Minutes RESOLUTION

12th meeting of Electronic Display Devices and Systems Sectional Committee, LITD 04

Friday, Jun 03 2022 -11:00 am

PARTICIPANTS:

1. **Chairman: Dr. M.J. Zarabi** **2. Member Secretary: Ms. Vinodini Kishore**

Sl.no	Name	Email id	Organization
1.	Ms. Neha Rajput	neha.rajput@netwebindia.com	Net web India Technology
2.	Mr.George Paul	george@mait.com	MAIT
3.	Mr.Rishi Verma	rishi@mait.com	MAIT
4.	Sh,Saurabh Nag	saurabh.nag@samsung.com	Samsung
5.	Dr. PS Porwal	ps.porwal@gov.in	Ministry of Defence, Dte. Of Standardization
6.	Sh,Ram Prakash	ramprakash@iitj.ac.in	IIT Jodhpur
7.	Smt. D s latha	dslatha@tce.co.in	Tata Consulting Engineers Limited
8.	Dr. Ashish Saurikhia	ashish@elcina.com	ELCINA
9.	Shri Pravin KA	pravin@eid.epson.co.in	Epson India Pvt Ltd
10.	Sh,Akarsh Dayal	akarsh.d@netwebindia.com	Net web India Technology

Item 0 WELCOME AND OPENING REMARKS

Dr. M.J. Zarabi, Chairman, LITD 04 welcomed all the participants to the 12th meeting of Electronic Display Devices and Systems Sectional Committee.

Item 1 CONFIRMATION OF THE MINUTES OF PREVIOUS MEETING

As no comments had been received, the minutes of the last meeting were confirmed by the Committee.

Item 2 COMPOSITION OF SECTIONAL COMMITTEE

2.1. The updated composition of LITD 04 Sectional committee is attached at **Annex A.**

Item 3 PRESENT SCOPE AND TECHNICAL WORK PROGRAMME OF THECOMMITTEE

3.1 The committee noted the information given in item 3.1 of agenda.

3.2 REVIEW OF PUBLISHED INDIAN STANDARDS

The committee reviewed list of standards mentioned at item 3.2 of agenda. Decision taken by the committee is mentioned in the below table.

Sl.no.	IS. No	Year	Title	Recommendations / Remarks	Comments received	Decision
1.	IS 2597 (Part 1)	1964	Code of practice for the use of electronic valves: Part 1 commercial rece4ing valves	As the vacuum tube technology has largely been replaced by the solid state based semiconductor devices and the parent International Standard, on which the Indian Standard IS 2597 (Part 1):1964 is based, is already withdrawn, it is proposed that this standard may also be considered for withdrawal.	From Senthil Kumar S,-BEL ,Bangalore IS 2597 (Part 1) & IS 2597 (Part 2) has been replaced by Semiconductor devices, hence it is suggested that this standards can be considered for withdrawal.	The committee decided to retain IS 2597 series as these are still used in measuring devices.
2.	IS 2597 (Part 2)	1967	Code of practice for the use of electron tubes: Part 2 special quality rece4ing tubes	As the vacuum tube technology has largely been replaced by the solid state based semiconductor devices and the parent International Standard, on which the Indian Standard is based, is already withdrawn, it is proposed that this standard may also be considered for withdrawal.		
3.	IS 2597 (Part 4)	1970	Code of practice for the use of electronic valves: Part 4	Tubes are still used in audio amplifiers, microwave ovens, some radars, and a few other applications where very high voltages are used like High	IS 2597 (Part 4) - Since Tubes are used for Radars & high power	-do-

			cathode - Ray tubes	power microwave transmitters, Traveling Wave Tube or TWT is still used. It is proposed to retain the standard.	Microwave Tubes, it is proposed to retain this standard.	
4.	IS 6134 (Part 1)	1978	Methods of measurements of electrical characteristics of microwave tubes: Part 1 common to all microwave tubes (First Revision)	Superseding IS 6134(Part 1, Part 2, Part 3, Part 5) with IEC 60235-2:1972 - "Measurement of the electrical properties of microwave tubes - Part 2: General measurements" incorporating amendment IEC 60235-2B:1975 & IEC 60235-2C:1976 ; IEC 60235-2A:1974 ;IEC 60235-2D:1976		It was decided to send an enquiry email to CEERI microwave tubes department about the present use of this series of standards.
5.	IS 6134 (Part 2)	1973	Methods of measurements on microwave tubes: Part 2 oscillator tubes	-do-		-do-
6.	IS 6134 (Part 3)	1973	Methods of measurements on microwave tubes: Part 3 amplifier tubes	-do-		-do-

7.	IS 6134 (Part 5)	1980	Methods of measurement on microwave tubes: Part 5 parasitic noise	-do-		-do-
8.	IS 6134 (Part 4)	1977	Methods of measurement of electrical characteristics of microwave tubes: Part 4 magnetrons	Withdraw and Replace with IEC 60235-4:1972 "Measurement of the electrical properties of microwave tubes. Part 4: Magnetrons" incorporating amendments IEC 60235-4A:1975 – "Voltage tunable magnetron".		-do-
9.	IS 6134 (Part 6)	1981	Methods of measurement of electrical characteristics of microwave tubes: Part 6 low - Power oscillator klystrons	Withdraw and Replace with IEC 60235-5:1972 – "Measurement of the electrical properties of microwave tubes. Part 5: Low-power oscillator klystrons"		-do-
10.	IS 6134 (Part 7)	1981	Methods of measurement of electrical characteristics of microwave tubes:	Withdraw and Replace with IEC 60235-6:1972 – "Measurement of the electrical properties of microwave tubes. Part 6: High-power klystrons"		-do-

			Part 7 high - Power klystrons			
11.	IS 6134 (Part 8)	1981	Methods of measurement of electrical characteristics of microwave tubes: Part 8 gas - Filled microwave switching devices	Withdraw and Replace with IEC 60235-7:1972 – "Measurement of the electrical properties of microwave tubes. Part 7: Gas-filled microwave switching devices"		-do-
12.	IS 6134 (Part 9)	1981	Methods of measurement of electrical characteristics of microwave tubes: Part 9 Backward-wave oscillator tube '0' type	Withdraw and Replace with IEC 60235-8:1972 – "Measurement of the electrical properties of microwave tubes. Part 8: Backward-wave oscillator tubes - '0' type "incorporating amendment 8A		-do-
13.	IS 6134 (Part 10)	1981	Methods of measurement of electrical characteristics of microwave tubes: Part 10 crossed - Field amplifier tubes	Withdraw and Replace with IEC 60235-9:1975 –" Measurement of the electrical properties of microwave tubes - Part 9: Crossed-field amplifier tubes"		-do-

14.	IS 6136	1971	Basic requirements for cathode ray tubes	Review analysis was circulated to all members through BIS portal on 01.09.2021.An emailed was also sent to all members for their inputs on 25.05.2022. After reviewing the standard it is recommended that "As CRT technology has not undergone any major change, the contents of the Indian Standard are relevant even today. Although the CRT technology has become obsolete due to advent of LCD/LED technology, it is not advisable to withdraw the Standard as CRT based monitors are used in Analog Oscilloscopes which are particularly in use in educational/training institutions." Hence it is recommended to		The committee agreed to the recommendation of waiving WC draft and publication of revised version of Indian standard.

				continue with the standard and revise the standard in the latest style and format of the Indian Standards. The Committee may consider and accord its approval, and shall finalize the revision of the standards for adoption and publication of the same waiving wide circulation, being non-controversial in nature.		
15.	IS 6567	1972	Radiation protection for an X - Ray tube in a protective tube housing, operating between 10 kV and 400 kV	Review analysis was circulated to all members through BIS portal on 01.09.2021. The standard may be considered for withdrawal as IS 13450 (Part 1/Sec 3): 2014 " Medical electrical equipment: Part 1 general requirements for basic safety and essential performance: Sec 3 collateral standard: radiation protection in diagnostic X-ray equipment" comprehensively covers the requirements of leakage radiation for different types of		The committee agreed for the withdrawal of the Indian standard.

				X-ray tubes and X-RAY TUBE Assemblies (nothing but the X-RAY TUBE HOUSING with an X-RAY TUBE installed) and the corresponding methods of compliances.		
16.	IS 7146 (Part 1)	1973	Methods of measurements on photosensitive devices: Part 1 basic considerations	Withdraw and Replace with IEC 60306-1:1969 ”Measurement of photosensitive devices - Part 1: Basic recommendations”		The committee agreed for the replacement of Indian Standard with IEC 60306-1:1969 ”Measurement of photosensitive devices - Part 1: Basic recommendations”
17.	IS 7146 (Part 2)	1974	Methods of measurements on photosensitive devices: Part 2 phototubes	Withdraw and replace with IEC 60306-2:1969 “Measurement of photosensitive devices. Part 2: Methods of measurement of phototubes”		The committee agreed for the replacement of Indian Standard with IEC 60306-2:1969 “Measurement of photosensitive devices. Part 2: Methods of

						measurement of phototubes”
18.	IS 7146 (Part 3)	1974	Methods of measurements on photosensitive devices: Part 3 photo-conductive cells for use in the visible spectrum	Withdraw and replace with IEC 60306-3:1970 **“**Measurement of photosensitive devices. Part 3: Methods of measurement of photoconductive cells for use in the visible spectrum”		The committee agreed for the replacement of Indian Standard with IEC 60306-3:1970 **“**Measurement of photosensitive devices. Part 3: Methods of measurement of photoconductive cells for use in the visible spectrum”
19.	IS 7146 (Part 4)	1974	Methods of measurements on photosensitive devices: Part 4 photomultipliers	Withdraw and replace with IEC 60306-4:1971 “Measurement of photosensitive devices. Part 4: Methods of measurement for photo-multipliers”		The committee agreed for the replacement of Indian Standard with IEC 60306-4:1971 “Measurement of photosensitive devices. Part 4: Methods of

						measurement for photo-multipliers"
20.	IS/IEC 60139	2000	Preparation of outline drawings for cathode - Ray tubes, their components, connections and gauges	IS/IEC 60139 : 2000 "Preparation of outline drawings for cathode-ray tubes + their components + connections and gauges" may be reaffirmed for 3 years as it is in line with the IEC standard 60139 : 2000.		The committee agreed the decision for reaffirmation of the Indian standard for 3 years.
21.	IS 13384 (Part 2)	1997	Cathode ray tube based data display monitor - Specification: Part 2 monochrome	Review analysis was circulated to all members through BIS portal on 01.09.2021. Followed by emailed dated 06.05.2022 & 26.05.2022.The observations of review report is as follows: The above standard has been studied and it was observed that the major manufacturers of display monitors in India have stopped manufacturing the		The committee recommended for revision of IS 13384 PART (1 & 2)

				production of CRT based display monitors. Further no laboratory is found which is still continuing the testing of CRT based display monitor. Further upon discussion with the end users in various industries it was observed that nobody is using them and has replaced them with newer technologies of LCD or LED display panels at their office/ workstations. Further CCTV display units used by them are also predominantly LCD/ LED display units.		
22.	IS 13384 (Part 1)	1992	Cathode ray tube based data display monitor - Specificaiton: Part 1 colour	-do-		-do-

Item 4 INTERNATIONAL ACTIVITES

4.1 & 4.1.1 The Committee noted the information as given in the Item 4.1 & 4.1.1 of the agenda.

4.1.2 The updated list of experts nominated in IEC TC 110 Working group is as follows:

Sl no.	Working Group	Expert nominated
1.	WG 10 Laser Displays	Shri Pravin Kumar Adaikkalam Mr Harish Anant Kalyan Mr Karthik Swaminathan Mr Amit Mittal
2.	WG 13 Optical measurements ofelectronic displays (OPT)	Mr Harish Anant Kalyan Mr Karthik Swaminathan Mr Amit Mittal Shri Pravin Kumar Adaikkalam
3.	WG 12 Eyewear Display	Mr H.K. Dwivedi Mr Karthik Swaminathan Mr Amit Mittal
4.	WG 8 Flexible display devices (FDD) & WG 18 (former WG 5) Organic light emitting diode displays (OLED).	Shri Sudhir Kumar Shri, Saurabh Nag

4.2 The committee decided to review the following standards published by TC 110 for adoption as Indian standards. It was decided to circulate the following standards as P draft for one month to all members for their comments.

IEC no	**Title**	**Description**
IEC 62908-12-20:2019	Touch and interactive displays - Part 12-20: Measuring methods of touch displays - Multi-touch performance	IEC 62908-12-20:2019(E) specifies the standard measuring conditions and measurement methods for the multi-touch performance of a touch sensor module. This document is applicable to touch sensor modules, where the structural relationship between the touch sensor, touch controller, touch sensor module, display panel, touch display panel, and touch display module is defined in IEC 62908-1-2.
IEC 62908-13-10:2016	Touch and interactive displays - Part 13-10: Reliability test methods of touch displays - Environmental durability test methods	IEC 62908-13-10:2016(E) specifies the methods for testing the environmental durability of touch display modules, touch sensor modules and test pattern cells, and can be used for devices at the production level, the prototype level or the trial model level when they are exposed to environmental stress. This document is applicable for touch displays that use capacitive or resistive detection sensors. It may also be applicable to other types of sensors as well as to touch display modules with both flat and flexible displays.

IEC 63211-3-5:2020	Durability test methods for electronic displays - Part 3-5: Mechanical tests - Surface durability	IEC 63211-3-5:2020(E) defines common procedures for surface durability mechanical test methods. This document generally describes the test equipment and procedures used for each method when applied on all levels, from parts (i.e. outermost surface parts of products, display panels and modules) to final products (i.e. finished displays or products).
IEC 63145-20-20:2019	Eyewear display - Part 20-20: Fundamental measurement methods - Image quality	IEC 63145-20-20:2019 (E) specifies the standard measurement conditions and measurement methods for determining the image quality of eyewear displays. This document is applicable to non-see-through type (virtual reality “VR” goggle) and see-through type (augmented reality “AR” glasses) eyewear displays using virtual image optics. Contact-lens type displays and retina direct projection displays are out of the scope of this document.
IEC 62977-2-2:2020	Electronic displays - Part 2-2: Measurements of optical characteristics - Ambient performance	IEC 62977-2-2:2020(E) specifies standard measurement conditions and measuring methods for determining the optical characteristics of electronic displays under indoor and outdoor illumination conditions. Standard illumination geometries are specified and the reflection properties of flat screens are determined under those conditions. Reference illumination levels and spectra are used to estimate the photometric and colorimetric characteristics of electronic displays under the same conditions. These methods apply to emissive, transmissive, and reflective displays, or combinations thereof, that render real 2D images on a flat screen.

IEC 62908-13-10:2016	Touch and interactive displays - Part 13-10: Reliability test methods of touch displays - Environmental durability test methods	IEC 62908-13-10:2016(E) specifies the methods for testing the environmental durability of touch display modules, touch sensor modules and test pattern cells, and can be used for devices at the production level, the prototype level or the trial model level when they are exposed to environmental stress. This document is applicable for touch displays that use capacitive or resistive detection sensors. It may also be applicable to other types of sensors as well as to touch display modules with both flat and flexible displays.
IEC 62908-1-2:2017	Touch and interactive displays - Part 1-2: Generic - Terminology and letter symbols	IEC 62908-1-2:2017(E) provides a list of terminological entries that are frequently used in the literature related to touch and interactive displays in the IEC 62908 series. Terms for various input methods such as touch, hovering, proximity, gesture, eye tracking, and motion recognition are included. This document is applicable to touch displays, interactive displays and their components.

Item 5 DATE AND PLACE FOR THE NEXT MEETING

It was decided to fix the date and place for the next meeting in consultation with the chairman.

Item 6 ANY OTHER BUSINESS

There being no other businesses, the meeting came to an end with the vote of thanks to the Chairman and all the participants for their active participation.