ADD Integer Addition ADD

Syntax ADD op1, op2

Operation (op1) ← (op1) + (op2)

Data Types WORD

Description Performs a 2's complement binary addition of the source operand specified by op2 and the destination operand specified by op1. The sum is then stored in op1.

Condition Flags

E	Z	V	C	N
*	*	*	*	*

E Set if the value of op2 represents the lowest possible negative number. Cleared otherwise. Used to signal the end of a table.

Z Set if result equals zero. Cleared otherwise.

V Set if an arithmetic overflow occurred, i.e. the result cannot be represented in the specified data type. Cleared otherwise.

C Set if a carry is generated from the most significant bit of the specified data type. Cleared otherwise.

N Set if the most significant bit of the result is set. Cleared otherwise.

Addressing Modes

Mnemonic		Format	Bytes
ADD	Rw_n, Rw_m	00 nm	2
ADD	Rw_n, [Rw_i]	08 n:10ii	2
ADD	Rw_n, [Rw_i+]	08 n:11ii	2
ADD	Rw_n, #data3	08 n:0###	2
ADD	reg, #data16	06 RR ## ##	4
ADD	reg, mem	02 RR MM MM	4
ADD	mem, reg	04 RR MM MM	4

ADDB Integer Addition ADDB

Syntax ADDB op1, op2

Operation (op1) ← (op1) + (op2)

Data Types BYTE

Description Performs a 2's complement binary addition of the source operand specified by op2 and the destination operand specified by op1. The sum is then stored in op1.

Condition Flags

E	Z	V	C	N
*	*	*	*	*

E Set if the value of op2 represents the lowest possible negative number. Cleared otherwise. Used to signal the end of a table.

Z Set if result equals zero. Cleared otherwise.

V Set if an arithmetic overflow occurred, i.e. the result cannot be represented in the specified data type. Cleared otherwise.

C Set if a carry is generated from the most significant bit of the specified data type. Cleared otherwise.

N Set if the most significant bit of the result is set. Cleared otherwise.

Addressing Modes

Mnemonic		Format	Bytes
ADDB	Rb_n, Rb_m	01 nm	2
ADDB	Rb_n, [Rw_i]	09 n:10ii	2
ADDB	Rb_n, [Rw_i+]	09 n:11ii	2
ADDB	Rb_n, #data3	09 n:0###	2
ADDB	reg, #data8	07 RR ## xx	4
ADDB	reg, mem	03 RR MM MM	4
ADDB	mem, reg	05 RR MM MM	4

SUB Integer Subtraction SUB

Syntax SUB op1, op2

Operation (op1) ← (op1) - (op2)

Data Types WORD

Description Performs a 2's complement binary subtraction of the source operand specified by op2 from the destination operand specified by op1. The result is then stored in op1.

Condition Flags

E	Z	V	C	N
*	*	*	S	*

E Set if the value of op2 represents the lowest possible negative number. Cleared otherwise. Used to signal the end of a table.

Z Set if result equals zero. Cleared otherwise.

V Set if an arithmetic underflow occurred, i.e. the result cannot be represented in the specified data type. Cleared otherwise.

C Set if a borrow is generated. Cleared otherwise.

N Set if the most significant bit of the result is set. Cleared otherwise.

Addressing Modes

Mnemonic		Format	Bytes
SUB	Rw_n, Rw_m	20 nm	2
SUB	Rw_n, [Rw_i]	28 n:10ii	2
SUB	Rw_n, [Rw_i+]	28 n:11ii	2
SUB	Rw_n, #data3	28 n:0###	2
SUB	reg, #data16	26 RR ## ##	4
SUB	reg, mem	22 RR MM MM	4
SUB	mem, reg	24 RR MM MM	4

SUBB Integer Subtraction SUBB

Syntax SUBB op1, op2

Operation (op1) ← (op1) - (op2)

Data Types BYTE

Description Performs a 2's complement binary subtraction of the source operand specified by op2 from the destination operand specified by op1. The result is then stored in op1.

Condition Flags

E	Z	V	C	N
*	*	*	S	*

E Set if the value of op2 represents the lowest possible negative number. Cleared otherwise. Used to signal the end of a table.

Z Set if result equals zero. Cleared otherwise.

V Set if an arithmetic underflow occurred, i.e. the result cannot be represented in the specified data type. Cleared otherwise.

C Set if a borrow is generated. Cleared otherwise.

N Set if the most significant bit of the result is set. Cleared otherwise.

Addressing Modes

Mnemonic		Format	Bytes
SUBB	Rb_n, Rb_m	21 nm	2
SUBB	Rb_n, [Rw_i]	29 n:10ii	2
SUBB	Rb_n, [Rw_i+]	29 n:11ii	2
SUBB	Rb_n, #data3	29 n:0###	2
SUBB	reg, #data8	27 RR ## xx	4
SUBB	reg, mem	23 RR MM MM	4
SUBB	mem, reg	25 RR MM MM	4

MOV Move Data MOV

Syntax MOV op1, op2

Operation (op1) ← (op2)

Data Types WORD

Description Moves the contents of the source operand specified by op2 to the location specified by the destination operand op1. The contents of the moved data is examined, and the condition codes are updated accordingly.

Condition Flags

E	Z	V	C	N
*	*	-	-	*

E Set if the value of op2 represents the lowest possible negative number. Cleared otherwise. Used to signal the end of a table.

Z Set if the value of the source operand op2 equals zero. Cleared otherwise.

V Not affected.

C Not affected.

N Set if the most significant bit of the source operand op2 is set. Cleared otherwise.

JMPA Absolute Conditional Jump JMPA

Syntax JMPA op1, op2

Operation

IF (op1) = 1 THEN
(IP) ← op2
ELSE
Next Instruction
END IF

Description If the condition specified by op1 is met, a branch to the absolute address specified by op2 is taken. If the condition is not met, no action is taken, and the instruction following the JMPA instruction is executed normally.

Note The condition codes for op1 are defined in **Table 5**.

Condition Flags

E	Z	V	C	N
-	-	-	-	-

E Not affected.

Z Not affected.

V Not affected.

C Not affected.

N Not affected.

Addressing Modes

Mnemonic		Format	Bytes
JMPA	cc, caddr	EA c0 MM MM	4