Register Summary

Address	Name	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Page
($FF)	Reserved	–	–	–	–	–	–	–	–	
..	Reserved	–	–	–	–	–	–	–	–	
($9E)	Reserved	–	–	–	–	–	–	–	–	
($9D)	UCSR1C	–	UMSEL1	UPM11	UPM10	USBS1	UCSZ11	UCSZ10	UCPOL1	191
($9C)	UDR1	USART1 I/O Data Register								189
($9B)	UCSR1A	RXC1	TXC1	UDRE1	FE1	DOR1	UPE1	U2X1	MPCM1	189
($9A)	UCSR1B	RXCIE1	TXCIE1	UDRIE1	RXEN1	TXEN1	UCSZ12	RXB81	TXB81	190
($99)	UBRR1L	USART1 Baud Rate Register Low								193
($98)	UBRR1H	–	–	–	–	USART1 Baud Rate Register High				193
($97)	Reserved	–	–	–	–	–	–	–	–	
($96)	Reserved	–	–	–	–	–	–	–	–	
($95)	UCSR0C	–	UMSEL0	UPM01	UPM00	USBS0	UCSZ01	UCSZ00	UCPOL0	191
($94)	Reserved	–	–	–	–	–	–	–	–	
($93)	Reserved	–	–	–	–	–	–	–	–	
($92)	Reserved	–	–	–	–	–	–	–	–	
($91)	Reserved	–	–	–	–	–	–	–	–	
($90)	UBRR0H	–	–	–	–	USART0 Baud Rate Register High				193
($8F)	Reserved	–	–	–	–	–	–	–	–	
($8E)	Reserved	–	–	–	–	–	–	–	–	
($8D)	Reserved	–	–	–	–	–	–	–	–	
($8C)	TCCR3C	FOC3A	FOC3B	FOC3C	–	–	–	–	–	135
($8B)	TCCR3A	COM3A1	COM3A0	COM3B1	COM3B0	COM3C1	COM3C0	WGM31	WGM30	131
($8A)	TCCR3B	ICNC3	ICES3	–	WGM33	WGM32	CS32	CS31	CS30	134
($89)	TCNT3H	Timer/Counter3 – Counter Register High Byte								136
($88)	TCNT3L	Timer/Counter3 – Counter Register Low Byte								136
($87)	OCR3AH	Timer/Counter3 – Output Compare Register A High Byte								136
($86)	OCR3AL	Timer/Counter3 – Output Compare Register A Low Byte								136
($85)	OCR3BH	Timer/Counter3 – Output Compare Register B High Byte								137
($84)	OCR3BL	Timer/Counter3 – Output Compare Register B Low Byte								137
($83)	OCR3CH	Timer/Counter3 – Output Compare Register C High Byte								137
($82)	OCR3CL	Timer/Counter3 – Output Compare Register C Low Byte								137
($81)	ICR3H	Timer/Counter3 – Input Capture Register High Byte								137
($80)	ICR3L	Timer/Counter3 – Input Capture Register Low Byte								137
($7F)	Reserved	–	–	–	–	–	–	–	–	
($7E)	Reserved	–	–	–	–	–	–	–	–	
($7D)	ETIMSK	–	–	TICIE3	OCIE3A	OCIE3B	TOIE3	OCIE3C	OCIE1C	138
($7C)	ETIFR	–	–	ICF3	OCF3A	OCF3B	TOV3	OCF3C	OCF1C	139
($7B)	Reserved	–	–	–	–	–	–	–	–	
($7A)	TCCR1C	FOC1A	FOC1B	FOC1C	–	–	–	–	–	135
($79)	OCR1CH	Timer/Counter1 – Output Compare Register C High Byte								136
($78)	OCR1CL	Timer/Counter1 – Output Compare Register C Low Byte								136
($77)	Reserved	–	–	–	–	–	–	–	–	
($76)	Reserved	–	–	–	–	–	–	–	–	
($75)	Reserved	–	–	–	–	–	–	–	–	
($74)	TWCR	TWINT	TWEA	TWSTA	TWSTO	TWWC	TWEN	–	TWIE	206
($73)	TWDR	Two-wire Serial Interface Data Register								208
($72)	TWAR	TWA6	TWA5	TWA4	TWA3	TWA2	TWA1	TWA0	TWGCE	208
($71)	TWSR	TWS7	TWS6	TWS5	TWS4	TWS3	–	TWPS1	TWPS0	207
($70)	TWBR	Two-wire Serial Interface Bit Rate Register								206
($6F)	OSCCAL	Oscillator Calibration Register								39
($6E)	Reserved	–	–	–	–	–	–	–	–	
($6D)	XMCRA	–	SRL2	SRL1	SRL0	SRW01	SRW00	SRW11		29
($6C)	XMCRB	XMBK	–	–	–	–	XMM2	XMM1	XMM0	31
($6B)	Reserved	–	–	–	–	–	–	–	–	
($6A)	EICRA	ISC31	ISC30	ISC21	ISC20	ISC11	ISC10	ISC01	ISC00	87
($69)	Reserved	–	–	–	–	–	–	–	–	
($68)	SPMCSR	SPMIE	RWWSB	–	RWWSRE	BLBSET	PGWRT	PGERS	SPMEN	279
($67)	Reserved	–	–	–	–	–	–	–	–	
($66)	Reserved	–	–	–	–	–	–	–	–	
($65)	PORTG	–	–	–	PORTG4	PORTG3	PORTG2	PORTG1	PORTG0	86
($64)	DDRG	–	–	–	DDG4	DDG3	DDG2	DDG1	DDG0	86
($63)	PING	–	–	–	PING4	PING3	PING2	PING1	PING0	86
($62)	PORTF	PORTF7	PORTF6	PORTF5	PORTF4	PORTF3	PORTF2	PORTF1	PORTF0	85

Register Summary (Continued)

Address	Name	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Page
($61)	DDRF	DDF7	DDF6	DDF5	DDF4	DDF3	DDF2	DDF1	DDF0	86
($60)	Reserved	–	–	–	–	–	–	–	–	
$3F ($5F)	SREG	I	T	H	S	V	N	Z	C	9
$3E ($5E)	SPH	SP15	SP14	SP13	SP12	SP11	SP10	SP9	SP8	12
$3D ($5D)	SPL	SP7	SP6	SP5	SP4	SP3	SP2	SP1	SP0	12
$3C ($5C)	XDIV	XDIVEN	XDIV6	XDIV5	XDIV4	XDIV3	XDIV2	XDIV1	XDIV0	41
$3B ($5B)	RAMPZ	–	–	–	–	–	–	–	RAMPZ0	12
$3A ($5A)	EICRB	ISC71	ISC70	ISC61	ISC60	ISC51	ISC50	ISC41	ISC40	88
$39 ($59)	EIMSK	INT7	INT6	INT5	INT4	INT3	INT2	INT1	INT0	89
$38 ($58)	EIFR	INTF7	INTF6	INTF5	INTF4	INTF3	INTF	INTF1	INTF0	89
$37 ($57)	TIMSK	OCIE2	TOIE2	TICIE1	OCIE1A	OCIE1B	TOIE1	OCIE0	TOIE0	106, 138, 158
$36 ($56)	TIFR	OCF2	TOV2	ICF1	OCF1A	OCF1B	TOV1	OCF0	TOV0	106, 139, 158
$35 ($55)	MCUCR	SRE	SRW10	SE	SM1	SM0	SM2	IVSEL	IVCE	29, 42, 61
$34 ($54)	MCUCSR	JTD	–	–	JTRF	WDRF	BORF	EXTRF	PORF	51, 256
$33 ($53)	TCCR0	FOC0	WGM00	COM01	COM00	WGM01	CS02	CS01	CS00	101
$32 ($52)	TCNT0	Timer/Counter0 (8 Bit)								103
$31 ($51)	OCR0	Timer/Counter0 Output Compare Register								103
$30 ($50)	ASSR	–	–	–	–	AS0	TCN0UB	OCR0UB	TCR0UB	104
$2F ($4F)	TCCR1A	COM1A1	COM1A0	COM1B1	COM1B0	COM1C1	COM1C0	WGM11	WGM10	131
$2E ($4E)	TCCR1B	ICNC1	ICES1	–	WGM13	WGM12	CS12	CS11	CS10	134
$2D ($4D)	TCNT1H	Timer/Counter1 – Counter Register High Byte								136
$2C ($4C)	TCNT1L	Timer/Counter1 – Counter Register Low Byte								136
$2B ($4B)	OCR1AH	Timer/Counter1 – Output Compare Register A High Byte								136
$2A ($4A)	OCR1AL	Timer/Counter1 – Output Compare Register A Low Byte								136
$29 ($49)	OCR1BH	Timer/Counter1 – Output Compare Register B High Byte								136
$28 ($48)	OCR1BL	Timer/Counter1 – Output Compare Register B Low Byte								136
$27 ($47)	ICR1H	Timer/Counter1 – Input Capture Register High Byte								137
$26 ($46)	ICR1L	Timer/Counter1 – Input Capture Register Low Byte								137
$25 ($45)	TCCR2	FOC2	WGM20	COM21	COM20	WGM21	CS22	CS21	CS20	156
$24 ($44)	TCNT2	Timer/Counter2 (8 Bit)								158
$23 ($43)	OCR2	Timer/Counter2 Output Compare Register								158
$22 ($42)	OCDR	IDRD/OCDR7	OCDR6	OCDR5	OCDR4	OCDR3	OCDR2	OCDR1	OCDR0	253
$21 ($41)	WDTCR	–	–	–	WDCE	WDE	WDP2	WDP1	WDP0	53
$20 ($40)	SFIOR	TSM	–	–	–	ACME	PUD	PSR0	PSR321	70, 107, 143, 228
$1F ($3F)	EEARH	–	–	–	–	EEPROM Address Register High				19
$1E ($3E)	EEARL	EEPROM Address Register Low Byte								19
$1D ($3D)	EEDR	EEPROM Data Register								20
$1C ($3C)	EECR	–	–	–	–	EERIE	EEMWE	EEWE	EERE	20
$1B ($3B)	PORTA	PORTA7	PORTA6	PORTA5	PORTA4	PORTA3	PORTA2	PORTA1	PORTA0	84
$1A ($3A)	DDRA	DDA7	DDA6	DDA5	DDA4	DDA3	DDA2	DDA1	DDA0	84
$19 ($39)	PINA	PINA7	PINA6	PINA5	PINA4	PINA3	PINA2	PINA1	PINA0	84
$18 ($38)	PORTB	PORTB7	PORTB6	PORTB5	PORTB4	PORTB3	PORTB2	PORTB1	PORTB0	84
$17 ($37)	DDRB	DDB7	DDB6	DDB5	DDB4	DDB3	DDB2	DDB1	DDB0	84
$16 ($36)	PINB	PINB7	PINB6	PINB5	PINB4	PINB3	PINB2	PINB1	PINB0	84
$15 ($35)	PORTC	PORTC7	PORTC6	PORTC5	PORTC4	PORTC3	PORTC2	PORTC1	PORTC0	84
$14 ($34)	DDRC	DDC7	DDC6	DDC5	DDC4	DDC3	DDC2	DDC1	DDC0	84
$13 ($33)	PINC	PINC7	PINC6	PINC5	PINC4	PINC3	PINC2	PINC1	PINC0	85
$12 ($32)	PORTD	PORTD7	PORTD6	PORTD5	PORTD4	PORTD3	PORTD2	PORTD1	PORTD0	85
$11 ($31)	DDRD	DDD7	DDD6	DDD5	DDD4	DDD3	DDD2	DDD1	DDD0	85
$10 ($30)	PIND	PIND7	PIND6	PIND5	PIND4	PIND3	PIND2	PIND1	PIND0	85
$0F ($2F)	SPDR	SPI Data Register								168
$0E ($2E)	SPSR	SPIF	WCOL	–	–	–	–	–	SPI2X	168
$0D ($2D)	SPCR	SPIE	SPE	DORD	MSTR	CPOL	CPHA	SPR1	SPR0	166
$0C ($2C)	UDR0	USART0 I/O Data Register								189
$0B ($2B)	UCSR0A	RXC0	TXC0	UDRE0	FE0	DOR0	UPE0	U2X0	MPCM0	189
$0A ($2A)	UCSR0B	RXCIE0	TXCIE0	UDRIE0	RXEN0	TXEN0	UCSZ02	RXB80	TXB80	190
$09 ($29)	UBRR0L	USART0 Baud Rate Register Low								193
$08 ($28)	ACSR	ACD	ACBG	ACO	ACI	ACIE	ACIC	ACIS1	ACIS0	228
$07 ($27)	ADMUX	REFS1	REFS0	ADLAR	MUX4	MUX3	MUX2	MUX1	MUX0	244
$06 ($26)	ADCSRA	ADEN	ADSC	ADFR	ADIF	ADIE	ADPS2	ADPS1	ADPS0	245
$05 ($25)	ADCH	ADC Data Register High Byte								246
$04 ($24)	ADCL	ADC Data Register Low byte								246
$03 ($23)	PORTE	PORTE7	PORTE6	PORTE5	PORTE4	PORTE3	PORTE2	PORTE1	PORTE0	85
$02 ($22)	DDRE	DDE7	DDE6	DDE5	DDE4	DDE3	DDE2	DDE1	DDE0	85

Register Summary (Continued)

Address	Name	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Page
$01 ($21)	PINE	PINE7	PINE6	PINE5	PINE4	PINE3	PINE2	PINE1	PINE0	85
$00 ($20)	PINF	PINF7	PINF6	PINF5	PINF4	PINF3	PINF2	PINF1	PINF0	86

Notes: 1. For compatibility with future devices, reserved bits should be written to zero if accessed. Reserved I/O memory addresses should never be written.

2. Some of the status flags are cleared by writing a logical one to them. Note that the CBI and SBI instructions will operate on all bits in the I/O register, writing a one back into any flag read as set, thus clearing the flag. The CBI and SBI instructions work with registers $00 to $1F only.