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**85-050 I/O COUNTER TABLE  
SAMPLE FOR 5211**

I/O COUNTER TABLE FOR LINE PRINTER

DATE CREATED 00/00/00  
NONRESETTABLE LINE COUNT 25634

DATE LAST RESET 00/00/00  
RESETTABLE LINE COUNT 25634

**85-100 ERROR COUNTER TABLE  
SAMPLE FOR 5211**

ERROR COUNTER TABLE FOR LINE PRINTER

DATE LAST RESET 00/00/00  
DESCRIPTION MAP

PRINTER CONTROLLER UNIT CHECKS .	0	85-101	8501
DATA TRANSFER CHECKS .....	0	85-103	8501
FIRE TIER CHECKS .....	0	85-105	8503
PRINT SUBSCAN EMITTER CHECKS ...	0	85-107	8503
ANY HAMMER ON CHECKS .....	0	85-109	8507
HAMMER ECHO CHECKS .....	0	85-111	8507
BELT SYNC CHECKS .....	30	85-113	8503
BELT SPEED CHECKS .....	0	85-115	8503
TEMP. BELT UP TO SPEED CHECKS ..	0	85-117	8503
PERM. BELT UP TO SPEED CHECKS ..	0	85-117	8503
PRINTER BUSY TOO OFTEN CHECKS ..	0	85-119	8509
PRINTER BUSY TOO LONG CHECKS ...	0	85-121	8509
CARRIAGE CHECK 1 .....	15	85-125	8505
CARRIAGE CHECK 2 .....	0	85-123	8505
FORMS JAM CHECKS .....	43	85-129	8505
RIBBON CHECKS .....	0	85-131	8509
DATA PARITY CHECKS .....	0	85-133	8511
CABLE INTERLOCK CHECKS .....	0	85-135	8511
PRINTER POWER CHECKS .....	0	85-137	8501

### **85-101 Printer Controller Unit Check**

Printer controller unit checks are either caused by a hardware error or a program loop time-out.

### **85-103 Data Transfer Check**

Byte transfer count did not match. While moving data from the system to the printer controller, a byte was lost or an extra byte was sensed.

### **85-105 Fire Tier Check**

Either the 'fire tier' lines were not in a valid condition during 'not print time' or the lines were not in correct sequence during print optioning.

### **85-107 Print Subscan Emitter Check**

An expected transition in the PSS (print subscan) emitter failed to occur.

### **85-109 Any Hammer On Check**

The 'hammer echo return' interface line goes active during 'not print time'.

### **85-111 Hammer Echo Check**

If a hammer-on-echo condition is sensed when the hammer should be off or a hammer-on-echo condition is not sensed when a hammer should be on. The first failing hammer position and the number of additional failing hammer positions are logged in the error history table (status bytes 4 and 5).

### **85-113 Belt Sync Check**

The 'home' pulse occurred when not expected or the 'home' pulse did not occur when expected. For example, a belt sync check is sensed if a 48-character belt is installed but a 64-character belt is needed.

### **85-115 Belt Speed Check**

The 'belt up to speed' interface line goes not active while the 'belt go' interface line is active.

### **85-117 Belt Up To Speed Check (Temporary/Permanent)**

The time between the 'belt go' signal and 'belt up to speed' signal was more than 2.8 seconds. Each error is logged. However, the printer comes to a stop after the second retry.

### **85-119 Printer Busy Too Often Check**

The 'printer busy' signal became active more than three times during the printing of a line.

### **85-121 Printer Busy Too Long Check**

The 'printer busy' signal was active for more than 3 seconds during a print operation.

### **85-123 Carriage Check 2 (Speed)**

A carriage single space operation did not complete inside 34 milliseconds. This error only logs in ERAP if it occurs three times on a single printed page.

### **85-125 Carriage Check 1 (Sync)**

Indicates one of two conditions:

- A 'carriage motion feedback' pulse failed to occur when expected, or
- A 'carriage motion feedback' pulse occurred when not expected.

### **85-129 Forms Jam Check**

The 'forms pulse' interface line has not been sensed in the last 12 lines of carriage motion for six lines per inch or in the last 16 lines of carriage motion for eight lines per inch.

### **85-131 Ribbon Check**

The interface line 'ribbon check' becomes active if the ribbon is not moving or both ribbon reverse switches are made active during the time that the ribbon should be moving.

**85-133 Data Parity Check**

The data parity check indicates that the printer unit has sensed even parity on the hammer address bus out during print time. This check is also known as the hammer bus out parity check.

**85-135 Cable Interlock Check**

A cable interlock check condition is recorded when any interface cable or the cable to the printer operator control panel is not connected correctly.

**85-137 Printer Power Check**

This counter indicates how many times the printer lost power.

**85-200 ERROR HISTORY TABLE  
SAMPLE FOR 5211**

ERROR HISTORY TABLE FOR LINE PRINTER						DATE	TIME
STATUS BYTES						YY/MM/DD	HH:MM:SS
..... HEX .....						77/04/13	11:13:06
02	00	00	10	00	00	77/04/13	00:00:09
02	00	00	10	00	00	77/04/13	

  

85-201 Printer Status Byte 0

85-203 Printer Status Byte 1

85-205 Printer Status Byte 2

85-207 Printer Status Byte 3

85-209 Printer Status Byte 4

85-211 Printer Status Byte 5

**85-201 Status Byte 0 (With Unit Check On)**

When a controller unit check (byte 0, bit 0 is on) occurs, status bytes 1 through 5 are all zeros and bits 1 through 7 of byte 0 have the following meanings:

Bit	Meaning
0	Must be on for bits 1 through 7 to have the following meanings. If this bit is off, see paragraph 85-202.
1	Not used
2,3	Both off = time-out error, either or both on = hardware parity check
4	Not used
5,6	Card jumper status bits. Bit on = no jumper installed, bit off = jumper is in place 00 = Test Level (New cards come with both speed jumpers on.) 01 = 300 lines per minute 10 = Not used 11 = 160 lines per minute
7	CE switches sense bit. Bit on = one or more switches is on

**85-202 Status Byte 0 (With Unit Check Off)**

When byte 0 bit 0 is not on, the status bytes have the following bit meanings:

Bit	Meaning	Priority (Note 1)	MAP (Note 2)
0	Controller unit check (If this bit is on, see paragraph 85-201.)	2	8501
1	Unprintable character	16	----
2	Hammer echo check	9	8507
3	Not ready	28	----
4	Belt sync check	13	8503
5	Belt speed check	15	8503
6	Belt up to speed check	14	8503
7	Any hammer on check	5	8507

**85-203 Status Byte 1**

Bit	Meaning	Priority (Note 1)	MAP (Note 2)
0	End of forms	22	----
1	Forms jam check	11	8505
2	Throat open	23	----
3	Printer busy too often check	24	8509
4	Printer busy too long check	25	8509
5	Ribbon check	26	8509
6	Cable interlock check	3	8511
7	Data parity check (hammer bus out parity)	27	8511

**85-205 Status Byte 2**

Bit	Meaning	Priority (Note 1)	MAP (Note 2)
0	Printer not powered up	7	----
1	Data transfer check	17	8501
2	Data stream reject	19	----
3	Spare		
4	Invalid SCS parameter	21	----
5	Invalid SCS command	20	----
6	Invalid IOB	18	----
7	Printer power check	4	8501

**Notes:**

- If more than one error is indicated, find the cause of the highest priority (lowest numbers) first.
- When no MAP number is indicated, the bit meaning is either:
  - Self-explanatory (throat open or end of forms)
  - Information for the user (8 lines per inch or speed = 300 lines per minute)
  - A program error (invalid IOB, invalid SCS parameter or invalid SCS command)

**85-207 Status Byte 3**

Bit	Meaning	Priority (Note 1)	MAP (Note 2)
0	CE switch on	6	----
1	8 lines per inch selected		----
2,3	Printer speed 00 = 160 lines per minute 01 = 300 lines per minute		----
4	Fire tier check	8	8503
5	Print subscan emitter check	12	8503
6	Carriage check 2 (speed check)	10	8505
7	Carriage check 1 (sync check)	10	8505

**Notes:**

1. If more than one error is indicated, find the cause of the highest priority (lowest numbers) first.
2. When no MAP number is indicated, the bit meaning is either:
  - a. Self-explanatory (throat open or end of forms)
  - b. Information for the user (8 lines per inch or speed = 300 lines per minute)
  - c. A program error (invalid IOB, invalid SCS parameter or invalid SCS command)

**85-209 Status Byte 4**

If a hammer echo check (byte 0, bit 2) is on, status byte 4 contains the number (in hexadecimal) of the first failing hammer. Status byte 4 has the highest test priority.

**85-211 Status Byte 5**

This byte contains the total number (in hexadecimal) of failing hammers when a hammer echo check is sensed.

**85-300 PRINTER CONSOLE ERROR LIGHTS  
DECODE FOR 5211**

Check	Console Lights			Check Condition
	Interlock	Forms	Ready	
1	0	0	0	Printer check
1	0	1	0	Carriage check
0	1	0	0	Throat or belt cover open
0	0	1	0	End of forms
0	0	0	0	Not ready
0	0	0	1	If printer error is indicated on the system console, program check

Note: The only console light that remains on is the Ready light. The other lights flash.

**85-400 PRINTER ERROR RECOVERY  
PROCEDURES FOR 5211**

See the *IBM System/34 Operator's Guide, SC21-5158* or the *5211 Printer Models 1 and 2 Component Description and Operator's Guide, GA24-3658*, or both.

**85-550 I/O COUNTER TABLE  
SAMPLE FOR 3262**

I/O COUNTER TABLE FOR LINE PRINTER

DATE CREATED	00/00/00
NONRESETTABLE LINE COUNT	25634
DATE LAST RESET	00/00/00
RESETTABLE LINE COUNT	25634

**85-600 ERROR COUNTER TABLE  
SAMPLE FOR 3262**

ERROR COUNTER TABLE FOR LINE PRINTER                      DATE LAST RESET 00/00/00  
DESCRIPTION MAP

PRINTER CONTROLLER UNIT CHECKS . . . . .	55	85-601	8551
DATA TRANSFER CHECKS . . . . .	1	85-603	8551
FIRE TIER CHECKS . . . . .	5	85-605	8553
PRINT SUBSCAN EMITTER CHECKS . . . . .	0	85-607	8553
ANY HAMMER ON CHECKS . . . . .	3	85-609	8557
HAMMER ECHO CHECKS . . . . .	12	85-611	8557
BELT SYNC CHECKS . . . . .	3	86-613	8553
BELT SPEED CHECKS . . . . .	0	85-615	8553
BELT UP TO SPEED CHECKS . . . . .	0	85-617	8553
PRINTER BUSY TOO LONG CHECKS . . . . .	0	85-612	8559
CARRIAGE PEDESTAL CHECKS . . . . .	19	85-622	8555
CARRIAGE CHECK 1 . . . . .	1	85-623	8555
CARRIAGE CHECK 3 . . . . .	0	85-623	8555
CARRIAGE CHECK 4 . . . . .	2	85-625	8555
FORMS JAM CHECKS . . . . .	35	85-629	8555
RIBBON CHECKS . . . . .	3	85-631	8559
DATA PARITY CHECKS . . . . .	24	85-633	8561
CABLE INTERLOCK CHECKS . . . . .	3	85-635	8561
THERMAL CHECK 1 . . . . .	0	85-636	8563
THERMAL CHECK 2 . . . . .	0	85-637	8563
PRINTER NOT POWERED ON . . . . .	3	85-369	8551

**85-601 Printer Controller Unit Check**

Printer controller unit checks are either caused by a hardware error or a program loop time-out.

**85-603 Data Transfer Check**

Byte transfer count did not match. While moving data from the system to the printer controller, a byte was lost or an extra byte was sensed.

**85-605 Fire Tier Check**

Either the 'fire tier' lines were not in a valid condition during 'not print time' or the lines were not in correct sequence during print optioning.

**85-607 Print Subscan Emitter Check**

An expected transition in the PSS (print subscan) emitter failed to occur.

**85-609 Any Hammer On Check**

The 'hammer echo return' interface line goes active during 'not print time'.

**85-611 Hammer Echo Check**

If a hammer-on-echo condition is sensed when the hammer should be off or a hammer-on-echo condition is not sensed when a hammer should be on. The first failing hammer position and the number of additional failing hammer positions are logged in the error history table (status bytes 4 and 5).

**85-613 Belt Sync Check**

The 'home' pulse occurred when not expected or the 'home' pulse did not occur when expected. For example, a belt sync check is sensed if a 48-character belt is installed but a 64-character belt is needed.

**85-615 Belt Speed Check**

The 'belt up to speed' interface line goes not active while the 'belt go' interface line is active.

**85-617 Belt Up To Speed Check**

The belt did not reach running speed in 4.5 seconds after being turned on.

**85-621 Printer Busy Too Long Check**

The 'printer busy' signal was active for more than 3 seconds during a print operation.

**85-622 Carriage Pedestal Check**

This check indicates a short circuit in the carriage pedestal driver was sensed.

**85-623 Carriage Check 1 (Sync)**

This check indicates the third (last) carriage advance pulse after the drop of 'carriage go' was not received by controller in 10 ms ( $\pm 1/2$  ms).

**85-624 Carriage Check 3 (Speed)**

This check indicates that on a carriage skip beyond one line, any five consecutive 'carriage advance' pulses were not received inside of 2.7 ms (+ 0, - .7 ms) to 6.6 ms (+ .6, - 0 ms) while 'carriage go' was active.

**85-625 Carriage Check 4 (Acceleration)**

This check indicates that the first three 'carriage advance' pulses after 'carriage go' was activated were not received in 6.0 ms ( $\pm .3$  ms).

**85-629 Forms Jam Check**

The 'forms pulses' interface line has not been sensed in the last 12 lines of carriage motion for six lines per inch or in the last 16 lines of carriage motion for eight lines per inch.



**85-631 Ribbon Check**

The 'ribbon check' interface line becomes active if the ribbon is not moving or both ribbon reverse switches are made active during the time that the ribbon should be moving.

**85-633 Data Parity Check**

The data parity check indicates that the printer unit has sensed even parity on the hammer address bus out during print time. This check is also known as the hammer bus out parity check.

**85-635 Cable Interlock Check**

A cable interlock check condition is recorded when any interface cable or the cable to the printer operator control panel is not connected correctly.

**85-636 Thermal Check 1**

This check indicates that a thermal switch opened in the printer belt motor, hammer unit blower, or hammer unit.

**85-637 Thermal Check 2**

This check indicates that a thermal switch opened in the printer power supply or that a circuit breaker has been tripped because of over current.

**85-639 Printer Not Powered On**

This counter indicates how many attempts the system made to use the printer but the printer was not powered on.

**85-700 ERROR HISTORY TABLE SAMPLE FOR 3262**

ERROR HISTORY TABLE FOR LINE PRINTER

STATUS BYTES						DATE	TIME
HEX						YY/MM/DD	HH:MM:SS
02	00	00	10	00	00	77/04/13	11:13:06
02	00	00	10	00	00	77/04/13	00:00:09

  

**85-701 Status Byte 0 (With Unit Check On)**

When a controller unit check (byte 0, bit 0 is on) occurs, status bytes 1 through 5 are all zeros and bits 1 through 7 of byte 0 have the following meanings:

Bit	Meaning
0	Must be on for bits 1 through 7 to have the following meanings. (If this bit is off, see paragraph 85-702.)
1	Not used
2,3	Both off = time-out error, either or both on = hardware parity check
4	Not used
5,6	Card jumper status bits. Bit on = no jumper installed, bit off = jumper is in place
00 =	} Jumpers are not correctly placed on adapter card
01 =	
10 =	
11 =	650 lines per minute
7	Not used

**85-702 Status Byte 0 (With Unit Check Off)**

When byte 0 bit 0 is not on, the status bytes have the following bit meanings:

Bit	Meaning	Priority (Note 1)	MAP (Note 2)
0	Controller unit check (If this bit is on, see paragraph 85-701)	2	8551
1	Unprintable character	17	----
2	Hammer echo check	19	8557
3	Not ready	28	----
4,5	Belt check	15	8553
	01 = Belt up to speed check	15	8553
	10 = Belt sync check	14	8553
	11 = Belt speed check	16	8553
6	Thermal check 1	4	8563
7	Any hammer on check	6	8557

**Notes:**

1. If more than one error is indicated, find the cause of the highest priority (lowest numbers) first.
2. When no MAP number is indicated, the bit meaning is either:
  - a. Self-explanatory (throat open or end of forms)
  - b. Information for the user (8 lines per inch or speed = 650 lines per minute)
  - c. A program error (invalid IOB, invalid SCS parameter or invalid SCS command)

**85-703 Status Byte 1**

Bit	Meaning	Priority (Note 1)	MAP (Note 2)
0	End of forms	23	----
1	Forms jam check	12	8555
2	Throat open	24	----
3	Thermal check 2	4	
4	Printer busy too long check	25	8559
5	Ribbon check	26	8559
6	Cable interlock check	3	8561
7	Data parity check (hammer bus out parity)	27	8561

**85-705 Status Byte 2**

Bit	Meaning	Priority (Note 1)	MAP (Note 2)
0	Printer not powered up	5	----
1	Data transfer check	18	8551
2	Data stream reject	20	----
3	Spare		
4	Invalid SCS parameter	22	----
5	Invalid SCS command	21	----
6	Invalid IOB	19	----
7	Carriage Pedestal check	10	8555

**85-707 Status Byte 3**

Bit	Meaning	Priority (Note 1)	MAP (Note 2)
0	CE switch on	7	----
1	8 lines per inch selected		----
2,3	Printer speed 11 = 650 lines per minute		----
4	Fire tier check	8	8553
5	Print subscan emitter check	13	8553
6,7	Carriage check 01 = Carriage check 1 (sync check) 10 = Carriage check 3 (speed check) 11 = Carriage check 4 (acceleration check)	11	8555

**Notes:**

- If more than one error is indicated, find the cause of the highest priority (lowest numbers) first.
- When no MAP number is indicated, the bit meaning is either:
  - Self-explanatory (throat open or end of forms)
  - Information for the user (8 lines per inch or speed = 650 lines per minute)
  - A program error (invalid IOB, invalid SCS parameter or invalid SCS command)

**85-709 Status Byte 4**

If a hammer echo check (byte 0, bit 2) is on, status byte 4 contains the number (in hexadecimal) of the first failing hammer. Status byte 4 has the highest test priority.

**85-711 Status Byte 5**

This byte contains the total number (in hexadecimal) of failing hammers when a hammer echo check is sensed.

**85-800 PRINTER CONSOLE ERROR LIGHTS  
DECODE FOR 3262**

**85-900 PRINTER ERROR RECOVERY  
PROCEDURES FOR 3262**

See the *IBM System/34 Operator's Guide*, SC21-5158.

Check	Console Lights			Check Power Condition	Condition
	Interlock	Forms	Ready		
1	0	0	0	1	Printer check
1	0	1	0	1	Carriage check
0	1	0	0	1	Throat or belt cover open
0	0	1	0	1	End of forms
0	0	0	0	1	Not ready
0	0	0	1	1	If printer error is indicated on the system console, program check
0	0	0	0	0	Power off

Note: The only console light that remains on is the Ready light. The other lights flash.