SG183/D

68HC705

MCU and Development Tool Selector Guide

Quarter 2, 1998

http://sps.motorola.com/csic

MOTOROLA

General-Purpose 68HC705 MCUs (Sheet 1 of 3)

Motorola Part Number	EPROM (Bytes)	RAM (Bytes)	EEPROM (Bytes)	Timer	Serial	A/D	PWM	Display Drive	I/O	COP	Comments	Packages	Documentation
MC68HC705B5	Motorola Recommends the 68HC705B16 as a Replacement for the 68HC705B5												
MC68HC705B16	15K	352	255	16-bit: (2IC, 2OC)	SCI+	8 ch (8-bit)	2 ch (8-bit)		32 i/o 2o	✔	On-Chip Charge Pump EEPROM Write Protect	52 PLCC - FN *52 Cerquad - FS 64 QFP - FU	MC68HC05B6/D AN1058/D
XC68HC705B32	32K	528	255	16-bit, (21C, 2OC)	SCI+	8 ch (8-bit)	2 ch (8-bit)		32 i/o	✔	On-Chip Charge Pump EEPROM Write Protect	52 PLCC - FN 56 SDIP - B 64 QFP - FU	MC68HC05B6/D AN1058/D
MC68HC705C4A	Motorola Recommends the 68HC705C8A as a Replacement for the 68HC705C4A												
MC68HC705C8A	8K	304		16-bit: (1IC, 1OC)	SPI SCI				24 i/o 7i	✔	Mask Option Pullups (8 pins) KBI (8 pins) 1 High Current Pin (20 mA sink) High Speed Option (HSC705C8A) Superset of ROM C8A with more RAM EPROM Security	40 DIP - P 44 PLCC - FN *40 Cerdip - S 42 SDIP - B 44 QFP - FB *44 Cerquad - FS	MC68HC705C8A/D
MC68HC705C9A	16K	352		16-bit: (1IC, 1OC)	SPI SCI				31 i/o	✔	Mask Option Pullups (8 pins) KBI (8 pins) 1 High Current Pin (20 mA sink) EPROM Security	40 DIP - P *40 Cerdip - S *44 Cerquad - FS 44 PLCC - FN 42 SDIP - B 44 QFP - FB	HC705C9AGRS/D
MC68HC705E5	5K	384		MFT RTI	I^2C				20 i/o	✔	32 kHz PLL Clock Synthesizer 0 to 70 °C Temperature Range Only	28 DIP - P *28 Cerdip - S 28 SOIC - DW	HC05E5GRS/D
XC68HC705JB2	2K	128		16-bit (1IC, 1OC) MFT, RTC	USB				11 i/o	✔	1.5 mbs USB with 3 Endpoints Low Voltage Reset, KBI (4 pins) 3.3 V Bandgap Reference DIP Available Now SOIC Available Q398	20 DIP - P 20 SOIC - DW	HC705JB2GRS/H
MC68HC705J1A	1.2K	64		MFT, RTI					14 i/o	✔	KBI (4 pins), EPROM Security Feature 4 High-Current Pins (8 mA sink) Programmable Pulldowns (14 pins) RC osc version (68HRC705J1A) Hi-Speed Version (68HSC705J1A)	20 DIP - P 20 SOIC - DW *20 Cerdip - S	MC68HC705J1A/D
MC68HC705J2	Motorola Recommends the 68HC705JJ7 as a Replacement for the 68HC705J2. Refer to Application Note AN1737, Migrating from the 68HC705J2 to the 68HC705JJ7.												
XC68HC705JJ7	6K + 64-bit PEP	224		16-bit (1IC, 1OC) MFT, RTI	SIOP	See Com-ments			14 i/o	✔	Two voltage comparators used with timer to create A/D (12-bit resolution), KBI (4 pins), Programmable Pulldowns (14 pins), 6 High Current Pins (10 mA sink),EPROM security feature, LVI	20 DIP - P 20 SOIC - DW *20 Cerdip - S	HC705JP7GRS/D

* Windowed packages available only in sample quantities.

All 68HC705 products have a standard operating voltage range from 3 V to 5.5 V unless noted in Comments.

All 68HC705 products have a standard operating temperature range from -40 to +85 C unless noted in Comments

General-Purpose 68HC705 MCUs (Sheet 2 of 3)

Motorola Part Number	EPROM (Bytes)	RAM (Bytes)	EEPROM (Bytes)	Timer	Serial	A/D	PWM	Display Drive	I/O	COP	Comments	Packages	Documentation
XC68HC705JP7	6K + 64-bit PEP	224		16-bit (1IC, 1OC) MFT, RTI	SIOP	See Com-ments			22 i/o	✔	Two voltage comparators used with timer to create A/D (12-bit resolution), KBI (4 pins), Programmable Pulldowns (14 pins), 6 High Current Pins (10 mA sink), EPROM security feature, LVI	28 DIP - P 28 SOIC - DW *28 Cerdip - S	HC705JP7GRS/D
MC68HC705K1	Motorola Recommends the 68HC805K3 as a Replacement for the 68HC705K1												
XC68HC805K3		64	920 16PEEP	MFT, RTI					10 i/o	✔	KBI (4 pins), Programmable Pulldowns (10 pins), 4 High Current Pins (8 mA sink), On-chip Charge Pump, Limited samples until Q498	16 DIP - P 16 SOIC - DW	HC805K3GRS/D
MC68HC705KJ1	1.2K	64		MFT, RTI					10 i/o	✔	KBI (4 pins), EPROM Security Feature All I/O w/ 10mA sink and Programmable Pulldowns Hi-Speed (4Mhz bus) Standard RC osc version (68HRC705KJ1) 32Khz OSC Version (68HLC705KJ1)	16 DIP - P 16 SOIC - DW *16 Cerdip - S	MC68HC705KJ1/D
MC68HC705L5	Motorola Recommends the 68HC705L16 as a Replacement for the 68HC705L5												
MC68HC705L16	16K	512		16-bit: (1IC, 1OC) RTI, 8-bit: (1IC, 1OC)	SIOP			156 Segment LCD: (1-4 x 27-39)	16 i/o 8 i 15 o	✔	KBI (8 pins), Dual Oscillators 8 High Current Pins (10 mA sink) Programmable Pullups (24 pins) Open Drain (31 pins)	80 QFP - FU *80 CQFP - FZ	HC05L16GRS/D
MC68HC705MC4	3.5K	176		16-bit: (2IC or 1IC, 1OC) MFT, RTI	SCI	6 ch (8-bit)	2 hi sp (8-bit 24 kHz Max)		22 i/o	✔	Eight High Current Pins (10 mA Source Pin, 20 mA Max/Port), 1 High Sink Current Pin (10 mA) Commutation Mux for PWM	28 DIP - P *28 Cerdip - S 28 SOIC - DW	HC705MC4GRS/D AN1058/D
XC68HC705P6A	4K	176		16-bit (1IC, 1OC)	SIOP	4 ch (8 - bit)			20 i/o	✔	KBI (8 pins) 2 High Current Pins (15 mA sink)	28 DIP - P 28 SOIC - DW	HC705P6AGRS/D
MC68HC705P6	Motorola Recommends the 68HC705P6A as a Replacement for the 68HC705P6												
MC68HC705P9	Motorola Recommends the 68HC705P6A as a Replacement for the 68HC705P9												
XC68HC805P18		192	8K + 128	16-bit (1IC, 1OC)	SIOP	4 ch (8 - bit)			20 i/o	✔	KBI (8 pins), LVR 2 High Current Pins Pullups (8 pins), clock out option Limited samples until Q498	28 DIP - P 28 SOIC - DW	HC805P18GRS/D
MC68HC705SR3	3.75K	192		8-bit Timer (7-bit prescaler)		4 ch (8-bit)			32 i/o		Programmable pullups (24 pins) KBI (8 pins), LED drive (8 pins) LVR	40 DIP- P *40 Cerdip - S 42 SDIP - B 44 QFP - FB	MC68HC05SR3D/H

* Windowed packages available only in sample quantities.

All 68HC705 products have a standard operating voltage range from 3 V to 5.5 V unless noted in Comments.

All 68HC705 products have a standard operating temperature range from -40 to +85 C unless noted in Comments

General-Purpose 68HC705 MCUs (Sheet 3 of 3)

Motorola Part Number	EPROM (Bytes)	RAM (Bytes)	EEPROM (Bytes)	Timer	Serial	A/D	PWM	Display Drive	I/O	COP	Comments	Packages	Documentation
XC68HC705X4	4K	176		16-bit: (1IC, 1OC) MFT, RTI					16 i/o	✔	CAN (Controller Area Network) KBI (16 pins)	28 SOIC - DW	MC68HC05X4/D AN464/D
MC68HC705X32	32K	528	255	16-bit, (21C, 2OC)	SCI+	8 ch (8-bit)	2 ch (8-bit)		32 i/o	✔	CAN (Controller Area Network)	64 QFP - FU	MC68HC05X16/D AN1058/D

* Windowed packages available only in sample quantities.

All 68HC705 products have a standard operating voltage range from 3 V to 5.5 V unless noted in Comments.

All 68HC705 products have a standard operating temperature range from -40 to +85 C unless noted in Comments

Definitions

CAN — Controller Area Network
CCTV — Closed Caption Television
COP — Computer Operating Properly (Watch Dog Timer)
DTMF — Dual-Tone Multi-Frequency
EBI — External Bus Interface
IC — Input Capture
I^2C — Inter-Integrated Circuit
IDE — Integrated Device Electronics (IBM PC/AT Type)
i/o — Bidirectional Input and Output Port Pins
i — Input Only Port Pins
KBI — Key Board Interrupt
LCD — Liquid Crystal Display
LVI — Low-Voltage Interrupt
LVPI — Low Voltage Program Inhibit
LVR — Low Voltage Reset
MDLC — Message Data Link Controller (J1850)
MFT — Multi Function Timer
o — Output Only Port Pins
OC — Output Compare
OSD — On-Screen Display
PEEP — Personality EEPROM
PEP — Personality EPROM
PIO — Parallel Input Output (IBM PC/AT Type)
PIT — Programmable Interrupt Timer
PLL — Phase-Lock Loop
PWM — Pulse-Width Modulation
RTC — Real-Time Clock
RTI — Real-Time Interrupt
SCI — Serial Communications Interface (asynchronous)
SCI+ — Serial Communications Interface (asynch. and synch.)
SIO — Serial Input Output (IBM PC/AT Type)
SIOP — Simple Serial I/O Port
SPI — Serial Peripheral Interface
VFD — Vacuum Flourescent Display
USB — Universal Serial Bus
VREG — Voltage Regulator
WDOG — Watch Dog Timer
B — Shrink DIP (70 mil spacing)
DW — Small Outline (Wide-Body SOIC)
FA — 7 x 7 mm Quad Flat Pack (QFP)
FB — 10 x 10 mm Quad Flat Pack (QFP)
FE — CQFP (windowed) — Samples Only
FN — Plastic Quad (PLCC)
FS — CLCC (windowed) — Samples Only
FT — 28 x 28 mm Quad Flat Pack (QFP)
FU — 14 x 14 mm Quad Flat Pack (QFP)
FZ — CQFP (windowed) — Samples Only
K — Cersdip (windowed) — Samples Only
L — Ceramic Sidebraze
P — Dual-in-Line Plastic
PU — 14 x 14 Thin Quad Flat Pack (TQFP)
PV — 20 x 20 mm Thin Quad Flat Pack (TQFP)
S — Cerdip (windowed) — Samples Only

HC05 PACKAGE OPTIONS

(SHOWN ACTUAL SIZE)

40-PIN DIP (P)
(100 mil PITCH)

28-PIN DIP (P)
(100 mil PITCH)

20-PIN DIP (P)
(100 mil PITCH)

16-PIN DIP (P)
(100 mil PITCH)

56-PIN SDIP (B)
(70 mil PITCH)

42-PIN SDIP (B)
(70 mil PITCH)

28-SOIC (DW)
(50 mil PITCH)

20-SOIC (DW)
(50 mil PITCH)

16-SOIC (DW)
(50 mil PITCH)

68-LEAD PLCC (FN)
(50 mil PITCH)

52-LEAD PLCC (FN)
(50 mil PITCH)

44-LEAD PLCC (FN)
(50 mil PITCH)

28-LEAD PLCC (FN)
(50 mil PITCH)

160/144/128-LEAD QFP (FT)
(0.65/0.65/0.80 mm PITCH)
(28x28 mm)

120/144-LEAD QFP (FV)
(0.65/0.50 mm PITCH)
(20x20 mm)

100/80/64-LEAD QFP (FU)
(0.50/0.65/0.80 min PITCH)
(14x14 mm)

80/48-LEAD QFP (FK)
(0.50/0.80 mm PITCH)
(12x12 mm)

52/44-LEAD QFP (FB)
(0.65/0.80 mm PITCH)
(10x10 mm)

48/32-LEAD QFP (FA)
(0.50/0.80 mm PITCH)
(7x7 mm)

MOTOROLA MODULAR DEVELOPMENT TOOLS

Motorola offers two fully modular real-time in-circuit development system choices: the Motorola Modular Evaluation System (MMEVS) and our popular, high-performance Motorola Modular Development System (MMDS). You can now build a customized MMEVS or MMDS to emulate the MCU in your target design in four simple steps. First, order the MMEVS or MMDS system platform (M68MMPFB0508 or M68MMDS05). Second, select and order the emulation module (EM) that contains circuitry specific to emulating the particular HC05/08 MCU in your target application. Third, complete the system by ordering target cable accessories to connect the MMEVS or MMDS to your target MCU socket. Finally, select the appropriate programmer to program your prototype devices.

CHOOSING BETWEEN THE MMEVS AND MMDS

Build an economical MMEVS system to perform traditional debugging activities such as executing code in run or step mode; setting breakpoints; monitoring or modifying CPU registers, memory and application variables; and creating log or script files to record test results or automate the testing process. Or, create an MMDS system to add high-performance, advanced emulation features such as real-time, dual-ported memory and a real-time bus state analyzer with an 8-K trace buffer. In addition, the MMDS includes a built-in power supply and is fully enclosed in a metal case. Both the MMEVS and MMDS include a host-based Integrated Development Environment (IDE) comprised of an editor, assembler, and hardware debugger.

$99* IN-CIRCUIT SIMULATOR KITS

Motorola's In-Circuit Simulator Kits are our lowest cost tools for developing and debugging target systems incorporating the MC68HC705KJ1, MC68HC705J1A, MC68HC805K3, MC68HC705P6A, MC68HC705C8A, MC68HC705C9A (available in April), or MC68HC705B16 (available in May) microcontrollers.These kits provide an innovative interface to a user's target system for Windows based editing, assembly, software simulation, programming, and in-circuit simulation. In-circuit simulation allows you to use the actual inputs and outputs of your target during simulation of your code. The ICS kits include samples of the microcontroller, comprehensive technical documentation, cables, and a power supply.

BUNDLED DEVELOPMENT KITS

Motorola also offers bundled development kits for our most popular OTPs. Included in each kit is an emulation module, emulation cables and package adapters for each package type, an In-Circuit Simulator Kit or Programming kit, our new MCUez windows based development software, and your choice of a real-time in-circuit emulator. The Motorola KITMMEVS05xx includes the economical MMEVS while the KITMMDS05xx includes the high performance MMDS.

* All prices are suggested North American Resale

NEW PRODUCT LITERATURE

For more information on Motorola's Development Tools and detailed information on Motorola's modular target cables, order the following literature or visit our web site at http://sps.motorola.com/csic.

FLDR19/D	Motorola's Development Tool Folder containing an overview of Motorola's Modular Tools and separate product briefs for each of the components of the complete solution (MMDS, MMEVS, EM, Target Cable Accessories, and PGMR)
EB416/D	Modular Target Cables for Motorola MCU Development Systems
HC05EVSTOMMEVS/D	Upgrading from the EVS to the MMEVS

TERMINOLOGY/DEFINITIONS

EM	A personality board that emulates one or several MCUs. Ordered separately to complete both MMDS and MMEVS functionality.
ICS	In-Circuit Simulator. Provides an innovative interface to a user's target system for Windows based editing, assembly, software simulation, programming, and in-circuit simulation. Includes samples of the microcontroller, comprehensive documentation, cables, and power supply.
MMDS	Motorola's Modular Development System. Requires EM and target cable accessories (consisting of flexcable, target head adapter, and optional surface mount adapters) for emulating a specific MCU. Built-in power supply included.
MMEVS	Motorola's new Modular Evaluation System. Requires EM and target cable accessories (consisting of flexcable, target head adapter, and optional surface mount adapters) for emulating a specific MCU. Requires 5V/1A external power supply.
PGMR	A stand alone parallel mode programming board for programming OTP and EPROM 68HC705s. PGMR requires a user-supplied variable voltage power supply for generating the device specific programming voltage (V_{PP}) in addition to 5V/1A operating voltage. **NOTE:** The PGMR is intended for use in prototype development and small production quantities only. For high-volume production, please obtain product information from Motorola's third party programming vendors listed in this guide.
FLEXCABLE:	An approximately 390-mm (15-inch) long, low noise, controlled impedance cable that connects the EM board of an MMEVS or MMDS system and a target head adapter.

TARGET HEAD:	A target head (TH) adapter provides device and package specific connections to a user's target system. THs for DIP- and PLCC-packaged MCUs typically connect between a flexcable and a socket in the user's target system. THs for SOIC and QFP surface mount applications typically connect between a flexcable and a surface mount adapter which is soldered to the user's target system.

DEVELOPMENT TOOL EXAMPLES

The following two examples use this selector guide to configure and order a development system for the 68HC705JJ7 MCU.

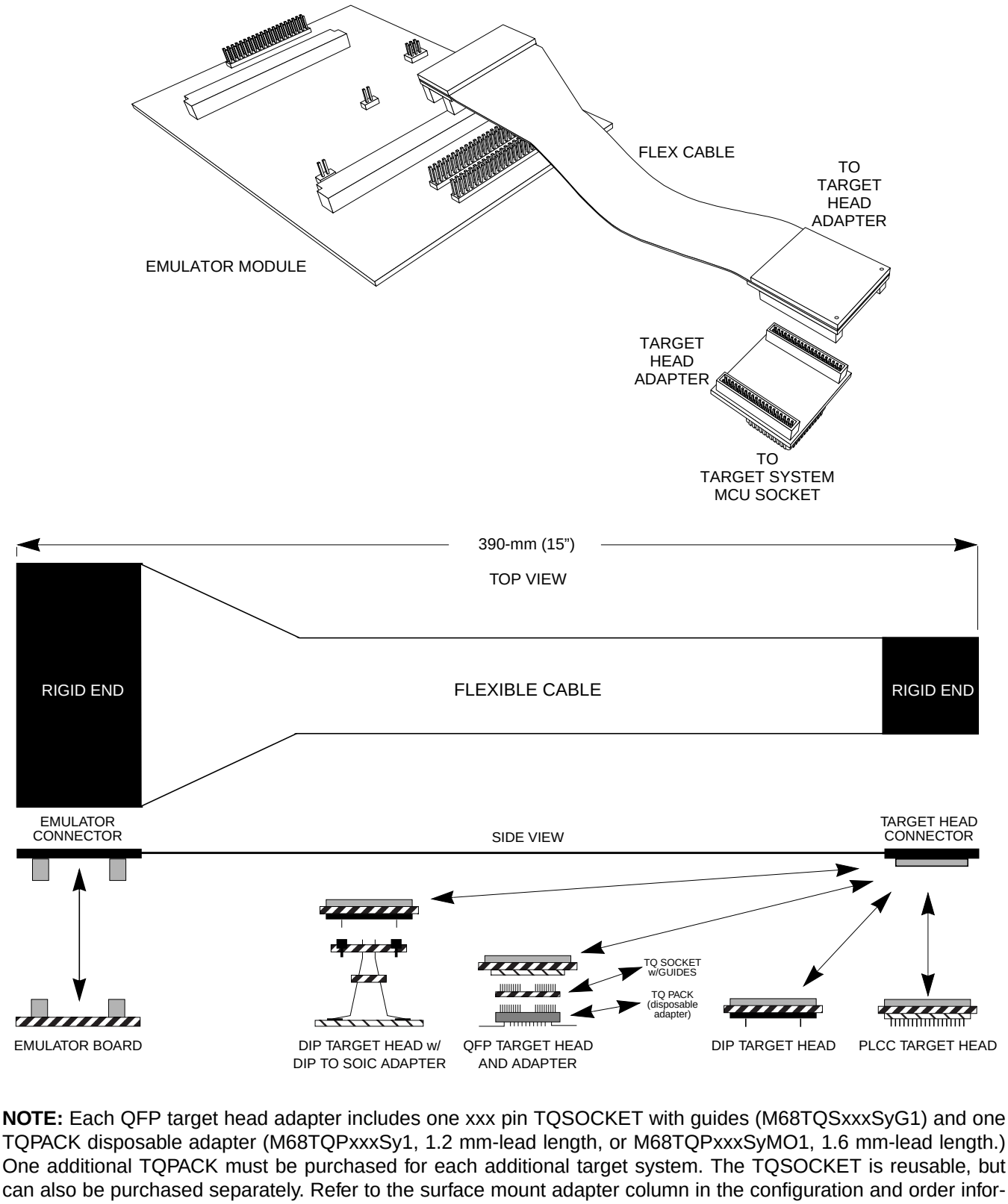
MMEVS Development Solution

M68MMPFB0508	MMEVS system platform
M68EM05JP7	Required emulator module (EM) completes MMDS05 functionality for the 68HC705JJ7, and 68HC705JP7 MCUs.
M68CBL05A	Flexcable supports all 16-to-28 pin MCUs
M68TA05JJ7P20	Target head adapter supports 20-pin 68HC705JJ7 MCUs
M68HC705JP7PGMR	Programs 68HC705JP7P and 68HC705JJ7P MCUs

MMDS05 Development Solution

M68MMDS05	MMDS system platform
M68EM05JP7	Required emulator module (EM) completes MMDS05 functionality for the 68HC705JJ7, and 68HC705JP7 MCUs.
M68CBL05A	Flexcable supports all 16-to-28 pin MCUs
M68TA05JJ7P20	Target head adapter supports 20-pin 68HC705JJ7 MCUs
M68HC705JP7PGMR	Programs 68HC705JP7P and 68HC705JJ7P MCUs

Figure 1: Modular Cable Structure



NOTE: Each QFP target head adapter includes one xxx pin TQSOCKET with guides (M68TQSxxxSyG1) and one TQPACK disposable adapter (M68TQPxxxSy1, 1.2 mm-lead length, or M68TQPxxxSyMO1, 1.6 mm-lead length.) One additional TQPACK must be purchased for each additional target system. The TQSOCKET is reusable, but can also be purchased separately. Refer to the surface mount adapter column in the configuration and order information table for Motorola Modular Tools (MMDS/MMEVS) for the TQSOCKET and TQPACK part numbers specific to the MCU in your target application.

Configuration and Order Information for Motorola 68HC705 Modular Development Tools (Sheet 1 of 2)

Devices	Platform	Emulation Module	Package Types	In-Circuit Target Cable			Programmer	Bundled Kits
				Low-Noise Flexcables	Target Head Adapters	Surface Mount Adapters		
68HC705B16 68HC705B32	M68MMPFB0508 OR M68MMDS05	M68EM05B32	56 SDIP-B	M68CBL05B	M68TB05B32B56		M68ICS05B* (Prior to availability, use M68HC05BPGMR)	KITMMEVS05B* KITMMDS05B*
			64 QFP-FU	M68CBL05C	M68TC05B32FU64	M68TQS064SAG1† M68TQP064SA1†		
			52 PLCC-FN	M68CBL05C	M68TC05B32FN52			
68HC705C8A	M68MMPFB0508 OR M68MMDS05	M68EM05C9A	40 DIP-P	M68CBL05B	M68TB05C9P40		M68ICS05C* (Prior to availability, use M68HC05PGMR-002)	KITMMEVS05C* KITMMDS05C*
			44 PLCC-FN	M68CBL05C	M68TC05C4FN44			
			44 QFP-FB	M68CBL05C	M68TC05C9FB44	M68TQS044SAG1† M68TQP044SAMO1†		
			42 SDIP-B	M68CBL05B	M68TB05C9B42			
68HC705C9A	M68MMPFB0508 OR M68MMDS05	M68EM05C9A	40 DIP-P	M68CBL05B	M68TB05C9P40		M68ICS05C* (Prior to availability, use M68HC05PGMR-002)	KITMMEVS05C* KITMMDS05C*
			44 PLCC-FN	M68CBL05C	M68TC05C9FN44			
			42 SDIP-B	M68CBL05B	M68TB05C9B42			
			44 QFP-FB	M68CBL05C	M68TC05C9FB44	M68TQS044SAG1† M68TQP044SAMO1†		
68HC705E5	M68MMPFB0508 OR M68MMDS05	M68EM05E5	28 DIP-P	M68CBL05A	M68TA05P9P28		M68HC705E5PGMR	
			28 SOIC-DW	M68CBL05A	M68TA05P9P28	M68DIP28SOIC		
68HC705JJ7	M68MMPFB0508 OR M68MMDS05	M68EM05JP7	20 DIP-P	M68CBL05A	M68TA05JJ7P20		M68HC705JP7PGMR	
			20 SOIC-DW	M68CBL05A	M68TA05JJ7P20	M68DIP20SOIC		
68HC705JP7	M68MMPFB0508 OR M68MMDS05	M68EM05JP7	28 DIP-P	M68CBL05A	M68TA05JP7P28		M68HC705JP7PGMR	
			28 SOIC-DW	M68CBL05A	M68TA05JP7P28	M68DIP28SOIC		
68HC705J1A	M68MMPFB0508 OR M68MMDS05	M68EM05J1A	20 DIP-P	M68CBL05A	M68TA05J2P20		M68ICS05J**	KITMMEVS05KJ** KITMMDS05KJ**
			20 SOIC-DW	M68CBL05A	M68TA05J2P20	M68DIP20SOIC		
68HC705KJ1	M68MMPFB0508 OR M68MMDS05	M68EM05J1A	16 DIP-P	M68CBL05A	M68TA05KJ1P16		M68ICS05J**	KITMMEVS05KJ** KITMMDS05KJ**
			16 SOIC-DW	M68CBL05A	M68TA05KJ1P16	M68DIP16SOIC		
68HC705K1 68HC805K3	M68MMPFB0508 OR M68MMDS05	M68EM05K3	16 DIP-P	M68CBL05A	M68TA05K1P16		M68HC805KICS**	
			16 SOIC-DW	M68CBL05A	M68TA05K1P16	M68DIP16SOIC		
68HC705L16 68HC705L5	M68MMPFB0508 OR M68MMDS05	M68EML05L16	80 QFP-FU	M68CBL05E	M68TE05L16FU80	M68TQS080SBG1† M68TQP080SBMO1†	KITPGMR05L16	KITMMEVS05L16 KITMMDS05L16
68HC705MC4	M68MMPFB0508 OR M68MMDS05	M68EM05MC4	28 DIP-P	M68CBL05A	M68TA05MC4P28		M68HC705MC4PGMR	
			28 SOIC-DW	M68CBL05A	M68TA05MC4P28	M68DIP28SOIC		

Configuration and Order Information for Motorola 68HC705 Modular Development Tools (Sheet 2 of 2)

Devices	Platform	Emulation Module	Package Types	In-Circuit Target Cable			Programmer	Bundled Kits
				Low-Noise Flexcables	Target Head Adapters	Surface Mount Adapters		
68HC705P6A	M68MMPFB0508 OR M68MMDS05	M68EM05P6A	28 DIP-P	M68CBL05A	M68TA05P9P28		M68ICS05P	KITMMEVS05P6A KITMMDS05P6A
			28 SOIC-DW	M68CBL05A	M68TA05P9P28	M68DIP28SOIC		
68HC805P18	M68MMPFB0508 OR M68MMDS05	M68EM05P18	28 DIP-P	M68CBL05A	M68TA05P9P28		M68HC805P18PGMR	
			28 SOIC-DW	M68CBL05A	M68TA05P9P28	M68DIP28SOIC		
68HC705SR3	M68MMPFB0508 OR M68MMDS05	M68EM05SR3	40 DIP-P	M68CBL05B	M68TB05SR3P40		M68HC05SR3PGMRSG + M68HC05SR3PAP40	
			44 QFP-FB	M68CBL05C	M68TC05SR3FB44	M68TQS044SAG1† M68TQP044SAMO1†	M68HC05SR3PGMRSG + M68HC05SR3PAFB44	
			42 SDIP-B	M68CBL05B	M68TB05SR3B42		M68HC05SR3PGMRSG + M68HC05SR3PAB42	
68HC705X4	M68MMPFB0508 OR M68MMDS05	M68EM05X4	28 DIP-P	M68CBL05A	M68TA05X4P28		M68HC705X4PGMR	
			28 SOIC-DW	M68CBL05A	M68TA05X4P28	M68DIP28SOIC		
68HC705X32	M68MMPFB0508 OR M68MMDS05	M68EML05X32	64 QFP-FU	M68CBL05E	M68TE05X32FU64	M68TQS064SAG1† M68TQP064SA1†	M68HC705X32PGMR	

* Kits to be introduced during Q298.
** Also available with 50/60 Hz 220/240 volt Euro 2-pin power supply. Use existing order number and end with E (for example, M68ICS05JE instead of M68ICS05J).
Also available with 50/60 Hz 220/240 volt UK 3-pin power supply. Use existing order number and end with U (for example, M68ICS05JU instead of M68ICS05J.
M68ICS05B, C, and P include universal power supplies.
† Each QFP target head includes one TQSOCKET with guides (M68TQSxxxSyG1) and one TQPACK disposable surface mount adapter (M68TQPxxxSy1 (1.2-mm lead length) or M68TQPxxxSyMO1 (1.6-mm lead length)).
Order additional TQPACKs and TQSOCKETs (optional) using part numbers referenced in the Surface Mount Adapters column to support multiple target systems. (See **Figure 1: Modular Cable Structure** for details.)

Order Information for $99† In-Circuit Simulator Kits

Devices	Development Tools
68HC705B16	M68ICS05B*
68HC705C8A	M68ICS05C*
68HC705C9A	M68ICS05C*
68HC705J1A	M68ICS05J**
68HC705KJ1	M68ICS05J**
68HC805K3 68HC705K1	M68HC805KICS**
68HC705P6A	M68ICS05P

† All prices are suggested North American Resale
* Kits to be introduced during Q298.
** Also available with 50/60 Hz 220/240 volt Euro 2-pin power supply. Use existing order number and end with E (for example, M68ICS05JE instead of M68ICS05J).
Also available with 50/60 Hz 220/240 volt UK 3-pin power supply. Use existing order number and end with U (for example, M68ICS05JU instead of M68ICS05J.
M68ICS05B, C, and P include universal power supplies.

Third Party Developers for 68HC705 Family (Sheet 1 of 3)

Programmers

Advin Systems Inc.	USA	(408) 243-7000 (800) 627-2456
	Australia	(61) 3-9878-2700
	Belgium	(32) 55-31-3737
	Canada:	
	Eastern	(416) 609-8396
	Western	(604) 986-1286
	France	+33 13961-1414
	Germany	+49 89 7459-1271
	Sweden	(46) 589-19250
Ascend Systems Inc.	USA	(510) 606-2000 (800) 541-3526
	Austria/ Germany	+43 2772-54581
	France	+33 148619528
BP Microsystems	USA	(800) 225-2102 (713) 688-4600
	Canada	(905) 602-8550
	UK	+ 44 1280-700262
	France	+33 16941-2801
	Germany	+49-8856-932616
	Hong Kong	852-234-166-11
	Tokyo	81-3-3817-4980
Bytek	USA	(407) 994-3520
	Netherlands, UK, Belgium	+ 31 16248-0100
	France	+33 16930-2880
	Germany	49 6181-75041
	Hong Kong	852 29198282
Circuit Equipment Corporation	USA	(216) 951-8840
	UK	+44 1734-575666
	France	+33 6185-5767
Data I/O	USA	(206) 881-6444 (800) 426-1045
	Canada	(905) 678-0761
	France	+35 80502-3300
	Germany	+33-31956-8131
	Hong Kong	49-89-858-580
	Japan	81-3-3779-2151
	Netherlands	+31-402-582-911
	UK	+44-1734-440011
E.E. Tools Inc.	USA Canada	(408) 734-8184
	Mexico	52-5-705-7422
	France	+33 16930-2880
	Germany	+49 89834-3047
	Japan	81-538-322822
Emulation Technology, Inc.	France	+33 16941-2801
	USA	(408) 982-0660
	UK	+44 1234 266455 +44 1962-733140
	Germany	+49 89-4602071 +49 81-047044
Logical Devices	USA	(800) 331-7766
Micro Enhanced Technology (PEP Programmers)	USA	(708) 352-3910
Nash Electronics	USA	(501) 289-6111
Needham's Electronics	USA	(916) 924-8037
SMS	USA	(415) 298-8041
	Germany	+49 7522-9728-0
	Japan	+81 3-3317-9911
Stag Programmers Ltd.	UK	+44-1707-332148
	USA	(800) 331-7766 (Logical Devices)
Sunrise Electronics	USA	(909) 595-7774
System General Corporation	USA	(800) 967-4776 (408) 263-6667
	Japan	81-3-3441-1510
	France	+33 2015-1133
	Germany	+41-1982-2050
TECI (The Engineers Collaborative Inc.)	USA	(800)-336-8321 (802) 525-3458
Tribal Microsystems, Inc.	USA	(510) 623-8859
	Asia	886-2-764-0215
Vel Electronic	Germany	+49 851-751427

ICE/Evaluation Boards

American Arium	USA	(714) 731-1661
Ashling Microsystems	USA	(800) 729-7700 (408) 747-0440 (Orion Instruments)
	UK	(01256) 811998
	France	01.46.66.27.50
	Germany	08233-32681
	Taiwan	02 9160977 (Chinatech Corp)
	Australia	07-3868-4255 (Metromatics Pty.)
Dr. Krohn & Stiller	Germany	+49 896100-0022
	UK	+44 1235-861461
	USA	(320) 617-9400
iSystem GmbH	Germany	+49 8131 25083
	USA	(408) 982-0660 (Emulation Technology Inc)
	France	+33 62-072-954 (ISIT Societe)
Lauterbach, Inc	USA	(508) 303-6812
	UK	(01254) 682092 (Noral Micrologics Ltd)
	Japan	(03) 3405-0511
	Germany	(08104) 8943-28
	France	(1) 39899622 (Logic Instrument)
MetaLink Corporation	USA	(602) 926-0797
	UK	+44-1491-455907
	Canada	(613) 226-2365
	Hong Kong	896-2-501-6699
	Germany	+49-8091-55950
	France	+33-1-39-3956-8131

Third Party Developers for 68HC705 Family (Sheet 2 of 3)

ICE/Evaluation Boards (Continued)

Orion Instruments	USA	(800) 729-7700 (408) 747-0440
	Canada	(416) 609-8396 (Multitest Elect. Inc)
	France	01.46.66.27.50
Pentica Systems	USA	(800) PENTICA (617) 275-4419
	UK	+44 0734-792101
	Germany	+49 7147-3085
Sophia Systems	Japan	(044) 989-7000
	USA	(800) 824-9294
Vel Electronic	Germany	+49 85175-1427
Yokogawa Digital Computer Corp	Japan	81-422-56-9101
	USA	(408) 747-0400 (Orion Instruments)

Assemblers/Linkers/Debuggers

2500 Software Inc.	USA	(719) 395-8683
	France	+33 7443-8045 (CK Electronique) +33 6185-1914 (Societe L.S.I.T.)
	UK	+44 1364-654100 (Greymatter) +44 17183-31022 (System Science)
American Arium	USA	(714) 731-1661
Archimedes Software, Inc.	USA	(206) 822-6300
Avocet Systems, Inc.	USA	(207) 236-9055 (800) 448-8500
Byte Craft Ltd.	USA	(519) 888-6911
Cosmic Software	USA	(617) 932-2556
	Europe/Intnl	+33 143-995390
	UK	+44 1734-880241
HIWARE	USA	(206) 827-4832 (Archimedes)
	France	+33 16013-3668 (CK Electronique Avnet Group)
	Germany	+41 61331-7151 (HIWARE) +49 7031-2895-38 (Diessner)
	UK	+44 1734-792101 (Pentica) +44 1962-733140 (Nohau)
	Japan	81 3-3293-4716 (Lifeboat)
Introl Corp.	USA	(414) 327-7171 (800) 327-7171
	UK	+44 171-8331022 (System Science)
	France	+33 7443-8045 (CK Electronique) +33 14622-9988 (Micro Sigma S.A.)
	Japan	(81) 3 256 5881 (Soft Mart Inc.)
	Germany	+49 8104-9074 (Lauterbach GmbH)
P & E Microcomputer Systems, Inc	USA	(617) 353-9206
PseudoCorp	USA	(541) 683-9173
Software Development Systems (SDS)	USA	(708) 368-0400
	UK	+44 1442-876065
	Japan	+81 (0) 3 3493 7981
	Asia-Pac.	+61 (0) 3 720 5344
	Germany	+49 2534-800170 (H S P GmbH)
TECI (The Engineers Collaborative Inc.)	USA	(802) 525-3458 (800) 336-8321

Compiler/Real-Time Kernel

Archimedes Software, Inc.	USA	(206) 822-6300
Avocet Systems, Inc.	USA	(207) 236-9055 (800) 448-8500
Byte Craft Ltd.	USA	(519) 888-6911
Cosmic Software	USA	(617) 932-2556
	Europe/Intnl	+33 143-995390
	UK	+44 1734-880241
Embedded System Products, Inc.	USA	(713) 728-9688
	Europe	+33-143-995-390 (Cosmic Software)
Hi-Tech	UK	+44-0734-792-101 (Pentica)
	Germany	+49-7147-3085 (Pentica)
	USA	(800) 448-8500 (207) 236-9055 (Avocet Systems)
HIWARE	USA	(206) 827-4832 (Archimedes)
	France	+33 16013-3668 (CK Electronique Avnet Group)
	Germany	+41 61331-7151 (HIWARE) +49 7031-2895-38 (Diessner)
	UK	+44 1734-792101 (Pentica) +44 1962-733140 (Nohau)
	Japan	81 33293-4716 (Lifeboat)

Third Party Developers for 68HC705 Family (Sheet 3 of 3)

Miscellaneous Software and Hardware Support		
AMP Incorporated (sockets)	USA	(717) 564-0100 (800) 522-6752
	Canada	(905) 475-6222
	Mexico	(525) 729-0400
	Europe	+44 1753-676-800
	Asia/Pacific	(81) 44-813-8502
McKenzie (now part of Berg Electronics) (adapters, sockets)	USA	(510) 6512700
	Germany	+49 89150-1001 (Infratron GmbH)
	France	+33 14594-1424 (Green Components)
	UK	+44 1295-271777 (Toby Electronics) +44 1501-44434 (Neltronic Ltd.)
Emulation Technology, Inc. (adapters)	France	+33 16941-2801
	USA	(408) 982-0660
	UK	+44 1234 266455 +44 1962-733140
	Germany	+49 89-4602071 +49 81-047044
USAR Systems, Inc. (keyboard encoders)	USA	(212) 226-2042
Yamaichi Elec. Inc. (sockets)	USA	(408) 456-0797

WORLD WIDE WEB SITE

http://sps.motorola.com/csic

The 68HC05 WWW pages provide a direct line to the latest information and software. The web site provides access to:

- The Latest News and Press Releases
- Product, Market, and Development Tool Overviews
- On-line MCU and Development Tool Selector Guides
- Hyper-text Linked Data Sheets and Application Notes
- New Windows based Free Development Software
- Applications Software Library
- 3rd Party Development Tool Information/Web Links
- On-line Technical Support, FAQs, MSEs

CD-ROM

Technical documentation and a local version of our web site is available on CD-ROM. Use document order number CDCSIC2/D

How to reach us:

USA/EUROPE/Locations Not Listed: Motorola Literature Distribution, P.O. Box 5405, Denver, Colorado 80217, 1-800-441-2447 or 1-303-675-2140. Customer Focus Center, 1-800-521-6274

JAPAN: Nippon Motorola Ltd.: SPD, Strategic Planning Office, 141, 4-32-1 Nishi-Gotanda, Shagawa-ku, Tokyo, Japan. 03-5487-8488

ASIA/PACIFIC: Motorola Semiconductors H.K. Ltd., 8B Tai Ping Industrial Park, 51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852-26629298

Mfax™, Motorola Fax Back System: RMFAX0@email.sps.mot.com; http://sps.motorola.com/mfax/; TOUCHTONE, 1-602-244-6609; US and Canada ONLY, 1-800-774-1848

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