

## Product Details

Show Product  
Product Name :  
GangPro-ARM

PN :  
GP-ARM

Description :  
Gang Programmer for all ARM MCUs supported by Elprotronic Inc. (USB-FPA 6.1).

## Product Features



**Need a Socket Board? Check out: QFP-144, QFP-100, QFP-80, QFP-64, QFP-48, QFP-32, QFN-64, QFN-48, QFN-32.**

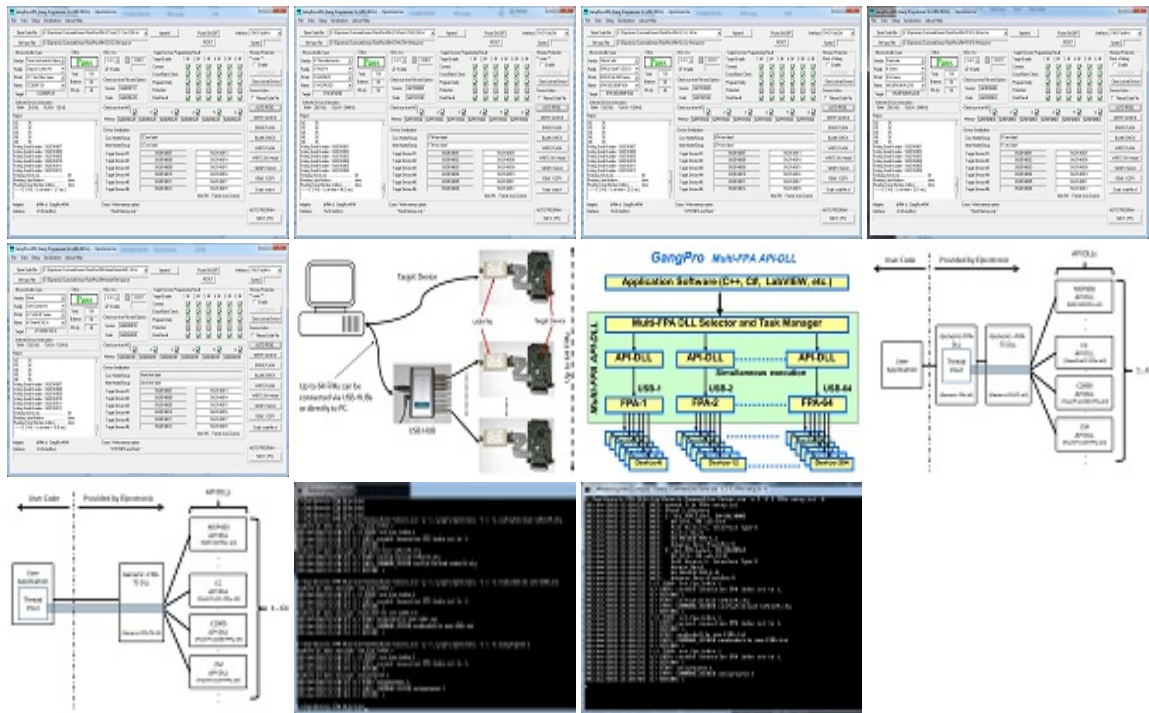
**Need Isolation? Connect this between your PC and programmer: USB 2.0 FS Isolator.**

- Supports Joint Test Action Group (JTAG, cJTAG), and Serial-Wire-Debug (SWD) communication.
- Programs MCUs from Texas Instruments, ST Microelectronics, Silicon Labs, Active-Semi, Freescale, and Atmel (See MCU list below).
- Six (6) MCUs can be programmed simultaneously using one programmer.
- Up to 64 programmers can be connected over USB to one PC running Windows(TM) ME, 2000, XP, 7, 8, 10.
- Easy to use GUI allows the user to configure all necessary options with ease.
- Extensive Memory options including select erase, program, verify. Select flash data can be retained across programming sequences.
- Supports full/segment erase, blank check, write and verify of code using one Auto Program function or separate functions for easy customization.
- **Faster Adapter with built-in Isolation: GangPro-ARM(XS).**
- This product provides the full functionality of the **GangPro-ARM-TI, GangPro-ARM-STM, GangPro-ARM-SL, GangPro-ARM-FS, and GangPro-ARM-AT.**
- **DLL and Command-Line support.**
- C++ and C# code examples provided.
- FCC and CE certified.

**Package contains:**

- **USB-FPA 6.1 programming adapter,**

- USB cable,
  - FPA to ARM 14-pin to 20-pin adapter and ribbon cable,
  - Software for adapter available for download from Product Data.
- One Year Warranty (see Product Data).



## Product Details

PC Communication Interface:	Full Speed USB-2.0 (12 Mb/s)
USB connectors	Adapter site: USB-type B, Computer site: USB-type A
Target connector	14-pin connector.
DC Power Consumption from USB	+5 V +/- 20%, up to 300 mA
Target Device DC supply - external - from programming adapter	+1.8 V to 4.0 V +1.8 V to 4.0 V in step 0.1 V, up to 200 mA
DC Isolation (PC and Target Device)	None
Adapter Physical Dimensions	78 x 43 x 21 mm ( 3.10 x 1.67 x 0.81 inch )
Verification Compliance	CE ( European CISPR 22 and EN 55022 ). FCC Part 15, Subpart B- Class B Unintentional Radiators for Uses in Home,

## Communication:

- Full Speed USB 2.0 (12 Mb/s) communication interface.
- Effective throughput via JTAG/SWD - over 50 kB/s per target (up to 6).

- Selectable JTAG/SWD communication speed - 4 Mb/s, 1 Mb/s or 400 kb/s allows to communicate with the target device even if the ESD protection components have been added to the JTAG lines.

#### **Code File:**

- No code size limitations.
- Code formats can be TI (\*.txt), Motorola (\*.srec, \*.s19, \*.s28, \*.s37), Intel and TI-CCS (\*.hex, \*.bin) for programming.

#### **Dynamic Link Library support:**

- API-DLL provided for easy integration with user application.
- Multi-FPA DLL allows control of up to 64 programmers simultaneously using broadcast-style commands from one user application.
- Generic-FPA DLL allows thread-safe control of up to 64 programmers of any type (MSP, CC, C2000, ARM) using independent threads from one user application.
- Command-Line tool allows easy programming with scripts. In addition, provided executables allow programming adapters connected to the host computer to be controlled remotely over the network.

#### **Protection:**

- Memory protection options for per-page protection and overall debug access disable.
- Unlock device capability for full erase even after debug access disable (if supported by MCU).

#### **Miscellaneous:**

- User defined programming sequence uses script file. No programming technique and language knowledge is required.
- Open/Save Project with encryption and password protection.
- Target device can be powered from the programming adapter (programmable Vcc from 1.6 V to 3.7 V step 0.1 V) or from external source (1.6 V to 3.7 V)).
- Defined Check Sum calculation (Sum, CRC16, CRC32). Up to four CS banks can be specified.
- Open/Save Project with encryption and password protection.
- Lock setup capability in GUI, useful in production.
- Unique serial number assign capability. Software package can assign and automatically increment the serial number, model type and revision. Serial number with or without an automatically inserted current date can be stored in flash memory in HEX, BCD or ASCII format. The serial number can be assigned from a user defined list in a file.
- Serial number can be read from the bar code using Bar-Code Scanner and saved in the target's device flash.
- Log file capability allowing to review information about the flashed target devices.

#### **MCU List:**

##### **Texas Instruments' Stellaris Cortex M3:**

LM3S101, LM3S102, LM3S300, LM3S301, LM3S308, LM3S310, LM3S315, LM3S316, LM3S317, LM3S328, LM3S600, LM3S601, LM3S608, LM3S610, LM3S611, LM3S612, LM3S613, LM3S615, LM3S617, LM3S618, LM3S628, LM3S800, LM3S801, LM3S808, LM3S811, LM3S812, LM3S815, LM3S817, LM3S818, LM3S828, LM3S1110, LM3S1133, LM3S1138, LM3S1150, LM3S1162, LM3S1165, LM3S1166, LM3S1332, LM3S1435, LM3S1439, LM3S1512, LM3S1538, LM3S1601, LM3S1607, LM3S1608, LM3S1620, LM3S1621, LM3S1625, LM3S1626, LM3S1627, LM3S1635, LM3S1636, LM3S1637, LM3S1651, LM3S1751, LM3S1776, LM3S1811, LM3S1816, LM3S1850, LM3S1911, LM3S1918, LM3S1937, LM3S1958, LM3S1960, LM3S1968, LM3S1969, LM3S1B21, LM3S1C21, LM3S1C26, LM3S1C58, LM3S1D21, LM3S1D26, LM3S1F11, LM3S1F16, LM3S1G21, LM3S1G58, LM3S1H11, LM3S1H16,

LM3S1J11, LM3S1J16, LM3S1N11, LM3S1N16, LM3S1P51, LM3S1R21, LM3S1R26, LM3S1W16, LM3S1Z16, LM3S2110, LM3S2139, LM3S2276, LM3S2410, LM3S2412, LM3S2432, LM3S2533, LM3S2601, LM3S2608, LM3S2616, LM3S2620, LM3S2637, LM3S2651, LM3S2671, LM3S2678, LM3S2730, LM3S2739, LM3S2776, LM3S2793, LM3S2911, LM3S2918, LM3S2939, LM3S2948, LM3S2950, LM3S2965, LM3S2B93, LM3S2D93, LM3S2U93, LM3S3634, LM3S3651, LM3S3654, LM3S3739, LM3S3748, LM3S3749, LM3S3826, LM3S3J26, LM3S3N26, LM3S3W26, LM3S3Z26, LM3S5632, LM3S5651, LM3S5652, LM3S5656, LM3S5662, LM3S5732, LM3S5737, LM3S5739, LM3S5747, LM3S5749, LM3S5752, LM3S5762, LM3S5791, LM3S5951, LM3S5956, LM3S5B91, LM3S5C31, LM3S5C36, LM3S5C51, LM3S5C56, LM3S5D51, LM3S5D56, LM3S5D91, LM3S5G31, LM3S5G36, LM3S5G51, LM3S5G56, LM3S5K31, LM3S5K36, LM3S5P31, LM3S5P36, LM3S5P3B, LM3S5P51, LM3S5P56, LM3S5R31, LM3S5R36, LM3S5T36, LM3S5U91, LM3S5Y36, LM3S6100, LM3S6110, LM3S6420, LM3S6422, LM3S6432, LM3S6537, LM3S6610, LM3S6611, LM3S6618, LM3S6633, LM3S6637, LM3S6730, LM3S6753, LM3S6911, LM3S6918, LM3S6938, LM3S6950, LM3S6952, LM3S6965, LM3S6C11, LM3S6C65, LM3S6G11, LM3S6G65, LM3S8530, LM3S8538, LM3S8630, LM3S8730, LM3S8733, LM3S8738, LM3S8930, LM3S8933, LM3S8938, LM3S8962, LM3S8970, LM3S8971, LM3S8C62, LM3S8G62, LM3S9781, LM3S9790, LM3S9792, LM3S9971, LM3S9997, LM3S9B81, LM3S9B90, LM3S9B92, LM3S9B95, LM3S9B96, LM3S9BN2, LM3S9BN5, LM3S9BN6, LM3S9C97, LM3S9CN5, LM3S9D81, LM3S9D90, LM3S9D92, LM3S9D95, LM3S9D96, LM3S9DN5, LM3S9DN6, LM3S9G97, LM3S9GN5, LM3S9L71, LM3S9L97, LM3S9U81, LM3S9U90, LM3S9U92, LM3S9U95, LM3S9U96

## Texas Instruments' Stellaris Cortex M4:

LM4F110B2QR, LM4F110C4QR, LM4F110E5QR, LM4F110H5QR, LM4F111B2QR, LM4F111C4QR, LM4F111E5QR, LM4F111H5QR, LM4F112C4QC, LM4F112E5QC, LM4F112H5QC, LM4F112H5QD, LM4F120B2QR, LM4F120C4QR, LM4F120E5QR, LM4F120H5QR, LM4F121B2QR, LM4F121C4QR, LM4F121E5QR, LM4F121H5QR, LM4F122C4QC, LM4F122E5QC, LM4F122H5QC, LM4F122H5QD, LM4F130C4QR, LM4F130E5QR, LM4F130H5QR, LM4F131C4QR, LM4F131E5QR, LM4F131H5QR, LM4F132C4QC, LM4F132E5QC, LM4F132H5QC, LM4F132H5QD, LM4F210E5QR, LM4F210H5QR, LM4F211E5QR, LM4F211H5QR, LM4F212E5QC, LM4F212H5BB, LM4F212H5QC, LM4F212H5QD, LM4F230E5QR, LM4F230H5QR, LM4F231E5QR, LM4F231H5QR, LM4F232E5QC, LM4F232H5BB, LM4F232H5QC, LM4F232H5QD

## Texas Instruments' TIVA-C Cortex M4:

TM4C1230C3PM, TM4C1230D5PM, TM4C1230E6PM, TM4C1230H6PM, TM4C1231C3PM, TM4C1231D5PM, TM4C1231D5PZ, TM4C1231E6PM, TM4C1231E6PZ, TM4C1231H6PGE, TM4C1231H6PM, TM4C1231H6PZ, TM4C1232C3PM, TM4C1232D5PM, TM4C1232E6PM, TM4C1232H6PM, TM4C1233C3PM, TM4C1233D5PM, TM4C1233D5PZ, TM4C1233E6PM, TM4C1233E6PZ, TM4C1233H6PGE, TM4C1233H6PM, TM4C1233H6PZ, TM4C1236D5PM, TM4C1236E6PM, TM4C1236H6PM, TM4C1237D5PM, TM4C1237D5PZ, TM4C1237E6PM, TM4C1237E6PZ, TM4C1237H6PGE, TM4C1237H6PM, TM4C1237H6PZ, TM4C123AE6PM, TM4C123AH6PM, TM4C123BE6PM, TM4C123BE6PZ, TM4C123BH6PGE, TM4C123BH6PM, TM4C123BH6PZ, TM4C123BH6ZRB, TM4C123FE6PM, TM4C123FH6PM, TM4C123GE6PM, TM4C123GE6PZ, TM4C123GH6PGE, TM4C123GH6PM, TM4C123GH6PZ, TM4C123GH6ZRB, TM4C123GH6ZXR, TM4C1290NCPDT, TM4C1290NCZAD, TM4C1292NCPDT, TM4C1292NCZAD, TM4C1294KCPDT, TM4C1294NCPDT, TM4C1294NCZAD, TM4C1297NCZAD, TM4C1299KZAD, TM4C1299NCZAD, TM4C1299NCPDT, TM4C1299CNCZAD, TM4C1299DNCZAD, TM4C1299ECPDT, TM4C1299KCPDT, TM4C1299KZAD, TM4C1299NCZAD, TM4C1299NCPDT, TM4C1299CNCZAD, TM4C1299DNCZAD, TM4C1299ECPDT, TM4C1299KCPDT, TM4C1299KZAD, TM4C1299NCZAD, TM4C1299NCPDT

## Texas Instruments' MSP432 Cortex M4:

MSP432P401R, MSP432P401R-revB, MSP432P401M

## Texas Instruments' Wireless MCU Cortex M3:

CC2538F128, CC2538F256, CC2538F512, CC2650F128, CC2640F128, CC2630F128, CC2620F128, CC1350F128, CC1310F128, CC1310F64, CC1310F32

## ST Microelectronics' STM32-L0:

STM32L011D3, STM32L011D4, STM32L011E3, STM32L011E4, STM32L011F3, STM32L011F4, STM32L011G3, STM32L011G4, STM32L011K3, STM32L011K4, STM32L021D4, STM32L021F4, STM32L021G4, STM32L021K4, STM32L031C4, STM32L031C6, STM32L031E4, STM32L031E6, STM32L031F4, STM32L031F6, STM32L031G4, STM32L031G6, STM32L031K4, STM32L031K6, STM32L041C6, STM32L041F6, STM32L041G6, STM32L041K6, STM32L051C6, STM32L051C8, STM32L051K6, STM32L051K8, STM32L051R6, STM32L051R8, STM32L051T6, STM32L051T8, STM32L071C8, STM32L071CB, STM32L071CZ, STM32L071K8, STM32L071KB, STM32L071KZ, STM32L071RB, STM32L071RZ, STM32L071V8, STM32L071VB, STM32L071VZ, STM32L081KZ, STM32L052C6, STM32L052C8, STM32L052K6, STM32L052K8, STM32L052R6, STM32L052R8, STM32L052T6, STM32L052T8, STM32L062K8, STM32L072CB, STM32L072CZ, STM32L072KB, STM32L072KZ, STM32L072RB, STM32L072RZ, STM32L072VB, STM32L072VZ, STM32L082KB, STM32L082KZ, STM32L053C6, STM32L053C8, STM32L053R6, STM32L053R8, STM32L063C8, STM32L063R8, STM32L073CB, STM32L073CZ, STM32L073RB, STM32L073RZ, STM32L073V8, STM32L073VB, STM32L073VZ, STM32L083CB, STM32L083CZ, STM32L083RB, STM32L083RZ, STM32L083V8, STM32L083VB, STM32L083VZ

## ST Microelectronics' STM32-L1:

STM32L100C6, STM32L100R8, STM32L100RB, STM32L100C6-A, STM32L100R8-A, STM32L100RB-A, STM32L100RC, STM32L151C6, STM32L151C8, STM32L151CB, STM32L151R6, STM32L151R8, STM32L151RB, STM32L151V8, STM32L151VB, STM32L151C6-A, STM32L151C8-A, STM32L151CB-A, STM32L151R6-A, STM32L151R8-A, STM32L151RB-A, STM32L151V8-A, STM32L151VB-A, STM32L151CC, STM32L151UC, STM32L151RC, STM32L151RC-A, STM32L151VC, STM32L151VC-A, STM32L151QC, STM32L151ZC, STM32L151RD, STM32L151VD, STM32L151QD, STM32L151ZD, STM32L151QE, STM32L151RE, STM32L151VE, STM32L151ZE, STM32L151VD-X, STM32L152C6, STM32L152C8, STM32L152CB, STM32L152R6, STM32L152R8, STM32L152RB, STM32L152V8, STM32L152VB, STM32L152C8-A, STM32L152C6-A, STM32L152CB-A, STM32L152R6-A, STM32L152R8-A, STM32L152RB-A, STM32L152V8-A, STM32L152VB-A, STM32L152CC, STM32L152RC, STM32L152RC-A, STM32L152VC, STM32L152VC-A, STM32L152QC, STM32L152ZC, STM32L152RD, STM32L152QD, STM32L152ZD, STM32L152ZD, STM32L152QE, STM32L152RE, STM32L152ZE, STM32L152ZD, STM32L162QD, STM32L162RC, STM32L162RC-A, STM32L162RD, STM32L162RE, STM32L162VC, STM32L162VC-A, STM32L162VD, STM32L162VD-X, STM32L162VE, STM32L162ZD, STM32L162ZE

## ST Microelectronics' STM32-L4:

STM32L431CB, STM32L431CC, STM32L431KB, STM32L431KC, STM32L431RB, STM32L431RC, STM32L431VC, STM32L471QE, STM32L471QG, STM32L471RE, STM32L471RG, STM32L471VE, STM32L471VG, STM32L471ZE, STM32L471ZG, STM32L432KB,

STM32L432KC, STM32L442KC, STM32L433CB, STM32L433CC, STM32L433RB, STM32L433RC, STM32L433VC, STM32L443CC, STM32L443RC, STM32L443VC, STM32L475RC, STM32L475RE, STM32L475RG, STM32L475VC, STM32L475VE, STM32L475VG, STM32L476JE, STM32L476JG, STM32L476ME, STM32L476MG, STM32L476QE, STM32L476QJ, STM32L476RC, STM32L476RE, STM32L476RG, STM32L476VC, STM32L476VE, STM32L476VG, STM32L476ZE, STM32L476ZG, STM32L486JG, STM32L486QG, STM32L486RG, STM32L486VG, STM32L486ZG

### ST Microelectronics' STM32-F0:

STM32F030C6, STM32F030C8, STM32F030CC, STM32F030F4, STM32F030K6, STM32F030R8, STM32F030RC, STM32F070C6, STM32F070CB, STM32F070F6, STM32F070RB, STM32F031C4, STM32F031C6, STM32F031E6, STM32F031F4, STM32F031F6, STM32F031G4, STM32F031G6, STM32F031K4, STM32F031K6, STM32F051C4, STM32F051C6, STM32F051C8, STM32F051K4, STM32F051K6, STM32F051K8, STM32F051R4, STM32F051R6, STM32F051R8, STM32F051T8, STM32F071CB, STM32F071RB, STM32F071V8, STM32F071VB, STM32F091CB, STM32F091CC, STM32F091RB, STM32F091RC, STM32F091VB, STM32F091VC, STM32F042C4, STM32F042C6, STM32F042F4, STM32F042F6, STM32F042G4, STM32F042G6, STM32F042K4, STM32F042K6, STM32F042T6, STM32F072C8, STM32F072CB, STM32F072R8, STM32F072RB, STM32F072V8, STM32F072VB, STM32F038C6, STM32F038E6, STM32F038F6, STM32F038G6, STM32F038K6, STM32F048C6, STM32F048G6, STM32F048T6, STM32F058C8, STM32F058R8, STM32F058T8, STM32F078CB, STM32F078RB, STM32F078VB, STM32F098CC, STM32F098RC, STM32F098VC

### ST Microelectronics' STM32-F1:

STM32F100C4, STM32F100C6, STM32F100C8, STM32F100CB, STM32F100R4, STM32F100R6, STM32F100R8, STM32F100RB, STM32F100RC, STM32F100RD, STM32F100RE, STM32F100V8, STM32F100VB, STM32F100VC, STM32F100VD, STM32F100VE, STM32F100ZC, STM32F100ZD, STM32F100ZE, STM32F101C4, STM32F101C6, STM32F101C8, STM32F101CB, STM32F101R4, STM32F101R6, STM32F101R8, STM32F101RB, STM32F101RC, STM32F101RD, STM32F101RE, STM32F101RF, STM32F101RG, STM32F101T4, STM32F101T6, STM32F101T8, STM32F101TB, STM32F101V8, STM32F101VB, STM32F101VC, STM32F101VD, STM32F101VE, STM32F101VF, STM32F101VG, STM32F101VZ, STM32F101ZC, STM32F101ZD, STM32F101ZE, STM32F101ZF, STM32F101ZG, STM32F102C4, STM32F102C6, STM32F102C8, STM32F102CB, STM32F102R4, STM32F102R6, STM32F102R8, STM32F102RB, STM32F103C4, STM32F103C6, STM32F103C8, STM32F103CB, STM32F103R4, STM32F103R6, STM32F103R8, STM32F103RB, STM32F103RC, STM32F103RD, STM32F103RE, STM32F103RF, STM32F103RG, STM32F103T4, STM32F103T6, STM32F103T8, STM32F103TB, STM32F103V8, STM32F103VB, STM32F103VC, STM32F103VD, STM32F103VE, STM32F103VF, STM32F103VG, STM32F103ZC, STM32F103ZD, STM32F103ZE, STM32F103ZF, STM32F103ZG, STM32F105R8, STM32F105RB, STM32F105RC, STM32F105V8, STM32F105VB, STM32F105VC, STM32F107RB, STM32F107RC, STM32F107VB, STM32F107VC

### ST Microelectronics' STM32-F2:

STM32F205RB, STM32F205RC, STM32F205RE, STM32F205RF, STM32F205RG, STM32F205VB, STM32F205VC, STM32F205VE, STM32F205VF, STM32F205VG, STM32F205ZC, STM32F205ZE, STM32F205ZF, STM32F205ZG, STM32F215RE, STM32F215RG, STM32F215VE, STM32F215VG, STM32F215ZE, STM32F215ZG, STM32F207IC, STM32F207IE, STM32F207IF, STM32F207IG, STM32F207VC, STM32F207VE, STM32F207VF, STM32F207VG, STM32F207ZC, STM32F207ZE, STM32F207ZF, STM32F207ZG, STM32F217IE, STM32F217IG, STM32F217VE, STM32F217VG, STM32F217ZE, STM32F217ZG

### ST Microelectronics' STM32-F3:

STM32F301C6, STM32F301C8, STM32F301K6, STM32F301K8, STM32F301R6, STM32F301R8, STM32F302C6, STM32F302C8, STM32F302CB, STM32F302CC, STM32F302K6, STM32F302K8, STM32F302R6, STM32F302R8, STM32F302RB, STM32F302RC, STM32F302RD, STM32F302RE, STM32F302VB, STM32F302VC, STM32F302VD, STM32F302VE, STM32F302ZD, STM32F302ZE, STM32F303C6, STM32F303C8, STM32F303CB, STM32F303CC, STM32F303K6, STM32F303K8, STM32F303R6, STM32F303R8, STM32F303RB, STM32F303RC, STM32F303RD, STM32F303RE, STM32F303VB, STM32F303VC, STM32F303VD, STM32F303VE, STM32F303ZD, STM32F303ZE, STM32F313CC, STM32F313RC, STM32F313VC, STM32F318C8, STM32F318K8, STM32F328C8, STM32F334C4, STM32F334C6, STM32F334C8, STM32F334K4, STM32F334K6, STM32F334K8, STM32F334K8, STM32F358CC, STM32F358RC, STM32F358VC, STM32F373C8, STM32F373CB, STM32F373CC, STM32F373R8, STM32F373RB, STM32F373RC, STM32F373V8, STM32F373VB, STM32F373VC, STM32F378CC, STM32F378RC, STM32F378VC, STM32F383CC, STM32F383RC, STM32F383VC, STM32F398VE

### ST Microelectronics' STM32-F4:

STM32F401CB, STM32F401CC, STM32F401CD, STM32F401CE, STM32F401RB, STM32F401RC, STM32F401RD, STM32F401RE, STM32F401VB, STM32F401VC, STM32F401VD, STM32F401VE, STM32F405OE, STM32F405OG, STM32F405RG, STM32F405VG, STM32F405ZG, STM32F415OG, STM32F415RG, STM32F415VG, STM32F415ZG, STM32F407IE, STM32F407IG, STM32F407VE, STM32F407VG, STM32F407ZE, STM32F407ZG, STM32F417IE, STM32F417IG, STM32F417VE, STM32F417VG, STM32F417ZE, STM32F417ZG, STM32F410C8, STM32F410CB, STM32F410R8, STM32F410RB, STM32F410T8, STM32F410TB, STM32F411CC, STM32F411CE, STM32F411RC, STM32F411RE, STM32F411VC, STM32F411VE, STM32F412CE, STM32F412CG, STM32F412RE, STM32F412RG, STM32F412VE, STM32F412VG, STM32F412ZE, STM32F412ZG, STM32F427AG, STM32F427AI, STM32F427IG, STM32F427II, STM32F427V, STM32F427VI, STM32F427ZG, STM32F427ZI, STM32F437AI, STM32F437IG, STM32F437II, STM32F437VG, STM32F437VI, STM32F437ZG, STM32F437ZI, STM32F429AG, STM32F429AI, STM32F429BE, STM32F429BG, STM32F429BI, STM32F429IE, STM32F429IG, STM32F429II, STM32F429NE, STM32F429NG, STM32F429NI, STM32F429VE, STM32F429VG, STM32F429VI, STM32F429ZE, STM32F429ZG, STM32F429ZI, STM32F439AI, STM32F439BG, STM32F439BI, STM32F439IG, STM32F439II, STM32F439NG, STM32F439NI, STM32F439VG, STM32F439VI, STM32F439ZG, STM32F439ZI, STM32F446MC, STM32F446ME, STM32F446RC, STM32F446RE, STM32F446VC, STM32F446VE, STM32F446ZC, STM32F446ZE, STM32F469AE, STM32F469AG, STM32F469AI, STM32F469BE, STM32F469BG, STM32F469BI, STM32F469IE, STM32F469IG, STM32F469II, STM32F469NG, STM32F469NI, STM32F469VI, STM32F469ZI, STM32F479AG, STM32F479AI, STM32F479BG, STM32F479BI, STM32F479IG, STM32F479II, STM32F479NG, STM32F479NI, STM32F479VG, STM32F479VI

### ST Microelectronics' STM32-F7:

STM32F745IE, STM32F745IG, STM32F745VE, STM32F745VG, STM32F745ZE, STM32F745ZG, STM32F746BE, STM32F746BG, STM32F746IE, STM32F746IG, STM32F746NE, STM32F746NG, STM32F746VE, STM32F746VG, STM32F746ZE, STM32F746ZG, STM32F756BG, STM32F756IG, STM32F756NG, STM32F756VG, STM32F756ZG, STM32F765BG, STM32F765BI, STM32F765IG,

STM32F765II, STM32F765NG, STM32F765NI, STM32F765VG, STM32F765VI, STM32F765ZG, STM32F765ZI, STM32F767BG, STM32F767BI, STM32F767IG, STM32F767II, STM32F767NG, STM32F767NI, STM32F767VG, STM32F767VI, STM32F767ZG, STM32F767ZI, STM32F769AI, STM32F769BG, STM32F769BI, STM32F769IG, STM32F769II, STM32F769NG, STM32F769NI, STM32F777BI, STM32F777II, STM32F777NI, STM32F777VI, STM32F777ZI, STM32F778AI, STM32F779AI, STM32F779BI, STM32F779II, STM32F779NI

## Silicon Labs' EFM32 Zero Gecko:

EFM32ZG108F4, EFM32ZG108F8, EFM32ZG108F16, EFM32ZG108F32, EFM32ZG110F4, EFM32ZG110F8, EFM32ZG110F16, EFM32ZG110F32, EFM32ZG210F4, EFM32ZG210F8, EFM32ZG210F16, EFM32ZG210F32, EFM32ZG222F4, EFM32ZG222F8, EFM32ZG222F16, EFM32ZG222F32

## Silicon Labs' EFM32 Happy Gecko:

EFM32HG108F32, EFM32HG108F64, EFM32HG110F32, EFM32HG110F64, EFM32HG210F32, EFM32HG210F64, EFM32HG222F32, EFM32HG222F64, EFM32HG308F32, EFM32HG308F64, EFM32HG309F32, EFM32HG309F64, EFM32HG310F32, EFM32HG310F64, EFM32HG321F32, EFM32HG321F64, EFM32HG322F32, EFM32HG322F64, EFM32HG350F32, EFM32HG350F64

## Silicon Labs' EFM32 Tiny Gecko:

EFM32TG108F4, EFM32TG108F8, EFM32TG108F16, EFM32TG108F32, EFM32TG110F4, EFM32TG110F8, EFM32TG110F16, EFM32TG110F32, EFM32TG210F8, EFM32TG210F16, EFM32TG210F32, EFM32TG222F8, EFM32TG222F16, EFM32TG222F32, EFM32TG225F8, EFM32TG225F16, EFM32TG225F32, EFM32TG230F8, EFM32TG230F16, EFM32TG230F32, EFM32TG232F8, EFM32TG232F16, EFM32TG232F32, EFM32TG822F8, EFM32TG822F16, EFM32TG822F32, EFM32TG825F8, EFM32TG825F16, EFM32TG825F32, EFM32TG840F8, EFM32TG840F16, EFM32TG840F32, EFM32TG842F8, EFM32TG842F16, EFM32TG842F32

## Silicon Labs' EFM32 Gecko:

EFM32G200F16, EFM32G200F32, EFM32G200F64, EFM32G210F128, EFM32G222F32, EFM32G222F64, EFM32G222F128, EFM32G230F32, EFM32G230F64, EFM32G230F128, EFM32G232F32, EFM32G232F64, EFM32G232F128, EFM32G280F32, EFM32G280F64, EFM32G280F128, EFM32G290F32, EFM32G290F64, EFM32G290F128, EFM32G840F32, EFM32G840F64, EFM32G840F128, EFM32G842F32, EFM32G842F64, EFM32G842F128, EFM32G880F32, EFM32G880F64, EFM32G880F128, EFM32G890F32, EFM32G890F64, EFM32G890F128

## Silicon Labs' EFM32 Jade Gecko:

EFM32JG1B100F128, EFM32JG1B100F256, EFM32JG1B200F128, EFM32JG1B200F256

## Silicon Labs' EFM32 Leopard Gecko:

EFM32LG230F64, EFM32LG230F128, EFM32LG230F256, EFM32LG232F64, EFM32LG232F128, EFM32LG232F256, EFM32LG280F64, EFM32LG280F128, EFM32LG280F256, EFM32LG290F64, EFM32LG290F128, EFM32LG290F256, EFM32LG295F64, EFM32LG295F128, EFM32LG295F256, EFM32LG330F64, EFM32LG330F128, EFM32LG330F256, EFM32LG332F64, EFM32LG332F128, EFM32LG332F256, EFM32LG360F64, EFM32LG360F128, EFM32LG360F256, EFM32LG380F64, EFM32LG380F128, EFM32LG380F256, EFM32LG390F64, EFM32LG390F128, EFM32LG390F256, EFM32LG395F64, EFM32LG395F128, EFM32LG395F256, EFM32LG840F64, EFM32LG840F128, EFM32LG840F256, EFM32LG842F64, EFM32LG842F128, EFM32LG842F256, EFM32LG880F64, EFM32LG880F128, EFM32LG880F256, EFM32LG890F64, EFM32LG890F128, EFM32LG890F256, EFM32LG895F64, EFM32LG895F128, EFM32LG895F256, EFM32LG940F64, EFM32LG940F128, EFM32LG940F256, EFM32LG942F64, EFM32LG942F128, EFM32LG942F256, EFM32LG980F64, EFM32LG980F128, EFM32LG980F256, EFM32LG990F64, EFM32LG990F128, EFM32LG990F256, EFM32LG995F64, EFM32LG995F128, EFM32LG995F256

## Silicon Labs' EFM32 Giant Gecko:

EFM32GG230F512, EFM32GG230F1024, EFM32GG232F512, EFM32GG232F1024, EFM32GG280F512, EFM32GG280F1024, EFM32GG290F512, EFM32GG290F1024, EFM32GG295F512, EFM32GG295F1024, EFM32GG330F512, EFM32GG330F1024, EFM32GG332F512, EFM32GG332F1024, EFM32GG380F512, EFM32GG380F1024, EFM32GG390F512, EFM32GG390F1024, EFM32GG395F512, EFM32GG395F1024, EFM32GG840F512, EFM32GG840F1024, EFM32GG842F512, EFM32GG842F1024, EFM32GG880F512, EFM32GG880F1024, EFM32GG890F512, EFM32GG890F1024, EFM32GG895F512, EFM32GG895F1024, EFM32GG940F512, EFM32GG940F1024, EFM32GG942F512, EFM32GG942F1024, EFM32GG980F512, EFM32GG980F1024, EFM32GG990F512, EFM32GG990F1024, EFM32GG995F512, EFM32GG995F1024

## Silicon Labs' EFM32 Pearl Gecko:

EFM32PG1B100F128, EFM32PG1B100F256, EFM32PG1B200F128, EFM32PG1B200F256

## Silicon Labs' EFM32 Wonder Gecko:

EFM32WG230F64, EFM32WG230F128, EFM32WG230F256, EFM32WG232F64, EFM32WG232F128, EFM32WG232F256, EFM32WG280F64, EFM32WG280F128, EFM32WG280F256, EFM32WG290F64, EFM32WG290F128, EFM32WG290F256, EFM32WG295F64, EFM32WG295F128, EFM32WG295F256, EFM32WG330F64, EFM32WG330F128, EFM32WG330F256, EFM32WG332F64, EFM32WG332F128, EFM32WG332F256, EFM32WG360F64, EFM32WG360F128, EFM32WG360F256

EFM32WG380F64, EFM32WG380F128, EFM32WG380F256, EFM32WG390F64, EFM32WG390F128, EFM32WG390F256, EFM32WG395F64, EFM32WG395F128, EFM32WG395F256, EFM32WG840F64, EFM32WG840F128, EFM32WG840F256, EFM32WG842F64, EFM32WG842F128, EFM32WG842F256, EFM32WG880F64, EFM32WG880F128, EFM32WG880F256, EFM32WG890F64, EFM32WG890F128, EFM32WG890F256, EFM32WG895F64, EFM32WG895F128, EFM32WG895F256, EFM32WG940F64, EFM32WG940F128, EFM32WG940F256, EFM32WG942F64, EFM32WG942F128, EFM32WG942F256, EFM32WG980F64, EFM32WG980F128, EFM32WG980F256, EFM32WG990F64, EFM32WG990F128, EFM32WG990F256, EFM32WG995F64, EFM32WG995F128, EFM32WG995F256

## Silicon Labs' SiM3 L1:

SiM3L134, SiM3L136, SiM3L144, SiM3L146, SiM3L154, SiM3L156, SiM3L157, SiM3L164, SiM3L166, SiM3L167

## Silicon Labs' EFR32 Mighty Gecko:

EFR32MG1B132F256, EFR32MG1P132F256, EFR32MG1V132F256, EFR32MG1B232F256, EFR32MG1P232F256

## Silicon Labs' EFR32 Blue Gecko:

EFR32BG1B132F128, EFR32BG1B132F256, EFR32BG1V132F128, EFR32BG1V132F256, EFR32BG1B232F128, EFR32BG1B232F256, EFR32BG1P232F256, EFR32BG1P332F256

## Silicon Labs' EFR32 Flex Gecko:

EFR32FG1P132F64, EFR32FG1P132F128, EFR32FG1P132F256, EFR32FG1V132F32, EFR32FG1V132F64, EFR32FG1V132F128, EFR32FG1V132F256

## Nordic Semiconductor's nRF:

nRF51822-QFAA, nRF51822-CEAA, nRF51822-QFAB, nRF51822-CDAB, nRF51822-QFAC, nRF51822-CFAC,

## Freescal Kinetic K Series:

MK20DN128VFM5, MK20DN128VFT5, MK20DN128VLF5, MK20DN128VLH5, MK20DN128VMP5, MK20DN32VFM5, MK20DN32VFT5, MK20DN32VLF5, MK20DN32VLH5, MK20DN32VMP5, MK20DN64VFM5, MK20DN64VFT5, MK20DN64VLF5, MK20DN64VLH5, MK20DN64VMP5, MK20DX128VFM5, MK20DX128VFT5, MK20DX128VLF5, MK20DX128VLH5, MK20DX128VMP5, MK20DX32VFM5, MK20DX32VFT5, MK20DX32VLF5, MK20DX32VLH5, MK20DX32VMP5, MK20DX64VFM5, MK20DX64VFT5, MK20DX64VLF5, MK20DX64VLH5, MK20DX64VMP5, MK20DX128VLH7, MK20DX128VLK7, MK20DX128VLL7, MK20DX128VMC7, MK20DX256VLH7, MK20DX256VLK7, MK20DX256VLL7, MK20DX256VMC7, MK20DX256VMC7R, MK20DX64VLH7, MK20DX64VLL7, MK20DX64VMP7, MK20DN512VLK10, MK20DN512VLL10, MK20DN512VLQ10, MK20DN512VMC10, MK20DN512VMD10, MK20DN512ZCAB10R, MK20DX128VLQ10, MK20DX256VLK10, MK20DX256VLK10R, MK20DX256VLL10, MK20DX256VLQ10, MK20DX256VLQ10R, MK20DX256VMC10, MK20DX256VMD10, MK20FN1M0VLLQ12R, MK20FN1M0VLLQ12R, MK20FN1M0VMD12, MK20FX512VLQ12, MK20FX512VMD12, MK21DN512AVLK5, MK21DN512AVMC5, MK21DX128AVLK5, MK21DX128AVMC5, MK21DX256AVLK5, MK21DX256AVMC5, MK21FN1M0AVLQ12, MK21FN1M0AVMC12, MK21FN1M0AVMD12, MK21FX512AVLQ12, MK21FX512AVMC12, MK21FX512AVMD12, MK22DN512VLH5, MK22DN512VLK5, MK22DN512VMC5, MK22DX128VLF5, MK22DX128VLH5, MK22DX128VLK5, MK22DX128VMC5, MK22DX256VLF5, MK22DX256VLH5, MK22DX256VLK5, MK22DX256VMC5, MK22FN128VLL12, MK22FN128VMD12, MK22FN128VMP12, MK22FN128CAH12R, MK22FN1M0AVLH12, MK22FN1M0AVLK12, MK22FN1M0AVLL12, MK22FN1M0AVLQ12, MK22FN1M0AVMC12, MK22FN1M0AVMD12, MK22FN256CAH12R, MK22FN256CAP12R, MK22FN256VDC12, MK22FN256VLL12, MK22FN256VMD12, MK22FN256VMP12, MK22FN512CAP12R, MK22FN512CBP12R, MK22FN512VDC12, MK22FN512VLH12, MK22FN512VLL12, MK22FN512VMD12, MK22FN512VMP12, MK22FX512AVLH12, MK22FX512AVLK12, MK22FX512AVLL12, MK22FX512AVLQ12, MK22FX512AVMC12, MK22FX512AVMD12, MK24FN1M0CAJ12R, MK24FN1M0VDC12, MK24FN1M0VDC12R, MK24FN1M0VLL12, MK24FN1M0VLL12R, MK24FN1M0VLLQ12, MK24FN1M0VLLQ12R, MK24FN1M0VMC12, MK24FN256VDC12, MK26FN2M0CAC18R, MK26FN2M0VLQ18, MK26FN2M0VMD18, MK26FN2M0VMI18

## Atmel' SMART ARM Cortex M0+:

ATSAMC20E15A, ATSAMC20E16A, ATSAMC20E17A, ATSAMC20E18A, ATSAMC20G15A, ATSAMC20G16A, ATSAMC20G17A, ATSAMC20G18A, ATSAMC20J15A, ATSAMC20J16A, ATSAMC20J17A, ATSAMC20J18A, ATSAMC21E15A, ATSAMC21E16A, ATSAMC21E17A, ATSAMC21E18A, ATSAMC21G15A, ATSAMC21G16A, ATSAMC21G17A, ATSAMC21G18A, ATSAMC21J15A, ATSAMC21J16A, ATSAMC21J17A, ATSAMC21J18A, ATSAMC20E14A, ATSAMC20E15A, ATSAMC20E16A, ATSAMC20E17A, ATSAMC20E18A, ATSAMC20G14A, ATSAMC20G15A, ATSAMC20G16A, ATSAMC20G17A, ATSAMC20G18A, ATSAMC20J14A, ATSAMC20J15A, ATSAMC20J16A, ATSAMC20J17A, ATSAMC20J18A, ATSAMC21E15A, ATSAMC21E16A, ATSAMC21E17A, ATSAMC21E18A, ATSAMC21G15A, ATSAMC21G16A, ATSAMC21G17A, ATSAMC21G18A, ATSAMC21J15A, ATSAMC21J16A, ATSAMC21J17A, ATSAMC21J18A, ATSAMDA1E14A, ATSAMDA1E15A, ATSAMDA1E16A, ATSAMDA1G14A, ATSAMDA1G15A, ATSAMDA1G16A, ATSAMDA1J14A, ATSAMDA1J15A, ATSAMDA1J16A, ATSAMDA1J16A, ATSAML21E15A, ATSAML21E16A, ATSAML21E17A, ATSAML21E18A, ATSAML21G16A, ATSAML21G17A, ATSAML21G18A, ATSAML21J16A, ATSAML21J17A, ATSAML21J18A, ATSAMR21E16A, ATSAMR21E17A, ATSAMR21E18A, ATSAMR21G16A, ATSAMR21G17A, ATSAMR21G18A

## Atmel' SMART ARM Cortex M4:

ATSAMG51G18, ATSAMG51N18, ATSAMG53G19-A, ATSAMG53N19-A, ATSAMG53G19-B, ATSAMG53N19-B, ATSAMG54G19-A, ATSAMG54J19-A, ATSAMG54N19-A, ATSAMG54G19-B, ATSAMG54N19-B, ATSAMG55G19, ATSAMG55J19, ATSAM4C4C-B, ATSAM4C8C-A, ATSAM4C8C-B, ATSAM4C16C-A, ATSAM4C16C-B, ATSAM4C32E-A, ATSAM4C32C-A, ATSAM4E8C, ATSAM4E8E, ATSAM4E16C, ATSAM4E16E, ATSAM4N8A, ATSAM4N8B, ATSAM4N8C, ATSAM4N16B, ATSAM4N16C, ATSAM4S2A-A, ATSAM4S2A-B, ATSAM4S2B-A, ATSAM4S2B-B, ATSAM4S2C-A, ATSAM4S2C-B, ATSAM4S4A-A, ATSAM4S4A-B, ATSAM4S4B-A, ATSAM4S4B-B, ATSAM4S4C-A, ATSAM4S4C-B, ATSAM4S8B-A, ATSAM4S8B-B, ATSAM4S8C-A, ATSAM4S8C-B, ATSAM4S16B-A, ATSAM4S16B-B, ATSAM4S16C-A, ATSAM4S16C-B, ATSAM4SA16B-A, ATSAM4SA16B-B, ATSAM4SA16C-A, ATSAM4SA16C-B, ATSAM4SD16B-A, ATSAM4SD16B-B, ATSAM4SD16C-A, ATSAM4SD16C-B, ATSAM4SD32B-A, ATSAM4SD32B-B, ATSAM4SD32C-A, ATSAM4SD32C-B

**Active-Semi PAC5:**

PAC5210QS, PAC5220QS, PAC5223QM, PAC5250QF, PAC5253QA