TSG-RAN Working Group1 meeting #14   **TSGR1#14(00)0844**
Oulu, Finland, July 4 - 7, 2000

To:	**TSG-RAN WG1, TSG-RAN WG2**
CC:	**TSG-RAN, TSG-RAN WG3, TSG-RAN WG4**
Title:	**Typical Radio Parameter Sets Version 1.2**
Source:	**GSM Association IMT2000 Steering Group (ISG)**
Document for:	**Information**

Summary

In RAN#7 meeting, it was endorsed to change TR25.926 and TR25.944 to align with "Typical radio interface parameter sets" document from GSMA ISG. Thanks to RAN WG1 and RAN WG2 members' efforts, CRs for these TRs were made for approval in RAN#8 meeting to align with the document from ISG. In the discussion in WG1 and WG2, version 1.1 of the document was referred.

After the discussion in WG1 and WG2, "Typical radio interface parameter sets" document was revised in the ad hoc of ISG to correct errors, to fix TBD parameters and to introduce necessary changes.

The attached document is the latest version (version 1.2) of "Typical radio interface parameter sets" document, which was approved in ISG to be submitted to the appropriate 3GPP TSGs and WGs. The major changes from the version 1.1 to the version 1.2 are summarised in the appendix "Overview of Typical Radio Interface Parameter Sets version 1.2". ISG hopes that WG1 and WG2 will discuss to reflect these changes to the TRs appropriately.

In order to fix remaining TBD parameters and correct errors, the version 1.3 will be released from ISG within one or two months.

Typical Radio Interface Parameter Sets

Version 1.~~1~~2

~~March~~ June 2000

Contents

1. Scope

This document describes the typical parameter sets for layer 1 and 2 configurations preferred by operators to ensure interoperability. It has to be noted that these sets of prioritised parameters are not imposing constraints in the standard, nor removing the flexibility which has been included in the standard as a requirement from the operators, nor will the document define specific essential services for roaming in IMT-2000(UTRA FDD) networks. Moreover, the identification of typical parameter sets does not prevent operators to exploit full flexibility in their networks by the use of parameter settings which are not mentioned in this document. It is expected that the prioritised parameter sets identified in this document will be reflected in the test specifications for UTRA FDD mobile handsets, forming the first class testing cases.

2. Reference

[1]   3G TS 25.211 Physical Channels and mapping of Transport Channels onto Physical channels (FDD)
[2]   3G TS 25.212 Multiplexing and Channel Coding (FDD)
[3]   3G TS 23.107 QoS concept and Architecture
[4]   3G TS 26.110 Codec for Circuit Switched Multimedia Telephony Service; General Description
[5]   3G TS 29.007 General requirements on interworking between the Public Land Mobile Network (PLMN) and the Integrated Services Digital Network (ISDN) or Public Switched Telephone Network (PSTN)
[6]   3G TR 23.910 Circuit Switched Data Bearer Service

3. Abbreviations

AM   Acknowledgement mode
BCCH   Broadcast Control Channel
CBS   Cell Broadcast Service
CC   Convolutional coding
CCCH   Common Control Channel
CCTrCH   Coded Composite Transport Channel
CS   Circuit switching
DCCH   Dedicated Control Channel
DL   Downlink
DPCH   Dedicated Physical Channel
DT   Direct transfer
DTCH   Dedicated Traffic Channel
FTM   File tunnelling mode
NAS   Non-access stratum
PRACH   Physical Randome Access Channel
PS   Packet switching
RAB   Radio Access Bearer
RB   Radio Bearer
SCCPCH   Secondary Common Control Physical Channel
SMS   Short Message Service
SRB   Signalling RB
SSD   Source statistics descriptor
TC   Turbo coding
TM   Transparent mode
UL   Uplink
UM   Unacknowledgement mode

4. QoS Architecture and RAB attributes

From a user point-of-view services are considered end-to-end, this means from a Terminal Equipment (TE) to another TE. An End-to-End Service may have a certain Quality of Service (QoS) which is provided for the user through the different networks. In UMTS, it is the UMTS Bearer Service that provides the requested QoS through the use of different QoS classes as defined in TS 23.107 [3].

The UMTS Bearer Service consists of two parts, the Radio Access Bearer Service, RAB, and the Core Network Bearer Service. The Radio Access Bearer Service is realised by a Radio Bearer Service and an Iu-Bearer Service. The relationship between the services is illustrated in figure 1.
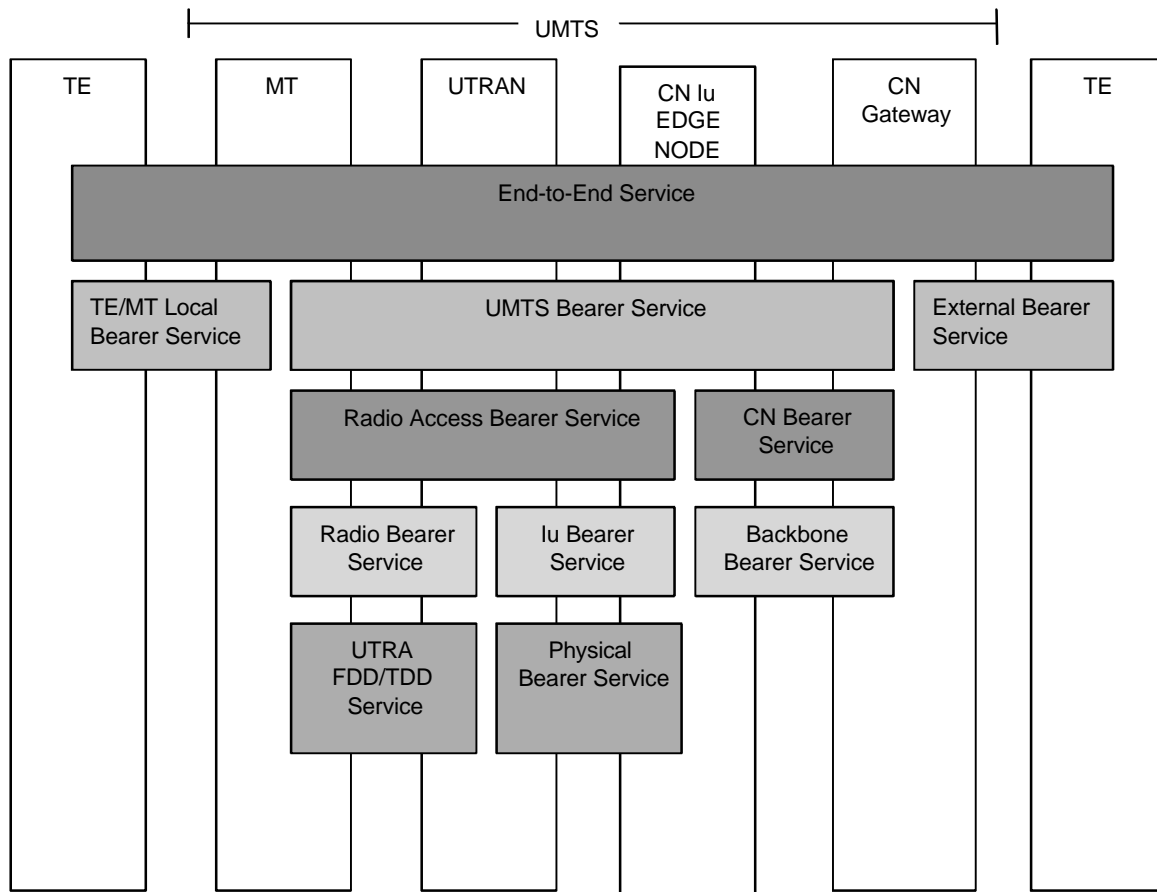
Figure 1: UMTS QoS Architecture

The Radio Access Bearer Service is characterised by a number of attributes such as Traffic class, Maximum bit rate, Guaranteed bit rate, SDU error ratio, Residual BER, Transfer Delay etc [3]. As a first approach the four following attributes have been considered to come up with the parameter settings in section 5.4:

- Traffic class
- SSD
- Maximum bit rate
- Residual BER

The Traffic classes are explained in table 1. The Maximum bit rate has been considered at RLC layer and Physical Layer for the acknowledged and unacknowledged modes respectively. The Residual BER is understood as BER at RLC layer and Transport BLER for the acknowledged and unacknowledged modes respectively.

Table 1: Traffic classes

Traffic class	Conversational class conversational RT	Streaming class streaming RT	Interactive class Interactive best effort	Background Background best effort
Fundamental characteristics	- Preserve time relation (variation) between information entities of the stream Conversational pattern (stringent and low delay)	- Preserve time relation (variation) between information entities of the stream (i.e. some but constant delay)	Request response pattern Preserve payload content	Destination is not expecting the data within a certain time Preserve payload content
Example of the application	- speech, video, …	- facsimile (NT) - streaming audio and video	- Web browsing	- background download of emails

5. RAB and signalling RB

5.1. RABs and signalling RBs

In the following sections, the typical parameter sets are presented for reference RABs, signalling RBs and important combinations of them. The data rate given for each RAB is the maximum data rate that can be supported by that RAB. NOTE: The granularity for each RAB needs to be clarified.

Table 2: Prioritised RABs.

#	Traffic class[3]	SSD[3]	Max. rate, kbps	CS/PS
1	Conversational	Speech	UL:12.2 DL:12.2	CS
2	Conversational	Speech	UL:10.2 DL:10.2	CS
3	Conversational	Speech	UL:7.95 DL:7.95	CS
4	Conversational	Speech	UL:7.4 DL:7.4	CS
5	Conversational	Speech	UL:6.7 DL:6.7	CS
6	Conversational	Speech	UL:5.9 DL:5.9	CS
7	Conversational	Speech	UL:5.15 DL:5.15	CS
8	Conversational	Speech	UL:4.75 DL:4.75	CS
9	Conversational	Unknown	UL:28.8 DL:28.8	CS
109	Conversational	Unknown	UL:64 DL:64	CS
1110	Conversational	Unknown	UL:32 DL:32	CS
12	Streaming	Unknown	UL:14.4 DL:14.4	CS
1311	Streaming	Unknown	UL:28.8 DL:28.8	CS
1412	Streaming	Unknown	UL:57.6 DL:57.6	CS
1513	Streaming	Unknown	UL:0 DL:64	CS or PS
1614	Streaming	Unknown	UL:64 DL:0	CS or PS
1715	Streaming	Unknown	UL:0 DL:128	CS or PS
1816	Streaming	Unknown	UL:128 DL:0	CS or PS
1917	Streaming	Unknown	UL:0 DL:384	CS or PS
2018	Interactive or Background	N/A	UL:32 DL:8	PS
2119	Interactive or Background	N/A	UL:64 DL:8	PS
2220	Interactive or Background	N/A	UL:32 DL:64	PS
2321	Interactive or Background	N/A	UL:64 DL:64	PS
2422	Interactive or Background	N/A	UL:64 DL:128	PS
2523	Interactive or Background	N/A	UL:128 DL:128	PS

26~~24~~	Interactive or Background	N/A	UL:64 DL:384	PS
27~~25~~	Interactive or Background	N/A	UL:128 DL:384	PS
28~~26~~	Interactive or Background	N/A	UL:384 DL:384	PS
29~~27~~	Interactive or Background	N/A	UL:64 DL:2048	PS
30~~28~~	Interactive or Background	N/A	UL:128 DL:2048	PS
31~~29~~	Interactive or Background	N/A	UL:384 DL:2048	PS

Table 3: Signalling RBs

#	Maximum rate, kbps	Logical channel	PhyCh onto which SRBs are mapped
1	UL:1.7 DL:1.7	DCCH	DPCH
2	UL:3.4 DL:3.4	DCCH	DPCH
3	UL:13.6 DL:13.6	DCCH	DPCH
4	DL:27.2 (alt. 40.8)	DCCH	SCCPCH
5	UL:16.6	CCCH	PRACH
6	DL:30.4 (alt. 45.6)	CCCH	SCCPCH
7	DL:33.2 (alt. 49.8)	BCCH:	SCCPCH
8	DL:24 (alt. 6.4)	PCCH	SCCPCH

5.2. Combinations of RABs and Signalling RBs

In this document, physical channel parameters for following combinations of RABs and signalling RBs on a CCTrCH are described.
Note: It is understood that for speech service the AMR mode may be operated asymmetrically for the uplink and downlink.

Combinations on DPCH
1) Stand-alone UL:1.7 DL:1.7 kbps SRBs for DCCH
2) Stand-alone UL:3.4 DL:3.4 kbps SRBs for DCCH
3) Stand-alone UL:13.6 DL:13.6 kbps SRBs for DCCH
4) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
    + UL:3.4 DL:3.4 kbps SRBs for DCCH
5) Conversational / speech / UL:10.2 DL:10.2 kbps / CS RAB
    + UL:3.4 DL:3.4 kbps SRBs for DCCH
6) Conversational / speech / UL:7.95 DL:7.95 kbps / CS RAB
    + UL:3.4 DL:3.4 kbps SRBs for DCCH
7) Conversational / speech / UL:7.4 DL:7.4 kbps / CS RAB
    + UL:3.4 DL:3.4 kbps SRBs for DCCH
8) Conversational / speech / UL:6.7 DL:6.7 kbps / CS RAB
    + UL:3.4 DL:3.4 kbps SRBs for DCCH
9) Conversational / speech / UL:5.9 DL:5.9 kbps / CS RAB
    + UL:3.4 DL:3.4 kbps SRBs for DCCH
10) Conversational / speech / UL:5.15 DL:5.15 kbps / CS RAB
    + UL:1.7 DL:1.7 kbps SRBs for DCCH
11) Conversational / speech / UL:4.75 DL:4.75 kbps / CS RAB
    + UL:1.7 DL:1.7 kbps SRBs for DCCH
12) Conversational / unknown / UL:28.8 DL:28.8 kbps / CS RAB
    + UL:3.4 DL:3.4 kbps SRBs for DCCH
~~12)~~13) Conversational / unknown / UL:64 DL:64 kbps / CS RAB
    + UL:3.4 DL:3.4 kbps SRBs for DCCH
~~13)~~14) Conversational / unknown / UL:32 DL:32 kbps / CS RAB
    + UL:3.4 DL:3.4 kbps SRBs for DCCH
15) Streaming / unknown / UL:14.4/DL:14.4 kbps / CS RAB
    + UL:3.4 DL:3.4 kbps SRBs for DCCH

14)16) Streaming / unknown / UL:28.8/DL:28.8 kbps / CS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
15)17) Streaming / unknown / UL:57.6/DL:57.6 kbps / CS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
16)18) Streaming / unknown / UL:0 DL:64 kbps / CS or PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
17)19) Streaming / unknown / UL:64 DL:0 kbps / CS or PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
18)20) Streaming / unknown / UL:0 DL:128 kbps / CS or PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
19)21) Streaming / unknown / UL:128 DL:0 kbps / CS or PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
20)22) Streaming / unknown / UL:0 DL:384 kbps / CS or PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
21)23) Interactive or background / UL:32 DL:8 kbps / PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
22)24) Interactive or background / UL:64 DL:8 kbps / PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
23)25) Interactive or background / UL:32 DL: 64 kbps / PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
24)26) Interactive or background / UL:64 DL: 64 kbps / PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
25)27) Interactive or background / UL:64 DL:128 kbps / PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
26)28) Interactive or background / UL:128 DL:128 kbps / PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
27)29) Interactive or background / UL:64 DL:144 kbps / PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
28)30) Interactive or background / UL:144 DL:144 kbps / PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
31) Interactive or background / UL:64 DL:256 kbps / PS RAB
   + UL:3.4 DL: 3.4 kbps SRBs for DCCH
29)32) Interactive or background / UL:64 DL:384 kbps / PS RAB
   + UL:3.4 DL: 3.4 kbps SRBs for DCCH
30)33) Interactive or background / UL:128 DL:384 kbps / PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
31)34) Interactive or background / UL:384 DL:384 kbps / PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
32)35) Interactive or background / UL:64 DL:2048 kbps / PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
33)36) Interactive or background / UL:128 DL:2048 kbps / PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
34)37) Interactive or background / UL:384 DL:2048 kbps / PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
35)38) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
   + Interactive or background / UL:32 DL:8 kbps / PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
36)39) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
   + Interactive or background / UL:32 DL:64 kbps / PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
37)40) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
   + Interactive or background / UL:64 DL:64 kbps / PS RAB
   + UL:3.4 DL: 3.4 kbps SRBs for DCCH
38)41) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
   + Interactive or background / UL:64 DL:128 kbps / PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH
42) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
   + Interactive or background / UL:64 DL:256 kbps / PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH

39)43) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
  + Interactive or background / UL:64 DL:384 kbps / PS RAB
  + UL:3.4 DL:3.4 kbps SRBs for DCCH
40)44) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
  + Interactive or background / UL:128 DL:2048 kbps / PS RAB
  + UL:3.4 DL:3.4 kbps SRBs for DCCH
41)45) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
  + Streaming / unknown / UL:57.6 DL:57.6 kbps / CS RAB
  + UL:3.4 DL:3.4 kbps SRBs for DCCH
42)46) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
  + Streaming / unknown / UL:0 DL:64 kbps / CS RAB
  + UL:3.4 DL:3.4 kbps SRBs for DCCH
43)47) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
  + Streaming / unknown / UL:0 DL:128 kbps / CS RAB
  + UL:3.4 DL:3.4 kbps SRBs for DCCH
44)48) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
  + Streaming / unknown / UL:0 DL:384 kbps / CS RAB
  + UL:3.4 DL:3.4 kbps SRBs for DCCH
45)49) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
  + Conversational / unknown / UL:64 DL:64 kbps / CS RAB
  + UL:3.4 DL:3.4 kbps SRBs for DCCH
46)50) Conversational / unknown / UL:64 DL:64 kbps / CS RAB
  + Conversational / unknown / UL:64 DL:64 kbps / CS RAB
  + UL:3.4 DL:3.4 kbps SRBs for DCCH
47)51) Conversational / unknown / UL:64 DL:64 kbps / CS RAB
  + Interactive or background / UL:64 DL:64 kbps / PS RAB
  + UL:3.4 DL:3.4 kbps SRBs for DCCH
48)52) Conversational / unknown / UL:64 DL:64 kbps / CS RAB
  + Interactive or background / UL:64 DL:128 kbps / PS RAB
  + UL:3.4 DL:3.4 kbps SRBs for DCCH
49)53) Conversational / unknown / UL:64 DL:64 kbps / CS RAB
  + Interactive or background / UL:128 DL:128 kbps / PS RAB
  + UL:3.4 DL:3.4 kbps SRBs for DCCH
50)54) Interactive or /background / UL:64 kbps DL:128 kbps / PS RAB
  + Streaming / unknown / UL:0 DL:64 kbps / CS RAB
  + UL:3.4 DL:3.4 kbps SRBs for DCCH
51)55) Interactive or /background / UL:64 kbps DL:128 kbps / PS RAB
  + Streaming / unknown / UL:0 DL:128 kbps / CS RAB
  + UL:3.4 DL:3.4 kbps SRBs for DCCH

Combinations on DSCH and DPCH
1)   Interactive or background / UL:64 DL:256 kbps / PS RAB
  + UL:3.4 DL: 3.4 kbps SRBs for DCCH
1)2)   Interactive or background / UL:64 DL:384 kbps / PS RAB
  + UL:3.4 DL: 3.4 kbps SRBs for DCCH
3)   Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
  + Interactive or background / UL:64 DL:256 kbps / PS RAB
  + UL:3.4 DL:3.4 kbps SRBs for DCCH
2)4)   Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
  + Interactive or background / UL:64 DL:384 kbps / PS RAB
  + UL:3.4 DL:3.4 kbps SRBs for DCCH
3)5)   Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
  + Interactive or background / UL:64 DL:2048 kbps / PS RAB
  + UL:3.4 DL:3.4 kbps SRBs for DCCH

Combinations on SCCPCH
1)   Stand-alone 32 kbps SRB for PCCH
2)   Interactive or background / DL:32 kbps / PS RAB
  + 50.4 kbps SRB for CCCH
  + 13.6 kbps SRBs for DCCH
  + 16.6 kbps SRB for BCCH

3) Interactive or background / DL:32 kbps / PS RAB
    + ~~32 kbps~~ SRB for PCCH
    + ~~50.4 kbps~~ SRB for CCCH
    + ~~13.6 kbps~~ SRBs for DCCH
    + ~~16.6 kbps~~ SRB for BCCH

Combinations on PRACH
1) Interactive or background / UL:32 kbps / PS RAB
    + ~~16.6 kbps~~ SRB for CCCH
    + ~~13.6 kbps~~ SRBs for DCCH

5.3. Example of linkage between RABs and services

RABs, which are included in this document, can provide the services as shown in Table 1. Furthermore, the required BER for each RAB, which is assumed in this document, is shown in Table 4.

Table 4: Example of linkage between RABs and services

RAB				Residual BER[3]	Services
Traffic class[3]	SSD[3]	Max. rate, kbps	CS/PS		
Conversational	Speech	UL:4.75-12.2 DL:4.75-12.2	CS	5×10^{-4}, 1×10^{-3}, 5×10^{-3}	AMR speech
Conversational	Unknown	UL:64 DL:64	CS	1×10^{-4} or 1×10^{-6}	UDI 1B, 64k 3G-324M[4]
Conversational	Unknown	UL:32 DL:32	CS	1×10^{-4} or 1×10^{-6}	32k 3G-324M[4]
Conversational	Unknown	UL:28.8 DL:28.8	CS	1×10^{-3}	Transparent modem
Streaming	Unknown	UL:14.4 DL:14.4	CS	1×10^{-3}	FAX[6]
Streaming	Unknown	UL:28.8 DL:28.8	CS	1×10^{-3}	FAX[6] PIAFS 32 kbps
Streaming	Unknown	UL:57.6 DL:57.6	CS	1×10^{-3}	Modem[6], FTM[5], PIAFS 64 kbps
Streaming	Unknown	UL:64-128 or DL:64-384	CS or PS	1×10^{-3} or 1×10^{-4}	Streaming video, uni-directional
Interactive or Background	N/A	UL:32-384 DL:8-2048	PS	1×10^{-3} or 1×10^{-4}	Packet

Note: SMS can be provided via the signalling RB (DCCH) on DPCH or SCCPCH.
Note: CBS can be provided via the signalling RB (CTCH) on SCCPCH
Note: UDI *n*B can be provided via *n* RABs of conversational 64 kbps.

5.4. Typical radio parameter sets

5.4.1. Combinations on DPCH

5.4.1.1. Stand-alone UL:1.7 DL:1.7 kbps SRBs for DCCH

5.4.1.1.1. Uplink

5.4.1.1.1.1. Transport channel parameters for UL:1.7 kbps SRBs for DCCH

		SRB#1	**SRB#2**	**SRB#3**	**SRB#4**
Higher layer	RAB/signalling RB				
	User of Radio Bearer	RRC	RRC	NAS_DT High prio	NAS_DT Low prio
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH
	RLC mode	UM	AM	AM	AM
	Payload sizes, bit	136	128	128	128
	Max data rate, bps	1700	1600	1600	1600
	RLC header, bit	8	16	16	16
MAC	MAC header, bit	4	4	4	4
	MAC multiplexing	4 logical channel multiplexing			
Layer 1	TrCH type	DCH			
	TB sizes, bit	148			
	TFS — TF0, bits	0x148			
	TFS — TF1, bits	1x148			
	TTI, ms	80			
	Coding type	CC 1/3			
	CRC, bit	16			
	Max number of bits/TTI before rate matching	516			
	Uplink: Max number of bits/radio frame before rate matching	65			

5.4.1.1.1.2. Physical channel parameters

DPCH Uplink	TFCS size	2
	Min spreading factor	256
	Max number of DPDCH data bits/radio frame	150
	Puncturing Limit	1

5.4.1.1.2. Downlink

5.4.1.1.2.1. Transport channel parameters for DL:1.7 kbps SRBs for DCCH

		SRB#1	**SRB#2**	**SRB#3**	**SRB#4**
Higher layer	RAB/signalling RB				
	User of Radio Bearer	RRC	RRC	NAS_DT High prio	NAS_DT Low prio
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH
	RLC mode	UM	AM	AM	AM
	Payload sizes, bit	136	128	128	128
	Max data rate, bps	1700	1600	1600	1600
	RLC header, bit	8	16	16	16
MAC	MAC header, bit	4	4	4	4
	MAC multiplexing	4 logical channel multiplexing			
Layer 1	TrCH type	DCH			
	TB sizes, bit	148			
	TFS — TF0, bits	0x148			
	TFS — TF1, bits	1x148			

13

TTI, ms	80
Coding type	CC 1/3
CRC, bit	16
Max number of bits/TTI before rate matching	516

5.4.1.1.2.2. Physical channel parameters

DPCH Downlink	DTX position		N/A (SingleTrCH)
	TFCS size		2
	Minimum spreading factor		512
	DPCCH	Number of TFCI bits/slot	0
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	4
		Number of data bits/frame	60

5.4.1.2. Stand-alone UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.2.1. Uplink

5.4.1.2.1.1. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

	RAB/signalling RB		**SRB#1**	**SRB#2**	**SRB#3**	**SRB#4**
Higher layer	User of Radio Bearer		RRC	RRC	NAS_DT High prio	NAS_DT Low prio
RLC	Logical channel type		DCCH	DCCH	DCCH	DCCH
	RLC mode		UM	AM	AM	AM
	Payload sizes, bit		136	128	128	128
	Max data rate, bps		3400	3200	3200	3200
	RLC header, bit		8	16	16	16
MAC	MAC header, bit		4	4	4	4
	MAC multiplexing		4 logical channel multiplexing			
Layer 1	TrCH type		DCH			
	TB sizes, bit		148			
	TFS	TF0, bits	0x148			
		TF1, bits	1x148			
	TTI, ms		40			
	Coding type		CC 1/3			
	CRC, bit		16			
	Max number of bits/TTI before rate matching		516			
	Uplink: Max number of bits/radio frame before rate matching		129			
	RM attribute		155-165			

5.4.1.2.1.2. Physical channel parameters

DPCH Uplink	TFCS size	2
	Min spreading factor	256
	Max number of DPDCH data bits/radio frame	150
	Puncturing Limit	1

5.4.1.2.2. Downlink

5.4.1.2.2.1. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

	RAB/signalling RB		**SRB#1**	**SRB#2**	**SRB#3**	**SRB#4**
Higher layer	User of Radio Bearer		RRC	RRC	NAS_DT High prio	NAS_DT Low prio
RLC	Logical channel type		DCCH	DCCH	DCCH	DCCH
	RLC mode		UM	AM	AM	AM
	Payload sizes, bit		136	128	128	128
	Max data rate, bps		3400	3200	3200	3200
	RLC header, bit		8	16	16	16
MAC	MAC header, bit		4	4	4	4
	MAC multiplexing		4 logical channel multiplexing			
Layer 1	TrCH type		DCH			
	TB sizes, bit		148			
	TFS	TF0, bits	0x148			
		TF1, bits	1x148			
	TTI, ms		40			
	Coding type		CC 1/3			
	CRC, bit		16			

Max number of bits/TTI before rate matching		516
RM attribute		155-165

5.4.1.2.2.2. Physical channel parameters

DPCH Downlink	DTX position		N/A (SingleTrCH)
	TFCS size		2
	Minimum spreading factor		256
	DPCCH	Number of TFCI bits/slot	0
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	10
		Number of data bits/frame	150

5.4.1.3.   Stand-alone UL:13.6 DL:13.6 kbps SRBs for DCCH

5.4.1.3.1.   Uplink

5.4.1.3.1.1.   Transport channel parameters for UL:13.6 kbps SRBs for DCCH

	RAB/signalling RB	**SRB#1**	**SRB#2**	**SRB#3**	**SRB#4**
Higher layer	User of Radio Bearer	RRC	RRC	NAS_DT High prio	NAS_DT Low prio
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH
	RLC mode	UM	AM	AM	AM
	Payload sizes, bit	136	128	128	128
	Max data rate, bps	13600	12800	12800	12800
	RLC header, bit	8	16	16	16
MAC	MAC header, bit	4	4	4	4
	MAC multiplexing	4 logical channel multiplexing			
Layer 1	TrCH type	DCH			
	TB sizes, bit	148			
	TFS — TF0, bits	0x148			
	TFS — TF1, bits	1x148			
	TTI, ms	10			
	Coding type	CC 1/3			
	CRC, bit	16			
	Max number of bits/TTI before rate matching	516			
	Uplink: Max number of bits/radio frame before rate matching	516			

5.4.1.3.1.2.   Physical channel parameters

DPCH Uplink	TFCS size	2
	Min spreading factor	64
	Max number of DPDCH data bits/radio frame	600
	Puncturing Limit	1

5.4.1.3.2.   Downlink

5.4.1.3.2.1.   Transport channel parameters for DL:13.6 kbps SRBs for DCCH

	RAB/signalling RB	**SRB#1**	**SRB#2**	**SRB#3**	**SRB#4**
Higher layer	User of Radio Bearer	RRC	RRC	NAS_DT High prio	NAS_DT Low prio
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH
	RLC mode	UM	AM	AM	AM
	Payload sizes, bit	136	128	128	128
	Max data rate, bps	13600	12800	12800	12800
	RLC header, bit	8	16	16	16
MAC	MAC header, bit	4	4	4	4
	MAC multiplexing	4 logical channel multiplexing			
Layer 1	TrCH type	DCH			
	TB sizes, bit	148			
	TFS — TF0, bits	0x148			
	TFS — TF1, bits	1x148			
	TTI, ms	10			
	Coding type	CC 1/3			
	CRC, bit	16			

	Max number of bits/TTI before rate matching	516

5.4.1.3.2.2. Physical channel parameters

DPCH Downlink	DTX position		N/A (SingleTrCH)
	TFCS size		2
	Minimum spreading factor		128
	DPCCH	Number of TFCI bits/slot	0
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	34
		Number of data bits/frame	510

5.4.1.4. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.4.1. Uplink

5.4.1.4.1.1. Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

Higher layer	RAB/Signalling RB		RAB subflow #1	RAB subflow #2	RAB subflow #3
RLC	Logical channel type		DTCH		
	RLC mode		TM	TM	TM
	Payload sizes, bit		81 39	103	60
	Max data rate, bps		12200		
	RLC header, bit		0		
MAC	MAC header, bit		0		
	MAC multiplexing		N/A		
Layer 1	TrCH type		DCH	DCH	DCH
	TB sizes, bit		0 39 81~~39~~	0 103	0 60
	TFS*1	TF0, bits	1x0*2	1x0	1x0
		TF1, bits	1x39~~81~~	1x0~~103~~	1x~~60~~
		TF2, bits	1x81~~39~~	1x103-	1x60-
	TTI, ms		20	20	20
	Coding type		CC 1/3	CC 1/3	CC 1/2
	CRC, bit		12	-	-
	Max number of bits/TTI after channel coding		303	333	136
	Uplink: Max number of bits/radio frame before rate matching		152	167	68
	RM attribute		180-220	170-210	215-256

*1: TFs of a three RAB subflows are associated each other as stated in above table.
*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.4.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.4.1.3. Physical channel parameters

DPCH Uplink	TFCS size	6
	Min spreading factor	64
	Max number of DPDCH data bits/radio frame	600
	Puncturing Limit	1

5.4.1.4.2. Downlink

5.4.1.4.2.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	RAB subflow #3
RLC	Logical channel type	DTCH		
	RLC mode	TM	TM	TM

	Payload sizes, bit	<u>0</u> <u>39</u> 81~~39~~	<u>0</u> 103	<u>0</u> 60
	Max data rate, bps	12200		
	RLC header, bit	0		
MAC	MAC header, bit	0		
	MAC multiplexing	N/A		
Layer 1	TrCH type	DCH	DCH	DCH
	TB sizes, bit	<u>0</u> <u>39</u> 81~~39~~	<u>0</u> 103	<u>0</u> 60
	TFS[*1] TF0, bits	1x0[*2]	1x0	1x0
	TF1, bits	1x<u>39</u>~~81~~	~~1x103~~<u>1x0</u>	~~1x60~~<u>1x0</u>
	TF2, bits	1x<u>81</u>~~39~~	<u>1x103</u>~~-~~	<u>1x60</u>~~-~~
	TTI, ms	20	20	20
	Coding type	CC 1/3	CC 1/3	CC 1/2
	CRC, bit	12	-	-
	Max number of bits/TTI after channel coding	303	333	136
	<u>RM attribute</u>	<u>180-220</u>	<u>170-210</u>	<u>215-256</u>

<u>*1: TFs of a three RAB subflows are associated each other as stated in above table.</u>
<u>*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).</u>

5.4.1.4.2.2.   Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.4.2.3.   Physical channel parameters

DPCH Downlink	TFCS size		6
	DTX position		Fixed
	Spreading factor		128
	DPCCH	Number of TFCI bits/slot	0
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	34
		Number of data bits/frame	510

5.4.1.5. Conversational / speech / UL:10.2 DL:10.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.5.1. Uplink

5.4.1.5.1.1. Transport channel parameters for Conversational / speech / UL:10.2 kbps / CS RAB

Higher layer	RAB/Signalling RB		RAB subflow #1	RAB subflow #2	RAB subflow #3
RLC	Logical channel type		DTCH		
	RLC mode		TM	TM	TM
	Payload sizes, bit		0 39 65~~39~~	0 99	0 40
	Max data rate, bps		10200		
	RLC header, bit		0		
MAC	MAC header, bit		0		
	MAC multiplexing		N/A		
Layer 1	TrCH type		DCH	DCH	DCH
	TB sizes, bit		0 39 65~~39~~	0 99	0 40
	TFS*[1]	TF0, bits	1x0*[2]	1x0	1x0
		TF1, bits	1x39~~65~~	1x0~~99~~	1x40
		TF2, bits	1x65~~39~~	1x99-	1x40-
	TTI, ms		20	20	20
	Coding type		CC 1/3	CC 1/3	CC 1/2
	CRC, bit		12	-	-
	Max number of bits/TTI after channel coding		255	321	96
	Uplink: Max number of bits/radio frame before rate matching		128	161	48
	RM attribute		180-220	170-210	215-256

*1: TFs of a three RAB subflows are associated each other as stated in above table.
*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.5.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.5.1.3. Physical channel parameters

DPCH Uplink	TFCS size	6
	Min spreading factor	64
	Max number of DPDCH data bits/radio frame	600
	Puncturing Limit	1

5.4.1.5.2. Downlink

5.4.1.5.2.1. Transport channel parameters for Conversational / speech / DL:10.2 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2	RAB subflow #3
RLC	Logical channel type	DTCH		
	RLC mode	TM	TM	TM

	Payload sizes, bit	0 39 65~~39~~	0 99	0 40
	Max data rate, bps	10200		
	RLC header, bit	0		
MAC	MAC header, bit	0		
	MAC multiplexing	N/A		
Layer 1	TrCH type	DCH	DCH	DCH
	TB sizes, bit	0 39 65~~39~~	0 99	0 40
	TFS*[1] TF0, bits	1x0*[2]	1x0	1x0
	TFS*[1] TF1, bits	1x39~~65~~	1x0~~99~~	1x4~~0~~
	TFS*[1] TF2, bits	1x65~~39~~	1x99~~-~~	1x40~~-~~
	TTI, ms	20	20	20
	Coding type	CC 1/3	CC 1/3	CC 1/2
	CRC, bit	12	-	-
	Max number of bits/TTI after channel coding	255	321	96
	RM attribute	180-220	170-210	215-256

*1: TFs of a three RAB subflows are associated each other as stated in above table.
*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.5.2.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.5.2.3. Physical channel parameters

DPCH Downlink	TFCS size		6
	DTX position		Fixed
	Spreading factor		128
	DPCCH	Number of TFCI bits/slot	0
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	34
		Number of data bits/frame	510

5.4.1.6.   Conversational / speech / UL:7.95 DL:7.95 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.6.1.   Uplink

5.4.1.6.1.1.   Transport channel parameters for Conversational / speech / UL:7.95 kbps / CS RAB

Higher layer	RAB/Signalling RB		RAB subflow #1	RAB subflow #2
RLC	Logical channel type		DTCH	
	RLC mode		TM	TM
	Payload sizes, bit		0 39 75~~39~~	0 84
	Max data rate, bps		7950	
	RLC header, bit		0	
MAC	MAC header, bit		0	
	MAC multiplexing		N/A	
Layer 1	TrCH type		DCH	DCH
	TB sizes, bit		0 39 75~~39~~	0 84
	TFS*[1]	TF0, bits	1x0*[2]	1x0
		TF1, bits	1x39~~75~~	1x0~~84~~
		TF2, bits	1x75~~39~~	1x84~~-~~
	TTI, ms		20	20
	Coding type		CC 1/3	CC 1/3
	CRC, bit		12	-
	Max number of bits/TTI after channel coding		285	276
	Uplink: Max number of bits/radio frame before rate matching		143	138
	RM attribute		180-220	170-210

*1: TFs of a three RAB subflows are associated each other as stated in above table.
*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.6.1.2.   Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1.

5.4.1.6.1.3.   Physical channel parameters

DPCH Uplink	TFCS size	6
	Min spreading factor	64
	Max number of DPDCH data bits/radio frame	600
	Puncturing Limit	1

5.4.1.6.2.   Downlink

5.4.1.6.2.1.   Transport channel parameters for Conversational / speech / DL:7.95 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2
RLC	Logical channel type	DTCH	
	RLC mode	TM	TM
	Payload sizes, bit	0 39 75~~39~~	0 84
	Max data rate, bps	7950	

MAC	RLC header, bit		0	
	MAC header, bit		0	
	MAC multiplexing		N/A	
Layer 1	TrCH type		DCH	DCH
	TB sizes, bit		0 39 75~~39~~	0 84
	TFS*[1]	TF0, bits	1x0*[2]	1x0
		TF1, bits	1x39~~75~~	1x0~~84~~
		TF2, bits	1x75~~39~~	1x84~~-~~
	TTI, ms		20	20
	Coding type		CC 1/3	CC 1/3
	CRC, bit		12	-
	Max number of bits/TTI after channel coding		285	276
	RM attribute		180-220	170-210

*1: TFs of a three RAB subflows are associated each other as stated in above table.
*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.6.2.2.   Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.6.2.3.   Physical channel parameters

DPCH Downlink	TFCS size		6
	DTX position		Fixed
	Spreading factor		128
	DPCCH	Number of TFCI bits/slot	0
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	34
		Number of data bits/frame	510

5.4.1.7.   Conversational / speech / UL:7.4 DL:7.4 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.7.1.   Uplink

5.4.1.7.1.1.   Transport channel parameters for Conversational / speech / UL:7.4 kbps / CS RAB

Higher layer	RAB/Signalling RB		**RAB subflow #1**	**RAB subflow #2**
RLC	Logical channel type		DTCH	
	RLC mode		TM	TM
	Payload sizes, bit		0 39 61~~39~~	0 87
	Max data rate, bps		7400	
	RLC header, bit		0	
MAC	MAC header, bit		0	
	MAC multiplexing		N/A	
Layer 1	TrCH type		DCH	DCH
	TB sizes, bit		0 39 61~~39~~	0 87
	TFS*[1]	TF0, bits	1x0*[2]	1x0
		TF1, bits	1x39~~61~~	1x0~~87~~
		TF2, bits	1x65~~39~~	1x87-
	TTI, ms		20	20
	Coding type		CC 1/3	CC 1/3
	CRC, bit		12	-
	Max number of bits/TTI after channel coding		243	285
	Uplink: Max number of bits/radio frame before rate matching		122	143
	RM attribute		180-220	170-210

*1: TFs of a three RAB subflows are associated each other as stated in above table.
*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.7.1.2.   Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.7.1.3.   Physical channel parameters

DPCH Uplink	TFCS size	6
	Min spreading factor	64
	Max number of DPDCH data bits/radio frame	600
	Puncturing Limit	1

5.4.1.7.2.   Downlink

5.4.1.7.2.1.   Transport channel parameters for Conversational / speech / DL:7.4 kbps / CS RAB

Higher layer	RAB/Signalling RB	**RAB subflow #1**	**RAB subflow #2**
RLC	Logical channel type	DTCH	
	RLC mode	TM	TM
	Payload sizes, bit	0 39 61~~39~~	0 87
	Max data rate, bps	7400	

25

			DCH	DCH
	RLC header, bit		0	
MAC	MAC header, bit		0	
	MAC multiplexing		N/A	
Layer 1	TrCH type		DCH	DCH
	TB sizes, bit		0 39 61~~39~~	0 87
	TFS*[1]	TF0, bits	1x0*[2]	1x0
		TF1, bits	1x39~~61~~	1x0~~87~~
		TF2, bits	1x61~~39~~	1x87~~-~~
	TTI, ms		20	20
	Coding type		CC 1/3	CC 1/3
	CRC, bit		12	-
	Max number of bits/TTI after channel coding		243	285
	RM attribute		180-220	170-210

*1: TFs of a three RAB subflows are associated each other as stated in above table.
*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.7.2.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.7.2.3. Physical channel parameters

DPCH Downlink	TFCS size		6
	DTX position		Fixed
	Spreading factor		128
	DPCCH	Number of TFCI bits/slot	0
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	34
		Number of data bits/frame	510

5.4.1.8.   Conversational / speech / UL:6.7 DL:6.7 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.8.1.   Uplink

5.4.1.8.1.1.   Transport channel parameters for Conversational / speech / UL:6.7 kbps / CS RAB

Higher layer	RAB/Signalling RB		**RAB subflow #1**	**RAB subflow #2**
RLC	Logical channel type		DTCH	
	RLC mode		TM	TM
	Payload sizes, bit		0 39 58~~39~~	0 76
	Max data rate, bps		6700	
	RLC header, bit		0	
MAC	MAC header, bit		0	
	MAC multiplexing		N/A	
Layer 1	TrCH type		DCH	DCH
	TB sizes, bit		0 39 58~~39~~	0 76
	TFS*[1]	TF0, bits	1x0*[2]	1x0
		TF1, bits	1x39~~58~~	1x0~~76~~
		TF2, bits	1x58~~39~~	1x76~~-~~
	TTI, ms		20	20
	Coding type		CC 1/3	CC 1/3
	CRC, bit		12	-
	Max number of bits/TTI after channel coding		234	252
	Uplink: Max number of bits/radio frame before rate matching		117	126
	RM attribute		180-220	170-210

*1: TFs of a three RAB subflows are associated each other as stated in above table.
*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.8.1.2.   Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.8.1.3.   Physical channel parameters

DPCH Uplink	TFCS size	6
	Min spreading factor	64
	Max number of DPDCH data bits/radio frame	600
	Puncturing Limit	1

5.4.1.8.2.   Downlink

5.4.1.8.2.1.   Transport channel parameters for Conversational / speech / DL:6.7 kbps / CS RAB

Higher layer	RAB/Signalling RB	**RAB subflow #1**	**RAB subflow #2**
RLC	Logical channel type	DTCH	
	RLC mode	TM	TM
	Payload sizes, bit	0 39 58~~39~~	0 76
	Max data rate, bps	6700	

	RLC header, bit	0	
MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	DCH
	TB sizes, bit	0 39 5839	0 76
	TFS*[1] — TF0, bits	1x0*[2]	1x0
	TFS*[1] — TF1, bits	1x3958	1x076
	TFS*[1] — TF2, bits	1x5839	1x76
	TTI, ms	20	20
	Coding type	CC 1/3	CC 1/3
	CRC, bit	12	-
	Max number of bits/TTI after channel coding	234	252
	RM attribute	180-220	170-210

*1: TFs of a three RAB subflows are associated each other as stated in above table.
*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.8.2.2.   Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.8.2.3.   Physical channel parameters

	TFCS size	6
DPCH Downlink	DTX position	Fixed
	Spreading factor	128
	DPCCH — Number of TFCI bits/slot	0
	DPCCH — Number of TPC bits/slot	2
	DPCCH — Number of Pilot bits/slot	4
	DPDCH — Number of data bits/slot	34
	DPDCH — Number of data bits/frame	510

5.4.1.9. Conversational / speech / UL:5.9 DL:5.9 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.9.1. Uplink

5.4.1.9.1.1. Transport channel parameters for Conversational / speech / UL:5.9 kbps / CS RAB

Higher layer	RAB/Signalling RB		RAB subflow #1	RAB subflow #2
RLC	Logical channel type		DTCH	
	RLC mode		TM	TM
	Payload sizes, bit		0 39 5539	0 63
	Max data rate, bps		5900	
	RLC header, bit		0	
MAC	MAC header, bit		0	
	MAC multiplexing		N/A	
Layer 1	TrCH type		DCH	DCH
	TB sizes, bit		0 395539	0 63
	TFS*[1]	TF0, bits	1x0*[2]	1x0
		TF1, bits	1x3955	1x063
		TF2, bits	1x5539	1x63
	TTI, ms		20	20
	Coding type		CC 1/3	CC 1/3
	CRC, bit		12	-
	Max number of bits/TTI after channel coding		225	213
	Uplink: Max number of bits/radio frame before rate matching		113	107
	RM attribute		180-220	170-210

*1: TFs of a three RAB subflows are associated each other as stated in above table.
*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.9.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.9.1.3. Physical channel parameters

DPCH Uplink	TFCS size	6
	Min spreading factor	64
	Max number of DPDCH data bits/radio frame	600
	Puncturing Limit	1

5.4.1.9.2. Downlink

5.4.1.9.2.1. Transport channel parameters for Conversational / speech / DL:5.9 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB subflow #1	RAB subflow #2
RLC	Logical channel type	DTCH	
	RLC mode	TM	TM
	Payload sizes, bit	0 39 5539	0 63
	Max data rate, bps	5900	
	RLC header, bit	0	

MAC	MAC header, bit	0	
	MAC multiplexing	N/A	
Layer 1	TrCH type	DCH	DCH
	TB sizes, bit	0 39 55~~39~~	0 63
	TFS*[1]	TF0, bits	1x0*[2]	1x0
		TF1, bits	1x39~~55~~	1x0~~63~~
		TF2, bits	1x55~~39~~	1x63-
	TTI, ms	20	20
	Coding type	CC 1/3	CC 1/3
	CRC, bit	12	-
	Max number of bits/TTI after channel coding	225	213
	RM attribute	180-220	170-210

*1: TFs of a three RAB subflows are associated each other as stated in above table.
*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.9.2.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.9.2.3. Physical channel parameters

DPCH Downlink	TFCS size	6
	DTX position	Fixed
	Spreading factor	128
	DPCCH	Number of TFCI bits/slot	0
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	34
		Number of data bits/frame	510

5.4.1.10. Conversational / speech / UL:5.15 DL:5.15 kbps / CS RAB + UL:1.7 DL:1.7 kbps SRBs for DCCH

5.4.1.10.1. Uplink

5.4.1.10.1.1. Transport channel parameters for Conversational / speech / UL:5.15 kbps / CS RAB

Higher layer	RAB/Signalling RB		**RAB subflow #1**	**RAB subflow #2**
RLC	Logical channel type		DTCH	
	RLC mode		TM	TM
	Payload sizes, bit		0 39 4939	0 54
	Max data rate, bps		5150	
	RLC header, bit		0	
MAC	MAC header, bit		0	
	MAC multiplexing		N/A	
Layer 1	TrCH type		DCH	DCH
	TB sizes, bit		0 39 4939	0 54
	TFS*1	TF0, bits	1x0*2	1x0
		TF1, bits	1x3949	1x054
		TF2, bits	1x4939	1x54-
	TTI, ms		20	20
	Coding type		CC 1/3	CC 1/3
	CRC, bit		12	-
	Max number of bits/TTI after channel coding		207	186
	Uplink: Max number of bits/radio frame before rate matching		104	93
	RM attribute		180-220	170-210

*1: TFs of a three RAB subflows are associated each other as stated in above table.
*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.10.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.10.1.3. Physical channel parameters

DPCH Uplink	TFCS size	6
	Min spreading factor	128
	Max number of DPDCH data bits/radio frame	300
	Puncturing Limit	1

5.4.1.10.2. Downlink

5.4.1.10.2.1. Transport channel parameters for Conversational / speech / DL:5.15 kbps / CS RAB

Higher layer	RAB/Signalling RB	**RAB subflow #1**	**RAB subflow #2**
RLC	Logical channel type	DTCH	
	RLC mode	TM	TM
	Payload sizes, bit	0 39 4939	0 54
	Max data rate, bps	5150	

31

			DCH	DCH
	RLC header, bit		0	
MAC	MAC header, bit		0	
	MAC multiplexing		N/A	
Layer 1	TrCH type		DCH	DCH
	TB sizes, bit		0 39 49~~39~~	0 54
	TFS*[1]	TF0, bits	1x0	1x0
		TF1, bits	1x39~~49~~	1x0~~54~~
		TF2, bits	1x49~~39~~	1x54~~-~~
	TTI, ms		20	20
	Coding type		CC 1/3	CC 1/3
	CRC, bit		12	-
	Max number of bits/TTI after channel coding		207	186
	RM attribute		180-220	170-210

*1: TFs of a three RAB subflows are associated each other as stated in above table.
*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.10.2.2.   Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.10.2.3.   Physical channel parameters

DPCH Downlink	TFCS size		6
	DTX position		Fixed
	Spreading factor		256
	DPCCH	Number of TFCI bits/slot	0
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	14
		Number of data bits/frame	210

5.4.1.11. Conversational / speech / UL:4.75 DL:4.75 kbps / CS RAB + UL:1.7 DL:1.7 kbps SRBs for DCCH

5.4.1.11.1. Uplink

5.4.1.11.1.1. Transport channel parameters for Conversational / speech / UL:4.75 kbps / CS RAB

Higher layer	RAB/Signalling RB		**RAB subflow #1**	**RAB subflow #2**
RLC	Logical channel type		DTCH	
	RLC mode		TM	TM
	Payload sizes, bit		0 39 42~~39~~	0 53
	Max data rate, bps		4750	
	RLC header, bit		0	
MAC	MAC header, bit		0	
	MAC multiplexing		N/A	
Layer 1	TrCH type		DCH	DCH
	TB sizes, bit		0 39 42~~39~~	0 53
	TFS*[1]	TF0, bits	1x0*[2]	1x0
		TF1, bits	1x39~~42~~	1x0~~53~~
		TF2, bits	1x42~~39~~	1x53~~-~~
	TTI, ms		20	20
	Coding type		CC 1/3	CC 1/3
	CRC, bit		12	-
	Max number of bits/TTI after channel coding		186	183
	Uplink: Max number of bits/radio frame before rate matching		93	92
	RM attribute		180-220	170-210

*1: TFs of a three RAB subflows are associated each other as stated in above table.
*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.11.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.11.1.3. Physical channel parameters

DPCH Uplink	TFCS size	6
	Min spreading factor	128
	Max number of DPDCH data bits/radio frame	300
	Puncturing Limit	1

5.4.1.11.2. Downlink

5.4.1.11.2.1. Transport channel parameters for Conversational / speech / DL:4.75 kbps / CS RAB

Higher layer	RAB/Signalling RB	**RAB subflow #1**	**RAB subflow #2**
RLC	Logical channel type	DTCH	
	RLC mode	TM	TM
	Payload sizes, bit	0 39 42~~39~~	0 53
	Max data rate, bps	4750	

33

			DCH	DCH
	RLC header, bit		0	
MAC	MAC header, bit		0	
	MAC multiplexing		N/A	
Layer 1	TrCH type		DCH	DCH
	TB sizes, bit		0 39 42~~39~~	0 53
	TFS*[1]	TF0, bits	1x0*[2]	1x0
		TF1, bits	1x39~~42~~	1x0~~53~~
		TF2, bits	1x42~~39~~	1x53~~-~~
	TTI, ms		20	20
	Coding type		CC 1/3	CC 1/3
	CRC, bit		12	-
	Max number of bits/TTI after channel coding		186	183
	RM attribute		180-220	170-210

*1: TFs of a three RAB subflows are associated each other as stated in above table.

*2: CRC parity bits are to be attached to RAB subflow#1 any time since number of TrBlks are 1 even if there is no data on RAB subflow#1 (see section 4.2.1.1 in TS25.212.).

5.4.1.11.2.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.11.2.3. Physical channel parameters

DPCH Downlink	TFCS size		6
	DTX position		Fixed
	Spreading factor		256
	DPCCH	Number of TFCI bits/slot	0
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	14
		Number of data bits/frame	210

5.4.1.12. Conversational / unknown / UL:28.8/DL:28.8 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.12.1. Uplink

5.4.1.12.1.1. Transport channel parameters for conversational / unknown / UL:28.8 kbps / CS RAB

Higher layer	RAB/Signalling RB		RAB
RLC	Logical channel type		DTCH
	RLC mode		TM
	Payload sizes, bit		576
	Max data rate, bps		28800
	RLC header, bit		0
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		576
	TFS	TF0, bits	0x576
		TF1, bits	1x576
		TF2, bits	2x576
	TTI, ms		40
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		3564
	Uplink: Max number of bits/radio frame before rate matching		891
	RM attribute		TBD

5.4.1.12.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.12.1.3. Physical channel parameters

DPCH Uplink	TFCS size	6
	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1

5.4.1.12.2. Downlink

5.4.1.12.2.1. Transport channel parameters for conversational / unknown / DL:28.8 kbps / CS RAB

Higher layer	RAB/Signalling RB		RAB
RLC	Logical channel type		DTCH
	RLC mode		TM
	Payload sizes, bit		576
	Max data rate, bps		28800
	RLC header, bit		0
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		576
	TFS	TF0, bits	0x576
		TF1, bits	1x576

	TF2, bits	2x576
	TTI, ms	40
	Coding type	TC
	CRC, bit	16
	Max number of bits/TTI after channel coding	3564
	RM attribute	TBD

5.4.1.12.2.2.   Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.12.2.3.   Physical channel parameters

DPCH Downlink	TFCS size		6
	DTX position		Flexible
	Spreading factor		64
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900

5.4.1.12.5.4.1.13. Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.12.1.5.4.1.13.1. Uplink

5.4.1.12.1.1.5.4.1.13.1.1. Transport channel parameters for Conversational / unknown / UL:64 kbps / CS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		TM
	Payload sizes, bit		640
	Max data rate, bps		64000
	RLC header, bit		0
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		640
	TFS	TF0, bits	0x640
		TF1, bits	2x640(alt. 4x640)
	TTI, ms		20(alt. 40)
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		3948(alt. 7884)
	Uplink: Max number of bits/radio frame before rate matching		1974(alt. 1971)
	RM attribute		150-195

5.4.1.12.1.2.5.4.1.13.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.12.1.3.5.4.1.13.1.3. Physical channel parameters

DPCH Uplink	TFCS size	4
	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	1

5.4.1.12.2.5.4.1.13.2. Downlink

5.4.1.12.2.1.5.4.1.13.2.1. Transport channel parameters for Conversational / unknown / DL:64 kbps / CS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		TM
	Payload sizes, bit		640
	Max data rate, bps		64000
	RLC header, bit		0
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		640
	TFS	TF0, bits	0x640
		TF1, bits	2x640(alt. 4x640)

TTI, ms	20(alt. 40)
Coding type	TC
CRC, bit	16
Max number of bits/TTI after channel coding	3948(alt. 7884)
RM attribute	150-195

5.4.1.12.2.2.5.4.1.13.2.2.   Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.

5.4.1.12.2.3.5.4.1.13.2.3.   Physical channel parameters

DPCH Downlink		TFCS size	4
		DTX position	Flexible
		Spreading factor	32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100

5.4.1.13.5.4.1.14. Conversational / unknown / UL:32 DL:32 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.13.1.5.4.1.14.1. Uplink

5.4.1.13.1.1.5.4.1.14.1.1.   Transport channel parameters for Conversational / unknown / UL:32 kbps / CS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		TM
	Payload sizes, bit		640
	Max data rate, bps		32000
	RLC header, bit		0
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		640
	TFS	TF0, bits	0x640
		TF1, bits	1x640(alt. 2x640)
	TTI, ms		20(alt. 40)
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		1980(alt. 3948)
	Uplink: Max number of bits/radio frame before rate matching		990(alt. 987)
	RM attribute		165-210

5.4.1.13.1.2.5.4.1.14.1.2.   Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.13.1.3.5.4.1.14.1.3.   Physical channel parameters

DPCH Uplink	TFCS size	4
	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1

5.4.1.13.2.5.4.1.14.2. Downlink

5.4.1.13.2.1.5.4.1.14.2.1.   Transport channel parameters for Conversational / unknown / DL:32 kbps / CS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		TM
	Payload sizes, bit		640
	Max data rate, bps		32000
	RLC header, bit		0
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		640
	TFS	TF0, bits	0x640
		TF1, bits	1x640(alt. 2x640)

TTI, ms	20(alt. 40)
Coding type	TC
CRC, bit	16
Max number of bits/TTI after channel coding	1980(alt. 3948)
RM attribute	165-210

5.4.1.13.2.2.5.4.1.14.2.2.   Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.13.2.3.5.4.1.14.2.3.   Physical channel parameters

DPCH Downlink	TFCS size		4
	DTX position		Flexible
	Spreading factor		64
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900

5.4.1.15. Streaming / unknown / UL:14.4/DL:14.4 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.15.1. Uplink

5.4.1.15.1.1.   Transport channel parameters for Streaming / unknown / UL: 14.4 kbps / CS RAB

Higher layer	RAB/Signalling RB		RAB
RLC	Logical channel type		DTCH
	RLC mode		TM
	Payload sizes, bit		576
	Max data rate, bps		28800
	RLC header, bit		0
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		576
	TFS	TF0, bits	0x576
		TF1, bits	1x576
	TTI, ms		40
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		1788
	Uplink: Max number of bits/radio frame before rate matching		447
	RM attribute		TBD

5.4.1.15.1.2.   Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.15.1.3.   Physical channel parameters

DPCH Uplink	TFCS size	6
	Min spreading factor	64
	Max number of DPDCH data bits/radio frame	600
	Puncturing Limit	1

5.4.1.15.2. Downlink

5.4.1.15.2.1.   Transport channel parameters for Streaming / unknown / DL:14.4 kbps / CS RAB

Higher layer	RAB/Signalling RB		RAB
RLC	Logical channel type		DTCH
	RLC mode		TM
	Payload sizes, bit		576
	Max data rate, bps		28800
	RLC header, bit		0
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		576
	TFS	TF0, bits	0x576
		TF1, bits	1x576

TTI, ms	40
Coding type	TC
CRC, bit	16
Max number of bits/TTI after channel coding	1788
RM attribute	TBD

5.4.1.15.2.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.15.2.3. Physical channel parameters

	TFCS size		6
	DTX position		Flexible
	Spreading factor		128
DPCH Downlink	DPCCH	Number of TFCI bits/slot	2
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	28
		Number of data bits/frame	420

5.4.1.14.5.4.1.16. Streaming / unknown / UL:28.8/DL:28.8 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.14.1.5.4.1.16.1. Uplink

5.4.1.14.1.1.5.4.1.16.1.1. Transport channel parameters for Streaming / unknown / UL:28.8 kbps / CS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		TM
	Payload sizes, bit		576
	Max data rate, bps		28800
	RLC header, bit		0
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		576
	TFS	TF0, bits	0x576
		TF1, bits	1x576
		TF2, bits	2x576
	TTI, ms		40
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		3564
	Uplink: Max number of bits/radio frame before rate matching		891
	RM attribute		135-175

5.4.1.14.1.2.5.4.1.16.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.14.1.3.5.4.1.16.1.3. Physical channel parameters

DPCH Uplink	TFCS size	6
	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1

5.4.1.14.2.5.4.1.16.2. Downlink

5.4.1.14.2.1.5.4.1.16.2.1. Transport channel parameters for Streaming / unknown / DL:28.8 kbps / CS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		TM
	Payload sizes, bit		576
	Max data rate, bps		28800
	RLC header, bit		0
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		576
	TFS	TF0, bits	0x576

	TF1, bits	1x576
	TF2, bits	2x576
	TTI, ms	40
	Coding type	TC
	CRC, bit	16
	Max number of bits/TTI after channel coding	3564
	RM attribute	135-175

5.4.1.14.2.2.5.4.1.16.2.2.   Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 55.4.1.2.2.1

5.4.1.14.2.3.5.4.1.16.2.3.   Physical channel parameters

	TFCS size		6
	DTX position		Flexible
	Spreading factor		64
DPCH Downlink	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900

5.4.1.15.5.4.1.17. Streaming / unknown / UL:57.6/DL:57.6 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.15.1.5.4.1.17.1. Uplink

5.4.1.15.1.1.5.4.1.17.1.1. Transport channel parameters for Streaming / unknown / UL:57.6 kbps / CS RAB

Higher layer	RAB/Signalling RB		RAB
RLC	Logical channel type		DTCH
	RLC mode		TM
	Payload sizes, bit		576
	Max data rate, bps		57600
	RLC header, bit		0
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		576
	TFS	TF0, bits	0x576
		TF1, bits	1x576
		TF2, bits	2x576
		TF3, bits	3x576
		TF4, bits	4x576
	TTI, ms		40
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		7116
	Uplink: Max number of bits/radio frame before rate matching		1779
	RM attribute		125-165

5.4.1.15.1.2.5.4.1.17.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.15.1.3.5.4.1.17.1.3. Physical channel parameters

DPCH Uplink	TFCS size	10
	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	1

5.4.1.15.2.5.4.1.17.2. Downlink

5.4.1.15.2.1.5.4.1.17.2.1. Transport channel parameters for Streaming / unknown / DL:57.6 kbps / CS RAB

Higher layer	RAB/Signalling RB	RAB
RLC	Logical channel type	DTCH
	RLC mode	TM
	Payload sizes, bit	576
	Max data rate, bps	57600
	RLC header, bit	0
MAC	MAC header, bit	0
	MAC multiplexing	N/A
Layer 1	TrCH type	DCH

TB sizes, bit			576
TFS	TF0, bits		0x576
	TF1, bits		1x576
	TF2, bits		2x576
	TF3, bits		3x576
	TF4, bits		4x576
TTI, ms			40
Coding type			TC
CRC, bit			16
Max number of bits/TTI after channel coding			7116
RM attribute			125-165

5.4.1.15.2.2.5.4.1.17.2.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.15.2.3.5.4.1.17.2.3. Physical channel parameters

DPCH Downlink	TFCS size		10
	DTX position		Flexible
	Spreading factor		32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100

5.4.1.16.5.4.1.18. Streaming / unknown / UL:0 DL:64 kbps / CS or PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.16.1.5.4.1.18.1. Uplink

5.4.1.16.1.1.5.4.1.18.1.1. Transport channel parameters for Streaming / unknown / UL:0 kbps / CS or PS RAB

N/A

5.4.1.16.1.2.5.4.1.18.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.16.1.3.5.4.1.18.1.3. Physical channel parameters

See 5.4.1.2.1.2

5.4.1.16.2.5.4.1.18.2. Downlink

5.4.1.16.2.1.5.4.1.18.2.1. Transport channel parameters for Streaming / unknown / DL:64 kbps / CS or PS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		TM
	Payload sizes, bit		320
	Max data rate, bps		64000
	RLC header, bit		0
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		320
	TFS	TF0, bits	0x320
		TF1, bits	1x320
		TF2, bits	2x320
		TF3, bits	4x320
		TF4, bits	8x320
	TTI, ms		40
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		8076
	RM attribute		TBD

5.4.1.16.2.2.5.4.1.18.2.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

5.4.1.2.2.1

5.4.1.16.2.3.5.4.1.18.2.3. Physical channel parameters

DPCH Downlink	TFCS size		5
	DTX position		Flexible
	Spreading factor		32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100

5.4.1.17.5.4.1.19. Streaming / unknown / UL:64 DL:0 kbps / CS or PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.17.1.5.4.1.19.1. Uplink

5.4.1.17.1.1.5.4.1.19.1.1. Transport channel parameters for Streaming / unknown / UL:64 kbps / CS or PS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		TM
	Payload sizes, bit		320
	Max data rate, bps		64000
	RLC header, bit		0
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		320
	TFS	TF0, bits	0x320
		TF1, bits	1x320
		TF2, bits	2x320
		TF3, bits	4x320
		TF4, bits	8x320
	TTI, ms		40
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		8076
	Uplink: Max number of bits/radio frame before rate matching		2019
	RM attribute		TBD

5.4.1.17.1.2.5.4.1.19.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

5.4.1.2.1.1

5.4.1.17.1.3.5.4.1.19.1.3. Physical channel parameters

DPCH Uplink	TFCS size	5
	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	1

5.4.1.17.2.5.4.1.19.2. Downlink

5.4.1.17.2.1.5.4.1.19.2.1. Transport channel parameters for Streaming / unknown / DL:0 kbps / CS or PS RAB

N/A

5.4.1.17.2.2.5.4.1.19.2.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.17.2.3.5.4.1.19.2.3. Physical channel parameters

See 5.4.1.2.2.2

5.4.1.18.5.4.1.20. Streaming / unknown / UL:0 DL:128 kbps / CS or PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.18.1.5.4.1.20.1. Uplink

5.4.1.18.1.1.5.4.1.20.1.1. Transport channel parameters for Streaming / unknown / UL:0 kbps / CS or PS RAB

N/A

5.4.1.18.1.2.5.4.1.20.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.18.1.3.5.4.1.20.1.3. Physical channel parameters

See 5.4.1.2.1.25.4.1.2.2.1.

5.4.1.18.2.5.4.1.20.2. Downlink

5.4.1.18.2.1.5.4.1.20.2.1. Transport channel parameters for Streaming / unknown / DL:128 kbps / CS or PS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		TM
	Payload sizes, bit		320
	Max data rate, bps		128000
	RLC header, bit		0
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		320
	TFS	TF0, bits	0x320
		TF1, bits	1x320
		TF2, bits	2x320
		TF3, bits	4x320
		TF4, bits	8x320
		TF5, bits	16x320
	TTI, ms		40
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		16152
	RM attribute		TBD

5.4.1.18.2.2.5.4.1.20.2.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.18.2.3.5.4.1.20.2.3. Physical channel parameters

	TFCS size		6
DPCH Downlink	DTX position		Flexible
	Spreading factor		16
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	288
			50

		Number of data bits/frame	4320

5.4.1.19.5.4.1.21. Streaming / unknown / UL:128 DL:0 kbps / CS or PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.19.1.5.4.1.21.1. Uplink

5.4.1.19.1.1.5.4.1.21.1.1. Transport channel parameters for Streaming / unknown / UL:128 kbps / CS or PS RAB

Higher layer	RAB/Signalling RB		RAB
RLC	Logical channel type		DTCH
	RLC mode		TM
	Payload sizes, bit		320
	Max data rate, bps		128000
	RLC header, bit		0
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		320
	TFS	TF0, bits	0x320
		TF1, bits	1x320
		TF2, bits	2x320
		TF3, bits	4x320
		TF4, bits	8x320
		TF5, bits	16x320
	TTI, ms		40
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		16152
	Uplink: Max number of bits/radio frame before rate matching		4038
	RM attribute		TBD

5.4.1.19.1.2.5.4.1.21.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.19.1.3.5.4.1.21.1.3. Physical channel parameters

DPCH Uplink	TFCS size	6
	Min spreading factor	8
	Max number of DPDCH data bits/radio frame	4800
	Puncturing Limit	1

5.4.1.19.2.5.4.1.21.2. Downlink

5.4.1.19.2.1.5.4.1.21.2.1. Transport channel parameters for Streaming / unknown / DL:0 kbps / CS or PS RAB

N/A

5.4.1.19.2.2.5.4.1.21.2.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.19.2.3.5.4.1.21.2.3. Physical channel parameters

See 5.4.1.2.2.2

5.4.1.20.5.4.1.22. Streaming / unknown / UL:0 DL:384 kbps / CS or PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.20.1.5.4.1.22.1. Uplink

5.4.1.20.1.1.5.4.1.22.1.1. Transport channel parameters for Streaming / unknown / UL:0 kbps / CS or PS RAB

N/A

5.4.1.20.1.2.5.4.1.22.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

5.4.1.2.1.1

5.4.1.20.1.3.5.4.1.22.1.3. Physical channel parameters

See 5.4.1.2.1.25.4.1.2.2.1.

5.4.1.20.2.5.4.1.22.2. Downlink

5.4.1.20.2.1.5.4.1.22.2.1. Transport channel parameters for Streaming / unknown / DL:384 kbps / CS or PS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		TM
	Payload sizes, bit		320
	Max data rate, bps		384000
	RLC header, bit		0
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		320
	TFS	TF0, bits	0x320
		TF1, bits	1x320
		TF2, bits	2x320
		TF3, bits	4x320
		TF4, bits	8x320
		TF5, bits	16x320
		TF6, bits	32x320
		TF7, bits	48x320
	TTI, ms		40
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		48432
	RM attribute		TBD

5.4.1.20.2.2.5.4.1.22.2.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

5.4.1.2.2.1

5.4.1.20.2.3.5.4.1.22.2.3. Physical channel parameters

DPCH Downlink	TFCS size		12(alt. 14)
	DTX position		Flexible
	Spreading factor		8
	Number od DPDCH		1
	DPCCH	Number of TFCI bits/slot	8

		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	608
		Number of data bits/frame	9120

5.4.1.21.5.4.1.23. Interactive or background / UL:32 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.21.1.5.4.1.23.1. Uplink

5.4.1.21.1.1.5.4.1.23.1.1. Transport channel parameters for Interactive or background / UL:32 kbps / PS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		AM
	Payload sizes, bit		320
	Max data rate, bps		32000
	RLC header, bit		16
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		336
	TFS	TF0, bits	0x336
		TF1, bits	1x336
		TF2, bits	2x336 (alt. TF2 is N/A)
	TTI, ms		20 (alt. 10)
	Coding type		TC (alt. CC 1/3)
	CRC, bit		16
	Max number of bits/TTI after channel coding		2124 (alt. 1080)
	Uplink: Max number of bits/radio frame before rate matching		1062 (alt. 1080)
	RM attribute		135-175

5.4.1.21.1.2.5.4.1.23.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.21.1.3.5.4.1.23.1.3. Physical channel parameters

DPCH Uplink	TFCS size	6 (alt. 4)
	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1

5.4.1.21.2.5.4.1.23.2. Downlink

5.4.1.21.2.1.5.4.1.23.2.1. Transport channel parameters for Interactive or background / DL:8 kbps / PS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		AM
	Payload sizes, bit		320
	Max data rate, bps		8000
	RLC header, bit		16
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		336
	TFS	TF0, bits	0x336

	TF1, bits		1x336
	TTI, ms		40
	Coding type		TC (alt. CC 1/3)
	CRC, bit		16
	Max number of bits/TTI after channel coding		1068 (alt. 1080)
	RM attribute		TBD

~~5.4.1.21.2.2.~~ 5.4.1.23.2.2.   Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

~~5.4.1.21.2.3.~~ 5.4.1.23.2.3.   Physical channel parameters

DPCH Downlink	TFCS size		4
	DTX position		Flexible
	Spreading factor		128
	DPCCH	Number of TFCI bits/slot	2
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	32
		Number of data bits/frame	480

5.4.1.22.5.4.1.24. Interactive or background / UL:64 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.22.1.5.4.1.24.1. Uplink

5.4.1.22.1.1.5.4.1.24.1.1. Transport channel parameters for Interactive or background / UL:64 kbps / PS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		AM
	Payload sizes, bit		320
	Max data rate, bps		64000
	RLC header, bit		16
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		336
	TFS	TF0, bits	0x336
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	3x336
		TF43, bits	4x336
	TTI, ms		20
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		4236
	Uplink: Max number of bits/radio frame before rate matching		2118
	RM attribute		130-170

5.4.1.22.1.2.5.4.1.24.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.22.1.3.5.4.1.24.1.3. Physical channel parameters

DPCH Uplink	TFCS size	108
	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	1

5.4.1.22.2.5.4.1.24.2. Downlink

See 5.4.1.23.2

5.4.1.23.5.4.1.25. Interactive or background / UL:32 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.23.1.5.4.1.25.1. Uplink

See 5.4.1.23.1

5.4.1.23.2.5.4.1.25.2. Downlink

5.4.1.23.2.1.5.4.1.25.2.1. Transport channel parameters for Interactive or background / DL:64 kbps / PS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		AM
	Payload sizes, bit		320
	Max data rate, bps		64000
	RLC header, bit		16
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		336
	TFS	TF0, bits	0
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	3x336
		TF43, bits	4x336
	TTI, ms		20
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		4236
	RM attribute		130-170

5.4.1.23.2.2.5.4.1.25.2.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.23.2.3.5.4.1.25.2.3. Physical channel parameters

DPCH Downlink	TFCS size		108
	DTX position		Flexible
	Spreading factor		32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100

5.4.1.24.5.4.1.26. Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.24.1.5.4.1.26.1. Uplink

See 5.4.1.24.1

5.4.1.24.2.5.4.1.26.2. Downlink

See 5.4.1.25.2

5.4.1.25.5.4.1.27. Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.25.1.5.4.1.27.1. Uplink

See 5.4.1.24.1

5.4.1.25.2.5.4.1.27.2. Downlink

5.4.1.25.2.1.5.4.1.27.2.1. Transport channel parameters for Interactive or background / DL:128 kbps / PS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		AM
	Payload sizes, bit		320
	Max data rate, bps		128000
	RLC header, bit		16
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		336
	TFS	TF0, bits	0x336
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	4 x336
		TF4, bits	8 x336
	TTI, ms		20
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		8460
	RM attribute		120-160

5.4.1.25.2.2.5.4.1.27.2.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1.

5.4.1.25.2.3.5.4.1.27.2.3. Physical channel parameters

DPCH Downlink	TFCS size		10
	DTX position		Flexible
	Spreading factor		16
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	288
		Number of data bits/frame	4320

5.4.1.26.5.4.1.28. Interactive or background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.26.1.5.4.1.28.1. Uplink

5.4.1.26.1.1.5.4.1.28.1.1. Transport channel parameters for Interactive or background / UL:128 kbps / PS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		AM
	Payload sizes, bit		320
	Max data rate, bps		128000
	RLC header, bit		16
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		336
	TFS	TF0, bits	0x336
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	4 x336
		TF4, bits	8 x336
	TTI, ms		20
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		8460
	Uplink: Max number of bits/radio frame before rate matching		4230
	RM attribute		120-160

5.4.1.26.1.2.5.4.1.28.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.26.1.3.5.4.1.28.1.3. Physical channel parameters

DPCH Uplink	TFCS size	10
	Min spreading factor	8
	Max number of DPDCH data bits/radio frame	4800
	Puncturing Limit	1

5.4.1.26.2.5.4.1.28.2. Downlink

See 5.4.1.27.2

5.4.1.27.5.4.1.29. Interactive or background / UL:64 DL:144 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

5.4.1.27.1.5.4.1.29.1. Uplink

See 5.4.1.24.1

5.4.1.27.2.5.4.1.29.2. Downlink

5.4.1.27.2.1.5.4.1.29.2.1. Transport channel parameters for Interactive or background / DL:144 kbps / PS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		AM
	Payload sizes, bit		320
	Max data rate, bps		144000
	RLC header, bit		16
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		336
	TFS	TF0, bits	0x336
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	4 x336
		TF4, bits	8 x336
		TF5, bits	9x336
	TTI, ms		20
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		9516
	RM attribute		TBD

5.4.1.27.2.2.5.4.1.29.2.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.27.2.3.5.4.1.29.2.3. Physical channel parameters

DPCH Downlink	TFCS size		10
	DTX position		Flexible
	Spreading factor		16
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	288
		Number of data bits/frame	4320

5.4.1.28.5.4.1.30. Interactive or background / UL:144 DL:144 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

5.4.1.28.1.5.4.1.30.1. Uplink

5.4.1.28.1.1.5.4.1.30.1.1. Transport channel parameters for Interactive or background / UL:144 kbps / PS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		AM
	Payload sizes, bit		320
	Max data rate, bps		144000
	RLC header, bit		16
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		336
	TFS	TF0, bits	0x336
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	4 x336
		TF4, bits	8 x336
		TF5, bits	9 x336
	TTI, ms		20
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		9516
	Uplink: Max number of bits/radio frame before rate matching		4758
	RM attribute		TBD

5.4.1.28.1.2.5.4.1.30.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.28.1.3.5.4.1.30.1.3. Physical channel parameters

DPCH Uplink	TFCS size	10
	Min spreading factor	84
	Max number of DPDCH data bits/radio frame	48009600
	Puncturing Limit	0.961

5.4.1.28.2.5.4.1.30.2. Downlink

See 5.4.1.29.25.4.1.28.2.

5.4.1.31. Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

5.4.1.31.1. Uplink

See 5.4.1.24.1

5.4.1.31.2. Downlink

5.4.1.31.2.1.   Transport channel parameters for Interactive or background / DL:256 kbps / PS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		AM
	Payload sizes, bit		320
	Max data rate, bps		384000
	RLC header, bit		16
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		336
	TFS	TF0, bits	0x336
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	4 x336
		TF4, bits	8 x336
		(alt. TF5, bits)	(alt. 12x336)
		(alt. TF6, bits)	(alt. 16x336)
	TTI, ms		10(alt. 20)
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		8460(alt. 16920)
	RM attribute		TBD

5.4.1.31.2.2.   Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.31.2.3.   Physical channel parameters

DPCH Downlink	TFCS size		10(alt. 14)
	DTX position		Flexible
	Spreading factor		8
	Number od DPDCH		1
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	608
		Number of data bits/frame	9120

5.4.1.29.5.4.1.32. Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

5.4.1.29.1.5.4.1.32.1. Uplink

See 5.4.1.24.1

5.4.1.29.2.5.4.1.32.2. Downlink

5.4.1.29.2.1.5.4.1.32.2.1.   Transport channel parameters for Interactive or background / DL:384 kbps / PS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		AM
	Payload sizes, bit		320
	Max data rate, bps		384000
	RLC header, bit		16
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		336
	TFS	TF0, bits	0x336
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	4 x336
		TF4, bits	8 x336
		TF5, bits	12x336
		(alt. TF6, bits)	(alt. 16x336)
		(alt. TF7, bits)	(alt. 20x336)
		(alt. TF86, bits)	(alt. 24 x336)
	TTI, ms		10(alt. 20)
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		12684(alt. 25368)
	RM attribute		TBD

5.4.1.29.2.2.5.4.1.32.2.2.   Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.29.2.3.5.4.1.32.2.3.   Physical channel parameters

DPCH Downlink	TFCS size		12(alt. 184)
	DTX position		Flexible
	Spreading factor		8
	Number od DPDCH		1
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	608
		Number of data bits/frame	9120

5.4.1.30.5.4.1.33. Interactive or background / UL:128 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.30.1.5.4.1.33.1. Uplink

See 5.4.1.28.1

5.4.1.30.2.5.4.1.33.2. Downlink

See 5.4.1.32.2

5.4.1.31.5.4.1.34. Interactive or background / UL:384 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.31.1.5.4.1.34.1. Uplink

5.4.1.31.1.1.5.4.1.34.1.1.   Transport channel parameters for Interactive or background / UL:384 kbps / PS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		AM
	Payload sizes, bit		320
	Max data rate, bps		384000
	RLC header, bit		16
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		336
	TFS	TF0, bits	0x336
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	4 x336
		TF4, bits	8 x336
		TF5, bits	12x336
		TF6, bits	16x336
		TF7, bits	20x336
		(alt. TF86, bits)	(alt. 24 x336)
	TTI, ms		10(alt. 20)
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		12684(alt. 25368)
	Uplink: Max number of bits/radio frame before rate matching		12684
	RM attribute		TBD

5.4.1.31.1.2.5.4.1.34.1.2.   Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.31.1.3.5.4.1.34.1.3.   Physical channel parameters

DPCH Uplink	TFCS size	12(alt. 14)18
	Min spreading factor	4
	Max number of DPDCH data bits/radio frame	9600
	Number of DPDCH	1
	Puncturing Limit	0.72

5.4.1.31.2.5.4.1.34.2. Downlink

See 5.4.1.32.2

5.4.1.32.5.4.1.35. Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.32.1.5.4.1.35.1. Uplink

See 5.4.1.24.1

5.4.1.32.2.5.4.1.35.2. Downlink

5.4.1.32.2.1.5.4.1.35.2.1. Transport channel parameters for Interactive or background / DL:2048 kbps / PS RAB

Higher layer	RAB/Signalling RB		RAB
RLC	Logical channel type		DTCH
	RLC mode		AM
	Payload sizes, bit		640
	Max data rate, bps		2048000
	RLC header, bit		16
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		656
	TFS	TF0, bits	0x656
		TF1, bits	1x656
		TF2, bits	2x656
		TF3, bits	4 x656
		TF4, bits	8 x656
		TF5, bits	12x656
		TF65, bits	16x656
		TF7, bits	20x656
		TF8, bits	24x656
		TF9, bits	28x656
		TF106, bits	32x656
		(alt. TF11, bits)	(alt. 36x656)
		(alt. TF12, bits)	(alt. 40x656)
		(alt. TF13, bits)	(alt. 44x656)
		(alt. TF14, bits)	(alt. 48x656)
		(alt. TF15, bits)	(alt. 52x656)
		(alt. TF16, bits)	(alt. 56x656)
		(alt. TF17, bits)	(alt. 60x656)
		(alt. TF187, bits)	(alt. 64x656)
	TTI, ms		10(alt. 20)
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		64572 (alt. 129132)
	RM attribute		TBD

5.4.1.32.2.2.5.4.1.35.2.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.32.2.3.5.4.1.35.2.3. Physical channel parameters

DPCH Downlink	TFCS size	14(alt. 16)
	DTX position	Flexible
	Spreading factor	4

Number of DPCH		3
DPCCH	Number of TFCI bits/slot	8
	Number of TPC bits/slot	8
	Number of Pilot bits/slot	16
DPDCH	Number of data bits/slot	1248
	Number of data bits/frame	18720

~~5.4.1.33.~~5.4.1.36. Interactive or background / UL:128 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

~~5.4.1.33.1.~~5.4.1.36.1. Uplink

See 5.4.1.28.1

~~5.4.1.33.2.~~5.4.1.36.2. Downlink

See 5.4.1.35.2~~5.4.1.28.2.~~

5.4.1.34.5.4.1.37. Interactive or background / UL:384 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.34.1.5.4.1.37.1. Uplink

See 5.4.1.34.1

5.4.1.34.2.5.4.1.37.2. Downlink

See 5.4.1.35.25.4.1.28.2.

~~5.4.1.35.~~5.4.1.38. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

~~5.4.1.35.1.~~5.4.1.38.1. Uplink

~~5.4.1.35.1.1.~~5.4.1.38.1.1. Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See 5.4.1.4.1.1

~~5.4.1.35.1.2.~~5.4.1.38.1.2. Transport channel parameters for Interactive or background / UL:32 kbps / PS RAB

See 5.4.1.23.1.1

~~5.4.1.35.1.3.~~5.4.1.38.1.3. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

~~5.4.1.35.1.4.~~5.4.1.38.1.4. Physical channel parameters

DPCH Uplink	TFCS size	18
	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	1

~~5.4.1.35.2.~~5.4.1.38.2. Downlink

~~5.4.1.35.2.1.~~5.4.1.38.2.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1

~~5.4.1.35.2.2.~~5.4.1.38.2.2. Transport channel parameters for Interactive or background / DL:8 kbps / PS RAB

See 5.4.1.23.2.1

~~5.4.1.35.2.3.~~5.4.1.38.2.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

~~5.4.1.35.2.4.~~5.4.1.38.2.4. Physical channel parameters

DPCH Downlink	TFCS size		18
	DTX position		Flexible
	Spreading factor		64
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900

5.4.1.36.5.4.1.39. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:64 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

5.4.1.36.1.5.4.1.39.1. Uplink

See 5.4.1.38.15.4.1.31.1.

5.4.1.36.2.5.4.1.39.2. Downlink

5.4.1.36.2.1.5.4.1.39.2.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1

5.4.1.36.2.2.5.4.1.39.2.2. Transport channel parameters for Interactive or background / DL:64 kbps / PS RAB

See 5.4.1.25.2.1

5.4.1.36.2.3.5.4.1.39.2.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.36.2.4.5.4.1.39.2.4. Physical channel parameters

DPCH Downlink	TFCS size		3024
	DTX position		Flexible
	Spreading factor		32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100

5.4.1.37.5.4.1.40. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

5.4.1.37.1.5.4.1.40.1. Uplink

5.4.1.37.1.1.5.4.1.40.1.1. Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See 5.4.1.4.1.1

5.4.1.37.1.2.5.4.1.40.1.2. Transport channel parameters for Interactive or background / UL:64 kbps / PS RAB

See 5.4.1.24.1.15.4.1.22.1.

5.4.1.37.1.3.5.4.1.40.1.3. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.37.1.4.5.4.1.40.1.4. Physical channel parameters

DPCH Uplink	TFCS size	30 24
	Min spreading factor	16 8
	Max number of DPDCH data bits/radio frame	2400 4800
	Puncturing Limit	0.88 1

5.4.1.37.2.5.4.1.40.2. Downlink

See 5.4.1.39.2 5.4.1.32.2.

5.4.1.38.5.4.1.41. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.38.1.5.4.1.41.1. Uplink

See 5.4.1.40.1~~5.4.1.33.1.~~

5.4.1.38.2.5.4.1.41.2. Downlink

5.4.1.38.2.1.5.4.1.41.2.1.   Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1~~5.4.1.4.1.1~~

5.4.1.38.2.2.5.4.1.41.2.2.   Transport channel parameters for Interactive or background / DL:128 kbps / PS RAB

See 5.4.1.27.2.1~~5.4.1.25.2.~~

5.4.1.38.2.3.5.4.1.41.2.3.   Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.38.2.4.5.4.1.41.2.4.   Physical channel parameters

	TFCS size		30
	DTX position		Flexible
	Spreading factor		16
DPCH Downlink	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	288
		Number of data bits/frame	4320

5.4.1.42. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Interactive or background / UL:64 DL:256 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.42.1. Uplink

See 5.4.1.40.1

5.4.1.42.2. Downlink

5.4.1.42.2.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1

5.4.1.42.2.2. Transport channel parameters for Interactive or background / DL:256 kbps / PS RAB

See 5.4.1.31.2.1

5.4.1.42.2.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.42.2.4. Physical channel parameters

DPCH Downlink		TFCS size	30(alt. 42)
		DTX position	Flexible
		Spreading factor	8
		Number of DPDCH	1
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	608
		Number of data bits/frame	9120

~~5.4.1.39.~~5.4.1.43. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Interactive or background / UL:64 DL:384 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH

~~5.4.1.39.1.~~5.4.1.43.1. Uplink

See 5.4.1.40.1~~5.4.1.33.1.~~

~~5.4.1.39.2.~~5.4.1.43.2. Downlink

~~5.4.1.39.2.1.~~5.4.1.43.2.1.   Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1~~5.4.1.4.1.1.~~

~~5.4.1.39.2.2.~~5.4.1.43.2.2.   Transport channel parameters for Interactive or background / DL:384 kbps / PS RAB

See 5.4.1.32.2.1~~5.4.1.29.2.~~

~~5.4.1.39.2.3.~~5.4.1.43.2.3.   Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

~~5.4.1.39.2.4.~~5.4.1.43.2.4.   Physical channel parameters

DPCH Downlink	TFCS size		36(alt. 5~~4~~42)
	DTX position		Flexible
	Spreading factor		8
	Number of DPDCH		1
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	608
		Number of data bits/frame	9120

5.4.1.40.5.4.1.44. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Interactive or background / UL:128 DL:2048 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.40.1.5.4.1.44.1. Uplink

5.4.1.40.1.1.5.4.1.44.1.1. Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See 5.4.1.4.1.1

5.4.1.40.1.2.5.4.1.44.1.2. Transport channel parameters for Interactive or background / UL:128 kbps / PS RAB

See 5.4.1.28.1.15.4.1.26.1.

5.4.1.40.1.3.5.4.1.44.1.3. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.40.1.4.5.4.1.44.1.4. Physical channel parameters

DPCH Uplink	TFCS size	30
	Min spreading factor	8
	Max number of DPDCH data bits/radio frame	4800
	Puncturing Limit	1

5.4.1.40.2.5.4.1.44.2. Downlink

5.4.1.40.2.1.5.4.1.44.2.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1

5.4.1.40.2.2.5.4.1.44.2.2. Transport channel parameters for Interactive or background / DL:2048 kbps / PS RAB

See 5.4.1.35.2.15.4.1.28.2.1

5.4.1.40.2.3.5.4.1.44.2.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.40.2.4.5.4.1.44.2.4. Physical channel parameters

DPCH Downlink	TFCS size		6642(alt. 11448)
	DTX position		Flexible
	Spreading factor		4
	Number of DPDCH		3
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	1248
		Number of data bits/frame	18720

5.4.1.41.5.4.1.45. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:57.6 DL:57.6 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.41.1.5.4.1.45.1. Uplink

5.4.1.41.1.1.5.4.1.45.1.1. Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See 5.4.1.4.1.1

5.4.1.41.1.2.5.4.1.45.1.2. Transport channel parameters for Streaming / unknown / UL:57.6 kbps / CS RAB

See 5.4.1.17.1.1

5.4.1.41.1.3.5.4.1.45.1.3. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.41.1.4.5.4.1.45.1.4. Physical channel parameters

DPCH Uplink	TFCS size	30
	Min spreading factor	16
	Max number of DPDCH data bits/radio frame	2400
	Puncturing Limit	1

5.4.1.41.2.5.4.1.45.2. Downlink

5.4.1.41.2.1.5.4.1.45.2.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1

5.4.1.41.2.2.5.4.1.45.2.2. Transport channel parameters for Streaming / unknown / DL:57.6 kbps / CS RAB

See 5.4.1.17.2.1

5.4.1.41.2.3.5.4.1.45.2.3. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.41.2.4.5.4.1.45.2.4. Physical channel parameters

DPCH Uplink	TFCS size		30
	DTX position		Flexible
	Spreading factor		32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100

5.4.1.42. 5.4.1.46. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:0 DL:64 kbps / CS or PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.42.1. 5.4.1.46.1. Uplink

See 5.4.1.4.1.

5.4.1.42.2. 5.4.1.46.2. Downlink

5.4.1.42.2.1. 5.4.1.46.2.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1

5.4.1.42.2.2. 5.4.1.46.2.2. Transport channel parameters for Streaming / unknown / DL:64 kbps / CS or PS RAB

See 5.4.1.18.2.1

5.4.1.42.2.3. 5.4.1.46.2.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.42.2.4. 5.4.1.46.2.4. Physical channel parameters

DPCH Downlink	TFCS size		36
	DTX position		Flexible
	Spreading factor		32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100

5.4.1.43.5.4.1.47. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:0 DL:128 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.43.1.5.4.1.47.1. Uplink

See 5.4.1.4.1

5.4.1.43.2.5.4.1.47.2. Downlink

5.4.1.43.2.1.5.4.1.47.2.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1

5.4.1.43.2.2.5.4.1.47.2.2. Transport channel parameters for Streaming / unknown / DL:128 kbps / CS or PS RAB

See 5.4.1.20.2.1

5.4.1.43.2.3.5.4.1.47.2.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.43.2.4.5.4.1.47.2.4. Physical channel parameters

DPCH Downlink	TFCS size		30
	DTX position		Flexible
	Spreading factor		16
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	288
		Number of data bits/frame	4320

5.4.1.44.5.4.1.48. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:0 DL:384 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.44.1.5.4.1.48.1. Uplink

See 5.4.1.4.1

5.4.1.44.2.5.4.1.48.2. Downlink

5.4.1.44.2.1.5.4.1.48.2.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1

5.4.1.44.2.2.5.4.1.48.2.2. Transport channel parameters for Streaming / unknown / DL:384 kbps / CS or PS RAB

See 5.4.1.22.2.15.4.1.2.2.1.

5.4.1.44.2.3.5.4.1.48.2.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.44.2.4.5.4.1.48.2.4. Physical channel parameters

DPCH Downlink	TFCS size		30
	DTX position		Flexible
	Spreading factor		8
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	608
		Number of data bits/frame	9120

5.4.1.45.5.4.1.49. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Conversational / unknown / UL:64 DL:64 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.45.1.5.4.1.49.1. Uplink

5.4.1.45.1.1.5.4.1.49.1.1. Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

See 5.4.1.4.1.1

5.4.1.45.1.2.5.4.1.49.1.2. Transport channel parameters for Conversational / unknown / UL:64 kbps / CS RAB

See 5.4.1.13.1.1

5.4.1.45.1.3.5.4.1.49.1.3. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.45.1.4.5.4.1.49.1.4. Physical channel parameters

DPCH Uplink	TFCS size	12
	Min spreading factor	16~~8~~
	Max number of DPDCH data bits/radio frame	2400~~4800~~
	Puncturing Limit	0.92~~1~~

5.4.1.45.2.5.4.1.49.2. Downlink

5.4.1.45.2.1.5.4.1.49.2.1. Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1

5.4.1.45.2.2.5.4.1.49.2.2. Transport channel parameters for Conversational / unknown / DL:64 kbps / CS RAB

See 5.4.1.13.2.1

5.4.1.45.2.3.5.4.1.49.2.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.45.2.4.5.4.1.49.2.4. Physical channel parameters

DPCH Downlink	TFCS size		12
	DTX position		Flexible
	Spreading factor		32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100

5.4.1.46.5.4.1.50. Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.46.1.5.4.1.50.1. Uplink

5.4.1.46.1.1.5.4.1.50.1.1. Transport channel parameters for Conversational / unknown / UL:64 kbps / CS RAB

See 5.4.1.13.1.1

5.4.1.46.1.2.5.4.1.50.1.2. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.46.1.3.5.4.1.50.1.3. Physical channel parameters

DPCH Uplink	TFCS size	8
	Min spreading factor	8
	Max number of DPDCH data bits/radio frame	4800
	Puncturing Limit	1

5.4.1.46.2.5.4.1.50.2. Downlink

5.4.1.46.2.1.5.4.1.50.2.1. Transport channel parameters for Conversational / unknown / DL:64 kbps / CS RAB

See 5.4.1.13.2.1

5.4.1.46.2.2.5.4.1.50.2.2. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.46.2.3.5.4.1.50.2.3. Physical channel parameters

DPCH Downlink	TFCS size		8
	DTX position		Flexible
	Spreading factor		16
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	288
		Number of data bits/frame	4320

~~5.4.1.47.~~5.4.1.51. Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

~~5.4.1.47.1.~~5.4.1.51.1. Uplink

~~5.4.1.47.1.1.~~5.4.1.51.1.1. Transport channel parameters for Conversational / unknown / UL:64 kbps / CS RAB

See 5.4.1.13.1.1

~~5.4.1.47.1.2.~~5.4.1.51.1.2. Transport channel parameters for Interactive or background / UL:64 kbps / PS RAB

See 5.4.1.24.1.1

~~5.4.1.47.1.3.~~5.4.1.51.1.3. Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

~~5.4.1.47.1.4.~~5.4.1.51.1.4. Physical channel parameters

	TFCS size	20~~16~~
DPCH Uplink	Min spreading factor	8
	Max number of DPDCH data bits/radio frame	4800
	Puncturing Limit	1

~~5.4.1.47.2.~~5.4.1.51.2. Downlink

~~5.4.1.47.2.1.~~5.4.1.51.2.1. Transport channel parameters for Conversational / unknown / DL:64 kbps / CS RAB

See 5.4.1.13.2.1

~~5.4.1.47.2.2.~~5.4.1.51.2.2. Transport channel parameters for Interactive or background / DL:64 kbps / PS RAB

See 5.4.1.25.2.1

~~5.4.1.47.2.3.~~5.4.1.51.2.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

~~5.4.1.47.2.4.~~5.4.1.51.2.4. Physical channel parameters

		TFCS size	20~~16~~
DPCH Downlink		DTX position	Flexible
		Spreading factor	16
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	288
		Number of data bits/frame	4320

5.4.1.48.5.4.1.52. Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.48.1.5.4.1.52.1. Uplink

See 5.4.1.51.1.5.4.1.43.1.

5.4.1.48.2.5.4.1.52.2. Downlink

5.4.1.48.2.1.5.4.1.52.2.1. Transport channel parameters for Conversational / unknown / DL:64 kbps / CS RAB

See 5.4.1.13.2.1.5.4.1.12.1.

5.4.1.48.2.2.5.4.1.52.2.2. Transport channel parameters for Interactive or background / DL:128 kbps / PS RAB

See 5.4.1.27.2.1

5.4.1.48.2.3.5.4.1.52.2.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.1.48.2.4.5.4.1.52.2.4. Physical channel parameters

DPCH Downlink	TFCS size		20
	DTX position		Flexible
	Spreading factor		8
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	608
		Number of data bits/frame	9120

5.4.1.49.5.4.1.53. Conversational / unknown / UL:64 DL:64 kbps / CS RAB
+ Interactive or background / UL:128 DL:128 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.49.1.5.4.1.53.1. Uplink

5.4.1.49.1.1.5.4.1.53.1.1.   Transport channel parameters for Conversational / unknown / UL:64 kbps / CS RAB

See 5.4.1.13.1.1

5.4.1.49.1.2.5.4.1.53.1.2.   Transport channel parameters for Interactive or background / UL:128 kbps / PS RAB

See 5.4.1.28.1.1

5.4.1.49.1.3.5.4.1.53.1.3.   Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.1.1

5.4.1.49.1.4.5.4.1.53.1.4.   Physical channel parameters

DPCH Uplink	TFCS size	20
	Min spreading factor	4
	Max number of DPDCH data bits/radio frame	9600
	Puncturing Limit	1

5.4.1.49.2.5.4.1.53.2. Downlink

See 5.4.1.52.25.4.1.44.2.

5.4.1.50.5.4.1.54. Interactive or background / UL:64 DL:128 kbps / PS RAB + Streaming / unknown / UL:0 DL:64 kbps / CS or PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.50.1.5.4.1.54.1. Uplink

See 5.4.1.24.1 5.4.1.22.1.1.

5.4.1.50.2.5.4.1.54.2. Downlink

5.4.1.50.2.1.5.4.1.54.2.1. Transport channel parameters for Interactive or background / DL:128 kbps / PS RAB

See 5.4.1.27.2.1

5.4.1.50.2.2.5.4.1.54.2.2. Transport channel parameters for Streaming / unknown / DL:64 kbps / CS or PS RAB

See 5.4.1.18.2.1

5.4.1.50.2.3.5.4.1.54.2.3. Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1 5.4.1.2.1.1.

5.4.1.50.2.4.5.4.1.54.2.4. Physical channel parameters

DPCH Downlink		TFCS size	50
		DTX position	Flexible
		Spreading factor	8
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	608
		Number of data bits/frame	9120

5.4.1.51.5.4.1.55. Interactive or background / UL:64 DL:128 kbps / PS RAB + Streaming / unknown / UL:0 DL:128 kbps / CS or PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.1.51.1.5.4.1.55.1. Uplink

See 5.4.1.24.15.4.1.46.1.

5.4.1.51.2.5.4.1.55.2. Downlink

5.4.1.51.2.1.5.4.1.55.2.1.   Transport channel parameters for Interactive or background / DL:128 kbps / PS RAB

See 5.4.1.27.2.1

5.4.1.51.2.2.5.4.1.55.2.2.   Transport channel parameters for Streaming / unknown / DL:128 kbps / CS or PS RAB

See 5.4.1.20.2.1

5.4.1.51.2.3.5.4.1.55.2.3.   Transport channel parameters for DL:3.4 kbps SRBs for DCCH

See 5.4.1.2.2.15.4.1.2.1.1.

5.4.1.51.2.4.5.4.1.55.2.4.   Physical channel parameters

DPCH Downlink	TFCS size		50
	DTX position		Flexible
	Spreading factor		8
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	8
		Number of Pilot bits/slot	16
	DPDCH	Number of data bits/slot	608
		Number of data bits/frame	9120

5.4.2. Combinations on PDSCH and DPCH

5.4.2.1. Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

5.4.2.1.1. Uplink

See 5.4.1.24.1

5.4.2.1.2. Downlink

5.4.2.1.2.1. Transport channel parameters for Interactive or background / DL:256 kbps / PS RAB

See 5.4.1.31.2.1

5.4.2.1.2.2. Transport channel parameters for DL:3.4 DL: 3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.2.1.2.3. Physical channel parameters

	RAB or SRB, TrCh		Interactive or background / 256 kbps / PS RAB, DSCH
PDSCH	TFCS size		5(alt. 7)
	DTX position		N/A (SingleTrCH)
	Spreading factor		8
DPCH Downlink associated with PDSCH	RAB or SRB, TrCh		3.4 kbps SRB for DCCH, DCH
	DTX position		N/A (SingleTrCH)
	Minimum spreading factor		256
	DPCCH	Number of TFCI bits/slot	0
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	10
		Number of data bits/frame	150

~~5.4.2.1.~~5.4.2.2.   Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

~~5.4.2.1.1.~~5.4.2.2.1.   Uplink

See 5.4.1.24.1

~~5.4.2.1.2.~~5.4.2.2.2.   Downlink

~~5.4.2.1.2.1.~~5.4.2.2.2.1.   Transport channel parameters for Interactive or background / DL:384 kbps / PS RAB

See 5.4.1.32.2.1.

~~5.4.2.1.2.2.~~5.4.2.2.2.2.   Transport channel parameters for DL:3.4 DL: 3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

~~5.4.2.1.2.3.~~5.4.2.2.2.3.   Physical channel parameters

	RAB or SRB, TrCh	**Interactive or background / 384 kbps / PS RAB, DSCH**
PDSCH	TFCS size	6(alt. 7)
	DTX position	N/A (SingleTrCH)
	Spreading factor	<u>84</u>
DPCH Downlink associated with PDSCH	RAB or SRB, TrCh	**3.4 kbps SRB for DCCH, DCH**
	DTX position	N/A (SingleTrCH)
	Minimum spreading factor	256
	DPCCH Number of TFCI bits/slot	0
	DPCCH Number of TPC bits/slot	2
	DPCCH Number of Pilot bits/slot	8
	DPDCH Number of data bits/slot	10
	DPDCH Number of data bits/frame	150

5.4.2.2.~~5.4.2.3.~~ Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

5.4.2.2.1.~~5.4.2.3.1.~~ Uplink

See 5.4.1.24.1.

5.4.2.2.2.~~5.4.2.3.2.~~ Downlink

5.4.2.2.2.1.~~5.4.2.3.2.1.~~ Transport channel parameters for Interactive or background / DL:2048 kbps / PS RAB

See 5.4.1.35.2.1~~5.4.1.28.2.1.~~

5.4.2.2.2.2.~~5.4.2.3.2.2.~~ Transport channel parameters for DL:3.4 DL: 3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.2.2.2.3.~~5.4.2.3.2.3.~~ Physical channel parameters

	RAB or SRB, TrCh	**Interactive or background / 2048 kbps / PS RAB, DSCH**		
PDSCH	TFCS size	7(alt. 8)		
	DTX position	N/A (SingleTrCH)		
	Spreading factor	4		
DPCH Downlink associated with PDSCH	RAB or SRB, TrCh	**3.4 kbps SRB for DCCH, DCH**		
	DTX position	N/A (SingleTrCH)		
	Minimum spreading factor	256		
	DPCCH	Number of TFCI bits/slot	0	
		Number of TPC bits/slot	2	
		Number of Pilot bits/slot	8	
	DPDCH	Number of data bits/slot	10	
		Number of data bits/frame	150	

5.4.2.4.　Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.2.4.1.　Uplink

See 5.4.1.40.1

5.4.2.4.2.　Downlink

5.4.2.4.2.1.　Transport channel parameters for Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1

5.4.2.4.2.2.　Transport channel parameters for Interactive or background / DL:256 kbps / PS RAB

See 5.4.1.31.2.1

5.4.2.4.2.3.　Transport channel parameters for DL:3.4 DL: 3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.2.4.2.4.　Physical channel parameters

	RAB or SRB, TrCh	Interactive or background / 256 kbps / PS RAB, DSCH
PDSCH	TFCS size	5(alt. 7)
	DTX position	N/A (SingleTrCH)
	Spreading factor	4
DPCH Downlink	RAB or SRB, TrCh	Conversational / speech / 12.2 kbps / CS RAB, DCH + 3.4 kbps SRBs for DCCH. DCH
	TFCS size	6
	DTX position	Fixed
	Spreading factor	128
	DPCCH　Number of TFCI bits/slot	0
	DPCCH　Number of TPC bits/slot	2
	DPCCH　Number of Pilot bits/slot	4
	DPDCH　Number of data bits/slot	34
	DPDCH　Number of data bits/frame	510

5.4.2.3.5.4.2.5. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.2.3.1.5.4.2.5.1. Uplink

See 5.4.1.40.15.4.1.33.1.

5.4.2.3.2.5.4.2.5.2. Downlink

5.4.2.3.2.1.5.4.2.5.2.1. Transport channel parameters for Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB

See 5.4.1.4.2.1

5.4.2.3.2.2.5.4.2.5.2.2. Transport channel parameters for Interactive or background / DL:384 kbps / PS RAB

See 5.4.1.32.2.1

5.4.2.3.2.3.5.4.2.5.2.3. Transport channel parameters for DL:3.4 DL: 3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.2.3.2.4.5.4.2.5.2.4. Physical channel parameters

PDSCH	RAB or SRB, TrCh	**Interactive or background / 384 kbps / PS RAB, DSCH**	
	TFCS size	6(alt. 7)	
	DTX position	N/A (SingleTrCH)	
	Spreading factor	84	
DPCH Downlink	RAB or SRB, TrCh	**Conversational / speech / 12.2 kbps / CS RAB, DCH + 3.4 kbps SRBs for DCCH. DCH**	
	TFCS size	6	
	DTX position	Fixed	
	Spreading factor	128	
	DPCCH	Number of TFCI bits/slot	0
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	34
		Number of data bits/frame	510

5.4.2.4.5.4.2.6. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Interactive or background / UL:64 DL:2048 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH

5.4.2.4.1.5.4.2.6.1. Uplink

See 5.4.1.40.15.4.1.33.1.

5.4.2.4.2.5.4.2.6.2. Downlink

5.4.2.4.2.1.5.4.2.6.2.1. Transport channel parameters for Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB

See 5.4.1.4.2.15.4.1.4.1.1.

5.4.2.4.2.2.5.4.2.6.2.2. Transport channel parameters for Interactive or background / DL:2048 kbps / PS RAB

See 5.4.1.35.2.15.4.1.28.2.

5.4.2.4.2.3.5.4.2.6.2.3. Transport channel parameters for DL:3.4 DL: 3.4 kbps SRBs for DCCH

See 5.4.1.2.2.1

5.4.2.4.2.4.5.4.2.6.2.4. Physical channel parameters

	RAB or SRB, TrCh	**Interactive or background / 2048 kbps / PS RAB, DSCH**		
PDSCH	TFCS size	7(alt. 8)		
	DTX position	N/A (SingleTrCH)		
	Spreading factor	4		
	RAB or SRB, TrCh	**Conversational / speech / 12.2 kbps / CS RAB, DCH + 3.4 kbps SRBs for DCCH. DCH**		
	TFCS size	6		
	DTX position	Fixed		
DPCH Downlink	Spreading factor	128		
	DPCCH	Number of TFCI bits/slot	0	
		Number of TPC bits/slot	2	
		Number of Pilot bits/slot	4	
	DPDCH	Number of data bits/slot	34	
		Number of data bits/frame	510	

5.4.3. Combinations on SCCPCH

5.4.3.1. Stand-alone signalling RB for PCCH

5.4.3.1.1. Transport channel parameter of SRB for PCCH

Higher layer	RAB/signalling RB	**SRB**
	User of Radio Bearer	RRC
RLC	Logical channel type	PCCH
	RLC mode	TM
	Payload sizes, bit	240 (alt. 8064)
	Max data rate, bps	24000 (alt. 648000)
	RLC header, bit	0
MAC	MAC header, bit	0
	MAC multiplexing	N/A
Layer 1	TrCH type	PCH
	TB sizes, bit	240 (alt. 8064)
	TFS	TF1, bts	0x240 (alt. 0x80)
		TF0, bits	1x240 (alt. 1x8064)
	TTI, ms	10
	Coding type	CC 1/2
	CRC, bit	16
	Max number of bits/TTI before rate matching	528 (alt. 208176)
	RM attribute	TBD

5.4.3.1.2. Physical channel parameters

SCCPCH	TFCS size		2
	DTX position		N/A (SingleTrCH)
	Spreading factor		128(alt. 256)
	DPCCH	Number of TFCI bits/slot	0
		Number of Pilot bits/slot	0
		Number of data bits/slot	40(alt. 20)
	DPDCH	Number of data bits/frame	600(alt. 300)

5.4.3.2. Interactive/Background 32 kbps PS RAB + ~~50.4 kbps~~ SRBs for CCCH + ~~13.6 kbps~~ SRB for DCCH + SRB for BCCH

5.4.3.2.1. Transport channel parameters for Interactive/Background 32 kbps PS RAB

Higher layer	RAB/signalling RB	**RAB**
	User of Radio Bearer	Interactive/ Background RAB
RLC	Logical channel type	DTCH
	RLC mode	AM
	Payload sizes, bit	320
	Max data rate, bps	32000
	RLC header, bit	16
MAC	MAC header, bit	24
	MAC multiplexing	N/A
Layer 1	TrCH type	FACH
	TB sizes, bit	360
	TFS	TF0, bits	0x360
		TF1, bits	1x360
		TF2, bits	-
		TF3, bits	-
	TTI, ms	10
	Coding type	TC
	CRC, bit	16
	Max number of bits/TTI before rate matching	1140
	RM attribute	TBD

5.4.3.2.2. Transport channel parameters of SRBs for CCCH, SRB for DCCH, and SRB for BCCH

Higher layer	RAB/signalling RB	**SRB#1**	**SRB#2**	**SRB#3**	**SRB#4**	**SRB#5**	**SRB#6**
	User of Radio Bearer	RRC	RRC	RRC	NAS_DT High prio	NAS_DT Low prio	RRC
RLC	Logical channel type	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH
	RLC mode	UM	UM	AM	AM	AM	TM
	Payload sizes, bit	152	136	128	128	128	166
	Max data rate, bps	45600	40800	38400	38400	38400	49800
	RLC header, bit	8	8	16	16	16	0
MAC	MAC header, bit	8	24	24	24	24	2
	MAC multiplexing	6 logical channel multiplexing					
Layer 1	TrCH type	FACH					
	TB sizes, bit	168					
	TFS	TF0, bits	0x168					
		TF1, bits	1x168					
		TF2, bits	2x168					
		(alt. TF3, bits)	(alt. 3x168)					
	TTI, ms	10					
	Coding type	CC 1/2					
	CRC, bit	16					
	Max number of bits/TTI before rate matching	752 (alt. 1136)					
	RM attribute	TBD					

~~5.4.3.2.2.~~5.4.3.2.3. Physical channel parameters

SCCPCH	TFCS size	4 -6~~TBD~~
	TFCS	0x360 + 0x168
		0x360 + 1x168
		0x360 + 2x168

			[0x360 + 3x168]*
			1x360 + 0x168
			[1x360 + 1x168]*
	DTX position		Flexible
	Spreading factor		64
DPCCH		Number of TFCI bits/slot	8
		Number of Pilot bits/slot	0
		Number of data bits/slot	72
DPDCH		Number of data bits/frame	1080

* These TFCs are available only if SCCPCH is allocated bigger Tx power than required Tx power for TFC of 1x360 + 0x168.

5.4.3.3.   Interactive/Background 32 kbps RAB + SRBs for PCCH + 50.4 kbps SRB for CCCH + 13.6 kbps SRB for DCCH + SRB for BCCH

5.4.3.3.1.   Transport channel parameters of SRB for Interactive/Background 32 kbps RAB

See 5.4.3.2.1

5.4.3.3.2.   Transport channel parameters of SRB for PCCH

See 5.4.3.1.1

5.4.3.3.3.   Transport channel parameters of SRBs for CCCH, SRB for DCCH, and SRB for BCCH

See 5.4.3.2.2

5.4.3.3.2.5.4.3.3.4.   Physical channel parameters

	Alternatives for TrBlk size for PCCH	240 bits	80 bits
SCCPCH	TFCS size	6-9TBD	7-12
	TFCS	0x360 + 0x240 + 0x168	0x360 + 0x80 + 0x168
		0x360 + 0x240 + 1x168	0x360 + 0x80 + 1x168
		0x360 + 0x240 + 2x168	0x360 + 0x80 + 2x168
		[0x360 + 0x240 + 3x168]*	[0x360 + 0x80 + 3x168]*
		0x360 + 1x240 + 0x168	0x360 + 1x80 + 0x168
		0x360 + 1x240 + 1x168	0x360 + 1x80 + 1x168
		[0x360 + 1x240 + 2x168]*	[0x360 + 1x80 + 2x168]*
		1x360 + 0x240 + 0x168	[0x360 + 1x80 + 3x168]*
		[1x360 + 0x240 + 1x168]*	1x360 + 0x80 + 0x168
			1x360 + 0x80 + 0x168
			[1x360 + 0x80 + 1x168]*
			[1x360 + 1x80 + 0x168]*
	DTX position	Flexible	
	Spreading factor	64	
	DPCCH — Number of TFCI bits/slot	8	
	DPCCH — Number of Pilot bits/slot	0	
	DPCCH — Number of data bits/slot	72	
	DPDCH — Number of data bits/frame	1080	

* These TFCs are available only if SCCPCH is allocated bigger Tx power than required Tx power for TFC of 1x360 + 0x168.

5.4.4. Combinations on PRACH

5.4.4.1. Interactive/Background 32 kbps PS RAB + ~~16.6 kbps~~ SRB for CCCH + ~~13.6 kbps~~ SRB for DCCH

5.4.4.1.1. Transport channel parameter for Interactive/Background 32 kbps PS RAB, SRB for CCCH, SRB for DCCH

Higher layer	RAB/signalling RB	**RAB**	**SRB#1**	**SRB#2**	**SRB#3**	**SRB#4**	**SRB#5**
	User of Radio Bearer	Interactive/ Background RAB	RRC	RRC	RRC	NAS_DT High prio	NAS_DT Low prio
RLC	Logical channel type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH
	RLC mode	AM	TM~~UM~~	UM	AM	AM	AM
	Payload sizes, bit	320	166	136 or 120*	128	128	128
	Max data rate, bps	32000	16600	13600 or 12000*	12800	12800	12800
	RLC header, bit	16	0	8	16	16	16
MAC	MAC header, bit	24	2	24 or 40*	24	24	24
	MAC multiplexing	6 logical channel multiplexing					
Layer 1	TrCH type	RACH					
	TB sizes, bit	360	168	168	168	168	168
	TFS — TF0, bits	1x168~~0~~					
	TFS — TF1, bits	1x360~~168~~					
	TFS — ~~TF2, bits~~	~~1x360~~					
	TTI, ms	20 (alt. 10)					
	Coding type	CC 1/2					
	CRC, bit	16					
	Max number of bits/TTI after channel coding	768	384	384	384	384	384
	Max number of bits/Radio frame~~TTI~~ before rate matching	384 (alt. 768)	192 (alt. 384)	192 (alt. 384)	192 (alt. 384)	192 (alt. 384)	192 (alt. 384)

* MAC header size and PLC payload size depend on use of U-RNTI or C-RNTI.

5.4.4.1.2. Physical channel parameters

PRACH	TFCS size	2~~3~~
	Minimum Spreading factor	64 (alt. 32)
	Max number of DPDCH data bits/radio frame	600 (alt. 1200)
	Puncturing Limit	1

\<Appendix\>

Overview of Typical Radio Interface Parameter Sets version 1.2

This document describes major changes from the Typical radio interface parameter sets version 1.1 to version 1.2 as following.

1. Additional TFS for interactive/background 384 and 2048 kbps PS RAB
    In order to reduce packet transmission delay, TFs are added for interactive/background 384 and 2048 kbps PS RAB as following.
    384 kbps RAB:
TF0	0 bits
TF1	1x336 bits
TF2	2x336 bits
TF3	4x336 bits
TF4	8x336 bits
TF5	12x336 bits
TF6	16x336 bits
TF7	20x336 bits
TF8	24x336 bits

    2048 kbps RAB:
TF0	0 bits
TF1	1x656 bits
TF2	2x656 bits
TF3	4x656 bits
TF4	8x656 bits
TF5	12x656 bits
TF6	16x656 bits
TF7	20x656 bits
TF8	24x656 bits
TF9	28x656 bits
TF10	32x656 bits

2. Addition of conversational 28.8 kbps RAB
The proposed RAB can be used for transparent modem. This kind of service has been already noted in N3. Transport and physical parameters for this RAB are completely same as those of the streaming 28.8 kbps RAB.

3. Addition of streaming 14.4 kbps RAB
    In the ver 1.1, streaming 28.8 kbps RAB is already included assuming fax rate of 14.4 kbps. It was found that majority of the fax rate is 9.6 kbps. It makes sense to add streaming 14.4 kbps RAB for the 9.6 kbps fax in terms of code shortage problem.

4. Addition of interactive/background 256 kbps RAB
    Interactive/background 256 kbps RAB is added to keep necessary flexibility for radio resource management.

5. Addition of 20 ms TTI for PRACH
From link budget point of view, it was found that TTI of 20 ms should be used for PRACH.

6. Deletion of 10 ms TTI for UL of interactive/background 384 kbps RAB
It was found that 20 ms TTI for UL is not so serious problem from UE and node B implementation point of view. Therefore, TTI of 10 ms was deleted from transport channel

parameters of UL.

7. TrBlk size for PCH
In the version 1.1, PCH TrBlk size of 64 kbps is used. However, it was found that 64 bits are not enough for a paging message which has an IMSI, and 80 bits are needed for the IMSI. Therefore, TrBlk size of 64 bits was replaced by 80 bits.

8. Addition of a new MAC header size for UM DCCH on SCCPCH
MAC header size of 40 bits and RLC payload size of 120 bits are added, Since it was found that MAC header size of 40 bits are also used for UM DCCH on SCCPCH.

9. Deletion of TF0 for PRACH
In the ISG document, 3 kinds of TFS is specified; 0, 168, and 360 bits. TF0 (0 bits) is not needed for PRACH since TF0 means no PRACH signal transmitted. TF0 for PRACH should be deleted.

10. Correction of RLC mode for CCCH on PRACH
RLC mode for CCCH on PRACH should be TM. This error was corrected.

11. DTX position for PRACH
In table of physical channel parameters for PRACH, DTX position is included. This is not needed since DTX position shall be flexible for all of UL.

12. RM attributes
Ranges of RM attributes for parts of RAB/SRB combinations were clarified according to simulation results. Description of RM attribute was moved from PhyCh parameter table to TrCh parameter table since it was found that almost same value of RM attribute can be used independent of the combination of RABs.

13. Correction of "maximum number of bits/TTI before rate matching" of FACH for SRBs on SCCPCH
"Maximum number of bits/TTI before rate matching" of FACH for SRBs on SCCPCH was changed from 1120 to 1136 because code block segmentation for TF of 3x168 bits was missed in the version 1.1.

14. TFCS on SCCPCH
TFCS on SCCPCH was clarified in section 5.4.3.

15. Puncturing limit for UL
In the version 1.1, puncturing is not applied to UL, ie. puncturing limit = 1 for any TrCh on UL. However it was found that use of smaller SF for UL consumes hardware resources of the UE and the node B. From hardware capacity point of view, it is beneficial to use puncturing and to use bigger SF if performance degradation caused by puncturing is not so serious. Therefore, puncturing was applied to UL TrChs with turbo coding. The minimum puncturing limit was set to 0.88. Section 5.4.1.30.1.3, 5.4.1.40.1.3, and 5.4.1.49.1.3 were applied this change.

16. SF for DSCH
In case of using PDSCH, SF=4 is applied for the combination of interactive or background DL 384 kbps RAB and SRB for DCCH (see 5.4.2.1.2.3). In case of using DPCH, however, SF=8 is applied for it (see 5.4.1.29.2.3). There is no reason to apply different SFs between PDSCH and DPCH for the identical RAB/SRB combination. Considering code shortage problem, SF for PDSCH was changed from 4 to 8.

17. Addition of a TF of 3x336 bits for interactive or background DL 64 kbps RAB
A TF of 3x336 bits for interactive or background DL 64 kbps RAB was added to avoid additional transmission delay.

18. Change of the structure of section 5.4.3 Combinations on SCCPCH
The table of TrCh parameters was divided into several tables for each TrCh to align with the structure of the section for DPCH.

19. Clarification of TFs for no data
Two TFs for no data can be used as alternatives: 0 TrBlk or 0 TrBlk size. It is clarified which TF should be used.

20. CRC attachment for 0 TrBlk size
It is clarified that CRC attachment for 0 TrBlk size is applied to AMR RAB subflow#1. This function is beneficial for BLER measurement for outer-loop TPC and for improvement of BTFD performance.

21. Clarification of PhyCh to which SRBs are mapped
In table 3, PhyChs to which SRBs are mapped were clarified.