

[Tutorial] LG Web_Testing 3D Video

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LGDEV-056

Home Entertainment Company
LG Electronics, Inc.

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About This Document

Revision History

Document Version	Date	Comment
1.0	October 17, 2011	Initial Version

Purpose

This document describes how to check 3D functions in each mode using Web open API.

Reference Documents

Refer to the following documents:

- LG Web Application Development Guide
- LG Web Open API Reference Guide

Conventions

Codes

Source code and examples are indicated in the `grey Courier New` font.

Note, Caution

Note and caution are used to emphasize information.
The following samples describe when each is used.

Note

Contains information about something that is helpful to you.

Caution

Contains important information about something that you should know.

Abbreviation

The following table defines the abbreviations used in this document.

Abbreviation	Description
API	Application Programming Interface

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1 Introduction

This chapter provides an overview of this application and needed APIs.

1.1 Overview

1.2 Needed APIs

1.1 Overview


This application can be used to check the 3D functions in each mode.

The current 3D mode can be set to 2D-to-3D, side-by-side, top-and-bottom, or checker board using the mode3D property.

This application consists of 4 html pages, one for each of these modes. However, since these html pages are only different in terms of the 3D mode settings, this document will cover 3dvideo_test_page01.html only, the html page for 2D-to-3D mode. For other modes, just change the mode3D property of the media object to a value matching the 3D format of the content. This allows the same application or media object to play content in various 3D formats.

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File : /mediaplayer/app/3dvideo_test_page01.html

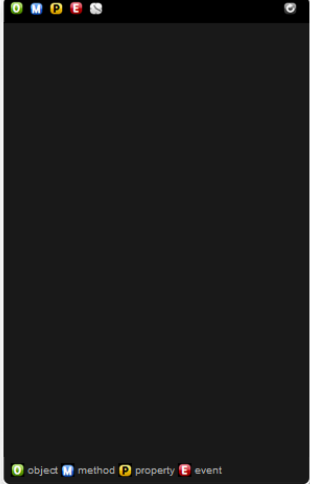


Web Open API List		
Methods	Properties	Events
play() play() stop() seek(time)	mode3D	

View

Source

Press RED-Key to start test.
Press YELLOW-Key to test Side By Side mode.



BACK

EXIT

START

NEXT PAGE

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[Figure 1] Application to Test 3D Video

Note

Log is used for checking the sequence of Web Open API; this will not be covered in the sample code description.

1.2 Needed APIs

This application uses following Web Open API:

[Table 1] Description of the Needed APIs

API Class	Name	Description
Method	Play(0)	Pauses media.
	Play(1)	Plays media.
	Stop()	Stops media.
	Seek(time)	Sets the time position of playback.
Property	mode3D	Returns the current 3D format for 3D mode.
Event	N/A	N/A

For more information on these functions, refer to “LG Web Open API Reference Guide”.



2 Creating Application

This chapter describes how to check 3D functions in each mode using Web open API.

2.1 Initializing the Page

2.2 Inputting Keys

2.3 Testing 3D Mode

2.4 Setting Media Object

2.5 Source Code of 3dvideo_test_page01.html

2.1 Initializing the Page

Use the **initPage** function to set the basic functions of the application.

- 04: Records the last visited page when running the application.
- 07: Initializes the page.
- 08: Gets the source code of the page using the XMLHttpRequest object.
- 09: Sets the page ID.
- 10: Initializes the Log function.
- 13-17: Adds an event handler which will be executed when the corresponding button is pressed.
- 19: Blue key is not displayed.
- 21: Stores the information on the user's browser in userAgent using navigator.userAgent.
- 23-26: If the application's browser is an LG Browser, true is stored in isLGEBrowser. Otherwise, false is stored.

Sample Code

```
01 : function initPage()
02 : {
03 :     //save page as last visited page
04 :     setLastVisitPage();
05 :
06 :     //common initialize function
07 :     commonInitialize();
08 :     requestSourceCode();
09 :     setPageID("3D Video");
10 :     jsLog.initLG();
11 :
12 :     //add onclick event handler
13 :     addEventHandler(document.getElementById("btn_back"),"click",onClickListener);
14 :     addEventHandler(document.getElementById("btn_red"),"click",onClickListener);
15 :     addEventHandler(document.getElementById("btn_blue"),"click",onClickListener);
16 :     addEventHandler(document.getElementById("btn_yellow"),"click",onClickListener);
17 :     addEventHandler(document.getElementById("btn_exit"),"click",onClickListener);
18 :
19 :     document.getElementById("btn_blue").style.display="none";
20 :
21 :     var userAgent = new String(navigator.userAgent);
22 :
23 :     if (userAgent != null && userAgent.search(/LG Browser/) > -1)
24 :         isLGEBrowser = true;
25 :     else
26 :         isLGEBrowser = false
27 : }
```

2.2 Inputting Keys

The **onUserInput** function is called by the **onClickHandler** function; it receives a key value as the **userInput** parameter from **onClickHandler** and creates the corresponding function for each key value to operate the key.

- 06: When the Back key is pressed, this code is executed.
- 07: When the Red key is pressed, **changeTestProgress()** is called.
- 08: When the Yellow key is pressed, the next page (3dvideo_test_page02.html → 3dvideo_test_page03.html → 3dvideo_test_page04.html) is called.
- 09: When the Blue key is pressed, **displayTridMode()** is called.

Sample Code

```
01 : //onUserInput function should be implemented
02 : function onUserInput(userInput)
03 : {
04 :     switch(userInput)
05 :     {
06 :         case VK_BACK : window.location.replace("../menu_mediaPlayer.html");
            break;
07 :         case VK_RED : case 82 : changeTestProgress(); break;
08 :         case VK_YELLOW : case 89 :
            window.location.replace("./3dvideo_test_page02.html"); break;
09 :         case VK_BLUE : case 66 : displayTridMode(); break;    }
10 : }
```

2.3 Testing 3D Mode

The following functions play a video for identifying the current 3D mode and show the current 3D format.

setTestProcess

Sets the test progress according to the input values.

03-06: Displays the output at the corresponding position on the screen according to the titleString, descString, and buttonString values inputted.

displayTridMode

Displays the 3D mode of the video being played.

11-12: Displays on the screen the 3D mode of the video being played.

changeTestProgress

Changes the test progress.

- 23: Sets the visibility of the tab where the source code is contained to "hidden" so that it is not shown while the video is being played.
- 27-30: If testStep is 1, the video plays back.
- 31-34: Shows the video and hides the body content. The test progress content that will be written in the View section is set to be shown in yellow.
- 36-37: Shows the blue key in the button bar at the bottom of the screen and hides the yellow key.
- 41: Displays the current video status and other information using the setTestProgress method, and change the "START" key to "PAUSE".
- 44-46: If testStep is 2, the video stops.
- 48: Displays the current video status and other information using the setTestProgress method, and change the "PAUSE" key to "START".
- 51-52: If testStep is 3, the video plays back.
- 54: Displays the current video status and other information using the setTestProgress method, and change the "START" key to "MOVE to 60 sec position".
- 57-58: If testStep is 4, the video plays back.
- 60: Displays the current video status and other information using the setTestProgress method, and change the "MOVE to 60 sec position" key to "STOP".
- 63-67: If testStep is 5, the video stops.
- 70: Displays the current video status and other information using the setTestProgress method, and change the "STOP" key to the " " key (i.e., the key is removed.).
- 71-73: Hides both of the red key and the blue key and shows the yellow key.
- 76: Increases testStep by one.

Sample Code

```
01 : function setTestProgress(titleString, descString, buttonString)
02 : {
03 :   setInnerTextById("3dvideo_test_title", titleString);
04 :   setInnerTextById("3dvideo_test_description", descString);
05 :   setInnerTextById("3dvideo_test_currentMode", "");
06 :   setInnerTextById("btn_red", buttonString);
07 : }
08 :
09 : function displayTridMode()
10 : {
11 :   var video = document.getElementById("video");
12 :   setInnerTextById("3dvideo_test_currentMode", "[Current 3D mode : " +
    video.mode3D + " ]");
13 :   jsLog.lgproperty('mode3D');
14 : }
15 :
16 : var testStep = 1;
17 :
18 : function changeTestProgress()
19 : {
20 :   var video = document.getElementById("video");
21 :   var sourcecode = document.getElementById("sourcecode");
22 :   var view = document.getElementById("view");
23 :   sourcecode.style.visibility = "hidden";
24 :
25 :   switch(testStep)
```

```

26 : {
27 :     case 1 :
28 :         if(isLGEBrowser)
29 :         {
30 :             video.play(1);
31 :             video.style.visibility="visible";
32 :             bodycontent.style.visibility="hidden";
33 :             view.style.visibility="visible";
34 :             view.style.color = "yellow";
35 :
36 :             document.getElementById("btn_blue").style.display="inline";
37 :
38 :             document.getElementById("btn_yellow").style.display="none";
39 :         }
40 :         jsLog.lgobject('application/x-netcast-av');
41 :         jsLog.lgmethod('video.play(1)');
42 :         setTestProgress("3D Video Test Page [2D to 3D] (step 1)",
43 : "Now this video has started with 3D mode. <br>Press RED-Key to pause.",
44 : "PAUSE");
45 :         break;
46 :
47 :     case 2 :
48 :         //Pause video which is being played.
49 :         if(isLGEBrowser){video.play(0);}
50 :         jsLog.lgmethod('video.play(0)');
51 :         setTestProgress("3D Video Test Page [2D to 3D] (step 2)",
52 : "The video has been paused.<br>Play the video and then check if current 3D
53 : mode continues.<br>Press RED-Key to play video.", "PLAY");
54 :         break;
55 :
56 :     case 3 :
57 :         if(isLGEBrowser){video.play(1);}
58 :         jsLog.lgmethod('video.play(1)');
59 :         setTestProgress("3D Video Test Page [2D to 3D] (step 3)",
60 : "Video has restarted with 3D mode.<br>Check if the video is being played in
61 : 3D mode. <br>Press RED-Key to move to 60 sec position.", "MOVE to 60 sec
62 : position");
63 :         break;
64 :
65 :     case 4 :
66 :         if(isLGEBrowser){video.seek(60000);}
67 :         jsLog.lgmethod('video.seek(time)');
68 :         setTestProgress("3D Video Test Page [2D to 3D] (step 4)",
69 : "The time position has been moved to 60 sec position.<br>Check if 3D video
70 : is working properly.<br>Press RED-Key to stop video.", "STOP");
71 :         break;
72 :
73 :     case 5 :
74 :         //Stop video which is being played.
75 :         if(isLGEBrowser){
76 :             video.stop();
77 :         }
78 :         jsLog.lgmethod('video.stop()');
79 :
80 :         setTestProgress("3D Video Test Page [2D to 3D] (step 5)",
81 : "The video has been stopped.<br>Now 3D mode is off.<br>Press YELLOW-Key to
82 : go to Side By Side mode.", "");
83 :         document.getElementById("btn_red").style.display="none";
84 :         document.getElementById("btn_blue").style.display="none";
85 :
86 :         document.getElementById("btn_yellow").style.display="inline";
87 :         break;
88 :     }
89 :     testStep++;
90 : }

```

2.4 Setting Media Object

The following code shows how to set the media object.

- 03: Sets the type suitable for the data.
For more information on this, refer to "Annex A Complete List of Supported MIME Types" of "LG Web Application Development Guide".
- 04-05: Sets the desired size and position of the video.
- 06: Sets the path of the media file to play.
- 07: Sets the style of the object.
- 08: Sets the autoStart property to false not to play the video immediately after the media object is created.
- 09: Sets the playCount property to "0" to allow the video to be replayed unlimitedly.
- 10: Sets the mode3D property to "from_2d_to_3d" to play the video in '2D to 3D' mode.
Change the value of the mode3D property according to the 3D format of each content item, which allows the media object to play content items of various 3D formats in 3D mode.
For more information on this, refer to "LG Web Application Development Guide".

Sample Code

```
01 : <object
02 :   id="video"
03 :   type="application/x-netcast-av"
04 :   width=1280
05 :   height=720
06 :   data="http://ncts.lge.com/ncts/mediafiles/3d_checkerbd.avi"
07 :   style="float: left; z-index: 1; visibility: hidden;"
08 :   autoStart="false"
09 :   playCount="0"
10 :   mode3D="from_2d_to_3d">
11 : </object>
```

2.5 Source Code of 3dvideo_test_page01.html

Source code of 3dvideo_test_page01.html is as follows:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
<title>3D Video Test Page 1/3</title>
<link rel="stylesheet" href="../../css/style.css">
<script language="javascript" src="../../js/common.js"></script>
<script language="javascript" src="../../js/keycode.js"></script>
<script language="javascript" src="../../js/media.js"></script>
<script language="javascript" src="../../js/menu.js"></script>

<script type="text/javascript" src="../../blackbirdjs/blackbird.js"></script>
<link type="text/css" rel="Stylesheet" href="../../blackbirdjs/blackbird.css" />

<script>

    //initialize page
    function initPage()
    {
        //save page as last visited page
        setLastVisitPage();

        //common initialize function
        commonInitialize();
        requestSourceCode();
        setPageID("3D Video");
        jsLog.initLG();

        //add onclick event handler
        addEventHandler(document.getElementById("btn_back"), "click",
onClickHandler);
        addEventHandler(document.getElementById("btn_red"), "click",
onClickHandler);
        addEventHandler(document.getElementById("btn_blue"), "click",
onClickHandler);
        addEventHandler(document.getElementById("btn_yellow"), "click",
onClickHandler);
        addEventHandler(document.getElementById("btn_exit"), "click",
onClickHandler);

        document.getElementById("btn_blue").style.display="none";

        var userAgent = new String(navigator.userAgent);

        if (userAgent != null && userAgent.search(/LG Browser/) > -1)
            isLGEBrowser = true;
        else
            isLGEBrowser = false;
    }

    function onUserInput(userInput)
    {
        switch(userInput)
        {
            case VK_BACK :
window.location.replace("../menu_mediaPlayer.html"); break;
            case VK_RED : case 82 : changeTestProgress(); break;
            case VK_YELLOW : case 89 :
window.location.replace("../3dvideo_test_page02.html"); break;
            case VK_BLUE : case 66 : displayTridMode(); break;
        }
    }

    function setTestProgress(titleString, descString, buttonString)
```

```

    {
        setInnerTextById("3dvideo_test_title", titleString);
        setInnerTextById("3dvideo_test_description", descString);
        setInnerTextById("3dvideo_test_currentMode", "");
        setInnerTextById("btn_red", buttonString);
    }

    function displayTridMode()
    {
        var video = document.getElementById("video");
        setInnerTextById("3dvideo_test_currentMode", "[Current 3D mode : " +
video.mode3D + " ]");
        jsLog.lgproperty('mode3D');
    }

    var testStep = 1;

    function changeTestProgress()
    {
        var video = document.getElementById("video");
        var sourcecode = document.getElementById("sourcecode");
        var view = document.getElementById("view");
        sourcecode.style.visibility = "hidden";

        switch(testStep)
        {
            case 1 :
                if(isLGEBrowser)
                {
                    video.play(1);
                    video.style.visibility="visible";
                    bodycontent.style.visibility="hidden";
                    view.style.visibility="visible";
                    view.style.color = "yellow";

                    document.getElementById("btn_blue").style.display="inline";

                    document.getElementById("btn_yellow").style.display="none";
                }
                jsLog.lgobject('application/x-netcast-av');
                jsLog.lgmethod('video.play(1)');
                setTestProgress("3D Video Test Page [2D to 3D] (step 1)",
"Now this video has started with 3D mode. <br>Press RED-Key to pause.", "PAUSE");
                break;

            case 2 :
                //Pause video which is being played.
                if(isLGEBrowser){video.play(0);}
                jsLog.lgmethod('video.play(0)');
                setTestProgress("3D Video Test Page [2D to 3D] (step 2)",
"The video has been paused.<br>Play the video and then check if current 3D mode
continues.<br>Press RED-Key to play video.", "PLAY");
                break;

            case 3 :
                if(isLGEBrowser){video.play(1);}
                jsLog.lgmethod('video.play(1)');
                setTestProgress("3D Video Test Page [2D to 3D] (step 3)",
"Video has restarted with 3D mode.<br>Check if the video is being played in 3D mode.
<br>Press RED-Key to move to 60 sec position.", "MOVE to 60 sec position");
                break;

            case 4 :
                if(isLGEBrowser){video.seek(60000);}
                jsLog.lgmethod('video.seek(time)');
                setTestProgress("3D Video Test Page [2D to 3D] (step 4)",
"The time position has been moved to 60 sec position.<br>Check if 3D video is working
properly.<br>Press RED-Key to stop video.", "STOP");
                break;
        }
    }

```



```

        case 5 :
            //Stop video which is being played.
            if(isLGBrowser){
                video.stop();
            }
            jsLog.lgmethod('video.stop()');

            setTestProgress("3D Video Test Page [2D to 3D] (step 5)",
"The video has been stopped.<br>Now 3D mode is off.<br>Press YELLOW-Key to go to Side
By Side mode.", "");

            document.getElementById("btn_red").style.display="none";
            document.getElementById("btn_blue").style.display="none";

            document.getElementById("btn_yellow").style.display="inline";
            break;
        }
        testStep++;
    }
</script>
</head>

<body ondragstart='return false' onselectstart='return false'
onload=" javascript:initPage();">

<div>
    <object
        id ="video"
        type="application/x-netcast-av"
        width=1280
        height=720
        data="/ApiTutorial/mediaprofile/samplevideo.wmv";
        style="float: left; z-index: 1; visibility: hidden;"
        autoStart="false"
        playCount="0"
        mode3D="from_2d_to_3d">
    </object>
</div>

<div id='bodycontent'>
    <!-- title -->
    <div id='3dvideo_test_title' class='SuiteTitle'>LG Smart TV SDK | Web Open API
Tutorial</div>

    <!-- navigation -->
    <div class='SuiteNavigation'>
        <div style="float:left;">File :
/mmediaplayer/app/3dvideo_test_page01.html</div>
    </div>

    <div class='SuiteTitleLine'> </div>

    <!-- test contents -->
    <div class='ContentArea'>
        <div class='ApiListTitleArea'>Web Open API List</div>
        <div class='ApiListArea'>
            <div class='MethodTitleArea'>
                Methods
                <div class='MethodListArea'>
                    play(0)<br>
                    play(1)<br>
                    stop()<br>
                    seek(time)<br>
                </div>
            </div>
            <div class='PropertyTitleArea'>
                Properties
                <div class='PropertyListArea'>
                    mode3D
                </div>
            </div>
        </div>
    </div>

```

```

        </div>
        <div class='EventTitleArea'>
            Events
            <div class='EventListArea'>

            </div>
        </div>
    </div>

    <div class='ViewTitleArea'>
        <div id='tabViewArea' class='SelectedViewArea' style='float:left;'
onclick="showView();">View</div>
        <div id='tabCodeArea' class='UnselectedViewArea'
style='float:right;' onclick='showCode();'>Source</div>
    </div>

    <div id='view'>
        <div class='ViewArea' style="position: relative;left: 100px;
top:100px;">

            <div class='centerTestGuide' id='3dvideo_test_description'
>
                Press RED-Key to start test. <br>Press YELLOW-Key to
test Side By Side mode.
            </div>
            <br>

            <div class='centerTestGuide' id='3dvideo_test_currentMode'>
            </div>

        </div>
    </div>

    <div style="visibility: hidden" id='codeview'>
        <textarea class="SourceCodeArea" value=""
id='sourcecode'></textarea>
    </div>
</div>

<!-- button and copyright -->
<div class='SuiteButtonArea'>
    <!-- back key description -->
    <div id='btn_back' class='buttonDescription '>BACK</div>

    <!-- exit key description -->
    <div id='btn_exit' class='buttonDescription'>EXIT</div>

    <!-- red key description -->
    <div id='btn_red' class='buttonDescription redColor'>START</div>

    <!-- yellow key description -->
    <div id='btn_yellow' class='buttonDescription yellowColor'>NEXT PAGE</div>

    <!-- blue key description -->
    <div id='btn_blue' class='buttonDescription blueColor'>CHECK FORMAT</div>

    <!-- copyright -->
    <div class='copyright'>Copyright LG Electronics</div>
</div>

</body>
</html>

```