2.07.01

CAC

# WISCoding for Complex Arithmetic - Cartesian (Revised)

By C.W. McClure Date June 28 59 Page 1 of 2

9-22-59
10 27-59

| | FLOW # | ORDER # | X | TYPE | A | B | C | # | HEXADECIMAL X | T | A | B | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LINK | | L | | A | [L+2[ +0 | [ ] → LO | [ ] | | 100 | 8 | L+2 | 3ff | 35f |
| | | L+1 | | TU | [ ] | [ ] | [CAC: 1] | | / | 5 | / | / | CAC:1 |
| k=0 ADD =1 SUB =2 MUL =3 DIV | | L+2 | k | $X_{r_1}$ | $X_{r_2}$ | $Y_r$ | β | | k | $X_{r_1}$ | $X_{r_2}$ | Y | β |
| | | | | | [ ] | [ ] | [ ] | | | | | | |
| UNPACKING | 0.01 | | | A | 0[ ] +0 | [ ] → spec OPSTO [ ] | | 001 | / | 8 | 3ff | 3ff | 35e |
| | 2 | | 37 | E | LO [$X_{r_1}$] | [25,12] | [1.01] | 2 | 025 | 1 | 35f | 19c | 007 |
| | 3 | | 25 | E | LO [$X_{r_2}$] | [25,12] | [1.02] | 3 | 019 | 1 | 35f | 19c | 008 |
| | 4 | | 13 | E | LO [$Y_r$] | [1,12] | [6.01] | 4 | 00d | 1 | 35f | 01c | 026 |
| | 5 | | 1 | E | LO [β] | [1,12] | [6.03] | 5 | 001 | 1 | 35f | 01c | 028 |
| | 6 | | 49 | E | LO [k] | [1,2] | spec OPSTO [ ] | 6 | 031 | 1 | 35f | 012 | 35e |
| SETTING UP | 1.01 | | | A | $X_{r_1}$ [ ] +0 | [ ] → $X_{r_1}$ | [ ] | 7 | / | 8 | ( ) | 3ff | 359 |
| | 2 | | | A | $X_{r_2}$ [ ] +0 | [ ] → $X_{r_2}$ | [ ] | 8 | / | 8 | ( ) | 3ff | 35b c |
| | 3 | | 100 | A | DUMMY ORDER [ ] + spec OPSTO | [ ] → | [1.09] | 9 | 100 | 8 | 029 | 35e | 00f |
| | 4 | | 100 | A | $X_{r_1}$ [1.01] +1 Ac | [ ] → | $X_{j_1}$ [1.07] | a | 100 | 8 | 007 | 026 | 00d |
| | 5 | | 100 | A | $X_{r_2}$ [1.02] +1 Ac | [ ] → | $X_{j_2}$ [1.08] | b | 100 | 8 | 008 | 026 | 00e |
| | 6 | | 100 | A | $Y_r$ [ ] +1 Ac | [ ] → | $Y_j$ [ ] | c | 100 | 8 | 026 | 02b | 027 |
| | 7 | | | A | $X_{j_1}$ [ ] +0 | [ ] → $X_{j_1}$ | [ ] | d | / | 0 | / | / | / |
| | 8 | | | A | $X_{j_2}$ [ ] +0 | [ ] → $X_{j_2}$ | [ ] | e | / | 0 | / | / | / |
| | 9 | | | TU | [ ] | [ ] START | [ ] | f | / | 0 | / | / | / |
| STARTING BLOCK | 2.01 | | | TU | [ ] | [ ] ADD: 1 | [ ] | 010 | / | 5 | / | / | 016 |
| | 2 | | | TU | [ ] | [ ] SUB: 1 | [ ] | 1 | / | 5 | / | / | 014 |
| | 3 | | | TU | [ ] | [ ] MUL: 1 | [ ] | 2 | / | 5 | / | / | 012 |
| | 4 | | | TU | [ ] | [ ] DIV: 1 | [ ] | 3 | / | 5 | / | / | 019 |
| | | | | | [ ] | [ ] | [ ] | | | | | | |
| | | | | | [ ] | [ ] | [ ] | | | | | | |

# WISCoding for CAC

By CWMc Date 6-28-59 Page 2 of 2

| | FLOW # | ORDER # | X | TYPE | A | B | C | # | HEXADECIMAL X | T | A | B | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADD-SUB BLOCK | 3.01 | SUB | | S | 0 [ ] $-X_{r_2}$ [ ] | [ ] $\rightarrow X_{r_2}$ [ ] | | 014 | / | 2 | 3ff | 35b | 35b |
| | 2 | | | S | 0 [ ] $-X_{j_2}$ [ ] | [ ] $\rightarrow X_{j_2}$ [ ] | | 5 | / | 2 | 3ff | 35d | 35d |
| | 3 | ADD | | A | $X_{r_1}$ [ ] $+X_{r_2}$ [ ] | [ ] $\rightarrow y_r$ [ ] | | 6 | / | 8 | 359 | 35c | 35c |
| | 4 | | | A | $X_{j_1}$ [ ] $+X_{j_2}$ [ ] | [ ] $\rightarrow y_j$ [ ] | | 7 | / | 8 | 35b | 35d | 35f |
| | 5 | | | TU | [ ] | [ ] OUT | [6.01] | 8 | / | 5 | / | / | 026 |
| DIV-MUL BLOCK | 4.01 | DIV | | S | 0 [ ] $-X_{j_2}$ [ ] | [ ] $\rightarrow X_{j_2}$ [ ] | | 9 | / | 2 | 3ff | 35d | 35d |
| | 2 | MUL | | M | $X_{r_1}$ [ ] $\cdot X_{r_2}$ [ ] | [ ] $\rightarrow$ OPSTO [ ] | | a | / | 2 | 359 | 35c | 35e |
| | 3 | | | M | $X_{j_1}$ [ ] $\cdot X_{j_2}$ [ ] | [ ] $\rightarrow$ [ \ ] | | b | / | 2 | 35b | 35d | 800 |
| | 4 | | | S | $X_{r_1} X_{r_2}$ [ ] $-X_{j_1} X_{j_2}$ [ ] | [ ] $\rightarrow y_r$ [ ] | | c | / | 2 | 35e | 800 | 35e |
| | 5 | | | M | $X_{r_1}$ [ ] $X_{j_2}$ [ ] | [ ] $\rightarrow$ OPSTO [ ] | | d | / | 2 | 359 | 35b | 35f |
| | 6 | | | M | $X_{r_2}$ [ ] $X_{j_1}$ [ ] | [ ] $\rightarrow$ [ \ ] | | e | / | 2 | 35c | 35a | 800 |
| | 7 | | | A | $X_{r_1} X_{j_2}$ [ ] $+X_{r_2} X_{j_1}$ [ ] | [ ] $\rightarrow y_j$ [ ] | | f | / | 8 | 35f | 800 | 35f |
| | 8 | | | TZ | DUMMY ORDER [9.02] | START ORDER [ ] OUT | [6.01] | 020 | / | c | 02a | 00f | 026 |
| DIV FINISH | 5.01 | | | M | $X_{r_2}$ [ ] $X_{r_2}$ [ ] | [ ] $\rightarrow$ OPSTO [ ] | | 1 | / | 2 | 35c | 35c | 35c |
| | 2 | | | M | $X_{j_2}$ [ ] $X_{j_2}$ [ ] | [ ] $\rightarrow$ [ \ ] | | 2 | / | 2 | 35d | 35d | 800 |
| | 3 | | | A | $X_{r_2}^2$ [ ] $+X_{j_2}^2$ [ ] | [ ] $\rightarrow$ OPSTO [ ] | | 3 | / | 8 | 35c | 800 | 35d |
| | 4 | | | D | $y_r$ [ ] $\div \lvert X_2 \rvert^2$ [ ] | [ ] $\rightarrow y_r$ [ ] | | 4 | / | 3 | 35e | 800 | 35e |
| | 5 | | | D | $y_j$ [ ] $\div \lvert X_2 \rvert^2$ [ ] | [ ] $\rightarrow y_j$ [ ] | | 5 | / | 3 | 35f | 35d | 35f |
| OUT | 6.01 | | | A | $Y_r$ [ ] $+0$ [ ] | [ ] $\rightarrow Y_r$ [ ] | | 6 | / | 8 | 35e | 3ff | ( ) |
| | 2 | | | A | $Y_j$ [ ] $+0$ [ ] | [ ] $\rightarrow Y_j$ [ ] | | 7 | / | 0 | / | / | / |
| | 3 | | | TU | [ ] | [ ] | [ ] | 8 | / | 5 | / | / | ( ) |
| CONSTANTS | 9.01 | | | | DUMMY ORDER | | [ ] | 9 | / | 5 | / | / | 010 |
| | 2 | | | | DUMMY ORDER | | [ ] | 9 | / | 5 | / | / | 012 |
| | 3 | | | | CONSTANT [ ] | | [ ] | 6 | / | 0 | 001 | / | 001 |
| | | | | | [ ] | [ ] | [ ] | | | | | | |

1 AC

$X_{r_1}$ 359 $X_{r_2}$ 35b $y_r$ 35e ~~OPSTO 35f~~

$X_{j_1}$ 35b $X_{j_2}$ 35d $y_j$ 35f

```
000000102b3e8,

00083ff3ff35e,
025135f19c007,
019135f19c008,
00d135f01c026,
001135f01c028,
031135f01235e,
00080003ff35a,
00080003ff35c,
100802935e00f,
100800702b00d,
100800802b00e,
100802602b027,
0000000000000,
0000000000000,
0000000000000,
0005000000016,
0005000000014,
000500000001a,
0005000000019,
000a3ff35c35c,
000a3ff35d35d,
000835a35c35e,
000835b35d35f,
0005000000026,
000a3ff35d35d,
000235a35c35e,
000235b35d800,
000a35e80035e,
000235a35d35f,
000235c35b800,
000835f80035f,
000c02a00f026,
000235c35c35c,
000235d35d800,
000835c80035d,
000335e80035e,
000335f35d35f,
000835e3ff000,
0000000000000,
0005000000000,
0005000000010,
0005000000012,
0000001000001,
```

CAC
CMC
12-8-59