

*Preliminary Brochure*

# RAppID ToolBox

## ( Enabling the “rapid” in Rapid Prototyping)

**REDUCE DEVELOPMENT TIME!**

**RAppID** ToolBox is an add-on library, for Matlab/Simulink, of configurable low level drivers for the MPC55XX peripherals. The ToolBox enables you to *quickly* take your control algorithm models directly onto your MPC55XX target board.

**Enhance** the performance of your control algorithms by using the **target optimized** code blocks for DSP functions like IIR, FIR, FFT. Measure performance of your algorithms by utilizing the **profiler** block function.

The blocksets are seamlessly integrated into automatic code generators like Real Time Workshop, Embedded Coder And TargetLink.



The **RAppID** initialization tool is also seamlessly integrated into the Matlab/Simulink environment.

**Product Highlights:**

- **Configurable Blocks for peripheral low level drivers:**
  - Queued Analog to Digital Conversion Block with Trigger Function - Single & continuous scan modes.
  - eMIOS Block, one per Channel with mode based driver functions and trigger functions.
  - Serial Peripheral Interface Block
  - eTPU Interface blocks for registered eTPU API functions.
  - CAN Interface block along with CAN packing and unpacking blocks
    - Full Buffer Initialization Support Transmit at Thread rate,
    - Receive using IRQ function
    - XCP Protocol Support for interfacing with Calibration Tools
  - Interface for digital I/O with pin conflict checks.
- ***The Peripheral Blocks seamlessly leverage the Interrupt and DMA capabilities of the processor.***
- **Target optimized blocks that leverage SIMD**
  - Fast Fourier Transform (FFT) Block
  - Infinite Impulse Response (IIR) Filter Block
  - Finite Impulse Response (FIR) Filter Block
- ***These blocks are Simulatable and you chose - C code or assembly!***
- **Embedded Targets**
  - Support for DIAB, GHS & Freescale compilers.
  - Generic Scheduler Target with multi-rate, synch./asynch. Task support.
  - OSEK Target : Freescale OSEK Turbo
  - Built-in consistency checks between target & model
- **On Target Profiling Support:**
  - Function profiling
  - Task Profiling
  - Profiling Data communicated back over SCI

**SYSTEM REQUIREMENTS**

Microsoft Windows NT, 2000 and XP  
 512 MB RAM recommended  
 Minimum 1 GHz processor recommended  
 Standard screen resolutions supported

Compatible with  
 Matlab Version R14sp1, R14sp2, R14sp3, and R2006a.  
 TargetLink Version 2.1  
 RAppID Version 1.1.1

# RAppID ToolBox ... Target Rapid Prototyping is a just a Click Away !

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rappid\_demo

File Edit View Simulation Format Tools Help

Model Browser

- rappid\_demo
  - CAN Models
  - EMIOS Models
  - EQADC Models
  - ESCI Models
  - ETPU Models
  - GPIO Models
  - Optimized Block Models
  - OSEK Target Example
  - Profiler Block Models
  - RAppID Init Block
  - Simple Target Example

MPC5554 Peripheral Demonstration Models

- FlexCAN2 Interface Block Examples
- CAN Models
- ESCI Interface Block Examples
- ESCI Models

The RAppID Toolbox Demo Library provides examples of every block and target to reduce your learning curve on the tool & the processor.

- Profiler Block Models
- Profiler Block Examples
- Optimized Block Example Models
- SMD Optimized Examples

RAppID-FIR Filter Designer :FIR Filter2

RAppID-IIR Filter Designer :Intuitive GUI for Filter Design

Magnitude (dB) vs Frequency (kHz) plots showing filter responses. The IIR plot includes a legend for Desired Response, Butterworth, Elliptical, Chebyshev 1, and Chebyshev 2.

**You don't have to be a DSP expert to use our Target Optimized DSP Blocks. But our filter designer block will make you look like one!**

Filter Order: 128, Samp Freq: 100

Filter Order	Samp Freq	Passband	Stopband	Passband Rp	stopBand Rp	Frame Size	Scalefactor
2	12	0.8	1.5	0.2	40	1024	64

**Profiler Block**

0:3{1}

Profiler Setup : eSCI\_A  
Baud Rate : 57600 bps

Profiler Setup

Block Parameters: Profiler Setup

PROFILE\_SETUP (mask) (link)  
Profile Interface Function - Sets up the Serial Communications Interface (eSCI) for the profiler function back to a host terminal.

Parameters

Select SCI Module for Transmit: eSCI\_A

Select the Baud Rate: 57600

OK Cancel Help Apply

### What our Customers are saying about the RAppID Toolbox:

"The RAppID toolbox is helping us to achieve our goal of moving concepts from research to production intent – and bridging some of the gaps in the tool chain."

-A Major Industrial Company Engineer

### Ordering and Contact Information

**Part Number: VG-ToolBox5554-SW**

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