

Curved (LCD/OLED) TV Analysis (Market, Technology, Process, Product)

<https://marketpublishers.com/r/C10DA94A7F7EN.html>

Date: January 2014

Pages: 144

Price: US\$ 4,950.00 (Single User License)

ID: C10DA94A7F7EN

Abstracts

Since the introduction of flat panel display TVs in early 2000, the presence of CRT TVs has almost disappeared. Due to competition between PDPs and LCDs, not many PDP producers have stayed in the PDP business. Moreover, Panasonic, a leading PDP producer, recently terminated its PDP TV business. In a little over 10 years, LCDs have become a major TV technology and the flat panel display market is about to face challenges of OLED display technology.

For the past ten years, LCD TV products have been making improvements and featuring new designs and systems. Every year, LCD systems have been developed to make improvements that included integrating LED back lighting units, realizing high definition and 3D TVs. Now TV producers are hoping to revive the stagnant TV market by introducing ultra high definition (UHD), which is in 3840 x 2160 (4K2K) resolution format TV. The UHD TV is known to deliver on a large screen a realistic image quality viewing experience; however, its distortion on the edges of the screen and low contrast ratio based on viewing angles issues that most need improvement. As a solution, the industry suggests that a curved display, which is capable of offering a realistic screen quality without sacrificing the contrast ratio by designing curvature screen that maintains an optimum viewing distance between viewers the center and edges of the display.

Despite a sluggish economy, TV producers are trying to promote TV demand by adapting the UHD TVs and large curved TVs to attract potential TV buyers.

Toward the latter part of 2013, the set makers have introduced curved TVs. Starting with Sony's 65" FHD Curved LCD TV in September 2013, Samsung Electronics unveiled a world's first 65" curved UHD LCD TV and a 55" curved UHD OLED. Then in October 2013, LGE introduced the world's first 77" curved UHD OLED TVs during IFA.

Changhong, a leading Chinese brand, also exhibited its 55" FHD LCD TV at the IFA show. Newer and better-curved TVs are expected by CES 2014. The industry expects that curved and/or UHD TVs will enter into strong competition in 2014.

This report focuses on Curved TV technology, explaining overall market trends, suggesting issues regarding curved TVs and resolution. This report will be a useful guide for professionals ranging from marketing research, product planning, developing, processing, and producing to component producers of curved TVs.

Important Points of the Report:

1. Background and concept of Curved TVs
2. Defining curvature methods by TV viewing conditions and case studies
3. Expected issues in curvature designs and solutions from Panel & Set makers view.
4. Issues in process from Panel and Set makers' point of view
5. Process trends by producers
6. The future of curved displays

Contents

1. OVERVIEW

- 1.1. Display Technical Trend
- 1.2. Display Product Trend (1) - (2)
- 1.3. Historical Trend of TV
- 1.4. Mega Trend of TV Set
- 1.5. Curved OLED TV vs. Curved LCD TV
- 1.6. Curved OLED TV
- 1.7. Curved LCD TV
- 1.8. Curved LCD TV Panel Business Plan (2014)
- 1.9. Curve TV Set Shipment Forecast (2014 - 2017)
- 1.10. TV Marketing Driven Points (1) - (3)
- 1.11. Curved TV Price Positioning

2. THE CONCEPT OF CURVED TV

- 2.1. Analysis on Device Viewing Distance
- 2.2. Optimum Viewing Angle and Viewing Distance
- 2.3. Optimum Viewing Distance by TV Screen Size (1) - (4)
 - Optimum Viewing Distance by TV Size (1)
 - Optimum Viewing Distance by TV Size (2)
 - Optimum Viewing Distance by TV Size (3)
 - Reference (Optimum View Distance for DTVs) (4)
- 2.4. High Resolution
- 2.5. The Concept of Viewing Angle and Pixel Resolution (1)-(4)
- 2.6. Analyzing Capability of Vision (1)
 - Analyzing Capability of Vision (1)
 - Analyzing Capability of Vision (2)
- 2.7. Optimum Viewing Angle (1) - (5)
 - Optimum Viewing Angle (1)
 - Optimum Viewing Angle (2)
 - Viewing Angle (3)
 - Viewing Angle (4)
 - Viewing Angles in Order to View for Realistic Images (5)
- 2.8. Distance Variance by Resolutions
- 2.9. Distortion of Screen Image (1) - (3)
 - Distortion of Screen Image (1)

- Distortion of Screen Image (2)
- Contrast Ratio Decrease by Viewing Angle (3)
- 2.10. Designing Curved Display (1)
 - Less Image Distortion by Curved Display (1)
 - Maintain the Contrast Ratio by Designing Curved Display (2)
- 2.11. Necessity of Developing Curved TV and Its Effects
- 2.12. Examples

3. TECHNOLOGY ANALYSIS OF CURVED LCD TV

- 3.1. Comparison of the Conventional FPD TV and Curved TV
- 3.2. Concept of Deciding Curvature (1) - (4)
 - Ideal Curvature for a Suggested Viewing Distance (1)
 - Ideal Curvature for a Suggested Viewing Distance (2)
 - Decide Curvature by Viewing Condition Study (3)
 - Decide Curvature by Viewing Condition Study (4)
- 3.3. Examples of Curvature Study (Patent) (1) - (4)
 - Example of Determine Curvature Patent (1)
 - Determine Curvature (2)
 - Determine Curvature (3)
 - Example on Determine Curvature Research [LG] (4)
- 3.4. Curvature by Viewing Environment (1) - (3)
 - Optimum Curvature by Living Room Size (Korea) (1)
 - Optimum Curvature by Living Room Size (Oversea) (2)
 - Optimum Curvature (3)
- 3.5. Screen Depth by Curvature
 - Screen Depth
- 3.6. Curved OLED TV (1) - (3)
 - Curved OLED TV (Overall) (1)
 - Curved OLED TV (SEC) (2)
 - Curved OLED TV (LG) (3)
- 3.7. Comparison of Curved OLED TV and Curved LCD TV (1) - (3)
 - Comparison of Curved OLED TV and Curved LCD TV (1)
 - Comparison of Curved OLED TV??Curved LCD TV (2)
 - Comparison of Curved OLED TV??Curved LCD TV (3)
- 3.8. Issues in Developing Curved LCD TV (1) - (3)
 - Issues in Realization of Curved Display (1)
 - Reason for Light Leakage and Low Black Uniformity (2)
 - Light Leakage and Low Black Uniformity (3)

- 3.9. Difference in Light Leakage by LC Mode (1) - (2)
 - Vertical Alignment LC vs. Horizontal Alignment LC (1)
 - Difference in LC Mode (2)
- 3.10. Technologies for Improvement (1) - (10)
 - Prevention of Light Leakage, Uniformity Improvement (1)
 - Pixel Design (2)
 - Pixel Design (3)
 - Curvature Design (4)
 - Curvature Design (5)
 - Set Curvature Design (6)
 - Set Curvature Design (7)
 - Set Curvature Design (8)
 - Set Curvature Design (9)
 - Set Curvature Design (10)
- 3.11. Production Process Overview (1) - (2)
 - Curved Panel Production Steps (1)
 - Curved Panel Production Steps (2)
- 3.12. Glass Fabrication and Lamination Process (1) - (2)
 - Fabrication Process (Glass) (1)
 - LC Process (Glass Lamination) (2)
- 3.13. Circuit Bonding Process and Component Composition (1) - (4)
 - Issues in Circuit Bonding Process (1)
 - Width of Film (2)
 - Film Thickness and Material (3)
 - Bonding Materials and Process (4)
- 3.14. Circuit Board in the TV Set (1) - (14)
 - TV Circuit Board Structure (1)
 - TV Circuit Board Design (2)
 - Circuit Board Arrangement Direction (3)
 - Connector Arrangement Direction (4)
 - Circuit Board Size (5)
 - Control Chip Design (6)
 - Separate Arrangement of Circuit Board (7)
 - Rear Cover Design of Set (8)
 - Circuit Interface (9)
 - High Speed Interface (10)
 - Reducing Board Size (11)
 - Reference: V-by-One Interface Lane Number (12)
 - One-Chip (13)

UHD (4K2K) T-CON (14)

3.15. Back Light Unit (1) - (3)

Backlight Unit (1)

Realizing Curvature Backlight Unit (2)

Slim LGP (3)

3.16. LED Light Source Design

3.17. Curved Surface In Order To Form Curve Jig

3.18. Optimum TV Set Design for Curve Effect (1) - (3)

Set Design Review (SEC Curved OLED TV) (1)

Set Design Review (LG Curved OLED TV) (2)

Set Design Review (Sony Curved OLED TV) (3)

3.19. Comparison of TV Installation (FPD TV vs. Curved TV)

4. SET MAKERS' DEVELOPMENT & PRODUCT INTRODUCTION STATUS

4.1. Curved LCD TV in Convention and Market (1) - (4)

Historical Summary of Curved TV (1)

Sony Curved LCD TV (65"FHD) (2)

Samsung Curved LCD TV (65"UHD) (3)

Changhong Curved LCD TV (55"FHD) (4)

4.2. Development Status and Release Date of Curved LCD TV by Brand (1) - (4)

SEC (1)

LGE (2)

Innolux & BOE (3)

Six Major Chinese Local TV Makers (4)

5. FUTURE OF CURVED TV

5.1. Optimized Large Screen 21:9 TV for Movie Viewing

5.2. Curved Monitor for Office

5.3. Monitors for Game / Simulation Monitor

5.4. Shape Curvature Changeable Curved TV

5.5. Convex Display

Appendix

Intel's TIC-TOC Strategy

Cinemascope (Panasonic)

I would like to order

Product name: Curved (LCD/OLED) TV Analysis (Market, Technology, Process, Product)

Product link: <https://marketpublishers.com/r/C10DA94A7F7EN.html>

Price: US\$ 4,950.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/C10DA94A7F7EN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:
Last name:
Email:
Company:
Address:
City:
Zip code:
Country:
Tel:
Fax:
Your message:

****All fields are required**

Customer signature _____

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970