

DIN EN 13757-5:2009-01 (E)

Communication systems for meters and remote reading of meters - Part 5: Wireless relaying; English version EN 13757-5:2008

Inhalt	Seite
Foreword	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Explanation	7
4.1 General	7
4.2 Introduction	7
4.3 Relaying	8
4.4 Use of routers	10
4.5 Use of gateways	10
4.5.1 General	10
4.5.2 Data duplication	11
4.6 Use of power strobed units	12
4.7 Error handling	13
4.8 Time synchronisation	13
4.9 Protocol possibilities	14
5 Mode P, protocol using routers	15
5.1 General	15
5.2 Physical layer protocol	15
5.2.1 General	15
5.2.2 Transmitter	16
5.2.3 Receiver	17
5.3 Data encoding	17
5.3.1 Manchester encoding	17
5.3.2 Order of transmission of the encoded data	17
5.3.3 Wake up and preamble chip sequences	18
5.4 Data link layer protocol	18
5.4.1 General	18
5.4.2 Frame format	18
5.4.3 C-field	19
5.4.4 M- and A-fields	21
5.4.5 The CI-field	21
5.4.6 Message handling	21
5.4.7 Timing requirements	22
5.5 Network layer protocol	23
5.5.1 General	23
5.5.2 Network layer format	23
5.5.3 Relaying rules	24
5.6 Application layer protocol	25
5.6.1 CI-field	25
5.6.2 Error reporting services	25
5.6.3 Network management service	27
6 Mode R2, protocol using gateways	32
6.1 General	32
6.2 Physical layer protocols	33
6.3 Data link layer protocol	33
6.3.1 General	33
6.3.2 M- and A-field	33

6.3.3	C-field	33
6.3.4	Timing requirements	38
6.3.5	Error handling	38
6.4	Network layer functionality	38
6.4.1	General.....	38
6.4.2	Downstream transfer	38
6.4.3	Downstream relaying rules	39
6.4.4	Upstream transfer	40
6.4.5	Upstream relaying rules	40
6.5	Application layer	40
6.5.1	CI-field	40
6.5.2	Network management services	41
7	Mode Q, protocol supporting precision timing	47
7.1	General.....	47
7.2	Physical layer protocol	47
7.2.1	General.....	47
7.2.2	Transmitter	48
7.2.3	Receiver	49
7.3	Data encoding	49
7.3.1	NRZ encoding.....	49
7.3.2	Order of transmission of the encoded data	50
7.3.3	Wake up and preamble bit sequences	50
7.4	Data link layer protocol	50
7.4.1	General.....	50
7.4.2	Frame format.....	51
7.4.3	Normal data link layer frame handling.....	53
7.4.4	Search link layer frame handling	55
7.5	Mode Q, network layer protocol	56
7.5.1	General.....	56
7.5.2	Network layer format	57
7.5.3	Address conversion rules.....	59
7.5.4	Routing rules	59
7.5.5	Timing requirements	62
7.6	Mode Q, application layer protocol.....	62
7.6.1	General.....	62
7.6.2	EN 13757-1 Application layer.....	63
7.6.3	Error reporting	63
7.6.4	Alarm reporting.....	65
7.6.5	Network management service	66
7.6.6	Timing requirements	72
7.6.7	COSEM extension	72
	Bibliography.....	74