Jansen

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Digital Dev. Memo #319, Revision A

To:
From: Robert J. Filene & Alan I. Green
Date: June 13, 1966
Subj: Nouns and Scales for 204

This memo lists the Noun assignments for 204, as found in program SUNSPOT (Revision 164).

Section 1 shows:

a. the Noun definitions

b. the number of components

c. the decimal format and units

d. any restrictions.

This information is reproduced exactly from the Noun list in the Program Listing under the log section "Assembly and Operation Information".

Section 2 shows:

a. the scale factor assigned

b. the registers assigned.

Section 3 gives a complete list of all scale factoring situations available. This includes:

a. the internal AGC units

b. the decimal format and units

c. maximum values where applicable.

SECTION 2

NORMAL NOUNS

NOUN	SCALE	COMP	REGISTERS
01	B	-	AS SPECIFIED
02	C	1	AS SPECIFIED
03	SPARE		
04	SPARE		
05	F	1	DSPTEM1
06	SPARE		
07	A	1	DSPTEM1
10	-	-	-
11	-	-	-
12	D	3	DSPTEM1, +1, +2
13	P	1	DSPTEM1, +1
14	P	1	DSPTEM1, +1
15	A	1	-
16	K	3	TIME2, TIME1
17	D	3	DSPTEM1, +1, +2
20	D	3	CDUX, CDUY, CDUZ
21	C	3	PIPAX, PIPAY, PIPAZ
22	D	3	THETAD, +1, +2
23	D	3	DSPTEM2, +1, +2
24	K	3	DSPTEM1, +1
25	C	1	DSPTEM1
26	C	1	DSPTEM1
27	C	1	SMODE
30	C	3	DSPTEM1, +1, +2
31	A	3	FAILREG, SFAIL, ERCOUNT
32	SPARE		
33	K	3	TIGN, +1
34	K	3	DSPTEM1, +1
35	K	3	DSPTEM1, +1
36	L	1	DSPTEM1, +1
37	A	1	MEASMODE

MIXED NOUNS

NOUN	SCALES	COMP	REGISTERS
40	H	3	GAMMAI, +1
	P		VMAGI, +1
	R		ALTI, +1
41	T	3	GMAX
	R		HPER, +1
	L		TFF, +1
42	R	3	DELTAR, +1
	R		HPER, +1
	L		TFF, +1
43	R	3	HAPO, +1
	R		HPER, +1
	L		TFF, +1
44	H	3	LAT(SPL), +1
	H		LNG(SPL), +1
	R		ALT(SPL), +1
45	R	3	HAPO, +1
	R		HPER, +1
	P		VGDISP, +1
46	L	3	TTOGO, +1
	P		VGDISP, +1
	R		HPER, +1
47	H	3	GAM300K, +1
	R		DELTAR, +1
	P		VE300K, +1

NOUN	SCALES	COMP	REGISTERS
50	L	2	TTOGO, +1
	L		DTBURN, +1
51	L	3	TTOGO, +1
	P		VGDISP, +1
	P		DVTOTAL, +1
52	L	3	TTOGO, +1
	P		VGDISP, +1
	L		TFF, +1
53	T	3	GMAX
	L		TFF, +1
	H		GAM300K, +1
54	H	3	ROLLC, +1
	T		GMAX
	R		RTOTARG, +1
55	D	2	OPTX
	J		OPTY
56	D	2	DSPTEM1
	J		DSPTEM1+1
57	D	2	DESOPTX
	J		DESOPTY

NOUN	SCALES	COMP	REGISTERS
60	A	3	IN3
	A		WASKSET
	A		OLDERR
61	D	2	DSPTEM1
	E		DSPTEM1+1
62	H	3	LAT(SPL), +1
	H		LNG(SPL), +1
	C		HEADSUP
63	G	3	DSPTEM1, +1
	G		DSPTEM1+2, +3
	S		DSPTEM1+4, +5
64	H	3	LAT(SPL), +1
	H		LNG(SPL), +1
	L		TFF, +1
65	K	3	SAMPTIME, +1
66	C	3	DSPTEM2
	B		DSPTEM2+1
	C		DSPTEM2+2
67	I	3	OGC, +1
	I		OGC+2, +3
	I		OGC+4, +5

NOUN	SCALES	COMP	REGISTERS
70	F	3	CGY
	F		CGZ
	M		TDECAY
71	H	3	ROLLC, +1
	T		GMAX
	R		PRED-RTG, +1
72	Q	3	DELR, +1
	Q		DELR+2, +3
	Q		DELR+4, +5
73	N	3	DELVEL, +1
	N		DELVEL+2, +3
	N		DELVEL+4, +5
74	P	2	DVIMP, +1
	M		TDECAY
75	R	3	DSPTEM1, +1
	P		DSPTEM1+2, +3
	C		DSPTEM1+4
76	SPARE		
77	SPARE		

SECTION 3

	Decimal Format	Precision	AGC Format
A) OCTAL	XXXXX	SP	OCTAL
B) FRACTIONAL	.XXXXX (max .99996)	SP	bit 1 = 2^{-14} Units
C) WHOLE	XXXXX. (max 16383.)	SP	bit 1 = 1 Unit
D) CDU DEGREES	XXX.XX DEGREES (max 359.99)	SP	bit 1 = $360/2^{15}$ DEGREES (uses 15 bits for magnitude and 2's comp.)
E) ELEVATION DEGREES	XX.XXX DEGREES (max 89.999)	SP	bit 1 = $90/2^{14}$ DEGREES
F) DEGREES (180)	XXX.XX DEGREES (max 179.99)	SP	bit 1 = $180/2^{14}$ DEGREES
G) DP DEGREES (90)	XX.XXX DEGREES (max 89.999)	DP	bit 1 of low register = $360/2^{28}$ DEGREES
H) DP DEGREES (360)	XXX.XX DEGREES (max 359.99)	DP	bit 1 of low register = $360/2^{28}$ DEGREES
I) GYRO DEGREES	XX.XXX DEGREES	DP	bit 1 of low register = $360/2^{20}$ DEGREES
J) Y OPTICS DEGREES	There are two different ranges, selected according to bit 13 of register WASOPSET. BIT 13 = 0 for Range I; BIT 13 = 1 for Range II. Negative numbers cannot be loaded for either range.		
RANGE I	XXX.XX DEGREES (max 179.99)	SP	bit 1 = $180/2^{15}$ DEGREES (uses 15 bits for magnitude and 2's comp.)
RANGE II	XX.XXX DEGREES (bias of 19.775 degrees added for display; subtracted for load.)	SP	bit 1 = $90/2^{15}$ DEGREES (uses 15 bits for magnitude and 2's comp.)

	Decimal Format	Precision	AGC Format
K) TIME (HR, MIN, SEC)	OOXXX. HR OOOXX. MIN OXX.XX SEC (decimal only, max MIN component 59, max SEC component 59.99; max capacity 745 HR, 39 MIN, 14.55 SEC)	DP	bit 1 of low register = 10^{-2} SEC
L) TIME (MIN/SEC)	XXBXX MIN/SEC (B is a blank position; decimal only, display only; max MIN component 59, max SEC component 59; values greater than 59 MIN 59 SEC are displayed as 59 MIN 59 SEC)	DP	bit 1 of low register = 10^{-2} SEC
M) TIME (SEC)	XXX.XX SEC (max 163.83)	SP	bit 1 = 10^{-2} SEC
N) VELOCITY 1	XXXX.X METERS/SEC (max 9864.8)	DP	bit 1 of low register = $\frac{631{,}350.3}{64 \text{ METERS/SEC}} .2^{-28}$
P) VELOCITY 2	XXXXX. FT/SEC (max 41994.)	DP	bit 1 of high register = 2^{-7} METERS/CENTI-SEC
Q) POSITION 1	XXXX.X KILOMETERS	DP	bit 1 of high register = 1 KILOMETER
R) POSITION 2	XXXX.X NAUTICAL MILES (max 9058.9)	DP	bit 1 of low register = 2^{-4} METERS
S) POSITION 3	XXX.XX NAUTICAL MILES	DP	bit 1 of high registers = 1 KILOMETER
T) G	XXX.XX G (max 163.83)	SP	bit 1 of 10^{-2} G

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