

Revision of IMDA TS DVB-T2 IRD Issue 1 (Dec 2016)	
Summary of Respondents' Comments	IMDA's Response
IMDA thanks the Respondents for their feedback.	
<b>1. Radiated radio frequency (RF) electromagnetic field (EMF) immunity testing</b>	
<ul style="list-style-type: none"> <li>▪ With addition of two reference documents in Part A § 2 (page 4) to support changes made to Part A § 4.2.1.2 of the draft IMDA TS DVB-T2 IRD (page 7), one Respondent suggests a grace period of 1 year for manufacturers to adopt the revised IMDA TS DVB-T2 IRD after its publication.</li> <li>▪ References added to Part A § 2:  [7a] IEC 61000-4-3 (2010-04): Testing and measurement techniques – Radiated, radio-frequency (RF), electromagnetic field (EMF) immunity test  [9] ITU-T K.116 (2015): EMC requirements and test methods for radio telecommunication terminal equipment</li> </ul>	<p>IMDA clarifies that the same RF EMF immunity testing requirement for DVB-T2 receivers based on the established IEC CISPR 20 standard has been in force since 1 Jul 2017, 6 months after the publication of the IMDA TS DVB-T2 IRD Issue 1 (Dec 2016). Hence, a further 6-month transition period from Nov 2017 should suffice for manufacturers of DVB-T2 receivers to adopt the IMDA TS DVB-T2 IRD Issue 1 Rev 1 (Nov 2017).</p> <p>Reasons being:</p> <ul style="list-style-type: none"> <li>(a) Part A § 4.2.1.2 of the draft IMDA TS DVB-T2 IRD streamlines the immunity testing requirement for the DVB-T2 receivers.</li> <li>(b) No new requirement is introduced into the environment for immunity testing with the inclusion of these two reference documents (IEC 61000-4-3 and ITU-T K.116). They are surfaced in this revision to emphasise the use of the IEC 61000-4-3 testing methodology in CISPR 20 for assessing DVB-T2 receivers' level of immunity to continuous RF EMF disturbances.</li> </ul> <p>IMDA would like to recapitulate the radiated RF EMF immunity requirements based on the established IEC CISPR 20 standard for immunity testing (or electromagnetic susceptibility):</p> <ul style="list-style-type: none"> <li>(a) IMDA TS DVB-T2 IRD Issue 1 (Dec 2016) has indicated that this CISPR 20 requirement shall be complied with. CISPR 20 requires the broadcast reception function to be activated to receive DVB-T2 signal and tested according to the method defined in the IEC 61000-4-3.</li> <li>(b) IEC 61000-4-3 is a generic EMC standard for testing the impact of continuous RF EMF disturbances, adopted in the IEC CISPR 20 as well as the IEC CISPR 35 standard for electromagnetic susceptibility (EMS) of multimedia equipment (approved by IEC and published in September 2016). CISPR 35 will replace CISPR 20 (EMS of TV receivers) and CISPR 24 (EMS of information technology equipment) after a 5-year transition period.</li> <li>(c) Furthermore, specific to testing the broadcast reception function in the existing VHF and UHF spectrum allocation outlined in the IMDA TS DVB-T2 IRD, relaxation of performance criterion A test level from 3 V/m (80 to 1000 MHz) to 1 V/m in VHF and UHF bands is permitted (Annex A of CISPR 35).</li> </ul>

Revision of IMDA TS DVB-T2 IRD Issue 1 (Dec 2016)	
Summary of Respondents' Comments	IMDA's Response
	<p>(d) The ITU-T K.116 serves mainly to outline the conditions and performance criteria commonly adopted for testing radio equipment according to the IEC 61000-4-3 standard.</p> <p>(e) Radiated RF EMF immunity testing according to CISPR 24 (EMS of information technology equipment) should be acceptable provided that the broadcast reception function has been tested with respect to CISPR 20 or CISPR 35.</p> <p>For further clarity, IMDA has included notes to highlight these existing provisions for the RF EMF immunity testing of the DVB-T2 reception function under Part A § 4.2.1.2 of the IMDA TS DVB-T2 IRD Issue 1 Rev 1 (Nov 2017).</p>
<b>2. Annex E for DVB-T2 performance Requirements – Addition of SG6 transmission mode for indoor reception</b>	
<ul style="list-style-type: none"> <li>▪ Referring to Annex E of the draft IMDA TS DVB-T2 IRD (page 34), one Respondent suggested that value of -32 dB for “PAL B/G ACI C/I N+/-1” should be -42 dB to scale from SG5, under the heading “Immunity to Adjacent Channel Interference from Analogue TV Signals” and the column “SG6 Indoor Reception”.</li> <li>▪ Also referring to Annex E, another Respondent inquired whether and when the DVB-T2 RF performance test suite would be updated for the SG6 indoor reception testing and take effect.</li> </ul>	<p>IMDA has amended the value to -42 dB for “PAL B/G ACI C/I N+/-1” under the column “SG6 Indoor Reception” in Annex E of the IMDA TS DVB-T2 IRD Issue 1 Rev 1 (Nov 2017).</p> <p>IMDA indicates that the updated DVB-T2 RF performance test suite will be made available with the publication of the IMDA TS DVB-T2 IRD Issue 1 Rev 1 (Nov 2017) and given the same 6-month grace period for it to take effect (inforce 1 June 2018).</p>