
Chapter 1. Overview of the 7581 Computer

The IBM 7581 Computer is designed for an extended product life in an environment of constantly advancing technology. It is engineered for flexibility, growth, and upgradability. The chassis and covers can be used with different configurations. The following are some of the highlights of the computer:

- It accommodates several different microprocessors.
- It can house a variety of standard-width drives (one diskette drive and four IDE drives).
- It has features for data security and power management.

This book describes the 7581 Computer that has a passive backplane. It can be set up as a desktop, floor-standing, or rack-mounting system. It uses a passive backplane with 11 expansion slots for adapters. Two other slots are used for I/O connectors and the SBC.

The passive backplane configuration has:

- One slot for the single-board computer (SBC)
- Three full-length ISA slots
- Five PCI slots (one full-length)
- Three full-length shared slots; each slot can support either an ISA or PCI adapter

Note: An additional half-length ISA slot can be configured. However, this slot is used for the USB connectors and to make room for memory in bank 1. Using this slot prevents memory from being installed in bank 1 and limits you to one USB connector, which must be relocated to the alternative location (see Figure 1-3 on page 1-3).

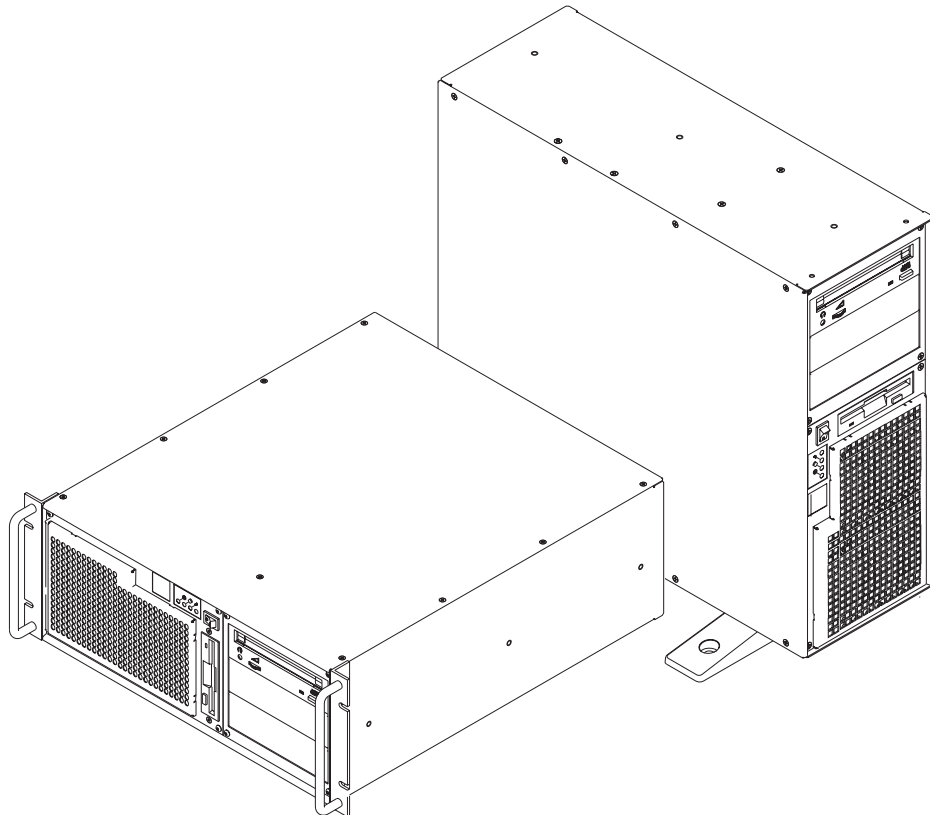


Figure 1-1. IBM 7581 Computer

General Layout of Components

Figure 1-2 and Figure 1-3 on page 1-3 show the location of the major components in the system unit. The actual options and adapters for a specific configuration may be different than the ones listed; however, the general layout is the same for all configurations,

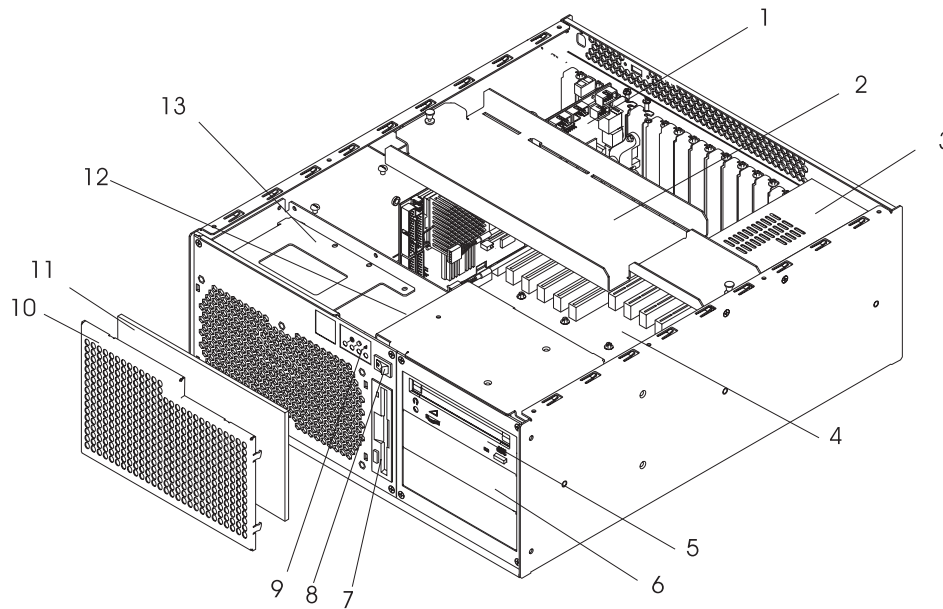


Figure 1-2. General Component Layout 1

- 1 SBC
- 2 Card hold-down bracket
- 3 Power supply
- 4 Backplane
- 5 CD-ROM drive
- 6 Drive cage
- 7 1.44 MB diskette drive
- 8 On/Off switch
- 9 Status light-emitting diodes (LEDs)
- 10 Filter grill
- 11 Filter
- 12 Fan-fail indicators (optional)
- 13 Alternative drive bay

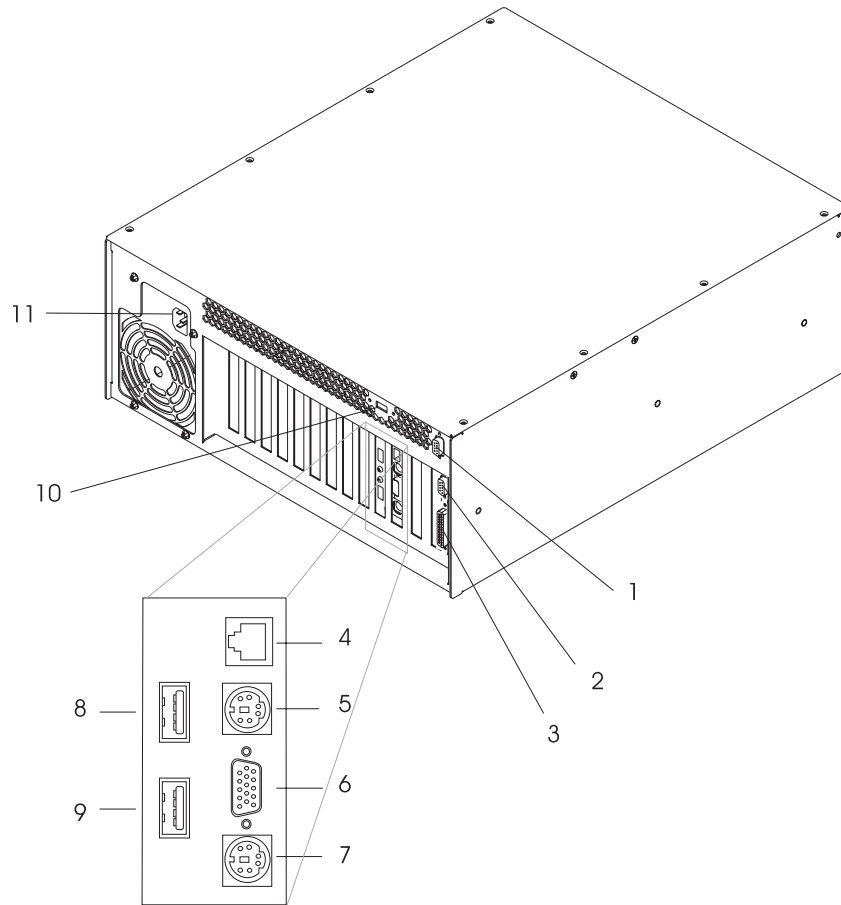


Figure 1-3. General Component Layout 2

- 1** Serial port B connector
- 2** Serial port A connector
- 3** Parallel port connector
- 4** 10 BaseT/100 BaseTx Ethernet port
- 5** Keyboard connector
- 6** Video connector
- 7** Mouse connector
- 8** USB port 2 connector
- 9** USB port 1 connector
- 10** Alternative USB connector
- 11** Power input connector

Specifications

The physical specifications are as follows. For more exact system-unit dimensions, see Appendix B, “Physical Dimensions.”

- Width: 432 millimeters (17.0 inches)
- Depth: 498 millimeters (19.6 inches)
- Height: 177 millimeters (7.0 inches)
- Weight: 20.0 kilograms (44.0 pounds)
(the actual weight depends on the installed options)

Power Supply

- 330 Watts Output—ac input only; the voltage range is selected automatically. Acceptable inputs are:
 - 100 to 127 (nominal) V ac; 50/60 Hz; 8.0 Amps (maximum)
 - 200 to 240 (nominal) V ac; 50/60 Hz; 4.0 Amps (maximum)

The following are the maximum total loading allowed for adapters and additional drives. The measurements assume one hard drive and one CD-ROM drive are currently installed.

+3.3 V dc	20.0 Amps	<i>See note.</i>
+5 V dc	20.0 Amps	<i>See note.</i>
+5 V (aux)	0.50 Amps	
+12 V dc	5.75 Amps	
–5 V dc	0.40 Amps	
–12 V dc	0.50 Amps	

Note: Maximum total power for 3.3 V dc and 5.0 V dc combined is 117 Watts.

Heat Output

The estimated heat output for the system unit with a 330-Watt power supply is 500 Watts (1700 BTU/hour).

Environment

- Ambient temperature
 - Operating: 0° to 50°C (32° to 122°F)
 - Non-Operating: 0° to 60°C (32° to 140°F)
 - Shipping: –40° to 60°C (–40° to 140°F)
- Relative humidity
 - Operating: 5% to 95%

Agency and Standards Compliance

- Equipment Approvals and Certifications
 - UL 1950, 3rd Edition (CSA certified)
 - CSA22.2 No. 950-M95 (CSA certified)
 - VDE or TUV (EN 60950/IEC 950; 2nd Edition)
 - FCC Class A
 - VCCI Class A
 - CISPR 22 Class A
 - CE Mark Class A (EN 55022)
 - AS/NZS 3548 Class A
 - Korea MIC Notice No. 1996-78
- European Standards Compliance
 - Safety (IEC 950, EN 60950)
 - Shock while operating (IEC 68-2-27)
 - 30 G, 1/2 sine wave for 3 milliseconds duration
 - Vibration (IEC 68-2-6)
 - 5 to 500 Hz random at 0.27 G RMS
 - Electromagnetic compatibility

Conducted immunity	ENV 50141, Level 3	
Radiated electromagnetic susceptibility	ENV 50140, Level 3	10 V/m
Power line harmonics	EN 61000-3-2	
Flicker	EN 61000-3-3	
Electrostatic discharge	EN 61000-4-2	4 kV contact 8 kV air-gap
Electrical fast transients	EN 61000-4-4, Level 3	
Power frequency magnetic field immunity	EN 61000-4-8, Level 4	

