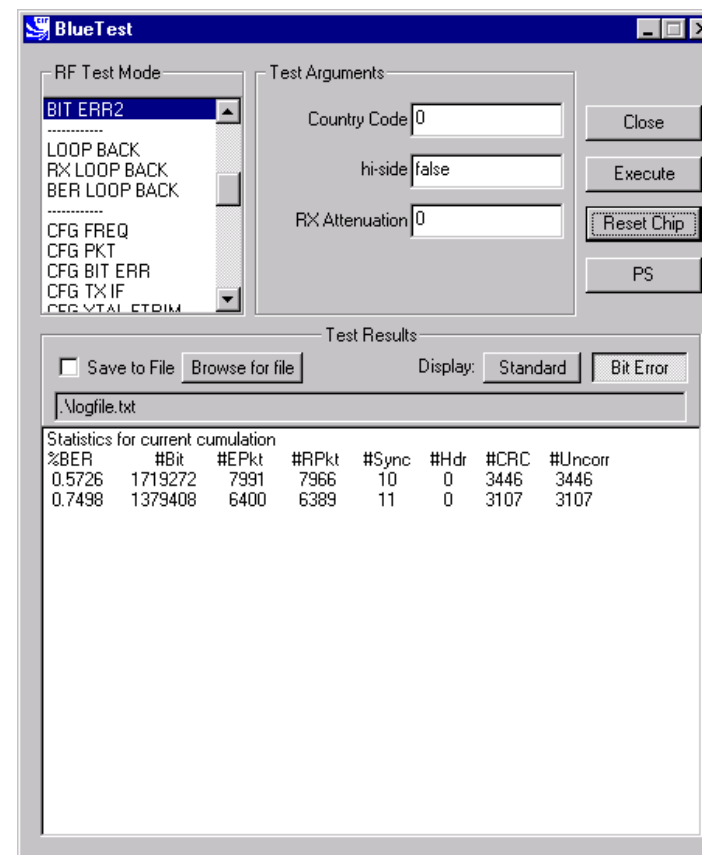


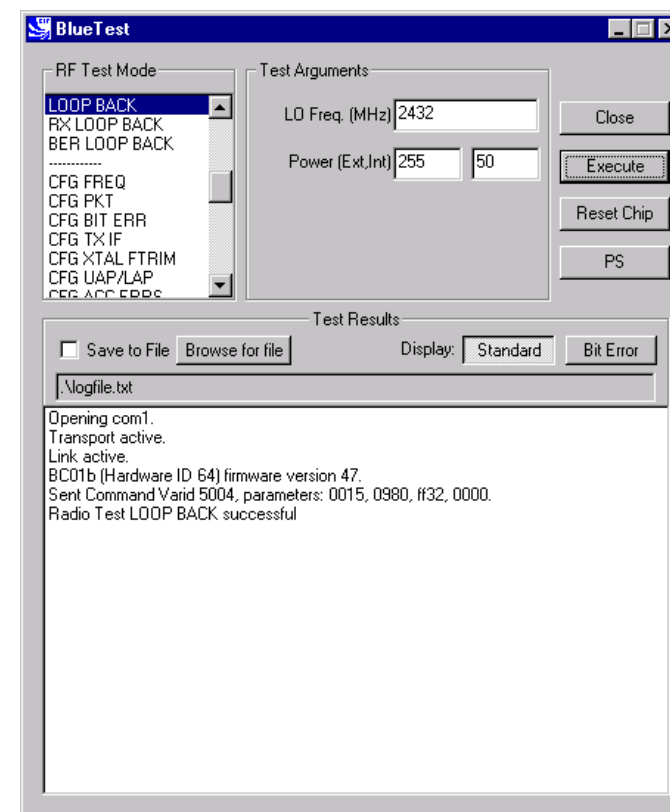
Title	BIT ERR2
Summary	<p>Enables the receiver with simplified hopping defined by Country Code with a choice of low or high side modulation (hi-side), and with a designated attenuation setting (RX Attenuation) as for RXDATA2.</p> <p>Returns information on bit errors to the host as those given for BIT ERR1.</p>
Related Test Spec Name	<p>None, but note that this test allows (as in BIT ERR1) the tests RCV/CA/01/C and RCV/CA/02/C (sensitivity), RCV/CA/04/C (blocking performance) to be performed with hopping on. This is a more thorough test than that possible with the 7 Layers equipment.</p>
Test Arguments	<p>Country Code = 0 to 3 (default 0)</p> <p>hi-side = 0 or 1 (default = 0)</p> <p>RX Attenuation = 0 to 15 (default = 0)</p>
Note	<p>With a second unit, execute CFG UAP/LAP to set BT address then execute TXDATA2, then execute CFG UAP/LAP to set the same BT address on the Equipment under Test (EUT) before executing BIT ERR2.</p>
Return Data	Nine reports, each two uint32 values as for BIT ERR1 .
Exit	Click on Reset Chip .



BIT ERR2 Example Display

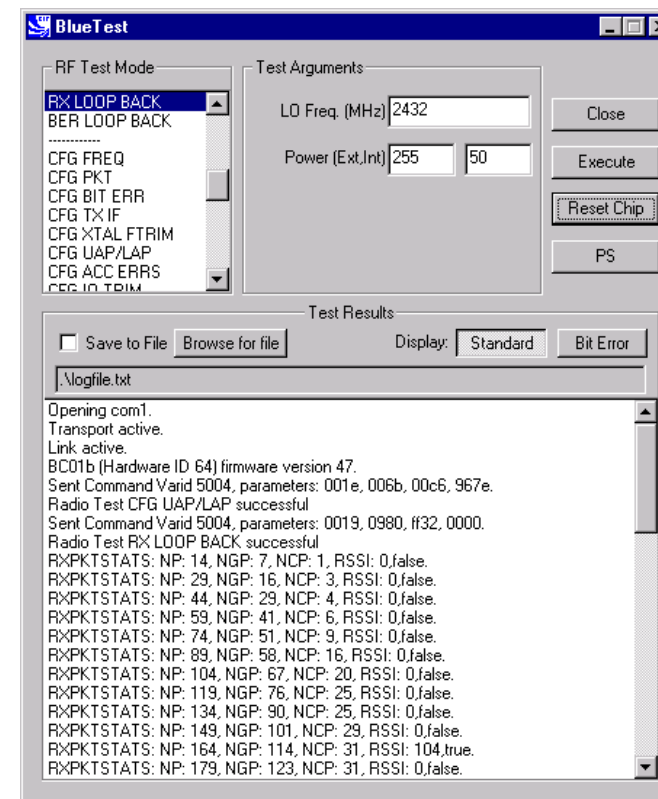
Loopback Test Mode

Title	LOOP BACK
Summary	Receives data on LO Frequency for data packets and then retransmits this data on the same channel at transmit level `lv1`. Highside reception is off and attenuation is set to 0. Expected reception frequency, <code>txrx_freq</code> (default = 12500 microseconds) with single slot packets returned <code>lb_offs</code> after receipt (default = 1875 microseconds). Defaults can be changed. See Configuration Commands section.
Related Test Spec Name	None, but note that this test RCV/CA/01/C to RCV/CA/06/C to be performed in loopback without using the LMP commanded loopback test mode. RCV/CA/01/C to RCV/CA/06/C to be performed in loopback, but without using the LMP commanded loopback test mode.
Test Arguments	LO Freq (Carrier Frequency MHz)= 2402 to 2480 (default = 2432) Power (Ext, Int) = gain of external amplifier (if present) and internal amplifier. Ext value is specific to the design and Int value is 0 to 63 (Default = 50).
Return Data	None
Exit	Click on Reset Chip .



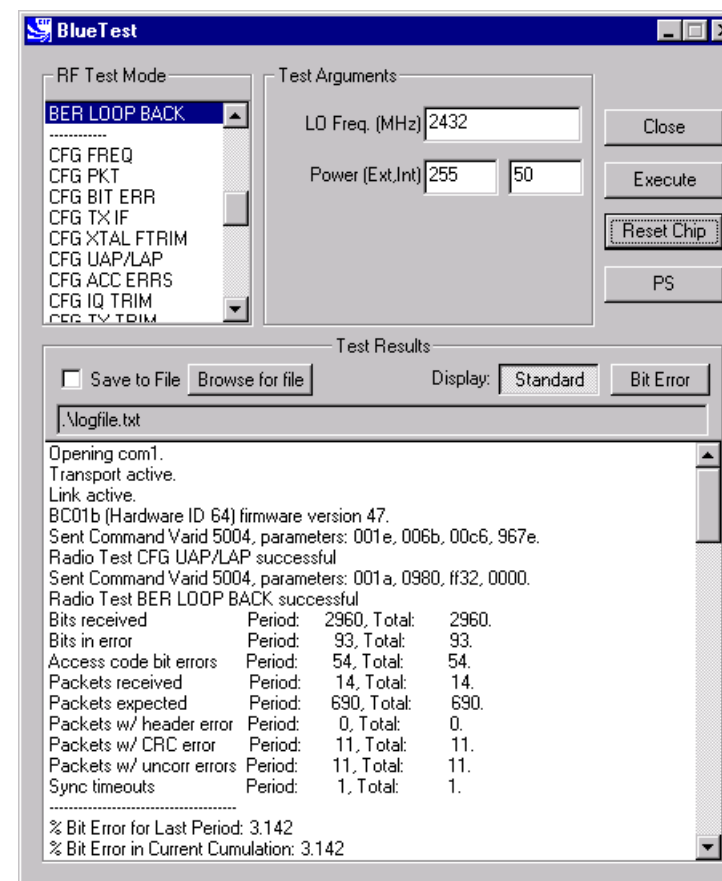
LOOP BACK Example Display

Title	RX LOOP BACK
Summary	Transmit PRBS9 data on LO Frequency at transmit level and listen for transmissions in the next slot but one. Sends reports as RXDATA1 back to the host once per second (configurable). Highside reception is off and attenuation is set to 0. Default is single-slot packets (configurable with <code>config_freq</code>). This is designed to be used with a second unit in LOOP_BACK test mode.
Related Test Spec Name	None, but note that this test allows transmission to and reception from Implementation under Test (IUT) in LOOP_BACK test mode with RSSI and BER calculated from FEC.
Test Arguments	LO Freq (Carrier Frequency MHz)= 2402 to 2480 Power (Ext, Int) = gain of external amplifier (if present) and internal amplifier. Ext value is specific to the design and Int value is 0 to 63 (Default = 50).
Note	With a second unit execute CFG UAP/LAP to set the Bluetooth address. Execute LOOP BACK then execute CFG UAP/LAP to set the same BT address on the Equipment under Test (EUT) before executing RX LOOP BACK .
Return Data	NP = Number of packets NGP = Number of good packets NCP = Number of corrected packets RSSI = Received Signal Strength Indication True = RSSI is reliable, otherwise false
Exit	Click on Reset Chip .



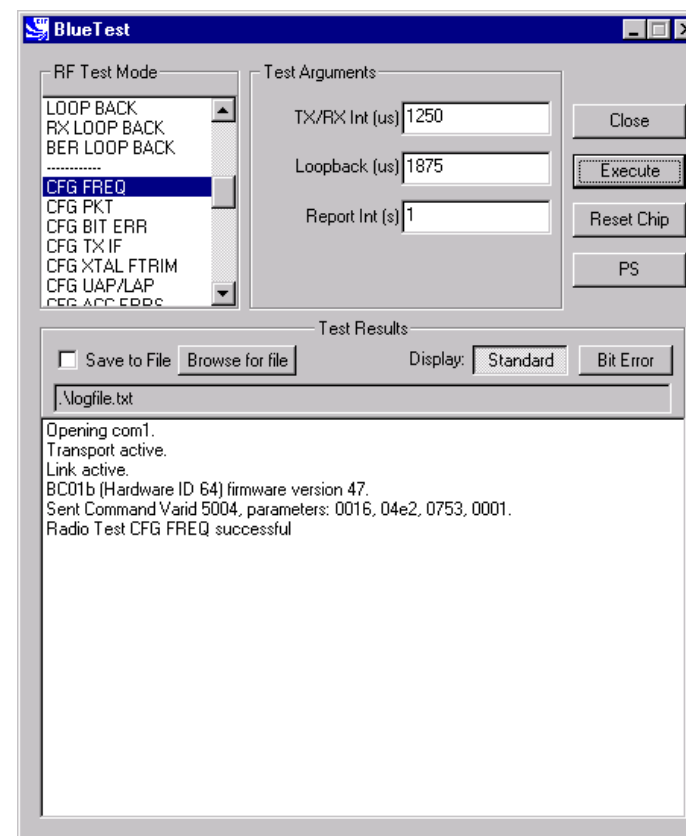
RX LOOP BACK Example Display

Title	BER LOOP BACK
Summary	Transmit PRBS9 data on LO Frequency at transmit level and listen for transmissions in the next slot but one. Sends reports as BIT ERR1 back to the host once per second (configurable). Highside reception is off and attenuation is set to zero Default is single slot packets (configurable with <code>config_freq</code>). Designed to be used with a second unit in <code>loop_back</code> test mode.
Related Test Spec Name	None, but note that this test allows transmission to and reception from IUT in loopback test mode, with calculation of BER to BT specification.
Called via	BCSP channel 2
Test Arguments	LO Freq (Carrier Frequency MHz)= 2402 to 2480 Power (Ext, Int) = gain of external amplifier (if present) and internal amplifier. Ext value is specific to the design and Int value is 0 to 63 (Default = 50).
Note	With a second unit execute CFG UAP/LAP to set BT address then execute LOOP BACK , then execute CFG UAP/LAP to set the same BT address on the EUT before executing BER LOOP BACK .
Return Data	Nine reports as for BIT ERR1 .
Exit	Click on Reset Chip .


BER LOOP BACK Example Display

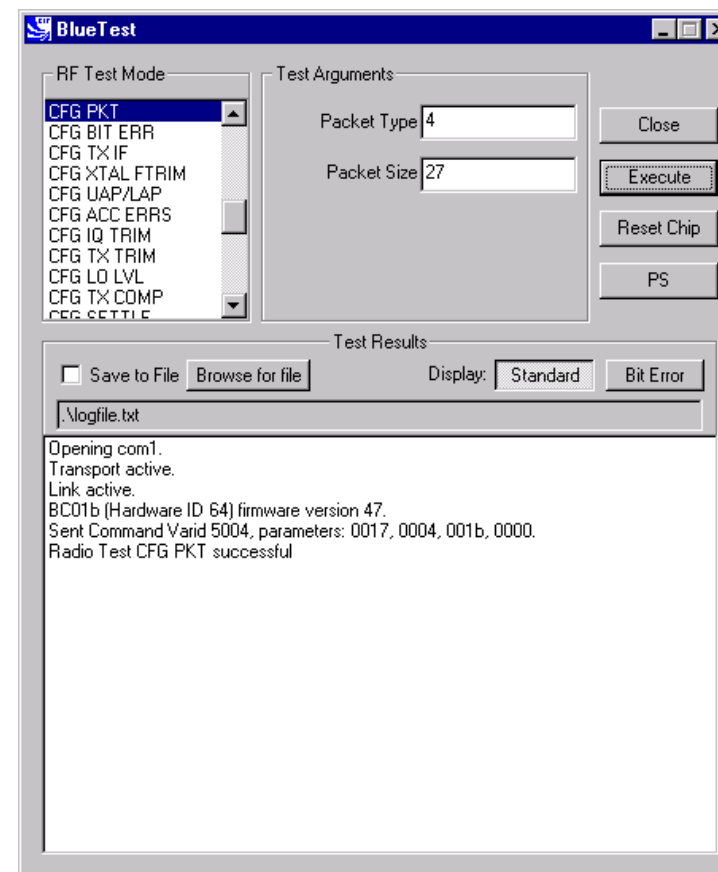
Configuration Commands

Title	CFG FREQ
Summary	<p>Sets three values used in deciding timing details of tests.</p> <p>Tx/Rx Int (<code>txrx_freq</code>) sets the period in microseconds between TX and RX events in RXDATA, TXDATA, BIT ERR and LOOP BACK test modes. Default is 1250 (20 slots), maximum 65536. If passed as 0, current value unchanged.</p> <p>Loopback (<code>lb_offs</code>) sets the offset in microseconds between a reception event and retransmission of the data in loopback. Default is 1875 (two slots later), must be less than TX/Rx Int (<code>txrx_freq</code>). If passed as zero current value unchanged.</p> <p>Report Int (<code>report_freqs</code>) sets the time in seconds between reports to host sent by RXDATA and BIT ERR functions. Default 1, if passed as 0 current value unchanged.</p>
Related Test Spec Name	None
Test Arguments	<p>TX/RX Int (μS) = 1 to 65535 (default = 1250)</p> <p>Loopback (μS) = 1 to 65535 (default = 1875)</p> <p>Report Int (S) = 1 to 65535 (default = 1)</p>
Return Data	None.
Exit	Click on Reset Chip .



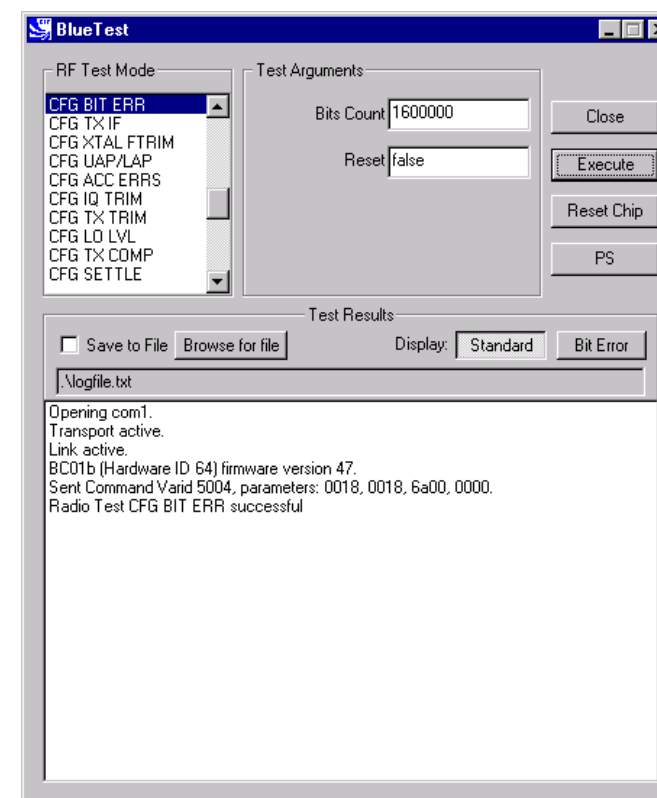
CFG FREQ Example Display

Title	CFG PKT
Summary	<p>Sets packet type and size for transmitter tests. It has no effect on RX or LOOP BACK tests.</p> <p>Packet Type (<code>pkt-type</code>) is the standard Bluetooth packet type, 0-15 (12-13 not allowed). Any other number sets default: DM5 for TXDATA1/2, DH5 for TXDATA3/4.</p> <p>Packet Size (<code>pkt_size</code>) is the size of data in packet, from one to maximum for type. If zero sets default: 20 bytes for TXDATA1/2, 192 bytes for TXDATA3/4.</p> <p>Since the two values are connected both values must be set – no default is inferred.</p>
Related Test Spec Name	None
Test Arguments	<p>Packet Type = 0 to 15 (default = 4) (see Appendix 5)</p> <p>Packet Size = 0 to 339 (default = 27)</p>
Return data	None
Exit	Click on Reset Chip .



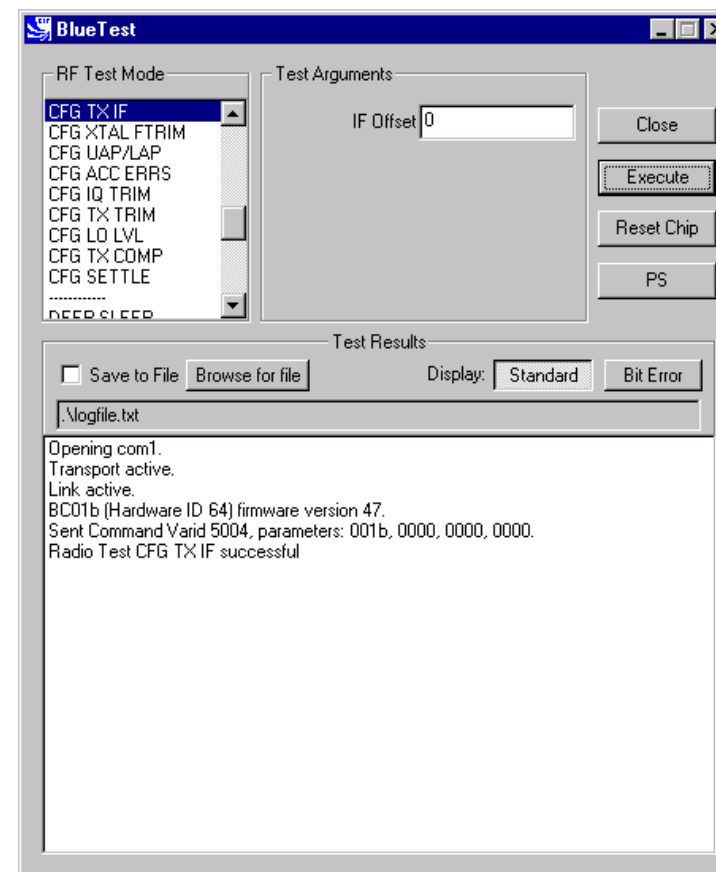
CFG PKT Example Display

Title	CFG BIT ERR
Summary	<p>Sets two values used in bit error measurements.</p> <p>If Bits Count (<code>bits_count</code>) is non-zero, the target for total counters is set to this and total count resets at this value. If passed as 0 current value, unchanged.</p> <p>If Reset is not <code>false</code> and BIT ERR/2 is active, immediately resets the counters for the total statistics, but not over the last report period.</p>
Related Test Spec Name	None
Test Arguments	<p>Bits Count = 1 to 4.2×10^9 (default = 1600000 Bit)</p> <p>Reset = <code>false</code> (0) or <code>true</code> (1) (default = <code>false</code>)</p>
Return Data	None
Exit	Click on Reset Chip .



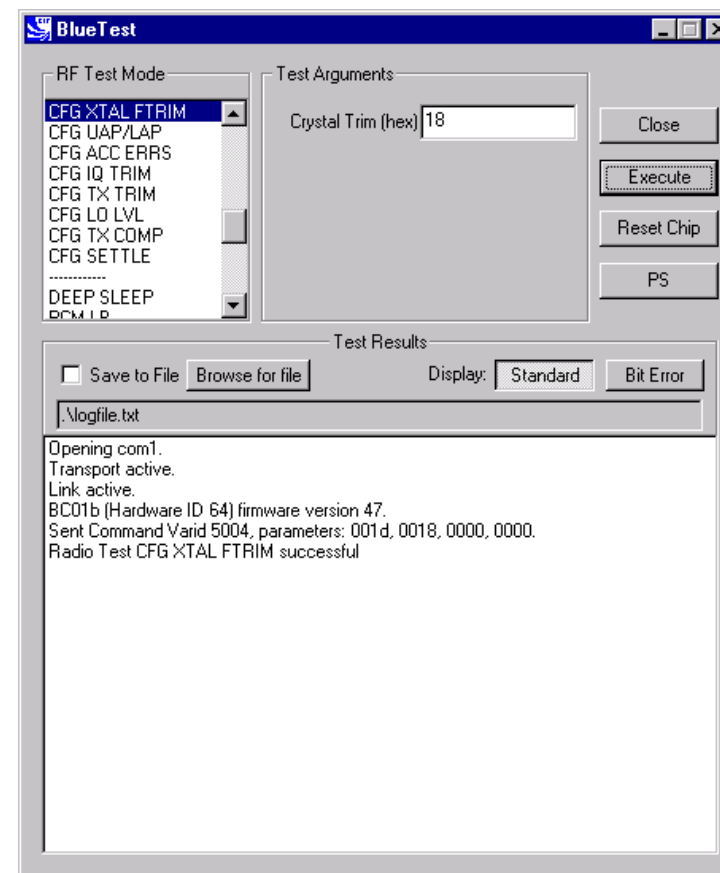
CFG BIT ERR Example Display

Title	CFG TX IF
Summary	<p>Sets the IF frequency used in transmit test modes. The target is zero, but the stack currently uses a default of -1MHz.</p> <p>Offset is a signed integer with a range from $+5$ to -5, in units of 0.5MHz.</p>
Related Test Spec Name	None
Test Arguments	IF Offset = -5 to $+5$ (default = 0)
Return data	None
Exit	Click on Reset Chip .



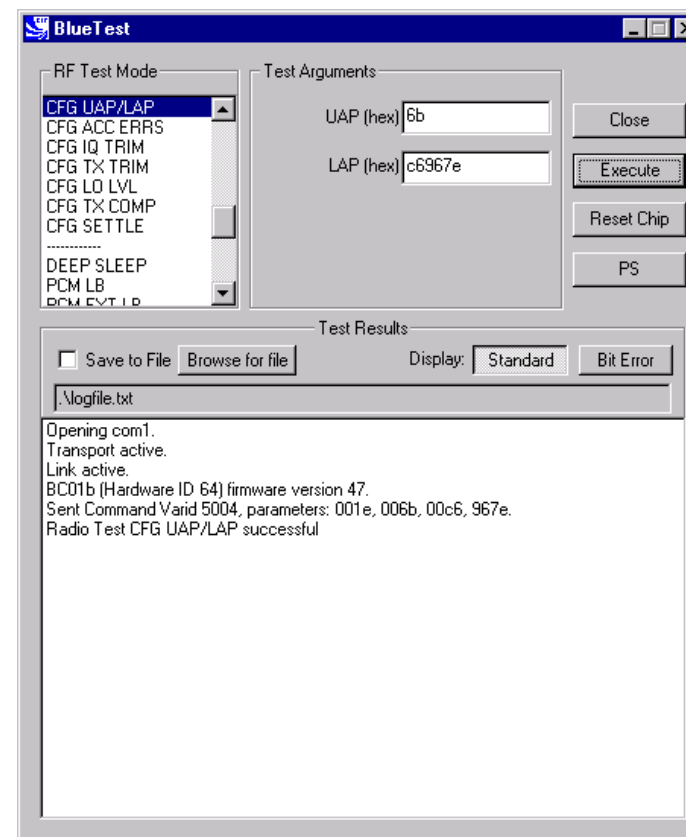
CFG TX IF Example Display

Title	CFG XTAL FTRIM
Summary	<p>Timing for BlueCore01 is controlled by a crystal. This requires trimming for new hardware. This command can be used to set a new trim value either before a radiotest command is started or while a test is already in operation; the change takes effect immediately.</p> <p>Crystal Trim (xtal_ftrim) is a number between 0 and 63 inclusive. This is not a permanent change.</p>
Related Test Spec Name	None
Test Arguments	Crystal Trim = 0 to 63 (typical = 27)
Note	With Crystal Trim set to 0, the current settings will not change.
Return data	None
Exit	Click on Reset Chip .



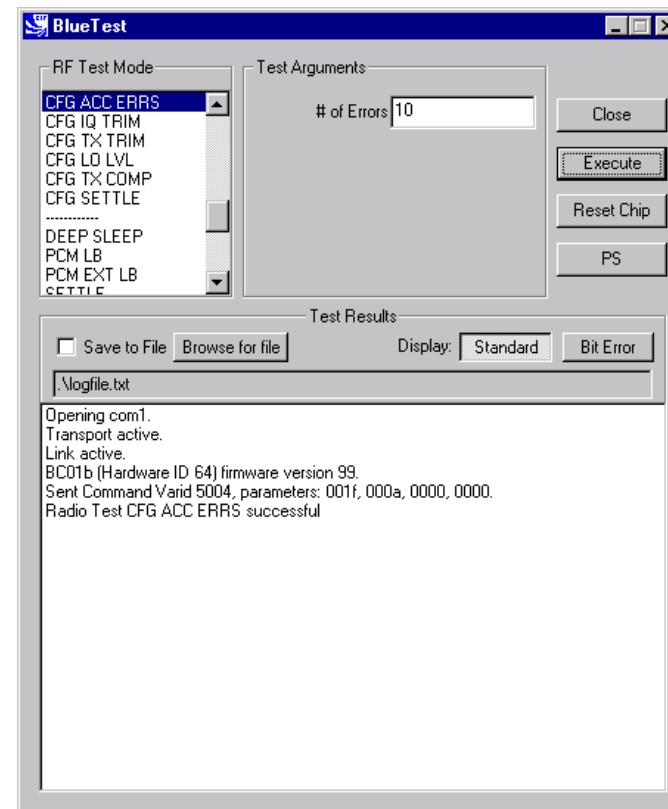
CFG XTAL FTRIM Example Display

Title	CFG UAP/LAP
Summary	Sets the UAP and LAP to be used in tests. BlueCore01 usually uses its own Bluetooth Device address to determine the access sync code, as if it is master of a piconet. The UAP and LAP are the only parts used. This command allows a special UAP and LAP to be used only in the test modes.
Related Test Spec Name	None
Test Arguments	Bluetooth Address: UAP = 0 to FF (Default = 6b) LAP = 0 to FFFFFFFF (Default = c6967e)
Return Data	None
Exit	Click on Reset Chip .



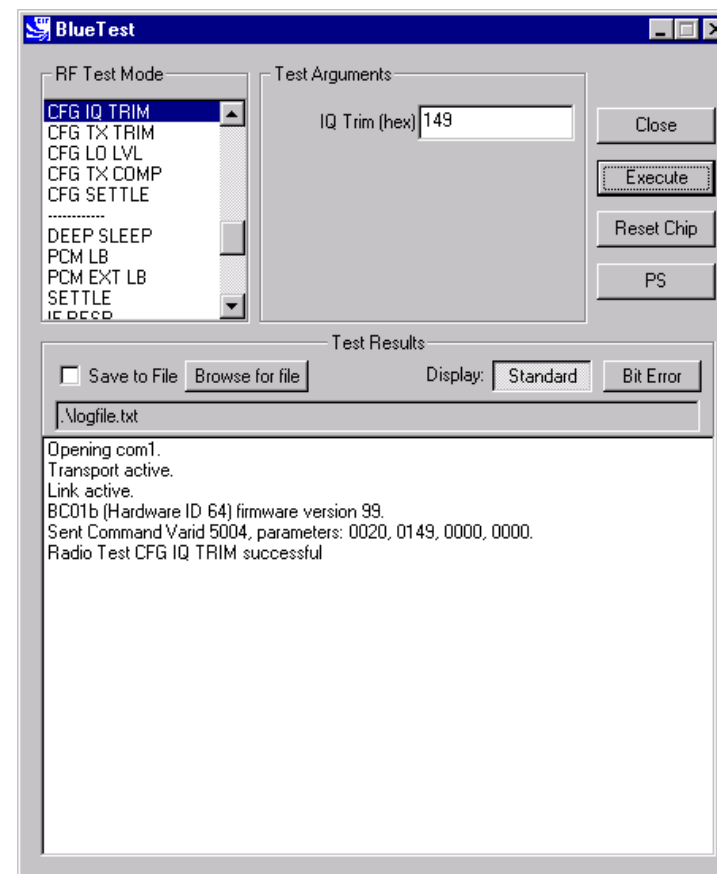
CFG UAP/LAP Example Display

Title	CFG ACC ERRS
Summary	The receiver uses a sliding correlator to determine that it has matched the start of a packet. The receiver allows up to # of errors (<i>n_errs</i>) before a match is rejected.
Related Test Spec Name	None
Test Arguments	# of errors = 0 to 15 (default = 10)
Return Data	None
Exit	Click on Reset Chip .



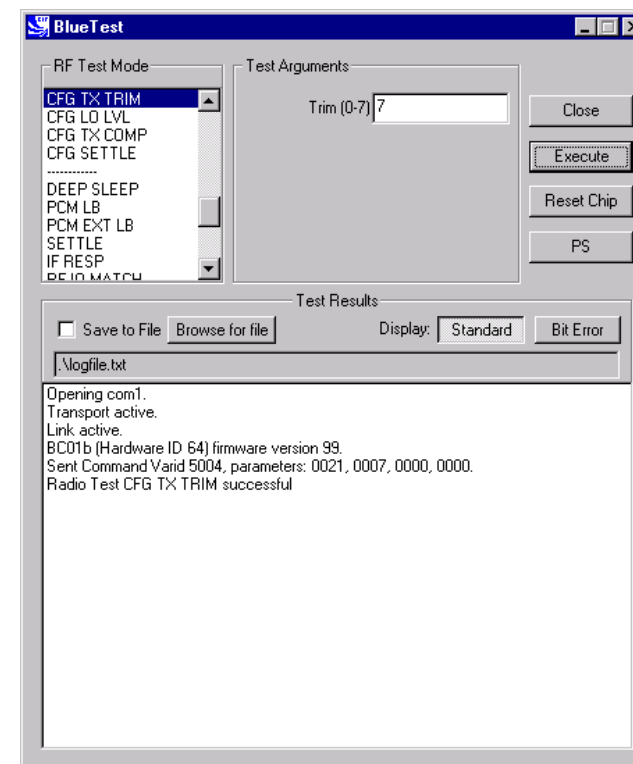
CFG ACC ERRS Example Display

Title	CFG IQ TRIM
Summary	Sets the IQ Trim (<code>trim</code>) value overriding the value calculated by the internal calibration algorithm. This command is not executed in normal use.
Related Test Spec Name	None
Test Arguments	IQ Trim = 0 to 511 (default 149 (hex))
Return Data	None
Exit	Click on Reset Chip .



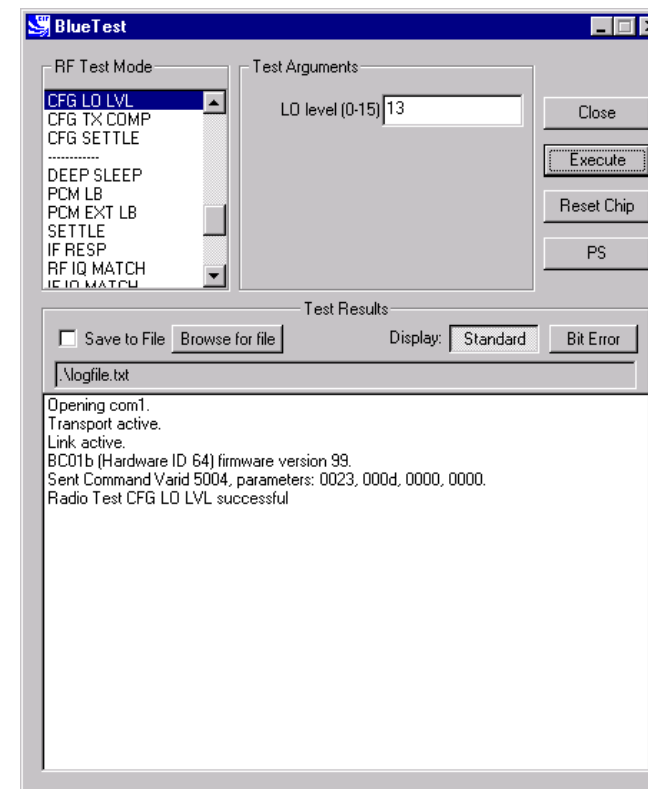
CFG IQ TRIM Example Display

Title	CFG TX TRIM
Summary	Sets the Active Member Address (<code>am_addr</code>) for the device to be used in the header of all test transmissions to <code>am_addr</code> . If the transmitter and receiver are used for the same test, both devices will normally have to be set to the same <code>am_addr</code> .
Related Test Spec Name	None
Test Arguments	Trim (<code>am_addr</code>) = 0 to 7, Default = 7
Return Data	None
Exit	Click on Reset Chip .



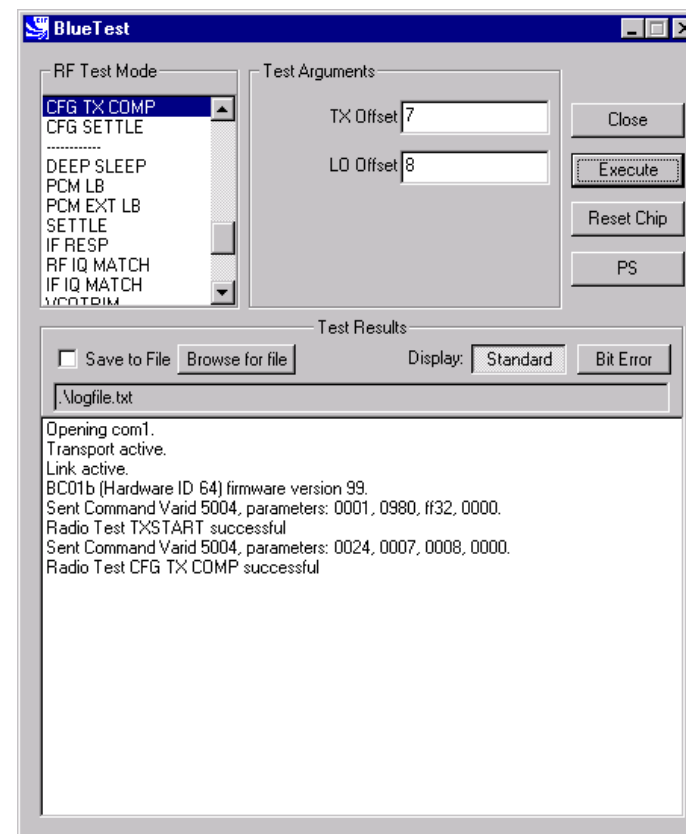
CFG TX TRIM Example Display

Title	CFG LO LVL
Summary	Sets the value of the Analogue Local Oscillator output level to LO level (lvl) , overriding the value calculated by the internal calibration algorithm. This command is not executed in normal use.
Related Test Spec Name	None
Test Arguments	LO level = 0 to 15 (default = 13)
Return Data	None
Exit	Click on Reset Chip .



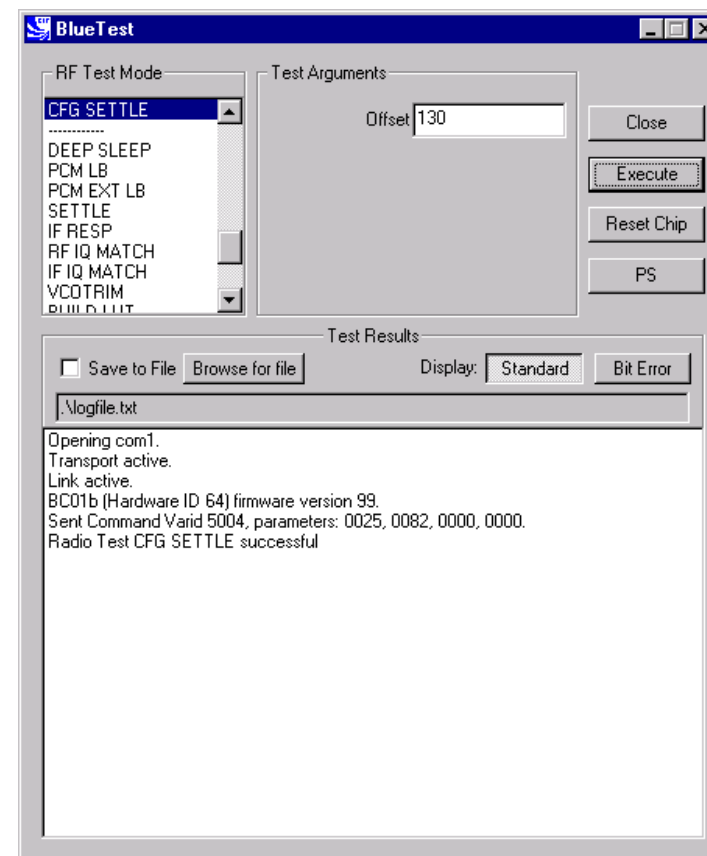
CFG LO LVL Example Display

Title	CFG TX COMP
Summary	Sets TX Offset (tx_offset) and LO Offset (lo_offset) for the firmware's algorithm, which sets the maximum power. Run TXSTART before executing CFG TX COMP , otherwise there is no transmit power to set.
Related Test Spec Name	None
Test Arguments	TX Offset , minimum = 0 (default = 7) LO Offset , minimum = 0 (default = 8)
Return Data	None
Exit	Click on Reset Chip .



CFG TX COMP Example Display

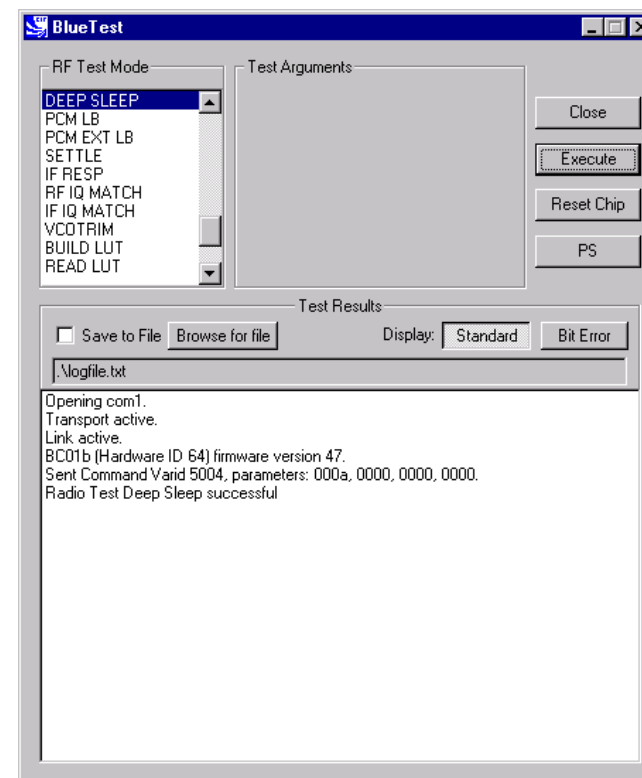
Title	CFG SETTLE
Summary	Sets the period (<code>radio_on_offset</code>) in microseconds between turning the radio on and starting to transmit.
Related Test Spec Name	None
Test Arguments	Offset , minimum = 0 (default = 130)
Return Data	None
Exit	Click on Reset Chip .



CFG SETTLE Example Display

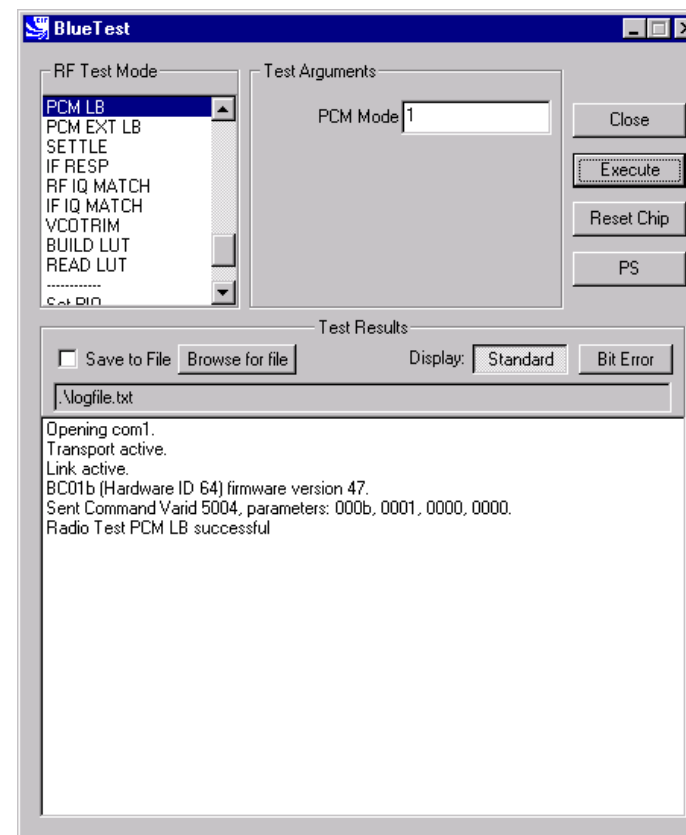
Built-in-Self Test (BIST) Routines

Title	Deep Sleep
Summary	Puts the chip into deep-sleep after a delay of half a second until woken by reset or any activity on USB or UART interface.
Return Data	None
Exit	Click on Reset Chip or another routine being called.



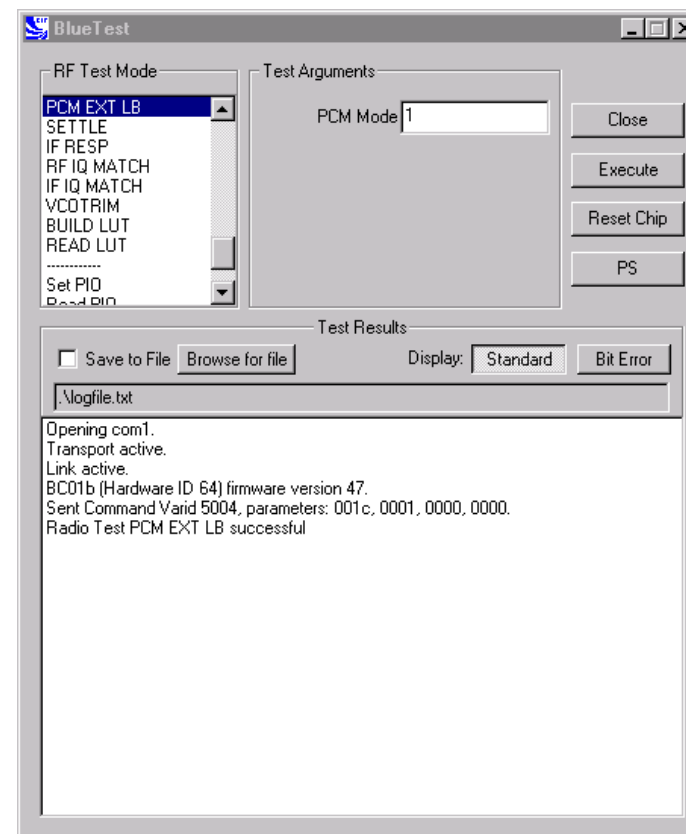
Deep Sleep Example Display

Title	PCM LB
Summary	<p>Sets the PCM into LOOP BACK mode, whereby the data read from the PCM input is output again on the PCM out pin. The LOOP BACK is via software and the buffers so there is a pipeline delay. The PCM port mode is selectable.</p> <p>If PCM Mode = 0, BlueCore01 is slave in normal 4-wire configuration</p> <p>If PCM Mode = 1, BlueCore01 is master in normal 4-wire configuration</p> <p>If PCM Mode = 2, BlueCore01 is master in Manchester encoded, 2-wire configuration.</p>
Test Arguments	PCM Mode = 0 to 2 (default = 1)
Return Data	None
Exit	Click on Reset Chip or another routine being called.



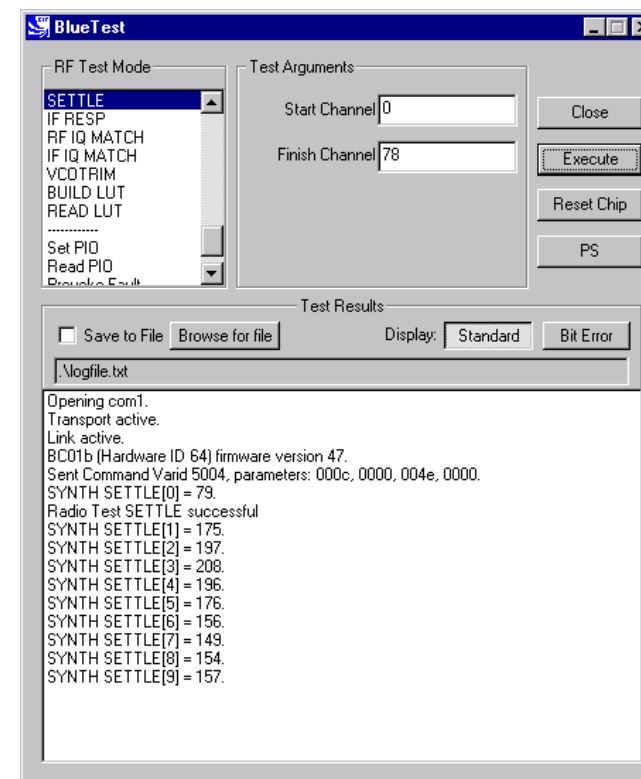
PCM LB Example Display

Title	PCM EXTERNAL LOOPBACK
Summary	<p>Sets the PCM into external LOOPBACK mode, whereby the data written to the PCM output is read again on the input pin. A check is made that the data read back is the same (up to usual codec transformations) as that written. The LOOP BACK consists of 512 bytes of random data.</p> <p>The PCM port mode is selectable as PCM Mode (<code>pcm_mode</code>), which is the same as for PCM LB (<code>radiotest_pcm_loop_back</code>)</p> <p>The external LOOP BACK may be a simple wire.</p>
Related Test Spec Name	None
Note	On the Casira under test, set CN8 jumper to Codec BYP and on header CN12 link pins 10 and 11.
Test Arguments	PCM Mode = 0 to 2 (default = 1)
Return Data	None
Exit	Click on Reset Chip .



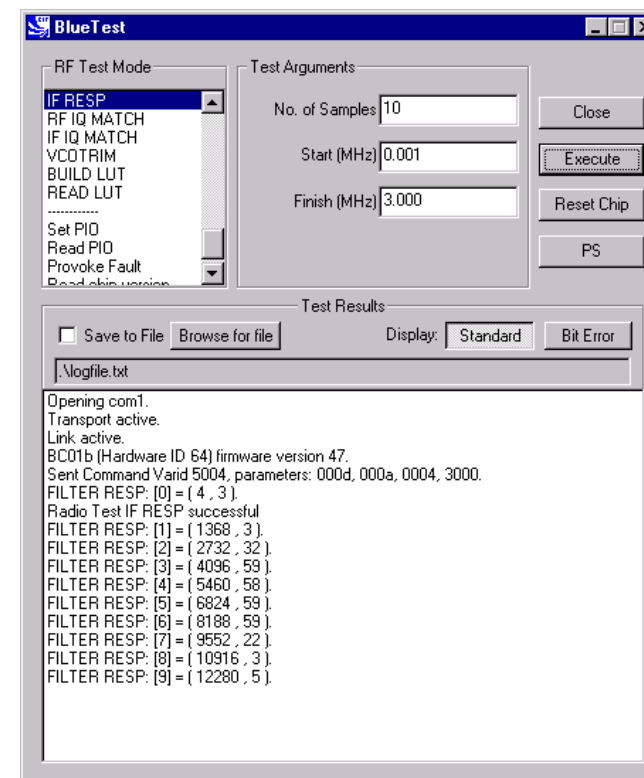
PCM EXT LB Example Display

Title	SETTLE
Summary	Builds the LUT as normal, then does a step from Start Channel (chan1) to Finish Channel (chan2), while the synthesiser is running. It digitises the synthesiser (LO_TUNE) error voltage at intervals of 10 – 20µs over the next 200µs and writes the results to an array.
Test Arguments	Start Channel (chan1) = 0 to 78 (default 0) Finish Channel (chan2) = 0 to 78 (default 78)
Return Data	A sequence of ten reports of the synthesiser (LO_TUNE) error voltage over the next 200µs.
Exit	Click on Reset Chip or another routine being called.



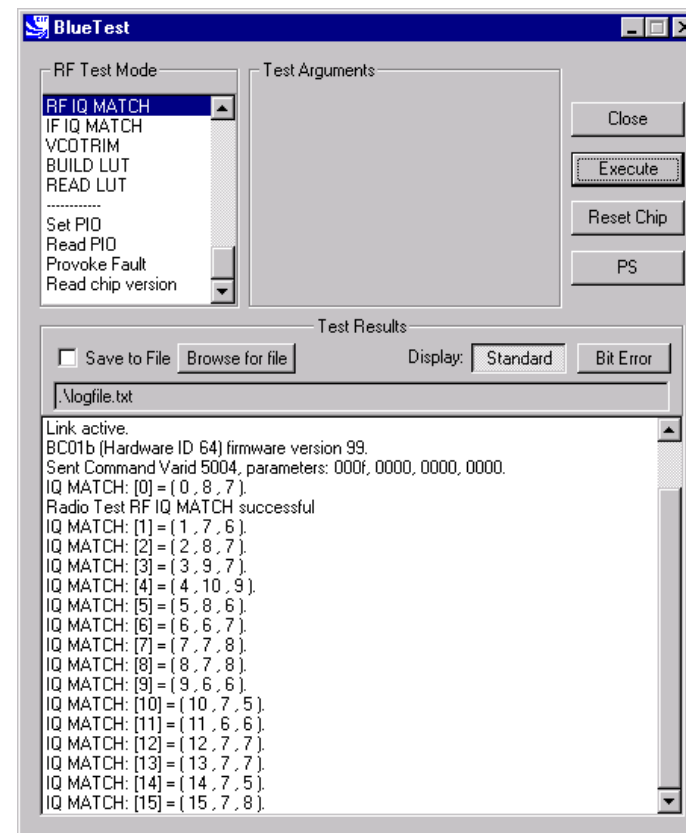
SETTLE Example Display

Title	IF RESP
Summary	Sweeps transmit IF carrier frequency over designated number of samples (<code>n_samples</code>) within range (0-3MHz maximum) and measures RSSI. Returns table of RSSI value against frequency offset to characterise IF filter response.
Test Arguments	<p>No. of Samples (<code>n_samples</code>) = 0 to 65535 (default = 10)</p> <p>Start (<code>lo_offset</code>) = 0 to 3MHz (default 0.001 MHz)</p> <p>Finish (<code>hi_offset</code>) = 0 to 3 MHz (default = 3.000 MHz. Must be greater than <code>lo_offset</code>)</p>
Return Data	A sequence of reports of RSSI and frequency offset.
Exit	Click on Reset Chip .



IF RESP Example Display

Title	RF IQ MATCH
Summary	Measures RF IQ match by injecting test signal, sweeping IQ trim and measuring RSSI for on-channel and image. Returns array of IQ measurements against IQ trim.
Return Data	An array of 16 IQ measurements against IQ trim.
Exit	Click on Reset Chip .



RF IQ MATCH Example Display