Field Configuration Unit memory map

MC6840 Programmable Timer Module

0x0000	Control Register, Timers 1 / 3
0x0001	Control Register, Timer 2 (bit 0 selects Timer 1 or 3)
0x0002, 0x0003	Timer 1 (MSB / LSB) – internal time delay
0x0004, 0x0005	Timer 2 (MSB / LSB) – NMI clock
0x0006, 0x0007	Timer 3 (MSB / LSB) – transmit clock (Manchester encoding)

MC6821 Peripheral Interface Adapter

0x000C	Port A
	bit 0 Incoming serial data stream
	bit 1 Outgoing serial data stream
	bit 2 Transmit enable
	bit 3 Transmit / Receive relay
	bit 4 Initialization Enable circuit
	bit 5-7 Unused
0x000D	Port A Control (only touched in setup)
0x000E	Port B (only touched in setup)
0x000F	Port B Control (only touched in setup)

RAM addresses specific to interrupt are so noted, addresses marked 'both' are also accessed in main code

MC6810 RAM

0x0080	BCH checksum byte (both)
0x0081	unused
0x0082	Present Si byte (interrupt; 8 bits of incoming data stream)
0x0083	Last Si byte (interrupt)
0x0084	Previous Last Si byte (interrupt)
0x0085	Calculated data: Ii (interrupt)
0x0086	Calculated data: Qi (interrupt)
0x0087	Calculated data: I2i (interrupt)
0x0088	Calculated data: Q2i (interrupt)

0x0089	I2avg data MSB (interrupt)
0x008A	Q2avg data MSB (interrupt)
0x008B	I2avg data LSB (interrupt)
0x008C	Q2avg data LSB (interrupt)
0x008D	Q2avg0 / previous Q2avg MSB (interrupt)
0x008E	Vector angle calculation? I (interrupt)
0x008F	Vector angle calculation? Q (interrupt)
0x0090	TBD (interrupt)
0x0091	Calculated signal strength (interrupt; debug only)
0x0092	TBD (interrupt)
0x0093	Scratchpad area (interrupt)
0x0094	Scratchpad area (interrupt)
0x0095	Scratchpad area (interrupt)
0x0096	Scratchpad area (interrupt)
0x0097	Scratchpad area (interrupt)
0x0098	M-table 1 (interrupt)
0x0099	M-table 1 (interrupt)
0x009A	M-table 1 (interrupt)
0x009B	M-table 1 (interrupt)
0x009C	M-table 2 (interrupt)
0x009D	M-table 2 (interrupt)
0x009E	M-table 2 (interrupt)
0x009F	M-table 2 (interrupt)
0x00A0	Message block preamble (both)
0x00A1	Message block preamble (both)
0x00A2	Message block body (both; 0x0C01 holds length)
0x00A3	Message block body (both; 0x0C01 holds length)
0x00A4	Message block body (both; 0x0C01 holds length)
0x00A5	Message block body (both; 0x0C01 holds length)
0x00A6	Message block body (both; 0x0C01 holds length)
0x00A7	Message block body (both; 0x0C01 holds length)
0x00A8	Message block body (both; 0x0C01 holds length)
0x00A9	Message block body (both; 0x0C01 holds length)
0x00AA	Message block body (both; 0x0C01 holds length)

0x00AB	Message block body (both; 0x0C01 holds length)
0x00AC	Message block body (both; 0x0C01 holds length)
0x00AD	Message block body (both; 0x0C01 holds length)
0x00AE	Message block body (both; 0x0C01 holds length)
0x00AF	Message block body (both; 0x0C01 holds length)
0x00B0	Message block body (both; 0x0C01 holds length)
0x00B1	Message block body (both; 0x0C01 holds length)
0x00B2	Message block body (both; 0x0C01 holds length)
0x00B3	Message block body (both; 0x0C01 holds length)
0x00B4	Message block body (both; 0x0C01 holds length)
0x00B5	Message block body (both; 0x0C01 holds length)
0x00B6	TBD (both); values: 00, 2B, 34, or 41
0x00B7	Transmit status flag (both; 1 = start transmit; 0 or negative = success)
0x00B8	TBD (both)
0x00B9	Decision tree byte; values: 00, 14, 4C, A4, AD, AE
0x00BA	Unused
0x00BB	UUT type flag (both; 1 = LMT-1xx; 2 = LMT-2; 4 = DCT)
0x00BC	Last number entered / NaN = 0xFF
0x00BD	Last key pressed
0x00BE	Length of time delay / also used as temp for decision tree byte
0x00BF	Relay status temp byte
0x00C0	TBD
0x00C1	TBD
0x00C2	Relay status temp byte
0x00C3	Relay status temp byte
0x00C4	Latching relay status? Bit 2 only
0x00C5	TBD
0x00C6	TBD
0x00C7	TBD
0x00C8	TBD
0x00C9	Data transmit flag (both; 1 = start, 0 = stop)
0x00CA	TBD (interrupt)
0x00CB	TBD (interrupt)
0x00CC	carrier detect flag? (interrupt)

0x00CD	TBD (interrupt; debug only)
0x00CE	TBD (interrupt)
0x00CF	TBD
0x00D0	Leftover cruft (only touched in setup)
0x00D1	TBD (interrupt)
0x00D2	Counter, sampling pulse (interrupt; keyed on bits 0-2 = 111)
0x00D3	Counter, phase image (interrupt; keyed on bits 0,1 = 00)
0x00D4	Counter, data bit (interrupt; 5 to 0)
0x00D5	Counter, sum sequence (interrupt; keyed on bits 0,1 = 11)
0x00D6	M table index MSB (interrupt; always 0x00)
0x00D7	M table index LSB (interrupt; range is 0x98-0x9B; 0x9C-0x9F)
0x00D8	Fixed offset (interrupt; always 0x00)
0x00D9	Fixed offset (interrupt; always 0x83)
0x00DA	TBD (interrupt)
0x00DB	TBD (interrupt)
0x00DC	TBD (interrupt)
0x00DD	Fixed offset (interrupt; always 0x00)
0x00DE	Fixed offset (interrupt; always 0x01)
0x00DF	TBD
0x00E0	unused
0x00E1	TBD
0x00E2	test set selected (0 = read/test; 1 = install; 2 = read; 3 = DCT; 8 = ?)
0x00E3 – 0x00FF	Allocated to processor stack

HM-6561 RAM

0x0C00	Message length MSB (always 0x00)
0x0C01	Message length LSB (both; variable; highest is 0x15)
0x0C02	TBD (interrupt)
0x0C03	TBD
0x0C04	unused
0x0C05	TBD
0x0C06	Number of relays to be tested
0x0C07	TBD

0x0C08	TBD
0x0C09	TBD
0x0C0A	TBD
0x0C0B	TBD
0x0C0C	TBD
0x0C0D	TBD
0x0C0E	TBD
0x0C0F	TBD
0x0C10	TBD
0x0C11	TBD
0x0C12	TBD
0x0C13	TBD
0x0C14	TBD
0x0C15	TBD
0x0C16	TBD
0x0C17	TBD
0x0C18	TBD
0x0C19	TBD
0x0C1A	TBD
0x0C1B	TBD
0x0C1C	TBD
0x0C1D	TBD
0x0C1E	TBD
0x0C1F – 0x0C2F	Unused
0x0C30	Data readout digit 0 (LSB)
0x0C31	Data readout digit 1
0x0C32	Data readout digit 2
0x0C33	Data readout digit 3
0x0C34	Data readout digit 4
0x0C35	Data readout digit 5
0x0C36	Data readout digit 6
0x0C37	Data readout digit 7 (MSB)
0x0C38	Test number readout (units)
0x0C39	Test number readout (tens)

0x0C3A	Relay A LED (4 = fail, 7 = pass, 8 = test, F = off)
0x0C3B	Relay B LED (4 = fail, 7 = pass, 8 = test, F = off)
0x0C3C	Relay C LED (4 = fail, 7 = pass, 8 = test, F = off)
0x0C3D	Relay D LED (4 = fail, 7 = pass, 8 = test, F = off)
0x0C3E	Install LED (5 or 8 = on, F = off)
0x0C3F	Test result LED (4 = fail, 7 = pass, 8 = test, F = off)
0x0C40 – 0x0C7F	unused

74LS138 3-to-8 decoder

0x0CF8	unused
0x0CF9	Tester mode switch (1 = LMT-1xx, 2 = LMT-2, 3 = DCT) – Test 01 only
0x0CFA	8279 IRQ (bit 0) – key press routines only
0x0CFB	unused (only touched in setup; was DCT analog select)
0x0CFC	Relay nybble (bits 0-3 / relays A - D; 0 = closed, 1 = open) – Test 35, 40, 72, 76
0x0CFD	UUT config jumpers (1 = LMT-1xx, 2 = LMT-2, 3 = DCT) – Test 01 only
0x0CFE	8279 data port (read: keyboard data, write: display data) – key press, display
0x0CFF	8279 command port – key press, display refresh

2764 ROM	(original unit used two 2732s)
0xE000	OEM firmware identifier
0xE003	Start of main code
0xF58F	Start of interrupt code
0xF8D3	Start of subroutines
0xFCE3	Start of message table
0xFD5B	Blank area
0xFFFC	NMI vector (F58F)
0xFFFE	Reset vector (E003)