



***DCC
POCKET
TESTER***

Statistics Packet Format

This document describes the responses from the PRICOM DCC Tester used to retrieve bit, packet, and address statistics.

To request a specific value or set of values, simply send the ASCII character shown for each "Send:" value. No CR or LF is needed, just the single key press. This can be accomplished from inside a program, or using HyperTerminal on the PC, the DCC Tester does not care.

The default baud rate of the DCC Tester 115,200 baud. This is to prevent packet loss when sending Text Decoded Packets. We highly suggest you use the default rate of 115,200 baud in order to not loose packets. The data line format is 8 bits, 2 stop bits, no parity, and no handshaking.

When the DCC Tester sends the data back, it could be delayed by a packet or two depending on the filtering in effect and the rate of packets on the DCC rails.

To help determine the returned values, we have included a unique identifier for each field. The first digit of the identifier is the ASCII command you sent, such as '1'. The second digit of the identifier is the parameter number within the requested statistics. All values for each request are contained in a single line separated by a space and the unique identifier, and ending in a CR/LF pair. A DCC packet will never appear with this single unbroken line.

For example:

```
5A=0003992832 5B=0000000000 5C=0000000000 5D=0000000000 5E=0000000000
```

Since each identifier always occupies 3 characters, the same filtering used to detect DCC packets can be used here as well. Here is an example DCC Speed Packet:

```
ADR=3210 CMD=Speed STP=128 DIR=Fwd SPD=S123
```

Please contact me with any Errors, Omissions, or Comments!

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Type: Query Track Voltage
Send: 'Q' or 'q' (upper or lower case)
Receive:
TV=0000013417 - Current Track Voltage
This measurement is in mV. In this example, a track voltage of 13.417V has been returned.

Type: Bit Statistics
Send: '1'
Receive:
1A=0228376088 - Total Good Bits (good)
1B=0158074560 - One Bit Count (good)
1C=0070301564 - Zero Bit Count (good)
1D=0000000000 - Bits too Short (bad)
1E=0000000000 - Bits too Long (bad)
1F=0000000000 - Bits Between One and Zero (bad)

Type: Preamble and Packet Summary
Send: '2'
Receive:
2A=0000000018 - Current Preamble length in bits
2B=0000000018 - Shortest Preamble length since reset
2C=0000000031 - Longest Preamble length since reset
2D=0000000000 - Number of packets with preamble too short
2E=0003779205 - Total Packet Count
2F=0003779205 - Packet Count with GOOD Check Byte

Type: Packet Timing Statistics
Send: '3'
Receive:
3A=0003613680 - Current Packet Duration Time
3B=0002482080 - Shortest Packet Duration Time
3C=0004392720 - Longest Packet Duration Time
3D=0002908160 - Current Inter-Packet Gap Time
3E=0002908160 - Shortest Inter-Packet Gap Time
3F=0002908160 - Longest Inter-Packet Gap Time
These numbers are represented in 10's of Nanoseconds.
For example 3A is 36.13680mS or 36136.80uS

Type: Packet Length Statistics

Send: `4`

Receive:

4A=0000419970 - Total 2-Byte Packets
4B=0000419968 - Total 3-Byte Packets
4C=0002939784 - Total 4-Byte Packets
4D=0000000000 - Total 5-Byte Packets
4E=0000000000 - Total 6-Byte Packets
4F=0000000000 - Total 7-Byte Packets

Type: Packet Error Statistics

Send: `5`

Receive:

5A=0003779759 - Total Packet Count (good)
5B=0000000000 - Number of Packets with Bad Check Byte
5C=0000000000 - Number of packets with preamble too short
5D=0000000000 - Number of packets that were too short
5E=0000000000 - DCC Tester Ring Overflow Counter

Type: Address Summary Statistics

Send: `6`

Receive:

6A=0003779802 - Total Address Count
6B=0003359824 - Number of Valid Addresses
6C=0000419978 - Number of Idle Packets
6D=0000000000 - Number of Accessory Packets
6E=0000000000 - Number of Broadcast Packets
6F=0000000000 - Number of Unknown Packets
6G=0000000121 - Lowest Mobile Address Received
6H=0000041645 - Highest Mobile Address Received
The values for 6G and 6H have a flag of 0x8000 to indicate a long 4-digit address. In the example above, 6G is short address 121, and 6H is long address 8877 (41645 - 32768 = 8877).

Type: Packet Type Statistics

Send: `7`

Receive:

7A=0003779918 - Total Packet Count

7B=0003359927 - Number of Speed Packets

7C=0000000000 - Number of Function Packets

7D=0000000000 - Number of Analog Packets (playable whistle)

7E=0000000000 - Number of Decoder Reset Packets

7F=0000419991 - Number of Decoder Idle Packets

7G=0000000000 - Number of Stop Packets

Type: Bit Timing Statistics

Send: `8`

Receive:

8A=0000011240 - Current One Bit Time

8B=0000011160 - Shortest One Bit Time

8C=0000011760 - Longest One Bit Time

8D=0000021280 - Current Zero Bit Time

8E=0000021160 - Shortest Zero Bit Time

8F=0000021440 - Longest Zero Bit Time

These numbers are represented in 10's of Nanoseconds.

For example 8A is 112.40uS and 8D is 212.8uS