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(12)

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(43)

10-2005-0008440  
2005 01 21

(21) 10-2003-0076108  
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1020030063346 2003 09 09 (KR)

(71) 416

(72) 1 617-411 2

228 1703

955-1 121 1102

60430-4420 1152

(74)  
:

(54)

,  
가 ,  
,  
,  
, 7가 , 가  
가 .

C.

1	CDMA 2000	OSI	,
2	CDMA 2000 1x	CDMA 2000 1xEVDV	,
3	5		,
4	1 2		,
5		7	,
6		7	,
7		7	,
8	7		,
9	7		,
10			,
11a		1	,
11b		2	.

(Code Division Multiple Access: CDMA ) 가 3 CDMA  
 2 ( CDMA 2000 ) 가 , 9.6kbps 14.4kbps 3Mbps(Mega bi  
 CDMA ) 가 가 .  
 CDMA 2000 ( CDMA 2000 1x ) 가  
 (Supplemental Channel: SCH) ,  
 (Fundamental Channel: FCH) (Dedicated Control Channel: DCCH)  
 가 가 .

3 CDMA  
CDMA 2000 1xEVDV(EVolution in Data and Voice)  
(Packet Data Channel: PDCH)  
가  
(Radio Link Protocol: RLP)

CDMA 2000 1xEVD

V

CDMA 2000 1x CDMA 2000 1xEVDV (Media Access Control: MAC)  
(Protocol Data Unit: PDU)

가

가 가

(Standard)

가

(non)-

(

가

가

(multiple service)

가,

가

가

가

가

, 가

가

가

가

가

3가

가

Project	CDMA 2000	CDMA2000 1xEV-DV(Evolution in data and voice)	3GPP2(3rd Generation Partner)
가	가	가 가	
1	CDMA 2000 CDMA 2000	OSI(Open Systems Interconnection) CDMA 2000 1x	CDMA 2000 1xEV-DV
1	CDMA 2000 (Radio Link Protocol: RLP (Physical: PHY)	(Upper Signaling) (10) (Link Access Control: LAC (14) (Media Access Control: MAC (10) OSI 3-7 (12) OSI 2 (14) OSI 1 (16)	(11) (13) (13) (10) (13) (16)
CDMA 2000		1	2 7
(Sequencing), 가 (segmentation) 가 가	(13) (Addressing) (12) (11) (10)	(10) (14) (14)	(Authentication), (report) (15) SOM(Start Of Messag (11) 가
primary Traffic)	(13) (Service Datagram Unit: SDU (Signalling Traffic) (13) (14) (Secondary Traffic) (15)	(14) (Non-Signalling Traffic) (13) 가 (Multiplex sublayer Protocol Data Unit: MuxPDU (16) (16) (15) (16)	(Pri (14) (15)
(16) (15) (16)	(15) (16) (15)	(16) (coding), (15)	(16) (modulation)

(Dedicated Control Channel: DCCH .) 3

2

(Fundamental Channel: FCH .) IS-95 가

가 (Supplemental Channel: SCH .) IS-95 가 가

(Packet Data Channel: PDCH .)

CDMA 2000

(MuxPDU Types) 2 CDMA 2000 1x CDMA 2000 1xEVDO

(Rate 1/2) 4800bps , 1/4 (Rate 1/4) 2400bps , 1/8 (Rate 1/8) 1200bps , 1/2

2 , 1(MuxPDU Type 1) 1200bps 9600bps , 2(MuxPDU T

ype 2) 1 14400bps . 1

2

가 3(MuxPDU Type 3) 4(MuxPDU Type 4) 14400bps ( )

1, 2, 3 4 (

) , 가 (variable data rate) , CDMA 2000 1xEVDO (payload)

가 가 5(MuxPDU Type 5)

2 5 , (Payload) 가 .

3 5 5 6, 14 22 5 10 ,

(Extension Indicator)

3 , 5 3 (Service Identifier: SID) 1

(Extension Indicator) 2 (Length Indicator) 0, 8 16

(following) (Length: LEN) 가 가 . 8

16 가 ) 22 (16 가 )가 . 6, 14(8

, '000' '001' '110'

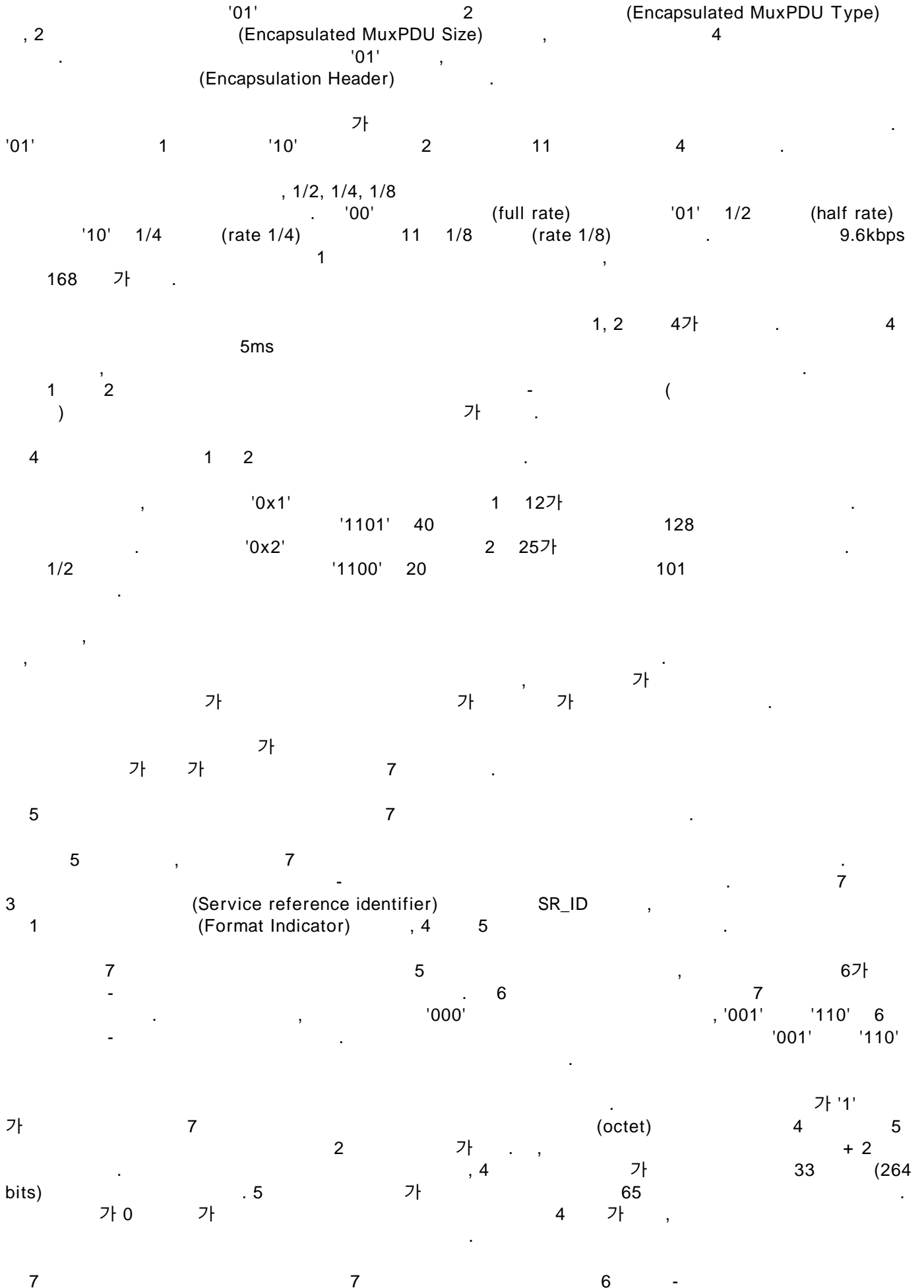
'111' (null service)

'01' 가 8 '10' 가 16 , '00' 가 가

가 .

(Length: LEN) 가 .

5 . 1



9.6kbps 20ms 4 CRC  
 (Cyclic Redundancy Codes) 172 , 172 SR\_ID가 '0'  
 01' '110' 6 - SR\_ID가 '000'

(Rate set)

1 2 '0x01'(rate set 1) '0x02'(r  
 ate set 2) , '0x10' 가 7  
 8 '0x10' 8 7

(Most Significant Bit: MSB)

(Format\_Descriptor)

1 '000' , 3  
 1 'MuxPDU\_Type' 2 1 가 1 6 7  
 (MuxPDU\_Type) 7 '100' 3  
 2 (Data\_Block Size) 가 '11' . 2  
 (Max\_Data Blocks) '000001' 2 '000000'  
 1(9.6kbps Family) 2(14.4kbps Family) (rate set)  
 0x1301, 0x1302, 0x1305, 0x1306 '01', '10' 가

9 0x1301 0x1302  
 000' Format\_Descriptor , '100' MuxPDU\_Type , '11' Data\_Block\_  
 Size , '000000' Max\_Data\_Blocks , '01' '10'

10

10 (a)

(General Page Message)  
 (Page Response Message)  
 (PDCH)  
 (Reverse Link: RL) (FCH)

(b) (Forward Link: FL)  
 (Common Power Control Channel: CPCCH)  
 (DCCH)

(c) Channel Assignment Message: ECAM) (d) (Extended

(e) (Service Response Message), (Service Request Message),  
 (Service Connect Complete Message) (Service Connect Message),

RC(Radio Configuration) (Service Configuration Record: SCR)  
 가 가

(f) (RLP) PPP(Point to Point Protocol)  
 (e)

(Mux PDU Type 7)

11a

11a (Mixed Mode : MM), (9600) (Traffic Type : TT) (Traffic Mode : T

1200/1500bps (FCH) (DCCH), 1/2(4800bps), 1/4(2400/2700bps), 1/8(

11b (Frame Mode ; FM) (MM) (MM)

ps) (FCH) (DCCH), 1/2(7200bps), 1/4(3600bps), 1/8(1800b

0 (FCH) (DCCH) (DCCH) 1/2 101

가 가

, CDMA 2000 7가 가

(57)

1.



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가 ,  
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1 2.  
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, 가 가

1 3.  
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, 가

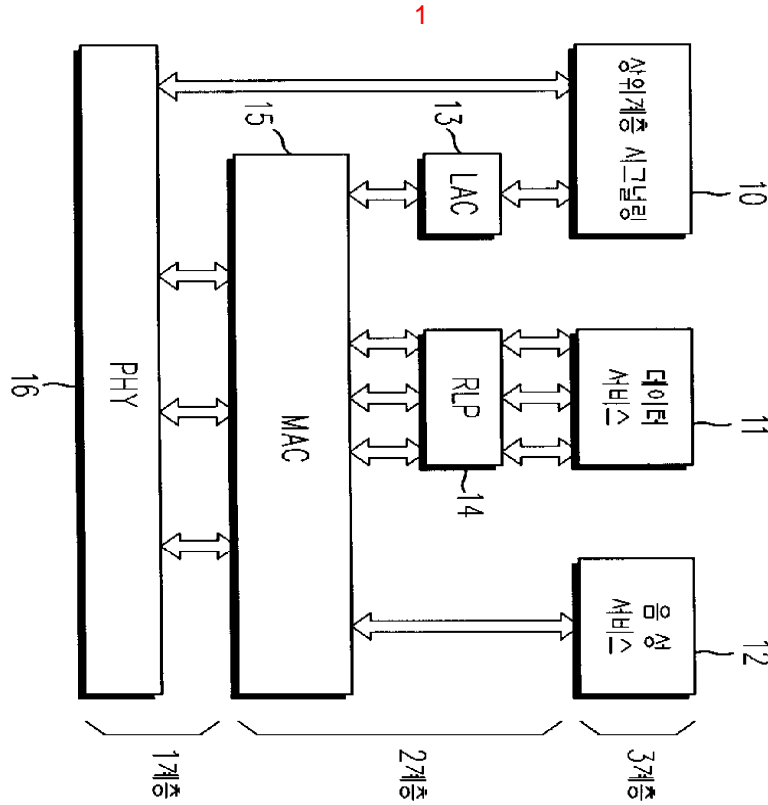
1 4.  
,

5.  
1 2  
1

, 2 ,  
3 ,

5 6.  
, ,  
, 가 가

5 7.  
, ,  
, 가



2

유형 1

전송율(bps)	헤더	프라이머리 트래픽 (bit/block)	시그널링 (bit/block)	세컨더리 트래픽 (bit/block)
9600	0000-1111	0 or 171	0 or 168	0 or 168
4800	-	80	0	0
2400	-	40	0	0
1200	-	16	0	0

유형 2

전송율(bps)	헤더	프라이머리 트래픽 (bit/block)	시그널링 (bit/block)	세컨더리 트래픽 (bit/block)
14400	00000-11000	0 or 266	0 or 262	0
7200	0000-1110	0 or 124	0 or 121	0
3600	000-111	0 or 54	0 or 52	0
1800	0-1	0 or 20	0	0

유형 3

SID	예비	트래픽 (bit/block)
001~111	000	0-538

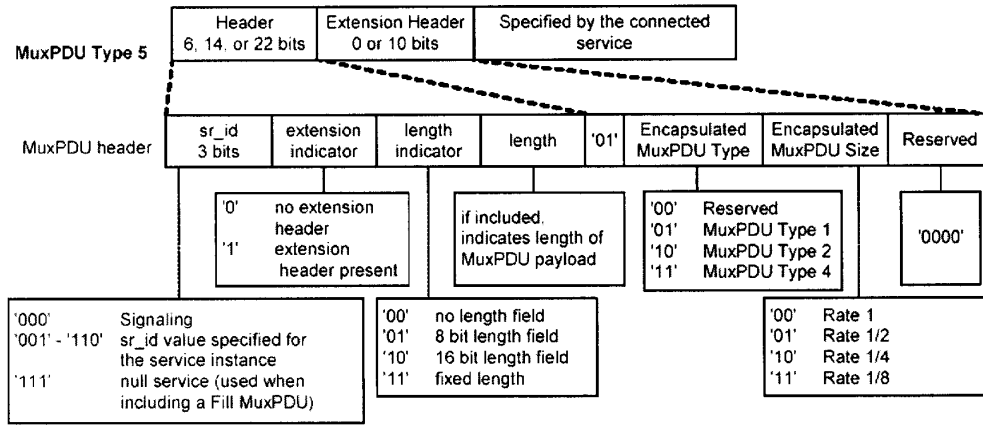
유형 4

전송율(bps)	시그널링 (bit/block)
9600	24

유형 5

SID	예비	길이지시	길이(bit)	트래픽 (bit/block)
000-110	0	00	-	variable
000-110	0	01	8	8 x LEN + 2
000-110	0	10	16	8 x LEN + 2
111	0	11	-	-

3



4

Multiplex Option 0x1 (MuxPDU Type 1)				Multiplex Option 0x2 (MuxPDU Type 2)			
muxpdu header	primary traffic	signaling traffic	secondary traffic	muxpdu header	primary traffic	signaling traffic	secondary traffic
'0'	171	0	0	'0'	266	0	0
'1000'	80	88	0	'10000'	124	138	0
'1001'	40	128	0	'10001'	54	208	0
'1010'	16	152	0	'10010'	20	242	0
'1011'	0	168	0	'10011'	0	262	0
'1100'	80	0	88	'10100'	124	0	138
'1101'	40	0	128	'10101'	54	0	208
'1110'	16	0	152	'10110'	20	0	242
'1111'	0	0	168	'10111'	0	0	262
N/A	80	0	0	'11000'	20	222	20
N/A	40	0	0	'0'	124	0	0
N/A	16	0	0	'1000'	54	67	0
				'1001'	20	101	0
				'1010'	0	121	0
				'1011'	54	0	67
				'1100'	20	0	101
				'1101'	0	0	121
				'1110'	20	81	20
				'0'	54	0	0
				'100'	20	32	0
				'101'	0	52	0
				'110'	20	0	32
				'111'	0	0	52
				0	20	0	0
				1	0	0	20

Rate 1 frame
Rate 1/2 frame
Rate 1/4 frame
Rate 1/8 frame

5

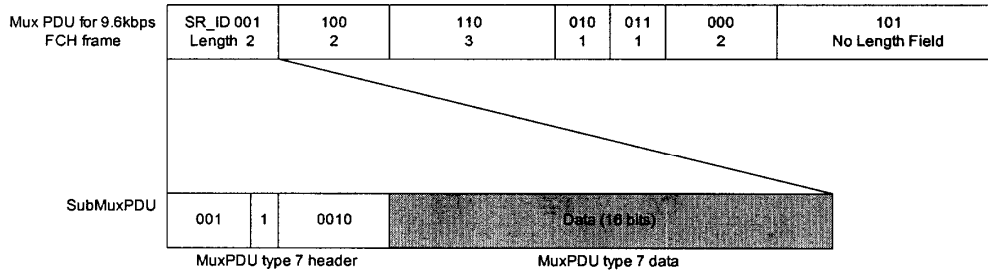
MuxPDU Type 7 Header		
3	1	4 or 5
SR_ID	Format Indicator	Optional Length Field

**General Format of a MuxPDU Type 7**

6

SR_ID	Usage
'000'	Signaling
'001' – '110'	SR_ID value specified for the service instance
'111'	Null service (used when including a Fill MuxPDU)

7



8

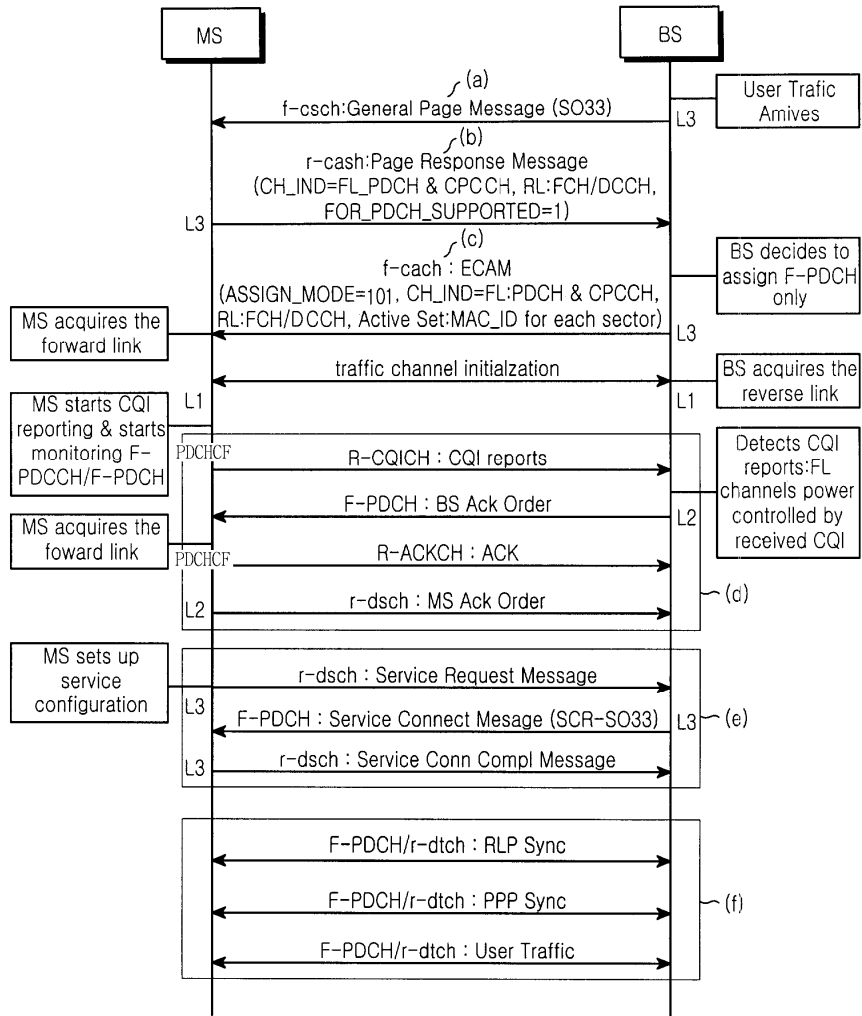
Field Name	Number of Bits	Value
Rate_Set	2	'00' - Not Applicable
		'01' - Rate Set 1
		'10' - Rate Set 2
Max_Data_Blocks	6	'000000' - No restriction
		'000001' - '001000'
Data_Block_Size	2	'00' - Single size
		'01' - Double size
		'11' - Variable size
MuxPDU_Type	3	'000' - MuxPDU Type 1, 2, or 4
		'010' - MuxPDU Type 3
		'001' - MuxPDU Type 4 or 6
		'011' - MuxPDU Type 5
		'100' - MuxPDU Type 7
Format_Descriptor	3	'000' - Format 1

Least Significant Bit

Most Significant Bit

<b>Multiplex Option 0X1301</b>			
<b>1</b>	<b>3</b>	<b>0</b>	<b>1</b>
<b>0001</b>	<b>0011</b>	<b>0000</b>	<b>0001</b>
<b>000100</b>			<b>Format 1, MuxPDU Type 7</b>
	<b>11</b>		<b>Variable size data blocks</b>
		<b>000000</b>	<b>Variable number of MuxPDUs in a physical SDU</b>
			<b>01 Rate Set 1 (9.6 Kbps family)</b>
<b>Multiplex Option 0X1302</b>			
<b>1</b>	<b>3</b>	<b>0</b>	<b>2</b>
<b>0001</b>	<b>0011</b>	<b>0000</b>	<b>0010</b>
<b>000100</b>			<b>Format 1, MuxPDU Type 7</b>
	<b>11</b>		<b>Variable size data blocks</b>
		<b>000000</b>	<b>Variable number of MuxPDUs in a physical SDU</b>
			<b>10 Rate Set 2 (14.4 Kbps family)</b>

10



11a

Transmit Rate (bits/sec)	MuxPDU Header						Permitted on	
	Mixed Mode (MM)	Traffic Type (TT)	Traffic Mode (TM)	Primary Traffic (bits/block)	Signaling Traffic (bits/block)	MuxPDU Type 7 (bits/block)	F C H	D C C H
9600	'0'	-	-	171	0	0	Y	Y
	'1'	'0'	'00'	80	88	0	Y	Y
	'1'	'0'	'01'	40	128	0	Y	Y
	'1'	'0'	'10'	16	152	0	Y	Y
	'1'	'0'	'11'	0	168	0	Y	Y
	'1'	'1'	'00'	80	0	88	Y	Y
	'1'	'1'	'01'	40	0	128	Y	Y
	'1'	'1'	'10'	16	0	152	Y	Y
'1'	'1'	'11'	0	0	168	Y	Y	
4800	-	-	-	80	0	0	Y	N
2400/2700	-	-	-	40	0	0	Y	N
1200/1500	-	-	-	16	0	0	Y	N

## 11b

Transmit Rate (bits/sec)	MuxPDU Header					Permitted on	
	Mixed Mode (MM)	Frame Mode (FM)	Primary Traffic (bits/block)	Signaling Traffic (bits/block)	MuxPDU Type 7 (bits/block)	F C H	D C H
14400	'0'	-	266	0	0	Y	Y
	'1'	'0000'	124	138	0	Y	Y
	'1'	'0001'	54	208	0	Y	Y
	'1'	'0010'	20	242	0	Y	Y
	'1'	'0011'	0	262	0	Y	Y
	'1'	'0100'	124	0	138	Y	Y
	'1'	'0101'	54	0	208	Y	Y
	'1'	'0110'	20	0	242	Y	Y
	'1'	'0111'	0	0	262	Y	Y
7200	'0'	-	124	0	0	Y	N
	'1'	'000'	54	67	0	Y	N
	'1'	'001'	20	101	0	Y	N
	'1'	'010'	0	121	0	Y	N
3600	'0'	-	54	0	0	Y	N
	'1'	'00'	20	32	0	Y	N
	'1'	'01'	0	52	0	Y	N
1800	'0'	-	20	0	0	Y	N