



# ST7 Programmers and Evaluation Boards

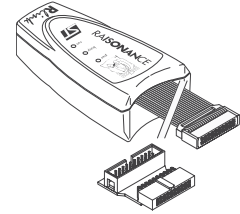
## STX-RLINK Programmer

The RLink is Raisonance's versatile, low-cost, in-circuit debugger/programmer for ST7, uPSD, and STR7 microcontrollers. It connects to application or evaluation boards for programming and debugging via a JTAG standard connection for ARM core-based and uPSD microcontrollers, or via STMicroelectronics' In-Circuit Communication (ICC) connection for ST7 microcontrollers.

The RLink can be driven by Raisonance's RIDE integrated development environment for in-circuit debugging and programming of applications for ST7 and uPSD, and in-circuit programming of STR7 microcontroller applications. In combination with Raisonance's free RFlasher programming software, RLink can be used as a very-low cost, dedicated in-circuit programmer for ST7 and STR7.

ST7 application developers can also drive RLink using the STVD7 (version 3.3 or later) integrated development environment for in-circuit debugging/programming and STVP7 (version 2.0 or later) for in-circuit programming. Both are available for free download in the ST7 Toolset.

**Note:** RLinks included with REva starter kits for STR7 (ST part number: STRxxx-SK/RAIS) and Professional Kits for STR7 (Raisonance part number: RKITPSTRxxx) provide debugging of STR7 devices.



497-5046-ND (STX-RLINK) ..... 45.38

## ST7 Programmers

The ST7 EPB series of programming boards is able to program all ST7 microcontrollers with OTP, EPROM, EEPROM or FLASH memories, regardless of the socket type. Certain programming boards also support In-Situ Programming (ISP) or In-Circuit Programming (ICP). These boards are driven by ST programming software: ST7 Visual Programmer (STVP7), which includes all useful functions such as Verify, Blank Check, Read Master and others.

**FEATURES:** • ISP/ICP Programming • Handled Formats: Intel HEX • Host Interface: Parallel Port (LPT) • Power Supply: Delivered inside the package • User Manual Software: • STVP7 (Free, available on ST CD-ROM and web site)

Devices Supported*	Digi-Key Part No.	Price Each	STMicroelectronics Part No.
ST7262x	497-2901-ND	537.24	ST7MDTU2-EPB/US
ST7263B	497-2902-ND	464.64	ST7MDTU3-EPB/US

\*Socket: All packages except TQFP64 10\*10

## ST7 Evaluation Boards

### ST7OPTIONS-EVAL:

The Safe ST7 Evaluation Board is intended for starting with the ST72F264 microcontroller and evaluating the features of the ST7 Flash family. The ST72F264 sample installed on-board is programmed with an example software application.

**FEATURES: Evaluate ST72F264:** • Integrated Low Voltage Detector/Auxiliary Voltage Detector (LVD/AVD) • Safe backup clock (CSS: Clock Nested Interrupts) **Develop your own application using:** • I/O port connectors • Wire-wrap area • LEDs, 7-segment displays, buzzer • EEPROMs (SPI, I<sup>2</sup>C) • Trimmers and buttons for reset and interrupts **Standalone Board:** • A 9V battery is provided • Input connector for external power

**Devices Supported:** ST72F26x

**Contents:** • Safe ST7 Evaluation Board • 9V Battery • One ST72F264 MCU programmed with the example software application code • CD-ROMs • User Manual • Selection Guide • Documentation

### ST7MDTULS-EVAL:

**FEATURES:** • Low-speed USB Evaluation Board • Can be used to develop USB Class applications: In-Application Programming (IAP) hardware support Device Firmware Upgrade (DFU) and Human Interface Device (HID) application demonstrator (LEDs, buttons, trimmer) • ST72F61/62/63B MCU Family support • Wrapping area • Windows 98 applet, as well as USB firmware libraries for running the peripheral device

**Devices Supported:** ST72611, ST7262, ST263B

**Contents:** • Two ST7 Low-speed USB microcontroller devices: ST72F62 in SDIP42 package and ST72F63B in SDIP32 package • One USB evaluation board • CD-ROMs

### ST7MDT20-EVC/US:

This board has been designed to help people begin working with ST7 devices or perform some tests and peripheral evaluation (SPI, I<sup>2</sup>C, ADC...). It can be used with a device, the emulator or development kit.

**FEATURES:** • LEDs • Trimmer • ISP connector for Flash devices programming • Reset button • External Interrupt Management • Buzzer • SPI, I<sup>2</sup>C, EEPROM • CAN communication

**Devices Supported:** ST72124, ST72311, ST72311Rx, ST72314, ST72321, ST72324, ST72331, ST72334, ST7251x, ST72521 in QFP64

**Contents:** • MDT20 board • Power Supply • ISP/ICP Connector for Flash devices programming • Exercise manual (with detailed description of the board)

### STEVAL-CBL001V1:

This demonstration board is used to program EEPROM data and to test ST7LNBx (0/1) microcontrollers on sockets or remotely using a coaxial cable (75Ω), via DiSEqC commands.

**FEATURES:** • Ready-to-use programming and test board with user friendly graphical user interface or windows hyper terminal • EEPROM data programming on-socket or via coaxial cable • DiSEqC commands testing controlled by pre-programmed microcontroller and dedicated voltage regulator

Description	Digi-Key Part No.	Price Each	STMicroelectronics Part No.
Evaluation Board for ST7 Series	497-2895-ND	229.60	ST7OPTIONS-EVAL
Low-Speed USB Evaluation Board	497-2903-ND	116.16	ST7MDTULS-EVAL
Evaluation Board for Training	497-2897-ND	1238.74	ST7MDT20-EVC/US
Evaluation Board Based on ST7LNBX	497-6453-ND◆	91.73	STEVAL-CBL001V1

◆ RoHS Compliant

## ST7 Emulators

STMicroelectronics continuously invests in efforts to offer a high-end emulator to support ST7 microcontrollers. The ST7-EMU3 series of emulators is the third generation of high-end emulators for ST7. EMU3 series emulators are designed to speed up the development of complex software applications for ST7 microcontrollers by providing a complete range of advanced emulator debugging features, as well as In-Circuit Debugging (ICD) and In-Circuit Programming (ICP) capability.

### Features:

- A common hardware development system mainframe supports the entire ST7 family of microcontrollers.
- 64Kbytes of user modifiable and configurable emulation RAM, allows memory mapping of all ST7 family devices as well as modeling hypothetical memory configurations.
- Logic analyzer events may trigger a breakpoint or simply define data capture parameters, in accordance to user preferences.
- Simple connection of the emulator system to the host PC via RS-232 serial channel or parallel port.
- Log files allow storage and subsequent re-display of any display screen for subsequent analysis.
- Real-time source level emulation allows viewing and breakpoint setting on high level source code rather than on disassembled target code for optimum user friendliness.

- Unlimited breakpoints may be set for any op-code fetch or any address access, and conditions may be defined for the generation of 2 external synchronization signals
- 1K by 32-bit wide trace memory for logic analyzer allows complex and sequential events to be defined on any combination of address and data, as well as 3 internal and 5 external logic signals
- Emulation system may be driven by a Windows-based GNU debugger software or DOS software running on host PC, allowing full control and monitoring of hardware resources.
- Multiple windows allow concurrent real-time display of source code, microcontroller resources, internal registers, trace data, etc.
- Command files can be used to execute a set of debugger commands in batch mode.
- Editable configuration files ensure tailoring of working environment to user preferences.

Supported Devices	Digi-Key Part No.	Price Each	STMicroelectronics Part No.
ST72260G1, ST72262G1, ST72262G2, ST72264G1, ST72264G2, ST7FLITE05, ST7FLITE09, ST7FLITE20, ST7FLITE25, ST7FLITE29, and ST7FDALI	497-4872-ND	2648.45	ST7MDT10-EMU3
ST72F321J9, ST72F321J7, ST72F324J6, ST72F324J4, ST72324J2, ST72F324K6, ST72F324K4, ST72324K2, ST72F344J4, ST72344J2, ST72F344K4, and ST72344K2	497-4879-ND	2648.45	ST7MDT20J-EMU3
ST72321M9, ST72F321M9, ST72321M7, ST72F321M7, ST72521M9, ST72F521M9, ST72521M7, and ST72F521M7	497-4880-ND	3136.32	ST7MDT20M-EMU3
ST72621J4, ST72621J2, ST72621L4, ST72622L2, ST72621K4, ST72622K2, ST72623F2, ST72611F1, ST72611F1, and ST72P611F4	497-4881-ND	2299.97	ST7MDTU2-EMU2B

## ST7 Development Kit



Supported Device	Digi-Key Part No.	Price Each	STMicroelectronics Part No.
ST72521M9	497-4878-ND	319.44	ST7MDT20-T80/DVP

**Free shipping on orders over £50! All prices are in British pound sterling and include duties.**

uk.digikey.com — FREEPHONE: 0-800-587-0991 • 0-800-904-7786 — FREEFAX: 0-800-587-0992 • 0-800-904-7783

(UK091) 669





# 32-Bit ARM Microcontrollers



The STR7 is a range of innovative 32 bit microcontrollers built on the industry standard ARM7 RISC core. The STR7 devices include high quality embedded Flash and feature powerful peripheral functions including USB and CAN. They are ideal for embedded applications requiring a compact yet powerful MCU and a versatile scalable solution. STR7 are used in various applications like user interfaces, factory automation systems, point of sale, appliances and many others. Built on the leading ARM™ architecture, STR7 allows fast response to emerging requirements, enabling the rapid implementation of changes at low cost. The flexibility of the family, with its rich options for Flash, RAM, the largest peripherals set and its versatile package options helps you reuse it for a whole range of products, optimizing your developments. It helps you build cost effective and powerful solutions that bring innovation in your market. ARM core with embedded Flash and RAM.

The STR71x series is a family of ARM powered 16/32-bit Microcontrollers with embedded Flash and RAM. It contains the high performance ARM7TDMI® CPU

with an extensive range of peripheral functions and enhanced I/O capabilities. All devices have on-chip high speed single voltage FLASH memory and high speed RAM. The STR71x family has an embedded ARM core and is therefore compatible with all ARM tools and software. For more information on the ARM Realview Developer Kit for ST and third party development tools, please refer to the [www.st.com/mcu](http://www.st.com/mcu)

STR730F Flash microcontrollers from STMicroelectronics combine the industry standard ARM7TDMI® RISC microprocessor with embedded Flash and powerful peripheral functions, including up to 20 timers, 4xUARTs and 3xCANs. They are ideal for embedded applications requiring a compact yet powerful MCU, as well as versatile, scalable solutions such as user interfaces, factory automation systems and appliances. Additionally, the STR730F family features a single 5V power supply particularly suited to industrial applications.

**Features:** • High-performance industry standard core ARM7TDMI RISC 32-bit CPU • Extensive software and tools including the complete STR7 library

supporting all standard peripherals and the CAN • Largest choice of peripherals and interfaces including 4xUARTs, up to 20 timers and up to 3xCANs • Flexible power and clock management, five low-power modes, low-power voltage regulator, dual APB buses architecture, multiple clock sources • Single 5V power supply • High-quality embedded Flash (data retention 20 years at 85°C) • 16 x channels DMA • Rich package options including the tiny power 10x10 LFBGA144 • Temperature range: -40°C - 85°C and -40°C - 105°C

**Benefits:** • Future-proof microcontrollers that easily adapt to customer requirements • Dramatically reduces development time and increases ease-of-use • Reduces system cost with all peripherals in one chip • Gives you full control over your power consumption and performance/power trade-offs • Native supply of industrial applications, no 3.3V conversion needed • Suitable for long-life equipment • Lower CPU load, optimized access to memory • Optimizes your developments: the same device in different options will fit all your product range • Increase domain of validity for the application to +105°C

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Internal ROM Type	Internal ROM Size	Internal RAM Size	USB	CAN	I/O Ports	Package	Temperature Range	Digi-Key Part No.	Price Each			Tape and Reel Qty.	Reel Pricing	STMicroelectronics Part No.
									1	10	100			
Flash	128K	32K	Yes	Yes	48	144-TQFP	-40°C - 85°C	497-4510-ND	16.84	15.27	12.11	—	—	STR710FZ1T6
	256K	64K	Yes	Yes	48	144-LFBGA	-40°C - 85°C	497-5642-ND	18.70	16.95	13.45	—	—	STR710FZ2H6
	256K	64K	Yes	Yes	48	144-TQFP	-40°C - 85°C	497-4511-ND	18.70	16.95	13.45	—	—	STR710FZ2T6
	64K	16K	Yes	No	30	64-TQFP	-40°C - 85°C	497-4885-ND	11.31	10.02	8.08	—	—	STR711FR0T6
	128K	32K	Yes	No	30	64-TQFP	-40°C - 85°C	497-4512-ND	13.35	12.10	9.60	—	—	STR711FR1T6
	256K	64K	Yes	No	30	64-LFBGA	-40°C - 85°C	497-5643-ND	13.52	12.26	9.72	—	—	STR711FR2H6
	256K	64K	Yes	No	30	64-TQFP	-40°C - 85°C	497-4513-ND	9.51	8.80	6.66	—	—	STR711FR2T6
	64K	16K	No	Yes	32	64-TQFP	-40°C - 85°C	497-4887-ND	11.31	10.01	8.08	—	—	STR712FR0T6
	128K	32K	No	Yes	32	64-TQFP	-40°C - 85°C	497-4514-ND	11.73	10.63	8.43	—	—	STR712FR1T6
	256K	64K	No	Yes	32	64-TQFP	-40°C - 85°C	497-4515-ND	13.71	12.43	9.86	—	—	STR712FR2T6
	64K	16K	No	No	32	64-TQFP	-40°C - 85°C	497-4888-ND	6.51	5.95	4.71	—	—	STR715FR0T6
	256K	16K	Yes	Yes	112	144-LQFP	-40°C - 105°C	497-5645-ND	18.35	16.64	13.20	—	—	STR730FZ2T6
	128K	16K	Yes	Yes	112	144-TQFP	-40°C - 105°C	497-5139-ND	12.68	11.73	8.88	—	—	STR730FZ1T7
	256K	16K	Yes	Yes	112	144-LFBGA	-40°C - 105°C	497-5644-ND	18.35	16.64	13.20	360	5675.17	STR730FZ2H6
	256K	16K	Yes	Yes	112	144-TQFP	-40°C - 105°C	497-5140-1-ND†	22.93	20.78	16.49	360	5675.17	STR730FZ2T7
	128K	16K	Yes	Yes	72	100-TQFP	-40°C - 105°C	497-5141-1-ND†	19.30	17.50	13.88	540	6515.70	STR731FV1T7
	256K	16K	Yes	Yes	72	100-TQFP	-40°C - 105°C	497-5142-ND	21.72	19.69	15.62	—	—	STR731FV2T7
	256K	16K	Yes	Yes	72	100-TQFP	-40°C - 105°C	497-5646-ND	17.38	15.75	12.50	—	—	STR731FV2T6
	128K	16K	Yes	No	112	144-TQFP	-40°C - 105°C	497-5143-1-ND†	16.71	15.14	12.01	360	4134.19	STR735FZ1T7
	256K	16K	Yes	No	112	144-LQFP	-40°C - 105°C	497-5647-ND	15.29	13.86	10.99	—	—	STR735FZ2T6
	256K	16K	Yes	No	112	144-TQFP	-40°C - 105°C	497-5144-1-ND†	19.12	17.33	13.75	360	4732.18	STR735FZ2T7
	256K	16K	Yes	No	72	100-TQFP	-40°C - 105°C	497-5648-ND	14.48	13.12	10.41	—	—	STR736FV2T6
	256K	16K	Yes	No	72	100-TQFP	-40°C - 105°C	497-5146-1-ND†	18.10	16.41	13.01	540	6107.98	STR736FV2T7
	256K	16K	Yes	Yes	72	100-LQFP	-40°C - 105°C	497-5650-ND	12.60	11.16	9.00	—	—	STR750FV2T6
	64K	16K	Yes	Yes	72	100-LQFP	-40°C - 85°C	497-5749-ND	10.00	8.86	7.14	—	—	STR750FV0T6
	128K	16K	Yes	Yes	72	100-LQFP	-40°C - 85°C	497-5750-ND	10.82	9.59	7.73	—	—	STR750FV1T6
	256K	16K	Yes	Yes	72	100-LFBGA	-40°C - 105°C	497-5649-ND	12.59	11.15	8.99	—	—	STR750FV2H6
	64K	16K	Yes	No	38	64-LQFP	-40°C - 85°C	497-5755-ND	9.70	8.59	6.93	—	—	STR751FR0T6
	128K	16K	Yes	No	38	64-LQFP	-40°C - 85°C	497-5756-ND	10.53	9.33	7.53	—	—	STR751FR1T6
	256K	16K	Yes	No	38	64-LFBGA	-40°C - 105°C	497-5651-ND	12.18	10.79	8.71	—	—	STR751FR2H6
	256K	16K	Yes	No	38	64-LQFP	-40°C - 105°C	497-5652-ND	12.18	10.79	8.71	—	—	STR751FR2T6
	256K	16K	No	Yes	38	64-LQFP	-40°C - 105°C	497-5653-ND	12.18	10.79	8.71	—	—	STR752FR2T6
	256K	16K	No	No	38	64-LQFP	-40°C - 105°C	497-5654-ND	11.52	10.21	8.23	—	—	STR755FR2T6
	64K	16K	No	No	72	100-LQFP	-40°C - 85°C	497-5757-ND	9.45	8.38	6.76	—	—	STR755FV0T6
	128K	16K	No	No	72	100-LQFP	-40°C - 85°C	497-5758-ND	10.28	9.11	7.35	—	—	STR755FV1T6
	256K	16K	No	No	72	100-LFBGA	-40°C - 85°C	497-5671-ND	11.94	10.57	8.53	—	—	STR755FV2H6
	256K	16K	No	No	72	100-LQFP	-40°C - 85°C	497-5759-ND	11.94	10.57	8.53	—	—	STR755FV2T6
	256K	64K	No	Yes	40	80-LQFP	-40°C - 80°C	497-6275-ND	12.05	10.92	8.67	—	—	STR910FAM32X6
	256K	64K	No	Yes	80	128-LQFP	-40°C - 80°C	497-6276-ND	12.81	11.61	9.21	—	—	STR910FAW32X6
	256K	64K	No	Yes	80	144-LFBGA	-40°C - 80°C	497-6277-ND	13.40	12.15	9.64	—	—	STR910FAZ32H6
	256K	96K	Yes	Yes	40	80-LQFP	-40°C - 80°C	497-6278-ND	12.96	11.75	9.32	—	—	STR911FAM42X6
	512K	96K	Yes	Yes	40	80-LQFP	-40°C - 80°C	497-6279-ND	14.47	13.11	10.40	—	—	STR911FAM44X6
	256K	96K	Yes	Yes	80	128-LQFP	-40°C - 80°C	497-6280-ND	13.41	12.16	9.64	—	—	STR911FAW42X6
	512K	96K	Yes	Yes	80	128-LQFP	-40°C - 80°C	497-6281-ND	15.22	13.80	10.95	—	—	STR911FAW44X6
	256K	96K	Yes	Yes	80	128-LQFP	-40°C - 80°C	497-6283-ND	14.16	12.84	10.19	—	—	STR912FAW42X6
	256K	96K	Yes	Yes	80	144-LFBGA	-40°C - 80°C	497-6285-ND	14.77	13.39	10.62	—	—	STR912FAZ42H6
	128K	32K	Yes	Yes	80	48-LQFP	-40°C - 80°C	497-6287-ND	8.26	7.32	5.90	—	—	STM32F101CBT6
	128K	32K	Yes	Yes	80	48-LQFP	-40°C - 80°C	497-6288-ND	9.76	8.65	6.97	—	—	STM32F103CBT6

† Cut Tape ‡ For Tape and Reel part number, change 1-ND to 2-ND.

## 32-Bit ARM Kits and Tools

### STR7 KickStart Kits from IAR

IAR KickStart Kits™ are cost effective and complete evaluation and development systems in a single package that are designed to help you to a flying start with all the necessary hardware and software you need to design, implement and test your application.

**Kit Includes:** • STR7 Development Board • J-Link-KS — IAR Systems' USB-to-JTAG Debugger • CD containing Embedded Workbench® for ARM — IAR's easy-to-use, powerful integrated development environment that seamlessly integrates a complete range software tools in a comprehensive toolkit, recognized for its efficient code generation and unique debugging properties. It includes the 32KB KickStart version of the C/C++ compiler, built in Flash loader and many useful sample projects covering the full range of STR7 peripherals

497-4550-ND	(STR711-SK/IAR) — RoHS Compliant	217.07
497-5047-ND	(STR730-SK/IAR)	216.89
497-4886-ND	(STR712-SK/IAR) — RoHS Compliant	217.07

### STR7 Reva Starter Kits from Raisonance

The STR7 starter kits from Raisonance are cost effective and complete solutions for evaluating and starting application development with ST microcontrollers.

**Kit Package Includes:** • Reva Mother Board: Universal evaluation board designed to easily and quickly evaluate a range of ST microcontrollers. The mother board provides a host of evaluation features including LEDs, push buttons, switches, temperature sensor, potentiometer and interfaces for I2C, SPI and UART. • Reva Daughter Boards: Dedicated boards that contain all the specific components for a given microcontroller, including the MCU itself, a clock selector and other device dependant features. • RLink: In-circuit debugger/programmer, featuring USB host interface. The RLink is attached to the Reva mother board so that no additional connection cables are required for in-circuit programming and debugging with the Reva. In addition, the user can power the MCU, Reva evaluation board and the RLink all from the USB connection. • Raisonance's RIDE: The full-featured Integrated Development Environment, which provides seamless integration of C and Assembler tools and a full-featured debug interface.

497-5048-ND	(ST7232X-SK/RAIS)	137.89
497-5049-ND	(ST7FLITE-SK/RAIS)	107.99
497-4889-ND	(STR71X-SK/RAIS) — RoHS Compliant	144.47

### STR71x Evaluation Board

The STR710-EVAL board is a complete development platform for the STR71x series. The STR710-EVAL board is a cost effective, flexible and open design to demonstrate the capability of the STR71x series of flash microcontrollers and to enable rapid evaluation of the STR71x devices and available peripherals. It includes the high performance STR710FZ2T6 ARM7TDMI-TM device that boasts 2Mbits embedded flash with "best-in-class" random access time, 64KB on-chip high speed SRAM as well as up to 10 serial communication interfaces, including USB and CAN.

The STR710-EVAL board includes SRAM and flash memory on the EMI to enable full freedom in development of large programs before custom hardware is designed. It integrates a 2x16 LCD, LED's, UART, CAN, USB interfaces, piezo buzzer and test buttons to create a versatile stand alone test platform. A wide choice of development tool support is readily available, including tools from: STMicroelectronics and 3rd parties.

497-4516-ND	(STR710-EVAL)	217.80
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### STR750 Evaluation Board

The STR750 Evaluation Board (STR750-EVAL) is a complete, development platform for STMicroelectronics' ARM® core-based STR75xF microcontrollers. Based on a cost effective, flexible and open design, it allows easy demonstration of STR75xF capabilities and enables rapid evaluation of the microcontroller's peripheral and other features.

It includes the high performance STR750F microcontroller, which is based on the ARM7TDMI-S core and includes USB 2.0 compliant port with full speed data transmission, CAN 2.0A/B compliant interface, 3 UART channels, internal Flash and internal SRAM memory.

The STR750-EVAL features a complete range of connectors and hardware features for developing applications based on STR75xF peripherals including motor control, USB and RS232 connectors, microphone, speaker, joystick and LCD display.

The STR750-EVAL uses a JTAG standard interface to connect to your host PC via any of a range of in-circuit emulators (ICE) for ARM core-based microcontrollers.

**Features:** • Three 5V power supply options: Power jack, USB connection or daughter board • RTC • Audio play and record • 3 RS232 connectors, one with hardware flow control • USB 2.0 compliant with full speed (12Mb/s) data transmission • CAN 2.0A/B connection • Inductor Motor Control connector with 6 PWM output and Emergency Stop • Debug and programming support via 20-pin JTAG connector • Dot-matrix LCD module • Joystick with 4-direction control and selector • Extension connectors for daughter board or wrapping board

497-5748-ND	(STR750-EVAL)	173.51
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(Continued)

Digi-Reel® Most SMT cutdown parts are available on a Digi-Reel®. For Digi-Reel part number, change 1-ND to 6-ND or CT-ND to DKR-ND. See Digi-Key® Services on page 2 for additional information.

Free shipping on orders over £50! All prices are in British pound sterling and include duties.

670 (UK091) uk.digikey.com — FREEPHONE: 0-800-587-0991 • 0-800-904-7786 — FREEFAX: 0-800-587-0992 • 0-800-904-7783



## 32-Bit ARM Kits and Tools (Cont.)

### Hitex Starter Kit for STR7



The Hitex Starter Kits for ST ARM® are complete, full-featured solutions for starting application development and evaluating the features of STMicroelectronics' ARM® core-based microcontrollers. They come with all the hardware and software developers need to start developing applications for STR7 and STR9 devices, including full-featured evaluation board, target microcontroller, Tantino JTAG interface and the HiTOP5 Integrated Development Environment with GNU C/C++ toolset.

**Starter Kit Architecture:** • **Tantino:** In-circuit debugging and programming tool for ARM7TDMI™ and ARM966E™ core-based microcontrollers features USB host interface and industry standard JTAG application board interface • **Hitex Evaluation Board:** Full-featured evaluation board with target microcontroller is designed for quick and easy evaluation of a complete range of microcontroller features such as Ethernet, USB, CAN, UART, I²C and SPI as well as the ADC peripheral. Power supply is included. • **HiTOP5 Software:** Hite's integrated development environment that drives the hardware and offers a full range of project management, source code editing and debugging features from an intuitive graphical interface. Includes the GNU C/C++ toolset for compiling application source files. The starter kit comes with 16K code-size limited version of the HiTOP5 IDE. HiTOP5 also supports the Tantino in-circuit debugging tool and Tanto Port Trace for STR9 microcontrollers with Embedded Trace Macrocell

**Starter Kit Key Features:** • **Tantino:** • USB interface to host PC • JTAG standard interface • Supports ARM7TDMI™ and ARM966E™ core-based microcontrollers • **HiTOP5:** • GNU C/C++ Toolset • HiSIM instruction simulator for ARM® • Projected management • Integrated editor • High-level language debugging • Trace support • Drives both Tantino and Tanto JTAG interfaces

497-5751-ND (STR750-SK/HIT) ..... 144.29

### I Love ST Mini Development Board



The I Love ST Mini Development Board contains an STR750 microcontroller, 16 LEDs, 2 skin-conductance pads which can be used as buttons, and an STR711 controlling the USB port and the JTAG functions. The board will run for several hours on the lithium battery mounted on the bottom of the board. No external JTAG debugger probe is necessary. Simply connect a mini-USB cable to the board and load the KickStart edition of IAR Embedded Workbench for ARM to Flash and debug your STR750 application.

497-5988-ND (STR750-LOVE)..... 24.14

### STZB-SK/RAIS Reva ZigBee Starter Kit



The STZB-SK/RAIS Reva ZigBee Starter Kit is one of Raisonance's low-cost solutions designed to help developers add wireless connectivity to their ST7 microcontroller-based applications using STMicroelectronics' SN260 single-chip ZigBee wireless networking device.

With the included SNRCM-260 module, EmberZnet ZigBee plug-and-play SPI interface, developers can turn their Reva mother boards into wireless application nodes and explore the possibilities of networking their microcontroller applications.

**Starter Kit includes:** • SNRCM-260 module • EmberZnet stack • ST EZSP and HAL libraries • Reva mother board and embedded RLink • STR711F daughter board • ST7FLITE3 daughter board • Raisonance RIDE • GNU C/C++ compiler for ARM • Raisonance C compiler for ST7

497-5990-ND (STZB-SK/RAIS) ..... 290.40

### Hitex STM32 Performance Stick



The Hitex STM32-Performance Stick is a complete, low-cost evaluation and development package that provides a fast and easy introduction to the capabilities of ST's ARM®Cortex™-M3 core-based STM32 family of microcontrollers. It is specifically designed to help application designers explore STM32 features and performance characteristics (low power modes, clock controls, wake up states, etc.), but can also be connected to extension boards with hardware features for evaluation of device peripherals or development of an application.

497-6289-ND (STM3210B-PFSTICK) ..... 47.31

### Keil Starter Kit for STR7 and STR91xF



The Keil starter kits are complete solutions for starting application development and evaluating STMicroelectronics' families of ARM® core-based microcontrollers. They come with all the hardware and software you need to start developing applications for the STR7 ARM7TDMI™ and STR9 ARM966E™ core-based microcontrollers. The kits come complete with evaluation board and target microcontroller, the ULINK™ USB-to-JTAG in-circuit debugger/programmer Keil's uVision3 integrated development environment for ARM and the 16KB code-size limited version of the ARM RealView Compilation Tools.

**Starter Kit Architecture:** • **ULink:** USB-to-JTAG in-circuit debugger/programmer integrates fully with uVision3, allowing users to download the application to the target and debug it while it runs on the ST ARM core-based microcontroller on the evaluation board • **Evaluation Board:** An application board that provides a full range of features (I/Os, ADC, UART, SPI, USB, etc.) to help users evaluate and start developing applications for the included microcontroller • **Keil Development Software:** A suite of software tools for developing and debugging applications for STR7 and STR9 including: • uVision3 integrated development environment integrating the ARM RealView Compilation Tools and Keil's debugging software so that users can quickly and easily develop and debug their applications while they run on a target microcontroller. • ARM RealView Compilation Tools (RVCT) 16K code-size limited version of the optimizing C/C++ compiler for ARM core-based microcontrollers • **Starter Kit Key Features:** • **ULink:** • USB interface to the host PC • 20-pin JTAG application interface • Supports ARM7TDMI and ARM966E core-based microcontrollers

497-5753-ND (STR750-SK/KEIL) ..... 144.29

497-5066-ND (STR91X-SK/KEIL) ..... 144.29

### STR910 Family Evaluation Board

The STR910 evaluation board (STR910-EVAL) is a complete development platform for the STMicroelectronics' ARM® core-based STR91xF. Based on the ARM966E-S® core.

The STR91xF includes Pre-Fetch Queue and Branch cache, full speed USB 2.0 compatible port, Ethernet 100/10 interface, embedded MAC, CAN2.0B compliant interface, a large Dual Bank Flash memory, a large SRAM and many peripherals. It includes a STR910F microcontroller, pre-loaded demonstration software and a full range of hardware features to help you evaluate device peripherals (Motor control, IrDA, USB, Ethernet, CAN, etc.) and develop your own applications. Extension headers make it possible to easily connect a daughter board or wrapping board for your specific application.

**Features:** • Three 5V power supply options: Jack, USB connection or a Daughter board • RTC with tamper detection • Audio play and record • 3 RS232 connectors with support of full modem control on one connector • Infrared Data Access (IrDA) • USB 2.0 compliant with full-speed (12Mb/s) data transmission • CAN 2.0B connection • Inductor Motor Control connector with 6 PWM output, emergency stop and Tachometer input • IEEE-802.3-2002 compliant Ethernet connection • Debug support via 20-pin JTAG connector • 38-pin ETM connector for optional trace module • Dot-matrix LCD module • Joystick with 4-direction control and selector • Extension connectors for daughter board or wrapping board

497-5067-ND (STR910-EVAL)..... 202.37

### REva Starter Kit for STR7 and STR9

The REva Starter Kits (STR71X-SK/RAIS, STR730-SK/RAIS, STR91X-SK/RAI) are Raisonance's complete, low-cost solutions for starting application development and evaluating the features of STMicroelectronics' ARM7TDMI™ and ARM966E™ core-based microcontrollers. Kits come with all the hardware and software developers need to start developing applications for STR7 and STR9 devices, including the REva evaluation board, microcontroller(s), embedded RLink JTAG in-circuit debugger/programmer and Raisonance Integrated Development Environment (RIDE).

#### Starter Kit Architecture:

• **Embedded RLink:** In-circuit debugging and programming tool with JTAG application board interface and USB connection to the host PC • **REva Motherboard:** Universal evaluation board designed for quick and easy evaluation of a complete range of device features. It is powered from the RLink's USB connection to the host PC • **REva Daughter Boards:** Interchangeable boards featuring different target microcontrollers, make it easy to evaluate and develop applications for a complete range of MCUs from a single evaluation platform • **RIDE Software:** Raisonance's integrated development environment drive the hardware and offers seamless control of all software development tools (compiler, assembler, linker, debugger, etc.) from an intuitive graphical interface. Fully integrates control of the GNU C/C++ tools. The starter kit comes with the 16K code size limited version of RIDE • **REva Starter Kits:** Based on the same mother/daughter board design, with embedded RLink, and driven by RIDE are available for the ST7 and uPSD 8-bit microcontroller families • **Starter Kit Key Features:** • **Embedded RLink:** • USB interface to host PC • Industry standard JTAG application interface • **REva Motherboard:** • One standard SO-DIMM connector to plug in daughter boards • Digital and analog I/O evaluation features, including on-board LEDs, buttons, switches, external analog connector, temperature sensor and potentiometer • I²C EEPROM and bus • RS232 driver and 2 DB9 connectors • Prototyping area • VDD settings for 1.8V, 3.3V and 5V • USB powered, no external power required

497-5754-ND (STR750-SK/RAIS) — RoHS Compliant ..... 144.29

497-5064-ND (STR91X-SK/RAI) ..... 144.29

### KickStart Starter Kit for STR7 and STR9



The KickStart Kits™ (STR711-SK/IAR, STR712-SK/IAR, STR730-SK/IAR, STR731-SK/IAR and STR91X-SK/IAR) are IAR's complete, cost-effective solutions for starting application development and evaluating STMicroelectronics' ARM® core-based microcontrollers. They come with all the hardware and software you need to start developing applications for a full range of STMicroelectronics' ARM7TDMI™ and ARM966E™ core-based microcontrollers. The kits include the KickStart Development Board with target microcontroller, the IAR JLink USB-to-JTAG debugger and IAR Embedded Workbench® for ARM (EWARM) integrated development environment with the 32KB KickStart version of the C/C++ compiler, built in Flash loader and sample projects for all device peripherals.

**Starter Kit Architecture:** • **JLink:** USB-to-JTAG in-circuit debugger/programmer integrates fully with EWARM, allowing you to download the application to your target and debug it while it runs on your ST ARM core-based microcontroller • **KickStart Development Board:** • Evaluation board that provides a full range of features (I/Os, ADC, UART, SPI, I²C, USB, etc.) to help you evaluate and start developing applications for the included microcontroller • The board is powered from the JLink's USB connection with the host PC • **IAR Development Software:** A suite of software tools for all phases of application development that includes: • IAR Embedded Workbench for ARM integrated development environment with the KickStart 32KB C/C++ compiler to build the application and the C-SPY™ debugger for debugging the application while it runs on your microcontroller • VisualSTATE® 20-state version of IAR's graphical design environment with C/C++ code generator for developing application code based on machine states.

**Starter Kit Key Features:** • **JLink:** • Supplies power from USB connection via pin 19 of the JTAG connector (no additional power supply required). • Download speed up to 50KB/sec • Maximum JTAG speed 8MHz • Auto speed recognition • 20-pin standard JTAG connector • USB and 20-pin flat cable included • Level shifter for 3.3V to 5V conversion (STR73X-SK/IAR, STR91X-SK/IAR) • **Supported platforms:** Microsoft® Windows® 2000 and XP

497-5752-ND (STR750-SK/IAR) ..... 216.89

497-5065-ND (STR91X-SK/IAR) ..... 216.89

### STM3210B-EVAL Evaluation Board



The STM3210B-EVAL is a complete development platform for the STM32F10x (128K) series of ARM®Cortex™-M3 core-based microcontrollers. It provides a cost effective, flexible and open design ideal for demonstrating the capabilities of the STM32F10x devices and rapidly evaluating device features and available peripherals. It includes an STM32F10x device with high performance ARM®Cortex™-M3, full speed USB 2.0 interface, CAN 2.0A/B compliant interface, 2 channels I2C, 2 channels SPI, 3 channels USART with smart card support, internal 20Kbyte SRAM and 128Kbyte flash. The STM3210B-EVAL board includes a complete range of hardware features for evaluating microcontroller performance and starting development of a wide range of applications. Features include MicroSD card, serial flash, USB, CAN, I2C, RS232, IrDA, induction motor control connector, TFT color LCD and more.

The board features industry standard JTAG connector allowing developers to choose from a wide variety of development tools from third party tool suppliers.

497-6048-ND (STM3210B-EVAL) ..... 152.46

### STM3210E-EVAL Evaluation Boards



The STM32 evaluation boards provide complete development platforms for the STM32F10x (128K) and STM32F10xE (512K) series of ARM®Cortex™-M3 core-based microcontrollers. They provide cost effective, flexible and open design solutions ideal for demonstrating device capabilities and rapidly evaluating features and peripherals. They include an STM32 microcontroller with high performance ARM®Cortex™-M3, full speed USB 2.0 interface, CAN 2.0A/B compliant interface, I2C, SPI, USART with smart card support and internal SRAM and Flash memory.

The evaluation boards include a complete range of hardware features for evaluating microcontroller performance and starting development of a wide range of applications. Features include MicroSD card, serial flash, USB, CAN, I2C, RS232, IrDA, induction motor control connector, TFT color LCD, audio play/recorder circuit. For the STM32F10xE, the board also includes a wide range of external memory. The boards feature industry standard JTAG connector allowing developers to choose from a wide choice of development tools from third-party tool suppliers. In addition, the STM32F10xE board includes a high density 20-pin connector so that users can take advantage of tools offering runtime trace.

497-6438-ND (STM3210E-EVAL) ..... 152.46

### Development Tools



STM3210B-PRIMER is a complete, ultra low cost kit for evaluation and application development. STM32103B-D/RAIS is a daughter card that converts the STM3210B-SK/RAIS to the Performance line.

497-6049-ND (STM3210B-PRIMER) ..... 28.00

497-6047-ND (ST32103B-D/RAIS) ..... 68.56

(Continued)

Digi-Reel® Most SMT cutdown parts are available on a Digi-Reel®. For Digi-Reel part number, change 1-ND to 6-ND or CT-ND to DKR-ND. See Digi-Key® Services on page 2 for additional information.

Free shipping on orders over £50! All prices are in British pound sterling and include duties.

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(UK091) 671



## 32-Bit ARM Kits and Tools (Cont.)



### STM3210B Starter Kits

STM3210B Starter kits are complete sets of hardware and software designed to help users discover device features and start application development easily.

**STM3210B-SK/HIT Hitex Kit** — STM32 starter kit with HITOP5 development software, GNU C/C++ compiler, debugger and USB stick with STM32 device, evaluation features and integrated in-circuit debugging/programming capabilities. Extension boards allow evaluation of additional device features.

**STM3210B-SK/IAR IAR Kickstart Kit™** for STM32 with IAR Embedded Workbench for ARM (EWARM – 32K code-size limited edition), IAR C/C++ compiler, IAR J-Link (USB/JTAG) in-circuit debugger/programmer and evaluation board for STM32.

**STM3210B-SK/KEIL Keil Starter Kit** for STM32 with RealView Microcontroller Development Kit for ARM (16K

code-size limited version) with ARM C/C++ compiler, ULINK (USB/JTAG) in-circuit debugger/programmer and evaluation board for STM32.

**STM3210B-SK/Raisance REva Starter Kit** for STM32 with RIDE (32K code-size limited version for Cortex core), GNU C/C++ compiler, debugger, RLINK (USB/JTAG) in-circuit debugger/programmer, demonstration motherboard and daughterboard with STM32 target device.

<b>497-6050-ND</b>	(STM3210B-SK/HIT).....	<b>84.97</b>
<b>497-6051-ND</b>	(STM3210B-SK/IAR).....	<b>173.33</b>
<b>497-6052-ND</b>	(STM3210B-SK/KEIL).....	<b>131.59</b>
<b>497-6053-ND</b>	(STM3210B-SK/RAIS).....	<b>151.55</b>

## STM32 Cortex™ Microcontrollers and Tools



The STM32 family of 32-bit Flash microcontrollers is based on the breakthrough ARM®Cortex™-M3 core, which is specifically developed for embedded applications requiring a combination of high performance, low power and low cost. The STM32 family benefits from the Cortex™-M3 architectural enhancements (including

the Thumb-2® instruction set) that deliver improved performance combined with better code density, and a tightly coupled nested vectored interrupt controller that significantly speeds response to interrupts, all combined with industry-leading power consumption.

C

Program (KBytes)	RAM (KBytes)	No. of Timers	I/O Ports	Supply Voltage	Package	Temperature Range (°C)	Digi-Key Part No.	Price Each			STMicroelectronics Part No.
								1	10	100	
32	6	2	32	2 - 3.6	48-LQFP	-40 - 85	497-6054-ND	6.48	5.32	4.49	STM32F101C6T6
32	6	3	49	2 - 3.6	64-LQFP	-40 - 85	497-6057-ND	6.96	5.72	4.83	STM32F101R6T6
32	10	2	32	2 - 3.6	48-LQFP	-40 - 105	497-6062-ND	7.01	6.22	5.01	STM32F103C6T6
32	10	2	49	2 - 3.6	64-LQFP	-40 - 105	497-6064-ND	8.27	6.79	5.73	STM32F103R6T6
64	10	3	32	2 - 3.6	48-LQFP	-40 - 85	497-6055-ND	6.71	5.95	4.80	STM32F101C8T6
64	10	3	49	2 - 3.6	64-LQFP	-40 - 85	497-6058-ND	7.22	6.40	5.16	STM32F101R8T6
64	10	3	80	2 - 3.6	100-LQFP	-40 - 85	497-6060-ND	8.26	7.32	5.90	STM32F101V8T6
64	20	3	32	2 - 3.6	48-LQFP	-40 - 105	497-6063-ND	8.26	7.32	5.90	STM32F103C8T6
64	20	3	49	2 - 3.6	64-LQFP	-40 - 105	497-6065-ND	8.87	7.86	6.34	STM32F103R8T6
64	20	3	80	2 - 3.6	100-LFBGA	-40 - 105	497-6067-ND	9.96	8.83	7.12	STM32F103V8H6
64	20	3	80	2 - 3.6	100-LQFP	-40 - 105	497-6068-ND	9.96	8.83	7.12	STM32F103V8T6
128	16	3	49	2 - 3.6	64-LQFP	-40 - 85	497-6059-ND	8.67	7.68	6.19	STM32F101RBT6
128	16	3	80	2 - 3.6	100-LQFP	-40 - 85	497-6061-ND	9.71	8.60	6.94	STM32F101VBT6
128	20	3	49	2 - 3.6	64-LQFP	-40 - 105	497-6066-ND	10.32	9.14	7.37	STM32F103RBT6
128	20	3	80	2 - 3.6	100-LFBGA	-40 - 105	497-6069-ND	11.51	10.20	8.23	STM32F103V8H6
128	20	3	80	2 - 3.6	100-LQFP	-40 - 105	497-6070-ND	11.51	10.20	8.23	STM32F103VBT6
512	48	4	112	2 - 3.6	144-LQFP	-40 - 85	497-6439-ND	16.17	14.66	11.63	STM32F101ZET6
512	48	4	80	2 - 3.6	100-LQFP	-40 - 85	497-6440-ND	14.33	12.99	10.31	STM32F101VET6
512	48	4	51	2 - 3.6	64-LQFP	-40 - 85	497-6441-ND	13.87	12.57	9.97	STM32F101RET6
512	64	4	112	2 - 3.6	144-LQFP	-40 - 85	497-6442-ND	11.17	10.33	7.82	STM32F103ZET6
512	64	4	80	2 - 3.6	100-LQFP	-40 - 85	497-6443-ND	10.16	9.41	7.12	STM32F103VET6
512	64	4	51	2 - 3.6	64-LQFP	-40 - 85	497-6444-ND	9.58	8.87	6.71	STM32F103RET6



Development Tools for the Embedded World

### inDART Series and Starter Kits

#### inDART SERIES:

They are a powerful entry-level tool for Freescale Semiconductor, Inc. (Formerly Motorola SPS) MCU-based systems. inDART takes advantage of Metroworks CodeWarrior Integrated Development environment and the ISP (In-System Programming) feature to program the flash memory of the Freescale family of MCUs. inDART provides you with everything you need to download (program), in-circuit emulate and debug end-user code. Full speed program execution allows you to perform hardware and software testing in real-time.

**Features:** • Low cost and easy to use kits • ISP/ICP programming • USB interface • In-circuit debugging  
**Kit Includes:** • inDART board and demo board with prototyping area • USB Cable • Software CodeWarrior CD and SofTec System CD • Getting started guide

#### STARTER KITS:

These starter kits are entry-level tools which allow you to get familiar with the different Freescale Semiconductor, Inc. (formerly Motorola SPS) microcontrollers. These kits along with the included CodeWarrior software allow for easy write, compile, download, in-circuit emulation and debug of user code. Includes a prototyping area to develop your own small applications.

**Features:** • Low cost and easy to use kits • Full-speed program execution for hardware and software testing • In-circuit debug and emulation • Serial interface

**Kit Includes:** • Evaluation board with prototyping area • Starter guide • Serial cable

Devices Supported	Digi-Key Part No.	Price Each	SofTec Part No.
<b>HC08</b>			
MC68HC908GPxx, MC68HC908GTxx.....	520-1001-ND	217.07	INDART-HC08/GP
MC68HC908GRxx, MC68HC908GZxx.....	520-1002-ND	217.07	INDART-HC08/GZ
MC68HC908GZ32, 48, 60.....	520-1003-ND	217.07	INDART-HC08/GZ64
MC68HC908JKxx.....	520-1004-ND	217.07	INDART-HC08/JK
MC68HC908JLxx.....	520-1005-ND	217.07	INDART-HC08/JL
MC68HC908APxx.....	520-1007-ND	217.07	INDART-HC08/AP
<b>HCS08</b>			
MC9S08GB60.....	520-1009-ND	217.07	INDART-HCS08/GB
MC9S08RG60.....	520-1029-ND	217.07	INDART-HCS08/RG60
<b>HCS12</b>			
MC9S12C32.....	520-1011-ND	362.27	INDART-HCS12/C32
MC9S12DP256.....	520-1012-ND	362.27	INDART-HCS12/DP256
MC9S12E128.....	520-1013-ND	362.27	INDART-HCS12/E128
<b>Starter Kits</b>			
MC68HC908QY4.....	520-1028-ND	71.87	PK-HC08QY4
MC9S08GB60.....	520-1014-ND	71.87	PK-HCS08GB60
MC9S12XDP512.....	520-1032-ND	286.77	SK-S12XDP512-A

### ST5 and ST7 Development Kits

The easy-to-use inDART series development kits are powerful entry-level tools for ST5 and ST7 based systems. These kits give you the ability to write, compile, download and in-circuit emulate and debug your code. Supports ISP (in-system programming) to program the flash on the target MCU.

#### Features:

• Low cost and easy to use • ISP/ICP programming • USB Interface • In-circuit debug

#### Kit Includes:

• inDART board, Demo board, Starter guide, CodeWarrior, STVD7 (ST Visual Debug) and DataBlaze software

Description	Digi-Key Part No.	Price Each	SofTec Part No.
ST52F Design Kit.....	520-1018-ND	217.07	INDART-STX/500
ST72F321, F521 Design Kit.....	520-1020-ND	253.37	INDART-STX/521
ST7FLITE1x, ST7FLITE2x Design Kit.....	520-1022-ND	217.07	INDART-STX/LITE2
ST72C1xx, 2xx Design Kit.....	520-1024-ND	180.77	INDART-ST72C254
ST72C3xx Design Kit.....	520-1025-ND	180.77	INDART-ST72C334

### ST5 and ST7 Tools

#### IPL-ST7:

This Dynamic Link Library includes all low-level functions that allow users to set up and perform commands and functions from the DataBlaze user interface within their own windows application

#### PK-ST7FLITE2:

Entry level tool which allows you to get started with the ST7FLITE2 MCU. **Features:** • Real-time code execution • In-circuit debugging • In-system programming and debugging • Demo area • Prototyping area  
**Kit Includes:** • Evaluation board • USB cable • STVD7, CodeWarrior, and Cosmic C Software • "Quickstart" poster • User's manual

#### AK-ST7FMC:

Demonstrates how effectively the ST7FMC of microcontrollers can be used in real-world motor control applications. **Kit Includes:** • Motor control board • BLDC Motor • In-Circuit debugger/programmer • Optoisolation board • Motor cable, power supply cable, USB cable, ISP Cables • "System Software" CD-ROM • "Quickstart" poster • User's manual

Description	Digi-Key Part No.	Price Each	SofTec Part No.
Programming Library for ST7.....	520-1026-ND	261.36	IPL-ST7
ST7FLITE2 Starter Kit.....	520-1030-ND	71.87	PK-ST7FLITE2
ST7MC Application Kit.....	520-1031-ND	504.57	AK-ST7FMC

Digi-Reel® Most SMT cutdown parts are available on a Digi-Reel®. For Digi-Reel part number, change 1-ND to 6-ND or CT-ND to DKR-ND. See Digi-Key® Services on page 2 for additional information.

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