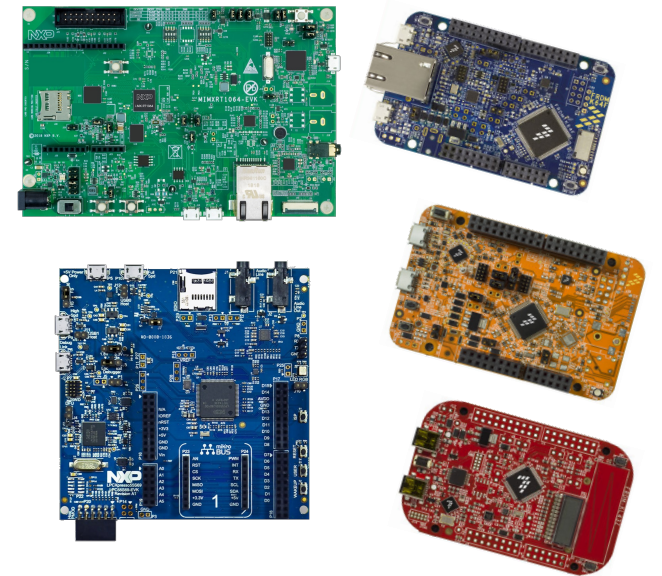
JTAG / SWD

Debug probes

NXP OR CUSTOMER BOARD

Embedded application

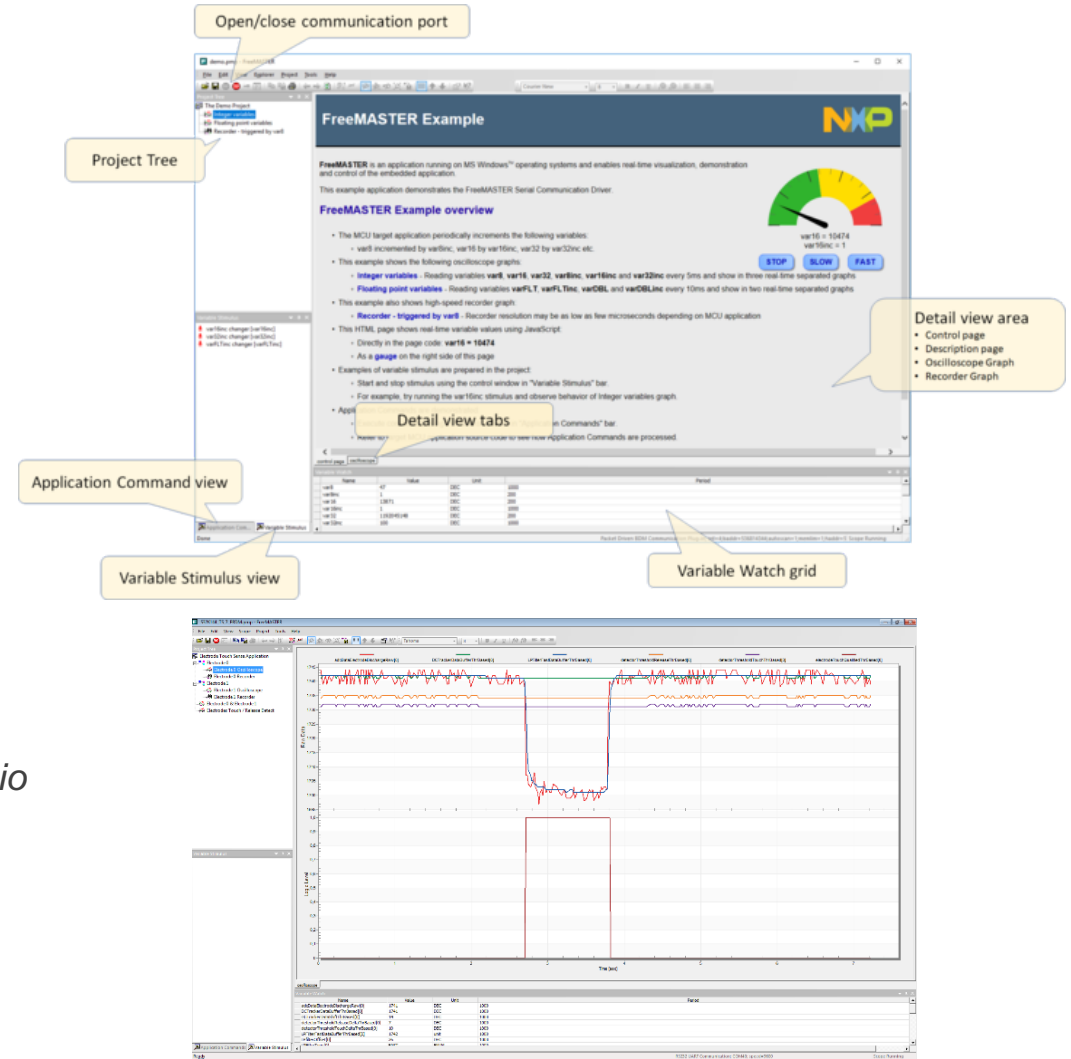
*FreeMASTER Communication Driver
(minimal changes to application)*



Feature Rich

Features:

- **Graphical environment** with easy-to-understand navigation
- Wide range of **serial and debug probe** connectivity options
- FreeMASTER Lite service enabling **remote access** to target system
- Interfacing to 3rd party applications using **ActiveX or JSON-RPC API**
- **Non-intrusive real-time** access to application variables
- **Visualization** of real-time data in the scope window
- Acquisition of fast data changes using the **on-target recorder**
- Demo mode with **password protection** support
- Communication **diagnostics and logging**
- Integration with NXP tools ecosystem: ready to use examples inside MCUXpresso SDK, Model-Based Design Toolboxes and S32 Design Studio



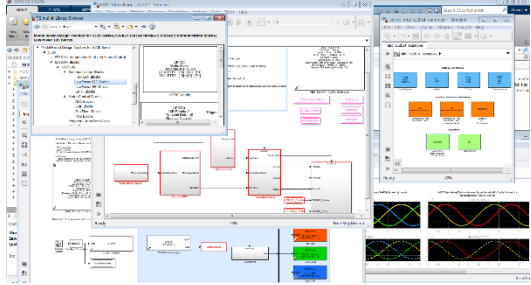
Ecosystem Support

DEVELOP

DEPLOY

VISUALIZE

Mode Based Design Toolbox



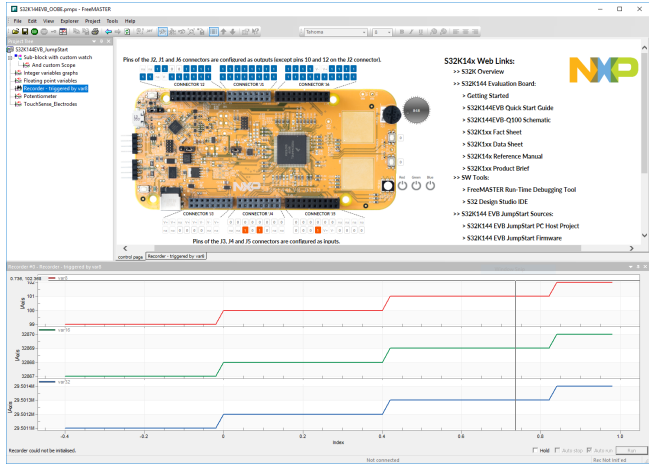
Code Generation From Model Based Design Toolbox

EDGE / AP Evaluation Kits



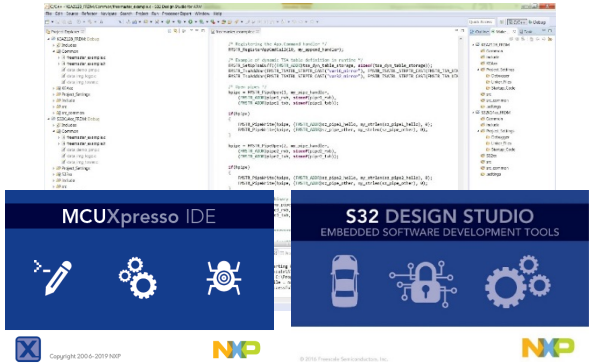
S32K144

FreeMASTER

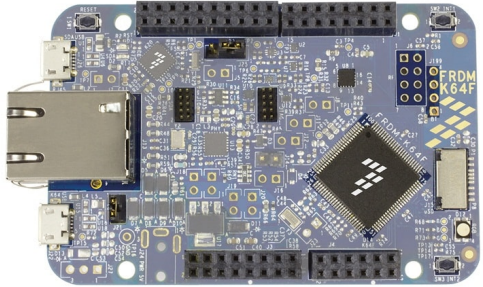


Load FreeMASTER project for demo, fine tuning or validation of the embedded application

MCUXpresso / S32 Design Studio



Generate Simple Models Based on SDK



General Purpose Arm Cortex-M based MCUs



FreeMASTER

Market leading data visualization and control from NXP

- ✓ *Unique NXP technology*
- ✓ *Graphical environment with easy-to-understand navigation*
- ✓ *Wide range of serial and debug probe connectivity options*
- ✓ *Enables HMI design enablement*
- ✓ *Real-time access to application variables*
- ✓ *Model Based Design Toolbox, MCUXpresso and S32 Design Studio integration*
- ✓ *Ready to use examples*
- ✓ *Free of charge*

Useful Links

NXP website:
Documentation & Downloads

The screenshot shows the NXP website page for the FreeMASTER Run-Time Debugging Tool. The navigation bar includes 'Products', 'Applications', 'Design', 'Support', and 'Company'. The breadcrumb trail is 'Software > Development Software > FreeMASTER Run-Time Debugging Tool'. The main heading is 'FREEMASTER: FreeMASTER Run-Time Debugging Tool'. Below the heading are tabs for 'OVERVIEW', 'BUY/PARAMETRICS', 'DOCUMENTATION', 'DOWNLOADS', and 'DEVELOPMENT TOOLS'. The 'OVERVIEW' tab is active, showing an overview of the tool and a list of features: Real-Time Data Monitoring, Control Panels, Host communication options, and Development platforms integration. There are also buttons for 'User Guide' and 'Download'.

nxp.com/freemaster

Engineering Community:
Examples and Support

The screenshot shows the NXP Engineering Community page for FreeMASTER. The navigation bar includes 'Home', 'Content', 'Places', 'News', and 'Go to nxp.com'. The main heading is 'COMMUNITY'. Below the heading are tabs for 'Home', 'Content', 'Places', 'News', and 'Go to nxp.com'. The 'Content' tab is active, showing a list of recommended content. The list includes three items: 'Read/Write Eeprom in HCS12X using Processor Expert', 'FS6500 monitoring FCCU flag IO_23_FS have error reaction', and 'Flash program on S32K142'. Each item has a title, author, latest activity, and view counts.

community.nxp.com/community/freemaster

ASK YOUR QUESTIONS!

