

Cf++
Cf-+
Cf*+
Cf/+
Cf*+
Cf(+
Cf)+
Cf,+
Cf?+
Cf!+
Cf:+
Cf=+
Cf≥+
Cf>+
Cf×+
Cf<+
Cf≤+
Cf->+
CfIE+
CfUNLESS+
CfINIEGER+
CfREAL+
CfINIEGER_MAP+
CfREAL_MAP+
CfINIEGER_LEN+

CfREAL_LEN+
CfROUTINE+
CfINIEGER_ARRAY_NAME+
CfINIEGER_NAME+
CfARRAY_NAME+
CfARRAY+
CfREAL_NAME+
CfAND+
CfOR+
CfCAPTION+
CfRESULI+
CfREIURN+
CfSIOR+
CfIHEN+
CfCYCLE+
CfREPEAI+
CfARRAY_LEN+
CfSPEC+

C+COMMENT+
C+END+
C+END_OF_PROGRAM+
C+IGNORE_QUERIES+
C+SWIICH+

C+a+
C+J+
C+SETB+
C+SET+
C+JS+
C+EXIT+
C+M+
C+SH+
C+Q+
C+TOQ+
C+C+
C+I+
C+IM+
C+CM+
C+CI+
C+NC+
C+DC+
C+LINK+
C+X+
C+X+C+
C+ROUND HF+
C+ROUND F+
C+ROUND H+
C+ROUND+
C+FLOAT D+
C+FLOAT+
C+ERASE+
C+REVD+
C+REV+
C+ZERO+
C+DUPD+

C+DUP+
C+NEGDF+
C+NEGF+
C+NEGD+
C+NEG+

C†MAXF†
C†MAX†
C†SIGNF†
C†SIGN†
C†CAB†
C†FRR†
C†STAND†
C†*DF†
C†*D†
C†*F†
C†*R†
C†*I†
C†*†
C†+DF†
C†+D†
C†+F†
C†-DF†
C†-D†
C†-F†
C†XDF†
C†XD†
C†XF†

C†X+F†
C†X†
C†=TR†
C†BITS†
C†DUMMY†
C†PERM†
C†TOR†
C†OR†
C†VR†
C†NEV†
C†NOT†
C†FIX†
C†STR†
C†CONT†
C†AND†
C†EXIT†
C†OUT†
C†NZS†
C†NZ†
C†Z†
C†=Z†
C†#Z†
C†>Z†
C†≥Z†

CtV+
CtNV+
CtEN+
CtNEN+

CtEJ+
CtNEJ+
CtTR+
CtNTR+
CtQHN+
CtQH+
CtQN+
CtHN+
CtH+
CtN+
CtA+
CtAD+
CtL+
CtLD+
CtAC+
CtADC+
CtLC+
CtLDC+
CtCC+
CtRC+
CtRI+
CtRM+
Ct+Q+
Ct+C+
Ct+I+
Ct+M+
CtP+
CtADDR+
CtACCEPI_MZC_INSIRUCTIONS+

CtREAD+
CtB+
CtO+
CtD+
CtE+
CtF+
CtTLOQ+
CtINTQ+
CtPARQ+
CtBUSYQ+
CtMANUAL Q+

C†ADVCA†
C†END_QE_PERM†
C†DEEINE_COMPILER†

D[NAME]
D[CONST]
D[N]
D[S]
D[TEXT]
D[CAPTION TEXT]
D[OCTAL]
D[±']
D[EXPR]
D[OPERAND]
D[APP]
D[EXPR-LIST]
D[OP1
D[QUERY']
D[,']
D[IU]
D[REAL']
D[TYPE]
D[TYPE']
D[NAME LIST]
D[ARRAY LIST]
D[BOUND PAIR LIST]
D[ARRAY FN LIST]
D[SWITCH LIST]
D[RT]
D[FP]
D[FP-LIST]
D[FP-DELIMITER]

D[COND]
 D[AND-C]
 D[OR-C]
 D[SC]
 D[COMP]
 D[UCT]
 D[J-INSTR]
 D[MS-INSTR]
 D[SH-INSTR]
 D[QS-INSTR]
 D[±]
 D[=']
 D[P']
 D[IOM]
 D[ATOF]
 D[UI]
 D[SS]

P[±'] = f++, f--, 0;
 P[EXPR] = [OPERAND][OP1[EXPR], [OPERAND];
 P[OPERAND] = [NAME][APP], [CONST], f(±[±'] [EXPR] f) f, f|±[±'] [EXPR] f| f;
 P[APP] = f(±[EXPR-LIST] f) f, 0;
 P[EXPR-LIST] = [±'] [EXPR] f, ±[EXPR-LIST], [±'] [EXPR];
 P[OP] = f++, f--, f*f, f/ f, f# f, 0;
 P[QUERY'] = f? f, 0;
 P[,'] = f, f, 0;
 P[UI] = f!E f, fUNLESS f;
 P[REAL'] = fREAL f, 0;
 P[TYPE] = fINIEGER f, fREAL f;
 P[TYPE'] = fINIEGER f, fREAL f, 0;
 P[NAME LIST] = [NAME] f, ±[NAME LIST], [NAME];
 P[ARRAY LIST] = [NAME LIST] f(±[BOUND PAIR LIST] f) f f, ±[ARRAY LIST],
 [NAME LIST] f(±[BOUND PAIR LIST] f) f;
 P[BOUND PAIR LIST] = [±'] [EXPR] f: ±[±'] [EXPR] f. ±[BOUND PAIR LIST],

P[SWITCH LIST] = [NAME] { (+ [EXPR-LIST]) } ;
 P[RT] = [NAME LIST] { (+ [±'] [N]) } ;
 P[FP-LIST] = [FP-DELIMITER] [NAME] [FP-LIST] , [FP-DELIMITER] [NAME] ;
 P[FP-DELIMITER] = [, '] [RT] , [, '] + INIEGER_ARRAY_NAME ,
 [, '] + INIEGER_NAME , [, '] + INIEGER , [, '] (REAL ') + ARRAY_NAME ,
 [, '] + REAL_NAME , [, '] + REAL , + , + ;

P[COND] = [SC] + AND + [AND-C] , [SC] + OR + [OR-C] , [SC] ;
 P[AND-C] = [SC] + AND + [AND-C] , [SC] ;
 P[OR-C] = [SC] + OR + [OR-C] , [SC] ;
 P[SC] = [±'] [EXPR] [COMP] [±'] [EXPR] [COMP] [±'] [EXPR] ,
 [±'] [EXPR] [COMP] [±'] [EXPR] , + (+ [COND]) ;
 P[COMP] = + = , + > , + < , + ≠ , + < , + < ;
 P[UCT] = + * , + α + [NAME] [APP] , + * + [= '] [NAME] [APP] , + J + [N] [P'] [J-INSTR] ,
 + SEIB + [OCTAL] , + SET + [N] + P + + : , + JS + [N] [P'] , + EXIT + [N] ,
 [= '] + M + [N] + M + [N] [MS-INSTR] , + SH + [SH-INSTR] , + = + [QS-INSTR] ,
 + Q + [N] + TOQ + [N] , + C + [N] + TOQ + [N] , + I + [N] + TOQ + [N] , + M + [N] + TOQ + [N] ,
 + IM + [N] + TOQ + [N] , + CM + [N] + TOQ + [N] , + CI + [N] + TOQ + [N] , + I + [N] + = + [±'] [N] ,
 + Q + [N] , + C + [N] , + I + [N] , + M + [N] , + NC + [N] , + DC + [N] , + LINK , + M + [±] + I + [N] ,
 + X + + [±'] [N] , + X + C + [N] , + ROUNDH , + ROUNDF , + ROUNDH , + ROUND , + FLOATD ,
 + FLOAT , + ERASE , + REVD , + REV , + ZERO , + DUPD , + DUP , + NEGDF , + NEGF ,
 + NEGDF , + NEG , + ABSF , + ABS , + MAXF , + MAX , + SIGNF , + SIGN , + CAB , + FRB ,
 + STAND , + *DF , + *D , + *F , + *R , + *I , + * , + *DF , + *D , + *F , + * ,
 + -DF , + -D , + -F , + - , + XDF , + XD , + XF , + X + F , + X , + =TR , + BITS ,
 + DUMMY , + PERM , + TOB , + OR , + VR , + NEV , + NOT , + FIX , + STR , + CONT ,
 + AND , + EXIT , + OUT , + X + , + P + [IOM] [A TO F] + Q + [N] , + TLOQ + [N] ,
 + INTQ + [N] , + PARQ + [N] , + BUSYQ + [N] , + MANUAL Q + [N] , + CTQ + [N] , + CLOQ + [N] ,
 + SET + [±'] [N] , + ADVCA + [N] , [OCTAL] + / + [OCTAL] + / + [OCTAL] , 0 ;
 P[J-INSTR] = + C + [N] + NZS , + C + [N] + NZ , + C + [N] + Z , + =Z , + = , + ≠Z , + ≠ , + >Z , + >Z ,
 + <Z , + <Z , + V , + NV , + FN , + NEN , + EJ , + NEJ , + TR , + NTR , 0 ;
 P[MS-INSTR] = + QHN , + QH , + QN , + Q , + HN , + H , + N , 0 ;
 P[SH-INSTR] = + A + [±'] [N] , + AD + [±'] [N] , + L + [±'] [N] , + LD + [±'] [N] ,
 + C + [±'] [N] , + AC + [N] , + ADC + [N] , + LC + [N] , + LDC + [N] , + CC + [N] ;
 P[QS-INSTR] = + LINK , + Q + [N] , + C + [N] , + I + [N] , + M + [N] , + RC + [N] , + RI + [N] , + RM + [N] ,
 + + Q + [N] , + + C + [N] , + + I + [N] , + + M + [N] ;

P[±] = + , - ;
 P[= '] = + = , 0 ;

P[ATOF]

= {A}, {B}, {C}, {D}, {E}, {F};

P[UI] = [NAME][APP]{=[±'] [EXPR][QUERY']},
{READ}{([EXPR-LIST])},
[NAME][APP].
{->}[N].
{CAPTION}{(CAPTION TEXT)},
{RETURN},
{RESULI}{=[±'] ADDR}{([NAME][APP])},
{RESULI}{=[±'] [EXPR],
{SIDE},
{->}[NAME]{([±'] [EXPR])};

P[ISS] = [UI][S],
{CYCLE}{[NAME][APP]{=[±'] [EXPR], +[±'] [EXPR], +[±'] [EXPR][S]},
{REPEAT}[S],
[N]{:},
[UI]{(COND)}{THEN}[UI][S],
[UI][UI]{(COND)}[S],
[TYPE][NAME LIST][S],
{END}[S],
[RT][NAME][FPP][S],
[RT]{SPEC}{[NAME][FPP][S],
[S],
{COMMENT}{(TEXT)}[S].


```

+BEGIN+(S),
+END_OF_PROGRAM+,

```

```

(NAME)+(+(+)(N)+)++,
+SWITCH+(SWITCH LIST)(S),
+COMPILE_QUERIES+(S),
+IGNORE_QUERIES+(S),
+ACCEPT_M/ZC_INSTRUCTIONS+(S),
(N)+P+++,
+*+(UCI)(S),
+END_OF_PERM+(S),
+DEFINE_COMPILER+(S);

```

F

```

BEGIN
COMMENT PERMANENT MATERIAL
ROUTINE_SPEC PRINT (REAL X, INTEGER M,N) -
ROUTINE_SPEC PRINT FL (REAL X, INTEGER N)
ROUTINE_SPEC READ SYMBOL (INTEGER_NAME N)
INTEGER_EN_SPEC NEXT SYMBOL
ROUTINE_SPEC SKIP SYMBOL
ROUTINE_SPEC PRINT SYMBOL (INTEGER N)
ROUTINE_SPEC NEWLINE
ROUTINE_SPEC NEWLINES (INTEGER N)
ROUTINE_SPEC SPACE
ROUTINE_SPEC SPACES (INTEGER N)
REAL_EN_SPEC SIN (REAL X)
REAL_EN_SPEC COS (REAL X)
REAL_EN_SPEC TAN (REAL X)
REAL_EN_SPEC ARCTAN (REAL X,Y)
REAL_EN_SPEC EXP (REAL X)
REAL_EN_SPEC LOG (REAL X)
REAL_EN_SPEC SQRT (REAL X)
REAL_EN_SPEC RADIUS (REAL X,Y)
REAL_EN_SPEC FRACPT (REAL X)
REAL_EN_SPEC MOD (REAL X)
INTEGER_EN_SPEC INT (REAL X)

```