Scanner Specifications

Scanner type:	Sheet-fed image scanner, monochrome
Photoelectric device:	CCD line sensor

Maximum document size:	216 mm by 356 mm (8.5 inches by 14 inches) US legal size
Minimum document size:	55 mm by 90 mm (2.2 inches by 3.5 inches) business card (with the attachable card guide)
Document capacity:	10 sheets standard paper (60 g/m² to 90 g/m²) 5 sheets for thermal paper (thickness 0.05 mm) 7 sheets for checks (thickness 0.16 mm) 3 sheets for business cards (thickness 0.1 mm to 0.23 mm) with the attachable card guide
Scanning speed:	4 ppm (A4 or letter, 300 dpi BW)
Optical resolution:	300 dpi
Output resolution:	50 dpi to 600 dpi
Output mode:	Error diffusion: 3 modes Dither: 4 resident modes and one user-defined mode
A/D converter:	8 bits
Image sensor:	CCD
Grayscale levels:	256 levels
Scaling:	50% to 200%
Text enhancement:	Background elimination technology
Brightness:	7 levels
Contrast:	256 levels
Gamma correction:	5 resident tables (linear, analog monitor, 3 printers) User-defined table
sharpness:	5 levels
Interface:	Bidirectional parallel or SCSI
Light source:	White fluorescent lamp
Reliability:	Main unit: MCBF 50,000 pages Lamp life: 2000 hours
Dimensions and weight:	Width: 300 mm (11.8 inches) Depth: 210 mm (8.3 inches) Height: 66 mm (2.6 inches) Weight: approx. 2.9 kg (6.3 lb)
Paper feed:	Input: face down output: face down

Electrical Specifications

100 V-120 V model

Rated voltage:	AC 100 V to 120 V
Input voltage range:	AC 90 V to 132 V
Rated frequency:	50 Hz to 60 Hz
Input frequency :	49.5 Hz to 60.5 Hz
Power consumption:	Approx. 35W

Safety and EMI

100 V–120 V model:

Safety regulation:	UL 1950, CSA 22.2 No. 950
EMI:	FCC 15B Class B CSA 108.8 Class B

Paper

Size:	Maximum:	216 mm by 356 mm (8.5 inches by 14 inches)
	Minimum:	76 mm by 127 mm (3 inches by 5 inches)
		55 mm by 90 mm (2.2 inches by 3.5 inches) with the attachable card guide
Paper quality:	High-quality bond or thermal paper	
Paper type:	Plain paper or standard bond paper (60 g/m² to 90 g/m²) Thermal paper (thickness 0.05 mm) Check (thickness 0.16 mm) Business card (thickness 0.1 mm to 0.23 mm)	
Paper condition:	Temperature:	5° C to 35° C (40° F to 95° F)
	Humidity:	40% to 85%, no condensation

Environmental Conditions

Temperature:	Operation: 5° C to 35" C (40° F to 95° F) Storage: -25" C to 60" C (–13° F to 140° F)
Humidity:	Operation: 10% to 80%, without condensation Storage: 10% to 85%, without condensation
Operating conditions:	Ordinary office or home conditions Extremely dusty environments should be avoided Operation under direct sunlight or near a strong light source should be avoided

Parallel Interface Specifications

Interface type:	Bidirectional parallel interface
Data format:	8-bit parallel
Synchronization:	By external strobe pulse
Handshaking:	By $\overline{\text{ACKNLG}}$ and BUSY signals
Logic level:	Input/output data and interface control signals are TTL level compatible
Connector type:	36-pin Centronics® type connector

Connector pin arrangement:
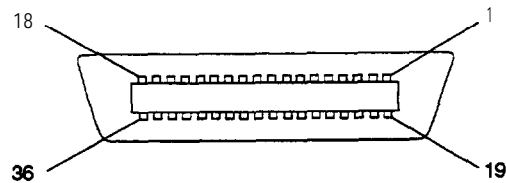
Signal pin assignments

| Pin No.	Return pin	Signal	Direction	Function
1	19	STROBE	IN/(OUT)	STROBE pulse to read in or sand out data. Pulse width must be more than 0.5 microseconds at the receiving terminal.
2	20	DATA0	IN/OUT	These signals represent information of bits 1 to 8, respectively. Each signal is at a high level when data is logical 1 and low when it is logical 0.
3	21	DATA1	IN/OUT	
4	22	DATA2	IN/OUT	
5	23	DATA3	IN/OUT	
6	2 4	DATA4	IN/OUT	
7	25	DATA5	IN/OUT	
8	26	DATA6	IN/OUT	
9	27	DATA7	IN/OUT	
10	28	ACKNLG	OUT/(IN)	About a 12-microsecond pulse. Low indicates that data has been received and that the scanner is ready to accept more data.
11	29	BUSY	OUT/(IN)	When this signal is high, the scanner cannot receive data. The signal is high: 1) during data entry 2) during scanning 3) when the scanner is not ready 4) when the scanner has an error
1 2 - 1 5	—	NC	—	Not used
16	—	GND	—	Logical ground level
17	—	C-GND	—	Scanner chassis ground
18	—	NC	—	Not used
19–30	—	—	—	Twisted pair return signal ground level
31	—	INIT	IN	When this signal level becomes low. the scanner is reset to the state when power is turned on. This level is usually High. The pulse width must be more than 50 microseconds at the receiving terminal
32	—	NC	—	Not used
33	—	GND	—	Twisted pair return signal ground level
34–35	—	NC	—	Not used
36	—	DIR	IN	Low indicates the direction is input.

❏ "Return pin" denotes the twisted-pair return, to be connected at signal ground level. For interface wiring be sure to use a twisted-pair cable for each signal, and to complete the connection on the return side. These cables should be shielded and the ground connected to the chassis of the host computer and the scanner.

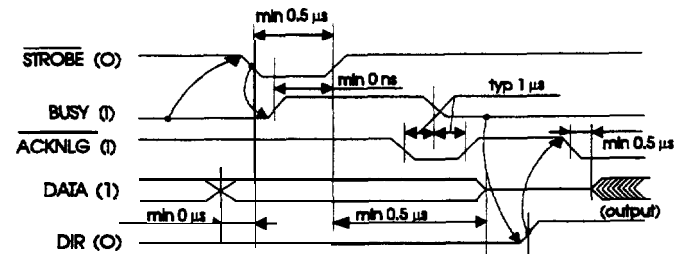❏ All interface conditions are based on TTL level.

Timing charts

The figures below show the timing for the bidirectional parallel interface as viewed from the scanner.

OUT (from scanner to computer):
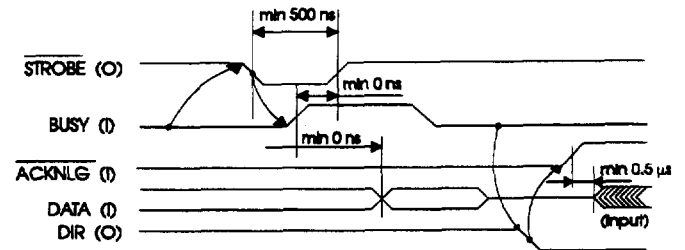
IN (from computer to scanner):

SCSI Interface Specifications

Interface type:	ANSI X3.131-1986 standard
Function:	The following functions are included:

BUS FREE phase
ARBITRATION phase
SELECTION/RESELECTION phase
COMMAND phase
(Logical Unit number is fixed to 0 and command link function is not supported)
DATA phase
Data in phase
Data out phase
STATUS phase
MESSAGE phase
MESSAGE IN phase
MESSAGE OUT phase
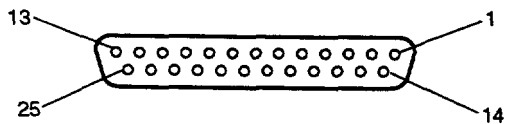ATTENTION condition
RESET condition

Logic level: TTL level compatible

Electrical standard: As per ANSI X3.131-1986 standard

ID setting — Selectable from 0 to 7 with push buttons (8 should not be selected; 9 selects the GT-6500 or ES-600C emulation mode)

Connector type: 25-pin D-SUB connector

Signal pin assignments

In this table, the direction of the signals is given relative to the scanner.

No.	Signal	I/O	Description
1	REQ	O	Request
2	MSG	O	Message
3	I/O	O	Input/Output
4	RST	I	Reset
5	ACK	I	Acknowledge
6	BSY	I/O	Busy
7	GND	—	Ground
8	DB0	I/O	Data bus 0
9	GND	—	Ground
10	DB3	I/O	Data bus 3
11	DB5	I/O	Data bus 5
12	DB6	I/O	Data bus 6
13	DB7	I/O	Data bus 7
14	GND	—	Ground
15	C/D	O	Control/Data
16	GND	—	Ground
17	ATN	I	Attention
18	GND	—	Ground
19	SEL	I/O	Select
20	DBP	I/O	Data bus parity
21	DB1	I/O	Data bus 1
22	DB2	I/O	Data bus 2
23	DB4	I/O	Data bus 4
24	GND	—	Ground
25	TERMPWR	—	Termination power (+5V)

Initialization

The scanner can be initialized (returned to a fixed set of conditions) in the following ways.

Hardware initialization:

❏ When the power is turned on.

❏ When the scanner receives an $\overline{\text{INIT}}$ signal at the parallel interface (pin 31 goes low).

❏ When the scanner receives a SCSI Reset signal at the SCSI interface.

Software initialization:

❏ When the software command ESC @ (initialize the scanner) is received.

❏ When the SCSI Bus Device Message is received.

Problems and Solutions

The problems you may have while using the scanner often involve the operation of your software and computer. Problems fall in the following major categories:

❏ Incorrect setup of the interface

❏ Inappropriate selection of the scanner functions

❏ Incorrect setup of your computer or software

❏ Incorrect operation of your software

❏ Incorrect loading of documents.

Also see the documentation that came with your software and computer for possible solutions.

Indicator lights

If an error occurs, the scanner stops operating and the **Ready** and **Error lights** show the type of error.

Error type	Ready	Error
Command error	on	on
Interface error	Off	Flashing
Fatal error	Flashing	flashing

Command error

The scanner has received incorrect commands from your scanning software. When this error occurs, retry the scanning operation. The scanner returns to normal operation when it receives correct commands. Normally you do not need to **reset the** scanner, which is done by turning the scanner off and then on.

> ⚠ *Caution:*
> *Whenever you turn off the scanner, wait at least 10 seconds before turning it back on. Rapidly turning it on and off can damage the scanner.*

Interface error

The scanner may not be properly connected to the computer.

Check the interface connections. Then turn the scanner off and back on to reset it.

The interrupt settings or the port addresses for the interface board may not be set correctly or may conflict with other installed expansion boards.

Fatal error

This error indicates one of the following problems:

❑ The fluorescent lamp needs to be replaced.

❑ Paper is jammed in the document feeder.

❑ There is no document in the document feeder or the document was not loaded correctly.

❑ The software may not be set up properly.

Check to see if the fluorescent lamp is on. If not, the lamp may need to be replaced. Contact your dealer or a.qualified service person for assistance.

Turn off the scanner and remove any paper that may be jammed in the document feeder. If the scanner still does not operate properly, or if this error occurs repeatedly, consult your dealer.

Make sure the document is loaded correctly in the document feeder, and then resume scanning.

Check to see that your software is installed correctly. Also make sure you have selected the correct device driver for the scanner. See your software manual for details.

Note:
To clear a fatal error, you will need to reset the scanner by turning it off and then on.

Scanner Bundled Kit

The bundled kit for the scanner includes the following:

ES-300GS-PC	**ES-300GS-MAC**
ES-3OOGS Personal Document Station	ES-300GS Personal Document Station
Bidirectional parallel interface card	SCSI interface cable
Attachable card guide	Attachable card guide
Parallel interface cable	ℓ•Paper™ Document
Xerox® Desktop Document Management Suite" for Microsoft@ Windows""	Management & Archival Suite

Information Reference List

Engineering Change Notices

None

Product Support Bulletins

None

Technical Support Bulletins

None

Related Documentation

TM-ES3COGS	ES-3OOGS Service Manual
PL-ES3OOGS	ES-3OOGS Parts Price List
4003693	ES-3OOGS User's Guide
CPD2766 4/95	**Getting Started (PC)**
CPD3392 3/96	Getting **Started (Mac)**