DIGITAL EQUIPMENT CORPORATION

pdp11

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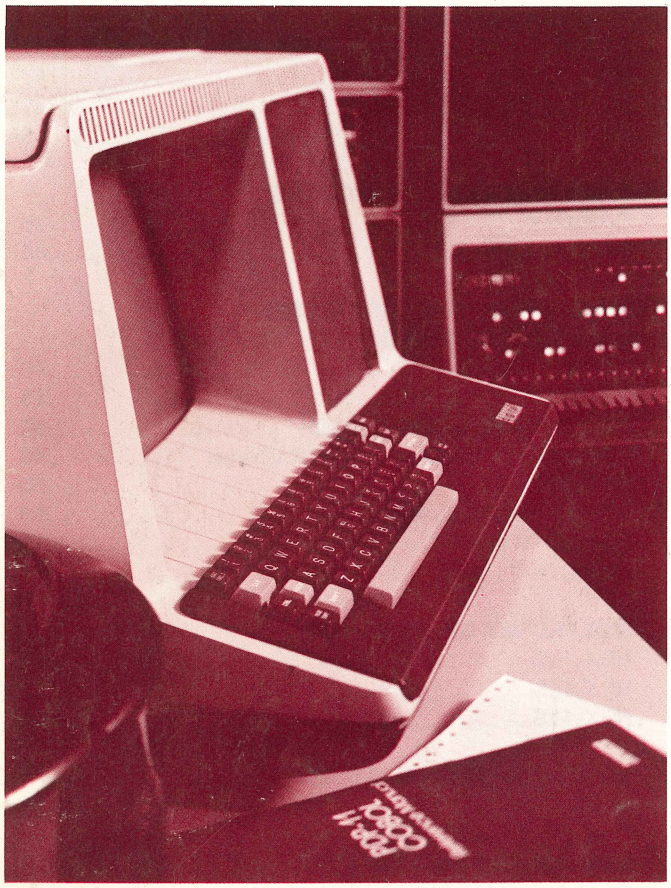
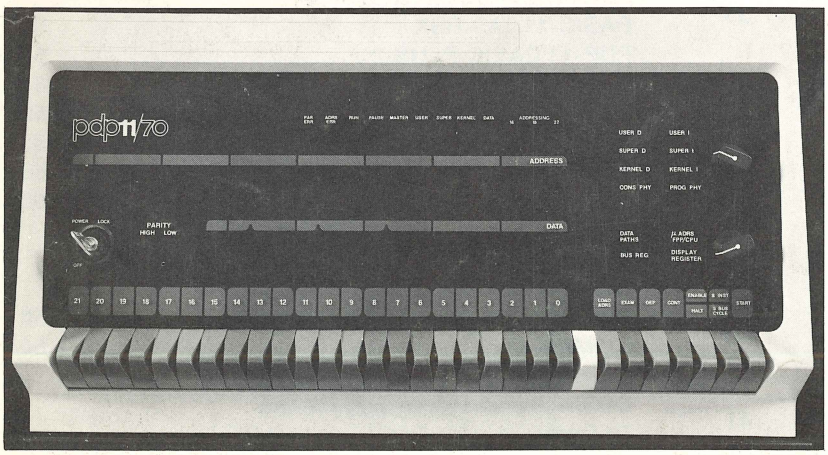
End-User Product Summary





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INTRODUCTION

This PDP-11 Product Summary gives you a concise description of all of our latest product offerings as well as configuring information about each hardware and software product.

We have arranged the information as follows:

Option Number

The first entry is the number for the option, with 115 Vac, 60 cycle power. If a different option number is used for 230 Vac, 50 cycle power, it is shown immediately below, in *italics*.

Description

The basic features and specifications of each option are included. More complete descriptions are found in option bulletins, brochures, and handbooks.

Prerequisite

Equipment needed as a prerequisite for the option is listed. The term 'UNIBUS 11' means any PDP-11 central processor unit except the 11/03.

Mounting Code

The mounting codes indicate how the option mounts in a system.

CAB	Cabinet mounted. A cabinet is included with the option.
FS	Free standing unit.
TT	Table top unit.
PAN	Panel mounted. Front panel height is 10½ inches.
SM PAN	Small panel. Front panel height is 5¼ inches.
SU	System Unit. SU mounting assembly is included with the option.
DBL SPC	Terminator or Small Peripheral Controller. Option is a module which mounts in 2 slots of a backplane.
Hex SPC	Small Peripheral Controller. Option is a module whichmounts in 6 slots of a backplane.
Quad SPC	Small Peripheral Controller. Option is a module which mounts in 4 slots of a backplane.
DF	Option occupies 2 single DF11 slots in a Peripheral Mounting Panel.
MOD	Module

Bus Load

The number of loads the option puts on the UNIBUS. There can be a total of 19 bus loads or 50 feet (15.2 cm) of UNIBUS cable before a DB11-A Bus Repeater is needed.

Amps @+5V

The +5V current required by the option. When power is available, it is stated as such.

System Software

The major operating systems that support the option, or have other software available to run the option.

RT-11	Real-Time Single User System
RSX-11S	Real-Time Memory-Based Operating System
RSX-11M	Real-Time Operating System
RSX-11D	Real-Time Operating System
RSTS/E	Resource Time-Sharing System (Expanded)
IAS	Interactive Application System
MUMPS-11	Multi-User Interpretive System
DECnet-11	Real-Time Computer Network Software

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This is text preparation software and a computerized typesetting system developed by DIGITAL.

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software

BASIC CPU'S, PROCESSOR OPTIONS & MEMORY

PDP-11/03 COMPUTERS

Note: When adding more than 15 options to the 11/03, please consult the 11/03 Configuring Guide for further details.

11/03-EA *11/03-EB*	CPU with 4K RAM memory (KD11-F). Serial line unit (DLV11 without cable). Expansion space of 5 double slots.	N/A	11/03 box	-	-	RT-11
11/03-FA *11/03-FB*	CPU with 4K core memory (KD11-J). Serial line unit. Expansion space of 3 double slots.	N/A	11/03 box	-	-	RT-11
11V03-AA *11V03-AD*	CPU with 8K RAM memory, a dual drive floppy disk, VT52 keyboard CRT, cabinet and RT-11 software package.	N/A	11/03 box w/ FS options	-	-	RT-11
11V03-EA *11V03-ED*	CPU with 8K RAM memory, a dual drive floppy disk, LA36 keyboard - printer terminal, cabinet, and RT-11 software package.	N/A	11/03 box w/ FS options	-	-	RT-11

PDP-11/03 PROCESSOR OPTION

KEV11	Extended Arithmetic Option. Includes fixed and floating point instructions.	11/03	Double LSI-11 slot	-	-	RT-11

MEMORY FOR PDP-11/03

MSV11-B	4K x 16 dynamic Random Access Memory (RAM). Board size: 8.5″ x 5″ (21.6 x 12.7 cm).	11/03	Single LSI-11 slot	-	-	RT-11
MMV11-A	4K x 16 core memory. Board size: 8.5″ x 10″ x 1″ (21.6 x 25.4 x 2.5 cm).	11/03	Double LSI-11 slot	-	-	RT-11
MRV11-AA	PROM/ROM memory unit, 32 IC pockets. Accepts 256 x 4 or 512 x 4 fusible link memory devices and masked ROM devices. Maximum capacity 4K x 16.	11/03	Single LSI-11 slot	-	-	RT-11
MRV11-AC	Unprogrammed fusible link. PROM chip (512 x 4 array size).	11/03	Single LSI-11 slot	-	-	RT-11

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
PDP-11/04 COMPUTERS						
Note: Due to the 9 slot backplane configuration of the 11/04's and 11/34's, the power @+5v shown is the power *available* for CPU Expansion. The second is power available for system unit expansion.						
11/04-DM 115V *11/04-DN* 240V	PDP-11/04 computer in a 10½ inch box. Includes 11/04 CPU with 32K bytes of parity MOS memory, serial line interface, real time clock (DL11-W), bootstrap loader, console terminal emulator, and CPU self-diagnostic module. CORE/MOS mixed configuration not supported. Expansion space: 4 hex, 2 quad SPC (CPU), 2 SU (Additional space).	N/A	PAN	5	11.0 25.0	RT-11 RSX-11S,M
11/04-HM *11/04-HN*	PDP-11/04 computer in a 10½ inch box. Includes 11/04 CPU with 32K bytes of core memory, serial line interface, real time clock (DL11-W), bootstrap loader, console terminal emulator, and CPU self-diagnostic module. CORE/MOS mixed configuration not supported. Expansion space: 3 hex, 2 quad SPC (CPU), 3 SU (Additional space).	N/A	PAN	5	9.0 25.0	RT-11 RSX-11S,M
PDP-11/34 COMPUTERS						
Note: Due to the 9 slot backplane configuration of the 11/04's and 11/34's, the power @+5v shown is the power *available* for CPU Expansion. The second is power available for system unit expansion.						
11/34-DM *11/34-DN*	PDP-11/34 computer in 10½ inch assembly. Includes 11/34 central processor, 32K byte parity MOS memory, memory management, automatic bootstrap loader, and serial line interface and real-time clock (DL11-W). Expansion space: 3 hex SPC, 2 quad SPC (CPU), 3 SU (Additional space).	N/A	PAN	5	7.0 25.0	RT-11 RSX-11S,M
11/34-LM *11/34-LN*	PDP-11/34 computer in 10½ inch assembly. Includes 11/34 central processor, 64K byte parity MOS memory, memory management, automatic bootstrap loader, and serial line interface and real-time clock (DL11-W). Expansion space: 3 hex, 2 quad SPC (CPU), 3 SU (Additional space).	N/A	PAN	6	5.0 25.0	RT-11 RSX-11S,M
11/34-HM *11/34-HN*	PDP-11/34 computer in 10 ½ inch assembly. Includes 11/34 central processor, 32K byte parity core memory, memory management, automatic bootstrap loader, and serial line interface and real-time clock (DL11-W). Expansion space: 2 hex SPC, 2 quad SPC (CPU), 3 SU (Additional space).	N/A	PAN	5	1.7 25.0	RT-11 RSX-11S,M

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
11F34-AA *11F34-AB*	Standard PDP-11/34 system. Includes 11/34 central processor, with 32K bytes of MOS memory, memory management, bootstrap loader, real-time clock, dual floppy disk system and LA36 DECwriter II terminal. VT52 terminal can be subsituted for LA36. Expansion space: 3 hex SPC, 1 quad SPC (CPU), 3 SU (Additional space).	N/A	CAB	6	7.0 25.0	RT-11 RSX-11S
11F34-BA *11F34-BB*	Standard PDP-11/34 system. Includes 11/34 central processor with 32K bytes of core memory, memory management, bootstrap loader, real time clock, dual floppy disk system and LA36 DECwriter II terminal. VT52 terminal can be substituted for LA36. Expansion space: 2 hex SPC, 1 quad SPC (CPU), 3 SU (Additional space).	N/A	CAB	6	5.0 25.0	RT-11 RSX-11S
11T34-AA *11T34-AB*	Standard PDP-11/34 system. Includes 11/34 central processor, 64K byte parity MOS memory, memory management, 2 disk cartridges (RK11J/RK05J), automatic bootstrap loader, real-time clock (DL11-W), LA36 DECwriter, and cabinet. Expansion space: 2 hex SPC, 2 quad SPC (CPU), 2 SU (Additional space).	N/A	CAB	7	7.0 16.0	RT-11 RSX-11M,S,M RSTS/E
11T34-BA *11T34-BB*	Standard PDP-11/34 system. Includes 11/34 central processor, 64K byte parity core memory, memory management, 2 disk cartridges (RK11J/RK05J), automatic bootstrap loader, real-time clock (DL11-W), LA36 DECwriter, and cabinet. Expansion space: 2 quad SPC (CPU), 2 SU (Additional space).	N/A	CAB	7	5.0 16.0	RT-11 RSX-11M RSTS/E
11T34-MC *11T34-MD*	Standard PDP-11/34 systems. Includes 11/34 central processor 64K byte parity MOS memory, memory management, 2 disk cartridges (RK11J and RK05J/F), automatic bootstrap loader, real-time clock (DL11-W), LA36 DECwriter, and cabinet. Expansion space: 2 quad SPC (CPU), 2 SU (Additional space).	N/A	CAB	7	7.0 16.0	RT-11 RSX-11M RSTS/E
11T34-PA *11T34-PB*	Standard PDP-11/34 system. Includes 11/34 central processor, 64K byte parity core memory, memory management, 2 disk cartridges (RK11J and RK05J/F), automatic bootstrap loader, real-time clock (DL11-W), LA36 DECwriter, and cabinet.	N/A	CAB	7	7.0 16.0	RT-11 RSX-11M RSTS/F

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
PDP-11/04 & 11/34 PROCESSOR OPTIONS						
KY11-LB	Programmer's console, interface for the 11/04 or 11/34.	11/34	Quad SPC	1	3.0	RT-11 RSX-11M
FP11-AU	Floating point processor for the 11/04 or 11/34.	11/34	Hex SPC	0	7.0	RT-11 RSX-11M
KE11-B	Extended Arithmetic Element (EAE). Provides signed integer multiply and divide, multiple shifts, and normalization.	11/04 or 11/34	Hex SPC	1	4.0	RT-11 RSX-11M
MEMORY FOR PDP-11/04 & 11/34						
MS11-FP	16K byte parity MOS memory and control.	11/04 or 11/34	Hex SPC	1	2.0	RT-11 RSX-11M
MS11-JP	32K byte parity MOS memory and control.	11/04 or 11/34	Hex SPC	1	2.0	RT-11 RSX-11M
MM11-CP	16K byte parity core memory and control.	11/04 or 11/34	Hex SPC	1	4.0	RT-11 RSX-11M
MM11-DP	32K byte parity core memory and control.	11/04 or 11/34	2 Hex SPC	1	4.0	RT-11 RSX-11M
M7850	Parity control for PDP-11/04 or11/34 memory.	11/04 or 11/34	DBL SPC	1	1.0	RT-11 RSX-11M

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
PDP-11/40 COMPUTERS						
11/40-BK *11/40-BL*	11/40 central processor with 32K byte parity core memory, LA36 DECwriter and control, and cabinet. Expansion space: 5 SU, MM11-UP (32K mem).	N/A	CAB	4	42	RT-11 RSX-11S,M,D
11/40-BS *11/40-BT*	11/40 central processor with 56K (64K if KT11-D included) byte parity core memory, LA36 DECwriter and control, and cabinet. Expansion space: 5 SU.	N/A	CAB	5	36	RT-11 RSX-11S,M,D RSTS/E
11T40-AA *11T40-AD*	Standard PDP-11/40 system. Includes 11/40 central processor, 64K byte parity core memory, memory management, LA36 DECwriter, 2 disk cartridges (RK11-D & RK05), bootstrap loader, line clock, and cabinet. Expansion space: 3 SU, 3 SPC.	N/A	CAB	8		RT-11 RSX-11S,M,D RSTS/E
PDP-11/40 PROCESSOR OPTIONS						
KE11-B	Extended arithmetic element (EAE). Provides signed integer multiply and divide, multiple shifts, and normalization.	11/40	Hex	1	4.0	RT-11 RSX-11S
KE11-E	Extended Instruction Set (EIS) option. Provides extended manipulation of fixed point numbers; signed integer multiply and divide, and long shifts.	11/40	11/40			RT-11 RSX-11S,M,D RSTS/E
KE11-F	Floating Point option. Enables faster calculations; floating point add, subtract, multiply, and divide.	KE11-E	11/40			RT-11 RSX-11S,M,D RSTS/E
KJ11-A	Stack limit option. Permits a soft stack limit violation.	11/40	11/40			RSX-11S,M,D RSTS/E
KT11-D	Memory management option. Permits access to 248K bytes of memory and provides protection and relocation. Includes KJ11-A.	11/40	11/40			RSX-11S,M,D RSTS/E

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
PDP-11/45 and 11/55 COMPUTERS						
11/45-BW *11/45-BY*	11/45 central processor with 64K byte parity core memory, hardware memory management. DL11-W serial line unit and line frequency clock, M9301-Y bootstrap loader, LA36 DECwriter, and cabinet. Expansion space 1 SU.	N/A	CAB	7	6.6	RT-11 RSX-11S,M,D RSTS/E IAS MUMPS-11
11/45-DW *11/45-DY*	11/45 central processor with 64K byte parity core memory, hardware memory management. DL11-W serial line unit and line frequency clock, M9301-Y bootstrap loader, LA36 DECwriter, and cabinet. Expansion space 3 SU.	N/A	CAB	7		RT-11 RSX-11M,S,D RSTS/E IAS MUMPS-11
11/55-BA *11/55-BB*	11/45 central processor with 64K byte parity bipolar memory, hardware memory management, DL11-W serial line unit and line frequency clock, M9301-Y bootstrap loader, LA36 DECwriter, and cabinet. Expansion space 3 SU.	N/A	CAB	6	22.2	RT-11 RSX-11M,S,D RSTS/E IAS MUMPS-11
11/55-BC *11/55-BD*	11/45 central processor with 32K byte parity bipolar plus 32K byte parity core memory, hardware memory management, DL11-W serial line unit and line frequency clock, M9301-Y bootstrap loader, LA36 DECwriter, and cabinet. Expansion space: 1 SU.	N/A	CAB	7	14.9	RT-11 RSX-11M,S,D RSTS/E IAS MUMPS-11
11T55-BA *11T55-BB*	Standard PDP 11/55 system. Includes 11/55-BA central processor, fast floating point (FP11-C), 2 cartridge disks (RK11J/RK05J), for a total of 5M bytes, LA36 DECwriter, and 2 cabinets.	N/A	2 CAB	6	22.2	RT-11 RSX-11M,S,D RSTS/E IAS
11T55-BC *11T55-BD*	Standard PDP 11/55 system. Includes 11/55-BC central processor, fast floating point (FP11-C), 2 cartridge disks (RK11J/RK05J) for a total of 5 megabytes, LA36 DECwriter, and 2 cabinets.	N/A	2 CAB	7	14.9	RT-11 RSX-11M,S,D RSTS/E IAS
PDP-11/45 and 11/55 PROCESSOR OPTIONS						
FP11-B	Floating point processor. Performs hardware operations on 32-bit and 64-bit floating point numbers as well as integer to floating conversions.	11/45-BW	11/45			RT-11 RSX-11S,M,D IAS RSTS/E
FP11-C	High performance floating point processor. Performs hardware operations on 32-bit and 64-bit floating point numbers as well as integer to floating conversions.	11/45-DW, 11/55, or 11/70	11/45 or 11/70			RT-11 RSX-11S,M,D IAS RSTS/E

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
MEMORY FOR 11/40, 11/45, and 11/55						
MF11-UR	64K byte parity core memory and control. 980 nanosecond cycle time. No expansion space.	11/40, 45, 55	2 SU	3	12.7	RSX-11M,D IAS RSTS/E
MF11-US (2x UR's)	128K byte parity core memory and control. 980 nanosecond cycle time. No expansion space.	11/40, 45, 55	4 SU	6	25.4	RSX-11M,D IAS RSTS/E
MF11-U	32K byte core memory and control with expansion capability to 64K bytes (by addition of MM11-U). 980 nsec cycle time.	11/40, 45, 55	2 SU	1	6.1	RSX-11M,D IAS RSTS/E
MF11-WP (DOUBLE DENSITY)	64K byte core memory and control with expansion capability up to 128K bytes (by addition of MM11-WP). 1.2 msec cycle time.	11/40, 45,55	2SU	1	6.1	RSX-11M,D IAS RSTS/E
MM11-U	32K byte expander core memory. Mounts in MF11-U. 980 nsec cycle time.	MF11-U	MF11-U	1	5.4	RSX-11M,D IAS RSTS/E
MF11-UP	32K byte parity core memory and control with expansion capability to 64K bytes (by addition of MM11-UP). 980 nsec cycle time. Space for additional 32K bytes.	11/40, 45, 55	2 SU	2	7.3	IAS RSX-11S,M,D RSTS/E
MM11-UP	32K byte parity expander core memory. Mounts in MF11-UP. 980 nsec cycle time.	MF11-UP	MF11-UP	1	5.4	RSX-11M,D IAS RSTS/E
MM11-WP (DOUBLE DENSITY)	64K byte parity expander core memory. 1.2 msec cycle time.	11/40 45,55	MF11-WP	1	5.4	RSX-M,D IAS RSTS/E
MS11-CC	Bipolar Memory Control. Controls up to four MS11-AP bipolar memories. Maximum of 2 MS11-CC's per system.	11/45 11/55	11/45 11/55	2		RSX-11M,D IAS RSTS/E
MS11-AP	8K byte parity bipolar memory. 300 nsec cycle time.	MS11-CC	11/45 11/55	2		RSX-11M,D IAS RSTS/E

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software

PDP-11/70 COMPUTERS

Please note that the number of amps available for 11/70 systems are not applicable since there essentially is no expansion space in the CPU cabinet.

All the PDP-11/70 systems described include the following **11/70 basic equipment**:

11/70 central processor with memory management
2K byte parity bipolar cache memory (1 byte = 8 data bits + 1 parity bit)
either: 128K byte parity core memory (MJ11-BA) or, 256K byte parity core memory interleaved (2MJ11-BA's)
bootstrap/diagnostic loader (M9301-YC)
line frequency clock (KW11-L)
DECwriter II console terminal (LA36-C)
terminal control (DL11-A)
2 cabinets (1 for the central processor and 1 for core memory)
prewired space within the CPU chassis for mounting optional equipment:
- fast floating point processor (FP11-C)
- high performance mass storage control units
- SPC equipment (4 slots)

All PDP-11/70 systems require 3-phase WYE power.

BUILDING BLOCKS

11/70-VA *11/70-VD*	This is a 128K byte building block which includes the 11/70 basic equipment with one MJ11-BA/BB parity core memory.	N/A	2 CABS	5	N/A	
11/70-VE *11/70-VJ*	This is a 256K byte building block which includes the 11/70 basic equipment with 2MJ11-BA/BB interleaved parity core memory. *	N/A	2 CABS	5	N/A	

* This is the building block used for all of the following packaged systems **except** the dual RK05 system (11/70-WA/WD).

PACKAGED SYSTEMS

11/70-YA *11/70-YD*	PDP 11/70 system with diskpack (88 million bytes) and magnetic tape (1600/800 b.p.i.). Includes: 256K bytes parity core memory interleaved (2 MJ11-BA/BB's), disk pack and control (RWP04-AA/AB), magnetic tape and ctl (TU16-EA/ED).	N/A	3 CABS FS		7	RSX-11M RSX-11D RSTS/E IAS MUMPS
11/70-YE *11/70-YJ*	PDP 11/70 system with disk pack (176 million bytes) and magnetic tape (1600/800 b.p.i.). Includes: 256K bytes parity core memory interleaved (2MJ11-BA/BB's), disk pack and control (RWP06-AA/AB), magnetic tape and control (TWU-EA/ED).	N/A	3 CABS FS	7	N/A	RSX-11M RSX-11D RSTS/E IAS MUMPS
11/70-WA *11/70-WD*	PDP 11/70 system with 2 disk cartridges (2.5 million bytes each). Includes: 128K bytes parity core memory (MJ11-BA/BB), cartridge disk and control (RK11J-DE/DJ), cartridge disk (RK05J-AA/BB), expansion chassis (BA11-KE/KF) mounted in the RK05 cabinet.	N/A	3 CABS	6	N/A	RSX-11M RSX-11D RSTS/E IAS MUMPS-11

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
DUAL PROCESSOR SYSTEMS*						
11/77-YA *11/77-YD*	Dual processor PDP 11/77 system with dual access diskpack (88 million bytes) and 2 magnetic tape transports. There is a total of 512K bytes of interleaved core memory in the system (256K bytes interleaved in each processor). Includes: 512K bytes parity core memory interleaved (2 MJ11-BA/BB each), 2 magnetic tape transports and controls (2 TWU16-EA/ED), dual access pack and two control units (RWP04-BA/BB).	N/A	6 CABS FS	7	N/A	RSX-11M RSX-11D RSTS/E IAS MUMPS
11/77-YE *11/77-YJ*	Dual processor PDP 11/77 system with dual access disk pack (176 million bytes) and 2 magnetic tape transports. There is a total of 512K bytes of interleaved core memory in the system (256K bytes interleaved inn each processor). Includes: 512K bytes parity core memory interleaved (2 MJ11-BA/BB each), 2 magnetic tape transports and control (2 TWU16-EA-ED), dual access pack and two control units (RWP06-BA/BB).	N/A	6 CABS FS	7	N/A	RSX-11M RSX-11D RSTS/E IAS MUMPS

* Dual access diskpack not supported by software.

DATA BASE MANAGEMENT PACKAGED SYSTEM

11B70-BA *11B70-BD*	11/70 system for data base management with disk pack, magnetic tape, 256K bytes of interleaved core memory (2 MJ11-BA/BB), additional teminal, line printer, expansion cabinet IAS, DBMS, and software consulting. Includes: 256K bytes parity core memory interleaved (2 MJ11-BA/BB), disk pack and control (RWP06-AA/AB), magnetic tape and control (TWU16-EA/ED), 132 column line printer (LP11-VA/VD), CRT (VT52-AE/AF), null modem (H 312-A), EIA asyn. control (DL11-B), cabinet (H960-CA/CB), extension mounting chassis (BA11-KE/KF), IAS on 9TK tape (QR 300-AD), DBMS-11 on 9TK tape (QR 375-AD), ten days software consulting.	N/A	4 CABS FS	9	N/A	RSX-11D DBMS-11 IAS

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
MEMORY FOR PDP-11/70						
Note: 11/70 uses only MJ11 memory.						
MJ11-BC *MJ11-BD*	512K byte parity core memory system. Includes cabinet, power supplies, and control. Expansion space for total of 2048K bytes by addition of 3 MJ11-BG's (or MJ11-BA's).	Memory	CAB	-	-	RSX-11M,D RSTS/E IAS
MJ11-BG *MJ11-BH*	512K byte parity core memory expansion unit. Includes power supplies, control, and frame.	11/70	Memory CAB	-	-	RSX-11M,D RSTS/E IAS
MJ11-BA *MJ11-BB*	128K byte parity core memory unit, includes frame, power supplies, and control. Expandable to a total of 512K bytes by addition of 3 MJ11-BE's.	11/70	Memory CAB	-	-	RSX-11M,D RSTS/E IAS
MJ11-BE	128K byte parity expander core memory. Mounts in MJ11-BA,BB.	MJ11-BA,BB	MJ11-BA,BB	-	-	RSX-11M,D RSTS/E IAS
PDP-11/70 MASS STORAGE						
RWS03-BA *RWS03-BD*	512K byte fixed head disk drive and control unit. Expandable to a total of 8 drives (RS03 or RS04). 2 μsec/byte transfer rate, 8.5 msec average access time.	11/70	CAB 11/70	1	18.5	RSX-11M,D RSTS/E IAS
RWS04-BA *RWS04-BD*	1024K byte fixed head disk drive and control unit. Expandable to a total of 8 drives (RS03 or RS04). 1 μsec/byte transfer rate, 8.5 msec access time.	11/70	CAB 11/70	1	18.5	RSX-11M,D RSTS/E IAS
RWP04-AA *RWP04-AB*	Single access 88 million byte disk drive and control. Expandable to 8 RP drives (RP04, RP05, RP06). One disk pack included. 1.25 μsec/byte transfer rate; 28 msec average access time.	11/70	FS 11/70	1	18.5	RSX-11M,D RSTS/E IAS
RWP04-BA *RWP04-BB*	Dual access 88 million byte disk drive and 2 11/70 controls. Expandable to 8 RP drives (RP04, RP05, RP06). One disk pack included. 1.25μsec/byte transfer rate; 28 msec average access time.	2 11/70's	FS 2 11/70's	1 1	18.5 18.5	N/A
RP04-BA *RP04-BB*	Dual access 88 million byte disk drive. 1.25 μsec/byte transfer rate. 28 msec average access time.	RWP04-B	FS	0	0	N/A

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
RWP05-AA *RWP05-AB*	Single access 88 million byte disk drive and control. Expandable to 8 RP drives (RP04, RP05, RP06). One disk pack included. 1.25 μsec/byte transfer rate, 28 msec average access time Field upgradeable to the RP06.	11/70	FS 11/70	1	18.5	RSX-11M,D RSTS/E IAS
RWP05-BA *RWP05-BB*	Dual access 88 million byte disk drive and 2 11/70 controls. Expandable to 8 RP drives (RP04, RP05, RP06). One disk pack included. 1.25 μsec/byte transfer rate. 28 msec average access time. Field upgradeable to the RP06.	2 11/70's	FS 2 11/70's	1 1	18.5 18.5	N/A
RP05-BA *RP05-BB*	Dual access 88 million byte disk drive. 1.25 μsec/byte transfer rate. 28 msec average access time. Field upgradeable to the RP06.	RWP05-B	FS	0	0	N/A
RWP06-AA *RWP06-AB*	Single access 176 million byte disk drive and control. Expandable to 8 RP drives. One disk pack included. 1.25 μsec/byte transfer rate, 28 msec average access time.	11/70	FS 11/70	1	18.5	RSX-11M
RWP06-BA *RWP06-BB*	Dual access 176 million byte disk drive and 2 11/70 controls. Expandable to 8 RP drives. One disk pack included. 1.25 μsec/byte transfer rate, 28 msec average access time.	2 11/70's	FS 2 11/70's	1 1	18.5 18.5	N/A
RP06-BA *RP06-BB*	Dual access 176 million byte disk drive. 1.-25 μsec/byte transfer rate, 28 msec average access time.	RWP06-B	FS	0	0	N/A
TWU16-EA *TWU16-ED*	Program selectable 1600/800 bpi magnetic tape transport and control unit. Expandable to a total of 8 TU16 transports. 45 in/sec, 9 track (industry compatible).	11/70	CAB SU	1	18.5	RSX-11D RSTS/E IAS
TWU16-EK *TWU16-EN*	800 bpi magnetic tape transport and control unit. Expandable to a total of 8TU16 transports. 45 in/sec, 9 track (industry compatible).	11/70	CAB SU	1	18.5	RSX-11D RSTS/E IAS

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
READ ONLY MEMORY/BOOTSTRAP LOADERS						
M9301-YA	Bootstrap loader for PC11, RK05J,F, RP02,03, RX11, TA11, TC11, TM11/TU10, TS03, and TTY, including ASCII console and diagnostic capability.	UNIBUS 11's	DBL SPC	1	2	all
M9301-YB	Bootstrap loader for RJP04,05,06, RS03,04, TJU16. Requires ASCII terminal.	UNIBUS 11's	DBL SPC	1	2	all
BM792-YC	Card Reader Bootstrap loader (CR11).	UNIBUS 11's	Quad SPC	1	0.3	
BM873-YC	Bootstrap loader for communications options including DL11, DU11, RK05J,F, RP02,03, TA11, TC11, TM11/TU10, TS03 and TTY.	UNIBUS 11's	Quad SPC	1	1	all
M9301-YD	REMOTE-11 network bootstrap loader	UNIBUS 11's	Hex SPC	1	2.0	RT-11
REV11-A	Refresh/ Bootstrap/ Diagnostic/ Terminator option. External refresh module which is used when the dynamic RAM memory refresh implemented in the PDP-11/03 CPU microcode is disabled. This option is used to reduce the long interrupt latency which exists when operating with the microcode refresh functions. Also included are bootstraps for the RXV11 floppy disk, resident paper tape absolute loader, CPU and memory diagnostics, and 120 ohm bus termination. 8.5″x5″ board size.	11/03	Single LSI-11 slot	-	-	RT-11
REV11-C	Refresh/ Bootstrap/ Diagnostics/ Option. External refresh module which is used when the dynamic RAM memory refresh implemented in the PDP-11/03 CPU microcode is disabled. This option is used to reduce the long interrupt latency which exists when operating with the microcode refresh functions. Also included are bootstraps for the RXV11 floppy disk, resident paper tape absolute loader, and CPU and memory diagnostics. 8.5″ x 5″ board size. (For use with high-speed DMA devices see Configuration Guide)	11/03	Single LSI-11 slot	-	-	RT-11
CLOCKS						
KW11-L	Line frequency real-time clock. Divides time into intervals of 16 2/3 msec (20 msec at 50 Hz line frequency). Mounts in a dedicated CPU slot.	UNIBUS 11's	CPU	1	0.8	RT-11 IAS RSX-11S,M,D RSTS/E
KW11-P	Programmable real-time clock, program selectable inputs of 100 kHz, 10 kHz, line frequency or external signal.	UNIBUS 11's	Quad SPC	1	1.0	IAS RSX-11S,M,D RSTS/E

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
REAL-TIME I/O OPTIONS						
AAV11-A	4-channel 12 bit digital to analog converter and scope control.	11/03	LSI-11 Quad slot	1	2.0	RT-11
ADV11-A	12-bit 16-channel single ended or (8-channel quasi-differential) analog to digital converter.	11/03	LSI-11 Quad slot	1	2.0	RT-11
KWV11-A	16-bit programmable real-time clock, one of four programmable modes user selectable, one of five crystal-controlled frequencies.	11/03	LSI-11 Quad slot	1	2.0	RT-11
DRV11	Parallel Line interface unit. 16-bit diode-clamped input; 16-bit latched-drive output. Protocol and control signals. Requires cable. Board Size: 8.5″ x 5″.	11/03	single LSI-11 slot	-	-	RT-11
DRV11-B	Parallel Line DMA Interface Unit. Single-cycle rate: 250K wordsec. Protocol and control signals. Requires cable. Board size: 8.5″ x 10″.	11/03	Double LSI-11 slot	-	-	RT-11
DLV11	Serial Interface Unit. Optically-isolated 20mA current loop or EIA interface levels. Selectable stop and data bits; baud rates from 50 to 9600. Requires cable. Board size 8.5″ x 5″.	11/03	Single LSI-11 slot	-	-	RT-11
AD11-K	12-bit 16-channel single-ended/8-channel true differential 12-bit A/D converter with self test and software controlled Vernier offset. Software support under RT-11 and RSX-11M.	UNIBUS 11's	Quad SPC	1	3.5	RT-11 RSX-11M,S,D IAS
KW11-K	Dual programmable real-time clock. One 16-bit clock and one 8-bit clock, 5 crystal controlled frequencies, 1 external, 1 line frequency, and 1 special freq., 3 Schmitt triggers and 4 modes of operation.	UNIBUS 11's	Hex SPC	1	3.5	RT-11 RSX-11M,S,D IAS
ADK11-KT	Package of AD11-K, KW11-K, H322 distribution panel and two BC08R-8 cables.	UNIBUS 11's	Quad SPC Hex SPC SM PAN	1	3.5	RT-11 RSX-11M,S,D IAS
AM11-K	48-channel single-ended (24 ch. differential) expander or switch gain Multiplexer. 6 gain levels per 16 channels.	AD11-K	SM PAN	N/A	N/A	RT-11 RSX-11M,D,S IAS
AA11-K	4-channel 12-bit digital to analog converter & scope control.	UNIBUS 11's	Quad SPC	1	2.5	RT-11 RSX-11S,M,D IAS

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
AA11-KT	Package of AA11-K, H322 & BC08R cable.	UNIBUS 11's	Quad SPC SM PAN	1	2.5	RT-11 RSX-11M,S,D
DR11-K	General purpose digital interface. Permits bi-directional 16-bit parallel transfers between the user's device and the UNIBUS. Each input line can generate an interrupt. Includes all necessary interrupt, address, and control signals.	UNIBUS 11's	Hex SPC	1	2.5	RT-11 RSX-11M,S,D IAS
DR11-KT	Package of DR11-K, 2 BC08R and H322	UNIBUS 11's	Hex SPC SM PAN	1	3.5	
AR11	Analog real-time subsystem; includes 10-bit A/D, 16-channel multiplexer, sample and hold, two 10-bit D/A's, scope control, and crystal clock with programmable frequencies. Normally used with BC11L-20 or BC08R cables and H322 distribution cable.	UNIBUS 11's	Hex SPC	2	3.5	RT-11 RSX-11M,S,D IAS
AR11-KT	Package of AR11, H322 and two BC08R cables	UNIBUS 11's	Hex SPC SM PAN	2	3.5	RT-11 RSX-11M,S,D IAS
H322	Distribution panel. Distributes signals from two 40-pin Berg connectors to nine 10-screw terminal strips.	CAB	SM PAN	N/A	N/A	N/A
H323-B	Table-top Analog Panel. Four channel analog potentiometer panel used in conjunction with A/D options such as the AR11, AD11-K, and the H322 distribution panel for the purpose of providing a variable voltage input.	H322	TT	N/A	N/A	N/A

LABORATORY SYSTEM PACKAGES

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
DECLAB 11/03 SYSTEMS						
11L03-CA *11L03-CD*	Standard PDP-11/03 Laboratory System. PDP-11/03 with 32K bytes of MOS memory, dual floppy disks and control (RXV11), hardware bootstrap (DMA refresh) terminator, (REV11-A), EIS/FIS (KEV11), expansion box (BA11-M), 12 bit 16 channel A/D (ADV11-A), programmable real-time clock (KWV11-A) distribution panel (H322), DECwriter II (LA36), cabinet (H984), RT-11 operating system software, FORTRAN IV with extensions, scientific subroutine package. VT52 terminal can be substituted for LA36. Expansion: 1 Quad slot.	N/A	CAB	8	-	RT-11
11L03-DA *11L03-DD*	Same as 11L03-A except VT55-F hard copy graphic terminal substituted in place of LA36. Expansion space: 1 Quad slot.	N/A	CAB	8	-	RT-11
11L03-HA *11L03-HD*	Standard PDP-11/03 Laboratory System. PDP-11/03 with 32K bytes of MOS memory, dual floppy disks and control (RXV11), hardware bootstrap (DMA refresh) terminator (REV11-A), EIS/FIS (KEV11), expansion box (BA11-M), 4-channel D/A converter and scope control (AAV11-A), general purpose digital I/O (DRV11), programmable real-time clock (KWV11-A), distribution panel (H322), DECwriter II (LA36), cabinet (H984), RT-11 operating system software, FORTRAN IV with extensions, scientific subroutine package. VT52 terminal can be substituted for LA36. Expansion: 1-double slot.	N/A	CAB	9	-	RT-11
11L03-JA *11L03-JD*	Same as 11L03-CA(CD) except VT55-F hardcopy terminal substituted in place of LA36. Expansion space: 1-double slot.	N/A	CAB	9	-	RT-11
DECLAB 11/34 SYSTEMS						
11L34-EA *11L34-EB*	Standard PDP-11/34 Laboratory System. Includes central processor with 32K bytes of MOS parity memory, memory management, bootstrap loader, real-time clock, serial line interface, dual diskette system, LA36 DECwriter terminal, and cabinet, AR11 analog real-time module including a 10 bit, 16 channel single-ended analog to digital converter, sample and hold, 8 bit programmable real-time clock, 2-channel 10 bit digital-to-analog converter and scope control; H322 distribution panel, BC08R cable, RT-11 Foreground/background real-time operating system, FORTRAN IV with real-time extensions. Expansion: 1 Hex SPC, 2 Quad SPC's (CPU); and 3 SU's (Additional space).	N/A	CAB	7	2.7 25.0	RT-11 RSX-11S

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
11L34-FA *11L34-FB*	Same as 11L34-EA(EB) except the 11L34-FA(FB) has 32K bytes of parity core memory intead of 32K bytes of parity MOS memory. Expansion: 3 SU's (Additional space)	N/A	CAB	7	0.0 25.0	RT-11 RSX-11S
11L34-HA *11L34-HB*	Standard PDP-11/34 Laboratory System. Includes central processor with 32K bytes of MOS parity memory, memory management, bootstrap loader, real-time clock, serial-line interface, dual diskette system, LA36 DECwriter terminal and cabinet, DD11-CK, 4 slot backplane, AD11-K analog to digital converter, 12 bit 16-channel single-ended, 16-channel pseudo differential, or 8-channel true differential, KW11-K dual programmable real-time clock with external schmitt trigger, H322 distribution panel, BC08R cable, DR11-K, 16 bit digital input/output, H322 distribution panel and (2) BC08R cables, RT11 Foreground/Background real-time operating systems, FORTRAN IV with real-time extensions. Expansion: 2 Hex SPC's, 2 Quad SPC's (CPU); and 2 SU's, 1 Hex SPC (Additional space).	N/A	CAB	9	7.5 14.7	RT-11 RSX-11S
11L34-JA *11L34-JB*	Same as 11L34-HA (HB) except the 11L34-JA (JB) has 32K bytes of parity core memory instead of 32K bytes of parity MOS memory. Expansion: 1 Hex SPC, 2 Quad SPC's (CPU); and 1 Quad SPC, 2 SU's (Additional space).	N/A	CAB	9	5.5 14.7	RT-11 RSX-11S
11L34-KA *11L34-KB*	Standard PDP-11/34 Laboratory System. Includes 11/34 central processor with 64 K bytes of MOS parity memory, memory management, bootstrap loader, real-time clock, serial-line interface, dual drive disk (RK11J/RK05F), LA36 DECwriter terminal and cabinet, DD11-D 9 slot backplane, AD11-K analog to digital converter, 12-bit 16-channel single-ended, 16-channel pseudo differential, or 8-channel true differential; KW11-K dual programmable real-time clock with external schmitt triggers, H322 distribution panel, BC08R cable, DR11-K 16-bit digital input/output, H322 distribution panel and 2 BC08R cables, RT11 Foreground/Background real-time operating system with FORTRAN IV real-time extensions. Expansion: 2 Hex SPC's, 2 Quad SPC's (CPU); 5 Hex SPC's, 1 Quad SPC (Additional space).	N/A	CAB	10	7.0 7.2	RT-11 RSX-11M RSX-11S
11L34-LA *11L34-LB*	Same as 11L34-KA(KB) except the 11L34-LA(LB) has 64 K bytes of parity core memory instead of 64K bytes of parity MOS memory. Expansion: 2 Quad SPC's (CPU); 5 Hex SPC's, 1 Quad SPC (Additional space).	N/A	CAB	10	3.0 7.2	RT-11 RSX-11M RSX-11S

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
11L34-MA *11L34-MB*	Standard PDP-11/34 Laboratory System. Includes 11/34 central processor with 64K bytes of MOS parity memory, memory management, bootstrap loader, real-time clock, serial line interface, dual drive disk RK11J/RK05F, LA36 DECwriter terminal, two cabinets, ICS11 rack mounted file with power supply with room for 16 function modules; function modules included are NAD-IA 12-bit 8-channel analog to digital converter, and NAD-IE 16-bit input interrupt module, RSX-11M real-time executive and FORTRAN IV. Expansion: 2 Hex SPC's, 1 Quad SPC's (CPU); 2 SU's (Additional space).	N/A	2 CABS	7	4.0 16.2	RSX-11M RSX-11S
11L34-NA *11L34-NB*	Same as 11L34-MA (MB) except the 11L34-NA (NB) has 64K bytes of parity core memory instead of 64K bytes of parity MOS memory. Expansion: 2 SU's (Additional space).	N/A	2 CABS	7	0.0 16.2	RSX-11M RSX-11S
11L34-PA *11L34-PB*	Standard PDP-11/34 Laboratory System. Includes 11/34 central processor with 64K bytes of MOS parity memory, memory management, bootstrap loader, real-time clock, serial line interface, dual drive disk RK11J/RK05F, LA36 DECwriter terminal and cabinet plus DD11-C 4 slot backplane, KY11-LB programmer's console, VT11 graphic display processor, 17 inch CRT and light pen, H970 display table, AD11-K analog to digital converter, 12-bit 16-channel single-ended, 16-channel pseudo differential, KW11-K dual programmable real-time clock with external schmitt trigger, H322 distribution and BC08R cable, DR11-K 16-bit digital input/output, H322 distribution panel and (2) BC08R cables, RT11 Foreground/Background real-time operating system, FORTRAN IV with real-time extensions. Expansion: 2 Hex SPC's, 1 Quad SPC (CPU)	N/A	TT CAB	12	4.0 0.0	RT11 RSX-11M RSX-11S
11L34-RA *11L34-RB*	Same as 11L34-PA(PB) except the 11L34-RA(RB) has 64K bytes of parity core memory instead of 64K bytes of parity MOS memory. No expansion space.	N/A	TT CAB	12	0.0 0.0	RT-11 RSX-11M RSX-11S
PEAK-11 SYSTEMS						
PK11-AA *PK11-AB*	Eight-channel PEAK-11 system including PDP-11/34 central processor with 64K bytes of MOS parity memory, memory management, bootstrap loader, real-time clock, serial-line interface, dual diskette system, LA36 DECwriter terminal, cabinet, 8-channel switch-gain ADC system, 16 bit buffered digital input/output, and 16-channel analog low pass filter with RT-11, RT-11 MU-BASIC and PEAK-11 software. Expansion: 2 Hex SPC's (CPU); 2 SU's, 2 Quad SPC's, 2 Hex SPC's (Additional space).	N/A	CAB	11	1.3 25.0	RT-11

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
PK11-BA *PK11-BB*	Same as PK11-AA(AB) except 64K bytes of core parity memory is substituted for 64K bytes of MOS parity memory. Expansion: none in CPU; 2 SU's, 2 HEX SPC's, 1 QUAD SPC (Additional space).	N/A	CAB	11	0.0 23.5	RT-11
PK11-CA *PK11-CB*	Sixteen-channel PEAK-11 SYSTEM including PDP-11/34 central processor with 64K bytes of MOS parity memory, memory management, bootstrap loader, real-time clock, serial line interface, dual drive RK05 disk system, LA36 DECwriter terminal, cabinet, 16 channel switch gain ADC system, 16 bit buffered digital input/output, and 16 channel analog low pass filter with RT-11, RT-11 MU BASIC, and PEAK-11 software. Expansion: 2 HEX SPC's (CPU); 2 SU's (Additional space).	N/A	CAB	10	2.8 17.5	RT-11
PK11-DA *PK11-DB*	Same as PK11-CA(CB) except 64K bytes of core parity memory is substituted for the 64K bytes of MOS parity memory.	N/A	CAB	10	0.0 17.5	RT-11

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
MEDICAL SYSTEM PACKAGES						
GM11-NA *GM11-NB*	Standard PDP-11/34 system for acquisition or analysis of data from a GAMMA camera. Includes 11/34 central processor with 32K bytes of core parity memory, memory management, push button bootstrap loader, real-time clock,serial line interface, dual drive disks (RK11D/RK05), LA36 DECwriter terminal, cabinets, GAMMA Camera interface, VSV01 video color display, A/D converter, real-time programmable clock, RT-11, RT-11 BASIC, and GAMMA-11 software. Expansion: 2 hex SPC's (CPU), 1 quad SPC (Additional Space).	N/A	2 CABS	11	6 7	RT-11
GM11-PA *GM11-PB*	Standard PDP-11/34 system for acquisition and simultaneous analysis of data from a GAMMA camera. Includes 11/34 central processor with 64K bytes of core parity memory, memory management, push button bootstrap loader, real-time clock, serial line interface, dual drive disk (RK11D/RK05), LA36 DECwriter terminal, VT52 CRT terminal, cabinets, GAMMA camera interface, VSV01 video color display, A/D converter, real-time programmable clock, RT-11, RT-11 BASIC, and GAMMA-11 software. Expansion: 1 quad SPC in the CPU, 6 SPC's in the BA11.	N/A	2 CABS	15	2 7.2 18.2 BA11	RT-11
PDL11-EA *PDL11-EB*	Standard PDP-11/34 system. Includes 11/34 processor with 64K bytes of core parity memory, memory management, bootstrap loader, real-time clock, serial line interface, dual drive disk (RK11D/RK05), LA36 DECwriter terminal, cabinet, A/D converter, digital I/O, RT-11, RT-11 MU BASIC, and PDL software. Expansion: 2 quad SPC's, and 5 hex SPC's (CPU), 2 quad SPC's (Additional Space).	N/A	2 CABS	10	2.8 18.5	RT-11
PDL11-DA *PDL11-DB*	Standard PDP-11/34 system, includes 11/34 processor with 64K bytes of core parity memory, memory management, bootstrap loader, real-time clock, serial line interface, dual diskette system, LA36 DECwriter terminal, cabinet, A/D converter, digital I/O, RT-11, RT-11 MU BASIC, and PDL software. Expansion: 1 quad SPC (CPU), and 1 SU, 5 hex SPC's, 2 quad SPC's (Additional Space).	N/A	CAB	10	1.3 18.5	RT-11

GRAPHIC SYSTEMS PACKAGES

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
GT43-AA *GT43-AB*	11/34 central processor with 32K bytes of MOS parity memory, memory management, bootstrap loader, real-time clock, serial line interface, programmer's console, VT11 graphic display processor with 17″ CRT monitor and light pen, asynchronous communications interface, ASCII keyboard. Table and cabinet included. Expansion: 3 Hex SPC's and 2 SU's.	N/A	TT CAB	8	4.0 16.7	N/A
GT43-AH *GT43-AJ*	Same as GT43-AA (AB) except an LA 36 is substituted for the ASCII keyboard.	N/A	TT CAB	8	4.0 16.7	N/A
GT46-CA *GT46-CB*	11/34 central processor with 64K bytes of core parity memory, memory management, bootstrap loader, real-time clock, serial line interface, programmer's console, VT11 graphic display processor with 17″ CRT monitor and light pen, dual drive disks (RK11D/RK05), LA36 DECwriter terminal, table, and cabinet. Expansion: 1 SU.	N/A	TT CAB	9	0.0 9.2	RT-11 RSX-11M
GT46-MA *GT46-MB*	Same as GT46-CA (CB) except 64K bytes of MOS parity memory is substituted for 64K bytes of core parity memory. Expansion: 2 Hex SPC's, 1 Quad SPC, and 1 SU.	N/A	TT CAB	9	4.0 9.2	RT-11 RSX-11M
GT62-EA *GT62-EB*	11/34 central processor with 32K bytes of MOS parity memory, memory management, bootstrap loader, real-time clock, serial line interface, programmer's console, VS60 graphic display processor, with 21″ CRT monitor and light pen, asynchronous communications interface, ASCII keyboard, 16 button function keyboard, table and cabinet. Expansion: 3 Hex SPC's, and 2 SU's, 2 Hex SPC's, 1 Quad SPC.	N/A	TT CAB	8	4.0 18.7	N/A
GT62-FA *GT62-FB*	Same as GT62-EA (EB) except an LA 36 is substituted for the ASCII keyboard. Expansion: 3 Hex SPC's, and 2 SU's, 2 Hex SPC's, 1 Quad SPC.	N/A	TT CAB	8	4.0 18.7	N/A
GM11-RA *GM11-RB*	GAMMA-11 F/B upgrade kit. Includes necessary hardware to upgrade from GM11-NA(NB) single job to GM11-PA(PB) F/B, consisting of: BA11-LA(LB) expansion box, DD11-D backplane, AR11 analog module, 70-1176-15 AR cable, DL11-W serial line interface, VT52 DECscope, MM11-DP 32K bytes parity core memory. Also includes BC11A-10 UNIBUS cable. Expansion: 4 Hex, 1 SPC (Additional space).	GM11-NA or GM11-NB	SM PAN	4	11	RT-11

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
GRAPHIC OPTIONS						
VT11-AA *VT11-AB*	Display processor with a 17″ CRT and a light pen.	UNIBUS 11's	TT SU	1	7.0	RT-11 RSX-11M
VS60-AA *VS60-AB*	Graphic display sub-system includes display processor, 21″ CRT, light pen, with tip switch and table.	UNIBUS 11's	FS PAN SM PAN	1	7.0	RT-11 RSX-11M
VS60-KA *VS60-KB*	Second CRT with light pen and table for VS60-A	VS60-A	FS	N/A	7.0	RT-11 RSX-11M
LK11-A	16 lighted push button box, plus control.	UNIBUS 11's	TT Quad SPC	1	5.0	N/A
LK40-A	ASCII Keyboard	DL11-WA or equiv.	TT	N/A	5.0	N/A

Option No. *(ital-230v)*	Description	Prerequiste	Mounting Code	Bus Load	Amps @+5v	System Software
ICS BASIC SUBSYSTEMS						
NCS11-AA *NCS11-AB*	Industrial Control Subsystem for Industrial 1100 Standard Systems. Accommodates up to 16 functional I/O modules, and includes mounting hardware for up to 16 screw terminal assemblies, or 3 converter panels. Allows top or bottom entry for field wiring. Can be expanded to 32 functional I/O modules by the addition of another ICS11-M master file. (Includes ICS11-M, H964-F, H964-P.) See Note 1.	UNIBUS 11's	CAB	1		RSX-11S,M,D IAS
NCS11-BA *NCS11-BB*	Same as NCS11-A except includes mounting hardware for an additional 4 AC converter panels. Another ICS11-M may not be added to this configuration without an additional H964-F cab. (Includes ICS11-M, H964-F, H964-P, and H009.) See Note 1.	UNIBUS 11's	CAB	1		RSX-11S,M,D IAS
ICS11-MA *ICS11-MB*	Industrial Control Subsystem master file for the PDP-11. Includes interface and control, power supply, and backplane for accommodating up to 16 functional I/O modules. Mounting hardware provided for up to 16 screw terminal assemblies or 4 AC panels. This is a PDP-11 Unibus option. See Note 1.	UNIBUS 11's	2½ PAN	1		RSX-11S,M,D IAS
ICR11-AA *ICR11-AB*	Industrial Control Subsystem -- Remote for the PDP-11. Includes Unibus interface and control, file, power supply, and backplane for accommodating up to 16 functional I/O modules. Mounting hardware is povided for up to 16 screw terminal assemblies or 4 AC panels. The interface and control is two hex modules which mount in the center two slots of a DD11-B system unit. The ICR11-A can be mounted in an H964-F or H967-B cab. See Note 1.	UNIBUS 11's H964-F or H967-B	2½ PAN	1	5	RSX-11S,M,D IAS
ICS/ICR ANALOG INPUT ASSEMBLIES						
NAD-IA	8-channel wide-range differential analog-to-digital converter. Uses flying capacitor mercury-wetted relay multiplexer. Resolution is 12 bits bipolar with a scan rate of 200 samples per second and sample rate of 20 samples per second same channel. May be expanded to 120 channels by adding the appropriate number of NMX-IA assemblies.	ICS/ICR	ICS/ICR			
IAD-IA	Same as NAD-IA without screw terminal assemblies.	ICS/ICR	ICS/ICR			

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
NMX-IA	16-channel flying capacitor relay multiplexer module for use in expanding NAD-IA. Up to 7 NMX-IA modules may be added to each NAD-IA (120 channels total). Screw terminal assemblies are included.	ICS/ICR and IAD-IA or NAD-IA	ICS/ICR			
IMX-IA	Same as NMX-IA without screw terminal assemblies.	ICS/ICR and IAD-IA or NAD-IA	ICS/ICR			
ISH-IA	Analog shield used to electromagnetically shield the NAD-IA and NMX-IA. Required when the NRL-OA or NRL-OB is placed within 4 module slots of the NAD-IA or NMX-IA. ISH-IA takes one module slot in the ICS or ICR.	ICS/ICR	ICS/ICR			

ICS/ICR ANALOG OUTPUT ASSEMBLIES

NDA-OA	4-channel digital-to-analog converter. 10-bit converter with output ranges of 0 to +10 volts (@ 15mA maximum) or 0 to 20 milliamps. A maximum of 12 NDA-OA modules may be added to each ICS or ICR subsystem. Screw terminal assemblies are included.	ICS/ICR	ICS/ICR			
IDA-OA	Same as NDA-OA without screw terminals.	ICS/ICR	ICS/ICR			

NOTE:
1. Any mixture of ICS11 and ICR11 subsystems is allowed up to a maximum of 12 subsystems per PDP-11.

ICS/ICR DIGITAL INPUT ASSEMBLIES

NDC-IA	Solid-state isolated voltage sense input module containing optically coupled differential inputs. Voltage ranges of 6, 24, and 48 volts are jumper selectable. Screw terminal assemblies are included.	ICS/ICR	ICS/ICR			
IDC-IA	Same as NDC-IA without screw terminals.	ICS/ICR	ICS/ICR			
NDC-IB	Solid-state isolated voltage interrupt input module containing optically coupled differential inputs. Voltage ranges of 6, 24, or 48 volts are jumper selectable. Screw terminal assemblies are included.	ICS/ICR	ICS/ICR			
IDC-IB	Same as NDC-IB without screw terminals.	ICS/ICR	ICS/ICR			

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
NDC-IC	16-bit asynchronous binary up counter with input voltage ranges of 6, 24, or 48 volts (jumper selectable). Screw terminal assemblies are included.	ICS/ICR	ICS/ICR			
IDC-IC	Same as NDC-IC without screw terminals.	ICS/ICR	ICS/ICR			
NDC-ID	Solid-state non-isolated voltage input module compatible with TTL logic levels. Input voltage range from -30 to +55 volts maximum. Screw terminal assemblies are included.	ICS/ICR	ICS/ICR			
IDC-ID	Same as NDC-ID without screw terminals.	ICS/ICR	ICS/ICR			
NDC-IE	Solid-state non-isolated voltage interrupt module compatible with TTL logic level. Input voltage range from -30 to +55 volts maximum. Screw terminal assemblies are included.	ICS/ICR	ICS/ICR			
IDC-IE	Same as NDC-IE without screw terminals.	ICS/ICR	ICS/ICR			
NAC-IA	Solid-state AC input module. Includes 16 bits of transformer coupled AC to DC converters. Input range of 95 to 135 volts AC (47 to 63 Hz). Screw terminal connections are provided, with 6-foot cables from the module to the AC panel.	ICS/ICR	ICS/ICR			
IAC-IA	Same as NAC-IA without AC to DC converters. Requires H1501 for implementation.	ICS/ICR and H1501	ICS/ICR			
H1501	One bit of transformer-coupled AC to DC converter for use with IAC-IA and IAC-IB. Input range of 95 to 135 volts AC (47 to 65 Hz). Screw terminal connections are provided. Up to 16 H1501s may be added to each IAC-IA and IAC-IB option.	ICS/ICR	ICS/ICR			
NAC-IB	Solid-state AC interrupt module. Includes 16 bits of transformer coupled AC to DC converters. Input range of 95 to 135 volts AC (47 to 63 Hz). Screw terminal connections are provided, with 6-foot cables between module and AC panel.	ICS/ICR	ICS/ICR			
IAC-IB	Same as NAC-IB without AC to DC converters. Requires H1501 for implementation.	ICS/ICR and H1501	ICS/ICR			

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Load	Amps @+5v	System Software
ICS/ICR DIGITAL OUTPUT ASSEMBLIES						
NDC-OA	Solid-state DC Flip-Flop driver to drive solid-state logic or as a current sink. Output drive is diode protected. Output is open collector and can drive up to 55 volts DC maximum (externally supplied). Screw terminal assemblies are included.	ICS/ICR	ICS/ICR			
IDC-OA	Same as NDC-OA without screw terminals.	ICS/ICR	ICS/ICR			
NDC-OB	Solid-state DC single-shot driver to drive solid-state logic or as a current sink. Output is open collector (diode protected) and can drive up to 55 volts DC maximum (externally supplied). Screw terminal assemblies are included.	ICS/ICR	ICS/ICR			
IDC-OB	Same as NDC-OB without screw terminals.	ICS/ICR	ICS/ICR			
NAC-OA	Solid-state AC Flip-Flop driver. Includes 16 bits of transformer-coupled DC to AC converters. Output range of 95 to 135 volts AC (47 to 63 Hz). Screw terminal connections are provided, with 6-foot cables between module and AC panel.	ICS/ICR	ICS/ICR			
NAC-OB	Solid-state AC single-shot output. Includes 16 bits of transformer-coupled DC to AC converters. Output range of 95 to 135 volts AC (47 to 63Hz). Screw terminal connections are provided, with 6-foot cables between module and AC panel.	ICS/ICR	ICS/ICR			
NRL-OA	Latching relay output with electrically-isolated mercury-wetted relays. Form A or B normally open or normally closed relays with contact rating of 55 volts AC or DC. Screw terminal assemblies are included.	ICS/ICR	ICS/ICR			
IRL-OA	Same as NRL-OA without screw terminals.	ICS/ICR	ICS/ICR			
NRL-OB	Flip-Flop relay output with electrically-isolated mercury-wetted relays. Form A or B normally open or normally closed "relays (jumper selectable)" with contact rating of 55 volts AC or DC. Screw terminal assemblies are included.	ICS/ICR	ICS/ICR			
IRL-OB	Same as NRL-OB without screw terminals.	ICS/ICR	ICS/ICR			

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software

ICS/ICR CABINETS AND MISCELLANEOUS HARDWARE

H964-FA *H964-FB*	Cabinet for housing the ICS11-M, ICS/ICR, and ICR11-A. Can accommodate up to two ICS/ICR subsystems or one ICS/ICR subsystem with up to 3 additional H009 mounting rail extensions. H964-P may be added for top entry of field wiring.					
H8030	Module connector for interfacing field wiring when screw terminal assemblies are not required.					
BC40H-IJ	Screw terminal assembly for digital I/O modules. Not required for IAC-IA/B or IAC-OA/B.					
BC40K-IJ	Screw terminal assembly for analog I/O modules.					
ICJ-IA	Empty slot jumper module. Used when empty I/O module slot is left between interrupt generating modules for expansion. One ICJ-IA required for each empty slot in interrupting module chain.					

MASS STORAGE

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
FLOPPY DISKS						
RX11-AA *RX11-AD*	Floppy disk and control; 256K bytes of storage in a single drive system. 18 msec/byte transfer rate, 480 msec average access time.	UNIBUS 11's	PAN Quad SPC	2	-	RT-11 RSX-11S,M RSTS/E
RX11-BA *RX11-BD*	Dual floppy disk and control; 512K bytes of storage. 18 msec/byte transfer rate, 480 msec average access time.	UNIBUS 11's	PAN Quad SPC	2	-	RT-11 RSX-11S,M RSTS/E
CARTRIDGE DISKS						
RK11J-AA *RK11J-AB*	2.5 megabyte, removable disk cartridge drive and controller. Expandable to a total of 20 megabytes of storage by adding combinations of RK05J's and RK05F's not to exceed 8 logical disks. 5.5 usec/byte transfer rate, 50 msec average access time.	UNIBUS 11's	SU PAN	1	7.5	RT-11 RSX-11S,M,D IAS RSTS/E MUMPS-11
RK05F-FA *RK05F-FB*	5.0 megabyte non-removable media disk drive. Features data transfer rate of 180K bytes/sec, and average access time of 76 msec. 5.5 usec/byte tranfer rate.	RK11J-AA	PAN	0	0	RT-11 RSX-11S,M,D IAS RSTS/E MUMPS-11
RK05J-AA *RK05J-BB*	2.5 megabyte removable disk drive. Features data transfer rate of 180K byes/sec and average access time of 70 msec. 5.5 usec/byte transfer rate.	RK11J-AA	PAN	0	0	RT-11 RSX-11S,M,D IAS RSTS/E MUMPS-11
RK05K-11	Cartridges for RK05, (2.5 million bytes).	RK05J	N/A	0	0	N/A
FIXED HEAD DISKS						
RJS03-BA *RJS03-BD*	512K byte fixed head disk drive and control unit. Expandable to a total of 8 drives (RS03 or RS04). 2 or 4 msec/byte transfer rate, 8.5 msec average access time. (2.4 or 4.8 msec/byte transfer rate, 10.2 msec average access time at 50 Hz.)	UNIBUS-11's except 11/70	CAB 2 SU	1	16.0	RSX-11M,D IAS RSTS/E
RJS04-BA *RJS04-BD*	1024 K byte fixed head disk drive and control unit. Expandable to a total of 8 drives (RS03 or RS04). 2 usec/byte transfer rate, 8.5 msec average access time. (2.4 usec/byte transfer rate, 10.2 msec average access time at 50 Hz.)	UNIBUS-11's except 11/70	CAB 2 SU	1	16.0	RSX-11M,D IAS RSTS/E
RS03-AA *RS03-AD*	512K byte fixed head disk drive. 2 or 4 μsec/byte transfer rate, 8.5 msec average access time.	RJS03/4 or RWS03/4	1 ½ PAN	0	0	RSX-11M,D IAS RSTS/E
AA	1024K byte fixed head disk drive. 2 μsec/byte transfer rate, 8.5 msec average access time.	RJS03/4 or RWS03/4	1 ½ PAN	0	0	RSX-11M,D IAS RSTS/E

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
DISK PACK DRIVES						
RPR11-AA *RPR11-AB*	20 megabyte disk pack drive and control unit. Expandable to 8 RPR02 disk pack drives. 3.2 μsec/byte, 47.5 msec average access time. Rebuilt equipment.	UNIBUS-11's	FS	1	16.0	RT-11 RSX-11M,D RSTS/E IAS
RPR02-AM *RPR02-BM*	20 megabyte disk pack drive. 3.2 μsec/byte, 47.5 msec average access time. Rebuilt equipment.	RPR11	FS	0	0	N/A
RPO2-P	Disk pack for RPR02 or RP11-C.	RPR02	RPR02	0	0	N/A
RP11-CE *RP11-CJ*	40 million byte disk pack drive and control unit. Expandable to a toal of 8 RP03 disk pack drives. 3.75 μsec/byte transfer rate, 42 msec average access time.	UNIBUS-11's	CAB FS	1	16.0	RSX-11M,D RSTS/E IAS
RP03-AS *RP03-BS*	40 million byte moving head disk pack drive. 3.75 μsec/byte transfer rate, 42 msec average access time.	RP11	FS	0	0	RSX-11M,D RSTS/E IAS
RJP04-AA *RJP04-AB*	Single access 88 million byte disk drive and control. Expandable to 8 RP drives (RP04, RP05, RP06). One disk pack included. 1.25 μsec/byte transfer rate; 28 msec average access time.	UNIBUS 11's except 11/70	FS 2 SU	1	16.0	RSX-11M,D IAS RSTS/E MUMPS-11
RP04-AA *RP04-AB*	Single access 88 million byte disk drive. 1.25 μsec/byte transfer rate, 28 msec average access time.	RJP04-A RWP04-A	FS	0	0	RSX-11M,D IAS RSTS/E MUMPS-11
RP04-P	88 million byte disk pack for RP04 and RP05.	RP04 or RP05	RP04 or RP05	0	0	N/A
RJP05-AA *RJP05-AB*	Single access 88 million byte disk drive and control. Expandable to 8 RP drives. (RP04, RP05, RP06). One disk pack included. 1.25 μsec/byte transfer rate, 28 msec average access time. Field upgradeable to the RP06.	UNIBUS 11's except 11/70	FS 2 SU	1	16.0	RSX-11M,D IAS RSTS/E MUMPS-11
RP05-AA *RP05-AB*	Single access 88 million byte disk drive. 1.25 μsec/byte transfer rate, 28 msec average access time. Field upgradeable to the RP06.	RJP05-A or RWP05-A	FS	0	0	RSX-11M,D IAS RSTS/E MUMPS-11
RJP06-AA *RJP06-AB*	Single access 176 million byte disk drive and control. Expandable to 8 RP drives (RP04, RP05, RP06). One disk pack included. 1.25 μsec/byte transfer rate, 28 msec average access time.	UNIBUS 11's	FS 2 SU	1	16.0	RSX-11M

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
RP06-AA *RP06-AB*	Single access 176 million byte disk drive. 1.25 μsec/byte transfer rate, 28 msec average access time.	RJP06-A or RWP06-A	FS	0	0	RSX-11M
RP06-P	176 million byte disk pack	RP06	RP06	0	0	N/A

MAGNETIC TAPE

TA11-AA *TA11-AB*	Dual DECcassette transport and control unit. 90,000 character storage capacity per reel.	UNIBUS-11's	SM PAN Quad SPC	1	1.5	CAPS-11 RT-11
TC11-GA *TC11-GB*	Dual DECtape transport and control unit. Expandable to a total of 4 TU56 dual transports, within the included cabinet. 288K character storage per reel.	UNIBUS-11's	CAB	1	3.0	RT-11 RSX-11S,M,D RSTS/E IAS
TU56	Dual DECtape transport. 288K character storage per reel.	TC11	PAN	N/A	N/A	RT-11 RSX-11S,M,D RSTS/E IAS
TMB11-MA *TMB11-MB*	12½ inch/sec tape transport and control unit. Expandable to a total of 2 TS03 transports. 9-track, 800 bpi, 7 inch reel.	UNIBUS-11's	PAN SU	1	5	RT-11 RSX-11S,M,D RSTS/E IAS
TS03-SA *TS03-SB*	12½ inch/sec tape transport. 9-track, 800 bpi.	TMB11-M	PAN	0	0	RT-11 RSX-11S,M,D RSTS/E IAS
TMB11-EA *TMB11-ED*	45 inch/sec magnetic tape transport and control unit. Expandable to a total of 8 TU10W transports. 9-track, 800 bpi (industry compatible).	UNIBUS 11's	CAB SU	1	5	RT-11 RSX-11S,M,D RSTS/E IAS
TU10W-EE *TU10W-EJ*	45 in/sec 9-track tape transport, 800 bpi.	TMB11-E	CAB	0	0	RT-11 RSX-11S,M,D RSTS/E IAS
TJU16-EA *TJU16-ED*	Program selectable 800 or 1600 bpi, 9-track magnetic tape transport and control unit. Expandable to a total of 8 TU16 transports. 45 in/sec (industry compatible).	UNIBUS-11's except 11/70	CAB 2 SU	1	16.0	RSX-11S,M,D RSTS/E IAS
TU16-EE *TU16-EJ*	Switch selectable 800 or 1600 bpi, 9-track magnetic tape transport. 45 in/sec.	TJU16 or TWU16	CAB	0	0	RSX-11S,M,D RSTS/E IAS

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
PDP-11/70 MASS STORAGE						
RWS03-BA *RWS03-BD*	512K byte fixed head disk drive and control unit. Expandable to a total of 8 drives (RS03 or RS04). 2 μsec/byte transfer rate, 8.5 msec average access time.	11/70	CAB 11/70	1	18.5	RSX-11M,D RSTS/E IAS
RWS04-BA *RWS04-BD*	1024K byte fixed head disk drive and control unit. Expandable to a total of 8 drives (RS03 or RS04). 1 μsec/byte transfer rate, 8.5 msec access time.	11/70	CAB 11/70	1	18.5	RSX-11M,D RSTS/E IAS
RWP04-AA *RWP04-AB*	Single access 88 million byte disk drive and control. Expandable to 8 RP drives (RP04, RP05, RP06). One disk pack included. 1.25 μsec/byte transfer rate; 28 msec average access time.	11/70	FS 11/70	1	18.5	RSX-11M,D RSTS/E IAS
RWP04-BA *RWP04-BB*	Dual access 88 million byte disk drive and 2 11/70 controls. Expandable to 8 RP drives (RP04, RP05, RP06). One disk pack included. 1.25μsec/byte transfer rate; 28 msec average access time.	2 11/70's	FS 2 11/70's	1 1	18.5 18.5	N/A
RP04-BA *RP04-BB*	Dual access 88 million byte disk drive. 1.25 μsec/byte transfer rate. 28 msec average access time.	RWP04-B	FS	0	0	N/A
RWP05-AA *RWP05-AB*	Single access 88 million byte disk drive and control. Expandable to 8 RP drives (RP04, RP05, RP06). One disk pack included. 1.25 μsec/byte transfer rate, 28 msec average access time. Field upgradeable to the RP06.	11/70	FS 11/70	1	18.5	RSX-11M,D RSTS/E IAS
RWP05-BA *RWP05-BB*	Dual access 88 million byte disk drive and 2 11/70 controls. Expandable to 8 RP drives (RP04, RP05, RP06). One disk pack included. 1.25 μsec/byte transfer rate. 28 msec average access time. Field upgradeable to the RP06.	2 11/70's	FS 2 11/70's	1 1	18.5 18.5	N/A
RP05-BA *RP05-BB*	Dual access 88 million byte disk drive. 1.25 μsec/byte transfer rate. 28 msec average access time. Field upgradeable to the RP06.	RWP05-B	FS	0	0	N/A
RWP06-AA *RWP06-AB*	Single access 176 million byte disk drive and control. Expandable to 8 RP drives. One disk pack included. 1.25 μsec/byte transfer rate, 28 msec average access time.	11/70	FS 11/70	1	18.5	RSX-11M
RWP06-BA *RWP06-BB*	Dual access 176 million byte disk drive and 2 11/70 controls. Expandable to 8 RP drives. One disk pack included. 1.25 μsec/byte transfer rate, 28 msec average access time.	2 11/70's	FS 2 11/70's	1 1	18.5 18.5	N/A

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
RP06-BA *RP06-BB*	Dual access 176 million byte disk drive. 1.-25 μsec/byte transfer rate, 28 msec average access time.	RWP06-B	FS	0	0	N/A
TWU16-EA *TWU16-ED*	Program selectable 1600/800 bpi magnetic tape transport and control unit. Expandable to a total of 8 TU16 transports. 45 in/sec, 9 track (industry compatible).	11/70	CAB SU	1	18.5	RSX-11D RSTS/E IAS
TWU16-EK *TWU16-EN*	800 bpi magnetic tape transport and control unit. Expandable to a total of 8TU16 transports. 45 in/sec, 9 track (industry compatible).	11/70	CAB SU	1	18.5	RSX-11D RSTS/E IAS

INTERFACE EQUIPMENT

GENERAL PURPOSE INTERFACES

DR11-B	Direct memory access interface. Moves data directly between user's device and memory (NPR operation). Includes word count, current address, and data registers.	UNIBUS-11's	SU	1	3.2	RT-11 RSX-11S,M,D RSTS/E IAS
DR11-C	General purpose digital interface. Permits bi-directional 16-bit parallel transfers between the user's device and the UNIBUS. Includes all necessary interrupt, address, and control signals and all required cable connectors.	UNIBUS-11's	Hex SPC	1	1.5	RT-11 RSX-11S,M,D RSTS/E IAS
DR11-K	General purpose digital interface. Permits bi-directional 16-bit parallel transfers between the user's device and the UNIBUS. Each line can generate an interrupt. Includes all necessary interrupt, address, and control signals and all required cable connectors.	UNIBUS-11's	Hex SPC	1	2.5	RT-11 RSX-11S,M,D RSTS/E IAS
H322	Distribution panel. Distributes signals from two 40-pin Berg connectors to nine 10-screw terminal strips.	UNIBUS-11's	SM PAN	-	-	N/A
H323-B	Table-top analog panel. Four channel analog potentiometer panel used in conjunction with A/D options such as the AR11 and the H322 distribution panel for the purpose of providing a variable voltage input.	UNIBUS-11's	TT	-	-	N/A

COMMUNICATIONS OPTIONS

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
SINGLE LINE ASYNCHRONOUS INTERFACES						
DL11-WA	Serial line interface and line frequency real-time clock. Switch selectable character size, parity, stop bit, and speed of operation. Switch selectable active or passive transmitter and receiver. The line frequency clock is useful only when the DL11-WA is used as the console interface on an 11/04 or 11/34. The DL11-WA cannot be used with DF11 options where external clocking is required.	UNIBUS 11's	Quad SPC	1	2.0	RT-11 RSX-11S,M,D RSTS/E MUMPS-11 IAS
DL11-WB	EIA/CCITT serial line interface and line frequency real-time clock. Switch selectable character size, parity, stop bits and speed of operation. The line frequency clock is useful only when the DL11-WB is used as the console interface on an 11/04 or 11/34. The DL11-WB cannot be used with DF11 options or where external clocking is required. The DL11-WB does not provide modem control. Includes 25 ft. (7.6 m) cable for connection to modem.	UNIBUS 11's	Quad SPC	1	2.0	RT-11 RSX-11S,M,D RSTS/E IAS
DL11-E	Modem controlling EIA/CCITT Serial line interface with a feature which allows a customer to specify speed, character size, parity, and stop bit size. Can be used with DF11 options or with external clocking. Includes 25 ft. (7.6 m) of cable for connection to modem.	UNIBUS 11's	Quad SPC	1	1.8	RSX-11M RSTS/E
ASYNCHRONOUS MULTIPLEXERS (PROGRAMMED I/O)						
DJ11-AA	Asynchronous 16-line multiplexer for EIA/CCITT terminals or lines. Customer specifiable speed, character size, parity, and stop bits. Includes distribution panel with 16 DB 25P EIA/CCITT connectors.	UNIBUS 11's	SM PAN	-	4.7	RSX-11M
DJ11-AC	Asynchronous 16-line multiplexer for 20mA level conversion. Distribution panel includes 16 4-screw terminal strips for connection of terminals. Customer specific speed, character size, parity and stop bits.	UNIBUS 11's	SU SM PAN	1	5.3	RSX-11M
DZ11-A	Asynchronous 8-line multiplexer for EIA/CCITT terminals or links. Features programmable speeds and formats on a per-line basis. Can expand to 16 links. For modems, a BC05D cable is needed.	UNIBUS 11's	Hex SPC SM PAN	1	2.2	RT-11 RSX-11S,M,D RSTS/E IAS
DZ11-B	Eight-line EIA/CCITT expansion multiplexer. For modems, a BC05 cable is needed.	DZ11-A	Hex SPC	1	2.2	RT-11 RSX-11S,M,D RSTS/E IAS

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
DZ11-C	Asynchronous 8-line multiplexer for 20mA current loop terminals. Features programmable speeds and formats on a per-line basis. Can expand to 16 lines.	UNIBUS 11's	Hex SPC SM PAN	1	3.0	RT-11 RSX-11S,M,D RSTS/E IAS
DZ11-D	Eight-line 20mA current loop expansion multiplexer.	DZ11-C	Hex SPC	1	3.0	RT-11 RSX-11S,M,D RSTS/E IAS
DZ11-E	Asynchronous 16-line multiplexer for EIA/CCITT terminals or lines. Features programmable speeds and formats on a per-line basis. For modems, a BC05D cable is needed.	UNIBUS 11's	2 Hex SPC SM PAN	2	4.4	RT-11 RSX-11S,M,D RSTS/E IAS
DZ11-F	Asynchronous 16 line multiplexer for 20mA current loop terminals. Features programmable speeds and formats on a per-line basis.	UNIBUS 11's	2 Hex SPC SM PAN	2	6.0	RT-11 RSX-11S,M,D RSTS/E IAS
DH11-AA *DH11-AC*	Programmable asynchronous 16-line multiplexer and mounting panel. Includes space for up to 4 DM11 line adapters. Character length, parity , stop bits and baud rates (up to 9600) are programmable on an individual line basis. EIA/CCITT and 20 mA lines may mixed (in 4-line groups). Output transfers are NPR, input transfers silo buffered programmed I/O.	UNIBUS 11's	2 SU SM PAN	2	8.4	RSX-11M,D IAS RSTS/E DECnet-11
DH11-AD	Complete programmable asynchronous 16-line multiplexer. EIA/CCITT only. Includes modem control. Does not include cables.	UNIBUS 11's	2 SU SM PAN	3	10.8	RSX-11S,M,D IAS RSTS/E
DH11-AE	Complete programmable asynchronous 16-line multiplexer. EIA/CCITT. Does not include modem control. Does not include cables.	UNIBUS 11's	2 SU SM PAN	2	8.6	RSX-11S,M,D IAS RSTS/E

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
ASYNCHRONOUS MULTIPLEXERS (NPR OUTPUT)						
DM11-BB	16-line modem control multiplexer for program operation of control leads for 103, 202, or equivalent data sets.	DH11-AA or DH11-AC	DH11	1	2.8	RSX-11S,M,D IAS RSTS/E
DM11-DA	Line adapter for four 20mA terminals.	DH11-AA or DH11-AC	DH11	N/A	N/A	RSX-11S,M,D RSTS/E IAS
DM11-DB	Line Adapter for 4 EIA lines (data only). Includes four 25 ft (7.5m) modem cables.	DH11-AA or DH11-AC	DH11	N/A	N/A	RSX-11S,M,D RSTS/E IAS
DM11-DC	Line adapter for 4 EIA/CCITT compatible lines which, when used with a DM11-BB, provides modem control. Includes four 25 ft. (7.5m) modem cables.	DH1-AA or DH11-AC and DM11-BB	DH11	N/A	N/A	RSX-11S,M,D RSTS/E IAS
SINGLE LINE SYNCHRONOUS INTERFACES						
DU11-DA	Full/half duplex synchronous interface. Programmable character sizes, transmission speeds up to 9600 baud, space character. Interfaces to Bell 200 Series modems or equivalent. 7.5m (25 ft.) modem cable provided. Data set control included. Cannot be used with bit-oriented protocols such as SDLC and HDLC.	UNIBUS 11's	Quad SPC	1	2	RSX-11S,M,D IAS RSTS/E
DFC11-A	Clock option for DU11 for use in local PDP-11 to PDP-11 connections without modems. This option mounts in a DD11-B SU or DF11 slot adjacent to the DU11.	DD11-B or DF11	DU11 or DF11 slot	N/A	N/A	N/A
DUP11-DA	Full/half duplex synchronous interface. Can be programmed to handle 8 bit character-oriented protocols such as DDCMP and BISYNC and bit-orientated protocols such SDLC and HDLC. Hardware calculates CRC-16 when using DDCMP protocol (not BISYNC) and CRC/CCITT when using bit-oriented protocols. Interfaces to Bell 200 series modems or equivalent at speeds up to 9600 baud. Includes 25 ft (7.6m) modem cable and data set control.	UNIBUS 11's	Hex SPC	1	3.6	ALL 2780 DECNET-11
DMC11-AL	Network link DDCMP microprocessor module (local). DDCMP protocol implemented in firmware for high speed local communication at speeds up to 1,000,000 bps full or half duplex. NPR input and output transfers. Includes firmware for unattended operation (remote load detect and down-line loading). Requires DMC11-MA or DMC11-MD line units.)	UNIBUS 11's	Hex SPC	-	4.0	ALL 2780

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
DMC11-DA	Network Link, remote line unit module. Interfaces to EIA/CCITT synchronous modems (Bell series 200 compatible) at speeds up to 19,200 bps. Operates full or half duplex. Includes data set control for switched network operations. Can be used to communicate over common carrier facilities to another DMC11 or to a synchronous interface with software implementation of DDCMP.	UNIBUS 11's	Hex SPC	-	2.5	ALL 2780
DMC11-AR	Network Link DDCMP microprocessor module (remote). DDCMP protocol implemented in firmware for remote operation. Operates full or half duplex. NPR input and output transfers. Includes data - set control firmware for switched network operation. Includes firmware for unattended operation (remote load detect and down line loading). Requires DMC11-DA line unit.	UNIBUS 11's	Hex SPC	-	2.5	ALL 2780
DMC11-MA	Network Link local line unit module 1,000,-000 bps. Provides high speed connection to another local DMC11 using coaxial cable up to 6000 ft. (1829m) long. (Includes built-in modem). Operates full duplex with two cables and half dulex with a single cable.	UNIBUS 11's	Hex SPC	-	2.5	ALL 2780
DMC11-MD	Network Link local line unit module 56,000 bps. Provides high speed connection to another local DMC11 using coaxial cable up to 18000 (5487) ft. long. (Includes built-in modem). Operates full duplex with two cables and half duplex with a single cable.	UNIBUS 11's	Hex SPC	-	2.5	ALL 2780
DQ11-DA	Full/half duplex NPR synchronous interface with programmable transmission speeds up to 10,000 baud. EIA/CCITT termination suitable for direct use with Bell Series 201, 208, or 209 equivalent modems. Data set control included.	UNIBUS 11's	SU	1	5.7	
DQ11-EA	Full/half duplex synchronous NPR interface to Bell system 303 or equivalent modems. Transmission speeds up to 1.0 megabaud. Data set control included.	UNIBUS 11's	SU	1	5.7	
DQ11-KA	Crystal clock option. Crystal in Hertz is 16 x baud rate for baud rates equal to or less than 250,000 baud and 2 x baud rate for baud rates greater than 250,000. For use with DQ11-DA or DQ11-EA when modem is NOT used.	DQ11-EA or DQ11-DA	(DQ11)			

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
DQ11-AB	Error detection option for DQ11-DA or DQ11-EA. Performs hardware CRC or LRC. SU must be adjacent to DQ11.	DQ11-EA or DQ11-DA	SU	1	1.2	
DQ11-BB	Protocol option with provisions for character recognition and hardware sequence control for protocol handling.	DQ11-AB	(DQ11-AB)		1.6	

MULTIPLE LINE SYNCHRONOUS INTERFACES

DV11-AA	Synchronous communications preprocessor for up to 16 EIA/CCITT lines - NPR transmission on all lines, internal CRC, up to 9600 baud full duplex transmission for each line. Accomodates one or two DV11-BA's.	UNIBUS 11's	2 SU	2	15	RT-11 RSX-11S,M,D RSTS/E IAS
DV11-BA	8-line group for use with DV11-AA (up to 2 per DV11-AA). Requires BC05D-25 cable.	DV11-AA	SM PAN	-	-	RT-11 RSX-11S,M,D RSTS/E IAS

TELEGRAPH INTERFACES

DJ11-AB	Asynchronous 16-line multiplexer for use with external signal conditioning equipment such as DC08 telegraph interfaces. Customer specifiable speed, character size, parity and stop bits. (No distribution panel.)	UNIBUS 11's	SU	1	4.7	DECNET-11S,M,D
DH11-AB	Programmable asynchronous 16-line multiplexer with data cable for connection to DC08 telegraph line interface. Character length, stop bits, parity and baud rate (up to 9600 baud) are programmable on an individual line basis. (No level conversion/distribution panel.)	UNIBUS 11's	2 SU	2	8.4	DECNET-11D
H316-A *H316-B*	Dual telegraph line interface for two common carrier or private telegraph circuits. Supplied with two 25 ft (7.5m) cables. Data rates from 10 to 500 bps.	DL11-E DH11-A	-	1	-	-
DC08-CS	Telegraph line interface panel. Accomodates up to 16 DC08-CM Dual-Line Adapters. Consists of wired system unit, rack, and control modules.	DH11-AB DJ11-AB	-	1	-	-
DC08-CM	One dual telegraph terminal and receive line adapter. Implements 2 transmit and receive telegraph line interfaces in the DC08-CS.	DC08-CS	-	0	-	-

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
DC08-EB	Telegraph line current adjustment panel. Provides line current monitoring and adjustment for 32 telegraph receive and transmit lines.	DC08-CS	-	-	-	-
DC08-D	Distribution panel; provides individual terminal blocks to facilitate connection of 32 telegraph lines.	DC08-CS	-	-	-	-

AUTO DIAL INTERFACES

DN11-AA	System unit mounting and control for up to 4 DN11-DA module sets.	UNIBUS 11's	SU	-	-	DECNET-11D
DN11-DA	Module set interface to Bell 801 ACU. Includes 25 ft (7.5m) cable. A DN11-AA accommodates up to four DN11-DA's.	DN11-AA	DN11-AA	1	1.0	DECNET-11D

LINE SIGNAL CONDITIONERS AND ADAPTERS

DF11-F	TTL to 20mA active local teletype loop. Connector is AMP Mate-N-Lok for connection with customer-supplied 22AWG, 2 twisted pair cable to local or remote (up to 1500 ft or 457m) Model 33 or 35 Teletype.	DH11	DF	-	-	N/A
DF11-G	TTL to Bell 303 adapter. Includes cable.	DU11	DF	-	-	N/A
DF11-K	TTL to active or passive 4-wire current mode (20mA) loop. Connector is AMP Mate-N-Lok for connection with customer-supplied cable. Signaling rates up to 2400 baud, at distances up to 1500 feet (457m).	DH11 DL11-E with DD11-B	DF	-	-	N/A
DF11-A	TTL to EIA/CCITT voltage levels. 25 ft (7.5m) cable with DB25P 25-pin male data set plug. Signaling rates up to 9600 baud.	DH11	DF	-	-	-
H312-A	Null modem allows direct connection of any peripheral having an EIA interface. May be used with a DL11-E, DM11-DB, or DU11-DA with DFC11, or DQ11-DA with DQ11-KA. Also used with DZ11-A,B,E and DN11-AD,AE.	-	-	-	-	-
H313-A	Teletype data set adapter converts DIGITAL supplied TTY output for use with Bell 103D Dataset or equivalent.	LT33	TT	-	-	-

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
INTEGRAL MODEMS						
DF11-BA	Originate-only integral modem (103-type) for use with a remote terminal. 25 ft (7.5m) cable and connector provided for connection with Bell System Data Access arrangement CDT or CBS to private wire line channels. Signaling rate up to 300 baud.	Remote Terminal	DF	-	2.8	N/A
DF11-BB	Answer-only integral modem (103-type) for use with central computer. 25 ft (7.5m) cable and connector provided for connection with Bell System Data Access arrangement CDT or CBS or to private wireline channels. Signaling rate up to 300 baud.	DH11-AC,AE DL11-E with DD11-B	DF	-	2.8	N/A
COMMUNICATIONS ACCESSORIES						
M405	Clock Card. Required for non-standard speed. Second M405 for an additional speed.	DH11	-	-	-	N/A
BC04R-12	4 spade lugs to male AMP Mate-N-Lok connector.	DJ11-AC	-	-	-	N/A
BC05D-25	25 ft (7.5m) cable with Cinch DB25S socket and DB25P plug.	Remote Terminal & DJ11-AA	-	-	-	N/A
BC05D-10	10 ft (3m) cable with Cinch DB25S socket and DB25P plug.	Remote Terminal & DJ11-AA DH11-AD	-	-	-	N/A
959-A	Eight 8-pin male Mate-N-Lok connectors with pins.	N/A	N/A	N/A	N/A	N/A
959-B	Eight 8-pin female Mate-N-Lok connectors with pins.	N/A	N/A	N/A	N/A	N/A
ARITHMETIC OPTION						
KG11-A	Communications arithmetic option. Computes cyclic redundancy check (CRC), longitudinal redundancy check (LRC), and block check characters (BCC).	DU11	Quad SPC	1	1.5	DECNET-11D RSTS/E RSX-11D

NOTES:

1. DJ11-A baud rates must be selected in four line groups from the following speeds: 75, 110, 134.5, 300, 600, 1200, 1800, 2400, 4800, 9600. Character size, parity and stop bits should be specified from the choices listed in Note 3 below.
2. DL11-A and DL11-B require specification of baud rate from group 1 or 3 in the table below.
3. DL11-E customers must select baud rate, character size, stop bits and parity.
   Character Size: 5,6,7,8
   Parity: none, odd, even
   Stop Bits: 1, 1.5, 2
   DL11 BAUD RATES
   Group 1: 110
   Group 2: 134.5
   Group 3: 50, 75, 150, 300, 600, 1200, 1800, 2400
   Group 4: 200, 300, 600, 1200, 2400, 4800, 7200, 9600

INPUT/OUTPUT

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
LINE PRINTERS						
LA11-PA *LA11-PD*	132 column, 128 character printer and control unit. 180 characters/sec.	UNIBUS 11's	Quad SPC FS	1	3.0	RT-11 RSX-11S,M,D RSTS/E IAS
LP11-VA *LP11-VD*	132 column, 64 character printer and control unit. 300 lines/minute.	UNIBUS 11's	Quad SPC FS	1	1.5	RT-11 RSX-11S,M,D RSTS/E IAS
LP11-WA *LP11-WD*	132 column, 96 character printer and control unit. 230 lines/minute.	UNIBUS 11's	Quad SPC FS	1	1.5	RT-11 RSX-11S,M,D RSTS/E IAS
LP11-RA *LP11-RB*	Heavy duty line printer and control unit. 132 columns, 64 characters, 1200 lines/minute.	UNIBUS 11's	Quad SPC FS	1	1.5	RT-11 RSX-11S,M,D RSTS/E IAS
LP11-SA *LP11-SB*	Heavy duty line printer and control unit. 132 columns, 96 characters,900 lines/minute.	UNIBUS 11's	Quad SPC FS	1	1.5	RT-11 RSX-11S,M,D RSTS/E IAS
LV11-BA *LV11-BB*	Electrostatic printer/plotter and control unit. 132 columns, 96 characters, 500 lines/minute. Plotting rate of 120,000 dots/second.	UNIBUS 11's	Quad SPC FS	1	1.5	RT-11 RSX-11S,M,D RSTS/E IAS

NOTE:
The LV11 is supported as a line printer by the operating systems. For plot mode, it is supported by BASIC and FORTRAN under RT-11.

CARD READERS						
CR11 *CR11-A*	Punched card reader and control unit. 300 cards/minute.	UNIBUS 11's	Quad SPC TT	1	1.5	RT-11 RSX-11S,M,D IAS RSTS/E COMTEX
CM11-FA *CM11-FB*	Mark sense and punched card reader. 285 cards/minute. Includes control unit.	UNIBUS 11's	Quad SPC TT	1	1.5	RSX-11D RSTS/E IAS
CD11-A *CD11-B*	1000 card/minute reader and control unit. 80 column punched cards. 1000 card hopper capacity.	UNIBUS 11's	SU TT	1	2.5	RSX-11D RSTS/E IAS
CD11-EA *CD11-EB*	1200 card/minute reader and control unit. 80 column punched cards. 2250 card hopper capacity.	UNIBUS 11's	SU FS	1	2.5	RSX-11D RSTS/E IAS

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
PAPER TAPE						
PC11 *PC11-A*	High-speed paper tape reader/punch and control unit. 300 characters/sec reading, 50 char/sec punching.	UNIBUS 11's	Quad SPC PAN	1	1.5	CAPS-11 RT-11 RSX-11D RSTS/E
H722	Transformer required for 230 Vac, 50 Hz operation of PC11-A. Mounts on rear door of cabinet.	PC11-A	PC11-A	N/A	N/A	

TERMINALS

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
LA36-CE *LA36-CJ*	DECwriter II hardcopy terminal. 30 char/sec, 20mA interface.	DL11-W	FS	N/A	N/A	RT-11 RSX-11S,M,D RSTS/E IAS
LA35-CE *LA35-CJ*	Printer. Receive only version of the LA36. No keyboard.	DL11-W	FS	N/A	N/A	RT-11 RSX-11S,M,D RSTS/E IAS
VT50-AA *VT50-AB*	DECscope video terminal. 12 lines, 80 characters wide. 75 to 9600 baud, switch selectable. 20mA interface.	DL11-WA or equiv.	FS	N/A	N/A	RT-11 RSX-11S,M,D RSTS/E IAS
VT50-HA *VT50-HB*	Alphanumeric CRT terminal. Switch-selectable parity, 64-character keyboard, 80-column by 12-line display, numeric keypad.	DL11-WA or equiv.	TT	N/A	N/A	RT-11 RSX-11S,M,D RSTS/E IAS
VT52-AA *VT52-AB*	Alphanumeric CRT terminal. Switch-selectable parity, 96-character keyboard, 80-column by 24-line display with cursor control. 20mA interface.	DL11-WA or equiv.	TT	N/A	N/A	RT-11 RSX-11S,M,D RSTS/E IAS
VT52-AE *VT52-AF*	Alphanumeric CRT terminal. Switch selectable parity, 96-character keyboard, 80-column by 24-line display with cursor control. EIA/CCITT interface.	DL11-WA or equiv.	TT	N/A	N/A	RT-11 RSX-11S,M,D RSTS/E IAS
VT55-EA *VT55-EB*	CRT display terminal with both graphics and alphanumeric capability; 20mA current loop interface.	Serial line unit	TT	N/A	N/A	RT-11 RSX-11M
VT55-EE *VT55-EF*	Same as VT55-EA, EB but with EIA interface.	Serial line unit	TT	N/A	/A	RT-11 RSX-11M

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
VT55-FA *VT55-FB*	VT55 with integral hard copy device; 20mA current loop interface.	Serial line unit	TT	N/A	N/A	RT-11 RSX-11M
VT55-FE *VT55-FF*	Same as VT55-FA, FB but with EIA interface.	Serial line unit	TT	N/A	N/A	RT-11 RSX-11M

REMOTE TERMINAL ADAPTERS

LAXX-KG	EIA/CCITT adaptor for LA36 DECwriter.	DL11-WB
BN50A-7F	EIA/CCITT adaptor for VT50.	DL11-WB

NOTES:

1. Local terminals are designed for direct connection to a computer through any 20mA interface of the appropriate baud rate.
2. Remote terminals connect to computers via telephone lines to EIA/CCITT standard interfaces.
3. Remote terminal and data set characteristics (baud rate, etc.) must be matched by the data set and interface at the computer site.

MOUNTING HARDWARE

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
CABINETS & EXTENSION MOUNTING BOXES						
H960-DH *H960-DJ*	Cabinet with a single sliding drawer extension mounting box, Provides mounting space for 9 system units. Includes power supply which provides 3 (+5V) regulators (75 amps) and power for up to 64K of core memory.	UNIBUS 11's	CAB	-	75 available	N/A
BA11-KE *BA11-KF*	Rack mountable extension mounting box. Provides mounting space for 5 systems units.	UNIBUS 11's	PAN	-	50 available	N/A
BA11-ME *BA11-MF*	Expander box which includes the H9270 backplane and power supply. Dimensions 19″x13.5″x3.5″ (48.3x34.3x8.9cm).	11/03	-	-	-	-
H744	+5V regulator, provides 25 amps.	11/40	(11/40)	-	25 available	N/A
H960-CA *H960-CB*	Standard PDP-11 cabinet. 72 inches high. Includes fans, power distribution panel, extension feet, and front bezel panels.	UNIBUS 11's	CAB	-	-	N/A

Option No. *(ital-230v)*	Description	Prerequisite	Mounting Code	Bus Loads	Amps @+5v	System Software
H967-KC *H967-KD*	Short PDP-11 cabinet, 50 inches high. Includes fans, power distribution panel, extension feet, and front bezel panels.	11/04 11/34 11/40	-	-	-	N/A
H952-HA	Free-standing table.	-	FS	N/A	N/A	N/A

SYSTEM UNITS

DD11-A OBSOLETE	Peripheral mounting panel. Includes UNIBUS connector module M920. Accommodates up to 4 small peripheral controllers. Expansion: 4 SPC's.	UNIBUS 11's.	SU	-	-	-
DD11-B	Peripheral mounting panel. Includes UNIBUS connector module M920. Accommodates up to 4 small peripheral controllers or 2 DF11's with DL11's and 2 small peripheral controllers. Expansion: 4 SPC's.	UNIBUS 11's	SU	-	-	-
DD11-C 11/04 11/34 ONLY	Backpanel mounting unit. Accommodates 2 Hex and 2 Quad SPC modules.	-	SU	-	-	-
DD11-D	Backpanel mounting unit. Accommodates 7 Hex and 2 Quad SPC modules.	11/04 11/34	2SU	-	-	-
BB11	Blank mounting panel for custom interface design and mounting system units.	UNIBUS 11's	SU	-	-	-

UNIBUS EXTENSION HARDWARE

DB11-A	UNIBUS repeater. Allows an additional 18 unit loads and an additional 50 ft. (15.2m) of UNIBUS to be added.	UNIBUS 11's	SU	2	2.2	
BC11A-02	2 ft. UNIBUS cable (0.6m)	UNIBUS 11's	-	-	-	-
BC11A-05	5 ft. UNIBUS cable (1.5m)	UNIBUS 11's	-	-	-	-
BC11A-8F	8½ ft. UNIBUS cable (2.6m)	UNIBUS 11's	-	-	-	-
BC11A-10	10 ft. UNIBUS cable (3m)	UNIBUS 11's	-	-	-	-
BC11A-15	15 ft. UNIBUS cable (4.5m)	UNIBUS 11's	-	-	-	-
BC11A-25	25 ft. UNIBUS cable (7.6m)	UNIBUS 11's	-	-	-	-

SOFTWARE PRODUCTS

The PDP-11 software products listed here are furnished under a license for use on a single computer system and can be copied (with the inclusion of DIGITAL's copyright notice) only for use in such system, except as may otherwise be provided in writing by DIGITAL.

The option numbers listed here refer to the binary software package for the product. In some cases source modules are distributed in addition to, or in lieu of, the binary modules as part of the software product. In most cases, where sources are available, they are licensed separately and require the execution of a source license agreement in addition to a license to use the binary software package.

For a complete description of any of the PDP-11 software products listed here (including a detailed statement of any included software support and training, optional software maintenance, and any available source or listing options, order number, and prices) refer to the DIGITAL Software Product Description for that software product.

Information for software products is given under the following headings:

Option Number

An option number, similar to hardware products, is used to identify and order the software product. Note that all software option numbers begin with the letter Q.

Distribution Medium

In many instances, the software product is available on more than one physical distribution medium. (The license fee in all cases includes the cost of the medium itself). The second letter after the dash in the option number identifies the distribution medium. Each software product is available only on those media specifically listed for that product.

B - Paper tape
C - DECtape
D - Magtape (9-track)
E - DECpack (RK05 disk cartridge)
N - DECcassette
P - Magtape (9-track, TU16)
Y - Floppy disk

Description

A summary description of the software product.

Software Support Category

The software product includes, in the license fee, at minimum, the service specified for the category indicated.

A - On-site installation, and one year Software Performance Reporting (SPR) Service, remedial service within the first 90 days.
B - One year SPR Service.
C - All services, if available, at a fee.

For a complete description of the included and optional software support and services for a product, refer to the appropriate Software Product Description.

SINGLE USER SYSTEMS

PTS-11

DESCRIPTION: PTS-11 (Paper Tape System-11) is a comprehensive collection of stand-alone programs which provide an efficient environment for the development of PDP-11 software. PTS-11 can be utilized from either a low-speed or high-speed paper tape reader.

SOFTWARE COMPONENTS: ED-11 editor, PAL-11A absolute assembler, PAL-11S relocatable assembler, LINK-11S linker, absolute loader, ODT-11 debugging tool, and IOX device independent I/O executive.

MINIMUM HARDWARE: PDP-11, 16K byte memory, terminal with paper tape I/O.

PREREQUISITE SOFTWARE: None

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QJ100-AB	paper tape	PTS-11 Paper Tape System	B

FOCAL/PTS

DESCRIPTION: FOCAL/PTS is an easy-to-learn, interactive computer language ideal for scientists and students who need simplicity as well as power. It allows calculations to be performed immediately in response to a user command; or the stringing of commands to form a program. Double precision arithmetic is supported.

SOFTWARE COMPONENTS: FOCAL/PTS language processor

MINIMUM HARWARE: PDP-11, 8K byte memory, terminal with paper tape I/O.

PREREQUISITE SOFTWARE: None

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QJ006-AB	paper tape	FOCAL/PTS Language Processor	B

BASIC/PTS

DESCRIPTION: BASIC/PTS is a single user Dartmouth standard BASIC processor, implemented as an incremental compiler to provide exceptional execution speed while retaining the interactive nature of BASIC. Features include optional string capability, a "CALL" statement for easy interface of assembly language routines.

SOFTWARE COMPONENTS: BASIC/PTS language processor.

MINIMUM HARDWARE: PDP-11, 16K byte memory, terminal with paper tape I/O.

PREREQUISITE SOFTWARE: None

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QJ900-AB	paper tape	BASIC/PTS Language Processor	B

LA-11

DESCRIPTION: LA-11 (Laboratory Applications-11Library) is a package of application software modules specifically designed to solve most lab automation problems. The module library encompasses most application needs from data aquisition, data display and manipulation, through file storage and retrieval.

SOFTWARE COMPONENTS: SPARTA stand-alone signal processing package, a library of MACRO-callable subroutines. All sources are included with the LA-11 binaries.

MINIMUM HARDWARE: PDP-11, 32K bytes of memory, console terminal; plus TC11 dual DECtape system, dual drive RK11 DECpack disk system, or dual drive diskette system.

PREREQUISITE SOFTWARE: RT-11 (QJ003)

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QJ940-AE	DECpack	LA-11 Library	B
QJ940-AC	DECtape		B
QJ940-AN	DECcassette		B
QJ940-AY	Floppy disk		B

CASSETTE BASED SOFTWARE

CAPS-11

DESCRIPTION: CAPS-11 (Casssette Programming System) is a system using magnetic tape DECcassettes as a file structured medium. The system supplies a true operating system environment at prices lower than high-speed paper-tape systems.

SOFTWARE COMPONENTS: Monitor, relocating assembler, linker, editor, debugging tool, and PIP file utility program.

MINIMUM HARDWARE: PDP/11 (except 11/03), 16K byte memory, console terminal, and TA11 dual DECcassette.

PREREQUISITE SOFTWARE: None

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QJ180-AN	DECcassette	CAPS-11 Programming System	B

BASIC/CAPS

DESCRIPTION: BASIC/CAPS is a single user Dartmouth standard BASIC language processor utilized from DECcassettes. It is an extension of BASIC/PTS, including all BASIC/PTS features with chaining capability and standard DECcassette file support.

SOFTWARE COMPONENTS: BASIC/CAPS language processor

MINIMUM HARDWARE: PDP-11, 16K byte memory, console terminal, and TA11 dual DECcassette system.

PREREQUISITE SOFTWARE: CAPS-11 (QJ180)

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QJ910-AN	DECcassette	BASIC/CAPS Language Processor	B

SMALL REAL/TIME DISK BASED OPERATING SYSTEMS

RT-11

DESCRIPTION: RT-11 is a high-performance Foreground/Background (F/B) operating system designed for the single user involved in program development and/or real-time applications. It is small, fast, easy-to-use, learn, and modify. Two responsive, interactive monitors are provided, a Foregound/Background monitor, and an even smaller single-job monitor.

SOFTWARE COMPONENTS: F/B monitor, single-job monitor, editor, MACRO assembler, linker, librarian, debugging tool, and PIP utility program.

MINIMUM HARDWARE: PDP-11, 16K byte memory (32K byte memory for F/B), and console terminal; plus TC11 dual DECtape system; or RK11 DECpack disk system; or RX11 floppy disk system; or RP11 disk pack system; or RJS03/RJS04; or RF11 fixed head disk system. (Most disk systems require a separate distribution/loading meduim device as well.)

PREREQUISITE SOFTWARE: None

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QJ003-AB	Paper Tape	RT-11 Operating System	A
QJ003-AC	DECtape		A
QJ003-AE	DECpack		A
QJ003-AN	DECcassette		A
QJ003-AY	Floppy Disk		A

FORTRAN/RT-11

DESCRIPTION: FORTRAN/RT-11 is an extended superset of the ANSI standard FORTRAN IV language. Its features include: fast compile time, optimized output for fast execution, very efficient code generation,and direct access I/O. The compiler and run time system can be effectively utilized in a minimum of only 16K bytes of memory.

SOFTWARE COMPONENTS: FORTRAN/RT-11 Compiler and Run-Time System.

MINIMUM HARDWARE: Any RT-11 system with 16K bytes of memory (32K bytes of memory for strings, LPS-11, or GT44 support).

PREREQUISITE SOFTWARE: RT-11 (QJ003)

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QJ925-AB	Paper Tape	FORTRAN/RT-11	B
QJ925-AC	DECtape		B
QJ925-AE	DECpack		B
QJ925-AN	DECcassette		B
QJ925-AY	Floppy Disk		B

RT-11 FORTRAN & EXTENSIONS

DESCRIPTION: This software includes RT-11 FORTRAN (QJ925) plus real-time support for A/D and D/A converters, digital I/O, graphics processors and terminals, and a symbolic FORTRAN debugger.

SOFTWARE COMPONENTS: RT-11 FORTRAN compiler and run-time system, laboratory and graphics subroutine library, and FORTRAN debugger.

MINIMUM HARDWARE: Any RT-11 system with 32K bytes of memory.

PREREQUISITE SOFTWARE: RT-11 (QJ003) V2B or later.

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QJ980-AC	DECtape	RT-11 FORTRAN	B
QJ980-AD	Magtape	& Extensions	B
QJ980-AE	DECpack		B
QJ980-AY	Floppy Disk		B

SSP-11 SCIENTIFIC SUBROUTINE PACKAGE

DESCRIPTION: The Scientific Package is a collection of over one hundred FORTRAN IV subroutines which provide the user with a large cross-section of those mathematical and statistical routines commonly required in scientific programming.

SOFTWARE COMPONENTS: FORTRAN-callable subroutines supplied in source form.

MINIMUM HARDWARE: Any RT-11 FORTRAN IV configuration with peripherals matching one of the distribution media listed below.

PREREQUISITE SOFTWARE: RT-11 (QJ003) and FORTRAN/RT (QJ925) (QJ980).

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QJ960-AC	DECtape	SSP-11	B
QJ960-AE	DECpack	Scientific	B
QJ960-AN	DECcassette	Subroutine	B
QJ960-AY	Floppy Disk	Package	B

BASIC/RT-11

DESCRIPTION: BASIC/RT-11 is a single-user Dartmouth standard BASIC language processor implemented as an incremental compiler.

SOFTWARE COMPONENTS: BASIC/RT-11 language processor.

MINIMUM HARDWARE: Any RT-11 system with 16K bytes of memory (32K bytes of memory for strings).

PREREQUISITE SOFTWARE: RT-11 (QJ003)

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QJ920-AB	Paper Tape	BASIC/RT-11 Language	B
QJ920-AC	DECtape	Processor	B
QJ920-AE	DECpack		B
QJ920-AN	DECcassette		B
QJ920-AY	Floppy Disk		B

RT-11 BASIC & EXTENSIONS

DESCRIPTION: This software includes RT-11 BASIC plus BASIC calls to support A/D and D/A converters, digital I/O, graphics processors and terminals.

SOFTWARE COMPONENTS: RT-11 BASIC language processor plus real-time and graphics calls.

MINIMUM HARDWARE: Any RT-11 system with 32 bytes of memory and appropriate graphics or real-time device.

PREREQUISITE SOFTWARE: RT-11 (QJ003) V2B or later.

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QJ830-AC	DECtape	RT-11 BASIC	B
QJ830-AD	Magtape	& Extensions	B
QJ830-AE	DECpack		B
QJ830-AY	Floppy disk		B

FOCAL/RT-11

DESCRIPTION: FOCAL/RT-11 is an extension to FOCAL/PTS. Simple, yet powerful, FOCAL/RT-11 supplies the extensions of RT-11 file support for programs and data. Also included is support for double precision (17 decimal digits) and calls to drive A/D and D/A converters, digital I/O, graphics processors and terminals.

SOFTWARE COMPONENTS: FOCAL/RT-11 Language Processor with calls for laboratory and graphics options

MINIMUM HARDWARE: Any RT-11 system with 16K bytes of memory (32K bytes of memory for double precision) real-time or graphics support).

PREREQUISITE SOFTWARE: RT-11 (QJ003) V2B or later, V2C or later for 11/03 systems.

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QJ922-AC	DECtape	FOCAL/RT-11	B
QJ922-AE	DECpack		B
QJ922-AN	DECcassette		B
QJ922-AY	Floppy Disk		B

REMOTE-11

DESCRIPTION: REMOTE-11 is an RT-11 based network which supports up to 8 satellites. A satellite has the ability to do program development, down-line loading of real-time software, and data transfers to and from the host.

SOFTWARE COMPONENTS: Multi-user editor, network processor, virtual terminal handler, down-line loader, RT-11 simulator, and all sources.

MINIMUM HARDWARE: Host PDP-11, 32K byte memory, and console terminal; dual drive floppy disk system, 1 asynchronous line interface and null modem per satellite. Satellite for program development only. Any ASCII compatible terminal with an asynchronous line interface is sufficient; For expansion to down-line loading, any PDP-11 with 16K bytes of memory, an asynchronous line interface, and a bootstrap is also required.

PREREQUISITE SOFTWARE: RT-11 (QJ003) V2B or later.

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QJ945-AC	DECtape	REMOTE-11	B
QJ945-AE	DECpack		B
QJ945-AY	Floppy Disk		B

MULTI-USER SYSTEMS

RSX-11D

DESCRIPTION: RSX-11D is a real-time disk based multi-programming system for the PDP-11/34, 11/40, 11/45, 11/55 and 11/70 processors, utilizing hardware memory management and protection. Installed tasks, running concurrently at one of 250 software priority levels, are event driven and dynamically scheduled. A background BATCH capability and FORTRAN compiler and object-time system are included.

SOFTWARE COMPONENTS: Executive, MACRO assembler, line editor, task builder (linker and overlay builder), debugging tool, PIP file utility program, file exchange program, FORTRAN compiler and object-time system.

MINIMUM HARDWARE: PDP-11/34 or larger with EIS, memory management, 96K bytes of memory, clock, bootstrap loader, and console terminal; plus RK11 DECpack system with TM11 magtape or TC11 DECtape or an additional RK05 DECpack drive; or plus RP11, RPR11, or RJP04 disk pack with TMB11 or TJU16 magnetic tape.

PREREQUISITE SOFTWARE: None

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QJ580-AD	magtape (9-tr)	RSX-11D Operating	A
QJ580-AE	DECpack	System (including FORTRAN)	A

RSX-11M

DESCRIPTION: RSX-11M is a real-time disk-based operating system that provides event-driven multi-programming operation. Up to ten concurrent tasks may be run in 32K bytes of memory, with a greater number in larger configurations. Foreground/background capability is available with at least 48K bytes of memory. RSX-11M is a program and file compatible subset of RSX-11D. An ANSI standard FORTRAN IV compiler and run-time system is included.

SOFTWARE COMPONENTS: Executive, MACRO assembler, task builder (linker and overlay builder), editor, on-line debugger, librarian, PIP file utility program; file verification, dump, and exchange programs; FORTRAN IV compiler and run-time system.

MINIMUM HARDWARE: PDP-11 (except LSI-11 and 11/03), 32K byte memory (48K byte for tape distribution), clock, bootstrap loader, and console terminal; plus RK11 DECpack disk system with TA11 DECcassette, or TC11 DECtape, or additional RK05 DECpack disk drive, or RX-11 floppy disk, or TMB11, or TJU16 magnetic tape; or RP11, RJP04, RJP05, or RJP06 disk pack with TMB11 or TJU16 magnetic tape.

PREREQUISITE SOFTWARE: None

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QJ620-AC	DECtape & DECpack	RSX-11M Operating System	A
QJ620-AE	DECpack	(including FORTRAN IV)	A
QJ620-AN	DECcassette & DECpack		A

RSX-11S

DESCRIPTION: RSX-11S is a memory based real-time operating system designed to operate in a PDP-11 processor with a minimum of 16K bytes of memory. The system is not dependent upon any mass storage media for execution. It provides a run-time environment for execution of tasks on a memory based processor with a modest complement of peripherals. RSX-11S is based on the RSX-11M version 2 disk based operating system and is fully subset compatible with it.

SOFTWARE COMPONENTS: Monitor Console Routine (RSX-11M Subset), On-Line Task Loader, System Image Preservation Program, File Control Services (FCS) for record devices.

MINIMUM HARDWARE: PDP-11 Processor with 16K bytes of memory, real time clock, bootstrap loader, and one of the following load devices:

RX11	Floppy Disk
TA11	Tape Cassette
PC11	Paper Tape Reader/Punch
TC11	DECtape
TM11	Magtape
TJU16	Magtape

PREREQUISITE SOFTWARE: RSX-11S requires an RSX-11M Version 2 (or later) operating system for host support and system generation.

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QJ640-AC	DECtape	RSX-11S Operating	A
QJ640-AD	magtape (9-tr)	System	A
QJ640-AE	DECpack		A
QJ640-AN	DECcasssette		A

MULTI-FUNCTIONAL SYSTEMS

IAS

DESCRIPTION: IAS (Interactive Appplication System) is a multi-function, multi-language operating system capable of supporting timesharing, real-time and batch programming concurrently. It supports up to 16 interactive terminals and versions of BASIC, FORTRAN, COBOL, MACRO assembler, and DBMS-11. It utilizes shared, re-entrant tasking, inter-task communication, and sophisticated scheduling/swapping to service real-time, time sharing, and batch tasks in a multiprogramming mode.

SOFTWARE COMPONENTS: Executive, MACRO assembler, editor, task builder (linker and overlay builder), debugging tool, file utilities, and text output utility (RUNOFF).

MINIMUM HARDWARE: PDP-11/45 or larger, with memory management, 128K byte memory, clock, bootstrap loader, console terminal, and one of the following disk systems: RP04, RP11, or RK11 (with three RK05 drives), with either TJU16 or TMB11 magnetic tape or RK11 DECpack.

PREREQUISITE SOFTWARE: None

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QR300-AD	magtape (TU10/16)	IAS with MACRO	A
QR300-AE	DECpack		A

LANGUAGES AND UTILITIES FOR MULTI-USER SYSTEMS

BASIC-II/IAS-RSX

DESCRIPTION: BASIC II is a timeshared BASIC implemented as an incremental compiler and compatible with the PDP-11 BASIC language processors for BASIC/PTS, BASIC/CAPS, and BASIC/RT-11. Features include strings, chaining, overlay support, virtual memory (direct access) files, real-time support and a "CALL" statement for assembly language routine interfacing.

SOFTWARE COMPONENTS: BASIC language processor

MINIMUM HARDWARE: Any valid IAS, RSX-11D, or RSX-11M configuration.

PREREQUISITE SOFTWARE: IAS (QR300), RSX-11D (QJ580), or RSX-11M (QJ620)

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QP240-AD	magtape (9-tr)	BASIC Language Processor	B
QP240-AE	DECpack		B

PDP-11 BASIC-PLUS-2

DESCRIPTION: BASIC-PLUS-2 is a superset of the RSTS/E BASIC-PLUS, BASIC-II/IAS-RSX, and Dartmouth BASIC languages. It includes CALL statements, COM or COMMON Statements, record I/O, and interactive debugging.

SOFTWARE COMPONENTS: BASIC-PLUS-2 compiler and run-time systems.

MINIUMUM HARDWARE: Any valid RSTS/E configuration with at least 96K bytes of memory.

PREREQUISITE SOFTWARE: RSTS/E (QR430)

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QJ916-AD	magnetic tape (9-tr)	PDP-11 BASIC-PLUS-2	A
QJ916-AE	DECpack		A

FORTRAN IV

DESCRIPTION: FORTRAN IV is an extended superset of the ANSI FORTRAN IV language. Its features include: fast compile time, optimized output for fast execution, very efficient code generation, direct access I/O, and plotting (LV11) support, and graphics support (VT11).

SOFTWARE COMPONENTS: FORTRAN IV compiler and run-time System

MINIMUM HARDWARE: Any valid IAS, RSTS/E, RSX-11D, or RSX-11M configuration.

PREREQUISITE SOFTWARE: IAS (QR300), RSTS/E (RQ430), RSX-11D (QJ580), or RSX-11M (QJ620).

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QP230-AD	magtape (9-tr)	FORTRAN IV	B
QP230-AE	DECpack		B

FORTRAN IV-PLUS

DESCRIPTION: FORTRAN IV-PLUS is an optimizing FORTRAN compiler designed to achieve maximum execution speed. It is a superset of ANSI standard FORTRAN and features a virtual memory compilation technique that allows large FORTRAN programs to be compiled in a relatively small user partition.

SOFTWARE COMPONENTS: FORTRAN IV-PLUS compiler and run-time system.

MINIMUM HARDWARE: Any valid IAS, RSX-11D, or RSX-11M configuration with floating point processor.

PREREQUISITE SOFTWARE: IAS (QR300), RSX-11D (QJ580), or RSX-11M (QJ620).

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QP100-AD	magtape (9-tr)	FORTRAN IV-PLUS	A
QP100-AE	DECpack		A

PDP-11 COBOL

DESCRIPTION: PDP-11 COBOL-11 is a precise, well-defined language processor for business data processing. It is an entry level compiler that conforms to the 1974 ANSI specification.

SOFTWARE COMPONENTS: COBOL compiler and run-time system, report generator, sort, and reformat utility programs.

MINIMUM HARDWARE: Any RSX-11D, RSTS/E, or IAS configuration that includes an LP11 series line printer and which is capable of supporting a minimum COBOL partition of 40K bytes.

PREREQUISITE SOFTWARE: RSX-11D(QJ580), IAS (QR300), or RSTS/E (QR430).

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QP010-AD	magtape (9-tr)	COBOL-11	A
QP010-AE	DECpack		A

RMS-11K

DESCRIPTION: RMS-11K provides keyed access record management services for RSTS/E, RSX-11M, and IAS operating systems with RMS-11 record management systems. RMS-11K is comprised of a set of run-time service routines and utility programs that enable keyed access data files to be defined, populated, updated, and maintained on direct access storage devices. The RMS-11K run-time service routines provide an interface between PDP-11 multi-programmed operating systems and user developed applications programs. Requires BASIC-PLUS-2, COBOL, or MACRO-11 as a language processor.

SOFTWARE COMPONENTS: RMS-11K run-time service routines and utilities.

MINIMUM HARDWARE: Any valid RSTS/E, RSX-11M, or IAS configuration with memory management that meets the minimum memory requirement for the operating system and optional language processors (PDP-11 BASIC-PLUS-2, PDP-11 COBOL) plus an additional 8K bytes (overlaid) or 24K bytes (not overlaid) for RMS-11K.

PREREQUISITE SOFTWARE: RSTS/E (QR430) with either PDP-11 BASIC-PLUS-2 (QJ916), or PDP-11 COBOL (QP010); or RSX-11M (QJ620); or IAS (QR300).

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QP900-AC	DECtape	RMS-11K for RSTS/E	A
QP900-AD	magnetic tape (9-tr)		A
QP900-AE	DECpack		A
QP901-AC	DECtape	RMS-11K for RSX-11M	A
QP901-AD	magnetic tape (9-tr)		A
QP901-AE	DECpack		A
QP902-AD	magnetic tape (9-tr)	RMS-11K for IAS	A
QP902-AE	DECpack		A

DBMS-11

DESCRIPTION: DBMS-11 is an implementation of the 1973 and 1975 CODASYL Data Base Language Specifications. It is designed to provide data base management facilities for PDP-11 COBOL programs and any other host language which supports a CALL Statement such as FORTRAN IV/ IAS-RSX, FORTRAN IV-PLUS, BASIC-II/IAS-RSX, and MACRO-11. DBMS-11 provides separate language facilities for the description of data and the manipulation of data. This separation of data description provides for the integration of all data and data relations into a data base which is common to all applications programs sharing the data.

SOFTWARE COMPONENTS: Data Definition Language (DDL), Data Manipulation Language (DML), and Utilities.

MINIMUM HARDWARE: Any valid IAS configuration with at least 256K bytes of memory, line printer, magnetic tape subsystem, and sufficient mass storage for the database.

PREREQUISITE SOFTWARE: IAS (QR300)

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QP375-AD	magnetic tape (9-tr)	DBMS-11	A

MULTI-USER TIME-SHARED OPERATING SYSTEM

RSTS/E

DESCRIPTION: RSTS/E (Resource Sharing Time-Sharing System/Extended) provides versatile and rapid system access for up to 63 simultaneous users, through BASIC-PLUS, BASIC-PLUS-2, COBOL, FORTRAN IV, and RPG-II. BASIC-PLUS is an extended version of Dartmouth BASIC, and combines with the RSTS/E monitor and utility programs to provide full interactive computing services for multiple user. BASIC -PLUS-2, COBOL, FORTRAN IV, and RPG-II are options which may be purchased to run under RSTS/E.

SOFTWARE COMPONENTS: Monitor, utility routines, and BASIC-PLUS language processor.

MINIMUM HARDWARE: PDP-11/34 or larger with EIS and memory management, 96K bytes of parity memory, clock, bootstrap loader, and console terminal; plus RK11 DECpack system with 2 RK05 drives or RK11 DECpack system (includes 1 RK05) plus RJS03 or RJS04 fixed head disk system; or RP11 or RPR11 or RJP04 disk pack systems and TC11 DECtape system or TM11, or TJU16 magnetic tape system.

PREREQUISITE SOFTWARE: None

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QR430-AC	DECtape	RSTS/E Operating System with BASIC-PLUS	A
QR430-AD	magtape (9-tr)		A
QR430-AE	DECpack		A

MUMPS-11

DESCRIPTION: MUMPS-11 is a multi-user interpretive system supporting a high level language with string processing and hierarchical file structure. The system is optimized for data base management functions, including random retrieval of string oriented data from files.

SOFTWARE COMPONENTS: MUMPS-11 monitor, language processor, file processor, and system generation software.

MINIMUM HARDWARE: PDP-11/34, 48K bytes of memory, console terminal, bootstrap loader, RK11 or RP03 disk, TM11 magnetic tape or a TC11 dual-drive DECtape. Dual RK11 drives are also acceptable for minimum mass storage requirements.

PREREQUISITE SOFTWARE: None

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QJ820-AC	DECtape		A
QJ820-AD	magtape(9-tr)		A
QJ820-AF	magtape(7-tr)		A

COMMUNICATIONS SOFTWARE

DECnet

DESCRIPTION: DECnet is the set of software products which extend and are integrated into major DIGITAL operating systems so that they may be interconnected to form computer networks. The common atributes of these systems are real-time inter-program communication and inter-system resource sharing (shared devices, files, programs, and data). DECnet is available as an enhancement to the following PDP-11 operating systems: RSX-11S,M, and D.
These operating systems require different minimum hardware configurations and differing amounts of memory space for DECnet software. This is because they include different subsets of DECnet features appropriate to the operating system capabilities and applications of each.

OPTION NUMBER	DISTRIBUTION MEDIUM	DESCRIPTION	SUPPORT CATEGORY
QJ690-AD	magtape (9-tr)	DECnet-11S	B
QJ690-AE	DECcassette		
QJ690-AF	magtape (7-tr)		
QJ680-AD	magtape (9-tr)	DECnet-11M	B
QJ680-AE	DECcassette		
QJ680-AF	magtape (7-tr)		
QP680-AD	magtape (9-tr)	DECnet-11D	B
QP680-AE	DECcassette		
QP680-AF	magtape (7-tr)		

INSERT for PRICES & INDEX, August 1976

PRICE

The purchase price of the option is in U.S. dollars, FOB DIGITAL plant, and applies only in the continental United States. Federal, state, and local taxes are not included. All prices and specifications are subject to change without notice.

LICENSE FEE

The license fee for the software product on a single computer system, in U.S. dollars. Included are the binaries (and/or sources) on the specified medium, services, and documentation as specified in the DIGITAL Software Product Description for the option, and the documentation.

DISC

yes = discountable under Quantity Discount Agreement (QDA)
no = no discount

FIELD SERVICE MAINTENANCE

The monthly price for a standard, 1-shift maintenance contract on the option. This provides complete maintenance coverage for the standard (8-hr) business day, 5 days per week. It includes all parts and labor required for system maintenance, plus regularly scheduled preventive maintenance and installation of engineering improvements.

FIELD SERVICE INSTALLATION

The price for field installation and checkout testing of the option as an add-on to existing equipment.

NOTE: (*) means to contact DIGITAL for prices.

Option Number	Price($)	Disc	Field Maint	Serv Instl	Page
11/03-EA(EB)	1,995	yes	37	-	4
11/03-FA(FB)	2,425	yes	37	-	4
11L03-CA(CD)	16,105	yes	157	-	18
11L03-DA(DD)	17,750	yes	192	-	18
11L03-HA(HD)	16,248	yes	163	-	18
11L03-JA(JD)	17,893	yes	198	-	18
11V03-AA(AD)	10,450	yes	110	-	4
11V03-EA(ED)	10,450	yes	110	-	4
11/04-DM(DN)	7,695	yes	77	-	5
11/04-HM(HN)	8,195	yes	66	-	5
11/34-DM(DN)	11,190	yes	82	-	5
11/34-HM(HN)	11,190	yes	71	-	5
11/34-LM(LN)	13,690	yes	118	-	5
11F34-AA(AB)	18,570	yes	137	-	6
11F34-BA(BB)	18,570	yes	126	-	6
11L34-EA(EB)	22,005	yes	146	-	18
11L34-FA(FB)	22,505	yes	146	-	19
11L34-HA(HB)	24,520	yes	180	-	19
11L34-JA(JB)	25,020	yes	180	-	19
11L34-KA(KB)	36,650	yes	310	-	19
11L34-LA(LB)	37,650	yes	310	-	19
11L34-MA(MB)	39,530	yes	301	-	20
11L34-NA(NB)	40,530	yes	301	-	20
11L34-PA(PB)	47,215	yes	379	-	20
11L34-RA(RB)	48,215	yes	379	-	20
11T34-AA(AB)	30,900	yes	263	-	6
11T34-BA(BB)	30,900	yes	241	-	6
11T34-MC(MD)	30,900	yes	278	-	6
11T34-PA(PB)	30,900	yes	256	-	6
11/40-BK(BL)	17,800	yes	120	-	8
11/40-BS(BT)	20,650	yes	147	-	8
11T40-AA(AD)	37,375	yes	293	-	8
11/45-BW(BY)	37,975	yes	243	-	9
11/45-DW(DY)	37,975	yes	244	-	9
11/55-BA(BB)	48,000	yes	360	-	9
11/55-BC(BD)	42,000	yes	302	-	9
11T55-BA(BB)	67,000	yes	510	-	9
11T55-BC(BD)	61,000	yes	452	-	9

Option Number	Price($)	Disc	Field Maint	Serv Instl	Page
11/70-VA(VD)	60,000	yes	247	-	11
11/70-VE(VJ)	74,900	yes	317	-	11
11/70-WA(WD)	78,300	yes	383	-	11
11/70-YA(YD)	126,175	yes	657	-	11
11/70-YE(YJ)	135,175	yes	657	-	11
11B70-BA(BD)	178,035	yes	773	-	12
11/77-YA(YD)	229,350	yes	1,144	-	12
11/77-YE(YJ)	238,350	yes	1,144	-	12
959-A	15	yes	-	-	41
959-B	16	yes	-	-	41
AA11-K	1,150	yes	7	40	16
AA11-KT	1,378	yes	7	65	17
AAV11-A	900	yes	10	95	16
AD11-K	2,200	yes	33	140	16
ADK11-KT	3,100	yes	49	165	16
ADV11-A	1,000	yes	9	95	16
AM11-K	1,150	yes	15	125	16
AR11	1,650	yes	20	135	17
AR11-KT	1,885	yes	20	160	17
BA11-KE(KF)	2,200	yes	16	90	44
BA11-ME(MF)	950	yes	7	50	44
BB11	170	yes	-	50	45
BC04R-12	28	yes	-	-	41
BC05D-10	85	yes	-	-	41
BC05D-25	120	yes	-	-	41
BC11A-02	115	yes	-	-	45
BC11A-05	130	yes	-	-	45
BC11A-8F	145	yes	-	-	45
BC11A-10	160	yes	-	-	45
BC11A-15	175	yes	-	-	45
BC11A-25	200	yes	-	-	45
BC40H-IJ	110	yes	-	15	29
BC40K-IJ	110	yes	-	15	29
BM792-YC	550	yes	3	50	15
BM873-YC	880	yes	3	90	15
BN50A	65	yes	-	75	44

Option Number	Price($)	Disc	Field Maint	Serv Instl	Page
CD11-A(B)	12,650	no	74	240	42
CD11-EA(EB)	17,500	no	95	300	42
CM11-FA(FB)	6,270	no	53	250	42
CR11(-A)	5,610	no	53	240	42
DB11-A	1,400	yes	5	75	45
DC08-CM	275	yes	2	25	39
DC08-CS	2,530	yes	4	25	39
DC08-D	1,320	yes	2	120	40
DC08-EB	2,530	yes	2	120	40
DD11-A	300	yes	-	50	45
DD11-B	300	yes	-	50	45
DD11-C	300	yes	-	50	45
DD11-D	600	yes	-	50	45
DF11-A	300	yes	5	50	40
DF11-BA	585	yes	11	75	41
DF11-BB	630	yes	11	75	41
DF11-F	190	yes	5	50	40
DF11-G	1,550	yes	5	50	40
DF11-K	245	yes	5	50	40
DFC11-A	275	yes	4	105	37
DH11-AA(AC)	4,700	yes	32	175	36
DH11-AB	4,500	yes	29	175	39
DH11-AD	6,000	yes	56	340	36
DH11-AE	5,200	yes	46	285	36
DJ11-AA	3,960	yes	32	175	35
DJ11-AB	3,650	yes	27	150	39
DJ11-AC	3,750	yes	32	175	35
DL11-E	655	yes	6	60	35
DL11-WA	700	yes	5	120	35
DL11-WB	700	yes	5	120	35
DLV11	235	yes	5	100	16
DM11-BB	1,500	yes	19	80	37
DM11-DA	220	yes	5	40	37
DM11-DB	585	yes	5	40	37
DM11-DC	1,020	yes	11	40	37
DMC11-AL	1,375	yes	13	140	37
DMC11-AR	1,375	yes	13	140	38
DMC11-DA	770	yes	6	100	38
DMC11-MA	770	yes	6	100	38
DMC11-MD	770	yes	6	100	38
DN11-AA	470	yes	5	70	40
DN11-DA	580	yes	5	70	40
DQ11-AB	1,430	yes	12	90	39
DQ11-BB	990	yes	12	77	39
DQ11-DA	3,245	yes	24	142	38
DQ11-EA	4,950	yes	25	152	38
DQ11-KA	220	yes	1	50	38
DR11-B	1,470	yes	13	125	34
DR11-C	490	yes	5	60	34
DR11-K	700	yes	5	65	17,34
DR11-KT	1,000	yes	5	85	17
DRV11	195	yes	5	100	16
DRV11-B	550	yes	8	100	16
DU11-DA	1,045	yes	5	103	37
DUP11-DA	1,375	yes	9	190	37
DV11-AA	4,400	yes	29	240	39
DV11-BA	3,410	yes	15	120	39
DZ11-A	2,100	yes	25	150	35
DZ11-B	1,550	yes	21	125	35
DZ11-C	2,100	yes	25	150	36
DZ11-D	1,550	yes	21	125	36
DZ11-E	3,400	yes	46	250	36
DZ11-F	3,400	yes	46	250	36
FP11-AU	4,400	yes	21	180	7
FP11-B	6,000	yes	45	100	9
FP11-C	5,900	yes	30	180	9
GM11-NA(NB)	55,900	no	366	-	22
GM11-PA(PB)	65,850	no	450	-	22
GM11-RA(RB)	9,950	no	84	-	23
GT43-AA(AB)	23,000	yes	152	-	23
GT43-AH(AJ)	24,450	yes	171	-	23
GT46-CA(CB)	41,500	yes	310	-	23
GT46-MA(MB)	40,500	yes	310	-	23
GT62-EA(EB)	51,000	yes	336	-	23
GT62-FA(FB)	52,450	yes	355	-	23
H1501	35	yes	-	-	27
H312-A	95	yes	2	50	40
H313-A	300	no	5	25	40
H316-A(B)	1,200	yes	3	50	39
H322	165	yes	-	25	17,34
H323-B	220	yes	1	5	17,34
H722	100	yes	-	-	43
H744	395	yes	-	-	44
H8030	6	yes	-	-	28
H952-HA	275	yes	-	-	45
H960-CA(CB)	935	yes	-	-	44
H960-DH(DJ)	3,300	yes	16	100	44
H964-FA(FB)	915	yes	3	62	28
H967-KC(KD)	825	yes	-	-	45
IAC-IA	350	yes	4	60	27
IAC-IB	370	yes	5	60	27
IAD-IA	1,600	yes	24	175	25
ICJ-IA	25	yes			29
ICR11-AA(AB)	4,515	yes	41	229	25
ICS11-MA(MB)	2,550	yes	15	248	25
IDA-OA	895	yes	12	145	26
IDC-IA	320	yes	3	40	26
IDC-IB	360	yes	4	40	26
IDC-IC	290	yes	8	40	27
IDC-ID	190	yes	2	40	27
IDC-IE	225	yes	3	40	27
IDC-OA	230	yes	3	40	28
IDC-OB	330	yes	3	40	28
IMX-IA	1,485	yes	12	114	26
IRL-OA	660	yes	3	40	28
IRL-OB	595	yes	3	40	28
ISH-IA	55	yes		15	26
KE11-B	1,650	yes	18	125	7,8
KE11-E	1,600	yes	11	75	8
KE11-F	1,600	yes	11	50	8
KEV11	175	yes		30	4
KG11-A	1,045	yes	6	60	41
KJ11-A	660	yes	5	50	8
KT11-D	2,850	yes	21	100	8
KW11-K	900	yes	16	90	16
KW11-L	350	yes	3	50	15
KW11-P	700	yes	6	50	15
KWV11-A	600	yes	5	95	16
KY11-LB	600	yes		95	7
LA11-PA(PD)	3,585	yes		55	42
LA35-CE(CJ)	2,150	yes	25	95	43
LA36-CE(CJ)	2,350	yes	25	95	43
LAXX-KG	60	yes		75	44
LK11-A	1,100	yes	9	70	24
LK40-A	900	yes	6	75	24
LP11-RA(RB)	34,965	no	154	250	42
LP11-SA(SB)	39,000	no	154	250	42
LP11-VA(VD)	11,235	no	72	220	42
LP11-WA(WD)	13,375	no	72	220	42
LV11-BA(BB)	13,650	no	95	225	42
M405	120	yes	*	*	41
M7850	800	yes		95	7
M9301-YA	800	yes	3	90	15
M9301-YB	800	yes	3	90	15
M9301-YD	800	yes	3	120	15
MF11-U	4,900	yes	32	125	10
MF11-UP	6,300	yes	27	175	10
MF11-UR	8,000	yes	54	325	10
MF11-US	15,000	yes	108	650	10
MF11-WP	7,400	yes	32	125	10
MJ11-BA(BB)	17,700	yes	70	190	13
MJ11-BC(BD)	52,850	yes	250	235	13
MJ11-BG(BH)	50.700	yes	250	190	13
MJ11-BE	11,000	yes	60	165	13
MM11-CP	2,000	yes	22	120	7
MM11-DP	3,100	yes	25	120	7

Option Number	Price($)	Disc	Field Maint	Serv Instl	Page
MM11-U	4,500	yes	32	125	10
MM11-UP	5,600	yes	27	150	10
MM11-WP	6,000	yes	27	150	10
MMV11-A	895	yes	13	100	4
MRV11-AA	175	yes	*	*	4
MRV11-AC	35	yes	*	*	4
MS11-AP	4,400	yes	25	150	10
MS11-CC	2,100	yes	13	25	10
MS11-FP	1,700	yes	22	120	7
MS11-JP	3,100	yes	36	120	7
MSV11-B	625	yes	13	100	4
NAC-IA	740	yes	4	75	27
NAC-IB	760	yes	5	75	27
NAC-OA	830	yes	4	75	28
NAC-OB	970	yes	5	75	28
NAD-IA	1,710	yes	24	190	25
NCS11-AA(AB)	3,635	yes	18	255	25
NCS11-BA	3,720	yes	18	255	25
NCS11-BB	3,200	yes	18	255	25
NDA-OA	1,005	yes	12	160	26
NDC-IA	430	yes	3	55	26
NDC-IB	470	yes	4	55	26
NDC-IC	400	yes	8	55	27
NDC-ID	300	yes	2	55	27
NDC-IE	335	yes	3	55	27
NDC-OA	340	yes	2	55	28
NDC-OB	440	yes	3	55	28
NMX-IA	1,598	yes	12	129	26
NRL-OA	770	yes	3	55	28
NRL-OB	705	yes	3	55	28
PC11(-A)	4,600	yes	38	380	43
PDL11-DA(DB)	29,500	yes	179	-	22
PDL11-EA(EB)	38,800	yes	281	-	22
PK11-AA(AB)	33,905	yes	247	-	20
PK11-BA(BB)	34,905	yes	247	-	21
PK11-CA(CB)	44,575	yes	374	-	21
PK11-DA(DB)	45,575	yes	374	-	21
REV11-A	300	yes		45	15
REV11-C	300	yes		45	15
RJP04-AA(AB)	35,000	no	220	1,040	31
RJP05-AA(AB)	39,000	no	220	1,040	31
RJP06-AA(AB)	44,000	no	220	1,040	31
RJS03-BA(BD)	14,900	yes	75	500	30
RJS04-BA(BD)	19,200	yes	85	685	30
RK05F-FA(FB)	6,500	yes	54	364	30
RK05J-AA(BB)	5,100	yes	39	260	30
RK05K-11	99	yes	-	-	30
RK11J-AA(AB)	9,900	yes	81	500	30

Option Number	Price($)	Disc	Field Maint	Serv Instl	Page
RP02-P	295	yes	-	-	31
RP03-AS(BS)	22,750	yes	159	425	31
RP04-AA(AB)	25,900	yes	190	585	31
RP04-BA(BB)	30,800	yes	210	*	13,33
RP04-P	600	yes	-	-	31
RP05-AA(AB)	29,900	yes	190	585	31
RP05-BA(BB)	34,800	yes	210	*	14,33
RP06-AA(AB)	34,900	yes	190	585	32
RP06-BA(BB)	39,800	yes	210	*	14,34
RP06-P	850	yes	-	-	32
RP11-CE(CJ)	36,250	no	233	665	31
RPR02-AM(BM)	9,975	no	145	400	31
RPR11-AA(AB)	20,500	yes	219	640	31
RS03-AA(AD)	9,500	yes	45	230	30
RS04-AA(AD)	13,800	yes	55	230	30
RWP04-AA(AB)	35,000	no	220	1,040	13,33
RWP04-BA(BB)	47,000	no	270	*	13,33
RWP05-AA(AB)	39,000	no	220	1,040	14,33
RWP05-BA(BB)	51,000	no	270	*	14,33
RWP06-AA(AB)	44,000	no	220	1,040	14,33
RWP06-BA(BB)	56,000	no	270	*	14,33
RWS03-BA(BD)	14,900	yes	75	500	13,33
RWS04-BA(BD)	21,200	yes	85	685	13,33
RX11-AA(AD)	3,045	yes	25	251	30
RX11-BA(BD)	4,095	yes	33	251	30
TA11-AA(AB)	3,630	yes	38	180	32
TC11-GA(GB)	12,600	yes	45	300	32
TJU16-EA(ED)	16,275	yes	120	550	32
TMB11-EA(ED)	12,075	yes	101	640	32
TMB11-MA(MB)	6,950	yes	75	425	32
TS03-SA(SB)	3,500	no	50	270	32
TU10W-EE(EJ)	8,400	yes	74	400	32
TU16-EE(EJ)	9,400	yes	60	280	32
TU56	6,600	yes	32	60	32
TWU16-EA(ED)	16,275	yes	120	550	14,34
TWU16-EK(EN)	15,175	yes	110	515	14,34
VS60-AA(AB)	38,800	yes	244	370	24
VS60-KA(KB)	18,000	yes	66	153	24
VT11-AA(AB)	9,995	yes	69	250	24
VT50-AA(AB)	1,300	yes	22	95	43
VT50-HA(HB)	1,575	yes	22	95	43
VT52-AA(AB)	2,095	yes	20	95	43
VT52-AE(AF)	2,095	yes	20	95	43
VT55-EA(EB)	2,495	yes	25	95	43
VT55-EE(EF)	2,495	yes	25	95	43
VT55-FA(FB)	3,995	yes	60	115	44
VT55-FE(FF)	3,995	yes	60	115	44

Option Number	License Fee($)	Disc	Page
QJ003-AB	1,250	yes	49
QJ003-AC	1,250	yes	49
QJ003-AE	1,250	yes	49
QJ003-AN	1,250	yes	49
QJ003-AY	1,250	yes	49
QJ006-AB	330	yes	47
QJ100-AB	110	no	47
QJ180-AN	300	yes	48
QJ580-AD	5,500	yes	52
QJ580-AE	5,500	yes	52
QJ620-AC	3,300	yes	52
QJ620-AE	3,300	yes	52
QJ620-AN	3,300	yes	52
QJ640-AC	1,500	yes	53
QJ640-AD	1,500	yes	53
QJ640-AE	1,500	yes	53
QJ640-AN	1,500	yes	53
QJ680-AD	1,500	yes	57
QJ680-AE	1,500	yes	57
QJ680-AF	1,500	yes	57
QJ690-AD	1,000	yes	57
QJ690-AE	1,000	yes	57
QJ690-AF	1,000	yes	57
QJ820-AC	7,500	yes	56
QJ820-AD	7,500	yes	56
QJ820-AF	7,500	yes	56
QJ830-AC	750	yes	51
QJ830-AD	750	yes	51
QJ830-AE	750	yes	51
QJ830-AY	750	yes	51
QJ900-AB	750	yes	47
QJ910-AN	750	yes	48
QJ916-AD	4,000	yes	54
QJ916-AE	4,000	yes	54
QJ920-AB	750	yes	50
QJ920-AC	750	yes	50
QJ920-AE	750	yes	50
QJ920-AN	750	yes	50
QJ920-AY	750	yes	50
QJ922-AC	330	yes	51
QJ922-AE	330	yes	51
QJ922-AN	330	yes	51
QJ922-AY	330	ves	51

Option Number	License Fee($)	Disc	Page
QJ925-AB	800	yes	49
QJ925-AC	800	yes	49
QJ925-AE	800	yes	49
QJ925-AN	800	yes	49
QJ925-AY	800	yes	49
QJ940-AC	500	yes	48
QJ940-AE	500	yes	48
QJ940-AN	500	yes	48
QJ940-AY	500	yes	48
QJ945-AC	1,000	yes	51
QJ945-AE	1,000	yes	51
QJ945-AY	1,000	yes	51
QJ960-AC	330	yes	50
QJ960-AE	330	yes	50
QJ960-AN	330	yes	50
QJ960-AY	330	yes	50
QJ980-AC	800	yes	50
QJ980-AD	800	yes	50
QJ980-AE	800	yes	50
QJ980-AY	800	yes	50
QP010-AD	7,000	yes	55
QP010-AE	7,000	yes	55
QP100-AD	3,000	yes	55
QP100-AE	3,000	yes	55
QP230-AD	800	yes	54
QP230-AE	800	yes	54
QP240-AD	750	yes	54
QP240-AE	750	yes	54
QP375-AD	15,000	yes	56
QP680-AD	2,500	yes	57
QP680-AE	2,500	yes	57
QP680-AF	2,500	yes	57
QP900-AC	2,500	yes	55
QP900-AD	2,500	yes	55
QP900-AE	2,500	yes	55
QP901-AC	2,500	yes	55
QP901-AD	2,500	yes	55
QP901-AE	2,500	yes	55
QP902-AD	2,500	yes	55
QP902-AE	2,500	yes	55
QR300-AD	7,800	yes	53
QR300-AE	7,800	yes	53
QR430-AC	5,500	yes	56
QR430-AD	5,500	yes	56
QR430-AE	5,500	yes	56

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