

## Appendix B

### Uplink Physical Channel

#### B.1 Dedicated uplink physical channels

Dedicated physical channels carry user data specific to a given user's mobile. There is only one type of dedicated physical channel, the DPCH. The DPCH carries user data in its data subchannel, the dedicated physical control channel (DPDCH), and L1 control information in its control subchannel, the dedicated physical control channel (DPCCH). The multiplexing of the DPDCH and DPCCH differs between the downlink and uplink. In the downlink the two subchannels are time multiplexed to form the DPCH.

The physical layer control information carried on the DPCCH is made up of known pilot bits, feedback commands for closed loop transmit diversity and SSST (FBI bits, present only in the uplink DPCCH) and TFCI bits. Again, the pilot bits are a predefined sequence which can be used at the receiver for channel estimation.

In the uplink DPCH the control and data information, the DPCCH and the DPDCH, are I/Q code multiplexed with a frame and slot structure. As in the downlink, there is a list of slot formats specified that define the number of bits per field as shown in table B.1 and table B.2. The slot formats for compressed mode have been omitted from these tables. Unlike in the downlink, where the slot format in the uplink is chosen dynamically by the physical layer depending on the number of bits to be transmitted and this may change on a frame by frame basis. This is possible because every mobile uses its own scrambling code, so that there is no need for centralized OVSF code assignment. In both the uplink and downlink there is always exactly one DPCCH but there may be none, one or several DPDCHs.

Table B.1 Uplink DPDCH slot formats

Slot format $i^{th}$	Channel bit rate (kbps)	Channel symbol rate (ksps)	SF	Bits/frame	Bits/slot	$N_{data}$
0	15	15	256	150	10	10
1	30	30	128	300	20	20
2	60	60	64	600	40	40
3	120	120	32	1200	80	80
4	240	240	16	2400	160	160
5	480	480	8	4800	320	320
6	960	960	4	9600	640	640

Table B.2 Uplink DPCCH slot formats

Slot format $i^{th}$	Channel bit rate (kbps)	Channel symbol rate (ksps)	SF	Bits/frame	Bits/slot	$N_{pilot}$	$N_{TPC}$	$N_{TFCI}$	$N_{FBI}$
0	15	15	256	150	10	6	2	2	0
1	15	15	256	150	10	8	2	0	0
2	15	15	256	150	10	5	2	2	1
3	15	15	256	150	10	7	2	0	1
4	15	15	256	150	10	6	2	0	2
5	15	15	256	150	10	5	1	2	2