ST-8000A UNIT - ASSEMBLY A6
FINAL HAL TEST PROCEDURE

MANUFACTURING WORK ORDER (MWO): 90508004.MWO

********** CAUTION **********

THIS ASSEMBLY CONTAINS ELECTRO-STATIC SENSITIVE DEVICES (ESD). TESTS MUST BE CONDUCTED AT AN APPROVED ESD WORK-STATION. PERSONNEL MUST WEAR AND USE ESD PREVENTION DEVICES.

REF: SCHEMATIC DRAWINGS A1787 through A1805 Current REV:
PICTORIAL DRAWING C1464 REV: A
WIRING SAMPLE: WS905-08004 REV: -
PARTS LISTS: PL905-08004 REV: -

1.0 FACTORY TEST PROCEDURES AND CONFIGURATION

The following pages provide procedures for factory final testing of the ST-8000A unit and is not intended as a procedure for field maintenance. This procedure assumes access to factory test equipment and jigs that are not available for field maintenance.

All problems discovered while final testing the unit should be recorded and resolved before continuing. At the completion of these tests, the ST-8000A will have been tested and the ST8000A is then submitted for acceptance testing.

2.0 TEST EQUIPMENT REQUIRED:

The following test instruments or their equivalents are essential to the proper completion of the described tests:

HP400FL AC Voltmeter (+30 to -80 dBm @ 600 ohms)

HP3311 Function Generator (20 to 20,000 Hz, +10 to - 30 dBm)

HP5381A Frequency Counter (20 Hz to 10 MHz)

HP122A Oscillosope (DC to 10 MHz)

Fluke 77 Multimeter (AC & DC Volts 20 MV to 600 V)

600 Ohm Step Attenuator (0 to - 70 dB in 1 dB steps)

ASCII Communication Terminal (HAL DS3200 or PC with serial I/O and communication terminal software)

Electrostatic Work Station with grounded floor and table mats, grounded wrist bracelet (3M 8031 kit)

HAL Engineering ST-8000A Audio I/0 Test Unit
TF900-????? REV: -
HAL Engineering ST-8000A Data/Remote Test Unit
TF900-????? REV: -

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

3.0 TEST PROCEDURE:

STEP ACTION

3.1 INITIAL TESTS:

3.1.1 Preliminary Inspection:

Verify that the unit is still operating and that the unit has not reset on burn-in.

3.1.2 Verify Switch and Jumper Settings on MODEM Board (A1):

SW1-1 ON (SW1-2 thru -8 OFF) (0 dBm AMH Threshold)
SW2-8 ON (SW2-2 thru -8 OFF) (1 second AMH Delay)

J6 = Installed (Input Term = 600 ohms)
J8 = 'Tones On' Position (AUTO MUTE defeated)
J9 = '-V' Position (LOS = -V polarity)
J10 = Installed (HS Modem Filters)
J11 = Installed "
J12 = Installed "
J13 = Installed "
J14 = 'NDIV' Position (Defeat Diversity)
J15 = 'NDIV' Position "

3.1.3 Verify Switch and Jumper Settings on CONTROL Board (A2):

A2SW1 = All OFF (Delay 1,2)
A2SW2 = All OFF (Delay 3,4)
A2SW3-1 ON (SW3-2 thru -8 OFF) (19200 Baud Remote)
A2SW4-1 ON (SW4-2 thru -8 OFF) (Unit Address = 01)

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

A2J1 = Open (Deadman Enabled)
A2J2 = '232' Position (RS-232 DATA TXD)
A2J6 = '232' Position (RS-232 Data RXC)
A2J7 = '232' Position (RS-232 Remote RXD/TXD)
A2J4 = Left Position (REMTXD -8V pulldown)
A2J5 = Left Position (REMRTS -8V pulldown)
A2J8 = Left Position (REMDTR -8V pulldown)

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

STEP ACTION

3.1.7 Turn On Test

Observe: 8.8.8.8.8 (Front panel)
8.8.8.8.8
8.8.8.8

Changes to: HAL
8000A
x.xx

Changes to: 2125.0
2975.0
75.

or other typical tone set.

3.1.8 Voltage Tests:

a. On POWER SUPPLY Assembly A4 (GND = A4J5-5&6):

+5 Unreg Power Supply A4J2-1 to GND 11.0 ± 1.0 VDC
+V Unreg Power Supply A4VR1-1 to GND 15.0 ± 1.5 VDC
-V Unreg Power Supply A4VR2-2 to GND -16.0 ± 1.5 VDC

b. On MODEM BOARD Assembly A1 (Use GND TP on A1):

+5 Reg J17-1 to Gnd 5.0 ± 0.1 VDC Measure & record.
+V Reg J17-3 to Gnd 8.0 7.9 to 8.3 VDC Measure & record.
-V Reg J17-4 to Gnd -8.0 -7.9 to -8.3 VDC Measure & record.

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

STEP ACTION

3.2 MODULATOR TEST:

For this part of the final test procedure, references to jumpers, resistors, test points, switches, and integrated circuits all refer to parts on the modem board unless specified otherwise.

3.2.1 Remote Control Terminal Setup

Connect a 19200 baud ASCII terminal to the Remote Control port (Rear Panel A5J4). To facilitate the testing of the ST-8000A Modem board, the following test commands will be useful and should be stored as HERE IS messages in the ASCII terminal. The test commands can be entered on a single line. Spaces are not necessary, but the command must be terminated with a carriage return.

Test Command 1:	Test Command 2:
c02r1 m2000 s3000 b30 n0	c02r1 m2125 s2975 b30 n0
c01 m2000 s3000 b30 n0	c01 m2125 s2975 b30 n0
j0 h0 y0 a1 x1 u0	j0 h0 y0 a1 x1 u0

Test Command 1 sets the following parameters:		Test Command 2 sets the following parameters:	
MOD MARK:	2000	MOD MARK:	2125
MOD SPACE:	3000	MOD SPACE:	2975
MOD BAUD:	30	MOD BAUD:	30
MOD Polarity:	Normal	MOD Polarity:	Normal
DEMOD MARK:	2000	DEMOD MARK:	2125
DEMOD SPACE:	3000	DEMOD SPACE:	2975
DEMOD BAUD:	30	DEMOD BAUD:	30
DEMOD Polarity:	Normal	DEMOD Polarity:	Normal

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

Mode:	FSK	Mode:	FSK
Hold:	Off	Hold:	Off
Regen:	Off	Regen:	Off
AMH:	On	AMH:	On
Remote Echo:	On	Remote Echo:	On
Auto Mute	Off	Auto Mute	Off

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

STEP	ACTION	SCOPE, ACVM, dB METER, COUNTER	dB ATTEN GEN	BOX
3.2.2	Connect MOD FSK Audio out out to a 600 ohm load. (Rear Pan A5J2-1, A5J2-3)			
3.2.3	Send Test Command 1. Observe 2000 Hz sine wave. Measure & record level. 1.25 dBm ±.5	TP4;		
3.2.4	Confirm -20 to 0 dBm range with Front Panel Output Level control.		Mod FSK out (Rear Panel A5J2-1, J2-3)	
	Reset front panel Output Level control to maximum (Full CW). Measure and record level. 4.25 dBm ±.5	TP3;		
3.2.5	Connect MOD FSK out (A5J2-1, A5J2-3) to Demod FSK Audio in (A5J2-10, A5J2-12). Remove jumper J6. Measure and record level change at MOD FSK Audio out. (A5J2-1, A5J2-3). Reinstall jumper J6.		MOD FSK Audio out Change = 5.75 dBm ±.5	
3.2.6	Connect a 30 baud RS232 signal to Data TXD in			

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

(A5J1-20).
Observe modulated MOD FSK
MOD FSK Audio output. Audio out

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

STEP	ACTION	SCOPE, ACVM, dB METER, COUNTER	ATTEN GEN	BOX
3.3	DEMODULATOR FILTER TESTS			
3.3.1	Connect signal generator to Demod FSK Audio in (A5J2-10, A5J2-12) through the dB box. Set signal generator.	DEMOD FSK Audio In. 2.000 kHz 0.0 dBm	0 dB	
3.3.4	Test Input Filter Check generator. Measure & record TP2; 6.8 dBm ±.5	DEMOD FSK Audio In	2.000 kHz 0.0 dBm	0 dB
3.3.5	Test Filter Clocks Send Test Command 1. Observe: TTL square wave.	TP15 (MARK) @ 100 KHz TP8 (SPACE) @ 150 KHz TP21 (LPF) @ 2880 Hz		
3.3.6	MARK Filter Test			
	Send Test Command 1. Set generator.	DEMOD FSK Audio In	2.000 kHz 0.0 dBm	0 dB

Change the Demod. baud rate to set MARK filter Qs using:

Q	Baud	Q	Baud

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

33.6	30	5.93	337
23.2	86	4.48	443
17.5	114	3.69	540
13.7	145	3.16	625
11.7	170	2.88	689
9.90	202	2.63	760
7.85	253	2.34	854
6.10	327	2.10	952

The above is based on the formula:
Q = Center Frequency / Baud = 2000 / Baud

Decrement the Q
of the MARK filter. TP14
(Remote commands:
c01 b30, b86, ... b952).

STEP	ACTION	SCOPE, ACVM, dB METER, COUNTER	dB ATTEN GEN	BOX
3.3.6	(Continued)			
	Observe level increases.	≈4.5 dBm @ MARK Q = 33.6		
		≈7.0 dBm @ MARK Q = 2.1		
	Send Test Command 1.	TP12 ≈6.9 dBm		
	Measure & record levels.	TP14 ≈4.5 dBm		
	Measure & record levels for MARK Q = 33.6, 6.1, 5.93, 2.10.	TP14		

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

(Remote commands:
c01 b30, b327, b337, b952).

Measure & record -3 dB
frequencies for MARK Q = TP14
33.6
(Remote commands:
c01 b30).

Compute and record BW, Fc and Qmeas. Target Value:

Mark Q	BW (Hz)	Fc (Hz)	Qmeas
33.6	62 ±4	2000 ±2	33.6 ±1.5

Reset generator. DEMOD FSK 2.000 kHz
Audio In 0.0 dBm 0 dB

3.3.7 Space Filter Test
Send Test Command 1.
Set Demod SPACE: 2000 Hz,
Demod MARK: 3000 Hz
(Remote command:
c01 s2000 m3000).

Set generator. DEMOD FSK 2.000 kHz
Audio In 0.0 dBm 0 dB

STEP	ACTION	SCOPE, ACVM, dB METER, COUNTER	dB ATTEN GEN	BOX

3.3.7 (Continued)

Change the demod baud rate to set filter Qs:

Q	Baud	Q	Baud
33.6	30	5.93	337
23.2	86	4.48	443
17.5	114	3.69	540
13.7	145	3.16	625
11.7	170	2.88	689
9.90	202	2.63	760
7.85	253	2.34	854
6.10	327	2.10	952

The above is based on the formula:
Q = Center Frequency / Baud = 2000 / Baud

Decrement the Q of the SPACE filter. (Remote commands: c01 b30, b86, ... b952). Observe level increases.

TP7 ≈4.75 dBm @ SPACE Q = 33.6
≈7.25 dBm @ SPACE Q = 2.1

Set SPACE Q to 33.6 (Remote command: c01 b30). Measure & record levels.

TP9 ≈6.75 dBm
TP7 ≈4.75 dBm

Measure & record levels for SPACE Q = 33.6,

TP7

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

(Remote commands:
c01 b30, b327, b337, b952).

Measure & record -3dB frequencies for SPACE Q = 33.6 — TP7
(Remote commands:
c01 b30).

Compute and record BW,Fc and Qmeas. Target Values:

SPACE Q	BW (Hz)	Fc (Hz)	Qmeas
33.6	62 ±4	2000 ±2	33.6 ±1.5

Reset generator. 2.000 kHz

STEP	ACTION	SCOPE, ACVM, dB METER, COUNTER	dB ATTEN GEN	dB ATTEN BOX
3.3.8	AMH Test			
	Connect the signal generator to DEMOD FSK Audio in (A5J2-10, A2J2-12).	DEMOD FSK Audio In	DEMOD FSK Audio In	
	Send Test Command 1.			
	Set generator & dB box.		2.000 kHz	
	Set AMH Threshold @ 0 dBm (SW1-1 only on).		0.0 dBm	-1 dB

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

Confirm LOS (TTL High)
for Threshold switch TP5 -1 dB
settings of: 0,-6, to
-12,-18,-24,-30,-36,-42 -43 dB
with input levels of -1,-7,
-13,-19,-25,-31,-37,-43
dBm respectively, ±1 dBm.

Reset AMH Threshold to
0 dBm (SW1-1 only on).

3.3.9 Gain Control Test DEMOD FSK 2.000 kHz
Send Test Command 1. Audio In 0.0 dBm 0 dB
Set generator & dB box.

Decrease Demod FSK Audio TP14
In level. Observe level
increases due to gain
control @ -4, -10, -16,
-22, -28, -34, -40 dBm.
Tolerance = ±1 dBm.

Set Demod Space: 2000
(Remote Command: c01 s2000)
Decrease Demod FSK Audio TP7
In level. Observe gain
control changes @ -4, -10,
-16, -22, -28, -34,
-40 dBm, ±1 dBm

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

STEP	ACTION	SCOPE, ACVM, dB METER, COUNTER	dB ATTEN GEN	BOX
	3.3.10 Low Pass Filter Test			
	Set generator and dB box.	DEMOD FSK	2.000 kHz	
		Audio In	0.0 dBm	0 dB
	Send Test Command 1.			
	Confirm zero offset	TP23		
	Set Demod MARK: 3000, Demod SPACE: 2000 (Remote command: m3000 s2000)			
	Confirm zero offset	TP22		
	Observe detected space ≈4VDC level.	TP23		
	Send Test Command 1.			
	Observe detected mark ≈4VDC level.	TP22		
	3.3.11 Detector Select Test			
	Jumper Mod FSK Audio out (A5J2-1, A5J2-3) to Mod FSK Audio In (A5J2-10, A5J2-12).			
	Send Test Command 2.			

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

Connect a symmetric
30 baud RS232 signal
to Data TXD in (A5J1-20).

Observe a symmetric
30 baud TTL Signal TP24
for Mk Only, Sp Only,
and FSK detector modes
(Remote commands:
j1, j2, j0).

3.3.12 High Speed Demod Filter Test
Jumper Mod FSK Audio out
(A5J2-1, A5J2-3)
to Mod FSK Audio In
(A5J2-10, A5J2-12).
Send Test Command 2.
Observe 12275 Hz sine wave TP11
≈ 6.0 dBm

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

STEP	ACTION	SCOPE, ACVM, dB METER, COUNTER	dB ATTEN GEN	BOX

3.4 MODEM I/O TESTS:

3.4.1 Demod RXD Output Check

Jumper Mod FSK Audio out
(A5J2-1, A5J2-3)
to Demod FSK Audio in
(A5J2-10, A5J2-12).

Connect symmetric 30 baud
RS232 signal to
Data TXD in (A5J1-20).
Send Test Command 2.
Observe symmetric 30 baud DEMOD RS-RXD
RS232 signal. A5J1-22

Set Data TXD in rate
to 1200 baud.
Set Demod to 1200 baud
(Remote command: c01 b1200).
Observe symmetric DEMOD MIL-RXD
1200 baud MIL188 signal. A5J1-23

3.4.2 Data CD Out Test

Jumper Mod FSK Audio out
(A5J2-1, A5J2-3)
to Demod FSK Audio in
(A5J2-10, A5J2-12).

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

Confirm AMH Threshold
@ 0 dBm (SW1-1 only on).

Confirm AMH Delay
@ 1 second (SW2-8 only on).

Confirm LOS Polarity
(J9) '-V' position.

Sent Test Command 2.
Set BIT Mode to
0dBm internal
(Remote command:t5) CD Out
Observe Data CD out A5J1-10
RS232 High

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

STEP	ACTION	SCOPE, ACVM, dB METER, COUNTER	dB ATTEN GEN	BOX
3.4.2	(Continued)			
	Set BIT Mode to internal -20 dBm (Remote command: t6). Observe Data CD out.	CD Out A5J1-10 RS232 Low		
	Set Demod baud to 1200 baud. (Test command: c01 b1200 t6). Observe Data CD out.	CD Out A5J1-10 RS232 High		
	Set Auto Mute On (Test command: u1). Observe Data CD out.	CD Out A5J1-10 RS232 Low (LOS)		
	Set AMH off (Test command: A0). Observe Data CD out.	CD Out A5J10-1 RS232 High		
	Set LOS Polarity to '+V'. (A1J9 = '+V')	CD out A5J1-10 RS232 Low		
	Reset Low Polarity to '-V' (A1J9 = '-V')			
3.4.3	AMH Time-out Test			

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

Jumper Mod FSK Audio out
(A5J2-1, A5J2-3)
to Demod FSK Audio in
(A5J2-10, A5J2-12).
Connect < 0.2 Hz
symmetric RS232 signal to
Data DRTS in (A5J1-17).

Set jumper J8 to
'Auto Mute' position.
Confirm AMH Threshold
@ 0 dBm (SW1-1 only on).

STEP	ACTION	SCOPE, ACVM, dB METER, COUNTER	dB ATTEN GEN	BOX
3.4.3	(Continued)			
	Set AMH Delay to 5 seconds (SW2-1 only on). Set counter for interval measurements. Set counter Channel A to trigger on trailing edge of Data DRTS in (A5J1-17) signal	CH A: Data DRTS In		
	Set counter Channel B to measure delay to trailing edge of Data CD out (Rear J1-10) signal.	CH B: Data CD out		
	Send Test Command 2. Confirm time delay to loss of signal (Data CD out @ RS232 low) for AMH Delay settings of: 5.0, 4.5, 4.0, 3.5, 3.0, 2.5, 2.0, 1.5, 1.0 secs (SW2-1 only on, SW2-2 only on, ... SW2-8 only on). Tolerance = ±0.2 secs.			
	Reset AMH Delay to 1.0 secs (SW2-8 only on). Reset jumper J8 to			

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

'Tone On' position.

3.4.4 Data DCTS Out Test

Set Data DRTS in (A5J1-17) to RS232 high.	
Confirm Data DCTS out (A5J1-18) is RS232 high.	Data DCTS RS232 high
Set Data DRTS in (A5J1-17) to RS232 low.	
Confirm Data DCTS out (A5J1-18) is RS232 low.	Data DCTS RS232 low

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

STEP	ACTION	SCOPE, ACVM, dB METER, COUNTER	dB ATTEN GEN	BOX
3.4.5	Tuning Bar Test			
	Set and connect signal generator to DEMOD FSK Audio in (A5J2-10, -12).	DEMOD FSK Audio In	2.000 kHz 0.0 dBm	0 dB
	Send Test Command 1. Set Demod SPACE to 2000 (Rem command: c01 s2000).			
	Confirm 0 dBm indication on the front panel tuning bar indicators.			
	Attenuate DEMOD FSK Audio in signal.		-45 dB	
	Confirm -45 dBm indication on the front panel tuning bar indicators.			
	Reset dB box to 0 dB.		0 dB	
	Send Test Command 2. Jumper MOD FSK Audio out (A5J2-1, A5J2-3) to DEMOD FSK Audio in (A5J2-10, A5J2-12). Connect 30 baud RS232 signal to Data TXD in (A5J1-20). Confirm operation of tuning bar indicators.			
	Set Demod Baud to 1200			

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

(Remote command: c01 b1200).
Connect 1200 baud RS232 signal
to Data TXD in (A5J1-20).
Confirm operation of
tuning bar indicators.

Send Test Command 2.
Select Modulator
(Remote command: c02).
Connect 30 baud RS232 signal
to Data TXD in (A5J1-20).
Confirm operation of
the tuning bar indicators.

STEP	ACTION	SCOPE, ACVM, dB METER, COUNTER	dB ATTEN GEN	BOX
3.4.6	Keyline Test Jumper MOD FSK Audio out (A5J2-1, A5J2-3) to DEMOD FSK Audio in (A5J2-10, A5J2-12). Connect 30 baud RS232 signal to Data TXD in (A5J1-20). Send Test Command 2. Confirm continuity between Data Key1 and Data Key2 (A5J1-15 and A5J1-16) Confirm continuity between Audio Key1 and Audio Key2 (A5J2-5 and A5J2-6). Set Mute on (Remote command: u1). Confirm open circuit between Audio Key1 and Audio Key2 (A5J2-5 and A5J2-6).			
3.4.7	Data TXC Out And RXC Out. Send Test Command 2. Set Synchronous mode (Remote command: w0) Verify Data RXC out (A5J1-21) (symmetric RS232 signal @ Demod baud rate).	Data RXC out 30.0 Hz		

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

Verify Data TXC out
(A5J1-19) Data TXC
(symmetric RS232 signal @ 30.0 Hz
mod baud rate).

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

STEP	ACTION	SCOPE, ACVM, dB METER, COUNTER	dB ATTEN GEN	BOX
3.4.8	Undet MARK Out, Undet SPACE Out Test. Jumper MOD FSK Audio out (A5J2-1, A5J2-3) to DEMOD FSK Audio in (A5J2-10, A5J2-12). Connect 30 baud RS232 signal to Data TXD in (A5J1-20). Send Test Command 2. Set scope to A vs B mode. Connect CH A Scope to Undet Mark Out (A5J1-7). CH A: Connect CH B Scope to Undet MARK Undet Space Out (A5J1-9) CH B: Observe M/S ellipses. Undet SPACE			
3.4.9	Connector Continuity Test Check Continuity to ground for: Data Rear A5J1-12, 13, 14, 24, 25, 26, 36, 37 Audio Rear A5J2-37 Remote Rear A5J4-6			

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

Check continuity between
A5J1-8 and A5J2-8.

3.4.10 Modem-Control Board I/O Test

Verify proper operation of
Remote CTS (A5J4-2),
Remote RTS out (A5J4-4), and
Remote CTS out (A5J4-5)
using the Control Board test
that checks these lines.

Also use the Control Board test to verify proper
operation of the following lines to the Control Board:
Demod Gain lines DGA, DGB, DGC (J18-20, 21, 22)
AMHO (J18-23)
Regen lines RXDTR, RXDFR (J18-29,30)

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

STEP	ACTION	SCOPE, ACVM, dB METER, COUNTER	dB ATTEN GEN	BOX
3.4.11	Diversity Test (when installed) Connect J2 to Diversity connector (A5J5).			
	Jumper Mod FSK Audio out (A5J2-1, A5J2-3) to Demod FSK Audio in (A5J2-10, A5J2-12). Set jumpers J13 and J14 to 'Div' positions.			
	Send Test Command 2. Set Div mode (Remote command: d1). Connect a 30 baud RS232 signal to Data TXD in (A5J1-20).			
	Confirm Diversity Mark. A5J5-1			
	Confirm Diversity Space. A5J5-2			
	Confirm Diversity Peak Det. A5J5-3			
	Confirm Diversity AMH. A5J5-4			
	Confirm continuity to GND A5J5-5.			
	Reset jumpers J13 & J14 to 'NDIV' position.			

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

3.5 Keypad Test

3.5.1 Confirm operation of all keys
using the BIT keypad test
(Remote command: t9 k)

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

STEP	ACTION	SCOPE, ACVM, dB METER, COUNTER	dB ATTEN GEN	BOX
3.6	Front Panel LED Test			
3.6.1	Confirm operation of all LEDS.			

Remote Command LED

?? Center & Shift ON
?? Mark & Space ON

w1 Synch ON
w5 Synch OFF

y1 Regen ON
y5 Regen OFF

j1 MK Only ON
j2 SP Only OFF
j0 FSK ON

a0 AMH OFF
a1 AMH ON

h1 Hold ON
h0 Hold OFF

n1 Rev ON
n0 Rev OFF

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

3.7 Indicate that the unit has been successfully final tested and submit the unit for acceptance testing.

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

ST8000A MODEM BOARD/UNIT FINAL - ASSEMBLY A1/A6 TEST LOG

__Unit
__Board S/N_____ Tech_____

Date_____ Start_____ Stop_____

Voltage Tests:

+5V_____V +8V_____V -8V_____V

Modulator Tests:

TP4_____dBm TP3_____dBm Hi Z δ_____dBm

Demod Filter Tests:

TP1_____dBm

TP2 (dBm)	Fh (Hz)	Fl (Hz)	BW (Hz)	Fc(Hz)	Q

TP12_____dBm TP14_____dBm

QM	TP14(dBm)	Fh (Hz)	Fl (Hz)	BW (Hz)	Fc (Hz)	Q
33.6						
6.10						

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***

5.93						
2.10						

TP9 _____dBm TP7 _____dBm

QS	TP7(dBm)	Fh (Hz)	Fl (Hz)	BW (Hz)	Fc (Hz)	Q
33.6						
6.10						
5.93						
2.10						

TP5 5 sec Timeout_____sec

*** CAUTION ESD HANDLING PROCEDURES REQUIRED ***