

NCBOX's PWM Generators Registers

1. PWM General Registers

(In SB of PCI Configuration Space Registers (IDSEL = AD18/Device 7))

Register Offset: CBh – C8h

Register Name: Internal Pins Control Register

Reset Value: 00000000h

31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

GS[31-24]	GS[23-16]	GS[15-8]	GS[7-0]
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Bit	Name	Attribute	Description
31-24	GS[31-24]	R/W	GPIO_P4[7-0] and PWM[31-24] selection. This register is used only when SB register C0h bit1 is "1". 0: PINS for GPIO_P4 (default) 1: PINS for PWM
23 – 16	GS[23-16]	R/W	GPIO_P2[7-0] and PWM[23-16] selection. This register is used only when STRAP[1] (NB register 60h bit19) is "1". 0: PINS for GPIO_P2 (default) 1: PINS for PWM
15 – 8	GS[15-8]	R/W	GPIO_P1[7-0] and PWM[15-8] selection. 0: PINS for GPIO_P1 (default) 1: PINS for PWM
7 – 0	GS[7-0]	R/W	GPIO_P0[7-0] and PWM[7-0] selection. 0: PINS for GPIO_P0 (default) 1: PINS for PWM

Register Offset: D3h – D0h

Register Name: Internal PWM Control Register

Reset Value: 00000000h

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Reserved							CL KS	UE	Rsvd	SIRT				UIOA						Reserved											

Bit	Na me	Attribute	Description
31-25	Rsvd	RO	Reserved
24	CLKS	R/W	PWM Clock selection 0: 10MHz (default) 1: 50MHz
23	UE	R/W	Enable/Disable Internal PWM IO Address Decode 0: Disable (Default) 1: Enable
22-20	Rsvd	RO	Reserved
19-16	SIRT	R/W	PWM IRQ Routing Table Bit19 Bit18 Bit17 Bit16 Routing Table 0 0 0 0 Disable. 0 0 0 1 IRQ[9] 0 0 1 0 IRQ[3] 0 0 1 1 IRQ[10] 0 1 0 0 IRQ[4] 0 1 0 1 IRQ[5] 0 1 1 0 IRQ[7] 0 1 1 1 IRQ[6] 1 0 0 0 IRQ[1] 1 0 0 1 IRQ[11] 1 0 1 0 Reserved

Bit	Name	Attribute	Description
			<p>1 0 1 1 IRQ[12]</p> <p>1 1 0 0 Reserved</p> <p>1 1 0 1 IRQ[14]</p> <p>1 1 1 0 Reserved</p> <p>1 1 1 1 IRQ[15]</p> <p>These four bits are used to route PWM IRQ to any 8259 Interrupt lines. The BIOS should be used to inhibit the setting of the reserved value.</p>
15-9	UIOA	R/W	Internal PWM IO Address. The Bit[15:9] contain the base IO address A[15:9] of internal PWM.
8-0	Rsvd	RO	Reserved. All are '0's. Writing any value to these bits causes no effect.

2. PWM Registers

(Base Address Refers to the Register of index D3h-D0h, IDSEL = AD18/SB of PCI Configuration Register)

IO Address	Register Name
BA + 00h	PWM Interrupt Mask Register
BA + 04h	PWM Interrupt Status Register
BA + 08h	PWM Sync Register
BA + 0Ch	PWM[0] Pulse Low Count Register
BA + 10h	PWM[0] Pulse High Count Register
BA + 14h	PWM[0] Control Register
BA + 18h	PWM[1] Pulse Low Count Register
BA + 1Ch	PWM[1] Pulse High Count Register
BA + 20h	PWM[1] Control Register
BA + 24h	PWM[2] Pulse Low Count Register
BA + 28h	PWM[2] Pulse High Count Register
BA + 2Ch	PWM[2] Control Register
BA + 30h	PWM[3] Pulse Low Count Register
BA + 34h	PWM[3] Pulse High Count Register
BA + 38h	PWM[3] Control Register
BA + 3Ch	PWM[4] Pulse Low Count Register
BA + 40h	PWM[4] Pulse High Count Register
BA + 44h	PWM[4] Control Register
BA + 48h	PWM[5] Pulse Low Count Register
BA + 4Ch	PWM[5] Pulse High Count Register
BA + 50h	PWM[5] Control Register
BA + 54h	PWM[6] Pulse Low Count Register

IO Address	Register Name
BA + 58h	PWM[6] Pulse High Count Register
BA + 5Ch	PWM[6] Control Register
BA + 60h	PWM[7] Pulse Low Count Register
BA + 64h	PWM[7] Pulse High Count Register
BA + 68h	PWM[7] Control Register
BA + 6Ch	PWM[8] Pulse Low Count Register
BA + 70h	PWM[8] Pulse High Count Register
BA + 74h	PWM[8] Control Register
BA + 78h	PWM[9] Pulse Low Count Register
BA + 7Ch	PWM[9] Pulse High Count Register
BA + 80h	PWM[9] Control Register
BA + 84h	PWM[10] Pulse Low Count Register
BA + 88h	PWM[10] Pulse High Count Register
BA + 8Ch	PWM[10] Control Register
BA + 90h	PWM[11] Pulse Low Count Register
BA + 94h	PWM[11] Pulse High Count Register
BA + 98h	PWM[11] Control Register
BA + 9Ch	PWM[12] Pulse Low Count Register
BA + A0h	PWM[12] Pulse High Count Register
BA + A4h	PWM[12] Control Register
BA + A8h	PWM[13] Pulse Low Count Register
BA + Ach	PWM[13] Pulse High Count Register
BA + B0h	PWM[13] Control Register
BA + B4h	PWM[14] Pulse Low Count Register

IO Address	Register Name
BA + B8h	PWM[14] Pulse High Count Register
BA + BCh	PWM[14] Control Register
BA + C0h	PWM[15] Pulse Low Count Register
BA + C4h	PWM[15] Pulse High Count Register
BA + C8h	PWM[15] Control Register
BA + CCh	PWM[16] Pulse Low Count Register
BA + D0h	PWM[16] Pulse High Count Register
BA + D4h	PWM[16] Control Register
BA + D8h	PWM[17] Pulse Low Count Register
BA + DCh	PWM[17] Pulse High Count Register
BA + E0h	PWM[17] Control Register
BA + E4h	PWM[18] Pulse Low Count Register
BA + E8h	PWM[18] Pulse High Count Register
BA + Ech	PWM[18] Control Register
BA + F0h	PWM[19] Pulse Low Count Register
BA + F4h	PWM[19] Pulse High Count Register
BA + F8h	PWM[19] Control Register
BA + FCh	PWM[20] Pulse Low Count Register
BA + 100h	PWM[20] Pulse High Count Register
BA + 104h	PWM[20] Control Register
BA + 108h	PWM[21] Pulse Low Count Register
BA + 10Ch	PWM[21] Pulse High Count Register
BA + 110h	PWM[21] Control Register
BA + 114h	PWM[22] Pulse Low Count Register

IO Address	Register Name
BA + 118h	PWM[22] Pulse High Count Register
BA + 11Ch	PWM[22] Control Register
BA + 120h	PWM[23] Pulse Low Count Register
BA + 124h	PWM[23] Pulse High Count Register
BA + 128h	PWM[23] Control Register
BA + 12Ch	PWM[24] Pulse Low Count Register
BA + 130h	PWM[24] Pulse High Count Register
BA + 134h	PWM[24] Control Register
BA + 138h	PWM[25] Pulse Low Count Register
BA + 13Ch	PWM[25] Pulse High Count Register
BA + 140h	PWM[25] Control Register
BA + 144h	PWM[26] Pulse Low Count Register
BA + 148h	PWM[26] Pulse High Count Register
BA + 14Ch	PWM[26] Control Register
BA + 150h	PWM[27] Pulse Low Count Register
BA + 154h	PWM[27] Pulse High Count Register
BA + 158h	PWM[27] Control Register
BA + 15Ch	PWM[28] Pulse Low Count Register
BA + 160h	PWM[28] Pulse High Count Register
BA + 164h	PWM[28] Control Register
BA + 168h	PWM[29] Pulse Low Count Register
BA + 16Ch	PWM[29] Pulse High Count Register
BA + 170h	PWM[29] Control Register
BA + 174h	PWM[30] Pulse Low Count Register

IO Address	Register Name
BA + 178h	PWM[30] Pulse High Count Register
BA + 17Ch	PWM[30] Control Register
BA + 180h	PWM[31] Pulse Low Count Register
BA + 184h	PWM[31] Pulse High Count Register
BA + 188h	PWM[31] Control Register

I/O Port: BA + 00h

Register Name: PWM Interrupt Mask Register

Reset Value: 00000000h

31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

SIM[31-0]

Bit	Na me	Attribute	Description
31-0	SIM[31-0]	R/W	PWM[31-0] Interrupt Mask Register 1: Enable Interrupt 0: Disable Interrupt

I/O Port: BA + 04h

Register Name: PWM Interrupt Status Register

Reset Value: 00000000h

31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

SIS[31-0]

Bit	Name	Attribute	Description
31-0	SIS[31-0]	R/W	PWM[31-0] Interrupt Status Register 1: Interrupt happen and write "1" to clear 0: No Interrupt

I/O Port: BA + 08h

Register Name: PWM Sync Status Register

Reset Value: 00000000h

31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

SYNC[31-0]

Bit	Name	Attribute	Description
31-0	SYNC[31-0]	R/W	PWM[31-0] Sync Register 1: PWM will be hold 0: PWM without hold

I/O Port: BA + 0Ch, 18h, 24h, 30h, 3Ch, 48h, 54h, 60h, 6Ch, 78h, 84h, 90h, 9Ch, A8h, B4h, C0h,

CCh, D8h, E4h, F0h, FCh, 108h, 114h, 120h, 12Ch, 138h, 144h, 150h, 15Ch, 168h, 174h, 180h

Register Name: PWM Pulse Low Register

Reset Value: 00000000h

31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

SPL																													
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Bit	Name	Attribute	Description
31-0	SPL	R/W	PWM Pulse Low Register. PWM clock is 10MHz

I/O Port: BA + 10h, 1Ch, 28h, 34h, 40h, 4Ch, 58h, 64h, 70h, 7Ch, 88h, 94h, A0h, Ach, B8h, C4h, D0h, DCh, E8h, F4h, 100h, 10Ch, 118h, 124h, 130h, 13Ch, 148h, 154h, 160h, 16Ch, 178h, 184h

Register Name: PWM Pulse High Register

Reset Value: 00000000h

31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

SPH																													
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Bit	Name	Attribute	Description
31-0	SPH	R/W	PWM Pulse High Register. PWM clock is 10MHz

I/O Port: BA + 14h, 20h, 2Ch, 38h, 44h, 50h, 5Ch, 68h, 74h, 80h, 8Ch, 98h, A4h, B0h, BCh, C8h, D4h, E0h, Ech, F8h, 104h, 110h, 11Ch, 128h, 134h, 140h, 14Ch, 158h, 164h, 170h, 17Ch, 188h

Register Name: PWM Control Register

Reset Value: 00000000h

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
SE	CM	INVS	Rsvd	RC																											

Bit	Name	Attribute	Description
31	SE	R/W	PWMx Enable Control 1: PWMx enable 0: PWMx disable
30	CM	R/W	PWMx Continuous Mode 1: PWMx Continuous Mode enable 0: PWMx Continuous Mode disable
29	INVS	R/W	Inverse PWM signal 0: default PWM out '0', SPH specify 'I', SPL specify "0". 1: Inverse output signal of upper case
28	Rsvd	RO	Reserved
27-0	RC	R/W	PWMx Repeat Count. It is used when CM=0.
