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Identification

645 Multics standard checksum procedure
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Purpose

This section describes a technique for computing a full-word checksum on the GE645. This technique is the 645 Multics standard technique.

Checksums

Checksums will be computed using the "AWCA" instruction followed by an "ALR 1" instruction. Upon completion of checksum computation, two "AWCA 0,d1" instructions will be executed to include all carries in the checksum.

A typical checksum computation scheme follows:

	ldi	=0,4000,d1	inhibit overflow flt
	sti	indics	save indicators
	lda	0,d1	initialize a to zero
	ldx1	0	count loc'ns in X1
loop:	ldi	indics	restore indicators
	awca	word,1	add with carry to checksum
	sti	indics	save indicators (they get clobbered by cmpx1)
	alr	1	rotate a left
	eax1	1,1	count 1 location and
	cmpx1	size,du	check for completion
	tnc	loop	loop
	ldi	indics	restore indicators
	awca	0,d1	add in carry, if any
	awca	0,d1	in case carry generated by last instruction
	sta	cksum	save the checksum