

ISO/IEC 18047-2:2012-01 (E)

Information technology - Radio frequency identification device conformance test methods - Part 2: Test methods for air interface communications below 135 kHz

| Contents | | Page |
|---------------------|--|-------------|
| Foreword | | v |
| Introduction | | vi |
| 1 | Scope | 1 |
| 2 | Normative references | 1 |
| 3 | Terms, definitions, symbols and abbreviated terms | 2 |
| 3.1 | Terms and definitions | 2 |
| 3.2 | Symbols | 2 |
| 3.3 | Abbreviated terms | 2 |
| 4.1 | General | 3 |
| 4.2 | Default conditions applicable to the test methods | 3 |
| 4.2.1 | Test environment | 3 |
| 4.2.2 | Pre-conditioning | 3 |
| 4.2.3 | Default tolerance | 3 |
| 4.2.4 | Spurious inductance | 3 |
| 4.2.5 | Noise floor at test location | 3 |
| 4.2.6 | Total measurement uncertainty | 3 |
| 4.3 | Setup of test equipment for tag tests | 4 |
| 4.3.1 | Parameter definition | 4 |
| 4.3.2 | Test equipment configuration | 4 |
| 4.4 | Test methods for tags | 11 |
| 4.4.1 | Tag Orientation | 11 |
| 4.5 | Test procedure for tags | 11 |
| 4.5.1 | Calibrating null compensation | 11 |
| 4.5.2 | Minimum activating magnetic field strength in FDX mode | 13 |
| 4.5.3 | Minimal activating magnetic field strength in HDX mode | 13 |
| 4.5.4 | Level of tag response in FDX mode | 14 |
| 4.5.5 | Level of tag response in HDX mode | 15 |
| 4.5.6 | Tag waiting time for FDX mode | 16 |
| 4.5.7 | Tag waiting time for HDX mode | 16 |
| 4.6 | Equipment for interrogator tests | 17 |
| 4.6.1 | Tag Emulation Circuit | 17 |
| 4.7 | Methods for interrogator tests | 17 |
| 4.7.1 | Verification of reading | 17 |
| 4.7.2 | Tag Orientation | 17 |
| 4.8 | Test procedure for interrogator | 18 |
| 4.8.1 | Modulation index and waveform | 18 |
| 4.8.2 | Power generation for FDX (informative) | 18 |
| 4.8.3 | Power generation for HDX (informative) | 19 |
| 4.8.4 | Response detection for FDX | 19 |
| 4.8.5 | Response detection for HDX | 19 |
| Annex A (normative) | Design description of the tag emulation circuits | 20 |
| A.1 | Reference air-cored antenna | 20 |
| A.2 | FDX Tag Emulation Circuit | 20 |
| A.2.1 | General | 20 |

| | | |
|--|---|----|
| A.2.2 | Set up trimming | 22 |
| A.3 | The HDX Tag Emulation Circuit | 22 |
| A.3.1 | General | 22 |
| A.3.2 | Working principle of the HDX Tag Emulation Circuit | 23 |
| A.3.3 | Set up and trimming procedure for the HDX emulation | 23 |
| Annex B (informative) Program for the evaluation of the spectrum | | 25 |
| Bibliography | | 29 |