TMS320C1x
DIGITAL SIGNAL PROCESSOR
Programmer's Reference Card

TEXAS INSTRUMENTS

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TMS320 DSP Hotline:
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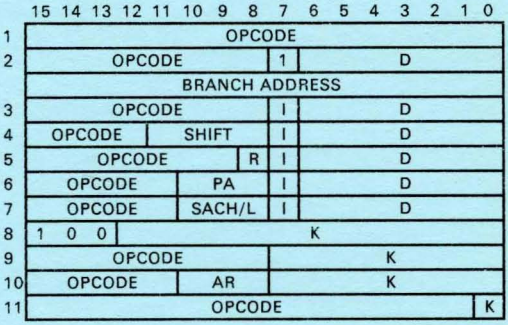
(713) 274-2323

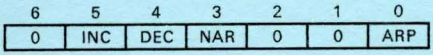
Instruction Symbols

Symbol	Meaning
AR	Auxiliary register
ARP	Auxiliary register pointer
B	Bit code
BR	Branch address
D	Data memory address or indirect addressing control bits (see below)
dma	Data memory address
I	Indirect/direct addressing mode 1 = indirect; 0 = direct addressing
ind	Indirect address: {*|*+|*-}
K	Immediate value
PA	Port address
pma	Program memory address
S	Shift count
< >	User-defined items
[ ]	Optional items

Instruction Format Description

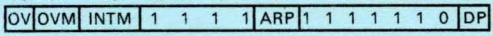


Indirect Addressing Control Bits



INC Increment flag; 1 increments auxiliary register
DEC Decrement flag; 1 decrements auxiliary register (INC and DEC cannot both be 1's)
NAR New auxiliary register control bit; 0 loads bit0 as new ARP
ARP If NAR = 0, ARP contains new ARP value.

Status Register Bits



OV Accumulator overflow flag bit
OVM Overflow mode bit
INTM Interrupt mask bit
ARP Auxiliary register pointer
DP Data memory page pointer

Instruction Set Summary

Instr	Description	Cyc/Wd	Operand Options	Opcode	Format
ABS	Absolute value of accumulator	1/1	None	7F88h	1
ADD	Add to accumulator with shift	1/1	<dma>[,<shift>] <ind>[,<shift>[,<next ARP>]]	0000h	4
ADDH	Add to high accumulator	1/1	<dma>; <ind>[,<next ARP>]	6000h	3
ADDS	Add to low accumulator with no sign extension	1/1	<dma> <ind>[<next ARP>]	6100h	3
AND	AND with accumulator	1/1	<dma>; <ind>[,<next ARP>]	7900h	3
APAC	Add P register to accumulator	1/1	None	7F8Fh	1
B	Branch unconditionally	2/2	<pma>	F900h	2
BANZ	Branch on auxiliary register not 0	2/2	<pma>	F400h	2
BGEZ	Branch if accumulator ≥ 0	2/2	<pma>	FD00h	2
BGZ	Branch if accumulator > 0	2/2	<pma>	FC00h	2
BIOZ	Branch on I/O status = 0	2/2	<pma>	F600h	2
BLEZ	Branch if accumulator ≤ 0	2/2	<pma>	FB00h	2
BLZ	Branch if accumulator < 0	2/2	<pma>	FA00h	2
BNZ	Branch if accumulator ≠ 0	2/2	<pma>	FE00h	2
BV	Branch on overflow	2/2	<pma>	F500h	2
BZ	Branch if accumulator = 0	2/2	<pma>	FF00h	2
CALA	Call subroutine indirect	2/1	None	7F8Ch	1
CALL	Call subroutine	2/2	<pma>	F800h	2
DINT	Disable interrupt	1/1	None	7F81h	1
DMOV	Data move in data memory	1/1	<dma>; <ind>[,<next ARP>]	6900h	3

Instruction Set Summary (Concluded)

Instr	Description	Cyc/Wd	Operand Options	Opcode	Format
EINT	Enable interrupt	1/1	None	7F82h	1
IN	Input data from port	2/1	<dma>,<PA> <ind>,<PA>[,<next ARP>]	4000h	6
LAC	Load accumulator with shift	1/1	<dma>[,<shift>] <ind>[,<shift>[,<next ARP>]]	2000h	4
LACK	Load accumulator immediate	1/1	<constant>	7E00h	9
LAR	Load auxiliary register	1/1	<AR>,<dma> <AR>,<ind>[,<next ARP>]	3800h	5
LARK	Load auxiliary register immediate	1/1	<AR>,<constant>	7000h	10
LARP	Load auxiliary register pointer	1/1	<constant>	6880h	11
LDP	Load data memory page pointer	1/1	<dma> <ind>[,<next ARP>]	6F00h	3
LDPK	Load data memory page pointer immediate	1/1	<constant>	6E00h	11
LST	Load status register	1/1	<dma> <ind>[,<next ARP>]	7B00h	3
LT	Load T register	1/1	<dma> <ind>[,<next ARP>]	6A00h	3
LTA	Load T register and accumulate previous product	1/1	<dma> <ind>[,<next ARP>]	6C00h	3
LTD	Load T register, accumulate previous product, move data	1/1	<dma> <ind>[,<next ARP>]	6B00h	3
MAR	Modify auxiliary register	1/1	<dma> <ind>[,<next ARP>]	6800h	3
MPY	Multiply (with T register, store product in P register)	1/1	<dma> <ind>[,<next ARP>]	6D00h	3
MPYK	Multiply immediate	1/1	<constant>	8000h	8
NOP	No operation	1/1	None	7F80h	1
OR	OR with accumulator	1/1	<dma> <ind>[,<next ARP>]	7A00h	3
OUT	Output data to port	2/1	<dma>,<PA> <ind>,<PA>[,<next ARP>]	4800h	6
PAC	Load accumulator with P register	1/1	None	7F8Eh	1
POP	Pop top of stack to low accumulator	2/1	None	7F9Dh	1
PUSH	Push low accumulator onto stack	2/1	None	7F9Ch	1
RET	Return from subroutine	2/1	None	7F8Dh	1
ROVM	Reset overflow mode	1/1	None	7F8Ah	1
SACH	Store high accumulator with shift	1/1	<dma>[,<shift>] <ind>[,<shift>[,<next ARP>]]	5800h	7
SACL	Store low accumulator	1/1	<dma> <ind>[,<0>[,<next ARP>]]	5000h	3
SAR	Store auxiliary register	1/1	<AR>,<dma> <AR>,<ind>[,<next ARP>]	3600h	5
SOVM	Set overflow mode	1/1	None	7F8Bh	1
SPAC	Subtract P register from accumulator	1/1	None	7F90h	1
SST	Store status register	1/1	<dma>; <ind>[,<next ARP>]	7C00h	3
SUB	Subtract from accumulator with shift	1/1	<dma>[,<shift>] <ind>[,<shift>[,<next ARP>]]	1000h	4
SUBC	Conditional subtract	1/1	<dma>; <ind>[,<next ARP>]	6400h	3
SUBH	Subtract from high accumulator	1/1	<dma>; <ind>[,<next ARP>]	6200h	3
SUBS	Subtract from low accumulator with no sign extension	1/1	<dma> <ind>[,<next ARP>]	6300h	3
TBLR	Table read	3/1	<dma>; <ind>[,<next ARP>]	6700h	3
TBLW	Table write	3/1	<dma>; <ind>[,<next ARP>]	7D00h	3
XOR	Exclusive-OR with accumulator	1/1	<dma>; <ind>[,<next ARP>]	7800h	3
ZAC	Zero accumulator	1/1	None	7F89h	1
ZALH	Zero low accumulator and load high accumulator	1/1	<dma> <ind>[,<next ARP>]	6500h	3
ZALS	Zero accumulator, load low accumulator with no sign extension	1/1	<dma> <ind>[,<next ARP>]	6600h	3