



### 860 DSPi Macro Results

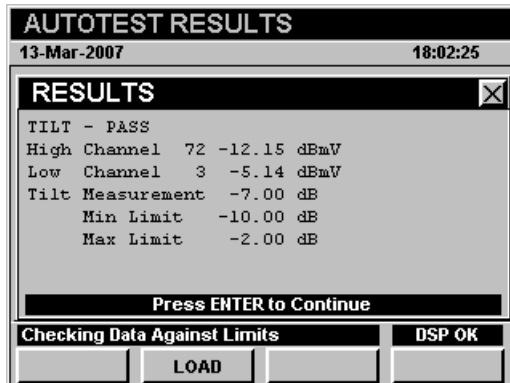
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This is a description of the New Macro Results Data presented in an 860 DSP / 860 DSPi starting in April 2007. It has been slightly re-organized for consistency.

#### TILT Macro Step

Description: The user selects a LO channel and a HI channel in their channel plan and the meter takes the difference of the HI channel measurement minus LO channel measurement and compares it to the limits set forth in the Macro Step

```
TILT - PASS [Could also be FAIL (LOW), FAIL (HIGH), or FAIL (ERROR)]
High Channel 78 -12.15 dBmV
Low Channel 3 -5.14 dBmV
Tilt Measurement -7.00 dB
  Min Limit -10.00 dB
  Max Limit -2.00 dB
```



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## HUM Macro Step

Description: The user selects any channels in the channel plan and then selects the HUM measurement type (50/60, 100/120, or <1k). The meter then measures each channel and compares the results to the limit.

```
HUM (<1 kHz) - PASS [FAIL (HIGH), or FAIL (ERROR)]
Hum Channel 12      5.17%
  Maximum Limit 5.00%
    60Hz 0.70%
    20Hz 4.64%
    <1kHz 5.17%
```



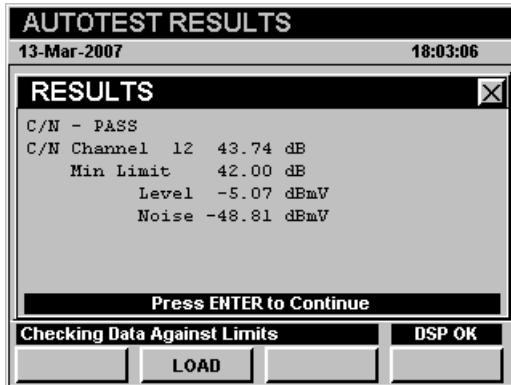
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## C/N Macro Step

Description: The user selects any channels in the channel plan to be tested for Carrier to Noise. The meter then measures each channels level and noise and compares the results to the limit.

```
C/N - PASS [FAIL (LOW), or FAIL (ERROR)]
C/N Channel 12  43.74 dB
  Min Limit    42.00 dB
    Level      -5.07 dBmV
    Noise      -48.81 dBmV
```



## MOD Macro Step

Description: The user selects any channels in the channel plan to be tested for Depth of Modulation. The meter then measures each channels video modulation and compares the results to the limits.

```
MOD - PASS [FAIL (LOW), FAIL (HIGH), or FAIL (ERROR)]
Mod Channel 12  91.92 %
  Min Limit     75.0 %
  Max Limit     95.0 %
```



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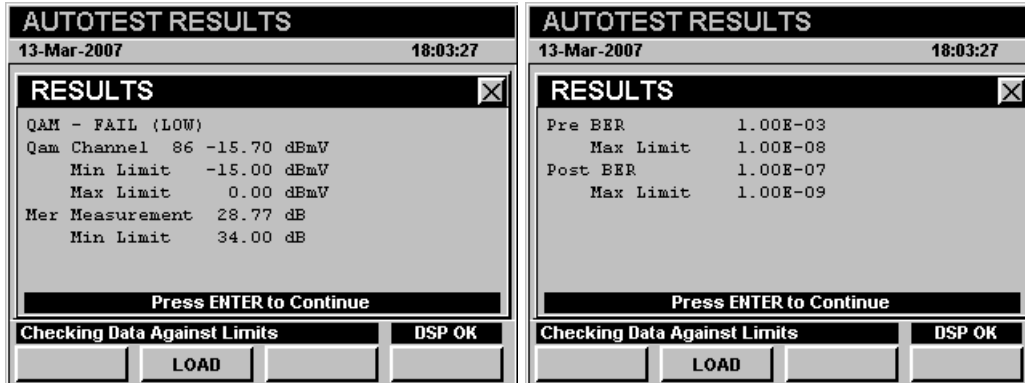
## QAM (with or without constellation) Macro Step

Description: The user selects any channels in the channel plan to be tested for QAM. The meter then measures each channels QAM parameters and compares the results to the limits.

QAM - PASS [FAIL (LOW), FAIL (HIGH), FAIL (MER), FAIL (EVM), FAIL (Pre BER), FAIL (Post BER), or FAIL (ERROR)]

```

Qam Channel 86  -15.70 dBmV
  Min Limit    -15.00 dBmV
  Max Limit      0.00 dBmV
Mer Measurement 28.77 dB
  Min Limit    34.00 dB
Pre BER         1.00E-03
  Max Limit    1.00E-08
Post BER        1.00E-07
  Max Limit    1.00E-09
  
```



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<b>AUTOTEST RESULTS</b>	
13-Mar-2007	18:07:58
<b>RESULTS</b> [X]	
Max Delta V/A	15.88 dB
Max Limit	17.00 dB
Max Delta Vid	46.60 dB
Max Limit	10.00 dB
Max Delta Adj	44.62 dB
Max Limit	3.00 dB
Min Digital	-20.89 dBmV
Min Limit	-20.00 dBmV
Press ENTER to Continue	
Checking Data Against Limits	DSP OK
LOAD	

<b>AUTOTEST RESULTS</b>	
13-Mar-2007	18:07:58
<b>RESULTS</b> [X]	
Max Digital	-15.34 dBmV
Max Limit	0.00 dBmV
Press ENTER to Continue	
Checking Data Against Limits	DSP OK
LOAD	

## SPECTRUM Macro Step

Description: The user selects any start and stop frequencies, RBW, Averaging, and Reference. The meter then measures this frequency band and compares the results to the limits.

```

SPECTRUM - PASS [FAIL (LOW), FAIL (HIGH), or FAIL (ERROR)]
Spectrum Peak -50.57 dBmV at 19.960 MHz
  Min Limit -70.00 dBmV
  Max Limit -50.00 dBmV

```

<b>AUTOTEST RESULTS</b>	
13-Mar-2007	18:03:56
<b>RESULTS</b> [X]	
SPECTRUM - FAIL (HIGH)	
Spectrum Peak -49.19 dBmV at 19.960 MHz	
Min Limit -70.00 dBmV	
Max Limit -50.00 dBmV	
Press ENTER to Continue	
Checking Data Against Limits	DSP OK
LOAD	

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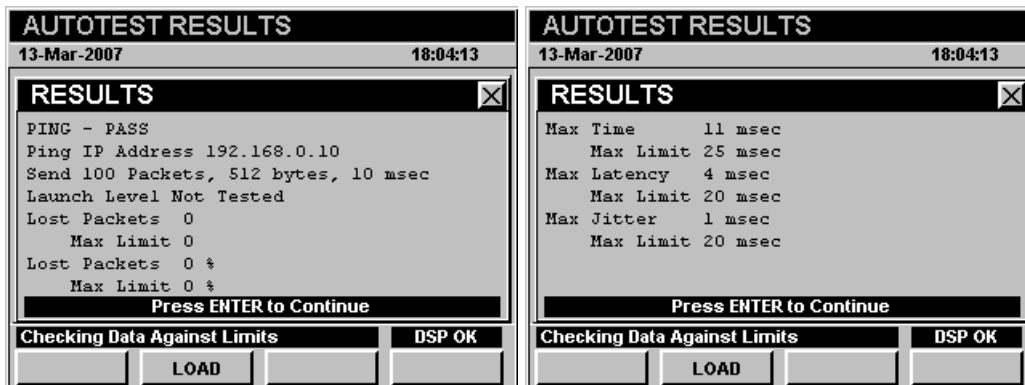
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## PING Macro Step

Description: The user selects any server address and packet parameters. The meter then pings the server and compares the results to the limits.

```
PING - PASS [FAIL (LOW LAUNCH), FAIL (HIGH LAUNCH), FAIL (PACKETS LOST), FAIL
(PACKETS LOST %), FAIL (PACKET TIME), FAIL (LATENCY), FAIL (JITTER), FAIL
(ERROR)]
```

```
Ping IP Address 192.168.0.10
Send 100 Packets, 1024 bytes, 50 msec rate
Launch Level Not Tested
Lost Packets 0
    Max Limit 0
Lost Packets 0 %
    Max Limit 0 %
Max Time      11 msec
    Max Limit 25 msec
Max Latency   4 msec
    Max Limit 20 msec
Max Jitter    1 msec
    Max Limit 20 msec
```



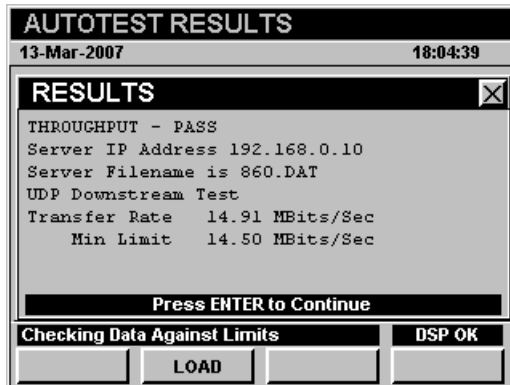
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## THROUGHPUT Macro Step

Description: The user selects any server address and upstream / downstream parameters. The meter then pings the server and compares the results to the limits.

```
THROUGHPUT - PASS [FAIL (Server or Filename), FAIL (RATE), FAIL (ERROR)]
Server IP Address 192.168.0.10
Server Filename is 860.DAT
UDP Downstream Test
Transfer Rate 14.91 MBits/Sec
    Min Limit 14.50 MBits/Sec
```



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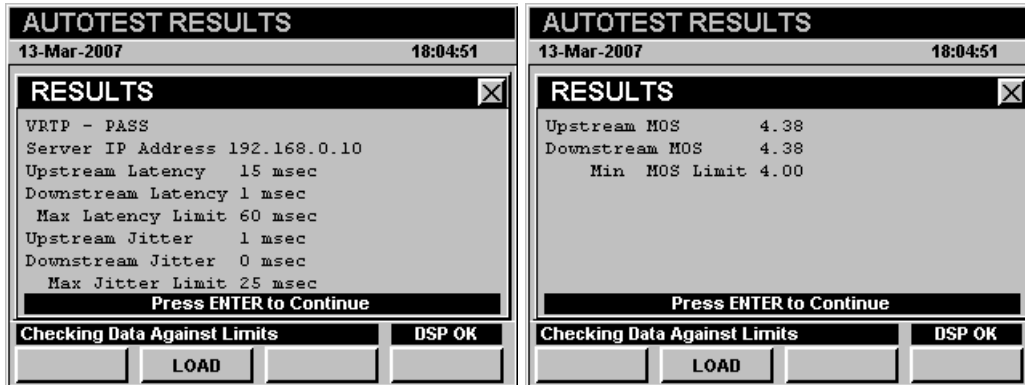
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## VOIP-RTP Macro Step

Description: The user selects any server address and VOIP parameters. The meter then simulates a VOIP call to the server and compares the results to the limits.

```

VRTP - PASS [FAIL (LATENCY), FAIL (JITTER), FAIL (MOS), FAIL (ERROR)]
Server IP Address 192.168.0.10
Upstream Latency: 15 msec
Downstream Latency: 1 msec
  Max Latency Limit: 60 msec
Upstream Jitter: 1 msec
Downstream Jitter: 0 msec
  Max Jitter Limit: 25 msec
Upstream MOS: 4.38
Downstream MOS: 4.38
  Min MOS Limit: 4.00
  
```



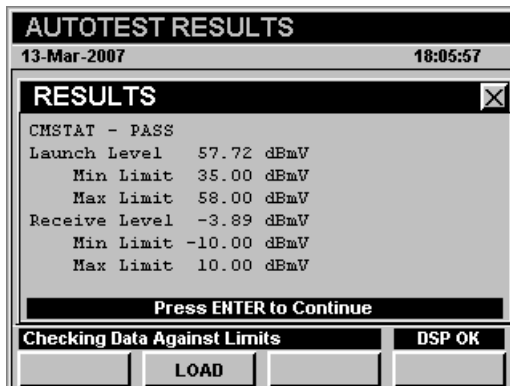
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## CMSTAT Macro Step

Description: The user connects to the CMTS and stores various parameters as long as you are using the internal cable modem. The meter then compares the collected data to the limits.

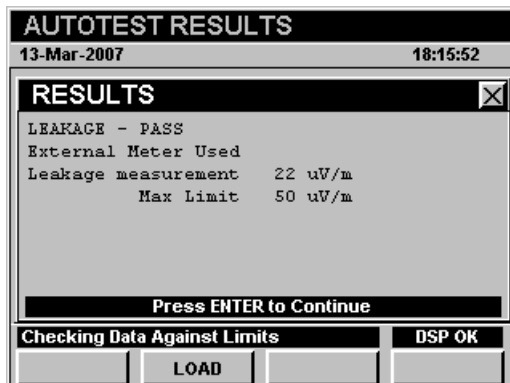
```
CMSTAT - PASS [FAIL (LOW), FAIL (HIGH)]
Launch Level    57.72 dBmV
  Min Limit    35.00 dBmV
  Max Limit    58.00 dBmV
Receive Level   -3.89 dBmV
  Min Limit   -10.00 dBmV
  Max Limit    10.00 dBmV
```



## LEAKAGE Macro Step

Description: The user enters a leakage value from an external leakage device. The meter then compares the collected data to a limit.

```
LEAKAGE - PASS [FAIL (HIGH), FAIL (ERROR)]
External Meter Used
Leakage measurement 22 uV/m
  Max Limit    50 uV/m
```



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