

ISO/IEC 14543-3-11:2016-02 (E)

Information technology - Home electronic system (HES) - Part 3-11: Frequency Modulated Wireless Short-Packet (FMWSP) protocol optimised for energy harvesting - Architecture and lower layer protocols

CONTENTS

- FOREWORD.....4
- INTRODUCTION.....5
- 1 Scope.....7
- 2 Normative references.....7
- 3 Terms, definitions and abbreviations8
 - 3.1 Terms and definitions8
 - 3.2 Abbreviations12
- 4 Conformance.....12
- 5 Architecture.....13
 - 5.1 Generic protocol description13
 - 5.1.1 Overview13
 - 5.1.2 Physical layer13
 - 5.1.3 Data link layer.....13
 - 5.1.4 Network layer.....14
 - 5.1.5 Transport layer14
 - 5.1.6 Session layer14
 - 5.1.7 Presentation layer14
 - 5.1.8 Application layer14
 - 5.2 Data unit description14
- 6 Layer 1 – Physical layer.....14
 - 6.1 Overview.....14
 - 6.2 General description14
 - 6.3 Physical specifications for a FMWSP transmitter.....16
 - 6.4 Physical specifications for a FMWSP receiver.....17
 - 6.5 Packet structure17
 - 6.6 Relationship between a packet and a telegram18
- 7 Layer 2 – Data link layer19
 - 7.1 Overview.....19
 - 7.2 Structure of a telegram of length less than 8 B.....19
 - 7.3 Structure of a telegram length of more than 7 B20
 - 7.4 Data integrity22
- 8 Layer 3 – Network layer.....23
 - 8.1 Overview.....23
 - 8.2 Media access23
 - 8.2.1 General23
 - 8.2.2 Listen before talk23
 - 8.2.3 Random access23
 - 8.3 Repeater.....24
- Annex A (informative) Examples of how to evaluate the hash value.....25
- Bibliography26

Figure 1 – Illustration of a frequency modulated signal and various associated physical parameters	15
Figure 2 – The packet structure for the FMWSP protocol	18
Figure 3 – Relationship between a packet and a telegram.....	19
Figure 4 – Structure of a telegram length of less than 8 B	19
Figure 5 – Structure of a telegram length of more than 7 B	20
Figure A.1 – C code program	25
Table 1 – The FMWSP protocol stack structure (OSI)	13
Table 2 – Requirements for a FMWSP transmitter	17
Table 3 – Requirements for a FMWSP receiver	17
Table 4 – Packet field values of the FMWSP protocol	18
Table 5 – Field values and meaning of a telegram with less than 8 B of length	19
Table 6 – Header (HDR) description.....	21
Table 7 – Extended header (EXHDR) description.....	22
Table 8 – Extended telegram type (ETELTYP) description	22