

Test Report
of
3D Test Transmission
at Temple Hill

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1 Executive Summary

The test was jointly conducted by RTHK, ATV and TVB from 10th to 30th November 2012. It aimed at comparing the performances of 2D and 3D programmes (side by side format) in both RF and baseband aspects under current digital TV system, DTMB.

The result might help to analyze the deployment of 3D technology in Hong Kong TV industry in future, as 3D was a hot topic in recent years.

2 Methodology

There were several kinds of method to generate 3D picture. In this trial, broadcasters prepared three 3D scenarios for performing the technical and the subjective visual measurements such that the corresponding results were assessed. Three kinds of scenarios were as follows;

- i) True 3D TV;
- ii) 2D to 3D simulation; and
- iii) 2D to 3D simulation plus true 3D CG (Computer Graphic).

In addition to the trials at the aforementioned scenarios, two broadcasters, ATV and TVB also prepared a 2-hour 3D programme for testing the reliability of the transmission chain.

The survey crews were deployed to Chun Wan Street (將軍澳宏駿街) and Car Park of Kai Tak Airport (啓德機場) where the measurements of 2D and 3 D parameters were conducted under line-of-sight and non line-of-sight environment respectively.

Table 1: Transmission Parameter

TX station:	Temple Hill
E.R.P.:	1 KW
Polarization:	Horizontal
TX channel:	CH62
Frequency:	802 MHz
Standard GB20600-2006	PN945
	64 QAM
	CR 0.6
	B=52 M=720

3 Measurement Result

Table 2: Summary Table of Measured Result

	Survey Pt.	Category	C+K Factor dBuV/m	C dBm	Nmax dBm	Signal Margin dB	Cmin dBm	C/Nmax dBm	TX site Temple Hill	3D scenarios	Survey date
1	將軍澳宏駿街	3D	57.6	-76.8	-98.2	4	-80.8	21.4	Mountain Shadow	True 3D	Nov 12 2012
2	啓德機場	3D	86.6	-47.8	-64.5	35	-82.8	16.7	Line of TX sight		
1	將軍澳宏駿街	2D	56.9	-77.5	-95.0	7	-84.5	17.5	Mountain Shadow	2D to 3D simulation	Nov 19 2012
		3D	56.9	-77.5	-96.0	7	-84.5	18.5			
2	啓德機場	2D	86.4	-48.0	-64.0	38	-86.0	16.0	Line of TX sight		
		3D	86.4	-48.0	-64.1	36	-84.0	16.1			
1	將軍澳宏駿街	2D	58.4	-76.0	-93.9	9	-85.0	17.9	Mountain Shadow	2D to 3D simulation plus true 3D CG	Nov 26 2012
		3D	56.9	-77.5	-94.2	9	-86.5	16.7			
2	啓德機場	2D	86.6	-45.5	-61.2	40	-85.5	15.7	Line of TX sight		
		3D	86.6	-45.6	-61.1	40	-85.6	15.5			
1	將軍澳宏駿街	2D	No measurement. Survey point occupied by other vehicles						Mountain Shadow	3D programme played at Master Control Room	Nov 30 2012
		3D									
2	啓德機場	2D	87.0	-47.4	-64.9	35	-82.4	17.5	Line of TX sight		
		3D	86.6	-47.8	-64.9	34	-81.8	17.1			

4 Conclusion

- 4.1 The result revealed that almost the same transmission performance was observed between 2D and 3D programme, i.e., requirements of C/N ratio, receiving threshold level, etc.
- 4.2 The transmission of 3D TV worked well with the existing digital TV system (DTMB). DTMB could be adopted to transmit 3D programme if free TV channels were allocated for such purpose after the analogue switch off (ASO).

End of Report