

GD

GD/J

Technical specification for emergency broadcasting loudspeaker system

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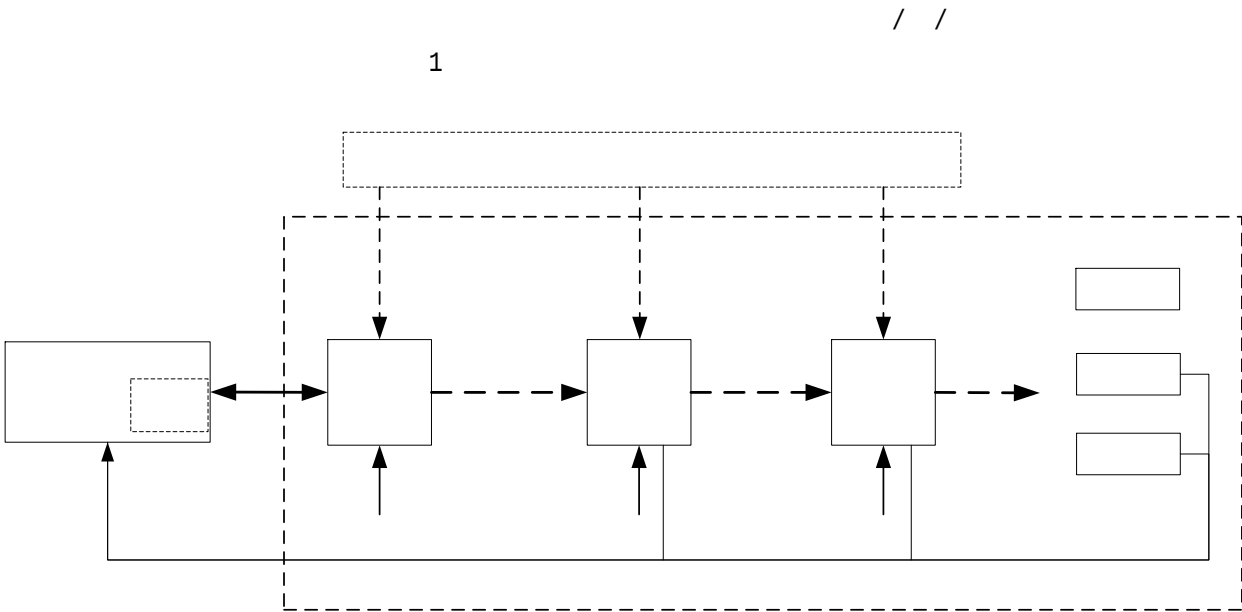
GB/T 1.1—2009

/ /

GB/T 2312—1980			
GB/T 4880.2—2000	2	3	
GB/T 6163—2011			
GB/T 13000—2010			UCS
GB/T 14198—2012			
GB/T 15273.1—1994			1 :
GB 16959—1997			
GB/T 17191.3—1997	1.5Mbit/s		
3 :			
GB/T 17975.1—2010			1
GB/T 18030—2005			
GB/T 21669—2008			
GY/T 106—1999			
GY/T 220.4—2007	4		
GD/J 080—2018			
GD/J 081—2018			
GD/J 082—2018			
GD/J 084—2018			
GD/J 085—2018			
GD/J 086—2018			
GD/J 087—2018			
GD/J 088—2018			

BCD	Binary Coded Decimal
DTMB	Digital Television Terrestrial Multimedia Broadcasting
IP	Internet Protocol

RDS	Radio Digital System
TS	Transport Stream
UTC	Coordinated Universal Time
uimbsf	unsigned integer most significant bit first



/ / /IP
/ /

/

/

—

IP / / /IP

GPRS 3G 4G IP

/ / /IP

,

a)

b) / /

c) / / /

d) /

e)

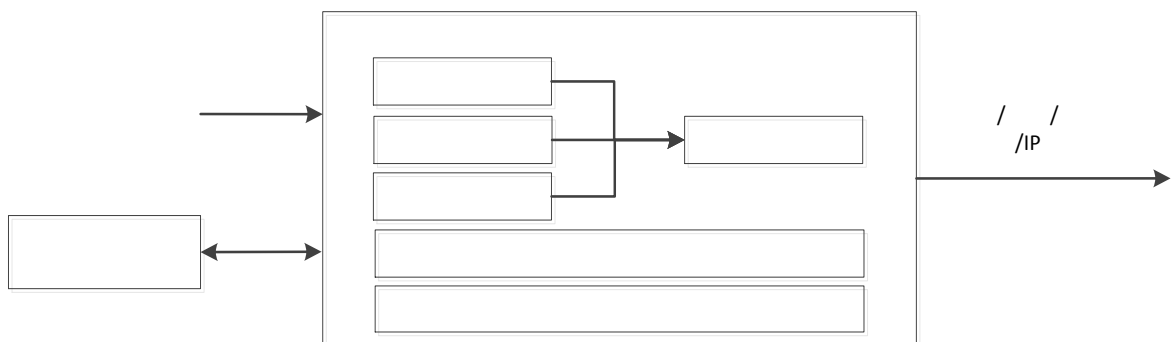
f)

a) 2

2

b)

2



—

a)

b)

A

c)

d)

TS

IP

RDS

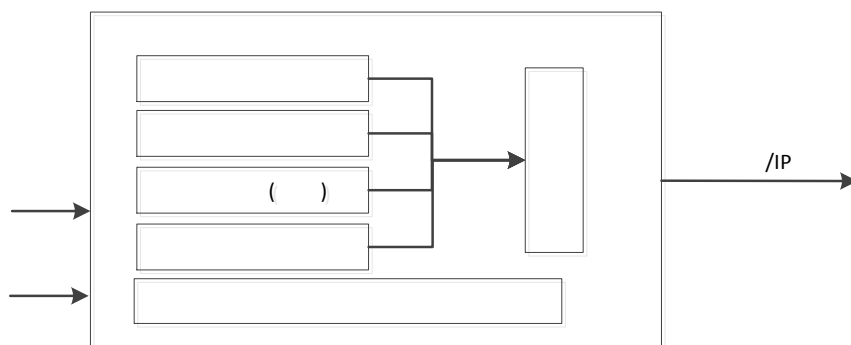
e)

g)

2

	10
	≥ 2
	≥ 2
	≤ 1

4



a)

b)

c)

d)

e)

f)

—2018

g)

GD/J 081

RDS IP

B

3

	10
	≥ 2
	≤ 1

a)

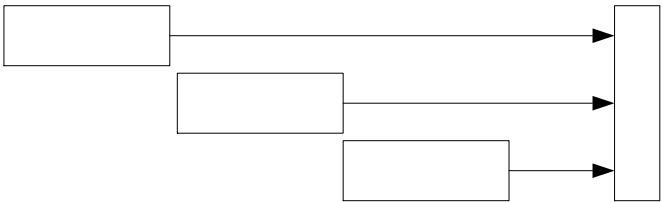
RDS

3

5

,

GD/J 085—2018



b)

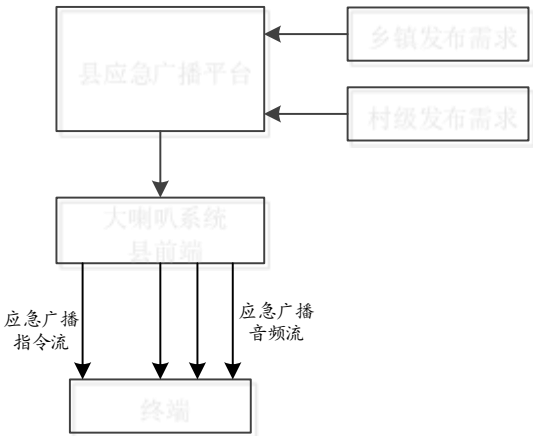
GD/J 085—2018

a) GY/T 106—1999

b) 2018 C GD/J 086—2018 GD/J 087—

c) TS

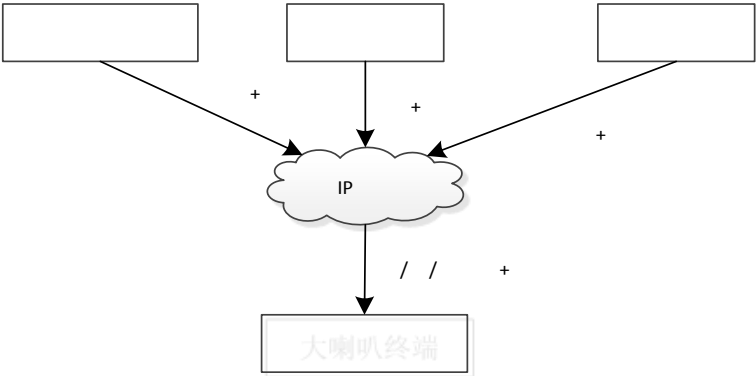
6

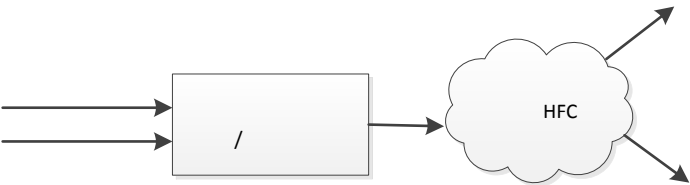


IP 3G 4G

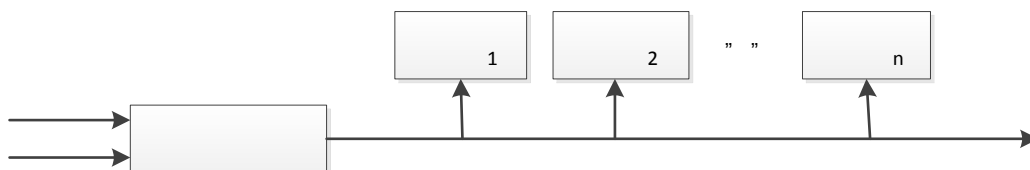
a) IP D

b) IP 7 / /





11



/

GPRS 3G 4G IP

- a) /
- b)
- c)

IP TS +

B, F

- a)
- b)
- c)
- d)
- e)
- f)
- g)
- h) (GD/J 085—2018
- i) GB/T 6163—2011

- IP
- a)
 - b)
 - c)
 - d)
 - e)
 - f) D

- TS
- a)
 - b)
 - c)
 - d) TS
 - e)
 - f) GD/J 086—2018 GD/J 087—2018

—

C

+

a)

b) GB/T 14198—2012

a)

GD/J 085—2018

b)

GD/J 084—2018

c)

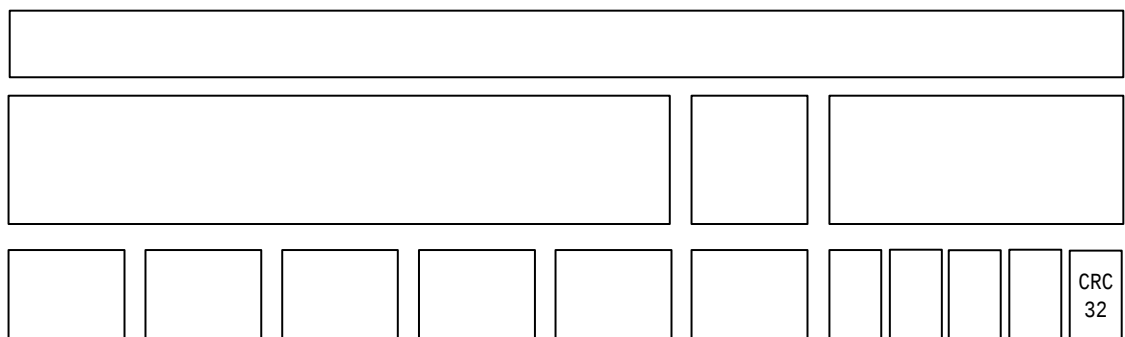
GD/J 087—2018

d)

GY/T 220.4—2007

TCP

A.1



A.1

head	8	uimbsf	0x49 0x50
version	16	uimbsf	=1

protocol_type	8	uimsbf	0x01 TS 0x02 RDS 0x03 IP 0x04 / 0x05 0x06 0x07 0x08 0x09 0x0A IP 0x0B: 0x0C 0x0D 0x0E 0x0F 0x10 0x11 0x12 () 0x13 0x14 0x15 0x16 0x17 0x18 0x19 0x20 0x21 0x40
platform_type	8	uimsbf	1 2
data_length	32	uimsbf	

A.2

data	N	uimbsf	

A.3

1		16	16
2		32	UTC
3		48	48 BCD 12
4		N	
5	CRC32	32	CRC32 G

A.4

	0x01 TS		0x12 ()
	0x02 RDS		
	0x03 IP		
	0x04 /		0x17
	0x05		
	0x06		
	0x07		
	0x08		
	0x09		
	0x0A IP		
	0x3F		
	0x0B		
	0x0C		
	0x0D		
	0x40		
	0x0E		0x13
	0x0F		0x14
	0x10		0x15
	0x11		0x16
	0x18		0x22
	0x19		0x21
	0x20		

phone_number_length	8	bslbf	
phone_number	N	bslbf	ASCII
user_name_length	8	uimsbf	
user_name	N	bslbf	UTF-8
permission_type	8	uimsbf	1: ;2: ;3
permission_area_number	8	uimsbf	
permission_area_length	8	uimsbf	
for (j=0;j< permission_area_number;j++) {			
permission_area_code	N	bslbf	BCD
}			
}			

A.6

reback_type	8	uimsbf	1 11 2 IP 3 4 9
reback_cycle	32	uimsbf	4
reback_address_length	8	uimsbf	
reback_address	N		N 11 1 IP 4 IP +2 ASCII “ ” + “ ” + www.chinaeb-lab.org 8080

A.7

reserved	4	bslbf	" 1111 "
front_code	92	bslbf	BCD 23 GD/J 080—2018
output_channel_id	8	uimsbf	0
output_channel_state	8	uimsbf	0 1 2 3

A.8

reserved	4	bslbf	" 1111 "
front_code	92	bslbf	BCD 23 GD/J 080—2018
input_channel_id	8	uimsbf	0
input_channel_state	8	uimsbf	0 1 2 3

A.9

reserved	4	bslbf	" 1111 "
front_code	92	bslbf	BCD 23 GD/J 080—2018
reserved	4	bslbf	" 1111 "
ebm_id	140	bslbf	BCD , 35 GD/J 082—2018 F ebmid
task_type	8	uimsbf	0 1 2
startTime	32	uimsbf	
endTime	32	uimsbf	

A.10

reserved	4	bslbf	" 1111 "
front_code	92	bslbf	BCD 23 GD/J 080—2018

A.11

certauth_number	8	uimsbf	
for(int i=0;i< certauth_number;i++) {			
certauth_length	16	uimsbf	
certauth	N	bslbf	
}			
cert_number	8	uimsbf	
for(int i=0;i< cert_number;i++) {			
certh_length	8	uimsbf	
certh	N	bslbf	
}			

A.12

						TS	RDS	IP
reserved	4	bslbf	" 1111 "	√	√			
ebm_id	140	uimsbf	BCD (EBMID=0)	√	√			
power_switch	8	uimsbf	1 2	√	√			
ebm_class	8	uimsbf	0 1 2 3 4 5	√				
ebm_type	40	bslbf		√				
ebm_level	8	uimsbf	0 1 1 2 2 3 3 4 4	√				
start_time	32	uimsbf	(UTC+8) " 1970-1-1 00:00:00	√				
end_time	32	uimsbf	(UTC+8) " 1970-1-1 00:00:00	√				
volume	8	uimsbf	0x00 0xff 0x01 0x64: 1% 100%	√				
resource_code_type	8	uimsbf	1 2	√	√			
resource_code_number	8	uimsbf		√	√			

						TS	RDS	IP
resource_code_length	8	uimsbf		√	√			
for (i=0;i< resource_code_number; i++) {								
resource_code	*	bslbf	BCD 1111	√	√			
}								
multilingual_content_number for(int m=0; m< multilingual_content_number; m++) {	8	uimsbf	0 0xF	√				
language_code	24	bslbf	GB/T 4880.2—2000 3					
coded_character_set	8	uimsbf	0 GB 2312—1980 1 GB/T 18030—2005 2 GB 13000—2010 3 GB 21669—2008 4 GB 16959—1997					
text_length	16	uimsbf						

						TS	RDS	IP
auxiliary_data		bslbf						√
}								
}								
input_channel_id	8	uimsbf		√				
output_channel_ number	8	uimsbf		√				
for(int i=0:i< output_channel_ number;i++){								
output_channel_id	8	uimsbf						
}								
private_data_length	16	uimsbf						
private_data	N	bslbf						
√	TS/RDS/IP	()	/					

A.13

logic_address_number for(i=0;i<logic_address_number;i++) {	8	uimsbf	
physical _address_length	8	uimsbf	
physical _address	N	bslbf	(bcd)
logic_address_length	8	uimsbf	12
logic_address }	N	bslbf	(bcd " 1111 ")

A.14

volume	8	uimsbf	0x00 0xff 0x01 0x64 1% 100%
resource_code_type	8	uimsbf	1 2
resource_code_number	8	uimsbf	
resource_code_length	8	uimsbf	
for (i=0;i< resource_code_number;i++) {			
resource_code	N	bslbf	BCD “ 1111 ”
}			

A.15

reback_type	8	uimsbf	1 11 2 IP 3 4 9
reback_address_length	8	uimsbf	
reback_address	N		N ASCII 11 1 IP 4 IP +2 ASCII “ ” + “ ” + www.chinaeb-lab.org 8080
resource_code_type	8	uimsbf	1 2
resource_code_number	8	uimsbf	
resource_code_length	8	uimsbf	

for (i=0;i< resource_code _number;i++) {			
resource_code	N	bslbf	BCD " 1111 "
}			

A.16

E /

query_code	8	uimsbf	1 2 3 4 5 6 7 D.5
}			

A.17

time	32	uimsbf	(UTC+8) “ ” 1970-1-1 00:00:00

A.18

ip	32	bslbf	IP IPV4 192.168.0.1 4 C0-A8-00-01
subnet_mask	32	bslbf	IPV4 192.168.0.1 4 C0-A8-00-01
gateway	32	bslbf	IPV4 192.168.0.1 4 C0-A8-00-01
resource_code_type	8	uimsbf	1 2
resource_code_length	8	uimsbf	
resource_code	N	bslbf	BCD ” 1111 ”

A.19

—

reback_cycle	32	uimbsf	4

—

certauth_number	8	uimsbf	
for(int i=0;i< certauth_number;i++) {			
certauth_length	16	uimsbf	
certauth	N	bslbf	
}			
cert_number	8	uimsbf	
for(int i=0;i< cert_number;i++) {			
certh_length	8	uimsbf	
certh	N	bslbf	
}			

TS

A.2



TS

A.22

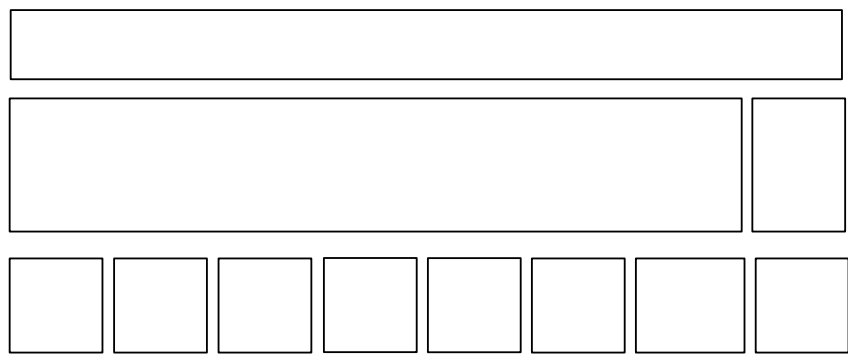
tag	8	uimsbf	0 1 2
data_length	32	uimsbf	
data	N	bslbf	

A.23

configure_cmd_tag	8	uimsbf	0x04
configure_cmd_length	16	uimsbf	
freq	32	uimsbf	KHZ,
symbol_rate	32	uimsbf	(KBPS)
qam	8	uimsbf	QAM QAM16 0 QAM32 1 QAM64 2 QAM128 3 QAM256 4
resource_code_type	8	uimsbf	1 2 3 9
resource_code_number	8	uimsbf	
resource_code_length	8		
for (i=0;i< resource_code_number;i++) {			
resource_code	N	bslbf	BCD
}			

RDS

A.3



RDS

A.24

cmd_type	8	uimsbf	0 1 2
data_type	8	uimsbf	GD/J 085—20185.2.1
send_times	8	uimsbf	0x00 0xFF 0xFF
interval	8	uimsbf	100ms
coverag_resource_number{	8	uimsbf	
resource_code }	N×96	bslbf	GD/J 085—20185.2.3 4 “ 1111 ”
data_length	32	uimsbf	
data	N	bslbf	

/

a)

GD/J 085—2018 5.2.2

b)

/

/

GD/J 085—2018 5.2.4

a)

GD/J 085—2018 5.2.12

b)

GD/J 085—2018 5.2.13

c)

GD/J 085—2018 5.2.16

“ () () 0x04 ” “ebm_class” “RDSFreq”

	A.12	text_length	text_char
GD/J 085—2018	5.2.12	16	A.12 ebm_class
a)	ebm_class		
b)	ebm_class		
c)	ebm_class		

IP

A.4



IP

A.25

—

tag	8	uimsbf	1
data_length	32	uimsbf	
data	N	bslbf	

A.26

return_code	32	uimsbf	
return_data_length	32	uimsbf	
return_data	N	bslbf	

Returncode

A.27

-1	
0	
1	
2	
3	
4 1000	

A.28

reserved	4	bslbf	" 1111 "
front_code	92	bslbf	BCD 23 GD/J 080—2018
output_channel_number	8	uimsbf	
for(i=0;i<output_channel_number;i++) {			
output_channel_id	8	uimsbf	()
out_channel_type	8	uimsbf	1 2 3 4 IP
If(out_channel_type==1){			rds
sub_channel_number	8	uimsbf	Rds
for(j=0;j< Sub_channel_number;j++){			
sub_channel_freq	24	bslbf	MHZ 3 BCD 6 4 2
output_channel_state	8	uimsbf	1 2 3
If(output_channel_state==2){			
reserved	4	bslbf	" 1111 "
ebm_id	140	bslbf	BCD , 35 GD/J 082—2018
}			
}			
}			
if out_channel_type==2 {	8	uimsbf	DVB_C
Sub_channel_number	8	uimsbf	DVB_C
for(j=0;j< Sub_channel_number;j++){			
original_network_id	16	uimsbf	TS ID
details_channel_transport_stream_id	16	uimsbf	TS
details_channel_program_number	16	uimsbf	TS
details_channel_pcr_pid	16	uimsbf	TS PCR
stream_number for(int k=0;k<stream_number;k++) {	8	uimsbf	
stream_type	8	uimsbf	37 GB/T 17975.1—2010

elementary_pid	16	uimsbf	PID
}			
output_channel_state	8	uimsbf	1 2 3
If(output_channel_state==2){			
reserved	4	bslbf	" 1111 "
ebm_id	140	bslbf	BCD , 35 GD/J 082—2018
}			
}			
}			
if out_channel_type ==3 {	8	uimsbf	DTMB
Sub_channel_number	8	uimsbf	DVB_C
for(j=0;j< Sub_channel_number;j++){			
original_network_id	16	uimsbf	TS ID
details_channel_transport_stream_id	16	uimsbf	TS
details_channel_program_number	16	uimsbf	TS
details_channel_pcr_pid	16	uimsbf	TS PCR
stream_number for(int k=0;k<stream_number;k++) {	8	uimsbf	
stream_type	8	uimsbf	GB/T 17975.1—2010 37
elementary_pid	16	uimsbf	PID
}			
output_channel_state	8	uimsbf	1 2 3
If(output_channel_state==2){			
reserved	4	bslbf	" 1111 "
ebm_id	140	bslbf	BCD , 35 GD/J 082—2018
}			
}			
}			
}			

reserved	4	bslbf	" 1111 "
front_code	92	bslbf	BCD 23 GD/J 080—2018
input_channel_number	8	uimsbf	
for(i=0;i<input_channel_number;i++) {			
input_channel_id	8	uimsbf	()
input_channel_name_length	16	uimsbf	
input_channel_name	N	bslbf	
input_channel_group	8	uimsbf	
input_channel_state	8	uimsbf	1 2 3
}			

A.30

reserved	4	bslbf	" 1111 "
front_code	92	bslbf	BCD 23 GD/J 080—2018
record_number	32	uimsbf	
for (i=0;i< record_number;i++) {			
reserved	4	bslbf	" 1111 "
ebm_id	140	bslbf	BCD , 35 GD/J 082—2018
task_state	8	uimsbf	0 1 2 3 4 5

program_resource	8	uimsbf	1 2 3 4 5
ebm_class	8	uimsbf	0 1 2 3 4 5
ebm_level	8	uimsbf	0 1 1 2 2 3 3 4 4
ebm_type	40	bslbf	
start_time	32	uimsbf	(UTC+8) " " 1970-1-1 00:00:00
end_time	32	uimsbf	(UTC+8) " " 1970-1-1 00:00:00
volume	8	uimsbf	0x00 0xff 0x01 0x64 1% 100%
input_channel_id	8	uimsbf	program_resource 2 0 0
output_channel_number	8	uimsbf	
for(i=0;i< output_channel_number;i++){			
output_channel_type	8	uimsbf	
output_channel_id	8	uimsbf	
}			

If(program_resource==3 or program_resource==4){			
tel_length	8	uimsbf	
tel_number }	N	uimsbf	
resource_code_number	8	uimsbf	

reserved	4	bslbf	" 1111 "
front_code	92	bslbf	BCD 23 GD/J 080—2018
reserved	4	bslbf	" 1111 "
ebm_id	140	bslbf	BCD 35 GD/J 082—2018
result_code	8	uimsbf	0 1
result_desc_length	32	uimsbf	
result_desc	N	uimsbf	utf-8
accept_stream_address_length	16	uimsbf	
accept_stream_address	N	bslbf	0x62 RTP://IP

A.33

reserved	4	bslbf	" 1111 "
front_code	92	bslbf	BCD 23 GD/J 080—2018
reserved	4	bslbf	" 1111 "
ebm_id	140	bslbf	BCD , 35 GD/J 082—2018
program_resource	8	uimsbf	1 2 3 4 5

ebm_class	8	uimsbf	0 1 2 3 4 5
ebm_level	8	uimsbf	0 1 1 2 2 3 3 4 4
ebm_type	40	bslbf	
input_channel_id	8	uimsbf	
output_channel_number	8	uimsbf	
for(i=0;i< output_channel_number;i++){			
output_channel_type	8	uimsbf	
output_channel_id	8	uimsbf	
}			
If(program_resource==3 or program_resource==4){			
tel_length	8	uimsbf	0
tel_number }	N	uimsbf	
volume	8	uimsbf	0x00 0xff 0x01 0x64 1% 100%
resource_code_number	8	uimsbf	
resource_code_length	8	uimsbf	

—

for (i=0;i< resource_code_number; i++) {			
resource_code	N	bslbf	BCD
}			

A.34

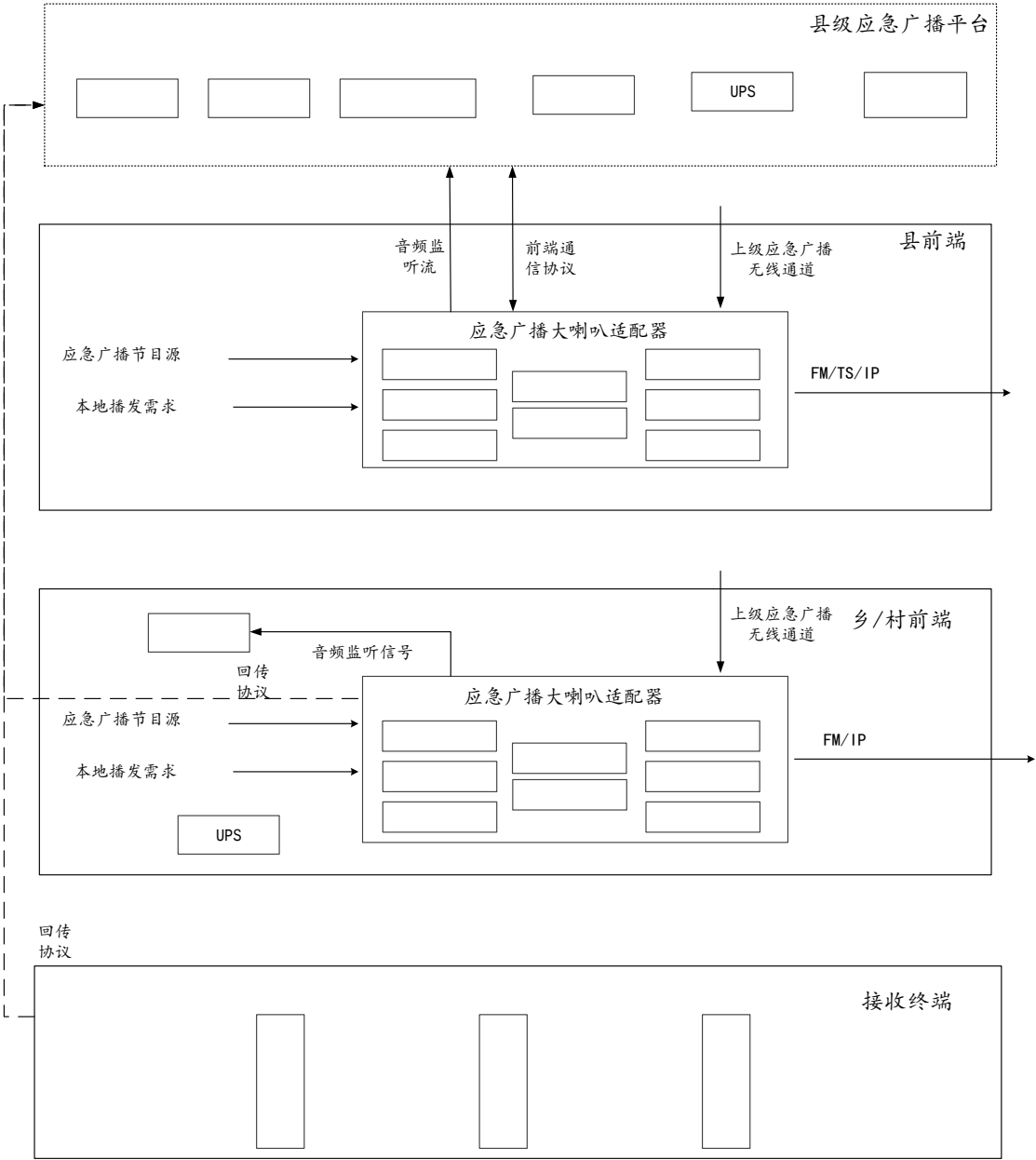
reserved	4	bslbf	" 1111 "
front_code	92	bslbf	BCD 23 GD/J 080—2018
reserved	4	bslbf	" 1111 "
ebm_id	140	bslbf	BCD , 35 GD/J 082—2018

A.35

front_code_length	8	uimsbf	
front_code	N	bslbf	BCD
front_State	8	uimsbf	1 2 3
connection_time	32	uimsbf	(UTC+8) " " 1970-1-1 00:00:00

A.36

B.1



/ IP

/ /

RDS B.1

1		XLR/RCA /TRS	2
2	USB	A USB	mp3
3		Φ 5F 75 Ω	
4		BNC	
5		10/100M/1000M RJ45	
6	SIM	SIM	
7		SMA	
8		220 1 $\pm$ 10% V AC 50Hz $\pm$ 5Hz	
10		RCA	
11		F	

RDS

a)

1 IP A

2 DTMB
GD/J 084—2018 GD/J 085

—2018 DTMB
GY/T 220.4—2007 GD/J 087—2018

b)

c)

1 mp3

2

3

d)

e)

1

2

3

f)

1

085—2018

GD/J

2

3

g)

1

A

E

2

RTP

h)

1

2

3

4

RDS

B.2

1			$\leq 3\text{kHz}$
2			$75\ \Omega\ \text{F}$
3			$\pm 75\text{kHz}$
4			$\leq \pm 1\text{dB}\ 80\text{Hz}\ 12.5\text{kHz}$
5			$\geq 55\text{dB}$
6			$\geq 60\text{dB}$
7			$\pm 1.5\text{kHz}\ \pm 7.5\text{kHz}\ \pm 2.0\text{kHz}$
8			57kHz
9			$\pm 6\text{Hz}$
10			BPSK

RDS

B.3

1		F 75Ω	
2		220 1 ± 10% V AC 50Hz ± 5Hz	
3		SIM	GPRS/3G/4G
4		SMA	GPRS/3G/4G
5	/	RS232/485 10/100M RJ45	

B.4

1		RDS	GD/J 085—2018
2			GD/J 080—2018
3			
4			
5			
6			E
7			GD/J 081—2018

B.5

1		87MHz 108MHz 3	
2		≥ 55dB	
3		30dBuV	
4		≤ 1.5%	
5		10W/15W/25W	
6		IP44	
7		I _{tm} =7500A(8μs), I _{tm} =6500A(20μs), I _p =100A	
8		220 1 ± 15% V AC	

RDS

B.6

1		F 75Ω	
2		220 1 ± 10% V AC 50Hz ± 5Hz	
3		SIM	GPRS/3G/4G
4		SMA	GPRS/3G/4G
5	/	RS232/485 10/100M RJ45	
6			

B.7

1		RDS	GD/J 085—2018
2			GD/J 080—2018
3			
4			
5			
6			E
7			GD/J 081—2018

B.8

1		87MH 108MHz 3	
2		≥ 55dB	
3		30dBuV	
4		≤ 1.5%	
5		25W 100W	
6		IP44	
7		I _{tm} =7500A(8μs), I _{tm} =6500A(20μs), I _p =100A	
8		220(1 ± 15%)V	

/ /

—

1		XLR/RCA /TRS	2
2	USB	A USB	mp3
3	ASI	BNC	
4		10/100M/1000M RJ45	
5	SIM	SIM	
6		SMA	
7		220(1±10%)V AC 50Hz±5Hz	
8		RCA	
9		F	

- TS
- a)

1IP A

2DTMB

085—2018DTMB

GY/T 220.4—2007

GD/J 084—2018

GD/J 087—2018

GD/J
- b)
- c)

1mp3

2

3
- d)
- e)

1

2TS

3
- f)

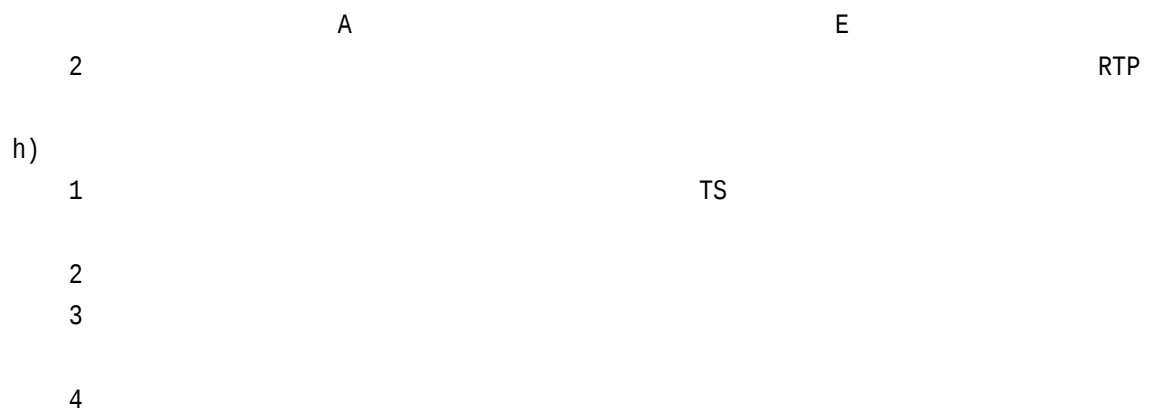
1TS

2018

2

GD/J 086—
- g)

1



TS B.10

1	TS		MPEG-1 LayerIII
2			64/128/192/256kbps
3			48kHz

TS B.11

1		F 75Ω	
2	/	RS232/485 10/100M RJ45	
3		220(1 ± 10%)V AC 50Hz ± 5Hz	
4		SIM	GPRS/3G/4G
5		SMA	GPRS/3G/4G

TS B.12

—

1		TS	GD/J 086—2018 GD/J 087—2018
2			GD/J 080—2018
3			
4			
5			
6			E
7			GD/J 081—2018

TS

B.13

1		DVB-C 64QAM 35dBuV -78dBm DTMB 16QAM 32dBuV -81dBm
2		$\leq 1.5\%$
3		$\geq 60\text{dB}$
4		5W/10W/15W/25W
5		IP44
6		$I_{tm}=7500\text{A}(8\mu\text{s})$, $I_{tm}=6500\text{A}(20\mu\text{s})$, $I_p=100\text{A}$
7		$220(1 \pm 15\%)V$

TS

B.14

1		F 75Ω	
2	/	RS232/485 10/100M RJ45	
3		220(1±10%)V AC 50Hz±5Hz	
4		SIM	GPRS/3G/4G
5		SMA	GPRS/3G/4G
6			

TS

B.15

1		TS	GD/J 086—2018 GD/J 087—2018
2			GD/J 080—2018
3			
4			
5			
6			E
7			GD/J 081—2018

TS

B.16

1		DVB-C 64QAM 35dBuV -78dBm DTMB 16QAM 32dBuV -81dBm
2		≤1.5%
3		≥60dB
4		25W~100W
5		IP44

—

6		$I_{tm}=7500A(8\mu s), I_{tm}=6500A(20\mu s), I_p=100A$
7		$220(1 \pm 15\%)V$

/ /

IP B.17

1		XLR/RCA /TRS	2
2	USB	A USB	mp3
3		10/100M/1000M RJ45	
4		$220(1 \pm 10\%)V$ AC 50Hz $\pm$ 5Hz	
5		RCA	
6		F	

IP

a)

- 1
2

IP A
DTMB
GD/J 084—2018
GD/J 085—2018 DTMB GD/J 087—2018
GY/T 220.4—2007

b)
c)
d)

- 1
2
3

mp3

e)

1
2 IP
3

f)

1 IP D
2 IP

g)

1 A E RTP
2

h)

1 IP
2
3
4

IP B.18

1			≥ 3000
2			≥ 300

IP

IP B.19

1		220(1 ± 10%)V AC 50Hz ± 5Hz	
2		10/100M RJ45	

—

IP

B.20

--	--	--	--

1		220(1±10%)V AC 50Hz±5Hz	
2		10/100M RJ45	
3			

IP

B.23

1			D
2			GD/J 080—2018
3			
4			
5	IP	DHCP	

60.960

TS

0x0021

table_id 0xFA

PID

C.1

<pre> daily_broadcast_section { table_id section_syntax_indicator private_indicator reserved section_length table_id_extension reserved version_number current_next_indicator section_number last_section_number daily_cmd_number for (i=0;i< daily_cmd_number;i++){ daily_cmd_tag daily_cmd_length for (j=0;j< daily_cmd_length;i++){ daily_cmd_char } } } </pre>	<pre> 8 1 1 2 12 16 2 5 1 8 8 8 8 16 8 </pre>	<pre> uimsbf bslbf bslbf bslbf uimsbf uimsbf bslbf uimsbf bslbf uimsbf uimsbf uimsbf uimsbf uimsbf uimsbf </pre>

signature_length for (l=0;l<q;l++){ signature_data() }	16	uimsbf
CRC_32 }	32	Rpchof

```

    table_id
8      0xFA
        section_syntax_indicator
1      " 1 "
        private_indicator
        1      ITU-T|ISO/IEC
    section_length
12      CRC_32      4093  0xFFFD
        table_id_extension
16
        version_number
5
    1      32
        current_next_indicator
1      " 1 "      " 0 "
        section_number
8      section_number      0x00
        1
        last_section_number
8      section_number
        daily_cmd_number
8

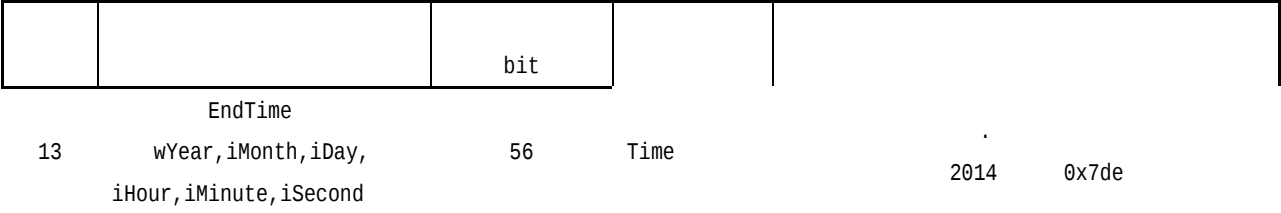
```

C.2

			bit	
1	daily_cmd_tag	Uint8	8	
2	daily_cmd_length	Uint16	16	,
3	daily_cmd_char	char[]	size	

daily_cmd_tag 0x01
daily_cmd_length 39+12×terminal_number
C.3

		bit		
1	reserved	4		1
2	ID	140		BCD 35 4 1 ID(23)+ 8 + 4 YYYYMMDD YYYY MM DD GD/J 082—2018
3	NetID	16	Uint16	
4	TSID	16	Uint16	
5	serviceID	16	Uint16	
6	reserved	3		1
7	PCR_PID	13		PCR TS PID
8	stream_type	8	Uint8	GB 17975.1—2010 37 0x03 GB/T 17191.3
9	reserved	3		1
10	program_PID	13		TS PID
11	priority	8	Uint8	
12	volume	8	Uint8	0x00 0xff 0x01 0x64 1% 100%



daily_cmd_tag 0x03
daily_cmd _length 2+12xterminal_number
C.5

		bit		
1	switch_status	8	Uint8	1 2
2	terminal_number	8	Uint8	
3	reserved	4	bslbf	" 1 "
4	resource_code	92	bslbf	BCD 4 1 23 GD/J 080—2018

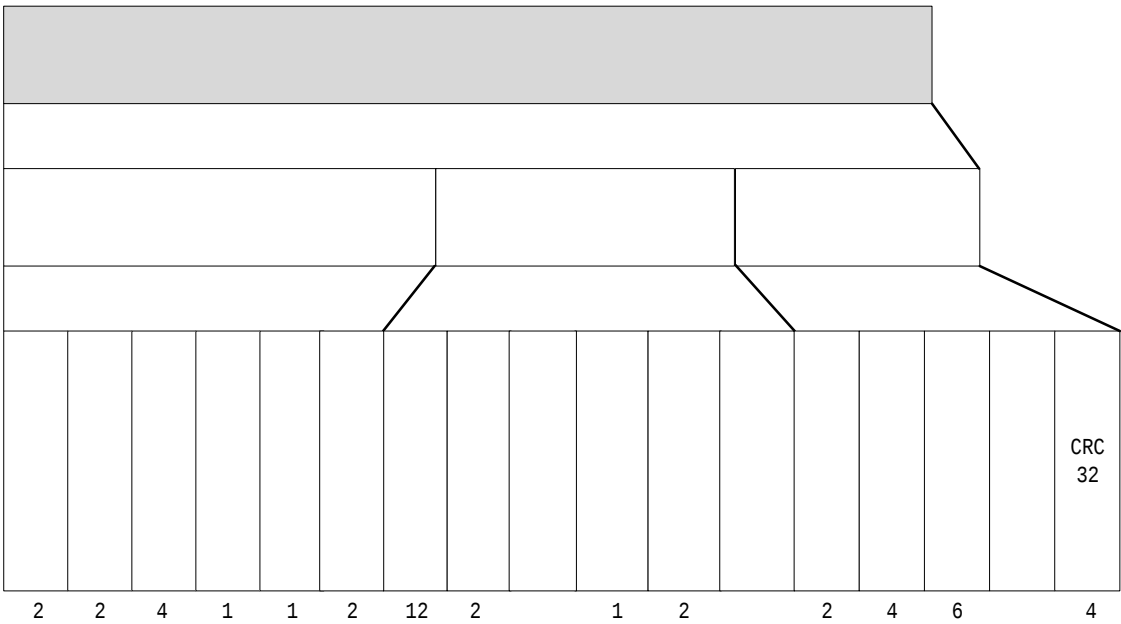
daily_cmd_tag 0x04
daily_cmd _length 22+

		bit		
4	ebm_ID	140		BCD 35 4 1 ID(23)+ 8 + 4 YYYYMMDD YYYY MM DD GD/J 082 —2018
5	terminal_number	8	Uint8	
6	reserved	4	bslbf	“ 1 ”
7	resource_code	92	bslbf	BCD 4 1 23 GD/J 080—2018
8	text_length	16	Uint8	
9	text_content	N×8	ascii	

—

IP
IP

D.1



D.1

1		
2		
3		

D.2

1		2	0xFEFD
2		2	0x0100
3		4	
4		1	1 2
5		1	0 1
6		2	

D.3

1		12	12 4bit 23 BCD GD/J 080—2018
2		2	
3		12×	
4		1	0x01 0x02 0x10 0x11 0x12 0x17
5		2	
6			

D.4

—

1		2	16
2		4	UTC
3		6	48 BCD 12
4		N	
5	CRC32	4	CRC32 G

TCP
0x01

D.5

1		18	GD/J 082—2018
2		1	1 - 2 - 3 - 4 5
3		1	1 4 2015 1 1 2 2 3 3 4 4

4		5	5 40 “ ” GB/T 15273.1—1994 8 “ 11111 ”
5		1	0x00 0xff 0x01 0x64 1% 100%
6		4	UTC
7		4	UTC
8		1	1
9	1	1	GD/J 082—2018 B.1 61
10	1	2	
11	1	1	GD/J 082—2018 61 RTP mp3 rtp://IP: udp://@ mp3
”	”	”	”
	N	1	1
	N	2	1
	N	N	1

TCP
0x02

D.6

1		18	

TCP
0x10

D.7

1		1	1 2 3
3		1	1 2
4		1	
5			BCD

TCP
0x11

D.8

1		1	
2	1	1	1 2 3 4 5 6 7 8 9 10
”	”	1	
	N	1	

TCP
0x12

D.9

1		1	
2	1	1	0x01 " 0x00
3	1	1	0xff 0x01 0x64
4	1	1	1% 100% "
"	"	"	0x02 IP IP 4
	N	1	4
	N	1	12
			0x03 IP+
			+
			0x01
			IP 4 + 2
			0x02
			n n +
			2
	N	N	0x04 1 + n
			+ n
			0x05 1
			0x01 0x02
			0x06 4 utc
			0x07 4

“ ” “ ”

TCP

“ ”

D.10

D.11

1		1	
2	for (i=0;i< ;i++) {		
4		2	
5	}	*	
6		1	
7	for(j=0;j< ;j++) {		
8		1	
9	}	*	

D.12

1	0	
10 29		
1	10	
2	11	
3	12	
4	13	
5	14	
6	15	CRC
30 49		
1	30	
2	31	
3	32	
4	33	

5	34	
6	35	UKey
7	36	UKey Ukey
50 69		
1	50	
2	51	
3	52	
4	53	
5	54	
6	55	
7	56	
8	57	
9	58	
10	59	
70 89		
1	70	
2	71	
3	72	
4	73	

—

- a)
- b)
- c)

FM

FM

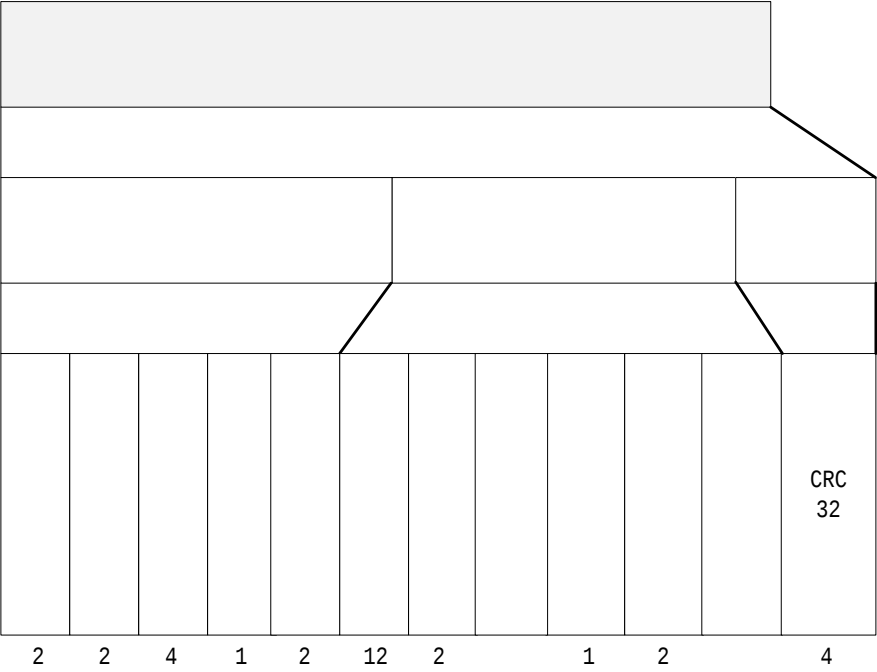
FM

- a)
- b)

- a)
- b)
- c)
- d)

/

E.1



E.1

1		
2		
3		

E.2

1		2	0xFEFD
2		2	0x0100
3		4	
4		1	1 2
5		2	

E.3

1		12	12 4bit 23 BCD GD/J 080—2018
2		2	
3		12×	
4		1	0x10 0x11 0x13 0x14 0x15 0x16
5		2	
6			

CRC32

4

G

TCP
0x11

E.4

1		1	0 13 60
2		2	0
3			

4		1	
5	1	1	
6	1	1	
7	1	1	
”	”	”	
	N	1	
	N	1	
	N	N	

/ E.5

					IP	TS	RDS
1		1	0x01	0 100	√	√	√
2		12	0x02	IP 4 4 12	√	√	√
3			0x03	IP+ + 0x01 IP 4 + 2 0x02 n n + 2 0x03 11	√	√	√
4		12	0x04	12 4bit 23 BCD GD/J 080—2018	√	√	√

—

						IP	TS	RDS
--	--	--	--	--	--	----	----	-----

5

0

1		1	1 2 3
2		1	1 2
3		1	
4			

TCP
0x13

E.7

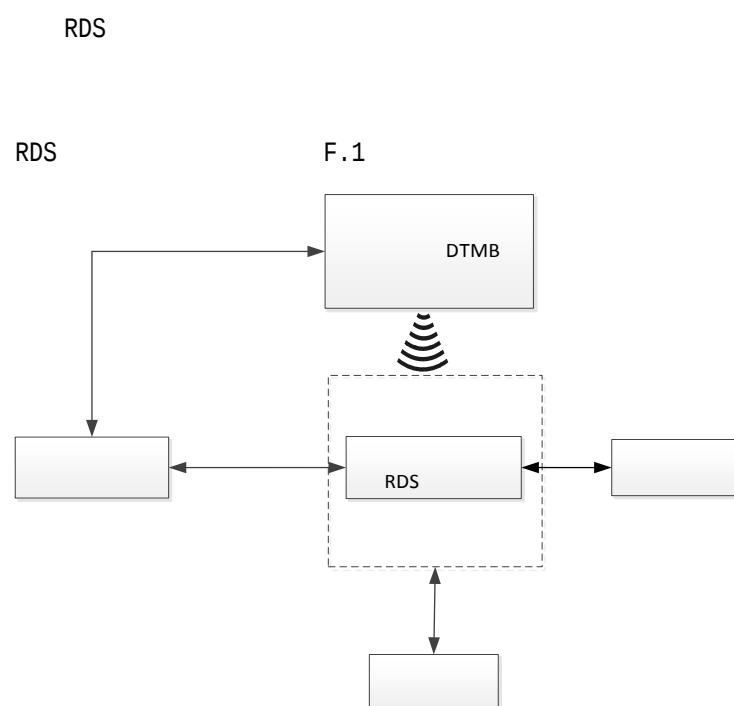
1		1	1 2
2		1	1 2 3 4 5
3		255	
4		4	UTC

TCP
0x14

E.8

1		1	
2		*	BCD
3		1	
	for (i=0;i< ;i++) {		
4		2	
5		1	0 1 2 3 4 5
6	EBM_id	18	BCD
7		1	1 2 3 4 5 6 u 7
8		1	0 1 2 3 4 05
9		1	0 1 1 2 2 3 3 4 4
10		5	

11		4	(UTC+8) “ ” 1970-1-1 00:00:00
12		4	(UTC+8) “ ” 1970-1-1 00:00:00
	If(==3 or ==4){		
13		1	0
14	}	*	
15		1	0x00 0xff 0x01 0x64 1% 100%
16		1	
17		1	
	for (i=0;i< ; i++) {		
18		*	BCD
	}		
	}		



- a) RDS
- b) RDS
- c) RDS
GD/J 085—2018
- d) DTMB
GD/J 084—2018
GD/J 087—2018
RDS
GD/J 085—2018
DTMB
GY/T 220.4—2007
- e) RDS

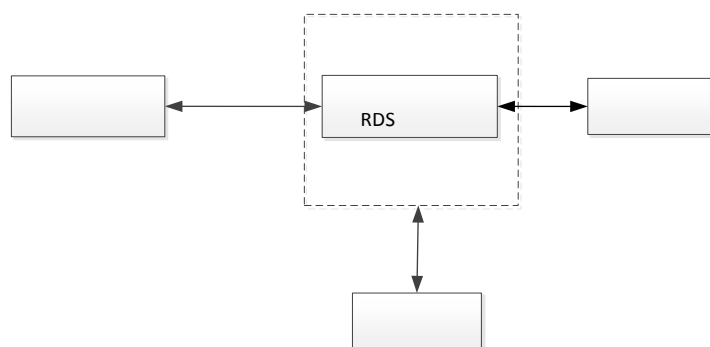
f)

RDS

RDS

RDS

F.2



RDS

a)

b)

c)

RDS

DVD

GD/J 085—2018

d)

RDS

USB

GD/J

085—2018

e)

RDS

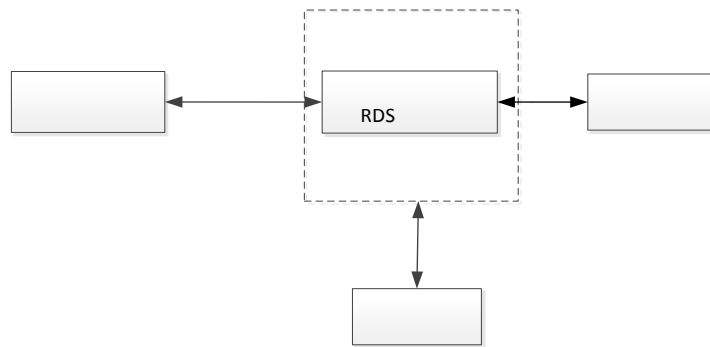
f)

RDS

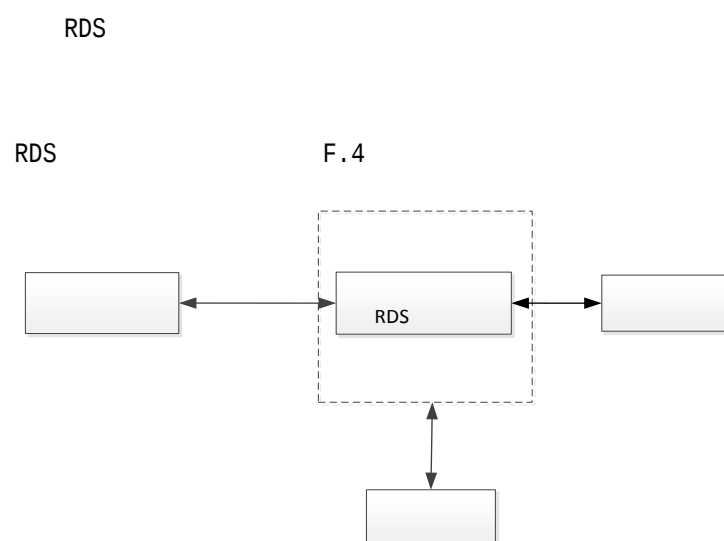
RDS

RDS

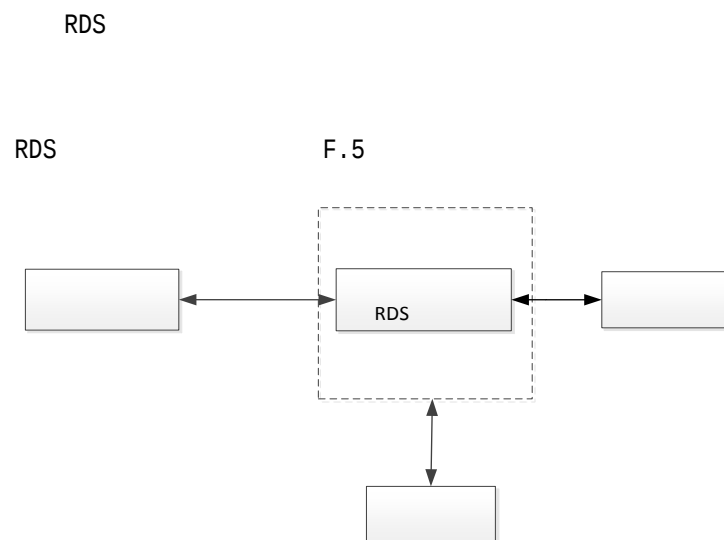
F.3



- a) RDS
- b) RDS
- c) RDS
GD/J 085—2018
- d) RDS
- e)



-
- a) RDS
 - b) RDS
 - c) RDS
 - d) GD/J 085—2018 RDS
 - e) RDS
 - f) RDS

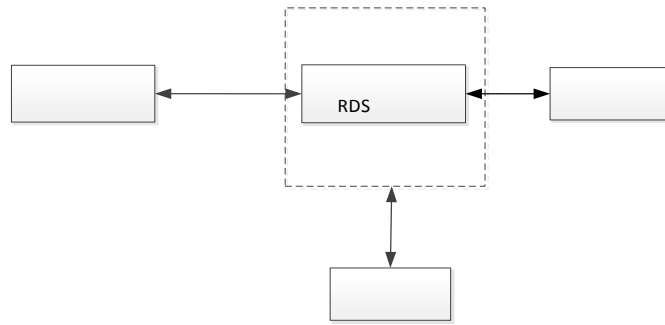


- a) RDS
- b) RDS
- c) RDS
- d) RDS GD/J 081—2018

RDS

RDS

F.6



RDS

a)

b)

Protocol type 0x08

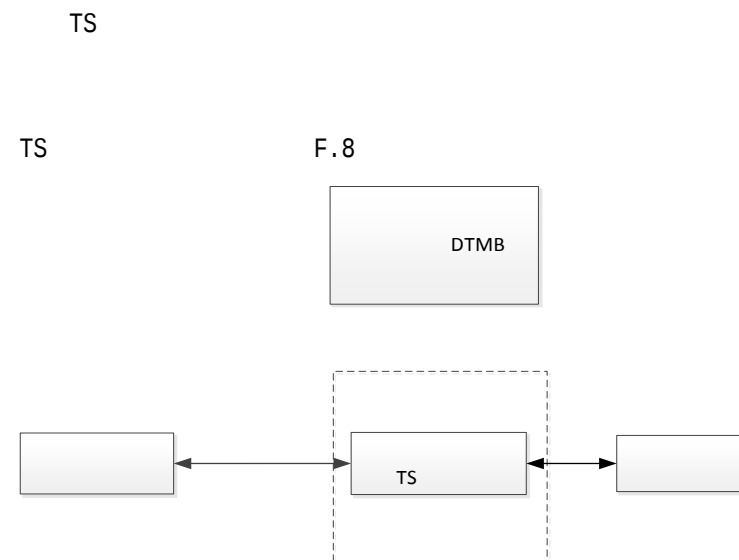
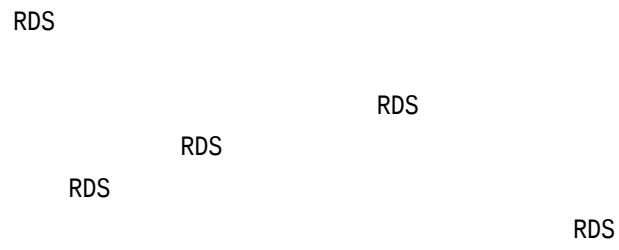
c)

RDS

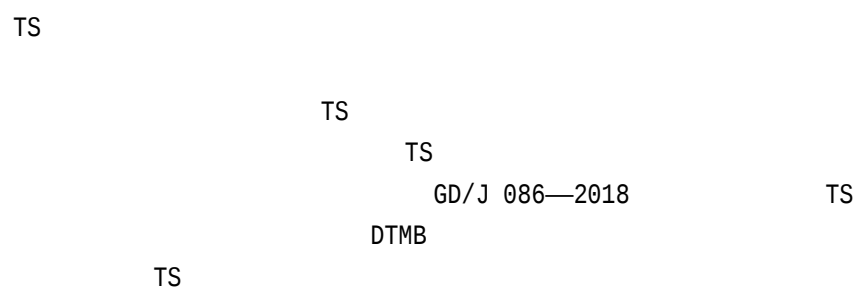
RDS

RDS

- a)
- b)
- c)
- d)
- e)



- a)
- b)
- c)
- d)



GD/J 084—2018
GD/J 087—2018

GD/J 085—2018 DTMB
GY/T 220.4—2007

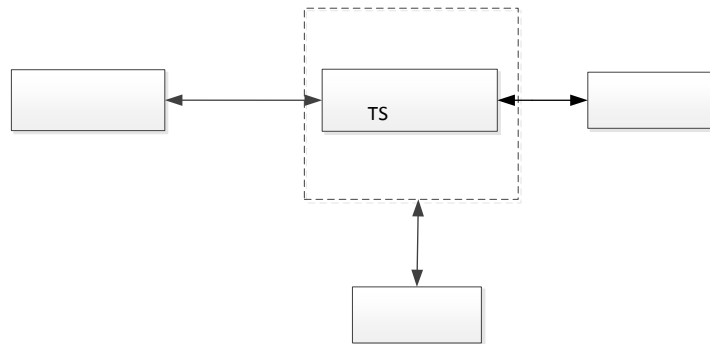
e) TS

f) TS

TS

TS

F.9



TS

a)

b)

c)

086—2018

TS

TS

DVD

GD/J

d)

086—2018

TS

TS

USB

GD/J

e)

TS

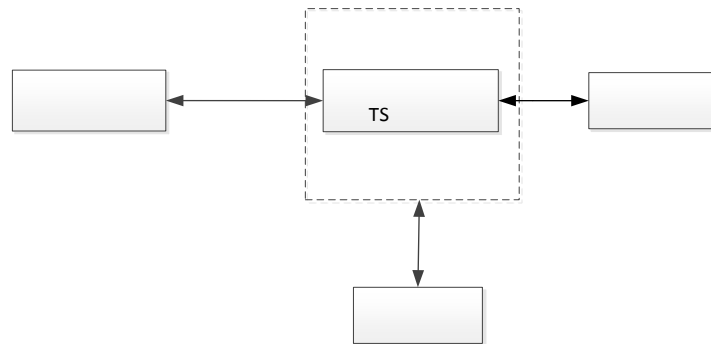
f)

TS

TS

TS

F.10



TS

a)

b)

TS

c)

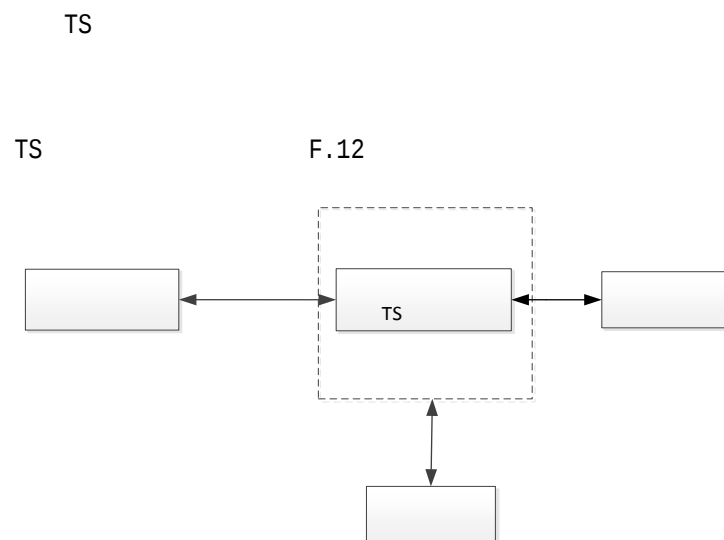
TS

GD/J 086—2018

TS

d)

- a) TS
- b) TS
- c) TS
GD/J 086—2018 TS
- d) TS TS
- e) TS
- f) TS



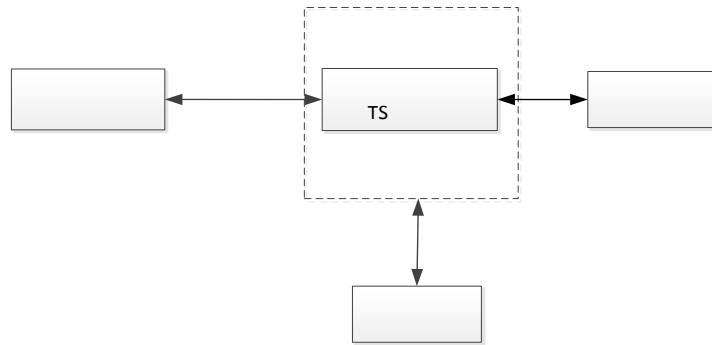
- a) TS
- b) TS
- c) TS
- d) TS GD/J 081—2018

—

TS

TS

F.13



TS

a)

b)

Protocol_type 0x08

c)

TS

TS

TS

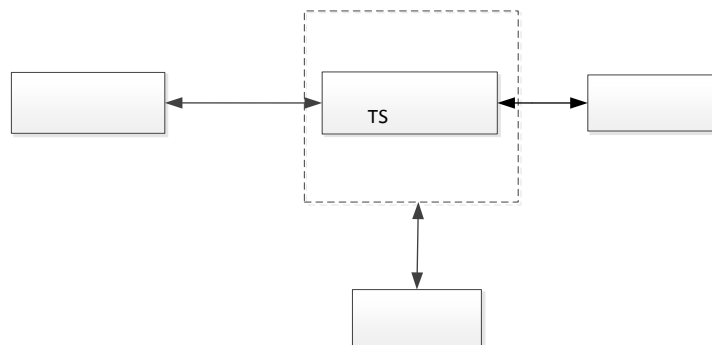
TS

E

TS

TS

F.14



- a)
- b)
- c)
- d)
- e)

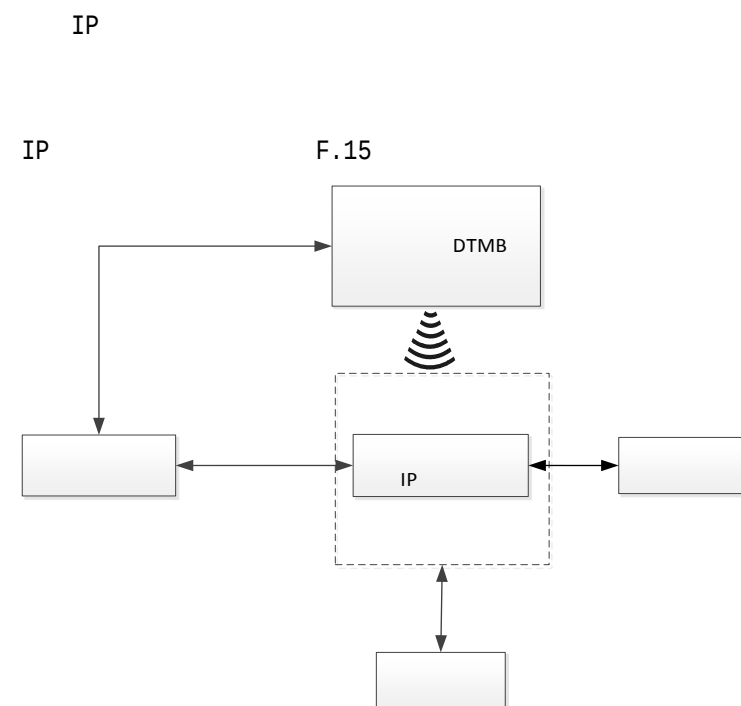
TS

TS

TS

TS

TS



- a)
- b)
- c)
- d)

IP

IP

IP

D IP

DTMB

IP

GD/J 084—2018

GD/J 085—2018

DTMB

GD/J 087—2018

GY/T 220.4—2007

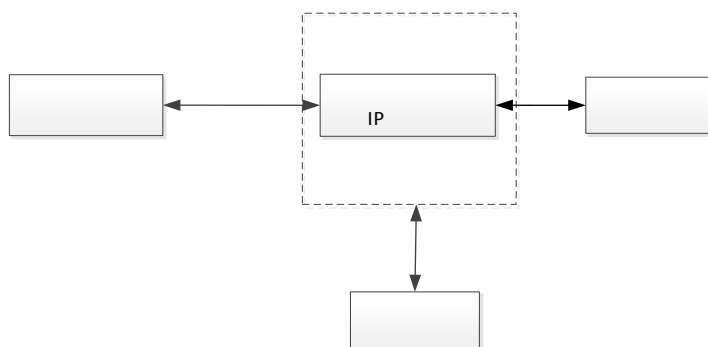
e) IP

f) IP

IP

IP

F.16



IP

a)

b)

c)

IP

DVD

D IP

d)

IP

USB

D

IP

e)

IP

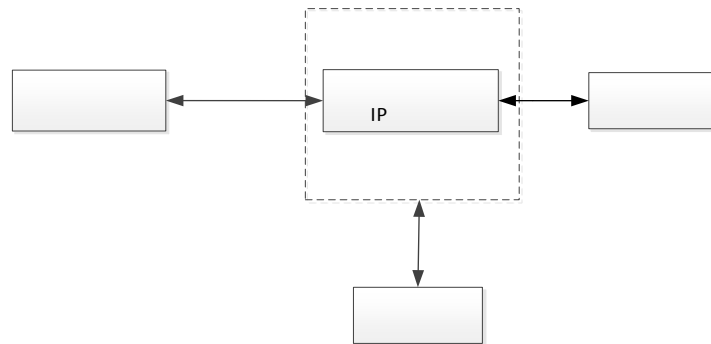
f)

IP

IP

IP

F.17



IP

a)

b)

IP

c)

D IP

IP

d)

IP

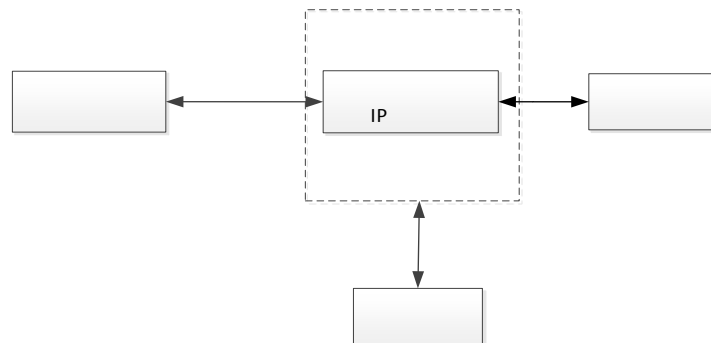
e)

IP

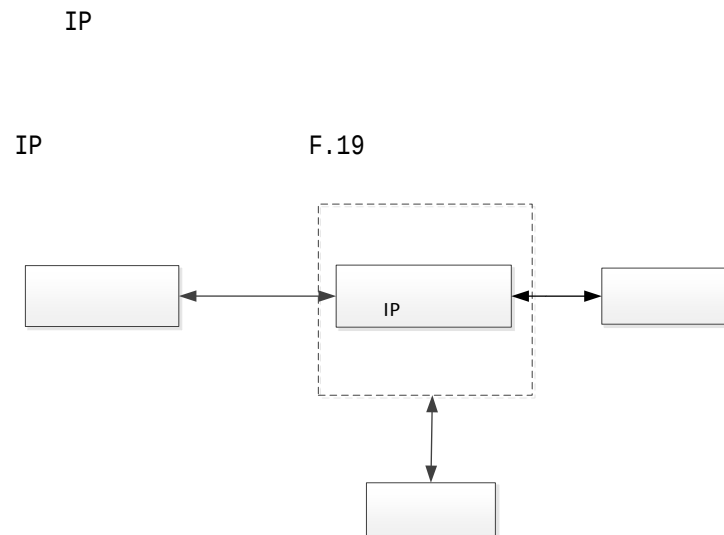
IP

IP

F.18



-
- a) IP
- b) IP
- c) IP
- d) IP
- e) IP
- f) IP

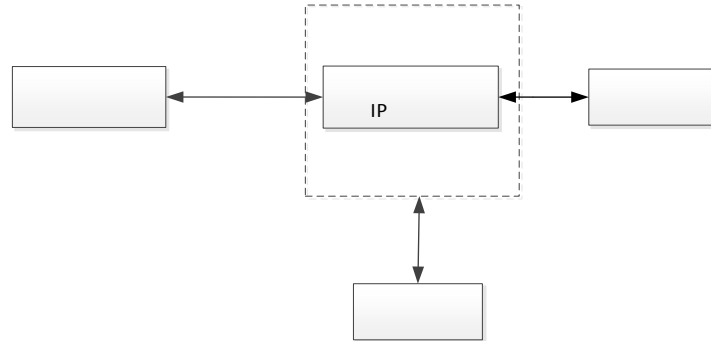


- a) IP
- b) IP
- c) IP
- d) IP
- GD/J 081—2018

IP

IP

F.20



IP

a)

b)

Protocol_type 0x08

c)

IP

IP

IP

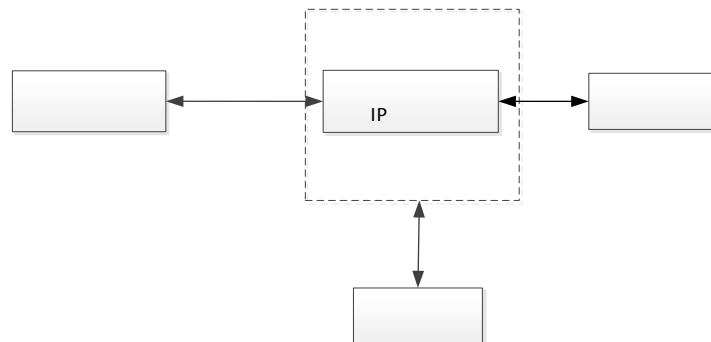
IP

E

IP

IP

F.21



- a)
b)
c)
d)
e)

IP

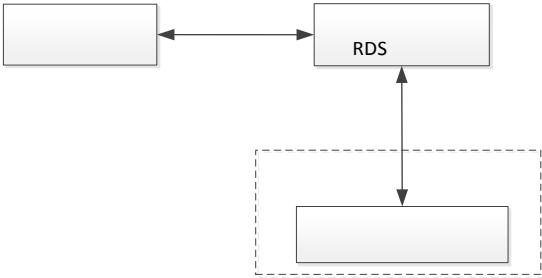
IP

IP

IP

IP

F.22



- a)
b)
c)
d)

ebm_class 4

 RDS

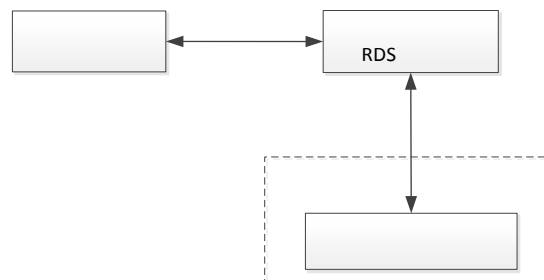
 GD/J 085—2018

Protocol_type 0x04

 11

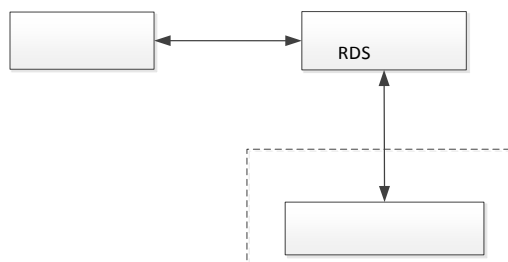
 11

F.23



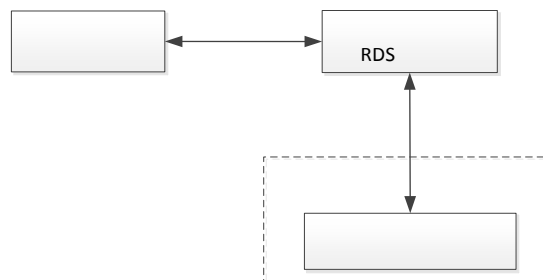
- a)
- b)
- c) 0x05 RDS Protocol_type
- d) 01 RDS GD/J 085—2018
- GD/J 085—2018 01

F.24



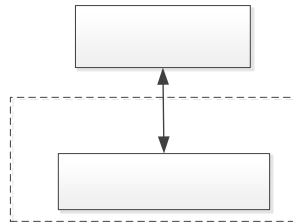
-
- a)
 - b) RDS Protocol_type
 - c) 0x06 RDS GD/J 085—2018
 - d) 23 GD/J 085—2018 23

F.25



- a)
- b) RDS
- c) RDS GD/J 085—2018
- d) RDS

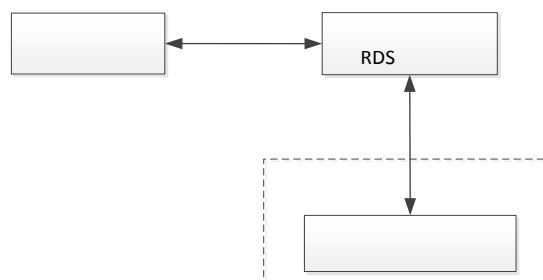
F.26



- a)
- b)
- c)

B3NÁn8

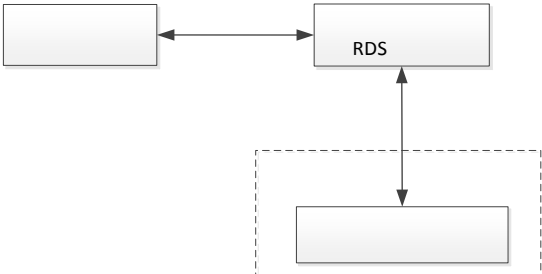
F.27



d)

E

F.28



a)

b)

c)

d)

IP

RDS
GD/J 081—2018

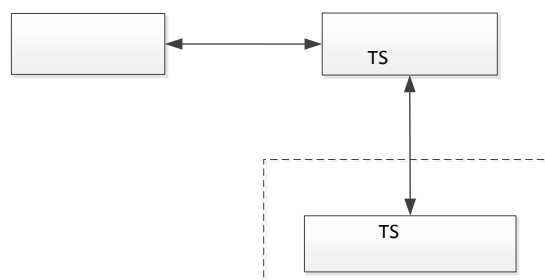
GD/J 081—

2018

TS

TS

F.29



TS

a)

b)

0x04 ebm_class 4

c)

TS

TS

d)

TS

GD/J 086—2018

TS

/

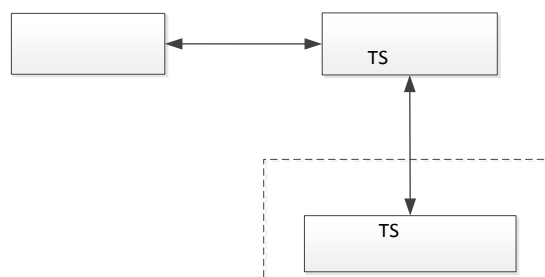
Protocol_type

GD/J 086—2018

TS

TS

F.30



TS

a)

b)

c)

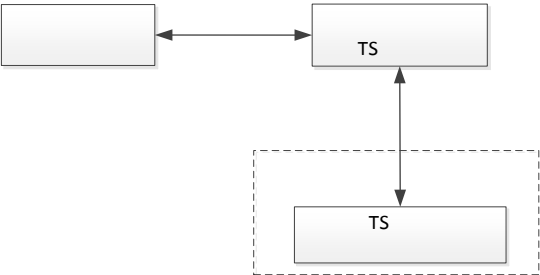
d)

TS
Protocol_type 0x05
GD/J 086—2018
TS
0x0021 PID table_id 0xFB Configure_cmd_tag 0x02
TS
GD/J 086—2018 0x0021 PID table_id 0xFB
Configure_cmd_tag 0x02

TS

TS

F.31



TS

a)

b)

c)

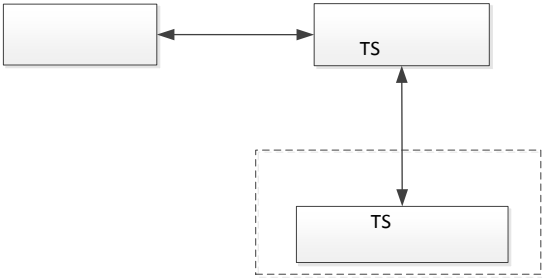
d)

TS
Protocol_type 0x06
GD/J 086—2018
TS
0x0021 PID table_id 0xFB Configure_cmd_tag 0x06
TS
GD/J 086—2018 0x0021 PID table_id 0xFB
Configure_cmd_tag 0x06

TS

TS

F.32



TS

a)

b)

c)

TS

TS

GD/J 086—2018

d)

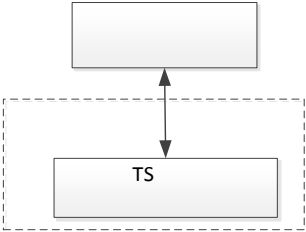
TS

TS

TS

TS

F.33



TS

a)

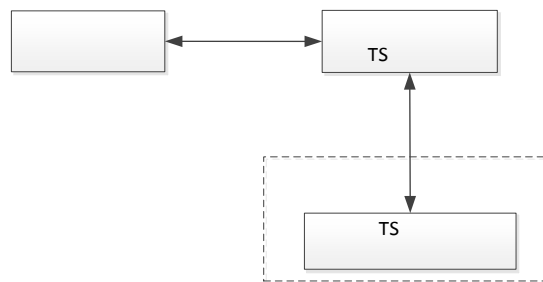
TS

-
- b) TS
 - c) TS

TS

TS

F.34



TS

a)

b)

c)

d)

TS

TS

TS

TS

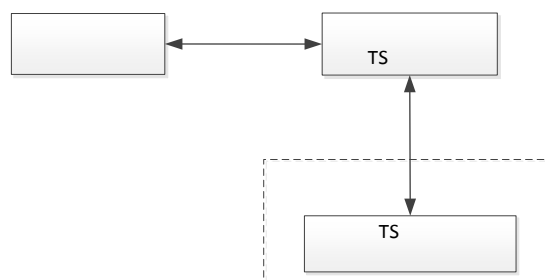
Protocol_type 0x08

E

TS

TS

F.35



TS

a)

b)

c)

d)

RDS
GD/J 081—2018

TS

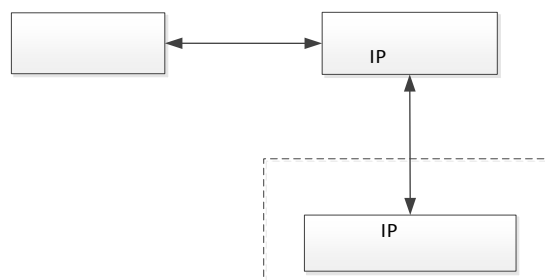
IP

GD/J 081—2018

IP

IP

F.36



IP

a)

b) IP / Protocol_type 0x04

ebm_class 4

c) IP D

IP (0xFEFD) 0x01

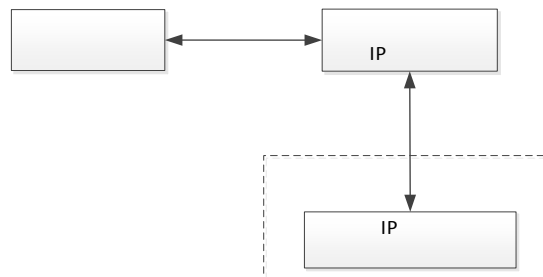
d) IP

D IP (0xFEFD)

0x01

IP

IP F.37



IP

a)

b) IP Protocol_type 0x05

c) IP IP D IP

IP (0xFEFD) 0x12

d) IP

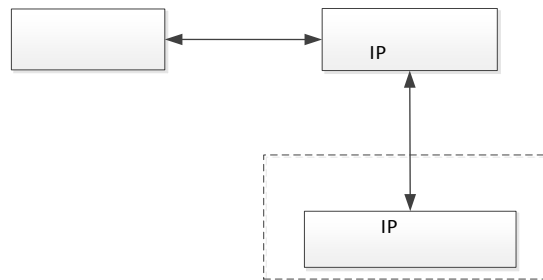
D IP IP (0xFEFD)

0x12 (0x04)

IP

IP

F.38



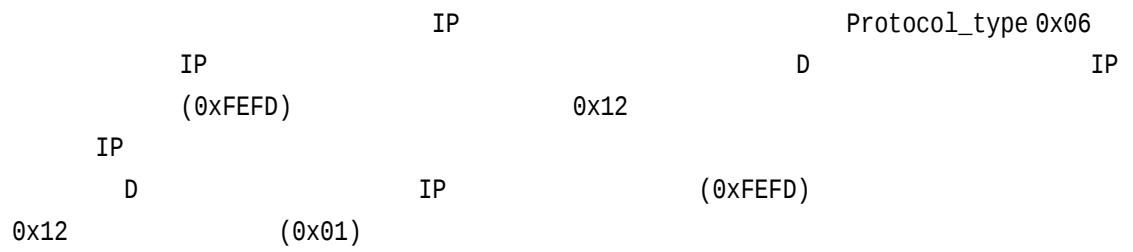
IP

a)

b)

c)

d)

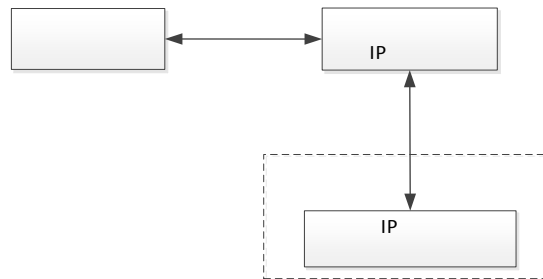


IP

IP

F.39

—



IP

a)

a)

b)

c)

IP

IP

IP

D

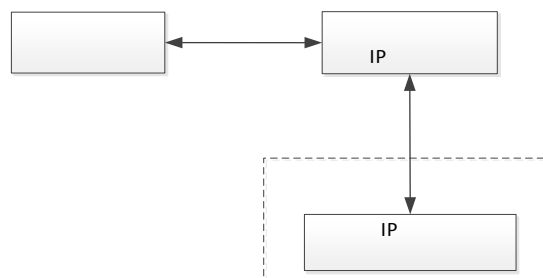
IP

IP

IP

IP

F.40

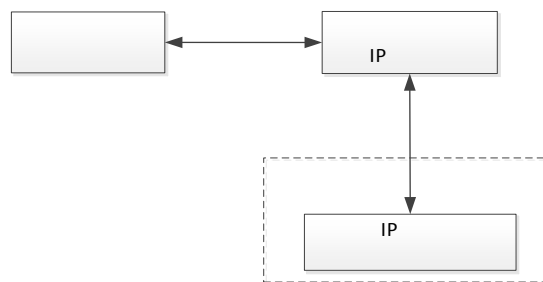


IP

a)

b) IP Protocol_type
 0x0A
 c) IP D IP
 (0xFEFD) 0x12
 d) IP D IP (0xFEFD)
 0x12 (0x02)

IP
 IP F.41

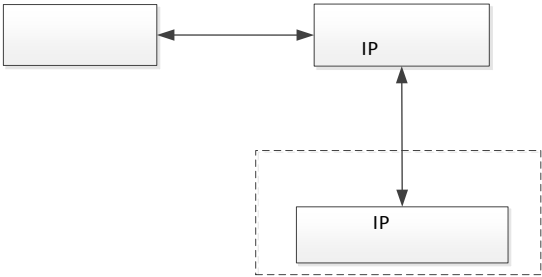


IP
 a)
 b) IP Protocol_type
 0x08
 c) IP D 0x11
 d) IP IP , (0xFEFD) 0x11 D
 e) IP
 E

IP

IP

F.42



IP

a)

b)

c)

d)

RDS
GD/J 081—2018
IP

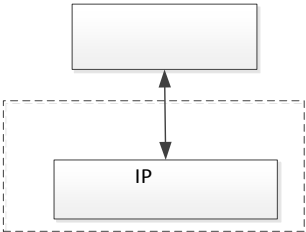
IP

GD/J 081—2018

IP

IP

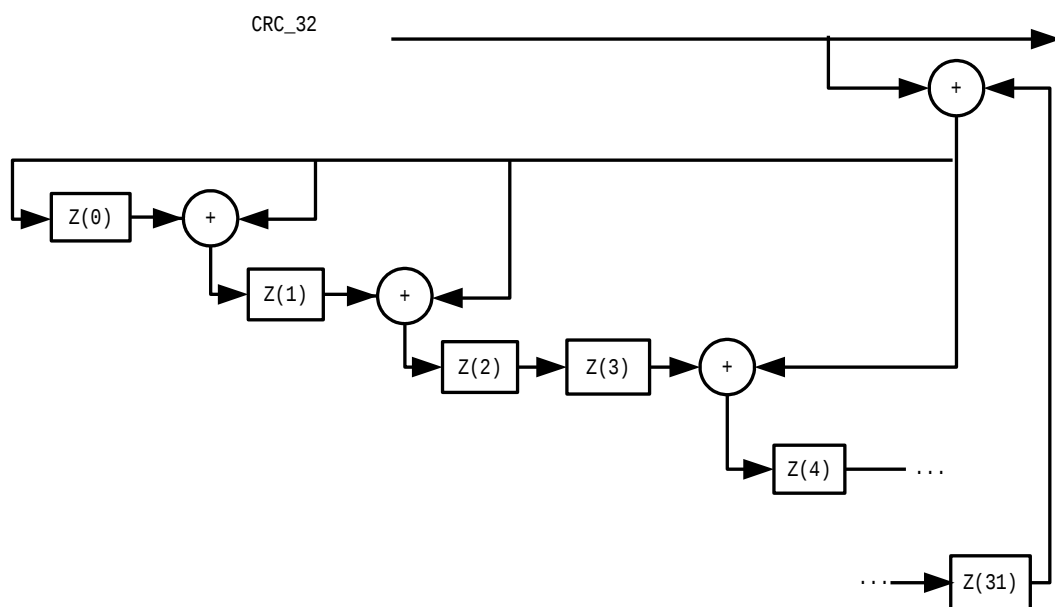
F.43



TS

-
- a)
 - b) IP
 - c) IP

G.1	32	CRC
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$$x^{32} + x^{26} + x^{23} + x^{22} + x^{16} + x^{12} + x^{11} + x^{10} + x^8 + x^7 + x^5 + x^4 + x^2 + x + 1 \quad \dots\dots\dots (G.1)$$

[1]

79

[2]

[3]