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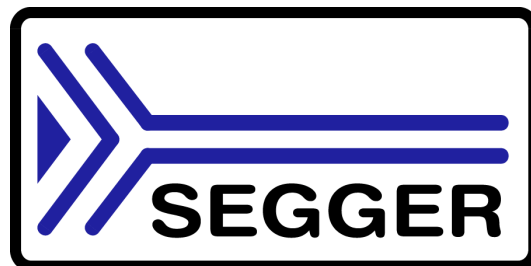
# *J-Link / J-Trace* *User Guide*



**Software Version V6.14**  
**Manual Rev. 0**

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## Revisions

This manual describes the J-Link and J-Trace device.

For further information on topics or routines not yet specified, please contact us.

Revision	Date	By	Explanation
V6.14 Rev. 3	170220	NV	Chapter "Working with J-Link and J-Trace" * Section "J-Link scriptfiles": Added: "OnTraceStart()" and "JLINK_TRACE_Portwidth" Chapter "Trace" * Added crossreference to "JLINK_TRACE_Portwidth"
V6.14 Rev. 2	170216	NV	Chapter "Introduction" *Added Subsubsection "Software and Hardware Features Overview" to all device Subsections. *Edited Subsection ""J-Trace ARM. *Section "Target interfaces and adapters": edited "RESET" to "nRESET" and updated description.
V6.14 Rev. 1	170210	NV	Chapter "Working with J-Link and J-Trace" * Section "Exec Commands": Updated SetResetPulseLen TraceSampleAdjust Chapter "Trace" * Section "Tracing via trace pins": Updated
V6.14 Rev. 0	170201	AG	Chapter "Working with J-Link" * Section "Exec Commands": Updated SelectTraceSource SetRAWTRACEPinDelay ReadIntoTraceCache Chapter "Trace" added .
V6.10a Rev. 0	160820	EL	Chapter "Working With J-Link" * Section "Exec Commands": Updated ExcludeFlashCacheRanges.
V6.00i Rev. 0	160802	EL	Chapter "Introduction" * Removed "Model Future Lists" Chapter "Adding Support for New Devices": renamed to "Open Flash Loader" Chapter "Open Flash Loader" updated.
V6.00 Rev. 1	160617	EL	Chapter "J-Flash SPI" * Added chapter "Custom Command Sequences"
V6.00 Rev. 0	160519	AG	Chapter "Adding Support for New Devices" added.
V5.12f Rev. 0	160503	AB	Chapter "Related Software" * Section "J-Link RTT Viewer" updated and moved from section "RTT".
V5.12d Rev. 1	160427	AG	Chapter "Working with J-Link and J-Trace" * Section "J-Link script files" updated.
V5.12d Rev. 0	160425	AG	Chapter "Working with J-Link and J-Trace" * Section "J-Link script files" updated.
V5.12c Rev. 1	160418	NG	Chapter "Related Software" * Section "J-Link Commander" Typo fixed.

Revision	Date	By	Explanation
V5.12c Rev. 0	160413	NG	Chapter "Related Software" * Section "J-Link Commander" Commands and commandline options added. Chapter "Working with J-Link and J-Trace" * Section "Command strings" Command "SetRTTtelnetPort" added. Chapter "Flash Download" * Section "Debugging applications that change flash contents at runtime" added.
V5.10u Rev. 0	160317	AG	Chapter "Monitor Mode Debugging" * Section "Target application performs reset" added.
V5.10t Rev. 0	160314	AG	Chapter "Monitor Mode Debugging" * Section "Enable Monitor Debugging" updated. * Section "Forwarding of Monitor Interrupts" added.
V5.10 Rev. 3	160309	EL	Chapter "J-Flash SPI" updated.
V5.10 Rev. 2	160215	AG	Chapter "RTT" updated.
V5.10 Rev. 1	151204	AG	Chapter "RDI" updated. Chapter "Semihosting" added.
V5.10 Rev. 0	151127	NG	Chapter "Related Software" * Section "J-Scope" removed.
V5.02m Rev. 0	151125	AG	Chapter "Working with J-Link and J-Trace" * Section "The J-Link settings file" added. Chapter "Low Power Debugging" added.
V5.02l Rev. 0	151123	AG	Various Chapters * Some typos corrected.
V5.02i Rev. 1	151106	RH	Chapter "J-Flash SPI" * Section "Send custom commands" added.
V5.02i Rev. 0	151105	RH	Chapter "Related Software" * Section "J-Link Commander" exec command added. Chapter "Working with J-Link and J-Trace" * Section "Command strings" New commands added.
V5.02f Rev. 1	151022	NG	Chapter "Related Software" * Section "J-Scope" updated.
V5.02f Rev. 1	151022	EL	Chapter "Target interfaces and adapters" * Section "Reference voltage (VTref)" added.
V5.02f Rev. 0	151007	RH	Chapter "Working with J-Link and J-Trace" * Section "J-Link script files" updated.
V5.02e Rev. 0	151001	AG	Chapter "Working with J-Link and J-Trace" * Section "J-Link script files" updated.
V5.02c Rev. 1	150925	NG	Chapter "Licensing" * Section "Original SEGGER products" updated. Chapter "Flash download" * Section "Setup for various debuggers (CFI flash)" updated.
V5.02c Rev. 0	150916	RH	Chapter "Flash download" * Section "Setup for various debuggers (SPIFI flash)" added.
V5.02c Rev. 0	150914	RH	Chapter "Introduction" * Section "J-Link / J-Trace models" updated. * Section "Supported OS" Added Windows 10
V5.02a Rev. 0	150903	AG	Chapter "Monitor Mode Debugging" added.

Revision	Date	By	Explanation
V5.02 Rev. 0	150820	AG	Chapter "Working with J-Link and J-Trace" * Section "Command strings" "DisableCortexMXPSRAutoCorrectTBit" added.
V5.02 Rev. 0	150813	AG	Chapter "Monitor Mode Debugging" added.
V5.00 Rev. 1	150728	NG	Chapter "Related Software" * Section "J-Link Commander" Sub-Section "Command line options" updated.
V5.00 Rev. 0	150609	AG	Chapter "Flash download" * Section "QSPI flash support" added. Chapter "Flash breakpoints" * Section "Flash Breakpoints in QSPI flash" added
V5.00 Rev. 0	150520	EL	Chapter "J-Flash SPI" * Initial version added
V4.99b Rev. 0	150520	EL	Chapter "Related Software" * Section "J-Link STM32 Unlock" - Added command line options
V4.99a Rev. 0	150429	AG	Chapter "Target interfaces and Adapters" Chapter "20-pin J-Link connector", section "Pinout for SPI" added.
V4.98d Rev. 0	150427	EL	Chapter "Related Software" * Section "Configure SWO output after device reset" updated.
V4.98b Rev. 0	150410	AG	Chapter "Licensing" * Section "J-Trace for Cortex-M" updated.
V4.98 Rev. 0	150320	NG	Chapter "Related Software" * Section "J-Link Commander" Sub-Section "Commands" added. Chapter "Working with J-Link and J-Trace" * Section "J-Link script files" updated
V4.96f Rev. 0	150204	JL	Chapter "Related Software" * Section "GDB Server" Exit code description added.
V4.96 Rev. 0	141219	JL	Chapter "RTT" added. Chapter "Related Software" * Section "GDB Server" Command line option "-strict" added. Command line option "-timeout" added.
V4.90d Rev. 0	141112	NG	Chapter "Related Software" * Section "J-Link Remote Server" updated. * Section "J-Scope" updated.
V4.90c Rev. 0	140924	JL	Chapter "Related Software" * Section "JTAGLoad" updated.
V4.90b Rev. 1	140813	EL	Chapter "Working with J-Link and J-Trace" * Section "Connecting multiple J-Links / J-Traces to your PC" updated Chapter "J-Link software" * Section "J-Link Configurator" updated.
V4.90b Rev. 0	140813	NG	Chapter "Related Software" * Section "J-Scope" added.
V4.86 Rev. 2	140606	AG	Chapter "Device specifics" * Section "Silicon Labs - EFM32 series devices" added
V4.86 Rev. 1	140527	JL	Chapter "Related Software" * Section "GDB Server" Command line options -halt / -nohalt added. Description for GDB Server CL version added.

Revision	Date	By	Explanation
V4.86 Rev. 0	140519	AG	Chapter "Flash download" Section "Mentor Sourcery CodeBench" added.
V4.84 Rev. 0	140321	EL	Chapter "Working with J-Link" * Section "Virtual COM Port (VCOM) improved. Chapter "Target interfaces and adapters" * Section "Pinout for SWD + Virtual COM Port (VCOM) added."
V4.82 Rev. 1	140228	EL	Chapter "Related Software" * Section "Command line options" Extended command line option -speed. Chapter "J-Link software and documentation package" * Section "J-Link STR91x Commander" Added command line option parameter to specify a customized scan-chain. Chapter "Working with J-Link" * Section "Virtual COM Port (VCOM) added. Chapter "Setup" * Section "Getting started with J-Link and DS-5"
V4.82 Rev. 0	140218	JL	Chapter "Related Software" * Section "GDB Server" Command line option -notimout added.
V4.80f Rev. 0	140204	JL	Chapter "Related Software" * Section "GDB Server" Command line options and remote commands added.
V4.80 Rev. 1	131219	JL/ NG	Chapter "Related Software" * Section "GDB Server" Remote commands and command line options description improved. Several corrections.
V4.80 Rev. 0	131105	JL	Chapter "Related Software" * Section "GDB Server" SEGGER-specific GDB protocol extensions added.
V4.76 Rev. 3	130823	JL	Chapter "Flash Download" * Replaced references to GDB Server manual. Chapter "Working withc J-Link" * Replaced references to GDB Server manual.
V4.76 Rev. 2	130821	JL	Chapter "Related Software" * Section "GDB Server" Remote commands added.
V4.76 Rev. 1	130819	JL	Chapter "Related Software" * Section "SWO Viewer" Sample code updated.
V4.76 Rev. 0	130809	JL	Chapter "Related Software" * Sections reordered and updated. Chapter "Setup" * Section "Using JLinkARM.dll moved here.
V4.71b Rev. 0	130507	JL	Chapter "Related Software" * Section "SWO Viewer" Added new command line options.
V4.66 Rev. 0	130221	JL	Chapter "Introduction" * Section "Supported OS" Added Linux and Mac OSX

Revision	Date	By	Explanation
V4.62b Rev. 0	130219	EL	Chapter "Introduction" * Section "J-Link / J-Trace models" Clock rise and fall times updated.
V4.62 Rev. 0	130129	JL	Chapter "Introduction" * Section "J-Link / J-Trace models" Sub-section "J-link ULTRA" updated.
V4.62 Rev. 0	130124	EL	Chapter "Target interfaces and adapters" * Section "9-pin JTAG/SWD connector" Pinout description corrected.
V4.58 Rev. 1	121206	AG	Chapter "Intoduction" * Section "J-Link / J-Trace models" updated.
V4.58 Rev. 0	121126	JL	Chapter "Working with J-Link" * Section "J-Link script files" Sub-section "Executing J-Link script files" updated.
V4.56b Rev. 0	121112	JL	Chapter "Related Software" * Section "J-Link SWO Viewer" Added sub-section "Configure SWO output after device reset"
V4.56a Rev. 0	121106	JL	Chapter "Related Software" * Section "J-Link Commander" Renamed "Commander script files" to "Commander files" and "script mode" to "batch mode".
V4.56 Rev. 0	121022	AG	Renamed "J-Link TCP/IP Server" to "J-Link Remote Server".
V4.54 Rev. 1	121009	JL	Chapter "Related Software" * Section "TCP/IP Server", subsection "Tunneling Mode" added.
V4.54 Rev. 0	120913	EL	Chapter "Flash Breakpoints" * Section "Licensing" updated. Chapter "Device specifics" * Section "Freescale", subsection "Data flash support" added.
V4.53c Rev. 0	120904	EL	Chapter "Licensing" * Section "Device-based license" updated.
V4.51h Rev. 0	120717	EL	Chapter "Flash download" * Section "J-Link commander" updated. Chapter "Support and FAQs" * Section "Frequently asked questions" updated. Chapter "J-Link and J-Trace related software" * Section "J-Link Commander" updated.
V4.51e Rev. 1	120704	EL	Chapter "Working with J-Link" * Section "Reset strategies" updated and corrected. Added reset type 8.
V4.51e Rev. 0	120704	AG	Chapter "Device specifics" * Section "ST" updated and corrected.
V4.51b Rev. 0	120611	EL	Chapter "J-Link and J-Trace related software" * Section "SWO Viewer" added.
V4.51a Rev. 0	120606	EL	Chapter "Device specifics" * Section "ST", subsection "ETM init" for some STM32 devices added.. * Section "Texas Instruments" updated. Chapter "Target interfaces and adapters" * Section "Pinout for SWD" updated.
V4.47a Rev. 0	120419	AG	Chapter "Device specifics" * Section "Texas Instruments" updated.



Revision	Date	By	Explanation
V4.46 Rev. 0	120416	EL	Chapter "Support" updated.
V4.42 Rev. 0	120214	EL	Chapter "Working with J-Link" * Section "J-Link script files" updated.
V4.36 Rev. 1	110927	EL	Chapter "Flash download" added. Chapter "Flash breakpoints" added. Chapter "Target interfaces and adapters" * Section "20-pin JTAG/SWD connector" updated. Chapter "RDI" added. Chapter "Setup" updated. Chapter "Device specifics" updated.
V4.36 Rev. 0	110909	AG	Chapter "Working with J-Link" * Section "J-Link script files" updated.
V4.26 Rev. 1	110513	KN	Chapter "Introduction" * Section "J-Link / J-Trace models" corrected.
V4.26 Rev. 0	110427	KN	Several corrections.
V4.24 Rev. 1	110228	AG	Chapter "Introduction" * Section "J-Link / J-Trace models" corrected. Chapter "Device specifics" * Section "ST Microelectronics" updated.
V4.24 Rev. 0	110216	AG	Chapter "Device specifics" * Section "Samsung" added. Chapter "Working with J-Link" * Section "Reset strategies" updated. Chapter "Target interfaces and adapters" * Section "9-pin JTAG/SWD connector" added.
V4.23d	110202	AG	Chapter "J-Link and J-Trace related software" * Section "J-Link software and documentation package in detail" updated. Chapter "Introduction" * Section "Built-in intelligence for supported CPU-cores" added.
V4.21g	101130	AG	Chapter "Working with J-Link" * Section "Reset strategies" updated. Chapter "Device specifics" * Section "Freescale" updated. Chapter "Flash download and flash breakpoints" * Section "Supported devices" updated * Section "Setup for different debuggers (CFI flash)" updated.
V4.21	101025	AG	Chapter "Device specifics" * Section "Freescale" updated.
V4.20j	101019	AG	Chapter "Working with J-Link" * Section "Reset strategies" updated.
V4.20b	100923	AG	Chapter "Working with J-Link" * Section "Reset strategies" updated.
90	100818	AG	Chapter "Working with J-Link" * Section "J-Link script files" updated. * Section "Command strings" updated. Chapter "Target interfaces and adapters" * Section "19-pin JTAG/SWD and Trace connector" corrected. Chapter "Setup" * Section "J-Link configurator added."
89	100630	AG	Several corrections.
88	100622	AG	Chapter "J-Link and J-Trace related software" * Section "SWO Analyzer" added.
87	100617	AG	Several corrections.

Revision	Date	By	Explanation
86	100504	AG	Chapter "Introduction" * Section "J-Link / J-Trace models" updated. Chapter "Target interfaces and adapters" * Section "Adapters" updated.
85	100428	AG	Chapter "Introduction" * Section "J-Link / J-Trace models" updated.
84	100324	KN	Chapter "Working with J-Link and J-Trace" * Several corrections Chapter Flash download & flash breakpoints * Section "Supported devices" updated
83	100223	KN	Chapter "Introduction" * Section "J-Link / J-Trace models" updated.
82	100215	AG	Chapter "Working with J-Link" * Section "J-Link script files" added.
81	100202	KN	Chapter "Device Specifics" * Section "Luminary Micro" updated. Chapter "Flash download and flash breakpoints" * Section "Supported devices" updated.
80	100104	KN	Chapter "Flash download and flash breakpoints" * Section "Supported devices" updated
79	091201	AG	Chapter "Working with J-Link and J-Trace" * Section "Reset strategies" updated. Chapter "Licensing" * Section "J-Link OEM versions" updated.
78	091023	AG	Chapter "Licensing" * Section "J-Link OEM versions" updated.
77	090910	AG	Chapter "Introduction" * Section "J-Link / J-Trace models" updated.
76	090828	KN	Chapter "Introduction" * Section "Specifications" updated * Section "Hardware versions" updated * Section "Common features of the J-Link product family" updated Chapter "Target interfaces and adapters" * Section "5 Volt adapter" updated
75	090729	AG	Chapter "Introduction" * Section "J-Link / J-Trace models" updated. Chapter "Working with J-Link and J-Trace" * Section "SWD interface" updated.
74	090722	KN	Chapter "Introduction" * Section "Supported IDEs" added * Section "Supported CPU cores" updated * Section "Model comparison chart" renamed to "Model comparison" * Section "J-Link bundle comparison chart" removed
73	090701	KN	Chapter "Introduction" * Section "J-Link and J-Trace models" added * Sections "Model comparison chart" & "J-Link bundle comparison chart" added Chapter "J-Link and J-Trace models" removed Chapter "Hardware" renamed to "Target interfaces & adapters" * Section "JTAG Isolator" added Chapter "Target interfaces and adapters" * Section "Target board design" updated Several corrections

Revision	Date	By	Explanation
72	090618	AG	Chapter "Working with J-Link" * Section "J-Link control panel" updated. Chapter "Flash download and flash breakpoints" * Section "Supported devices" updated. Chapter "Device specifics" * Section "NXP" updated.
71	090616	AG	Chapter "Device specifics" * Section "NXP" updated.
70	090605	AG	Chapter "Introduction" * Section "Common features of the J-Link product family" updated.
69	090515	AG	Chapter "Working with J-Link" * Section "Reset strategies" updated. * Section "Indicators" updated. Chapter "Flash download and flash breakpoints" * Section "Supported devices" updated.
68	090428	AG	Chapter "J-Link and J-Trace related software" * Section "J-Link STM32 Commander" added. Chapter "Working with J-Link" * Section "Reset strategies" updated.
67	090402	AG	Chapter "Working with J-Link" * Section "Reset strategies" updated.
66	090327	AG	Chapter "Background information" * Section "Embedded Trace Macrocell (ETM)" updated. Chapter "J-Link and J-Trace related software" * Section "Dedicated flash programming utilities for J-Link" updated.
65	090320	AG	Several changes in the manual structure.
64	090313	AG	Chapter "Working with J-Link" * Section "Indicators" added.
63	090212	AG	Chapter "Hardware" * Several corrections. * Section "Hardware Versions" Version 8.0 added.
62	090211	AG	Chapter "Working with J-Link and J-Trace" * Section "Reset strategies" updated. Chapter J-Link and J-Trace related software * Section "J-Link STR91x Commander (Command line tool)" updated. Chapter "Device specifics" * Section "ST Microelectronics" updated. Chapter "Hardware" updated.
61	090120	TQ	Chapter "Working with J-Link" * Section "Cortex-M3 specific reset strategies"
60	090114	AG	Chapter "Working with J-Link" * Section "Cortex-M3 specific reset strategies"
59	090108	KN	Chapter Hardware * Section "Target board design for JTAG" updated. * Section "Target board design for SWD" added.
58	090105	AG	Chapter "Working with J-Link Pro" * Section "Connecting J-Link Pro the first time" updated.

Revision	Date	By	Explanation
57	081222	AG	Chapter "Working with J-Link Pro" * Section "Introduction" updated. * Section "Configuring J-Link Pro via web interface" updated. Chapter "Introduction" * Section "J-Link Pro overview" updated.
56	081219	AG	Chapter "Working with J-Link Pro" * Section "FAQs" added. Chapter "Support and FAQs" * Section "Frequently Asked Questions" updated.
55	081218	AG	Chapter "Hardware" updated.
54	081217	AG	Chapter "Working with J-Link and J-Trace" * Section "Command strings" updated.
53	081216	AG	Chapter "Working with J-Link Pro" updated.
52	081212	AG	Chapter "Working with J-Link Pro" added. Chapter "Licensing" * Section "Original SEGGER products" updated.
51	081202	KN	Several corrections.
50	081030	AG	Chapter "Flash download and flash breakpoints" * Section "Supported devices" corrected.
49	081029	AG	Several corrections.
48	080916	AG	Chapter "Working with J-Link and J-Trace" * Section "Connecting multiple J-Links / J-Traces to your PC" updated.
47	080910	AG	Chapter "Licensing" updated.
46	080904	AG	Chapter "Licensing" added. Chapter "Hardware" Section "J-Link OEM versions" moved to chapter "Licensing"
45	080902	AG	Chapter "Hardware" Section "JTAG+Trace connector" JTAG+Trace connector pinout corrected. Section "J-Link OEM versions" updated.
44	080827	AG	Chapter "J-Link control panel" moved to chapter "Working with J-Link". Several corrections.
43	080826	AG	Chapter "Flash download and flash breakpoints" Section "Supported devices" updated.
42	080820	AG	Chapter "Flash download and flash breakpoints" Section "Supported devices" updated.
41	080811	AG	Chapter "Flash download and flash breakpoints" updated. Chapter "Flash download and flash breakpoints", section "Supported devices" updated.
40	080630	AG	Chapter "Flash download and flash breakpoints" updated. Chapter "J-Link status window" renamed to "J-Link control panel" Various corrections.
39	080627	AG	Chapter "Flash download and flash breakpoints" Section "Licensing" updated. Section "Using flash download and flash breakpoints with different debuggers" updated. Chapter "J-Link status window" added.

Revision	Date	By	Explanation
38	080618	AG	Chapter "Support and FAQs" Section "Frequently Asked Questions" updated Chapter "Reset strategies" Section "Cortex-M3 specific reset strategies" updated.
37	080617	AG	Chapter "Reset strategies" Section "Cortex-M3 specific reset strategies" updated.
36	080530	AG	Chapter "Hardware" Section "Differences between different versions" updated. Chapter "Working with J-Link and J-Trace" Section "Cortex-M3 specific reset strategies" added.
35	080215	AG	Chapter "J-Link and J-Trace related software" Section "J-Link software and documentation package in detail" updated.
34	080212	AG	Chapter "J-Link and J-Trace related software" Section "J-Link TCP/IP Server (Remote J-Link / J-Trace use)" updated. Chapter "Working with J-Link and J-Trace" Section "Command strings" updated. Chapter "Flash download and flash breakpoints" Section "Introduction" updated. Section "Licensing" updated. Section "Using flash download and flash breakpoints with different debuggers" updated.
33	080207	AG	Chapter "Flash download and flash breakpoints" added Chapter "Device specifics:" Section "ATMEL - AT91SAM7 - Recommended init sequence" added.
32	0080129	SK	Chapter "Device specifics": Section "NXP - LPC - Fast GPIO bug" list of device enhanced.
31	0080103	SK	Chapter "Device specifics": Section "NXP - LPC - Fast GPIO bug" updated.
30	071211	AG	Chapter "Device specifics": Section "Analog Devices" updated. Section "ATMEL" updated. Section "Freescale" added. Section "Luminary Micro" added. Section "NXP" updated. Section "OKI" added. Section "ST Microelectronics" updated. Section "Texas Instruments" updated. Chapter "Related software": Section "J-Link STR91x Commander" updated
29	070912	SK	Chapter "Hardware", section "Target board design" updated.
28	070912	SK	Chapter "Related software": Section "J-LinkSTR91x Commander" added. Chapter "Device specifics": Section "ST Microelectronics" added. Section "Texas Instruments" added. Subsection "AT91SAM9" added.

Revision	Date	By	Explanation
28	070912	AG	Chapter "Working with J-Link/J-Trace": Section "Command strings" updated.
27	070827	TQ	Chapter "Working with J-Link/J-Trace": Section "Command strings" updated.
26	070710	SK	Chapter "Introduction": Section "Features of J-Link" updated. Chapter "Background Information": Section "Embedded Trace Macrocell" added. Section "Embedded Trace Buffer" added.
25	070516	SK	Chapter "Working with J-Link/J-Trace": Section "Reset strategies in detail" - "Software, for Analog Devices ADuC7xxx MCUs" updated - "Software, for ATMEL AT91SAM7 MCUs" added. Chapter "Device specifics" Section "Analog Devices" added. Section "ATMEL" added.
24	070323	SK	Chapter "Setup": "Uninstalling the J-Link driver" updated. "Supported ARM cores" updated.
23	070320	SK	Chapter "Hardware": "Using the JTAG connector with SWD" updated.
22	070316	SK	Chapter "Hardware": "Using the JTAG connector with SWD" added.
21	070312	SK	Chapter "Hardware": "Differences between different versions" supplemented.
20	070307	SK	Chapter "J-Link / J-Trace related software": "J-Link GDB Server" licensing updated.
19	070226	SK	Chapter "J-Link / J-Trace related software" updated and reorganized. Chapter "Hardware" "List of OEM products" updated
18	070221	SK	Chapter "Device specifics" added Subchapter "Command strings" added
17	070131	SK	Chapter "Hardware": "Version 5.3": Current limits added "Version 5.4" added Chapter "Setup": "Installing the J-Link USB driver" removed. "Installing the J-Link software and documentation pack" added. Subchapter "List of OEM products" updated. "OS support" updated
16	061222	SK	Chapter "Preface": "Company description" added. J-Link picture changed.
15	060914	OO	Subchapter 1.5.1: Added target supply voltage and target supply current to specifications. Subchapter 5.2.1: Pictures of ways to connect J-Trace.
14	060818	TQ	Subchapter 4.7 "Using DCC for memory reads" added.
13	060711	OO	Subchapter 5.2.2: Corrected JTAG+Trace connector pinout table.
12	060628	OO	Subchapter 4.1: Added ARM966E-S to List of supported ARM cores.

Revision	Date	By	Explanation
11	060607	SK	Subchapter 5.5.2.2 changed. Subchapter 5.5.2.3 added.
10	060526	SK	ARM9 download speed updated. Subchapter 8.2.1: Screenshot "Start sequence" updated. Subchapter 8.2.2 "ID sequence" removed. Chapter "Support" and "FAQ" merged. Various improvements
9	060324	OO	Chapter "Literature and references" added. Chapter "Hardware": Added common information trace signals. Added timing diagram for trace. Chapter "Designing the target board for trace" added.
8	060117	OO	Chapter "Related Software": Added JLinkARM.dll. Screenshots updated.
7	051208	OO	Chapter Working with J-Link: Sketch added.
6	051118	OO	Chapter Working with J-Link: "Connecting multiple J-Links to your PC" added. Chapter Working with J-Link: "Multi core debugging" added. Chapter Background information: "J-Link firmware" added.
5	051103	TQ	Chapter Setup: "JTAG Speed" added.
4	051025	OO	Chapter Background information: "Flash programming" added. Chapter Setup: "Scan chain configuration" added. Some smaller changes.
3	051021	TQ	Performance values updated.
2	051011	TQ	Chapter "Working with J-Link" added.
1	050818	TW	Initial version.

# About this document

## Assumptions

This document assumes that you already have a solid knowledge of the following:

- The software tools used for building your application (assembler, linker, C compiler)
- The C programming language
- The target processor
- DOS command line

If you feel that your knowledge of C is not sufficient, we recommend *The C Programming Language* by Kernighan and Ritchie (ISBN 0-13-1103628), which describes the standard in C-programming and, in newer editions, also covers the ANSI C standard.

## How to use this manual

This manual explains all the functions and macros that the product offers. It assumes you have a working knowledge of the C language. Knowledge of assembly programming is not required.

## Typographic conventions for syntax

This manual uses the following typographic conventions:

Style	Used for
Body	Body text.
Keyword	Text that you enter at the command-prompt or that appears on the display (that is system functions, file- or pathnames).
Parameter	Parameters in API functions.
Sample	Sample code in program examples.
Sample comment	Comments in programm examples.
Reference	Reference to chapters, sections, tables and figures or other documents.
<b>GUIElement</b>	Buttons, dialog boxes, menu names, menu commands.
<b>Emphasis</b>	Very important sections.

**Table 1.1: Typographic conventions**





**SEGGER Microcontroller GmbH & Co. KG** develops and distributes software development tools and ANSI C software components (middleware) for embedded systems in several industries such as telecom, medical technology, consumer electronics, automotive industry and industrial automation.

SEGGER's intention is to cut software development time for embedded applications by offering compact flexible and easy to use middleware, allowing developers to concentrate on their application.

Our most popular products are emWin, a universal graphic software package for embedded applications, and embOS, a small yet efficient real-time kernel. emWin, written entirely in ANSI C, can easily be used on any CPU and most any display. It is complemented by the available PC tools: Bitmap Converter, Font Converter, Simulator and Viewer. embOS supports most 8/16/32-bit CPUs. Its small memory footprint makes it suitable for single-chip applications.

Apart from its main focus on software tools, SEGGER develops and produces programming tools for flash micro controllers, as well as J-Link, a JTAG emulator to assist in development, debugging and production, which has rapidly become the industry standard for debug access to ARM cores.

**Corporate Office:**

<http://www.segger.com>

**United States Office:**

<http://www.segger-us.com>

## EMBEDDED SOFTWARE (Middleware)



### emWin

#### Graphics software and GUI

emWin is designed to provide an efficient, processor- and display controller-independent graphical user interface (GUI) for any application that operates with a graphical display.



### embOS

#### Real Time Operating System

embOS is an RTOS designed to offer the benefits of a complete multitasking system for hard real time applications with minimal resources.



### embOS/IP

#### TCP/IP stack

embOS/IP a high-performance TCP/IP stack that has been optimized for speed, versatility and a small memory footprint.



### emFile

#### File system

emFile is an embedded file system with FAT12, FAT16 and FAT32 support. Various Device drivers, e.g. for NAND and NOR flashes, SD/MMC and Compact-Flash cards, are available.



### USB-Stack

#### USB device/host stack

A USB stack designed to work on any embedded system with a USB controller. Bulk communication and most standard device classes are supported.

## SEGGER TOOLS

### Flasher

#### Flash programmer

Flash Programming tool primarily for micro controllers.

### J-Link

#### JTAG emulator for ARM cores

USB driven JTAG interface for ARM cores.

### J-Trace

#### JTAG emulator with trace

USB driven JTAG interface for ARM cores with Trace memory. supporting the ARM ETM (Embedded Trace Macrocell).

### J-Link / J-Trace Related Software

Add-on software to be used with SEGGER's industry standard JTAG emulator, this includes flash programming software and flash breakpoints.

**Table 1.1:**



# Table of Contents

1	Introduction .....	27
1.1	Requirements.....	28
1.2	Supported OS .....	29
1.3	J-Link / J-Trace models .....	30
1.3.1	Model comparison.....	31
1.3.2	J-Link BASE .....	32
1.3.3	J-Link PLUS .....	34
1.3.4	J-Link ULTRA+ .....	37
1.3.5	J-Link PRO.....	39
1.3.6	J-Link Lite ARM .....	39
1.3.7	J-Link Lite CortexM .....	41
1.3.8	J-Trace ARM .....	42
1.3.9	J-Trace for Cortex-M .....	43
1.3.10	Flasher ARM.....	45
1.4	Common features of the J-Link product family .....	47
1.5	Supported CPU cores .....	48
1.6	Built-in intelligence for supported CPU-cores .....	49
1.6.1	Intelligence in the J-Link firmware .....	49
1.6.2	Intelligence on the PC-side (DLL).....	49
1.6.3	Firmware intelligence per model .....	51
1.7	Supported IDEs .....	53
2	Licensing .....	55
2.1	..... Components requiring a license	56
2.2	License types .....	57
2.2.1	Built-in license .....	57
2.2.2	Key-based license.....	57
2.3	Legal use of SEGGER J-Link software.....	58
2.3.1	Use of the software with 3rd party tools.....	58
2.4	Original SEGGER products.....	59
2.4.1	J-Link BASE .....	59
2.4.2	J-Link PLUS .....	59
2.4.3	J-link ULTRA+ .....	60
2.4.4	J-Link PRO.....	60
2.4.5	J-Trace for Cortex-M .....	61
2.4.6	Flasher ARM.....	62
2.4.7	Flasher RX.....	62
2.4.8	Flasher PPC .....	63
2.5	J-Link OEM versions.....	64
2.5.1	Analog Devices: mIDASLink .....	64
2.5.2	Atmel: SAM-ICE .....	64
2.5.3	Digi: JTAG Link.....	65
2.5.4	IAR: J-Link / J-Link KS .....	65
2.5.5	IAR: J-Link Lite .....	65
2.5.6	IAR: J-Trace .....	66
2.5.7	NXP: J-Link Lite LPC Edition .....	66
2.5.8	SEGGER: J-Link Lite ARM.....	66
2.6	J-Link OBs .....	67
2.7	Illegal Clones .....	68
3	J-Link software and documentation package.....	69

3.1	Software overview.....	70
3.2	J-Link Commander (Command line tool) .....	71
3.2.1	Commands.....	72
3.2.2	Command line options .....	88
3.2.3	Using command files.....	91
3.3	J-Link GDB Server .....	92
3.3.1	J-Link GDB Server CL (Windows, Linux, Mac) .....	92
3.3.2	Debugging with J-Link GDB Server .....	93
3.3.3	Supported remote (monitor) commands .....	98
3.3.4	SEGGER-specific GDB protocol extensions .....	110
3.3.5	Command line options .....	115
3.3.6	Program termination.....	126
3.3.7	Semihosting .....	127
3.4	J-Link Remote Server .....	128
3.4.1	List of available commands.....	128
3.4.2	Tunneling mode .....	129
3.5	J-Mem Memory Viewer.....	132
3.6	J-Flash.....	133
3.7	J-Link RTT Viewer.....	134
3.7.1	RTT Viewer Startup .....	134
3.7.2	Connection Settings.....	135
3.7.3	The Terminal Tabs.....	135
3.7.4	Sending Input.....	136
3.7.5	Logging Terminal output .....	136
3.7.6	Logging Data.....	137
3.7.7	Command line options .....	137
3.7.8	Menus and Shortcuts .....	139
3.7.9	Using "virtual" Terminals in RTT .....	141
3.7.10	Using Text Control Codes .....	141
3.8	J-Link SWO Viewer .....	142
3.8.1	Usage.....	143
3.8.2	List of available command line options .....	143
3.8.3	Configure SWO output after device reset .....	145
3.8.4	Target example code for terminal output .....	145
3.9	SWO Analyzer.....	148
3.10	JTAGLoad (Command line tool) .....	149
3.11	J-Link RDI (Remote Debug Interface).....	150
3.11.1	Flash download and flash breakpoints .....	150
3.12	Processor specific tools .....	151
3.12.1	J-Link STR91x Commander (Command line tool) .....	151
3.12.2	J-Link STM32 Unlock (Command line tool) .....	152
3.13	J-Link Software Developer Kit (SDK).....	155
4	Setup.....	157
4.1	Installing the J-Link software and documentation pack .....	158
4.1.1	Setup procedure .....	158
4.2	Setting up the USB interface.....	161
4.2.1	Verifying correct driver installation .....	161
4.2.2	Uninstalling the J-Link USB driver.....	162
4.3	Setting up the IP interface.....	164
4.3.1	Configuring J-Link using J-Link Configurator.....	164
4.3.2	Configuring J-Link using the webinterface.....	164
4.4	FAQs .....	166
4.5	J-Link Configurator .....	167
4.5.1	Configure J-Links using the J-Link Configurator .....	167
4.6	J-Link USB identification.....	169
4.6.1	Connecting to different J-Links connected to the same host PC via USB .....	169
4.7	Using the J-Link DLL.....	171
4.7.1	What is the JLink DLL?.....	171
4.7.2	Updating the DLL in third-party programs.....	171
4.7.3	Determining the version of JLink DLL .....	172

4.7.4	Determining which DLL is used by a program .....	172
4.8	Getting started with J-Link and ARM DS-5 .....	173
4.8.1	Replacing the RDDI DLL manually .....	173
4.8.2	Using J-Link in DS-5 Development Studio .....	173
5	Working with J-Link and J-Trace.....	175
5.1	Connecting the target system.....	176
5.1.1	Power-on sequence.....	176
5.1.2	Verifying target device connection .....	176
5.1.3	Problems .....	176
5.2	Indicators .....	177
5.2.1	Main indicator .....	177
5.2.2	Input indicator .....	179
5.2.3	Output indicator .....	179
5.3	JTAG interface.....	180
5.3.1	Multiple devices in the scan chain .....	180
5.3.2	Sample configuration dialog boxes .....	180
5.3.3	Determining values for scan chain configuration.....	183
5.3.4	JTAG Speed .....	184
5.4	SWD interface.....	185
5.4.1	SWD speed.....	185
5.4.2	SWO.....	185
5.5	Multi-core debugging .....	187
5.5.1	How multi-core debugging works .....	187
5.5.2	Using multi-core debugging in detail .....	188
5.5.3	Things you should be aware of .....	189
5.6	Connecting multiple J-Links / J-Traces to your PC .....	191
5.6.1	How does it work? .....	191
5.7	J-Link control panel.....	193
5.7.1	Tabs .....	193
5.8	Reset strategies .....	199
5.8.1	Strategies for ARM 7/9 devices.....	199
5.8.2	Strategies for Cortex-M devices .....	201
5.9	Using DCC for memory access .....	204
5.9.1	What is required? .....	204
5.9.2	Target DCC handler .....	204
5.9.3	Target DCC abort handler .....	204
5.10	The J-Link settings file.....	205
5.10.1	SEGGER Embedded Studio .....	205
5.10.2	Keil MDK-ARM (uVision).....	205
5.10.3	IAR EWARM .....	205
5.10.4	Mentor Sourcery CodeBench for ARM.....	205
5.11	J-Link script files .....	206
5.11.1	Actions that can be customized .....	206
5.11.2	Script file API functions .....	208
5.11.3	Global DLL variables .....	213
5.11.4	Global DLL constants.....	217
5.11.5	Script file language .....	219
5.11.6	Script file writing example .....	220
5.11.7	Executing J-Link script files .....	220
5.12	Command strings .....	223
5.12.1	List of available commands .....	223
5.12.2	Using command strings .....	241
5.13	Switching off CPU clock during debug .....	243
5.14	Cache handling.....	244
5.14.1	Cache coherency .....	244
5.14.2	Cache clean area .....	244
5.14.3	Cache handling of ARM7 cores.....	244
5.14.4	Cache handling of ARM9 cores.....	244
5.15	Virtual COM Port (VCOM) .....	245
5.15.1	Configuring Virtual COM Port.....	245

<b>6</b>	<b>Flash download</b>	<b>247</b>
6.1	Introduction	248
6.2	Licensing	249
6.3	Supported devices	250
6.4	Setup for various debuggers (internal flash)	251
6.4.1	IAR Embedded Workbench	251
6.4.2	Keil MDK	251
6.4.3	Mentor Sourcery CodeBench	254
6.4.4	J-Link GDB Server	254
6.4.5	J-Link Commander	255
6.4.6	J-Link RDI	256
6.5	Setup for various debuggers (CFI flash)	257
6.5.1	IAR Embedded Workbench / Keil MDK	257
6.5.2	J-Link GDB Server	258
6.5.3	J-Link commander	258
6.6	Setup for various debuggers (SPIFI flash)	259
6.7	QSPI flash support	260
6.7.1	Setup the DLL for QSPI flash download	260
6.8	Using the DLL flash loaders in custom applications	261
6.9	Debugging applications that change flash contents at runtime	262
<b>7</b>	<b>Flash breakpoints</b>	<b>263</b>
7.1	Introduction	264
7.2	Licensing	265
7.2.1	Free for evaluation and non-commercial use	265
7.3	Supported devices	266
7.4	Setup & compatibility with various debuggers	267
7.4.1	Setup	267
7.4.2	Compatibility with various debuggers	267
7.5	Flash Breakpoints in QSPI flash	268
7.5.1	Setup	268
7.6	FAQ	269
<b>8</b>	<b>Monitor Mode Debugging</b>	<b>271</b>
8.1	Introduction	272
8.2	Enable Monitor Debugging	273
8.2.1	GDB based debug solutions	273
8.2.2	IAR EWARM	273
8.2.3	Keil MDK-ARM (uVision)	274
8.2.4	J-Link Commander	274
8.2.5	Generic way of enabling	274
8.3	Availability and limitations of monitor mode	275
8.3.1	Cortex-M3	275
8.3.2	Cortex-M4	275
8.4	Monitor code	276
8.5	Debugging interrupts	277
8.6	Having servicing interrupts in debug mode	278
8.7	Forwarding of Monitor Interrupts	279
8.8	Target application performs reset (Cortex-M)	280
<b>9</b>	<b>Low Power Debugging</b>	<b>281</b>
9.1	Introduction	282
9.2	Activating low power mode handling for J-Link	283
9.2.1	SEGGER Embedded Studio	283
9.2.2	Keil MDK-ARM	283
9.2.3	IAR EWARM	283
9.2.4	Mentor Sourcery CodeBench for ARM	283
9.2.5	GDB + GDBServer based setups (Eclipse etc.)	283
9.3	Restrictions	284

10	Open Flashloader .....	285
10.1	Introduction.....	286
10.2	General procedure .....	287
10.3	Adding a new device .....	288
10.4	Editing/Extending an Existing Device .....	289
10.5	XML Tags and Attributes.....	290
10.5.1	<Database> .....	290
10.5.2	<Device> .....	290
10.5.3	<ChipInfo> .....	290
10.5.4	<FlashBankInfo>.....	293
10.6	Example XML file .....	295
10.7	Add. Info / Considerations / Limitations .....	296
10.7.1	CMSIS Flash Algorithms Compatibility .....	296
10.7.2	Customized Flash Banks .....	296
10.7.3	Supported Cores.....	296
10.7.4	Information for Silicon Vendors .....	296
10.7.5	Template Projects and How To's .....	296
11	J-Flash SPI .....	297
11.1	Introduction.....	298
11.1.1	What is J-Flash SPI?.....	298
11.1.2	J-Flash SPI CL (Windows, Linux, Mac) .....	298
11.1.3	Features.....	298
11.1.4	Requirements.....	298
11.2	Licensing .....	300
11.2.1	Introduction.....	300
11.3	Getting Started .....	301
11.3.1	Setup.....	301
11.3.2	Using J-Flash SPI for the first time .....	301
11.3.3	Menu structure.....	302
11.4	Settings .....	306
11.4.1	Project Settings.....	306
11.4.2	Global Settings.....	309
11.5	Command Line Interface.....	311
11.5.1	Overview .....	311
11.5.2	Command line options.....	311
11.5.3	Batch processing .....	313
11.5.4	Programming multiple targets in parallel.....	313
11.6	Create a new J-Flash SPI project .....	315
11.6.1	Creating a new J-Flash SPI project .....	315
11.7	Custom Command Sequences .....	316
11.7.1	Init / Exit steps .....	316
11.7.2	Example.....	316
11.7.3	J-Flash SPI Command Line Version .....	317
11.8	Device specifics .....	320
11.8.1	SPI flashes with multiple erase commands .....	320
11.9	Target systems .....	321
11.9.1	Which flash devices can be programmed? .....	321
11.10	Performance .....	322
11.10.1	Performance values .....	322
11.11	Background information .....	323
11.11.1	SPI interface connection .....	323
11.12	Support.....	324
11.12.1	Troubleshooting .....	324
11.12.2	Contacting support .....	324
12	RDI.....	325
12.1	Introduction.....	326
12.1.1	Features.....	326
12.2	Licensing .....	327

12.3	Setup for various debuggers .....	328
12.3.1	IAR Embedded Workbench IDE .....	328
12.3.2	ARM AXD (ARM Developer Suite, ADS) .....	331
12.3.3	ARM RVDS (RealView developer suite) .....	333
12.3.4	GHS MULTI .....	338
12.3.5	KEIL MDK ( $\mu$ Vision IDE) .....	341
12.4	Configuration .....	344
12.4.1	Configuration file JLinkRDI.ini .....	344
12.4.2	Using different configurations .....	344
12.4.3	Using multiple J-Links simultaneously .....	344
12.4.4	Configuration dialog .....	344
12.5	Semihosting .....	353
12.5.1	Unexpected / unhandled SWIs .....	353
<b>13</b>	<b>RTT .....</b>	<b>355</b>
13.1	Introduction .....	356
13.2	How RTT works .....	357
13.2.1	Target implementation .....	357
13.2.2	Locating the Control Block .....	357
13.2.3	Internal structures .....	357
13.2.4	Requirements .....	358
13.2.5	Performance .....	359
13.2.6	Memory footprint .....	359
13.3	RTT Communication .....	360
13.3.1	RTT Viewer .....	360
13.3.2	RTT Client .....	360
13.3.3	RTT Logger .....	360
13.3.4	RTT in other host applications .....	360
13.4	Implementation .....	361
13.4.1	API functions .....	361
13.4.2	Configuration defines .....	367
13.5	ARM Cortex - Background memory access .....	369
13.6	Example code .....	370
13.7	FAQ .....	371
<b>14</b>	<b>Trace .....</b>	<b>373</b>
14.1	Introduction .....	374
14.1.1	What is backtrace? .....	374
14.1.2	What is streaming trace? .....	374
14.1.3	What is code coverage? .....	374
14.1.4	What is code profiling? .....	375
14.2	Tracing via trace pins .....	376
14.2.1	Cortex-M specifics .....	376
14.2.2	Trace signal timing .....	376
14.2.3	Adjusting trace signal timing on J-Trace .....	376
14.2.4	J-Trace models with support for streaming trace .....	378
14.3	Tracing with on-chip trace buffer .....	379
14.3.1	CPUs that provide tracing via pins and on-chip buffer .....	379
14.4	Target devices with trace support .....	380
14.5	Streaming trace .....	381
14.5.1	Download and execution address differ .....	381
14.5.2	Do streaming trace without prior download .....	381
<b>15</b>	<b>Device specifics .....</b>	<b>383</b>
15.1	Analog Devices .....	384
15.1.1	ADuC7xxx .....	384
15.2	ATMEL .....	386
15.2.1	AT91SAM7 .....	387
15.2.2	AT91SAM9 .....	389
15.3	DSPGroup .....	390

15.4	Ember.....	391
15.5	Energy Micro.....	392
15.6	Freescale.....	393
15.6.1	Kinetis family.....	393
15.7	Fujitsu.....	396
15.8	Itron.....	397
15.9	Infineon.....	398
15.10	Luminary Micro.....	399
15.10.1	Unlocking LM3Sxxx devices.....	400
15.11	NXP.....	401
15.11.1	LPC ARM7-based devices.....	402
15.11.2	Reset (Cortex-M3 based devices).....	403
15.11.3	LPC288x flash programming.....	403
15.11.4	LPC43xx:.....	403
15.12	OKI.....	404
15.13	Renesas.....	405
15.14	Samsung.....	406
15.14.1	S3FN60D.....	406
15.15	Silicon Labs.....	407
15.15.1	EFM32 series devices.....	407
15.16	ST Microelectronics.....	408
15.16.1	STR91x.....	409
15.16.2	STM32F10xxx.....	409
15.16.3	STM32F2xxx.....	411
15.16.4	STM32F4xxx.....	412
15.17	Texas Instruments.....	413
15.17.1	AM335x.....	413
15.17.2	AM35xx / AM37xx.....	414
15.17.3	OMAP4430.....	414
15.17.4	OMAP-L138.....	414
15.17.5	TMS470M.....	414
15.17.6	OMAP3530.....	415
15.17.7	OMAP3550.....	415
15.18	Toshiba.....	416
<b>16</b>	<b>Target interfaces and adapters.....</b>	<b>417</b>
16.1	20-pin J-Link connector.....	418
16.1.1	Pinout for JTAG.....	418
16.1.2	Pinout for SWD.....	421
16.1.3	Pinout for SWD + Virtual COM Port (VCOM).....	423
16.1.4	Pinout for SPI.....	424
16.2	38-pin Mictor JTAG and Trace connector.....	425
16.2.1	Connecting the target board.....	425
16.2.2	Pinout.....	426
16.2.3	Assignment of trace information pins between ETM architecture versions.....	428
16.2.4	Trace signals.....	428
16.3	19-pin JTAG/SWD and Trace connector.....	430
16.3.1	Target power supply.....	431
16.4	9-pin JTAG/SWD connector.....	432
16.5	Reference voltage (VTref).....	433
16.6	Adapters.....	434
<b>17</b>	<b>Background information.....</b>	<b>435</b>
17.1	JTAG.....	436
17.1.1	Test access port (TAP).....	436
17.1.2	Data registers.....	436
17.1.3	Instruction register.....	436
17.1.4	The TAP controller.....	437
17.2	Embedded Trace Macrocell (ETM).....	439
17.2.1	Trigger condition.....	439



17.2.2	Code tracing and data tracing .....	439
17.2.3	J-Trace integration example - IAR Embedded Workbench for ARM.....	439
17.3	Embedded Trace Buffer (ETB) .....	443
17.4	Flash programming .....	444
17.4.1	How does flash programming via J-Link / J-Trace work? .....	444
17.4.2	Data download to RAM.....	444
17.4.3	Data download via DCC.....	444
17.4.4	Available options for flash programming .....	444
17.5	J-Link / J-Trace firmware.....	446
17.5.1	Firmware update.....	446
17.5.2	Invalidating the firmware .....	446
18	Designing the target board for trace .....	449
18.1	Overview of high-speed board design.....	450
18.1.1	Avoiding stubs .....	450
18.1.2	Minimizing Signal Skew (Balancing PCB Track Lengths) .....	450
18.1.3	Minimizing Crosstalk.....	450
18.1.4	Using impedance matching and termination .....	450
18.2	Terminating the trace signal .....	451
18.2.1	Rules for series terminators.....	451
18.3	Signal requirements .....	452
19	Semihosting .....	453
19.1	Introduction .....	454
19.1.1	Advantages .....	454
19.1.2	Disadvantages .....	454
19.2	Debugger support .....	455
19.3	Implementation .....	456
19.3.1	SVC instruction .....	456
19.3.2	Breakpoint instruction.....	456
19.3.3	J-Link GDBServer optimized version .....	456
19.4	Communication protocol.....	458
19.4.1	Register R0 .....	458
19.4.2	Command SYS_OPEN (0x01) .....	458
19.4.3	Command SYS_CLOSE (0x02) .....	459
19.4.4	Command SYS_WRITEC (0x03).....	459
19.4.5	Command SYS_WRITE0 (0x04).....	459
19.4.6	Command SYS_WRITE (0x05) .....	459
19.4.7	Command SYS_READ (0x06) .....	460
19.4.8	Command SYS_READC (0x07) .....	460
19.4.9	Command SYS_ISTTY (0x09).....	460
19.4.10	Command SYS_SEEK (0x0A) .....	461
19.4.11	Command SYS_FLEN (0x0C).....	461
19.4.12	Command SYS_REMOVE (0x0E).....	461
19.4.13	Command SYS_RENAME (0x0F) .....	461
19.4.14	Command SYS_GET_CMDLINE (0x15).....	462
19.4.15	Command SYS_EXIT (0x18) .....	462
19.5	Enabling semihosting in J-Link GDBServer .....	463
19.5.1	SVC variant.....	463
19.5.2	Breakpoint variant.....	463
19.5.3	J-Link GDBServer optimized variant.....	463
19.6	Enabling Semihosting in J-Link RDI + AXD.....	464
20	Support and FAQs .....	465
20.1	Measuring download speed .....	466
20.1.1	Test environment .....	466
20.2	Troubleshooting .....	467
20.2.1	General procedure.....	467
20.2.2	Typical problem scenarios .....	467
20.3	Contacting support.....	469

20.4 Frequently Asked Questions ..... 470

21 Glossary .....471

22 Literature and references .....477