

FORD SERIES 22

Operator's Manual

970-0012-003

October, 1989

INTRODUCTION

This manual provides the instructions for programming Ford 8762, 8763, 87C66, and 87F66 MOS PROMs. The Ford Series 22 special programmer operates exactly the same as the standard Data I/O Series 22 with the exception of the items noted in the paragraphs below. Also, the Ford socket adapter 351A-FORD is required when programming Ford Devices. Refer to the Series 22 PROM Programmer manual (981-0119) for information on operating the Series 22 programmer. This document provides information pertaining only to the programming of the Ford devices and also provides a device list which lists all of the devices that are programmable with the Ford Series 22. Please note the following exceptions to the Series 22 manual:

- On page 1-3 the Series 22 options are listed in table 1-2. Some of these options may not be supported on the special Ford Series 22. Contact Data I/O for information on which options are available with the special Ford Series 22.
- On page 3-2 the power-up procedure is explained. The special Ford Series 22 does not display the programmer's software version when the self-test is completed. Instead it displays:

SELF TEST - OK

- The programming sequence for the special Ford devices is slightly different than shown on pages 3-6, 3-7, 3-10, 3-14, and 3-15 of the Series 22 manual. The "begin device address" and the "block size" is not operable with the Ford devices. See the "Programming Devices" section of this manual for more information on programming devices.
- On page 3-22, in table 3-4, and on page 3-67, in table 3-14, the Series 22 select commands are listed. The following select commands are not available on the special Ford Series 22.

Select Code	Title	Page Described On
B8	View Option Codes	3-28
BB	Adapter Enable	3-29
BC	Disable Electronic ID	3-29
BD	Enable Electronic ID	3-30
EF	Adapter Identification	3-33

- On page 3-22, in table 3-4, and on page 3-67, in table 3-14, the Series 22 Select Codes are listed. The following select command has been added:

Select Code	Title
A9	Erase Device 87F66

Select Code A9 is for use with the 87F66 device only; this code causes the entire part to be erased. It is not necessary to use this Select Code to program devices, as all devices are automatically erased before they are programmed. If this select code is used on a non-flash device, it will simply cause the device to undergo a blank test.

Family and Pinout Code Assignments

The Ford Series 22 special programmer accepts all standard family and pinout codes listed in the attached device list. In addition, it accepts the following family and pinout codes:

Family code	E3	Family code for 8762 and 8763 devices
Pinout code	4A	Pinout code for 8762 (16K PROM)
Pinout code	4B	Pinout code for 8763 (32K PROM)
Family code	FD	Family code for 87C66 device
Pinout code	EF	Pinout code for 87C66 & 87F66
Family code	FB	Family code for 87F66

CAUTION

Use only the proper pinout codes with family codes. Use of other pinout codes in combination with these family codes E3 could result in damage to the installed device.

Programmable Address Range - 8762 and 8763

The 8762 and 8763 devices have a unique feature which is a programmable address range. The 8762 may have a base address of 2000 hex or 6000 hex. The 8763 may reside at either 2000 hex or A000 hex. When the family code E3 is selected with the correct socket adapter installed, the programmer will prompt the operator for the address range when any data transfer function is executed. This prompt is in the form of "RANGE zero or 1^." Entering zeros in answer to the "RANGE" prompt will cause the Series 22 to treat the device as though it is or will be at address 2000 hex. If, for example, the desired function is to copy device data into the Series 22 RAM; zero will cause the Series 22 to start reading data from the device at address 2000 hex. If the desired function is to copy data from RAM to the device, a zero will cause the Series 22 to program the device address range to 2000 hex.

Any non-zero value entered for the address range will select the high address block for the device. Please refer to the following table for address options:

Family Code	Pinout Code	Device Type	Address Range	Actual Device Address
E3	4A	8762	zero	2000 hex
E3	4A	8762	1 or non-zero	6000 hex
E3	4B	8763	zero	2000 hex
E3	4B	8763	1 or non-zero	A000 hex

NOTE

When the high address range is selected, only 6000 hex bytes are read or programmed. 8763 devices used at A000 hex only provide 24K of their possible 32K bytes.

Programmable Address Range - 87C66 and 87F66

The "RANGE" parameter function for the 87C66 differs from the 8762 and 8763. There are three valid "RANGE" values for the 87C66:

- 0 = access entire array
- 1 = access normal array only
- 2 = access shadow array only

Entering any other number will be identical to RANGE =1

NOTE

For the 87F66, the range cannot be specified. Since the flash erase operation erases the entire part at once, the part can only be programmed in its entirety.

PROGRAMMING DEVICES

The programming sequence described in this section assumes that the operator is familiar with the basic operation of the standard Series 22 programmer. For instructions on operating the standard Series 22 programmer, see the Series 22 PROM Programmer manual.

Please note the following exceptions to the standard programming sequence of the Series 22 programmer: When programming Ford devices, never enter the *begin device address* or *block size*. For example, to program a device with RAM data, you would press the COPY key and then the RAM key. You could, if desired, enter a begin RAM address and/or a block size in answer to the Series 22 prompt "RAM^ADDR/SIZE TO." After pressing the DEVICE key, the programmer will display "CO RAM>DEV ADDR." Do not enter a begin address for the device; continue the operation by pressing the START key. Similarly, when loading data from the device to RAM, do not enter a begin device address or block size in response to the prompt "DEV ADDR/SIZE TO." Entering begin device addresses or block size will not damage the device, but incorrect data may be programmed into the device or loaded into RAM.

To program a Ford device, perform the following procedure:

1. Install the special Ford 56K flash socket adapter (see the Series 22 PROM Programmer manual for instructions on installing socket adapters).
2. Load the data into the Series 22 RAM using the standard procedure, but do not enter an address or size at the prompt.
3. Insert the device to programmed into the special Ford 56K flash adapter.

CAUTION

Never insert Ford devices into the Series 22 programming socket or any socket adapter other than the special Ford 56K flash adapter. Damage to the device may occur.

4. Press COPY, RAM, and then DEVICE and enter the family code (see page 1).
5. Select pinout code (see the table on the page 1 of this document for the correct pinout code for the device you are programming).
6. Select the address range (see page 2).
7. Press START.

The Series 22 will begin programming the device. Refer to the Series 22 PROM Programmer manual for any further operational information.

NOTE

The Ford 56K flash ADAPTER is used for programming all Ford devices.

SILICON SIGNATURE

The Intel 87C66 silicon signature equals 89/1E; the Intel 87F66 silicon signature equals 89/1F. Entering family/pinout code = FF/FF will allow access to this word and therefore a Program/Verify/Load (P/V/L) operation can be done. One word of caution: Since these parts require a unique power-up sequence during a "sil sig" read, reading of other devices in the 28-pin socket may cause error if the Ford adapter is installed. For these devices either enter its family/pinout code or remove the Ford adapter.

CAUTION

Since the programmer does not prompt for a "RANGE" value when an FF/FF is entered as a family/pinout code, the last entered value is used. On power-up, a "RANGE" value of zero is entered.

PROGRAM INHIBIT BIT (Select C3)

To program this bit on the 87C66, it is necessary to press the SELECT key followed by C3. The message "PGM ALG OPT" will appear in the display. Pressing the START key will initiate the programming.

THE FORD MODULE

The Ford Module containing an 87F66 device can be programmed in the Model 22 with the appropriate socket adapter. The family/pinout code to be used for the socket adapter is the same family/pinout code used for the device. The silicon signature family/pinout code (FFFF) may also be used for the module.

Special Ford Series 22 Device List

Device Part Number	Family and Pinout Code	Software Version	Adapter	Approval Status	Device Part Number	Family and Pinout Code	Software Version	Adapter	Approval Status
Advanced Micro Devices					Advanced Micro Devices (Cont.)				
27LS18	16 02	V01	351A-064	S	27S48	16 67	V01	-	S
27LS19	16 02	V01	351A-064	S	2708	21 27	V01	-	A
27S08	15 02	V01	351A-064	O	AM9708	21 27	V01	-	A
27S09	15 02	V01	351A-064	O	2716	19 23	V01	-	A
27S18	16 02	V01	351A-064	A	AM9716	19 23	V01	-	A
27S19	16 02	V01	351A-064	A	2732	19 24	V01	-	A
29750A	16 02	V01	351A-064	A	2732A	27 24	V01	-	A
29761A	16 02	V01	351A-064	A	AM9732	19 24	V01	-	A
27S10	15 01	V01	351A-064	O	2764	AF 33	V01	-	A
27S11	15 01	V01	351A-064	O	AM9764	AF 33	V01	-	A
27S20	16 01	V01	351A-064	A	27128	AF 51	V01	-	A
27S21	16 01	V01	351A-064	A	Electronic Arrays				
29780A	16 01	V01	351A-064	A	2708	21 27	V01	-	O
29761A	16 01	V01	351A-064	A	2716	19 23	V01	-	O
27S12	16 03	V01	351A-064	A	Fairchild				
27S13	16 03	V01	351A-064	A	93417	01 01	V01	351A-064	A
29770	16 03	V01	351A-064	A	93427	01 01	V01	351A-064	A
29771	16 03	V01	351A-064	A	93436	01 03	V01	351A-064	A
27S24	16 65	V01	351A-074	S	93446	01 03	V01	351A-064	A
27S25	16 65	V01	351A-074	S	93438	01 15	V01	-	A
27S28	16 09	V01	351A-064	A	93448	01 15	V01	-	A
27S29	16 09	V01	351A-064	A	93452	01 05	V01	351A-064	A
27S30	16 36	V01	-	A	93453	01 05	V01	351A-064	A
27S31	16 36	V01	-	A	93450	01 16	V01	-	A
27S32	16 38	V01	351A-064	A	93451	01 16	V01	-	A
27S33	16 38	V01	351A-064	A	93460	01 16	V01	-	S
27PS181	16 37	V01	-	S	93461	01 16	V01	-	S
27PS281	16 37	V01	351A-074	S	93L450	01 16	V01	-	S
27S180	16 37	V01	-	A	93L451	01 16	V01	-	S
27S181	16 37	V01	-	A	93514	01 06	V01	351A-064	S
27S280	16 37	V01	351A-074	S	93515	01 06	V01	351A-064	S
27S281	16 37	V01	351A-074	S	93510	01 21	V01	-	A
27S35	16 66	V01	351A-074	S	93511	01 21	V01	-	A
27S37	16 66	V01	351A-074	S	2708	21 27	V01	-	S
27LS185	16 06	V01	351A-064	S	Fujitsu				
27PS184	16 06	V01	351A-064	S	27C32A	27 24	V01	-	S
27PS185	16 06	V01	351A-064	S	27C64	45 33	V01	-	S
27PS186	16 06	V01	351A-064	S	7051	78 02	V01	351A-064	S
27PS191	16 68	V01	-	S	7056	78 02	V01	351A-064	S
27PS291	16 68	V01	351A-074	S	7111	68 02	V01	351A-064	S
27S190	16 68	V01	-	A	7112	68 02	V01	351A-064	S
27S191	16 68	V01	-	A	7052	78 01	V01	351A-064	S
27S290	16 68	V01	351A-074	S	7057	78 01	V01	351A-064	S
27S291	16 68	V01	351A-074	S	7113	68 01	V01	351A-064	S
27PS41	16 63	V01	351A-064	S	7114	68 01	V01	351A-064	S
27S40	16 63	V01	351A-064	A	7117	68 08	V01	351A-064	S
27S41	16 63	V01	351A-064	A	7118	68 08	V01	351A-064	S
27PS43	16 63	V01	-	A	7119	68 14	V01	-	S
27S43	16 63	V01	-	A	7120	68 14	V01	-	S
27PS49	16 67	V01	-	S	7053	78 03	V01	351A-064	S
					7058	78 03	V01	351A-064	S

Special Ford Series 22 Device List

Device Part Number	Family and Pinout Code	Software Version	Adapter	Approval Status	Device Part Number	Family and Pinout Code	Software Version	Adapter	Approval Status
Fujitsu (Cont.)					Harris Semiconductor (Cont.)				
7115	88 03	V01	351A-064	S	7881RP	05 16	V01	.	A
7116	88 03	V01	351A-064	S	7884	05 06	V01	351A-064	A
7123	88 09	V01	351A-064	S	7884P	05 06	V01	351A-064	A
7124	88 09	V01	351A-064	S	7885	05 06	V01	351A-064	A
7125	88 15	V01	.	S	7885P	05 06	V01	351A-064	A
7126	88 15	V01	.	S	7816	05 42	V01	.	A
7054	78 05	V01	351A-064	S	78180	05 21	V01	.	A
7059	78 05	V01	351A-064	S	78161	05 21	V01	.	A
7121	88 05	V01	351A-064	S	78165	05 53	V01	351A-064	A
7122	88 05	V01	351A-064	S	78320	05 83	V01	.	A
7055	78 89	V01	.	S	78321	05 83	V01	.	A
7080	78 89	V01	.	S	78841	05 67	V01	.	A
7131	88 16	V01	.	S	Hitachi				
7132	88 16	V01	.	S	25044	74 05	V01	351A-064	S
7127	88 06	V01	351A-064	S	25045	74 05	V01	351A-064	S
7128	88 06	V01	351A-064	S	25088	74 16	V01	.	S
7137	88 21	V01	.	S	25088S	86 16	V01	.	S
7138	88 21	V01	.	S	25089	74 16	V01	.	S
7151	88 53	V01	351A-064	S	25089S	86 16	V01	.	S
7152	88 53	V01	351A-064	S	25084	74 06	V01	351A-064	S
7141	88 83	V01	.	S	25084S	86 06	V01	351A-064	S
7142	88 83	V01	.	S	25085	74 06	V01	351A-064	S
7143	88 67	V01	.	S	25085S	86 06	V01	351A-064	S
7144	88 67	V01	.	S	25188	74 21	V01	.	S
8518	21 27	V01	.	S	25188S	86 21	V01	.	S
8516	19 23	V01	.	S	25189	74 21	V01	.	S
8742	50 57	V01	351A-075	S	25189S	86 21	V01	.	S
8749H	50 57	V01	351A-075	S	27C32	19 24	V01	.	S
2732A	27 24	V01	.	S	27C32A	27 24	V01	.	S
2732A-35	27 24	V01	.	S	482716	19 23	V01	.	S
8532	19 24	V01	.	S	48016	33 23	V01	.	S
2764	45 33	V01	.	S	482532	19 25	V01	.	S
27128	45 51	V01	.	S	482732	19 24	V01	.	S
General Instruments					482732P	19 24	V01	.	S
5716	83 23	V01	.	S	482732A	27 24	V01	.	S
5816	37 23	V01	.	S	482764	79 33	V01	.	S
Harris Semiconductor					4827128	79 51	V01	.	S
8641	40 47	V01	.	S	Hughes				
7802	05 02	V01	351A-064	A	3004-1	58 62	V01	.	S
7803	05 02	V01	351A-064	A	3004-2	58 61	V01	.	S
7610	05 01	V01	351A-064	A	3704-1	58 62	V01	.	S
7611	05 01	V01	351A-064	A	3704-2	88 61	V01	.	S
7829	05 43	V01	.	A	3008	88 80	V01	.	S
7820	05 03	V01	351A-064	A	3708	88 80	V01	.	S
7821	05 03	V01	351A-064	A	Incal				
7640	05 15	V01	.	A	2704	21 26	V01	.	O
7641	05 15	V01	.	A	8704	21 26	V01	.	O
7648	05 89	V01	351A-064	A	2708	21 27	V01	.	O
7649	05 89	V01	351A-064	A	2768	19 22	V01	.	O
7842	05 05	V01	351A-064	A	8708	21 27	V01	.	O
7842P	05 38	V01	351A-064	A	8741	86 89	V01	351A-075	S
7843	05 05	V01	351A-064	A	8741A	86 89	V01	351A-075	S
7843P	05 38	V01	351A-064	A	8748	82 86	V01	351A-075	A
7808	05 16	V01	.	A	8748H	80 86	V01	351A-075	A
7880	05 16	V01	.	A	2716	19 23	V01	.	A
7880RP	05 16	V01	.	A	2815	85 23	V01	.	A
7881	05 16	V01	.	A					

Special Ford Series 22 Device List

Device Part Number	Family and Pinout Code	Software Version	Adaptor	Approval Status	Device Part Number	Family and Pinout Code	Software Version	Adaptor	Approval Status
Intel (Cont.)					Monolithic Memories, Inc. (Cont.)				
2816	37 23	V01	-	A	6305	11 03	V01	351A-064	S
8742	50 57	V01	351A-075	S	63LS240	18 03	V01	351A-064	S
8749H	50 57	V01	351A-075	A	63LS241	18 03	V01	351A-064	S
8755A	47 55	V01	351A-075	S	63S240	18 03	V01	351A-064	S
2732	19 24	V01	-	A	63S241	18 03	V01	351A-064	S
2732A	27 24	V01	-	A	6340	11 15	V01	-	S
8751	53 58	V01	351A-076	A	6340JS	11 15	V01	351A-074	S
2764	79 33	V01	-	A	6341	11 15	V01	-	S
27128	79 51	V01	-	A	6341JS	11 15	V01	351A-074	S
27256	83 32	V01	-	A	6348	11 09	V01	351A-066	S
Intersil					6349	11 09	V01	351A-064	S
5600	70 02	V01	351A-064	O	6340	11 15	V01	-	S
5610	70 02	V01	351A-064	O	6340JS	11 15	V01	351A-074	S
5603A	70 01	V01	351A-064	O	6341	11 15	V01	-	S
5623	70 01	V01	351A-064	O	6341JS	11 15	V01	351A-074	S
5604	70 03	V01	351A-064	O	6348	11 09	V01	351A-064	S
5624	70 03	V01	351A-064	O	6349	11 09	V01	351A-064	S
6716	59 64	V01	-	A	63S480	18 09	V01	351A-064	O
Mitsubishi					63S481	18 09	V01	351A-064	O
2708	21 27	V01	-	S	63S2	11 05	V01	351A-064	S
8748	52 56	V01	351A-075	S	6352	11 05	V01	351A-064	S
2716	19 23	V01	-	S	6353	11 05	V01	351A-064	S
2732	19 24	V01	-	S	63LS441	18 05	V01	351A-064	O
2732A	27 24	V01	-	S	63RA441	18 07	V01	351A-064	S
2764	79 33	V01	-	S	63RD441	18 07	V01	351A-064	S
27128	79 51	V01	-	S	63RS441	18 07	V01	351A-064	O
Monolithic Memories, Inc.					63S440	18 05	V01	351A-064	S
5330	29 02	V01	351A-064	A	63S441	18 05	V01	351A-064	S
5331	29 02	V01	351A-064	A	5380	11 16	V01	-	S
53LS080	18 02	V01	351A-064	O	5380JS	11 16	V01	351A-074	S
53LS081	18 02	V01	351A-064	O	5381	11 16	V01	-	S
53S080	18 02	V01	351A-064	A	5381JS	11 16	V01	351A-074	S
53S081	18 02	V01	351A-064	A	6380	11 16	V01	-	S
6330	29 02	V01	351A-064	A	6380JS	11 16	V01	351A-074	S
6331	29 02	V01	351A-064	A	6381	11 16	V01	-	S
63LS080	18 02	V01	351A-064	O	6381JS	11 16	V01	351A-074	S
63LS081	18 02	V01	351A-064	O	6388	11 06	V01	351A-064	S
63S080	18 02	V01	351A-064	A	6389	11 06	V01	351A-064	S
63S081	18 02	V01	351A-064	A	6388	11 06	V01	351A-064	S
5300	11 01	V01	351A-064	A	6389	11 06	V01	351A-064	S
5301	11 01	V01	351A-064	A	63RA841	18 11	V01	351A-064	O
6300	11 01	V01	351A-064	A	63S840	18 06	V01	351A-064	O
6301	11 01	V01	351A-064	A	63S841	18 06	V01	351A-064	S
63LS140	18 01	V01	351A-064	A	63S1881JS	18 21	V01	351A-074	S
63LS141	18 01	V01	351A-064	A	63PL1881	18 21	V01	-	S
63S140	18 01	V01	351A-064	A	63PS1881	18 21	V01	-	S
63S141	18 01	V01	351A-064	A	63S1880	18 21	V01	-	O
6308	11 08	V01	351A-064	S	63S1881	18 21	V01	-	S
6309	11 08	V01	351A-064	S	63S1840	18 53	V01	351A-064	O
6335	11 14	V01	-	O	63S1841	18 53	V01	351A-064	S
6336	11 14	V01	-	S	63S3281	18 63	V01	-	S
6308	11 08	V01	351A-064	S	Mestek				
6309	11 08	V01	351A-064	S	2716	19 23	V01	-	O
6335	11 14	V01	-	S					
6336	11 14	V01	-	S					
6305	11 03	V01	351A-064	S					
6306	11 03	V01	351A-064	S					
6305	11 03	V01	351A-064	S					

Special Ford Series 22 Device List

Device Part Number	Family and Pinout Code	Software Version	Adapter	Approval Status	Device Part Number	Family and Pinout Code	Software Version	Adapter	Approval Status
Motorola					National Semiconductor (Cont.)				
7620	05 03	V01	351A-064	O	74S573	08 06	V01	351A-064	A
7621	05 03	V01	351A-064	A	77LS181	08 16	V01	-	A
7640	05 15	V01	-	O	77S180	08 16	V01	-	A
7641	05 15	V01	-	A	87LS181	08 16	V01	-	A
7649	05 09	V01	351A-064	A	87S180	08 16	V01	-	A
7642	05 05	V01	351A-064	O	87S181	08 16	V01	-	A
7643	05 05	V01	351A-064	A	87S280	08 16	V01	351A-074	S
7680	05 16	V01	-	O	87S281	08 16	V01	351A-074	S
7681	05 16	V01	-	A	77S184	08 06	V01	-	A
7684	05 06	V01	351A-064	O	77S185	08 06	V01	-	A
7685	05 06	V01	351A-064	A	87S184	08 06	V01	351A-064	A
76161	05 21	V01	-	A	87S185	08 06	V01	351A-064	A
76165	05 53	V01	351A-064	A	87S190	08 21	V01	-	A
MCM2706P	21 27	V01	-	A	87S191	08 21	V01	-	A
MCM2808	81 72	V01	-	A	87S290	08 21	V01	351A-074	S
MCM88708	21 27	V01	-	A	87S291	08 21	V01	351A-074	S
MCM2716	19 23	V01	-	A	87S195	08 53	V01	351A-064	S
MCM2816	43 23	V01	-	A	87S321	08 63	V01	-	S
MCM2817	81 71	V01	-	A	2708	21 27	V01	-	S
TMS2716	23 28	V01	-	A	2758A	19 22	V01	-	S
68732-0	25 44	V01	-	O	2758B	19 35	V01	-	S
68732-1	25 45	V01	-	O	2716	19 23	V01	-	S
MCM2532	19 25	V01	-	A	2816	37 23	V01	-	A
MCM2832	81 70	V01	-	A	8716	33 23	V01	-	A
MCM88764	25 29	V01	-	A	2532	19 25	V01	-	S
MCM88766	25 29	V01	-	A	2732	19 24	V01	-	S
					2764	35 33	V01	-	S
National Semiconductor					Nippon Electric Company, Ltd.				
27C16	19 23	V01	-	S	8403	72 01	V01	351A-064	S
25C32	19 25	V01	-	S	8423	72 01	V01	351A-064	S
27C32	19 24	V01	-	S	8405	72 15	V01	-	S
54S188	08 02	V01	351A-064	A	8425	72 15	V01	-	S
54S288	08 02	V01	351A-064	A	8406	72 05	V01	351A-064	S
74S188	08 02	V01	351A-064	A	8426	72 05	V01	351A-064	S
74S288	08 02	V01	351A-064	A	8408	72 16	V01	-	S
54S287	08 01	V01	351A-064	A	8417	72 16	V01	-	S
54S387	08 01	V01	351A-064	A	8428	72 16	V01	-	S
74S287	08 01	V01	351A-064	A	8409	72 21	V01	-	S
74S387	08 01	V01	351A-064	A	8419	72 42	V01	-	S
54LS471	08 08	V01	351A-064	A	8429	72 21	V01	-	S
54S471	08 08	V01	351A-064	A	8741AD	56 59	V01	351A-075	S
74LS471	08 08	V01	351A-064	A	8748AD	52 56	V01	351A-075	S
74S471	08 08	V01	351A-064	A	2716	19 23	V01	-	S
54S570	08 03	V01	351A-064	A	8755A	47 55	V01	351A-075	S
54S571	08 03	V01	351A-064	A	2732	19 24	V01	-	S
74S570	08 03	V01	351A-064	A	2732A	27 24	V01	-	S
74S571	08 03	V01	351A-064	A	2764	79 33	V01	-	S
54S472	08 08	V01	351A-064	A	2712B	79 51	V01	-	S
54S473	08 08	V01	351A-064	A					
54S474	08 15	V01	-	A					
54S475	08 15	V01	-	A					
74S472	08 08	V01	351A-064	A					
74S473	08 08	V01	351A-064	A					
74S474	08 15	V01	-	A					
74S475	08 15	V01	-	A					
87S285	08 15	V01	-	A					
87S286	08 15	V01	-	A					
54S572	08 05	V01	351A-064	A					
54S573	08 05	V01	351A-064	A					
74S572	08 05	V01	351A-064	A					
					Oki				
					2708	21 27	V01	-	S
					2758	19 22	V01	-	S
					2716	19 23	V01	-	S
					8755A	47 55	V01	351A-075	S
					2532	19 25	V01	-	S
					2732	19 24	V01	-	S
					2732A	27 24	V01	-	S
					2764	79 33	V01	-	S
					2712B	79 51	V01	-	S

Special Ford Series 22 Device List

Device Part Number	Family and Pinout Code	Software Version	Adapter	Approval Status	Device Part Number	Family and Pinout Code	Software Version	Adapter	Approval Status
Raytheon					SGS				
29880	11 01	V01	351A-064	A	2716	19 23	V01	-	S
29881	11 01	V01	351A-064	A	2732	19 24	V01	-	S
29882	11 01	V01	351A-064	A	Signetics				
29883	11 01	V01	351A-064	A	82123	10 02	V01	351A-064	O
29800	11 08	V01	351A-064	A	82S123	10 02	V01	351A-064	A
29801	11 08	V01	351A-064	A	82S23	10 02	V01	351A-064	A
29802	11 08	V01	351A-064	A	82S126	10 01	V01	351A-064	A
29803	11 08	V01	351A-064	A	82S129	10 01	V01	351A-064	A
29610	11 03	V01	351A-064	A	82S130	10 03	V01	351A-064	A
29611	11 03	V01	351A-064	A	82S131	10 03	V01	351A-064	A
29612	11 03	V01	351A-064	A	82S140	10 15	V01	-	A
29613	11 03	V01	351A-064	A	82S141	10 15	V01	-	A
29620	11 09	V01	351A-064	A	82S146	10 09	V01	351A-064	A
29621	11 09	V01	351A-064	A	82S147	10 09	V01	351A-064	A
29622	11 09	V01	351A-064	A	82LS137	10 05	V01	351A-064	S
29623	11 09	V01	351A-064	A	82S136	10 05	V01	351A-064	A
29624	11 15	V01	-	A	82S137	10 05	V01	351A-064	A
29625	11 15	V01	-	A	82LS180	10 16	V01	-	A
29626	11 15	V01	-	A	82LS181	10 16	V01	-	A
29627	11 15	V01	-	A	82PS180	10 16	V01	-	S
29630	11 16	V01	-	A	82PS181	10 16	V01	-	S
29630SM	11 16	V01	351A-074	A	82S180	10 16	V01	-	A
29631	11 16	V01	-	A	82S181	10 16	V01	-	A
29631SM	11 16	V01	351A-074	A	82S182	10 16	V01	-	A
29632	11 16	V01	-	A	82S183	10 16	V01	-	A
29632SM	11 16	V01	351A-074	A	82S2708	10 16	V01	-	A
29633	11 16	V01	-	A	82S184	10 06	V01	351A-064	A
29633SM	11 16	V01	351A-074	A	82S185	10 06	V01	351A-064	A
29634	11 16	V01	-	A	82S190	10 21	V01	-	A
29635	11 16	V01	-	A	82S191	10 21	V01	-	A
29636	11 16	V01	-	A	82S195	10 63	V01	351A-064	A
29637	11 16	V01	-	A	82S321	10 63	V01	-	A
29650	11 06	V01	351A-064	A	Z708	21 27	V01	-	S
29651	11 06	V01	351A-064	A	Synertek				
29652	11 06	V01	351A-064	A	2716	19 23	V01	-	O
29653	11 06	V01	351A-064	A	Texas Instruments				
29680	11 21	V01	-	A	24S10	13 01	V01	351A-064	A
29680SM	11 21	V01	351A-074	A	24SA10	13 01	V01	351A-064	A
29681	11 21	V01	-	A	28L22	13 46	V01	351A-064	A
29681SM	11 21	V01	351A-074	A	28LA22	13 46	V01	351A-064	A
29682	11 21	V01	-	A	28L42	13 09	V01	351A-064	A
29682SM	11 21	V01	351A-074	A	28L45	13 15	V01	351A-074	A
29683	11 21	V01	-	A	28P42	13 09	V01	351A-064	A
29683SM	11 21	V01	351A-074	A	28P45	13 15	V01	351A-074	A
29640	11 63	V01	351A-064	A	28S42	13 09	V01	351A-064	A
29641	11 63	V01	351A-064	A	28S45	13 15	V01	351A-074	S
29642	11 63	V01	351A-064	A	28S46	13 15	V01	351A-074	A
29643	11 63	V01	351A-064	A	28SA42	13 09	V01	351A-064	A
29671	11 63	V01	-	A	28SA46	13 15	V01	351A-074	A
29673	11 63	V01	-	A	24S41	13 38	V01	351A-064	A
Ricoh					24SA41	13 38	V01	351A-064	A
RD5H32	27 24	V01	-	S	64S476	13 38	V01	351A-064	O
Seeq					64S477	13 38	V01	351A-064	O
6133	35 33	V01	-	S	74S476	13 38	V01	351A-064	O
6133H	79 33	V01	-	S	74S477	13 38	V01	351A-064	O
					28L85	13 16	V01	351A-074	A

Special Ford Series 22 Device List

Device Part Number	Family and Pinout Code	Software Version	Adapter	Approval Status	Device Part Number	Family and Pinout Code	Software Version	Adapter	Approval Status
Texas Instruments (Cont.)					Texas Instruments (Cont.)				
28L86	13 16	V01	-	A	2708	21 27	V01	-	A
28P86	13 16	V01	351A-074	A	27L08	21 27	V01	-	A
28S2708	13 16	V01	-	A	2816	31 23	V01	-	A
28S86	13 16	V01	351A-074	A	TMS2716	23 28	V01	-	A
28S86	13 16	V01	-	A	2832	31 25	V01	-	A
28SA86	13 16	V01	-	A	28L32	19 25	V01	-	A
54LS478	13 16	V01	-	O	2732	31 24	V01	-	A
54S478	13 16	V01	-	O	2732A	27 24	V01	-	A
54S479	13 16	V01	-	O	2864	31 30	V01	-	A
74LS478	13 16	V01	-	O	2764	36 33	V01	-	A
74S2708	13 16	V01	-	O	Toshiba				
74S478	13 16	V01	-	O	321	21 26	V01	-	A
74S479	13 16	V01	-	O	322	21 27	V01	-	A
24S81	13 06	V01	351A-064	A	323	19 23	V01	-	S
24SA81	13 06	V01	351A-064	A	8765AC	47 66	V01	351A-075	S
74S454	13 06	V01	351A-064	O	2732	19 24	V01	-	A
74S455	13 06	V01	351A-064	O	2732A	27 24	V01	-	A
28L166	13 21	V01	-	A	2732D	19 24	V01	-	S
28P166	13 21	V01	-	A	2764	79 33	V01	-	S
28S166	13 21	V01	-	A	27128	79 51	V01	-	S
28SA166	13 21	V01	-	A					
24S166	13 53	V01	351A-064	A					
24SA166	13 53	V01	351A-064	A					
2508	19 22	V01	-	A					

KEY TO HEADINGS AND FOOTNOTES

- **Device Part Number.** The number assigned by the device manufacturer.
- **Family Code.** A 2-digit number that designates the programming algorithm.
- **Pinout Code.** A 2-digit number used to differentiate device types based on pin assignment and array size.
- **Software Version.** A number in this column specifies the earliest software version of the 22A that will program the device to the manufacturer's latest specifications.
- **Adapter.** Model number of the socket adapter that programs the device. If a number does not appear in this column, use the fixed 28-pin front panel socket to program your device.
- **Approval Status.** The following is an explanation of the symbols used in this column.

A - Written approval obtained.

- O - Device is obsolete and no longer in production. No approval can be obtained. Algorithm has been used and approved in previous Data I/O equipment.
- S - This algorithm is in the process of submission for manufacturer approval. The algorithm has been tested by Data I/O or the manufacturer, but no representation as to yield level is made or implied.

CAUTION

Entry of an invalid family/pinout code, other than those listed in this table can cause unpredictable results at the device socket, which may damage a device. A valid family code and a valid pinout code may be combined to produce an invalid (illegal) combination. The correct combination for your device is published in this table. All family/pinout combinations not contained in this table are considered "illegal". Data I/O assumes no responsibility or liability for results produced by entry of "illegal" family/pinout combinations.