 भारत इलेक्ट्रॉनिक्स BHARAT ELECTRONICS	ACCEPTANCE TEST PROCEDURE			DOC CODE ATP	PART NUMBER 4461 722 601 34	
LCD DISPLAY WITH KEYBOARD & TRACKBALL			ISSUE P1	SH No. 1	PREPD. Ch.Sasikala	DATE 01.10.16
	P1	PROVISIONAL	HELD IN	No. OF SH	APPRD. P.Manjulatha	DATE 01.10.16
	ISS No.	CN No.	HYD	11		

PROJECT: GBMES

ACCEPTANCE TEST PROCEDURE

FOR

LCD DISPLAY WITH KEYBOARD & TRACKBALL

BEL Part No: 4461 722 601 34

(Designed by BEL – Hyderabad)

Prepared By
BEL-Hyderabad

Checked By
BEL QC - Hyderabad

Approved By
DGAQA

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Bharat Electronics
Industrial Estate, Nacharam,
Hyderabad -500076,
Telangana,
INDIA.

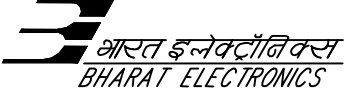
Telephone: 040 27194208


Fax: 040 27151243

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<p>This document describes the procedure for carrying out ACCEPTANCE Tests on LCD DISPLAY WITH KEYBOARD & TRACKBALL</p>							
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1.0 INTRODUCTION:

This document outlines the procedure for conducting ACCEPTANCE tests for the LCD DISPLAY WITH KEYBOARD & TRACKBALL which is used GBMES system.

This item is being supplied by M/s Datasol Pvt Limited, Bangalore.

This item is mounted in 19 inch rack inside the shelter of Receiving Station Vehicle-1, Vehicle-2 and Control station. Hence, this is a **Protected Unit**.


This item is listed under the following in the contract for GBMES systems.

- part of sl.no.10 in station list for Receiving station Vehicle-1
- part of sl.no.9 in & station list for Receiving station Vehicle-2
- part of sl.no.2 in station list of Control station

1.1. Brief Description: LCD DISPLAY WITH KEYBOARD & TRACKBALL It is Rugged 19" Rack mount 2U foldable display fitted with 88-key keyboard, trackball. and TFT LCD module using amorphous silicon TFT's as active switching devices built for space-limited environments with high graphics demand. The built is 19.0 inch diagonally measured active area with SXGA resolutions. Each pixel is divided into RED, GREEN, BLUE dots which are arranged in vertical stripe and this display can display min.16.2 million colors.

1.2 REFERENCE DOCUMENTS

- 1.2.1 QTP Document Ref: QTP for p/no. 4461 722 601 34 ver P1 , dtd 10.06.16
- 1.2.2 ESS Tests as per DGAQA Quality Directive No: 04-03/2015 dtd. 14 AUG 2015.
- 1.2.3 MDI/BOM Part no: PP drawing includes BOM (PP No: 4461 722 601 34)
- 1.2.4 BEL PO No.. BEPO / HD4 / 4000057921 dated 05.04.2016
- 1.2.5 Approved Specifications are as per BEL PP drawing.
- 1.2.6 Contract No. AIR HQ/S/96135/69/1/ASR Dated 31/07/2015.
- 1.2.7 SOFTWARE CERTIFICATION - Not applicable
- 1.2.8 FAILURE ANALYSIS - Refer Appendix-A
- 1.2.9 MTBF Value of the Sub Assy: Ref BEL letter no. 4706/07/12 dtd 19th Aug 2016 to AHQ.
- 1.2.10. Packing Drawing No : 9672 001 064 46
- 1.2.11. Delivery Set List: As per BEL PP drawing. Part no. 4461 722 601 34 Sheet:000

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2.0 SPECIFICATIONS

2.1 Technical Specifications:

- MONITOR: Anti-Glare polarizer product, wide temp liquid crystal, 2 channel LVDS interface, LED side mounting backlight, min.16.2 million colors, data enable signal mode, side mounting frame, green product.
- KEYBOARD / SLP: 88 keys with 10-key numeric pad green backlit keys integrated trackball. It is built into a rugged ABS polycarbonate case. It features green LED backlighting for use in low-light environments, and boasts an integrated touchpad that is designed with gloved-use in mind. Its slim features make it ideal for use on carts, wall mounts and other areas where space is at a premium.
- TRACK BALL: USB biased Full customization of bezel color, various colors and stainless steel, three buttons switch and track ball to move cursor.
- POWER SUPPLY: Max output wattage 75.6 & DC output 12V 6.3A.

2.2. Input Power Supply Requirements:

230 V AC single phase, 50 Hz

2.3. Dimensions:

The following are the dimensions of various parts:

a) Monitor	: 460.0± 0.5 (H) X 483.0 ± 0.5 (W) X 7.0 (D: max).
b) Functional Keyboard	: 11.80± 10(H) X 6.79±.10 (W) X1.35 (D: max).
c) Power Supply	: 33.528 (H) X 50.038 (W) X 150.114 (D: max).
d) Track Ball	: 58 (H)x 78 (W) x 36.17 (D)


2.4. Weight: 16 Kgs (approx.)

3.0 SOFTWARE :

Module is not software driven, hence documentation is not applicable

4.0 TEST EQUIPMENT REQUIRED:

4.1	CPU of a standard PC	- 1 No. (Straight)
4.2	Power cables	- 2 Nos.
4.3	Video cable	- 1 No.
4.4	USB Cables	- 2 Nos.

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5.0 PHYSICAL INSPECTION:

5.1 Visual:


- 1.Check the Display for any damages
2. Check if the power circular connector is properly mating at the Dispaly end and also clearly inserted at the power socket.
3. Check all the connectors power & signal for any loose pins/wires.
- 4.Note down the result in TDR-1.

5.2 Dimensions & Drawing Verification:

1. Physical inspection of the unit is to be carried out wrt dimensions, mounting and other details as per drawing and note down the measured dimensions in TDR-1.

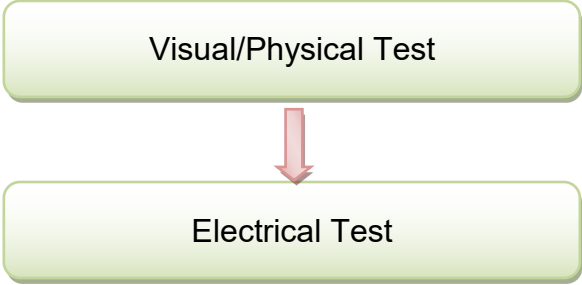
6.0 FUNCTIONAL TEST PROCEDURE:

1. Connect the Display to the CPU of a PC. After switching ON the power to Display check the system booting and display seen on the screen of Display.
2. Check the functionality of the keyboard by typing &Tack ball by right clicking / scrolling the ball.
3. Note down the results in TDR-2.
4. After checking, shutdown the system and switch off the Display Unit.

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7.0 ENVIRONMENTAL STRESS SCREENING (ESS):

As the item is an LCD monitor, ESS shall not be done on the unit.



Flow Chart for ATP

8.0 Defect / Failure Analysis: Defect/failure investigation is to be done, entered in the format mentioned in **Appendix-A** for any failure during any of the tests and filed with the results.

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TEST DATA RECORD-1

Sl.no. Date:
Test condition:

1. PHYSICAL INSPECTION

S.No	Test	Requirement	Result
1	KVM damages check	No damages	OK /NOT OK
2	Power circular mating and insertion at the power socket.	Proper fitment	OK /NOT OK
3	All the connectors power & signal	No loose pins / wires	OK /NOT OK

2. Dimensional Check:

S.No	Description	Specified Dimensions(mm)	Measured Dimensions(mm)	Result
1	Width	421 ± 0.5		OK /NOT OK
2	Height	86 ± 0.5		OK /NOT OK
3	Depth	500 ± 0.5		OK /NOT OK
4	Weight	15 Kgs ± 1		OK /NOT OK

RESULT : OK / NOT OK

OEM .Rep BEL-QA.Rep DGAQA Rep

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TEST DATA RECORD-2

Sl.no.

Date:

Test condition:

FUNCTIONAL TEST:

S.No	TEST	REQUIREMENT	RESULT
1	Power On Self Test:		
1	<u>Functionality of KVM:</u> System booting display seen on the screen of KVM.	<u>Observe:</u> Resolution up to 1280 X 1024	OK / NOT OK
2	<u>Functionality of Keyboard / Tracker Ball:</u> Functionality of the keyboard by typing & Tacker ball by right clicking / scrolling the ball.	Test by pressing the keys at keyboard & check the same is display on the screen at KVM. Right click on Tracker Ball & also by moving cursor to check the mouse is working fine.	OK / NOT OK


RESULT : OK / NOT OK

OEM .Rep

BEL-QA.Rep

DGAQA Rep

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Appendix A							
DIR <i>Defect Investigation Report</i>		Unit Description: Unit Sl. No.:					
DI NO.		TYPE OF MODIFICATION					
DATE:	H/W	S/W	N/A	BOTH	N/A		
S/W VERSION: N/A			CHECK SUM:				
PROBLEM REPORTED DURING:							
PROBLEM DESCRIPTION:							
MODULE / COMPONENT AFFECTED:							
DEFECT ANALYSIS & CAUSE OF PROBLEM:							
REPAIR / REMEDIAL ACTION:							
FOLLOW UP ACTION:							