

```
10 ORG          #9000
20
30
40 ;***MAGNIFICADOR DE GRAFICOS***
50
60
70 LD BC,TABLA
80 LD HL,SPACE
90 JP #BCD1
100 TABLA:DEFW NAME
110 JP MAGNI
120 NAME:DEFM  "MAGN"
130 DEFB      "I"+#80
140 DEFB      0
150 SPACE:DEFS          4
160
170
180
```

```
190 MAGNI:LD    A,(IX+0)
200 LD (ANCHO),A
210 SLA        A
220 LD (ANCHO1),A
230 LD B,0
240 LD C,A
250 LD (LONG),BC
260 LD A,(IX+2)
270 SLA        A
280 SLA        A
290 SLA        A
300 LD (ALTO),A
310 ADD        A,A
320 LD (ALTO1),A
330 LD L,(IX+4)
340 LD H,(IX+5)
350 LD E,(IX+6)
360 LD D,(IX+7)
370 LD (BUFFER),HL
```

```
380 LD (GRAFIC),DE
390 LD L,(IX+8)
400 LD H,(IX+10)
410 LD (POSIC),HL
420 LD A,(IX+12)
430 CP 1
440 JP Z,MAGNI1
450 CP 0
460 JP Z,MAGNI0
470 MAGNI2:CALL          MIRA2
480 CALL          IMPRE
490 RET
500 MIRA2:LD      DE,(BUFFER)
510 LD HL,(GRAFIC)
520 LD A,(ALTO)
530 LD B,A
540 KKK2:PUSH  BC
550 LD (POSIN),DE
560 LD A,(ANCHO)
570 LD B,A
580 KKK1:XOR   A
590 BIT          7,(HL)
600 CALL          NZ,PON67
610 BIT          6,(HL)
```

620	CALL	NZ, PON45
630	BIT	5, (HL)
640	CALL	NZ, PON23
650	BIT	4, (HL)
660	CALL	NZ, PON01
670	LD (DE), A	
680	XOR	A
690	INC	DE
700	BIT	3, (HL)
710	CALL	NZ, PON67
720	BIT	2, (HL)
730	CALL	NZ, PON45
740	BIT	1, (HL)
750	CALL	NZ, PON23
760	BIT	0, (HL)
770	CALL	NZ, PON01
780	LD (DE), A	
790	INC	DE
800	INC	HL

```
810 DJNZ          KKK1
820 PUSH          HL
830 LD HL,(POSIN)
840 LD BC,(LONG)
850 LDIR
860 POP           HL
870 POP           BC
880 DJNZ          KKK2
890 LD (POSIN),DE
900 RET
910 MAGN11:CALL   MIRA1
920 CALL          IMPRE
930 RET
940 MIRA1:LD      DE,(BUFFER)
950 LD HL,(GRAFIC)
960 LD A,(ALTO)
970 LD B,A
980 LLL2:PUSH     BC
990 LD (POSIN),DE
1000 LD A,(ANCHO)
```

1010	LD B,A	
1020	LLL1:XOR	A
1030	BIT	7,(HL)
1040	CALL	NZ,PON67
1050	BIT	6,(HL)
1060	CALL	NZ,PON45
1070	BIT	3,(HL)
1080	CALL	NZ,PON23
1090	BIT	2,(HL)
1100	CALL	NZ,PON01
1110	LD (DE),A	
1120	XOR	A
1130	INC	DE
1140	BIT	5,(HL)
1150	CALL	NZ,PON67
1160	BIT	4,(HL)
1170	CALL	NZ,PON45
1180	BIT	1,(HL)
1190	CALL	NZ,PON23
1200	BIT	0,(HL)

```
1210 CALL          NZ,PON01
1220 LD (DE),A
1230 INC           DE
1240 INC           HL
1250 DJNZ         LLL1
1260 PUSH         HL
1270 LD HL,(POSIN)
1280 LD BC,(LONG)
1290 LD IR
1300 POP          HL
1310 POP          BC
1320 DJNZ         LLL2
1330 LD (POSIN),DE
1340 RET
1350 MAGNIO:CALL          MIRA0
1360 CALL          IMPRE
1370 RET
1380 MIRA0:LD      DE,(BUFFER)
1390 LD HL,(GRAFIC)
1400 LD A,(ALTO)
1410 LD B,A
```

```
1420 MMM2:PUSH BC
1430 LD (POSIN),DE
1440 LD A,(ANCHO)
1450 LD B,A
1460 MMM1:XOR A
1470 BIT 7,(HL)
1480 CALL NZ,PON67
1490 BIT 5,(HL)
1500 CALL NZ,PON45
1510 BIT 3,(HL)
1520 CALL NZ,PON23
1530 BIT 1,(HL)
1540 CALL NZ,PON01
1550 LD (DE),A
1560 XOR A
1570 INC DE
1580 BIT 6,(HL)
1590 CALL NZ,PON67
1600 BIT 4,(HL)
1610 CALL NZ,PON45
1620 BIT 2,(HL)
```

1630	CALL	NZ, PON23
1640	BIT	0, (HL)
1650	CALL	NZ, PON01
1660	LD (DE), A	
1670	INC	DE
1680	INC	HL
1690	DJNZ	MMM1
1700	PUSH	HL
1710	LD HL, (POSIN)	
1720	LD BC, (LONG)	
1730	LDIR	
1740	POP	HL
1750	POP	BC
1760	DJNZ	MMM2
1770	LD (POSIN), DE	
1780	RET	
1790	POSIN:DEFS	2
1800	PON01:SET	0, A
1810	SET	1, A
1820	RET	
1830	PON23:SET	2, A

```
1840 SET          3,A
1850 RET
1860 PON45:SET    4,A
1870 SET          5,A
1880 RET
1890 PON67:SET    6,A
1900 SET          7,A
1910 RET
1920 ;RUTINA-IMPRESION
1930 ;H-POSICION-VERTICAL-INICIO-1
1940 ;L-POSICION-HORIZONTAL-INICIO-1
1950 ;DE-DIRECCION-GRAFICO
1960 ;
1970 IMPRE:LD     HL,(POSIC)
1980 LD DE,(BUFFER)
1990 PUSH        DE
2000 EX DE,HL
2010 LD HL,#C000-80
2020 LD B,D
2030 LD D,0
2040 DEC         E
```

2050	ADD	HL, DE
2060	LD DE, 80	
2070	S_BUC:ADD	HL, DE
2080	DJNZ	S_BUC
2090	POP	IX
2100	LD A, (ALTO1)	
2110	LD B, A	
2120	JR COLOC	
2130	P_BUC:LD	A, H
2140	AND	56
2150	CP 56	
2160	JR Z, P_PAS	
2170	LD A, H	
2180	ADD	A, 8
2190	LD H, A	
2200	JR COLOC	
2210	P_PAS:LD	DE, 0080
2220	LD A, H	
2230	XOR	56
2240	LD H, A	
2250	ADD	HL, DE

```

2260 COLOC:PUSH BC
2270 PUSH          HL
2280 LD A,(ANCHO1)
2290 LD B,A
2300 P_BUC1:LD    A,(IX+0)
2310 LD (HL),A
2320 INC          IX
2330 INC          HL
2340 DJNZ        P_BUC1
2350 POP         HL
2360 POP         BC
2370 DJNZ        P_BUC
2380 RET
2390 ALTO:DEFS  1
2400 ANCHO:DEFS 1
2410 ALTO1:DEFS 1
2420 ANCHO1:DEFS          1
2430 POSIC:DEFS  2
2440 LONG:DEFS   2
2450 GRAFIC:DEFS          2
2460 BUFFER:DEFS          2

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```

1 REM AHORRAR MEMORIA EN GRAFICOS(II)      240 DATA 175,203,126,196,145,145,203      500 DATA 237,83,128,145,58,223,145
2 REM PROGRAMA CARGADOR                    250 DATA 118,196,140,145,203,110,196      510 DATA 71,175,203,126,196,145,145
10 FOR N=&9000 TO &91DE                     260 DATA 135,145,203,192,196,130,145      520 DATA 203,110,196,140,145,203,94
20 READ A:SUMA=SUMA+A                       270 DATA 18,175,19,203,94,196,145        530 DATA 196,135,145,203,78,196,130
30 POKE N,A                                 280 DATA 145,203,86,196,140,145,203      540 DATA 145,18,175,19,203,118,196
40 NEXT                                      290 DATA 78,196,135,145,203,70,196      550 DATA 145,145,203,102,196,140,145
50 IF SUMA<>65991 THEN PRINT                300 DATA 130,145,18,19,35,16,207        560 DATA 203,86,196,135,145,203,70
   "ERROR EN DATAS"                         310 DATA 229,42,128,145,237,75,228      570 DATA 196,130,145,18,19,35,16
60 DATA 1,9,144,33,20,144,195             320 DATA 145,237,176,225,193,16,184      580 DATA 207,229,42,128,145,237,75
70 DATA 209,188,14,144,195,24,144         330 DATA 237,83,128,145,201,205,201      590 DATA 228,145,237,176,225,193,16
80 DATA 77,65,71,78,201,0,0               340 DATA 144,205,150,145,201,237,91      600 DATA 184,237,83,128,145,201,0
90 DATA 0,0,0,221,126,0,50                350 DATA 232,145,42,230,145,58,222      610 DATA 0,203,199,203,207,201,203
100 DATA 223,145,203,39,50,225,145        360 DATA 145,71,197,237,83,128,145      620 DATA 215,203,223,201,203,231,203
110 DATA 6,0,79,237,67,228,145            370 DATA 58,223,145,71,175,203,126      630 DATA 239,201,203,247,203,255,201
120 DATA 221,126,2,203,39,203,39          380 DATA 196,145,145,203,118,196,140    640 DATA 42,226,145,237,91,232,145
130 DATA 203,39,50,222,145,135,50        390 DATA 145,203,94,196,135,145,203    650 DATA 213,235,33,176,191,66,22
140 DATA 224,145,221,110,4,221,102        400 DATA 86,196,130,145,18,175,19       660 DATA 0,29,25,17,80,0,25
150 DATA 5,221,94,6,221,86,7              410 DATA 203,110,196,145,145,203,102    670 DATA 16,253,221,225,58,224,145
160 DATA 34,232,145,237,83,230,145        420 DATA 196,140,145,203,78,196,135    680 DATA 71,24,21,124,230,56,254
170 DATA 221,110,8,221,102,10,34          430 DATA 145,203,70,196,130,145,18     690 DATA 56,40,6,124,198,8,103
180 DATA 226,145,221,126,12,254,1        440 DATA 19,35,16,207,229,42,128       700 DATA 24,8,17,80,0,124,238
190 DATA 202,194,144,254,0,202,33         450 DATA 145,237,75,228,145,237,176    710 DATA 56,103,25,197,229,58,225
200 DATA 145,205,106,144,205,150,145     460 DATA 225,193,16,184,237,83,128     720 DATA 145,71,221,126,0,119,221
210 DATA 201,237,91,232,145,42,230       470 DATA 145,201,205,40,145,205,150    730 DATA 35,35,16,247,225,193,16
220 DATA 145,58,222,145,71,197,237       480 DATA 145,201,237,91,232,145,42     740 DATA 216,201,0,0,0,0,0
230 DATA 83,128,145,58,223,145,71        490 DATA 230,145,58,222,145,71,197

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