

ISO/IEC 15149:2011-12 (E)

Information technology - Telecommunications and information exchange between systems - Magnetic field area network (MFAN)

Contents		Page
Foreword		v
1	Scope	1
2	Terms and definitions	2
3	Symbols and abbreviated terms	3
4	Overview	4
5	Network elements	6
5.1	General	6
5.2	Time element	6
5.2.1	Request period	7
5.2.2	Response period	7
5.2.3	Spontaneous period	7
5.2.4	Network activation	7
5.3	Physical element	8
5.3.1	MFAN-C	8
5.3.2	MFAN-N	8
5.4	Address element	8
5.4.1	MFAN ID	8
5.4.2	UID	9
5.4.3	Group ID	9
5.4.4	Node ID	9
6	Network status	10
6.1	General	10
6.2	Network configuration	10
6.3	Network association	10
6.4	Network disassociation	10
6.5	Data transmission	10
6.6	Network release	10
6.7	MFAN device state	10
6.7.1	MFAN-C state	11
6.7.2	MFAN-N state	11
7	PHY layer	13
7.1	PHY layer frame format	13
7.1.1	General	13
7.1.2	Preamble	13
7.1.3	Header	13
7.1.4	Payload	15
7.1.5	Frame check sequence (FCS)	15
7.2	Coding and modulation	16
7.2.1	Coding	16
7.2.2	The data rate and coding type	17
7.2.3	Modulation	18
7.2.4	The coding and modulation process	18
8	MAC layer frame format	20

8.1	General	20
8.2	Frame format	20
8.2.1	Frame header	20
8.2.2	Frame body	21
8.3	Frame type	22
8.3.1	Request frame	22
8.3.2	Response frame	23
8.3.3	Data frame	23
8.3.4	Acknowledgement frame	23
8.4	Payload format	24
8.4.1	Request frame	24
8.4.2	Response frame	27
8.4.3	Data frame	29
8.4.4	Acknowledgement frame	29
9	MAC layer function	33
9.1	General	33
9.2	Network association and disassociation	33
9.2.1	Association	33
9.2.2	Disassociation	34
9.2.3	Association status check	34
9.3	Data transmission	35
9.3.1	Transmission in the response period	35
9.3.2	Transmission in the spontaneous period	35
9.4	Group ID set-up	36
10	Air interface	37
10.1	Frequency	37
10.2	Signal waveform	37
Annex A (informative) Network Security		39