TSG-RAN Meeting #13
Beijing, China, 18 - 21, September, 2001

RP-010522

Title: **Agreed CRs (R99 and Rel-4 Category A) to TS 25.221**

Source: **TSG-RAN WG1**

Agenda item: **8.1.3**

No.	Spec	CR	Rev	R1 T-doc	Subject	Release	Cat	W/I Code	V_old	V_new
1	25.221	056	-	R1-01-0781	TFCI Terminology	R99	F	TEI	3.7.0	3.8.0
2	25.221	057	-	R1-01-0781	TFCI Terminology	REL-4	A	TEI	4.1.0	4.2.0
3	25.221	060	-	R1-01-0933	Clarification of notations in TS25.221 and TS25.223	R99	F	TEI	3.7.0	3.8.0
4	25.221	063	-	R1-01-0933	Clarification of notations in TS25.221 and TS25.223	REL-4	A	TEI	4.1.0	4.2.0
5	25.221	061	-	R1-01-0811	Addition and correction of the reference	R99	F	TEI	3.7.0	3.8.0
6	25.221	062	-	R1-01-0811	Addition and correction of the reference	REL-4	A	TEI	4.1.0	4.2.0

3GPP TSG RAN Meeting #13 ***R1-01-0781***
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CR-Form-v3

CHANGE REQUEST

⌘ **25.221** **CR** **056** ⌘ rev **-** ⌘ Current version: **3.7.0** ⌘

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Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network **X** Core Network ☐

Title:	⌘	TFCI Terminology
Source:	⌘	TSG RAN WG1
Work item code:	⌘	TEI
Date:	⌘	20.08.2001
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
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R97 (Release 1997)
R98 (Release 1998)
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REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	The Terminology of the TFCI is corrected in this CR, because the current usage of the term TFCI, TFCI information and TFCI code word can cause confusion and misunderstandings
Summary of change:	⌘	TFCI is the indicator, indicating the TFC and the term TFCI code word is used for the coded TFCI bits after FEC.
Consequences if not approved:	⌘	Possible misunderstandings

Clauses affected:	⌘	5.2.2.4, 5.2.2.5, 5.2.2.6		
Other specs affected:	⌘	**X** Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	TS 25.222
Other comments:	⌘			

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

5.2.2.4 Transmission of TFCI

All burst types 1, 2 and 3 provide the possibility for transmission of TFCI.

The transmission of TFCI is negotiated at call setup and can be re-negotiated during the call. For each CCTrCH it is indicated by higher layer signalling, which TFCI format is applied. Additionally for each allocated timeslot it is signalled individually whether that timeslot carries the TFCI or not. The TFCI is always present in the first timeslot in a radio frame for each CCTrCH. If a time slot contains the TFCI, then it is always transmitted using the first allocated channelisation code in the timeslot, according to the order in the higher layer allocation message.

The transmission of TFCI is done in the data parts of the respective physical channel. In DL the TFCI code word bits and data bits are subject to the same spreading procedure as depicted in [8]. In UL, independent of the SF that is applied to the data symbols in the burst, the data in the TFCI field are always spread with SF=16 using the channelisation code in the lowest branch of the allowed OVSF sub tree, as depicted in [8]. Hence the midamble structure and length is not changed. The TFCI ~~information~~ code word is to be transmitted directly adjacent to the midamble, possibly after the TPC. Figure 7 shows the position of the TFCI code word in a traffic burst in downlink. Figure 8 shows the position of the TFCI code word in a traffic burst in uplink.

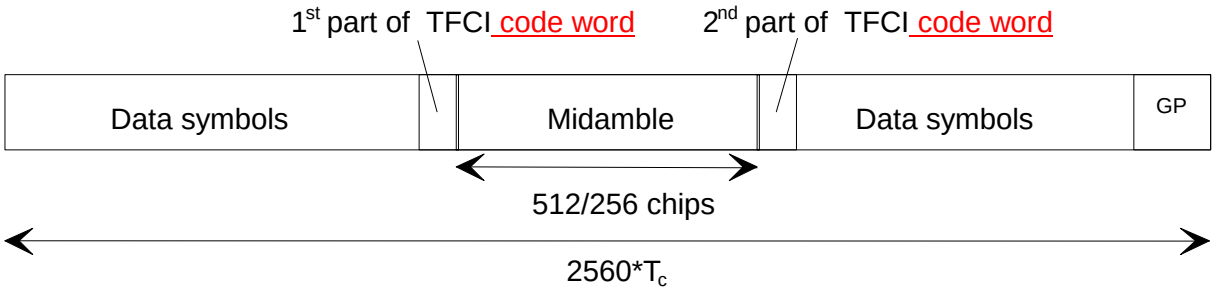

Figure 7: Position of the TFCI ~~information~~ code word in the traffic burst in case of downlink

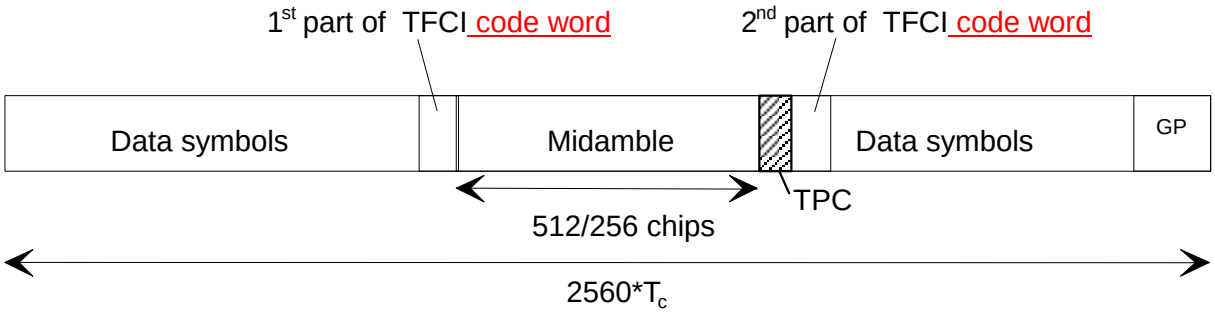

Figure 8: Position of the TFCI ~~information~~ code word in the traffic burst in case of uplink

Two examples of TFCI transmission in the case of multiple DPCHs used for a connection are given in the Figure 9 and Figure 10 below. Combinations of the two schemes shown are also applicable.

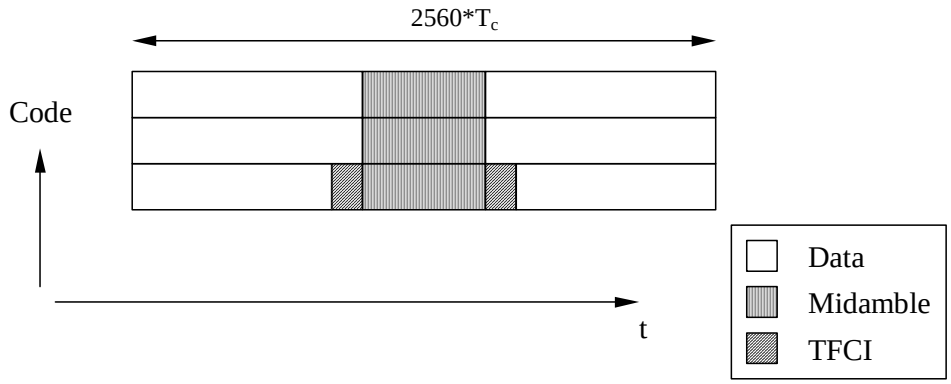

Figure 9: Example of TFCI transmission with physical channels multiplexed in code domain

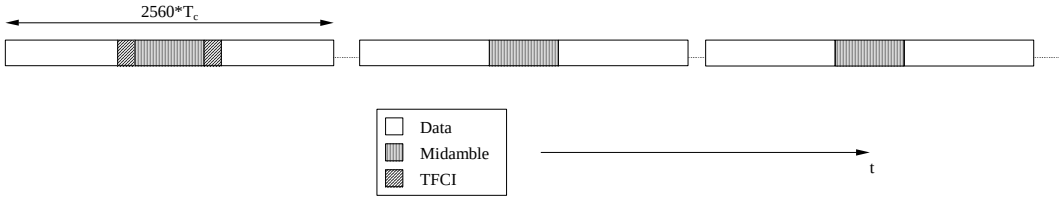

Figure 10: Example of TFCI transmission with physical channels multiplexed in time domain

In case the Node B receives an invalid TFI combination on the DCHs mapped to one CCTrCH the procedure described in [16] shall be applied. According to this procedure DTX shall be applied to all DPCHs to which the CCTrCH is mapped to.

5.2.2.5 Transmission of TPC

All burst types 1, 2 and 3 for dedicated channels provide the possibility for transmission of TPC in uplink.

The transmission of TPC is done in the data parts of the traffic burst. Independent of the SF that is applied to the data symbols in the burst, the data in the TPC field are always spread with SF=16 using the channelisation code in the lowest branch of the allowed OVSF sub tree, as depicted in [8]. Hence the midamble structure and length is not changed. The TPC information is to be transmitted directly after the midamble. Figure 11 shows the position of the TPC in a traffic burst.

For every user the TPC information shall be transmitted at least once per transmitted frame. If a TFCI is applied for a CCTrCH, TPC shall be transmitted with the same channelization codes and in the same timeslots as the TFCI. If no TFCI is applied for a CCTrCH, TPC shall be transmitted using the first allocated channelisation code and the first allocated timeslot, according to the order in the higher layer allocation message.

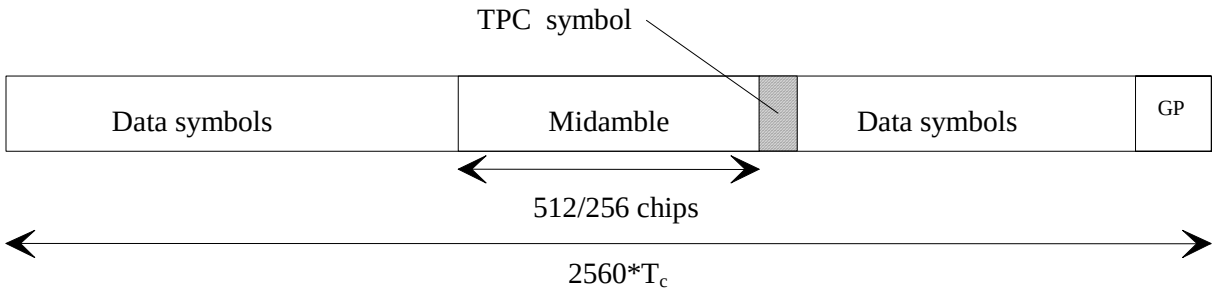

Figure 11: Position of TPC information in the traffic burst

The length of the TPC command is one symbol. The relationship between the TPC symbol and the TPC command is shown in table 4a.

Table 4a: TPC bit pattern

TPC Bits	TPC command	Meaning
00	'Down'	Decrease Tx Power
11	'Up'	Increase Tx Power

5.2.2.6 Timeslot formats

5.2.2.6.1 Downlink timeslot formats

The downlink timeslot format depends on the spreading factor, midamble length and on the number of the TFCI code word bits, as depicted in the table 5a.

Table 5a: Time slot formats for the Downlink

Slot Format #	Spreading Factor	Midamble length (chips)	$N_{TFCI\ code\ word}$ (bits)	Bits/slot	$N_{Data/Slot}$ (bits)	$N_{data/data\ field}$ (bits)
0	16	512	0	244	244	122
1	16	512	4	244	240	120
2	16	512	8	244	236	118
3	16	512	16	244	228	114
4	16	512	32	244	212	106
5	16	256	0	276	276	138
6	16	256	4	276	272	136
7	16	256	8	276	268	134
8	16	256	16	276	260	130
9	16	256	32	276	244	122
10	1	512	0	3904	3904	1952
11	1	512	4	3904	3900	1950
12	1	512	8	3904	3896	1948
13	1	512	16	3904	3888	1944
14	1	512	32	3904	3872	1936
15	1	256	0	4416	4416	2208
16	1	256	4	4416	4412	2206
17	1	256	8	4416	4408	2204
18	1	256	16	4416	4400	2200
19	1	256	32	4416	4384	2192

5.2.2.6.2 Uplink timeslot formats

The uplink timeslot format depends on the spreading factor, midamble length, guard period length and on the number of the TFCI code word bits. Due to TPC, different amount of bits are mapped to the two data fields. The timeslot formats are depicted in the table 5b.

Table 5b: Timeslot formats for the Uplink

Slot Format #	Spreading Factor	Midamble length (chips)	Guard Period (chips)	$N_{TFCI\ code\ word}$ (bits)	N_{TPC} (bits)	Bits/slot	N_{Data} /Slot (bits)	$N_{data/data\ field(1)}$ (bits)	$N_{data/data\ field(2)}$ (bits)
0	16	512	96	0	0	244	244	122	122
1	16	512	96	0	2	244	242	122	120
2	16	512	96	4	2	244	238	120	118
3	16	512	96	8	2	244	234	118	116
4	16	512	96	16	2	244	226	114	112
5	16	512	96	32	2	244	210	106	104
6	16	256	96	0	0	276	276	138	138
7	16	256	96	0	2	276	274	138	136
8	16	256	96	4	2	276	270	136	134
9	16	256	96	8	2	276	266	134	132
10	16	256	96	16	2	276	258	130	128
11	16	256	96	32	2	276	242	122	120
12	8	512	96	0	0	488	488	244	244
13	8	512	96	0	2	486	484	244	240
14	8	512	96	4	2	482	476	240	236
15	8	512	96	8	2	478	468	236	232
16	8	512	96	16	2	470	452	228	224
17	8	512	96	32	2	454	420	212	208
18	8	256	96	0	0	552	552	276	276
19	8	256	96	0	2	550	548	276	272
20	8	256	96	4	2	546	540	272	268
21	8	256	96	8	2	542	532	268	264
22	8	256	96	16	2	534	516	260	256
23	8	256	96	32	2	518	484	244	240
24	4	512	96	0	0	976	976	488	488
25	4	512	96	0	2	970	968	488	480
26	4	512	96	4	2	958	952	480	472
27	4	512	96	8	2	946	936	472	464
28	4	512	96	16	2	922	904	456	448
29	4	512	96	32	2	874	840	424	416
30	4	256	96	0	0	1104	1104	552	552
31	4	256	96	0	2	1098	1096	552	544
32	4	256	96	4	2	1086	1080	544	536
33	4	256	96	8	2	1074	1064	536	528
34	4	256	96	16	2	1050	1032	520	512
35	4	256	96	32	2	1002	968	488	480
36	2	512	96	0	0	1952	1952	976	976
37	2	512	96	0	2	1938	1936	976	960
38	2	512	96	4	2	1910	1904	960	944
39	2	512	96	8	2	1882	1872	944	928
40	2	512	96	16	2	1826	1808	912	896
41	2	512	96	32	2	1714	1680	848	832
42	2	256	96	0	0	2208	2208	1104	1104
43	2	256	96	0	2	2194	2192	1104	1088
44	2	256	96	4	2	2166	2160	1088	1072
45	2	256	96	8	2	2138	2128	1072	1056
46	2	256	96	16	2	2082	2064	1040	1024

Slot Format #	Spreading Factor	Midamble length (chips)	Guard Period (chips)	$N_{TFCI\ code\ word}$ (bits)	N_{TPC} (bits)	Bits/slot	N_{Data} /Slot (bits)	$N_{data/data\ field(1)}$ (bits)	$N_{data/data\ field(2)}$ (bits)
47	2	256	96	32	2	1970	1936	976	960
48	1	512	96	0	0	3904	3904	1952	1952
49	1	512	96	0	2	3874	3872	1952	1920
50	1	512	96	4	2	3814	3808	1920	1888
51	1	512	96	8	2	3754	3744	1888	1856
52	1	512	96	16	2	3634	3616	1824	1792
53	1	512	96	32	2	3394	3360	1696	1664
54	1	256	96	0	0	4416	4416	2208	2208
55	1	256	96	0	2	4386	4384	2208	2176
56	1	256	96	4	2	4326	4320	2176	2144
57	1	256	96	8	2	4266	4256	2144	2112
58	1	256	96	16	2	4146	4128	2080	2048
59	1	256	96	32	2	3906	3872	1952	1920
60	16	512	192	0	0	232	232	122	110
61	16	512	192	0	2	232	230	122	108
62	16	512	192	4	2	232	226	120	106
63	16	512	192	8	2	232	222	118	104
64	16	512	192	16	2	232	214	114	100
65	16	512	192	32	2	232	198	106	92
66	8	512	192	0	0	464	464	244	220
67	8	512	192	0	2	462	460	244	216
68	8	512	192	4	2	458	452	240	212
69	8	512	192	8	2	454	444	236	208
70	8	512	192	16	2	446	428	228	200
71	8	512	192	32	2	430	396	212	184
72	4	512	192	0	0	928	928	488	440
73	4	512	192	0	2	922	920	488	432
74	4	512	192	4	2	910	904	480	424
75	4	512	192	8	2	898	888	472	416
76	4	512	192	16	2	874	856	456	400
77	4	512	192	32	2	826	792	424	368
78	2	512	192	0	0	1856	1856	976	880
79	2	512	192	0	2	1842	1840	976	864
80	2	512	192	4	2	1814	1808	960	848
81	2	512	192	8	2	1786	1776	944	832
82	2	512	192	16	2	1730	1712	912	800
83	2	512	192	32	2	1618	1584	848	736
84	1	512	192	0	0	3712	3712	1952	1760
85	1	512	192	0	2	3682	3680	1952	1728
86	1	512	192	4	2	3622	3616	1920	1696
87	1	512	192	8	2	3562	3552	1888	1664
88	1	512	192	16	2	3442	3424	1824	1600
89	1	512	192	32	2	3202	3168	1696	1472

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5.2.2.4 Transmission of TFCI

All burst types 1, 2 and 3 provide the possibility for transmission of TFCI.

The transmission of TFCI is negotiated at call setup and can be re-negotiated during the call. For each CCTrCH it is indicated by higher layer signalling, which TFCI format is applied. Additionally for each allocated timeslot it is signalled individually whether that timeslot carries the TFCI or not. The TFCI is always present in the first timeslot in a radio frame for each CCTrCH. If a time slot contains the TFCI, then it is always transmitted using the first allocated channelisation code in the timeslot, according to the order in the higher layer allocation message.

The transmission of TFCI is done in the data parts of the respective physical channel. In DL the TFCI code word bits and data bits are subject to the same spreading procedure as depicted in [8]. In UL, independent of the SF that is applied to the data symbols in the burst, the data in the TFCI field are always spread with SF=16 using the channelisation code in the lowest branch of the allowed OVSF sub tree, as depicted in [8]. Hence the midamble structure and length is not changed. The TFCI ~~information~~ code word is to be transmitted directly adjacent to the midamble, possibly after the TPC. Figure 7 shows the position of the TFCI code word in a traffic burst in downlink. Figure 8 shows the position of the TFCI code word in a traffic burst in uplink.

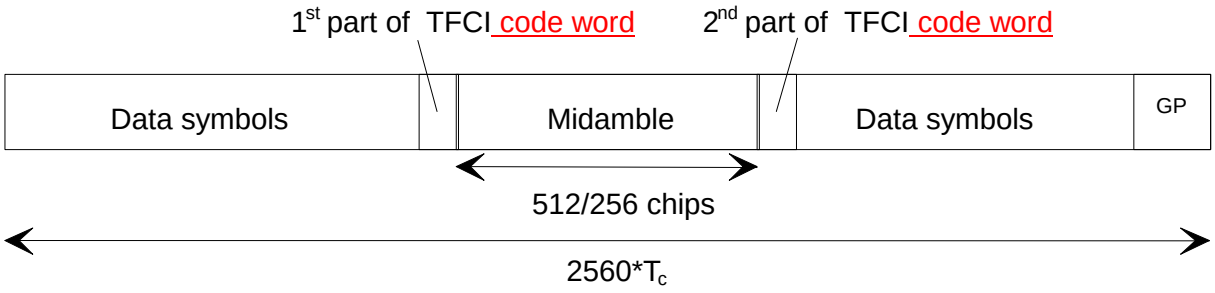

Figure 7: Position of the TFCI ~~information~~ code word in the traffic burst in case of downlink

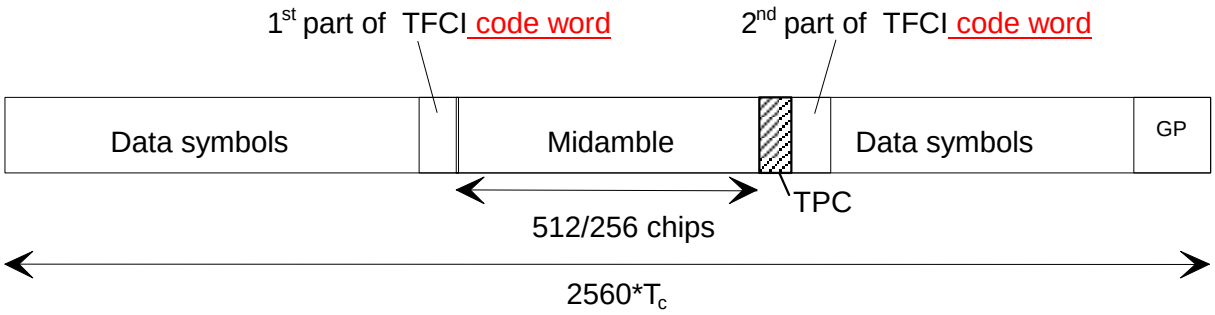

Figure 8: Position of the TFCI ~~information~~ code word in the traffic burst in case of uplink

Two examples of TFCI transmission in the case of multiple DPCHs used for a connection are given in the Figure 9 and Figure 10 below. Combinations of the two schemes shown are also applicable.

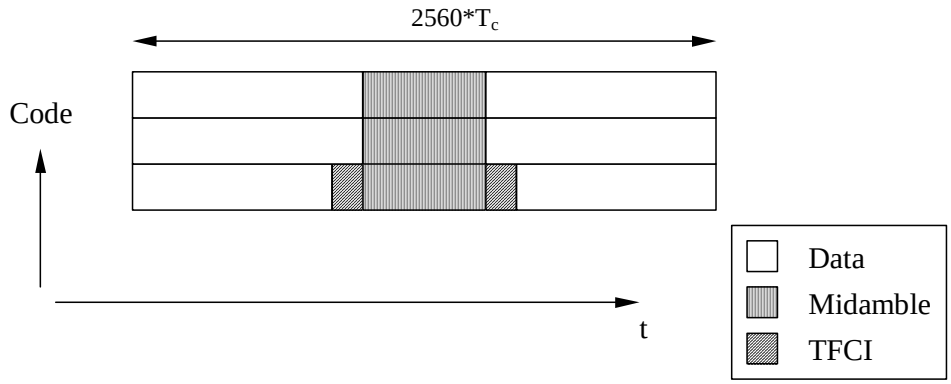

Figure 9: Example of TFCI transmission with physical channels multiplexed in code domain

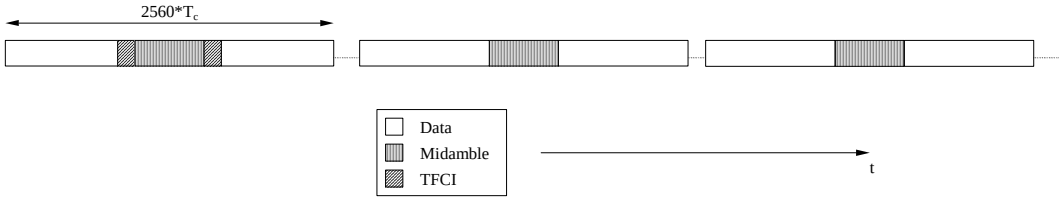

Figure 10: Example of TFCI transmission with physical channels multiplexed in time domain

In case the Node B receives an invalid TFI combination on the DCHs mapped to one CCTrCH the procedure described in [16] shall be applied. According to this procedure DTX shall be applied to all DPCHs to which the CCTrCH is mapped to.

5.2.2.5 Transmission of TPC

All burst types 1, 2 and 3 for dedicated channels provide the possibility for transmission of TPC in uplink.

The transmission of TPC is done in the data parts of the traffic burst. Independent of the SF that is applied to the data symbols in the burst, the data in the TPC field are always spread with SF=16 using the channelisation code in the lowest branch of the allowed OVSF sub tree, as depicted in [8]. Hence the midamble structure and length is not changed. The TPC information is to be transmitted directly after the midamble. Figure 11 shows the position of the TPC in a traffic burst.

For every user the TPC information shall be transmitted at least once per transmitted frame. If a TFCI is applied for a CCTrCH, TPC shall be transmitted with the same channelization codes and in the same timeslots as the TFCI. If no TFCI is applied for a CCTrCH, TPC shall be transmitted using the first allocated channelisation code and the first allocated timeslot, according to the order in the higher layer allocation message.

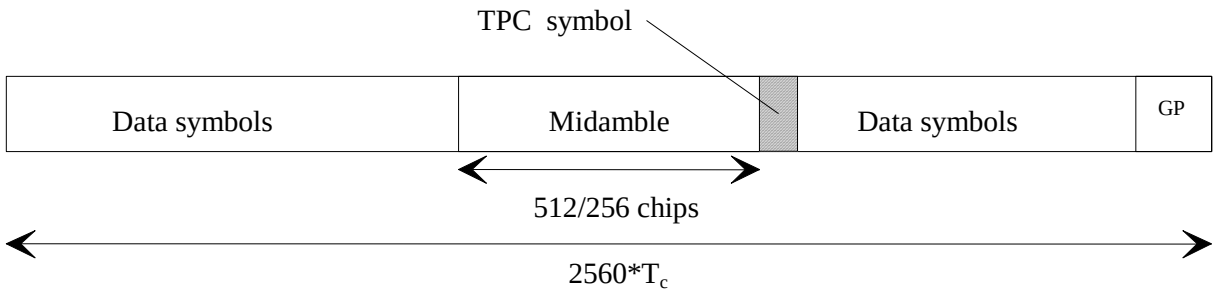

Figure 11: Position of TPC information in the traffic burst

The length of the TPC command is one symbol. The relationship between the TPC symbol and the TPC command is shown in table 4a.

Table 4a: TPC bit pattern

TPC Bits	TPC command	Meaning
00	'Down'	Decrease Tx Power
11	'Up'	Increase Tx Power

5.2.2.6 Timeslot formats

5.2.2.6.1 Downlink timeslot formats

The downlink timeslot format depends on the spreading factor, midamble length and on the number of the TFCI code word bits, as depicted in the table 5a.

Table 5a: Time slot formats for the Downlink

Slot Format #	Spreading Factor	Midamble length (chips)	$N_{TFCI\ code\ word}$ (bits)	Bits/slot	$N_{Data/Slot}$ (bits)	$N_{data/data\ field}$ (bits)
0	16	512	0	244	244	122
1	16	512	4	244	240	120
2	16	512	8	244	236	118
3	16	512	16	244	228	114
4	16	512	32	244	212	106
5	16	256	0	276	276	138
6	16	256	4	276	272	136
7	16	256	8	276	268	134
8	16	256	16	276	260	130
9	16	256	32	276	244	122
10	1	512	0	3904	3904	1952
11	1	512	4	3904	3900	1950
12	1	512	8	3904	3896	1948
13	1	512	16	3904	3888	1944
14	1	512	32	3904	3872	1936
15	1	256	0	4416	4416	2208
16	1	256	4	4416	4412	2206
17	1	256	8	4416	4408	2204
18	1	256	16	4416	4400	2200
19	1	256	32	4416	4384	2192

5.2.2.6.2 Uplink timeslot formats

The uplink timeslot format depends on the spreading factor, midamble length, guard period length and on the number of the TFCI code word bits. Due to TPC, different amount of bits are mapped to the two data fields. The timeslot formats are depicted in the table 5b.

Table 5b: Timeslot formats for the Uplink

Slot Format #	Spreading Factor	Midamble length (chips)	Guard Period (chips)	$N_{TFCI\ code\ word}$ (bits)	N_{TPC} (bits)	Bits/slot	$N_{Data/Slot}$ (bits)	$N_{data/data\ field(1)}$ (bits)	$N_{data/data\ field(2)}$ (bits)
0	16	512	96	0	0	244	244	122	122
1	16	512	96	0	2	244	242	122	120
2	16	512	96	4	2	244	238	120	118
3	16	512	96	8	2	244	234	118	116
4	16	512	96	16	2	244	226	114	112
5	16	512	96	32	2	244	210	106	104
6	16	256	96	0	0	276	276	138	138
7	16	256	96	0	2	276	274	138	136
8	16	256	96	4	2	276	270	136	134
9	16	256	96	8	2	276	266	134	132
10	16	256	96	16	2	276	258	130	128
11	16	256	96	32	2	276	242	122	120
12	8	512	96	0	0	488	488	244	244
13	8	512	96	0	2	486	484	244	240
14	8	512	96	4	2	482	476	240	236
15	8	512	96	8	2	478	468	236	232
16	8	512	96	16	2	470	452	228	224
17	8	512	96	32	2	454	420	212	208
18	8	256	96	0	0	552	552	276	276
19	8	256	96	0	2	550	548	276	272
20	8	256	96	4	2	546	540	272	268
21	8	256	96	8	2	542	532	268	264
22	8	256	96	16	2	534	516	260	256
23	8	256	96	32	2	518	484	244	240
24	4	512	96	0	0	976	976	488	488
25	4	512	96	0	2	970	968	488	480
26	4	512	96	4	2	958	952	480	472
27	4	512	96	8	2	946	936	472	464
28	4	512	96	16	2	922	904	456	448
29	4	512	96	32	2	874	840	424	416
30	4	256	96	0	0	1104	1104	552	552
31	4	256	96	0	2	1098	1096	552	544
32	4	256	96	4	2	1086	1080	544	536
33	4	256	96	8	2	1074	1064	536	528
34	4	256	96	16	2	1050	1032	520	512
35	4	256	96	32	2	1002	968	488	480
36	2	512	96	0	0	1952	1952	976	976
37	2	512	96	0	2	1938	1936	976	960
38	2	512	96	4	2	1910	1904	960	944
39	2	512	96	8	2	1882	1872	944	928
40	2	512	96	16	2	1826	1808	912	896
41	2	512	96	32	2	1714	1680	848	832
42	2	256	96	0	0	2208	2208	1104	1104
43	2	256	96	0	2	2194	2192	1104	1088
44	2	256	96	4	2	2166	2160	1088	1072
45	2	256	96	8	2	2138	2128	1072	1056
46	2	256	96	16	2	2082	2064	1040	1024

Slot Format #	Spreading Factor	Midamble length (chips)	Guard Period (chips)	$N_{TFCI\ code\ word}$ (bits)	N_{TPC} (bits)	Bits/slot	$N_{Data/Slot}$ (bits)	$N_{data/data\ field(1)}$ (bits)	$N_{data/data\ field(2)}$ (bits)
47	2	256	96	32	2	1970	1936	976	960
48	1	512	96	0	0	3904	3904	1952	1952
49	1	512	96	0	2	3874	3872	1952	1920
50	1	512	96	4	2	3814	3808	1920	1888
51	1	512	96	8	2	3754	3744	1888	1856
52	1	512	96	16	2	3634	3616	1824	1792
53	1	512	96	32	2	3394	3360	1696	1664
54	1	256	96	0	0	4416	4416	2208	2208
55	1	256	96	0	2	4386	4384	2208	2176
56	1	256	96	4	2	4326	4320	2176	2144
57	1	256	96	8	2	4266	4256	2144	2112
58	1	256	96	16	2	4146	4128	2080	2048
59	1	256	96	32	2	3906	3872	1952	1920
60	16	512	192	0	0	232	232	122	110
61	16	512	192	0	2	232	230	122	108
62	16	512	192	4	2	232	226	120	106
63	16	512	192	8	2	232	222	118	104
64	16	512	192	16	2	232	214	114	100
65	16	512	192	32	2	232	198	106	92
66	8	512	192	0	0	464	464	244	220
67	8	512	192	0	2	462	460	244	216
68	8	512	192	4	2	458	452	240	212
69	8	512	192	8	2	454	444	236	208
70	8	512	192	16	2	446	428	228	200
71	8	512	192	32	2	430	396	212	184
72	4	512	192	0	0	928	928	488	440
73	4	512	192	0	2	922	920	488	432
74	4	512	192	4	2	910	904	480	424
75	4	512	192	8	2	898	888	472	416
76	4	512	192	16	2	874	856	456	400
77	4	512	192	32	2	826	792	424	368
78	2	512	192	0	0	1856	1856	976	880
79	2	512	192	0	2	1842	1840	976	864
80	2	512	192	4	2	1814	1808	960	848
81	2	512	192	8	2	1786	1776	944	832
82	2	512	192	16	2	1730	1712	912	800
83	2	512	192	32	2	1618	1584	848	736
84	1	512	192	0	0	3712	3712	1952	1760
85	1	512	192	0	2	3682	3680	1952	1728
86	1	512	192	4	2	3622	3616	1920	1696
87	1	512	192	8	2	3562	3552	1888	1664
88	1	512	192	16	2	3442	3424	1824	1600
89	1	512	192	32	2	3202	3168	1696	1472

6.2.2.1 Transmission of TFCI

The traffic burst format provides the possibility for transmission of TFCI in uplink and downlink.

The transmission of TFCI is negotiated at call setup and can be re-negotiated during the call. For each CCTrCH it is indicated by higher layer signalling, which TFCI format is applied. Additionally for each allocated timeslot it is signalled individually whether that timeslot carries the TFCI or not. If a time slot contains the TFCI, then it is always transmitted using the first allocated channelisation code in the timeslot, according to the order in the higher layer allocation message.

The transmission of TFCI is done in the data parts of the respective physical channel, this means that TFCI code word bits and data bits are subject to the same spreading procedure as depicted in [8]. Hence the midamble structure and length is not changed.

The ~~encoded~~ TFCI ~~symbols~~ code word bits are equally distributed between the two subframes and the respective data fields. The TFCI ~~information~~ code word is to be transmitted possibly either directly adjacent to the midamble or after the SS and TPC symbols. Figure 23 shows the position of the TFCI code word in a traffic burst, if neither SS nor TPC are transmitted. Figure 24 shows the position of the TFCI code word in a traffic burst , if SS and TPC are transmitted.

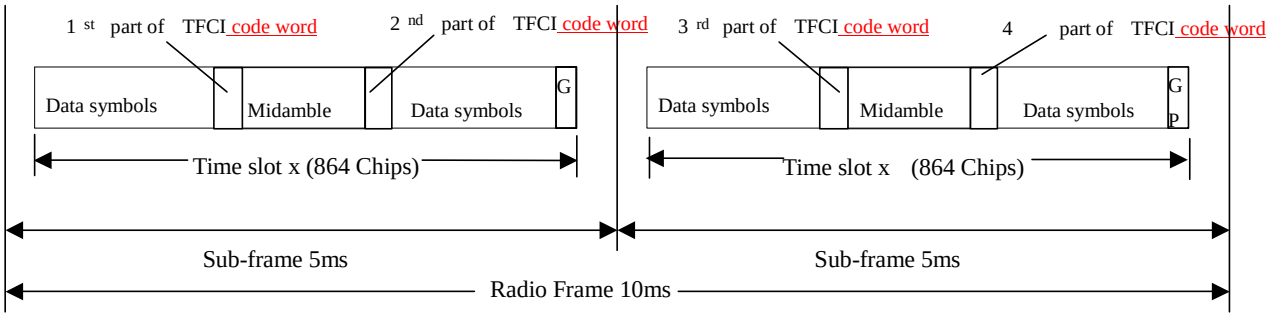

Figure 23: Position of the TFCI ~~information~~ code word in the traffic burst in case of no TPC and SS in 1.28 Mcps TDD

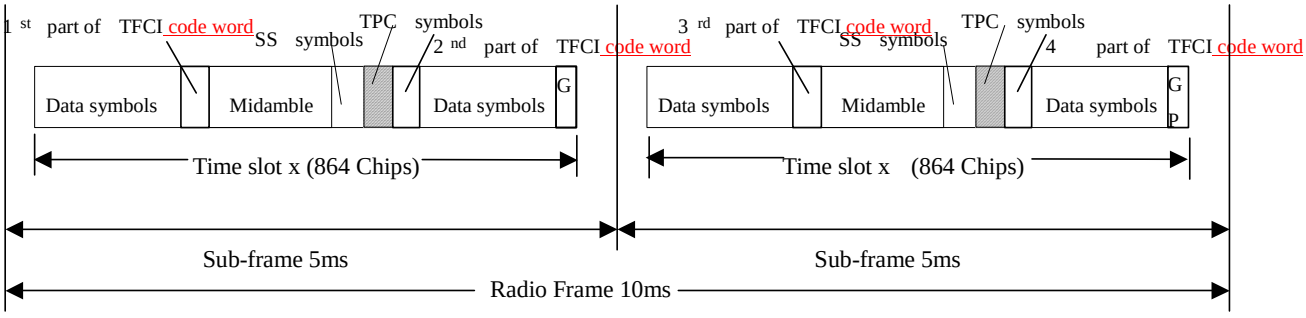

Figure 24:Position of the TFCI ~~information~~ code word in the traffic burst in case of TPC and SS in 1.28 Mcps TDD

6.2.2.3 Transmission of SS

The burst type for dedicated channels provides the possibility for transmission of uplink synchronisation control (ULSC).

The transmission of ULSC is done in the data parts of the traffic burst. Hence the midamble structure and length is not changed. The ULSC information is to be transmitted directly after the midamble. Figure 26 shows the position of the SS command in a traffic burst.

For every user the ULSC information shall be transmitted at least once per transmitted sub-frame. By default the following rules apply:

1. If a TFCI is applied for a CCTrCH, the SS command(s) shall be transmitted using the same channelisation code and the same timeslots as the TFCI.

2. If no TFCI is applied for a CCTrCH, the SS command(s) shall be transmitted using the first allocated channelisation code and the first allocated timeslot, according to the order in the higher layer allocation message.

Apart from the default rules other allocations of SS commands are possible according higher layer signalling – e.g. the transmission of more then one SS command (on more than one time slot).

The SS command is spread with the same spreading factor (SF) and spreading code as the data parts of the respective physical channel.

The SS is utilised to command a timing adjustment by (k/8) Tc each M sub-frames, where Tc is the chip period. The default k and M values are signalled by the network by means of system information that is broadcast in the cell. The SS, as one of L1 signals, is to be transmitted once per 5ms sub-frame.

M (1-8) and k (1-8) can be adjusted during call setup or readjusted during the call.

Note: The smallest step for the SS signalled by the UTRAN is 1/8 Tc. For the UE capabilities regarding the SS adjustment of the UE it is suggested to set the tolerance for the executed command to be [1/9;1/7] Tc.

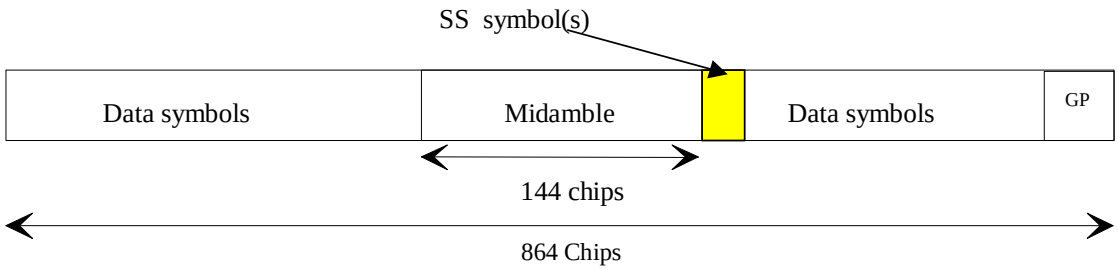

Figure 26: Position of ULSC information in the traffic burst (downlink and uplink)

Note that for the uplink where there's no SS symbol used, the SS symbol space is reserved for future use. This can keep UL and DL slots the same structure.

For the number of layer 1 symbols there are 3 possibilities configurable for each channelisation code during the call setup:

- one SS symbol
- no SS symbol
- 16/SF SS symbols

So, in case 3, when SF=1, there are 16 SS symbols which correspond to 32 bits (for QPSK) and 48 bits (for 8PSK).

Each of the SS symbols in the DL will be associated with an UL time slot depending on the allocated UL time slots and the allocated SS symbols in the DL.

Note: Even though the different time slots of the UE are controlled with independent SS commands, the UE is not in need to execute SS commands leading to a deviation of more than [3] chip with respect to the average timing advance applied by the UE.

The synchronisation shift commands for each UL time slot (all channelisation codes on that time slot have the same SS command) will be distributed to the following rules:

1. The UL time slots the SS commands are intended for will be numbered form the first to the last UL time slot occupied by the regarded UE (starting with 0) considering all CCTrCHs allocated to that UE.

2. The commanding SS symbols on all downlink CCTrCHs allocated to one UE are numbered consecutively starting with zero according to the following rules:

   a) The numbers of the SS commands of a regarded DL time slot are lower than those of DL time slots being transmitted after that time slot

   b) Within a DL time slot the numbers of the SS commands of a regarded channelisation code are lower than those of channelisation codes having a bigger spreading code number

      The spreading code number is defined by the following table: (see TS 25.223)

Spreading code number	SF (Q)	Walsh code number (k)
0	16	$\mathbf{c}_{Q=16}^{(k=1)}$
	...	
15	16	$\mathbf{c}_{Q=16}^{(k=16)}$
	Spreading factors 2-8 are nor used in DL	
30	1	$\mathbf{c}_{Q=1}^{(k=1)}$

   c) Within a channelisation code numbers of the SS commands are lower than those of SS commands being transmitted after that time

The following equation is used to determine the UL time slot which is controlled by the regarded SS symbol:

$$UL_{pos} = (SFN' \cdot N_{SSsymbols} + SS_{pos}) \bmod (N_{ULslot}),$$

where

UL_{pos} is the number of the controlled uplink time slot.

SFN' is the system frame number counting the sub-frames. The system frame number of the radio frames (SFN) can be derived from SFN' by

SFN=SFN' div 2, where div is the reminder free division operation.

$N_{SSsymbols}$ is the number of SS symbols in a frame.

SS_{pos} is the number of the regarded SS symbol within the sub-frame.

N_{ULslot} is the number of UL slots in a frame.

The relationship between the SS Bits and the SS command for QPSK is the given in table 12:

Table 12: Coding of the SS for QPSK

SS Bits	SS command	Meaning
00	'Down'	Decrease synchronisation shift by k/8 Tc
11	'Up'	Increase synchronisation shift by k/8 Tc
01	'Do nothing'	No change

The relationship between the SS Bits and the SS command for 8PSK is given in table 13:

Table 13: Coding of the SS for 8PSK

SS Bits	SS command	Meaning
000	'Down'	Decrease synchronisation shift by k/8 Tc
110	'Up'	Increase synchronisation shift by k/8 Tc
011	'Do nothing'	No change

6.2.2.4 Timeslot formats

The timeslot format depends on the spreading factor, the number of the TFCI code word bits, the number of SS and TPC symbols and the applied modulation scheme (QPSK/8PSK) as depicted in the following tables.

6.2.2.4.1 Timeslot formats for QPSK

6.2.2.4.1.1 Downlink timeslot formats

Table 14 : Time slot formats for the Downlink

Slot Format #	Spreading Factor	Midamble length (chips)	$N_{TFCI\ code\ word}$ (bits)	N_{SS} & N_{TPC} (bits)	Bits/slot	$N_{Data/Slot}$ (bits)	$N_{data/data\ field(1)}$ (bits)	$N_{data/data\ field(2)}$ (bits)
0	16	144	0	0 & 0	88	88	44	44
1	16	144	4	0 & 0	88	86	42	44
2	16	144	8	0 & 0	88	84	42	42
3	16	144	16	0 & 0	88	80	40	40
4	16	144	32	0 & 0	88	72	36	36
5	16	144	0	2 & 2	88	84	44	40
6	16	144	4	2 & 2	88	82	42	40
7	16	144	8	2 & 2	88	80	42	38
8	16	144	16	2 & 2	88	76	40	36
9	16	144	32	2 & 2	88	68	36	32
10	1	144	0	0 & 0	1408	1408	704	704
11	1	144	4	0 & 0	1408	1406	702	704
12	1	144	8	0 & 0	1408	1404	702	702
13	1	144	16	0 & 0	1408	1400	700	700
14	1	144	32	0 & 0	1408	1392	696	696
15	1	144	0	2 & 2	1408	1404	704	700
16	1	144	4	2 & 2	1408	1402	702	700
17	1	144	8	2 & 2	1408	1400	702	698
18	1	144	16	2 & 2	1408	1396	700	696
19	1	144	32	2 & 2	1408	1388	696	692
20	1	144	0	32 & 32	1408	1344	704	640
21	1	144	4	32 & 32	1408	1342	702	640
22	1	144	8	32 & 32	1408	1340	702	638
23	1	144	16	32 & 32	1408	1336	700	636
24	1	144	32	32 & 32	1408	1328	696	632

6.2.2.4.1.2 Uplink timeslot formats

Table 15 : Time slot formats for the Uplink

Slot Format #	Spreading Factor	Midamble length (chips)	$N_{TFCI\ code\ word}$ (bits)	N_{SS} & N_{TPC} (bits)	Bits/ slot	$N_{Data/Slot}$ (bits)	$N_{data/data\ field(1)}$ (bits)	$N_{data/data\ field(2)}$ (bits)
0	16	144	0	0 & 0	88	88	44	44
1	16	144	4	0 & 0	88	86	42	44
2	16	144	8	0 & 0	88	84	42	42
3	16	144	16	0 & 0	88	80	40	40
4	16	144	32	0 & 0	88	72	36	36
5	16	144	0	2 & 2	88	84	44	40
6	16	144	4	2 & 2	88	82	42	40
7	16	144	8	2 & 2	88	80	42	38
8	16	144	16	2 & 2	88	76	40	36
9	16	144	32	2 & 2	88	68	36	32
10	8	144	0	0 & 0	176	176	88	88
11	8	144	4	0 & 0	176	174	86	88
12	8	144	8	0 & 0	176	172	86	86
13	8	144	16	0 & 0	176	168	84	84
14	8	144	32	0 & 0	176	160	80	80
15	8	144	0	2 & 2	176	172	88	84
16	8	144	4	2 & 2	176	170	86	84
17	8	144	8	2 & 2	176	168	86	82
18	8	144	16	2 & 2	176	164	84	80
19	8	144	32	2 & 2	176	156	80	76
20	8	144	0	4 & 4	176	168	88	80
21	8	144	4	4 & 4	176	166	86	80
22	8	144	8	4 & 4	176	164	86	78
23	8	144	16	4 & 4	176	160	84	76
24	8	144	32	4 & 4	176	152	80	72
25	4	144	0	0 & 0	352	352	176	176
26	4	144	4	0 & 0	352	350	174	176
27	4	144	8	0 & 0	352	348	174	174
28	4	144	16	0 & 0	352	344	172	172
29	4	144	32	0 & 0	352	336	168	168
30	4	144	0	2 & 2	352	348	176	172
31	4	144	4	2 & 2	352	346	174	172
32	4	144	8	2 & 2	352	344	174	170
33	4	144	16	2 & 2	352	340	172	168
34	4	144	32	2 & 2	352	332	168	164
35	4	144	0	8 & 8	352	336	176	160
36	4	144	4	8 & 8	352	334	174	160
37	4	144	8	8 & 8	352	332	174	158
38	4	144	16	8 & 8	352	328	172	156
39	4	144	32	8 & 8	352	320	168	152
40	2	144	0	0 & 0	704	704	352	352
41	2	144	4	0 & 0	704	702	350	352
42	2	144	8	0 & 0	704	700	350	350
43	2	144	16	0 & 0	704	696	348	348
44	2	144	32	0 & 0	704	688	344	344
45	2	144	0	2 & 2	704	700	352	348
46	2	144	4	2 & 2	704	698	350	348

Slot Format #	Spreading Factor	Midamble length (chips)	$N_{TFCI\ code\ word}$ (bits)	N_{SS} & N_{TPC} (bits)	Bits/ slot	$N_{Data/Slot}$ (bits)	$N_{data/data\ field(1)}$ (bits)	$N_{data/data\ field(2)}$ (bits)
47	2	144	8	2 & 2	704	696	350	346
48	2	144	16	2 & 2	704	692	348	344
49	2	144	32	2 & 2	704	684	344	340
50	2	144	0	16 & 16	704	672	352	320
51	2	144	4	16 & 16	704	670	350	320
52	2	144	8	16 & 16	704	668	350	318
53	2	144	16	16 & 16	704	664	348	316
54	2	144	32	16 & 16	704	656	344	312
55	1	144	0	0 & 0	1408	1408	704	704
56	1	144	4	0 & 0	1408	1406	702	704
57	1	144	8	0 & 0	1408	1404	702	702
58	1	144	16	0 & 0	1408	1400	700	700
59	1	144	32	0 & 0	1408	1392	696	696
60	1	144	0	2 & 2	1408	1404	704	700
61	1	144	4	2 & 2	1408	1402	702	700
62	1	144	8	2 & 2	1408	1400	702	698
63	1	144	16	2 & 2	1408	1396	700	696
64	1	144	32	2 & 2	1408	1388	696	692
65	1	144	0	32 & 32	1408	1344	704	640
66	1	144	4	32 & 32	1408	1342	702	640
67	1	144	8	32 & 32	1408	1340	702	638
68	1	144	16	32 & 32	1408	1336	700	636
69	1	144	32	32 & 32	1408	1328	696	632

6.2.2.4.2 Time slot formats for 8PSK

The Downlink and the Uplink timeslot formats are described together in the following table.

Table 16: Timeslot formats for 8PSK modulation

Slot Format #	Spreading Factor	Midamble length (chips)	$N_{TFCI\ code\ word}$ (bits)	N_{SS} & N_{TPC} (bits)	Bits/slot	$N_{Data/Slot}$ (bits)	$N_{data/data\ field(1)}$ (bits)	$N_{data/data\ field(2)}$ (bits)
0	1	144	0	0 & 0	2112	2112	1056	1056
1	1	144	6	0 & 0	2112	2109	1053	1056
2	1	144	12	0 & 0	2112	2106	1053	1053
3	1	144	24	0 & 0	2112	2100	1050	1050
4	1	144	48	0 & 0	2112	2088	1044	1044
5	1	144	0	3 & 3	2112	2106	1056	1050
6	1	144	6	3 & 3	2112	2103	1053	1050
7	1	144	12	3 & 3	2112	2100	1053	1047
8	1	144	24	3 & 3	2112	2094	1050	1044
9	1	144	48	3 & 3	2112	2082	1044	1038
10	1	144	0	48 & 48	2112	2016	1056	960
11	1	144	6	48 & 48	2112	2013	1053	960
12	1	144	12	48 & 48	2112	2010	1053	957
13	1	144	24	48 & 48	2112	2004	1050	954
14	1	144	48	48 & 48	2112	1992	1044	948
15	16	144	0	0 & 0	132	132	66	66
16	16	144	6	0 & 0	132	129	63	66
17	16	144	12	0 & 0	132	126	63	63
18	16	144	24	0 & 0	132	120	60	60
19	16	144	48	0 & 0	132	108	54	54
20	16	144	0	3 & 3	132	126	66	60
21	16	144	6	3 & 3	132	123	63	60
22	16	144	12	3 & 3	132	120	63	57
23	16	144	24	3 & 3	132	114	60	54
24	16	144	48	3 & 3	132	102	54	48

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CHANGE REQUEST

⌘ **TS 25.221 CR 060** ⌘ rev **-** ⌘ Current version: **3.7.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network **X** Core Network ☐

Title:	⌘	Clarification of notations in TS25.221 and TS25.223
Source:	⌘	TSG RAN WG1
Work item code:	⌘	TEI
Date:	⌘	21-08-2001
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	The letter K is used in the specifications for three different purposes. It currently indicates the number of codes per time slot, the number of supported midambles in a cell, and the max. number of possible midambles for the different basic midamble codes. New abbreviations are introduced to distinguish between those purposes.
Summary of change:	⌘	K is used to indicate the max. Number of possible midambles for the different basic midambles. K_{CELL} is used to indicate the number of supported midambles in a cell. K_{CODE} is used to indicate the number of codes.
Consequences if not approved:	⌘	Ambiguous specifications

Clauses affected:	⌘	5.2.3, 5.3.1.3, 5.6.1, A.1-A.3, B.1-B.8		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	TS25.223
Other comments:	⌘			

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

5.2.3 Training sequences for spread bursts

In this subclause, the training sequences for usage as midambles in burst type 1, 2 and 3 (see subclause 5.2.2) are defined. The training sequences, i.e. midambles, of different users active in the same cell and same time slot are cyclically shifted versions of one cell-specific single basic midamble code. The applicable basic midamble codes are given in Annex A.1 and A.2. As different basic midamble codes are required for different burst formats, the Annex A.1 shows the basic midamble codes $\mathbf{m}_{PL}$ for burst type 1 and 3, and Annex and A.2 shows $\mathbf{m}_{PS}$ for burst type 2. It should be noted that burst type 2 must not be mixed with burst type 1 or 3 in the same timeslot of one cell.

The basic midamble codes in Annex A.1 and A.2 are listed in hexadecimal notation. The binary form of the basic midamble code shall be derived according to table 6 below.

Table 6: Mapping of 4 binary elements m_i on a single hexadecimal digit

4 binary elements m_i	Mapped on hexadecimal digit
-1 -1 -1 -1	0
-1 -1 -1 1	1
-1 -1 1 –1	2
-1 -1 1 1	3
-1 1 -1 –1	4
-1 1 -1 1	5
-1 1 1 –1	6
-1 1 1 1	7
1 -1 -1 –1	8
1 -1 -1 1	9
1 -1 1 –1	A
1 -1 1 1	B
1 1 -1 –1	C
1 1 -1 1	D
1 1 1 –1	E
1 1 1 1	F

For each particular basic midamble code, its binary representation can be written as a vector $\mathbf{m}_{\mathrm{P}}$:

$$\mathbf{m}_{\mathrm{P}} = (m_1, m_2, ..., m_P) \tag{1}$$

According to Annex A.1, the size of this vector $\mathbf{m}_{\mathrm{P}}$ is P=456 for burst type 1 and 3. Annex A.2 is setting P=192 for burst type 2. As QPSK modulation is used, the training sequences are transformed into a complex form, denoted as the complex vector $\underline{\mathbf{m}}_{\mathrm{P}}$:

$$\underline{\mathbf{m}}_{\mathrm{P}} = (\underline{m}_1, \underline{m}_2, ..., \underline{m}_P) \tag{2}$$

The elements $\underline{m}_i$ of $\underline{\mathbf{m}}_{\mathrm{P}}$ are derived from elements m_i of $\mathbf{m}_{\mathrm{P}}$ using equation (3):

$$\underline{m}_i = (\mathrm{j})^i \cdot m_i \text{ for all } i = 1, ..., P \tag{3}$$

Hence, the elements $\underline{m}_i$ of the complex basic midamble code are alternating real and imaginary.

To derive the required training sequences (different shifts), this vector $\underline{\mathbf{m}}_{\mathrm{P}}$ is periodically extended to the size:

$$i_{\max} = L_m + (K' - 1)W + \lfloor P / K \rfloor \tag{4}$$

Notes on equation (4):

- L_m: Midamble length

- K': Maximum number of different midamble shifts in a cell, when no intermediate shifts are used. This value depends on the midamble length.
- K: Maximum number of different midamble shifts in a cell, when intermediate shifts are used, K=2K'. This value depends on the midamble length.
- W: Shift between the midambles, when the number of midambles is K'.
- $\lfloor x \rfloor$ denotes the largest integer smaller or equal to x

Allowed values for L_m, K' and W are given in Annex A.1 and A.2.

So we obtain a new vector $\underline{\mathbf{m}}$ containing the periodic basic midamble sequence:

$$\underline{\mathbf{m}} = \left(\underline{m}_1, \underline{m}_2, ..., \underline{m}_{i_{\max}}\right) = \left(\underline{m}_1, \underline{m}_2, ..., \underline{m}_{L_m + (K'-1)W + \lfloor P/K \rfloor}\right) \quad (5)$$

The first P elements of this vector $\underline{\mathbf{m}}$ are the same ones as in vector $\underline{\mathbf{m}}_P$, the following elements repeat the beginning:

$$\underline{m}_i = \underline{m}_{i-P} \text{ for the subset } i = (P+1), ..., i_{\max} \quad (6)$$

Using this periodic basic midamble sequence $\underline{\mathbf{m}}$ for each shift k a midamble $\underline{\mathbf{m}}^{(k)}$ of length L_m is derived, which can be written as a shift specific vector:

$$\underline{\mathbf{m}}^{(k)} = \left(\underline{m}_1^{(k)}, \underline{m}_2^{(k)}, ..., \underline{m}_{L_m}^{(k)}\right) \quad (7)$$

The L_m midamble elements $\underline{m}_i^{(k)}$ are generated for each midamble of the first K' shifts (k = 1,...,K') based on:

$$\underline{m}_i^{(k)} = \underline{m}_{i+(K'-k)W} \text{ with } i = 1, ..., L_m \text{ and } k = 1, ..., K' \quad (8)$$

The elements of midambles for the second K' shifts (k = (K'+1),...,K = (K'+1),...,2K') are generated based on a slight modification of this formula introducing intermediate shifts:

$$\underline{m}_i^{(k)} = \underline{m}_{i+(K-k-1)W+\lfloor P/K \rfloor} \text{ with } i = 1, ..., L_m \text{ and } k = K'+1, ..., K-1 \quad (9)$$

$$\underline{m}_i^{(k)} = \underline{m}_{i+(K'-1)W+\lfloor P/K \rfloor} \text{ with } i = 1, ..., L_m \text{ and } k = K \quad (10)$$

The number K_{Cell} of midambles that is supported in each cell can be smaller than K, depending on the cell size and the possible delay spreads, see annex A. The number K_{Cell} ~~Whether intermediate shifts are allowed in a cell~~ is signalled by higher layers.

The midamble sequences derived according to equations (7) to (10) have complex values and are not subject to channelisation or scrambling process, i.e. the elements $\underline{m}_i^{(k)}$ represent complex chips for usage in the pulse shaping process at modulation.

The term 'a midamble code set' or 'a midamble code family' denotes K specific midamble codes $\underline{\mathbf{m}}^{(k)}$; k=1,...,K, based on a single basic midamble code $\mathbf{m}_P$ according to (1).

5.3.1.3 P-CCPCH Training sequences

The training sequences, i.e. midambles, as described in subclause 5.2.3 are used for the P-CCPCH. For those timeslots in which the P-CCPCH is transmitted, the midambles $m^{(1)}$ and $m^{(2)}$ are reserved for P-CCPCH in order to support Block STTD antenna diversity and the beacon function, see 5.4 and 5.5. The use of midambles depends on whether Block STTD is applied to the P-CCPCH:

- If no antenna diversity is applied to P-CCPCH, $m^{(1)}$ is used and $m^{(2)}$ is left unused. The maximum number K_{Cell} of midambles in a cell may be 4, 8 or 16.

- If Block STTD antenna diversity is applied to P-CCPCH, $m^{(1)}$ is used for the first antenna and $m^{(2)}$ is used for the diversity antenna. The maximum number K_{Cell} of midambles in a cell may be 8 or 16. The case of 4 midambles is not allowed for Block STTD.

5.6.1 Midamble Allocation for DL Physical Channels

Beacon channels shall always use the reserved midambles $m^{(1)}$ and $m^{(2)}$, see 5.5. For DL physical channels that are located in the same time slot as the P-CCPCH, midambles shall be allocated based on the default midamble allocation scheme, using the association for burst type 1 and K_{Cell}=8 midambles. For all other DL physical channels, the midamble is explicitly assigned by higher layers or allocated by layer 1.

Annex A (normative): Basic Midamble Codes

A.1 Basic Midamble Codes for Burst Type 1 and 3

In the case of burst type 1 or 3 (see subclause 5.2.2) the midamble has a length of Lm=512, which is corresponding to:

K'=8; W=57; P=456.

Depending on the possible delay spread cells are configured to use K_{Cell} midambles which are generated from the Basic Midamble Codes (see table A-1)

- for all k=1,2,...,K; K=2K' or
- for k=1,2,...,K', only, or
- for odd k=1,3,5,...,≤ K', only.

Depending on the cell size midambles for PRACH are generated from the Basic Midamble Codes (see table A-1)

- for k=1,2,...,K' or
- for odd k=1,3,5,...,≤ K', only.

The cell configuration is broadcast on BCH.

The mapping of these Basic Midamble Codes to Cell Parameters is shown in TS 25.223.

Table A-1: Basic Midamble Codes $\mathbf{m}_p$ according to equation (5) from subclause 5.2.3 for case of burst type 1 and 3

Code ID	Basic Midamble Codes m_{PL} of length *P*=456
m_{PL0}	8DF65B01E4650910A4BF89992E48F43860B07FE55FA0028E454EDCD1F0A09A6F029668F55427253FB8A71E5EF2EF360E539C489584413C6DC4
m_{PL1}	4C63F9BC3FD7B655D5401653BE75E1018DC26D271AADA1CF13FD348386759506270F2F953E93A44468E0A76605EAE8526225903B1201077602
m_{PL2}	8522611FFCAEB55A5F07D966036C852E7B15B893B3ABA9672C327380283D168564B8E1200F0E2205AF1BB23A58679899785CFA2A6C131CFDC4
m_{PL3}	F58107E6B777C221999BDE9340E192DC6C31AB8AE85E70AA9BBEB39727435412A5A27C0EF73AB453ED0D28E5B032B94306EC1304736C91E922
m_{PL4}	89670985013DFD2223164B68A63BD58C7867E97316742D3ABD6CBDA4FC4E08C0B0CBE44451575C72F887507956BD1F27C466681800B4B016EE
m_{PL5}	FCDEF63500D6745CDB962594AF171740241E982E9210FC238C4DD85541F08C1A010F7B3161A7F4DF19BAD916FD308AB1CED2A32538C184E92C
m_{PL6}	DB04CE77A5BA7C0E09B6D3551072B11A7A43B6A355C1D6FDCF725D587874999895748DD09832ABC35CEC3008338249612E6FE5005E13B03103
m_{PL7}	D2F61A622D0BA9E448CD29587D398EF8CDC3B6582B6CDD50E9E20BF5FE2B3258041E14D60821DC6725132C22D787CD5D497780D4241E3B420D
m_{PL8}	7318524E62D806FA149ECC5435058A2B74111524B84727FE9A7923B4A1F0D8FCD89208F34BEE5CADEB90130F9954BB30605A98C11045FF173D
m_{PL9}	8E832B4FA1A11E0BF318E84F54725C8052E0D099EF0AF54BC342BEE44976C9F38DE701623C7BF6474DF90D2E2222A4915C8080E7CD3EC84DAC
m_{PL10}	CFA5BAC90780876C417933C43103B55699A8AD51164E590AF9DA6AF0C18804E1F74862F00CE7ECC899C85B6ABB0CAD5E50836AD7A39878FE2F
m_{PL11}	AD539094A19858A75458F1B98E286A4F7DC3A117083D04724CBE83F34102817C5531329CDB437FFF712241B644BDF0C1FEC8598A63C2F21BD7
m_{PL12}	BEB8483139529BDE23E42DA6AB8170DD0BFBB30CE28A4502FAF3C8EDA219B9A6D5B849D9C9E4451F74E2408EA046061201E0C1D69CF48F3A94
m_{PL13}	C482462CA7846266060D21688BA00B72E1EC84A3D5B7194C8DA39E21A3CE12BF512C8AAB6A7079F73C0D3E4F40AC555A4BCC453F1DFE3F6C82
m_{PL14}	9663373935FD5C213AC58C0670206683D579D2526C05B0A81030DDF61A221D8A68EAD8D6F7AA0D662C07C6DCD0115A54D39F03F7122B0675AC
m_{PL15}	387397AE5CD3F2B3912C26B8F87CE82CEFEC55507DB08FB0C4CF2FD6858896201ACA7264281D0298440DD3481E5E9DDB24C16F30EB7A22948A
m_{PL16}	AFE9266843C892571B6230D808788C63B9065EA3BDFF687B92B8734A8D7099559FEA22C9416576D0C087EB4503E87E356471B330182A24A3E6
m_{PL17}	6E6C550A4CB74010F6C3E0328651DF421C456D9A5E8AE9D3946C10189D72B579184552EE3E799970969C870FE8A37B6C4BA890992103486DC0
m_{PL18}	D803CA71B6F99CFB3105D40F4695D61EB0B62E803F79302EE3D2A6BF12EA70D304B181E8B38B3B74F5022B67EB8109808C62532688C563D4BE
m_{PL19}	E599ED48D01772055DBE9D343A4EA5EABE643DA38F06904FC7523B08C4101F021B199AF759A00D9AC298881D79413A77470992A75C771492D0
m_{PL20}	9F30AC4162CE5D185953705F3D45F026F38E9B5721AEFE07370214D526A2C4B344B508B57BFB2492320C05903C79CBEE08C6E7F218B57E14D6
m_{PL21}	B5971060DA84685B4D042ED0189FAF13C961B2EF61CC164E363B22AAB14AC8AF607906C1C6E04F2054C687AA6741A9E70639857DA02B6FFFFA
m_{PL22}	97135FC2226C4B4A5CBA5FCA3732763B87455F73A1148006F3DF214BD4C936D061E04045160E2CE33B9CD09D08FDE2A37F4E998322B4401D27
m_{PL23}	4D256D57C861B9791151A78D5299C56D116B6178B2A2D04BB95FB76540AF28341DC6EC4E7ED3BF9E508478D9C8F44914805DA82429E1CF320E
m_{PL24}	858EF5C84CE32D18D9ABA110EEA7474CF0CD70254D2928C3F4DFF6BB3A518587CADA19029078AC90A8336C8178203BE3289E601F07D089CB64
m_{PL25}	920A8796A511650AEF32F93DD3C39C624E07AE03CE8C96139973F54DCB9803C5164ADB502D4FF561564D607037FCD172921F1982B102C3312C
m_{PL26}	485C5DAE76B360A9C56E20B8422EA3E6ACF07CB093B5587CB0E6A5498A4714081EA98DBCDB0482B26E0D097C03444473D233BEF3C8E440DEBF
m_{PL27}	565A9D54EA789892B024F97E728E8EE112411942C48BD0C5BC8AA457D8DC9941F0F7424B38643FFE6521CD306FBC56FE10F1428D4C245B5606
m_{PL28}	5AEF2C0C2C378179A1AC36242E6B3EDB72C42D3624437674F8D51260C0898C201837CBA14E9E23D1EF6451C4ACF27AB031F457A8A1BFD148AE
m_{PL29}	87D8FE685417822A23D925307E6C11081ADAC4702BCCD9BE448E78984D109B50DEF5B7C58BC71EA1F0A6826BA8AD1978843E7697F3E416AADA

Code ID	Basic Midamble Codes m_{PL} of length *P*=456
m_{PL30}	84802B72AF27B5BE724D1FB629E0E627BDB0D9061292562F98350C1D0C9D4B9D8E2BF71123C82EBB161003AE9829E07244D78F19926F8847A2
m_{PL31}	8CCB5128238BCB088E30972D62792AEF02B9BBDDCAD68C9916C00BF91CBE788B0F03851FAAF88605534FD73436C259D270B1013CB14226F658
m_{PL32}	62F4E6FAC2BF1979CE6854AA2D33534BFB2F946519101A6589131C3640707D40E67ED804AF8736AD213CAF5935741900061967E8285C27E34C
m_{PL33}	4095E5B4EEAFCDF68A34B267EEA28D8444FA533900F41499E260D2E65C256A52E1DD5861F5227C98E00687D107233F51A1167BCF72FB184654
m_{PL34}	5630E9A79FCAD303404D9E5A802299162657AAC734761C6E90DA8BCE4F61A763E0BB48D3FEB3F78468C828ABA4828DAD06E0F904CFD40421DC
m_{PL35}	CD12B24C0BCA8AAC1FCBF0500A3BC684A180E863D888F2506B48C68ECF17F76CB285991FBA18EB6397211FAD002F482D57A258CD45DE3FF1A6
m_{PL36}	AFCF2A50877286CD3405442730C45514F082D9EC296B367C0F64F04C4E0007DCA9E50BEED5C102126E319ACBC64F1729272F2F72C9397029FE
m_{PL37}	18F89EE8589D20882A72A44DCCDF0050F0A3D88DBA6531614973D26905FDF41E3F779FF0648E8AF1540928511BCF4C25D9C64AF34AC31B8965
m_{PL38}	F890D550F33F032ECDA3A51FED427D634F64EB29AF1332A23CD961258E4BAED040E7B336918E250EC272A12816B9EBFFA1E0AE401185F08C10
m_{PL39}	ACE5DD61506047E80FB7D41BD3992DF4D7F18EB46CC145C0E9105428C2F8F299141F5D66691904A7DC2513A3B83994ACB1292246B32818FE9D
m_{PL40}	150680FF900C9B46E1E24D54BE2238CB950A934E5CCDE9BC3939EB51CB0AE202B7D339EEC2018B33A0AB9B63DA5D512D64FB58C0E51A1C82C2
m_{PL41}	51A579EED2663A002D32D10A0753173612F4D5BA167D1807C61F25C4D42C063682E8E9DD019F79D446A046EB3F75E50FEB228DC52F08E694B6
m_{PL42}	CDC644FE4C0C6897604F9D14D714123BF16FFF0E49F35F674908CA60653702FE27BCCA2A47098453AF8661055C8C549EB6A951A8396AD4B94D
m_{PL43}	750A10366C595373C5001CA3E4239764B1409D602CF6052B39BC6A3255A15FE06C782C4C5F847026A7E79838A2933A61C77BB6CBF5915B2DA5
m_{PL44}	B7490686D78E409082C4C48FE18D4C35429C20AADF96076B92FC4E85490664753DB0891A0B27FD849BB7FCA99E3B38F22F8C662852C0D35AA6
m_{PL45}	D86E1B575B47D23DA811806A54C231281F03317830E7BD305D3CAA7D6382A5233104CFD54D22DF9F34535E5B390D9040CF1375FEA44CEC29E2
m_{PL46}	828655960C026EC67B683480992AC2ED2C43ABC606F5220C2945F373470BE7ED5BCCF7C1AA0986BBCCC84F11F1658AA568FAA0A60C5F0B5BFA
m_{PL47}	D76230E02C8533653AAB99B288AA2ADE25A1C1BF28516C04239240EAF1EFC0B98974B51F886861D8A1E9F5D62CFFEC309F071A9716B325101B
m_{PL48}	EA207662865B8A07D69648964DED818EE474A90B94473408871880E63EF0596B9FCFEC3C06B86EA6AD2B06C91672EFB33C70241A5450B59B8A
m_{PL49}	9CB5459549909835FAB22F0D99298C120ACF479F814CCE749079D40688F28101037762F125C776DA9C5FA1FCE0E76E452F8185354FDCDE94E2
m_{PL50}	227506304AEC1D6F93569B51FDC3405A0F38194F65BE17163A3CB9827A35AECEA757D020FE249377ECD561428A38FEED004EC859C272563185
m_{PL51}	96B9AEC9938910F0E533422A3977519B05CD4AD3909BC15A7502D48D49C124FA192A8E57027CFEB11DF542010603CE5C9FDF8E626D4FBF8CF4
m_{PL52}	A6AAD06E095A9BE0BD9F8A2ED40C3CBDBAE91C700CBB778C8696CC06F3A675C16BDB2918E5F2111005A8727206DC6A9684E05655185C398EEB
m_{PL53}	CD168D384A78DA172991AD333EE2A9880905AFE59E2A2A4AC4414C40F82874F98A3CBE7B44F4C7F4710B35FD88AFC0399FAEB070EB9CA4D30A
m_{PL54}	22016CA87AD1549174A8699DD65599697871091457E83E0912E7E77A06531C209394D283D18A38662B73681DD9C5BF330FED978BDA7D487CA8
m_{PL55}	B9401B0843AA6F7827A13BD66C922287E8886C31EB5B90B82B472CCD6DA3D8D4FBF78B8F8496DFA8252B06429D5DD17142F1C908ACCD70EA0C
m_{PL56}	E42B9EFDC5D09AC27B3C7DA28D02493A70521223B9D7A76A9D13E9C171017964D16A70C08EAD02C3DC948889C23E365AFCF01BF20B89B0BF5C
m_{PL57}	9DA0180168DB915E9F3597B59312198E1B5CC00D743C2ECB0DBAADA3E35A2465ED1EAA9D74734D49A313CE4DFF020D0760E3153DC485603943
m_{PL58}	B6C966619ECB98191D719C187C07BD503425650CAA3A2D1F2DF5212B1441D7A0C1D36A4C9C2550240AD17CA43BB3943DFFFBF1E283D81299CC
m_{PL59}	DB0E8C41F08A03D477C1AA548799274C4BF3EB68F2636166FDC8D4B1E7132539930297E228BA232BB5C279FA5ECA3AC10E24361AF050A453B8
m_{PL60}	89BCE2DE2974EEBA833CF32F224C85A2891484478527DB48FA6ECEA84C5E288CC3914CB54ADA0476278750187F68FBEA41017E1E58DF1A5A3D
m_{PL61}	70A457D1314A278625443EEB52520815EC92CEF17417B97440DCB531BC1CE83212F63270418D0FBDE71F6DB9E0EA88772E1E4535B6633E4425

Code ID	Basic Midamble Codes m_{PL} of length *P*=456
m_{PL62}	C388460AD54B36C4452CF0433BD347100ACCC24C79C535AD3E1F23FE0425E93A044C553BFA 116E09AA4BB32F13CFA76FBA1BC17520F45EFD44
m_{PL63}	0BAFCADCDF9AA2846681782CD3B90CA036A863C78EE1507620BC394D0C6804B4C97A15BC9 C0D7B79E6892EA1BFF1A0DD9573A9213AB140D0D2
m_{PL64}	833B0226789A62882FCD27A30885E67872B1A1C2FA484AD498011599DD57E8E2A07A560B4716 7AA5F60EF47177DBB1632D5387A2896348640B
m_{PL65}	8F52820323ABA5E6C6B465821B621600B980E59F53A599DA5646BA103214336836CF17E3386C E4FB2BC5F25CCB30CF7F500546828EC8786B8E
m_{PL66}	E2E9A29C3C8207B9A4508FD2F667A159F068EEE8D00686F46EA904C3692C1D79DFF1B32E510 3720D47B4B58AC35384A26087027E141B3126A8
m_{PL67}	70E7C39FD2D3AE1DCE341699A544D801A8688A6EE47C5CB3630022147DDC06241FC5337A34 8A462B2472DEC5E104DD520ADA5114DB065D4B0D
m_{PL68}	9E3483CAB164BD053C4971D4D87494CC689033D589EF80E5453376E4A8DCC02183B98C36B0 FF7DDC0AD07FCE8B4D5164371BD03A2110AD1247
m_{PL69}	04DA1C649B0608938DAADD3FE920A4F681690C54505429DBDCDCF10067AB5714BCDDFE1F2 8692710F794765781C1D233344E119BEE8A8416DC
m_{PL70}	7A18D6D30BDF44410714C3DCA27D8F9EA8A542D87122205640B98313C91AD9A0B993A5A7BC 3E035F93B88BBE6D4204BC82A9FA8D4C1A7618CF
m_{PL71}	EB9525E10265A48733C8E0E77E459310112A71DCA680F68AC044B64BC0A31D02EEA0F7ACAA AB7F1E574E94FEA2D1301CB14B03263DA8122B76
m_{PL72}	E706C6ED2D6F89153835079BE0C6D45310845EF2F9F6C6AE91B7419810508BA501C0148BF09 955BAD90D6391BA8EBA5CEFBD23221CC75143D7
m_{PL73}	DF071A10AC4120CD1431590BEDCFF9483CA7047B19590D035D309240BDB4264E9A3A2761402 EC97FD8BC51B4AF32E37FBC47162A2357D18751
m_{PL74}	F0F952B2238139F46D8254D1A2C1C22A16BA71EC0C0C900ED1442452D7F44C798BC65FF4067 1B88074BA0B74C6510996EEAC495C5B49C37DEB
m_{PL75}	1C86BD82EDA81FD65418D3837B5552A853791456D93B06C62C650D86CFBEC269AFFD772763 064062C03751B9428C6DA2E60383025F9E404B70
m_{PL76}	B390978DD2552C88AABA7838489A6F5A8E9C41E95FFA2215819BF8A5BFE39C8A706CC658E5 49E966611B843A1468406C41C09D1560BEDA4F1B
m_{PL77}	1A69EC9D053C7E84BAE7A48CCC71857D0C6B06D1065E3EA4633B133AA022B8104F6EE7C69B 6184B746C8822958B0A16686F27C8A0E3B4EFEAD
m_{PL78}	C95B2070816DC97C6D8DD2583263E73F9AAAFD13F0548D2EBD835824418F11E54111005FB71 3AB234BE412347358281C7DE331EDD21B8BEA52
m_{PL79}	56D6408399F23C2ED85EE0F68111D69A91A3AD9A732AC57CA08F86CC28B3CF4E4B02EBBA0 BCE5CAE5BACC4D52004070797C04093A84BB18DBA
m_{PL80}	E662E7043867BE250764DA0596D34A582A619B408B505E6211DD6286E93A37F95B1EA680C0C 5F3E777E3F71E8D75495D59043217FC0E222E16
m_{PL81}	27D5E681C222297AD478A079EF12F1A98F744B66335303322EF8880B931FEBF8322F4302944E 80BED468A0A516D410B183D863795992DA7DDB
m_{PL82}	5100336C05F9E5BF35201906C1C588858E0DAF56130DF5554B9AB21CA15311A90290624CD63 E03F5EDA49DB7A0C32AB5F1CA427A2D5635FDA5
m_{PL83}	C696DC993BFAEA9A61B781B9C5C3F5CFAA4C8339D8B03A9B0387883D0482A41AC78D652242 5959846E561D26A30FF79A205C801A85889736B2
m_{PL84}	D562297561AFF42D3168296C1153E4E39BE7B2EB0348BC704625AA08391235075EE0DE0A79A B03222FEDB27218C56F96EAC2F91CC8FCE64B12
m_{PL85}	DD0B6768FC01CC0A551F8ACC36907129623E975AB8B3FF58037F1859E2FA8C62C2D9D1E850 6916029A2C3F8CAD9A26AE2CC652F48800859F5C
m_{PL86}	923920696EB3AB413786C41854822282BB83F6900D33A232D470BE198BBF086067B72613300C 593B74251E2F079857ADBBCD86583A9DCAA6DC
m_{PL87}	B8EF30C797D8D2C4EF11244F137D806E556A436626D0115A621C92C34D166A68BCEDFA0040 DA8FD6F987B1CD5C2AA1C1B045E64475F0F8DABD
m_{PL88}	E1887001D414405ED6419E9EE1D1D346D924ED57ADF04B31B7948099976B2D1501A60DFFB28 7AD44C8783DF0C1EA5AA5D273D1389C8EA22DCC
m_{PL89}	8C2E379A58AA96748141CA84C35987905F984A49D3AD9BFF7807AC244C16C1DF74343C2E1F2 5514F5A0954CFBB3C92E25EF783136844998AC5
m_{PL90}	78F8A99E0A54E27F51C0726FE7A11EB26B1E29FE65F55AC8AC58011465900B958488A90F6DF 614A58431DC8B6C6B9A6F032EE0E0B1306EC4B4
m_{PL91}	88F7A31B7B20E0F05CA26E729B4F8A1933962D7BD7BE3E1EB130B28C794C0B4D01CADE0900 6FF97E80117509733F3A9DC225413A0AE08CA662
m_{PL92}	BE4DFCEAC18905AC8D5DA27A794F88A4D3058D2EFA3B075A819DEAE688EAF8940A653ED71 04E7B403D490F0A9030264E1F12B8922C75775E61
m_{PL93}	5BA4B79FC4550234D8922963BF3537485E3C8745A5DB90D3E2E454B30FF61112F508155B7C2B 3C4C628AF846240C2021ACDE547E5A41F666B8

Code ID	Basic Midamble Codes m_{PL} of length P=456
m_{PL94}	00556D35649F7610AB24A43C4F16D6AC0571FD126F11880C5CD72100D730E4E4D6BB73C33F8 37FAF1072743B249ADA2E09598B1EB23F1180A7
m_{PL95}	7A0CC9F21BD69CF3023E944545C2176EF0D4F450B765C28359FB8A32137D043D0E5713E67B3 F61320985D2C6106605081F87D2296321468A2F
m_{PL96}	DA669880995B0671201172BABFF141D5854A245E211879EF3038A7C84170DADBD368455F2465 3161E7886E15B253F93E3A3C568EFB17CDEB1A
m_{PL97}	4E294E53D1661C1F6F748302A7723DA951C00FDB8BEBBF67A68710BA0F1A255DFB1627059D4 1A23D3961726DE6FEB10E5D209CC4505B209812
m_{PL98}	73385DF701414E144768A67EF72924B1653479E962FB1554B7E54BC5284D9B3E41C0C133F878 972230721918AA425501B920B204FECE0C7F8A
m_{PL99}	F4492160805F258CE592DF4D1200566F81D173458D78EA3ABED79A14AF88170DB1D4A9A5931 D2B80C58C27FE17D806E3E6A66CDAAD09F118D4
m_{PL100}	44D562D9012D8B07B8F44596467C11A163982BB7EAEAC184078B6B8CE46B5D7E17C39CEF57 6A025491183017FA09931D070B307B86524B03FF
m_{PL101}	FCAEEFCC49A13B4FFA12C0CC6A2B90CF4F57D78B1E98294B04675C2F0991661FDC61A452A2 47F8C29E0284AA21026F368307375AA2C3F1E12C
m_{PL102}	C486DF0510DCAD5AB86E178A686D398E11A0ECFAC5A326C10129257E5456B22FB8E147E919 0D9929A5DFFE44715FA47D62F04CFC9B1C201414
m_{PL103}	C10AF383DC708E257E15A8AB337BCE684A2F4AC7A22DC2C25C277F8E8D0858E79317CDDD9 AA2EA6CBE604D24AC0945026103E7B4126FD361A4
m_{PL104}	A5C60A181148D9A931B2DDDB9D169648BA54F366B4EFAE88F6861909EE0F07C037EE349D0E C59A823286E366CA3943589EEA7F828C3728085F
m_{PL105}	96136AEBD5E28462B0421DF292BA899FFA660D80EA01620D2C7490E5347127884AA3C3D1FF4 4BCEEF6C29EC589CDEF200C5742C5964F8B2B52
m_{PL106}	40F63C04ACAD986255D1E16B769A6D4C11A1D075E804BDC0AC61923E9A67F5D741775632807 2455F6E22B1C64E06F367D1B0808295C2D90E22
m_{PL107}	F4B82D413578C4888C5F002CF6D0E03778134A860436551FD57537E4CED334B3C9CEBACE615 238271717AA762448B86FA53D2074BCE35658A7
m_{PL108}	BCCC92D72C920E685530591FC351743D1E23DE044BF81D32650406113E23ECC757FDE4E386 B6E2E7195EE4969717A7BD0812AC312B33A54308
m_{PL109}	6ED59DE0D44370A861CE2B42CF5E578E764A682AB5777905EE027D7160490EDC6C28989B238 05AA697FCD215CB401BC5E4D430624C01B16192
m_{PL110}	DE80C0E273B92CC3C5034F7A20DB3914643C430B425C8B9249EAF73ACE8C3BCF17957242CF 534D87A67D4DC0252275262E737F4095450CFA14
m_{PL111}	9505C4FEF2A397D5059F4729D013292A8321FFFA929ACB0A210D0A13E13061227C44A68FBD8 CE6B66CE3D783363CD039AB35EE52603E09B758
m_{PL112}	E8BE90D7F954B14D8002A4CAC20765ABEED80634498C836D79B0F9338DBC17B28F05CF4E79 136779E1C55AA30B6215F890882887B3B53C23E2
m_{PL113}	9F4B622C1358AE5468DC31E4B2CA320E5E20458C1DE5405BF4F9AD7D45A5BCAA39EC0626FF FC698C16A009CCCB7A18A64E85E70BA71731BA24
m_{PL114}	B91B2624843CF48299AFC2B1442570B41F28F578530D1E322E0B54282372131C71ACB924E707 68A243EEC3200E7A5EBFA77111D9FB07FEA8AE
m_{PL115}	965F42DDA3A4650FE2F5103932B68F166FA424B9F0F7045311D962C2A9F66B9BC6C66FB480F 9800354E0C54A72251071422CF1DFC44F94C00C
m_{PL116}	08ADCE48699FC30FA0788073BDAADB9177BBB4C1CED41F93085218364B8BAD8488561EF0FE 1B0DDAA403C602494CB35697D62AA0A2B93A64CF
m_{PL117}	9A313BED80B1220D77C8ADA4B2E0B3D284A5120A94B741380923C78D3AD32BC3E71EC6EEA 520E9D447D8727697598BB987F17506F482003ABD
m_{PL118}	24C9AD4C14EFEC002A3473FCAB04E492F2E269161A2960BA8AF09FD710B444A40C4E8B1384 18E62301E91FBA97AFDC58759A76D00F676736C7
m_{PL119}	6514C7733711CE4942CD2123AB37186EB7FECB7E78ABB28744864942FCF4C0F810054AF55B1 042EB53064F0857C61D85B2CF0D2DC5826AF22F
m_{PL120}	B2C80CDC83E48C36BC6FDAB8661208EAD392F3A0571BE41DFAD765E744932ADEA50061E66 C05498A5381B2A1F1B446587089DC4E4A2DF03D82
m_{PL121}	639368BA75CC709A3D9F28EDA237E32C2017A9BF1E382045B9426AEE0A4049DCB4E1D7EBE4 647B855212824557497CFA039885A3BA42F98F63
m_{PL122}	6A70DDC17D0C8024B1C853F0C1948561EF32510151BE0C63BCA9171F20217891D1021EE7258 6CAFF557F8973336913A94A2A699B8740B054B8
m_{PL123}	2E32E3A35CCD001172CE310B63B4E406126045A0FA3795BE3E3D9B56F72405FC94FD8994681 8BAECD24A61BABBBE2D23052AB01EF73CA0CF4A
m_{PL124}	829395C35205A480AC1351C25E234BF52D384A3DE1C5138A650A6F82F739757D812D9C38231 AB9FD81AA0648B11F6F6113F9312C57624FC746
m_{PL125}	D98FFE19C0AAAAB0571A9075ECDFD3E7373F5255DC669116A8C6913F0123E598F930934C5F6 A601C37C529C371A0C391B59AC5A9E286D04011

Code ID	Basic Midamble Codes m_{PL} of length *P*=456
m_{PL126}	C1A108192BCE96C2430A63C189BB33856BE6B8B524703FCB205DAEF37EF544CD43CA09B618 1B417398083FF2F781BA4AE89A5CA291DB928D71
m_{PL127}	42568DF9F61849BF9E7DEE750604BE2E0BC16CC464B1CDE15015E01D6498E9F3E6D6950E58 24651F212BA0057CE9529B9CCAB88D8136B8545E

A.2 Basic Midamble Codes for Burst Type 2

In the case of burst type 2 (see subclause 5.2.2) the midamble has a length of Lm=256, which is corresponding to:

K'=3; W=64; P=192.

Depending on the possible delay spread cells are configured to use K_{Cell} midambles which are generated from the Basic Midamble Codes (see table A-2)

- for all k=1,2,...,K; K=2K' or
- for k=1,2,...,K', only.

The cell configuration is broadcast on BCH.

The mapping of these Basic Midamble Codes to Cell Parameters is shown in TS 25.223.

Table A-2: Basic Midamble Codes $\mathbf{m}_p$ according to equation (5) from subclause 6.2.3 for case of burst type 2

Code ID	Basic Midamble Codes m_{PS} of length *P*=192
m_{PS0}	5D253744435A24EF0ECC21F43AA5B8144FBDB348C746080C
m_{PS1}	9D7174187201B5CE0136B7A6D85D39A9DD8D4B00E23835E4
m_{PS2}	AE90B477C294E55D28467476C6011029CDE29B7325DF0683
m_{PS3}	BC8A44125F823E51E568641EC12A6C68EAFDFA2350E3233C
m_{PS4}	898B7317B830D207C9BC7B521D5715680824DC08347B2943
m_{PS5}	466C7482C8827655BC13F479C7C1417290679A9841297C4A
m_{PS6}	AC0734C27C7DC1B818A8492744290DFE866B0EBA62B0B56E
m_{PS7}	0A92106325B15A8C15FC3764724CE67A5056D50A77F9360E
m_{PS8}	AE69F62E23035083E6094B89493D33E06FDB6532D473A280
m_{PS9}	B485D4E3614C9C373EA1365FA6FA890E9844084EBA90EB0C
m_{PS10}	66182885E2D28360D2FEAB842C65304FFC956CE8DC8A90C7
m_{PS11}	CC30A9B0A742FCC1E9A408415368391F1299AEA3CB6509FE
m_{PS12}	673928915886947F464FDDAAD29A07D182328EBC5839089A
m_{PS13}	4418861C14D62B46EE6D70D4BF05A3ED801A01BD6CDC5235
m_{PS14}	DAD62DC88F52F2D140062C2330BE6540E6F86192322AFB04
m_{PS15}	A2122BAF24529CEA9855FB43CE40923E7CA7B30D92E40702
m_{PS16}	6C44AB41E11F54B0929DF65673BD231F92A380132D9F1712
m_{PS17}	1DC2742E756CDA6421340D0087DD087A615E4B8688CB2F75
m_{PS18}	2E0105328B56E9E07D9B5A62F38B08AF8D8C2817B54F3302
m_{PS19}	88315EC30A94CA4EDB2C77079D9BD810A2E280B50DABB213
m_{PS20}	440E0093D28CB2B2B0A95D18CEB4AB934C33FA45C1CFC7B0
m_{PS21}	CC9BF85D41A96A6EC314F9611D5E1C0672556C8850801BB4
m_{PS22}	1ABEA04C99BC26972715F01957C0B6B959CC71CD88120817
m_{PS23}	EC5A33DA0BA4470442C5CB324A8E47B0A9F7968FC8108EE8
m_{PS24}	F82086290271DB446B5B1DC15D9BE96414B19B3D5E0F540C
m_{PS25}	11A1A790D6958FD3A9157DF1E05D1378248CA201EBCC7592
m_{PS26}	AA8564882231907BCE78092DC6C9DD4F5A0E4A34AFCFB809
m_{PS27}	912EE2238212F87BC7CDA7F30441ED184A6AA954EC4D20C8
m_{PS28}	2D200D8B8891B804673E380A1AF5AB875986E29D37D3FDC9
m_{PS29}	75E086B6C818423491BF9D6365C52FD1C5E42A576E268170
m_{PS30}	50ADBF27DA2A3701470186B699118E16DDB0D10F705607B1
m_{PS31}	656C0692B4E22023590A906D2A74DFD471C883A7B1E0B3A2
m_{PS32}	C21FDACD09A3CDCE74C4794010A3E45769B142505C56A0E6
m_{PS33}	CD9392A87C2D4D7CE5801CDDA8A76339B6F900F008B290E2
m_{PS34}	956426FEFD8B8D52073E87984E10C4D255064E1372C04A24
m_{PS35}	C4F4D6DF1B754AD6063FD10C331C1428ABB27B0700134B94
m_{PS36}	B65548082B34E9FAF43F33C4070F79099758CFD41B491A11
m_{PS37}	C8317EA111A82B04E78B88B864B1EF5D711BBEB4A0527036
m_{PS38}	8FB7AD1188E8D1A5219845013672560FD38904E70537403B
m_{PS39}	B41A324E0D80AA0598A8D391C1D7FFC82B4A075218E98EC3
m_{PS40}	49A6350A62E208B011E86528B9A481A0E76D723F6675FF82

Code ID	Basic Midamble Codes m_{PS} of length P=192
m_{PS41}	C344C8C23C42A7B7442E6022E95AE4B08A4BFA786F35F911
m_{PS42}	28F430CF67D69C9DF60E25656413BC5F932A022DB1406C44
m_{PS43}	2FA5D70CF0FED4213F32116051450391C2A627D9B670C428
m_{PS44}	959537D988FDD4F1360B4E84701AE5409229C30EDF8BC404
m_{PS45}	CDD2E0450F9EC12F81391AD4633CB29F315B4A0A890A9A22
m_{PS46}	158776A20B4B82C563EC08F086830EA66DBD2DCCB4DF6026
m_{PS47}	431FCACBE48208975950342709D11F19AD5FB047F3B440C9
m_{PS48}	86B141AC571BA6B42653B12FF04D4F0E6C81F3EB608660A2
m_{PS49}	86D297ABD34E8510F6CDB0EA617F1F1051C8799117B02211
m_{PS50}	80B2D9530B34E781311D95CFA3857F277CC07014D324AF5A
m_{PS51}	2B607B93FD8B45601C1E574E14CFC6912C22AEC1045ADC49
m_{PS52}	D234C5C45E105A837E6DD74BC4E534523A20317BA0625A29
m_{PS53}	768CCDB3E2A7A2B863128382590946B25472BE2BFFC40641
m_{PS54}	3DA38212E0A987EE1F665D4E13C2AA4446E00A76C948A073
m_{PS55}	09173135E4A2CFC8F2678750AB5257110906F013587BDE82
m_{PS56}	522E070B266F35E99C1F3C42D2017F8E415550492B72F086
m_{PS57}	D63E4BD805262A3DEF05C7D86C422E5048921E5531784132
m_{PS58}	564AF806E28131611E5F884229265D446A50E1E488EAFBBA
m_{PS59}	A2603E009D3D30147727B750C35C62299AF754D3E4A54E1C
m_{PS60}	938504B02599D33E28246E4271C375AE81A3BBE8D3F8A920
m_{PS61}	461516B2CAC6FC42A4B707CC6073BBE573C014892C811776
m_{PS62}	29186DE4CCAAB2CD0100BB19EA595879D63F0F0CFA881AA5
m_{PS63}	A064B449CB784A91B803369CDC5EF61A670AAAC044BA3E68
m_{PS64}	8719C454D88FF5149DB943CB6CADA01D0B9664B357A18203
m_{PS65}	A27EC68720F00A714AA2C45A7EF232286984D7B193F5C916
m_{PS66}	AC8361676AB424E48F0789082B0CD2EFB8D2E627D041DD66
m_{PS67}	ABA1BEB0064733A0620906BF2B29C95883F069D7E4C35D39
m_{PS68}	9E22EEDED47D92CA1D0B7530EC6062287BD83A04874AE00C
m_{PS69}	0BADEF288B20F5686C5DE3A71219AC2172054326BE831696
m_{PS70}	953801EB2AF58C2F80E49A6CC46085CB554243E3B3BBEC8C
m_{PS71}	333A504C51C8FAC5025994565C3F600F154F64FAEF4EA484
m_{PS72}	A6583E19647662005474153A6F8DD88A473853E94B720CE7
m_{PS73}	90ACAF707D18AF34F5848C58166830AF620ACDC1B2DFDDA8
m_{PS74}	39C5C598A374EA82F3F83378258248DAD3808812DD0E74BB
m_{PS75}	F79525DE694629346D73F6256CC0F140F82603197AAA1844
m_{PS76}	B8C2A8F139097699A693022E78588D4058DB0A65FF52F813
m_{PS77}	449B50C2A52996FA5A828A907F30F9F460EE3D99930DF890
m_{PS78}	62CEC9574D30184BCB4F94EECF0CC23D2D2A8D0003F0AA33
m_{PS79}	B56D258889703F76A0738EE3A7D355994159A4851833E198
m_{PS80}	65894AA54C0F6C9A206521C9FC379A8AAF6E621C03CF849C
m_{PS81}	2D47F3414E30CC02C6835D95C9BA204488F0FFCB4852677D
m_{PS82}	12BE4DD8B906B584010F8A330AB67B278E8642FA33D51B68
m_{PS83}	BC928A90A4B10906CAEE638BF768E08542F48F1676006DF0

Code ID	Basic Midamble Codes m_{PS} of length P=192
m_{PS84}	30C544E437C8ADA143566CD1BC4E9E7BA84139A08505C2F4
m_{PS85}	84FD5B05506192B753FBA2C719B584E0EDA01814999867D2
m_{PS86}	191F14DD00034E03AB5BB4342F1138B2CD33784E60CFD75A
m_{PS87}	B8ACE7990B6A98A80A61162C4D2D5F88F24E8F7DE4207590
m_{PS88}	EC1DBE72E8EED0C61054FC2695422AC0AD2D888265B21AB0
m_{PS89}	9A1B4CA467AB7E082AF4278E44D177EA78424508C23E8B08
m_{PS90}	999EE541C608164AC975214F3A37A677FC2CA03E2C2A4B20
m_{PS91}	1BDCC20265031432917A2EB828FB356A22DF9CB609C0F8F3
m_{PS92}	EB4A81859C93338B8A1B87C02C815AE09D765F6F2249B958
m_{PS93}	E6A5D1629F4CF09A1F280DE0C480D4C73B26ADE321A50AEE
m_{PS94}	BAAB7286DD24C80B15A7958039B904F1CA83C310C8C7AFF2
m_{PS95}	12220F72619E983717C68FFE1C4148F2354B7B1955B65620
m_{PS96}	A198706E24FAA08BD09EE392414816038E667BB34307D6B2
m_{PS97}	30B3493B4C035881A7A722E4546527AAE787FA2C0893AC46
m_{PS98}	5A7318126522843DCB7F00A2D9F9BA8F88963E4152BC923C
m_{PS99}	844844B0CACAB702C332CE2692B4166F4B0C63E62BF151BF
m_{PS100}	B829738952641031369 2F861DC60DA86A23607F7DDE24755
m_{PS101}	6C1144CF8BC01538D655D29ED62DE6E74A3180EC905BF1E0
m_{PS102}	E9DB3221FACFC5C88691A7013EF09672A130D52C3413AAE2
m_{PS103}	2FD0508615EC4CD4BF18ADD46D777078869130C8921A4F0E
m_{PS104}	40911B4E0525AC874228F6EF642E59154730CB187C7E417A
m_{PS105}	2034C6A027D4D850F5184AA64C3153231F4651B616BBFCF9
m_{PS106}	57833235451525A1DFA213FCE0B419B6494BC7B99F488410
m_{PS107}	6DC3D57F2E39158D036825F8804810D77CA1ECA610ECD894
m_{PS108}	F5C50DE43AA7B731CAB7683524021701F97650499A7070E4
m_{PS109}	F2184D2699785442E09FA22CC2D60A5A13FFF22AE660A470
m_{PS110}	EF0029DE0D79207205458CF4D7328E81A93518D93C9A74BD
m_{PS111}	9D6D8992482FB885AA5E878C3BA2045538B09886C23CDC2D
m_{PS112}	C0A5AB67D1CEA126F6476C75443F0A11CBE749412EF03104
m_{PS113}	1853A5C20CDF968C5A180D8EB5E72BF15517D06680D98412
m_{PS114}	8CEA1223227ADF37D0DAAB320906E1C79029F480D25181A7
m_{PS115}	5561038E96A658EF3EC665612FF92B064065D1ACC1F54812
m_{PS116}	C55A6263F08D664A1E53584560DFF5E611640D8281D9A843
m_{PS117}	4386A8EA59124D043F29056A4598735A4FC7BC11119B90C1
m_{PS118}	D6571B20668BED50BD7C80388C162632BCB069AA67C7FC22
m_{PS119}	4F9F09ABBC1391EC2CCA5359FB52250E533BF04324154106
m_{PS120}	662659F42188C9453F6E6DF00C579627045DA1461A3A0EA5
m_{PS121}	8DCC9274C0C2A9BA6096BF27FACA542CD01CA8653D60A80F
m_{PS122}	5C1210A1E50E505F6B73C90156C9D9F19AE2310BBD820DF0
m_{PS123}	B1E0A7CE26202E223D4FC06D5C9BBA4E5F6D98204D2D5286
m_{PS124}	DB506776958E34552F7E60E4B400D836153218F918E22FA6
m_{PS125}	ECAA60300439B2360B2AC3C43FB6241ACDE5055B295FA71C
m_{PS126}	BF1E6D9AA9CA4AC092BE60500C77D0DC7A6A236520F86722

Code ID	Basic Midamble Codes m_{PS} of length *P*=192
m_{PS127}	051C5FA122845A30B4EC306B38016B45667C7754F92F13A0

A.3 Association between Midambles and Channelisation Codes

The following mapping schemes apply for the association between midambles and channelisation codes if no midamble is allocated by higher layers. Secondary channelisation codes are marked with a (*). These associations apply both for UL and DL.

A.3.1 Association for Burst Type 1/3 and K_{Cell}=16 Midambles

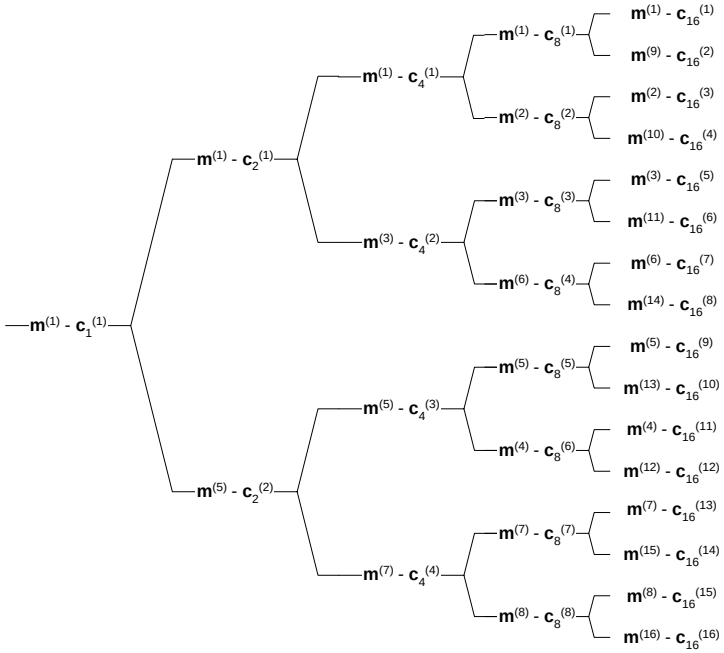

Figure A-1: Association of Midambles to Spreading Codes for Burst Type 1/3 and K_{Cell}=16

A.3.2 Association for Burst Type 1/3 and K_{Cell}=8 Midambles

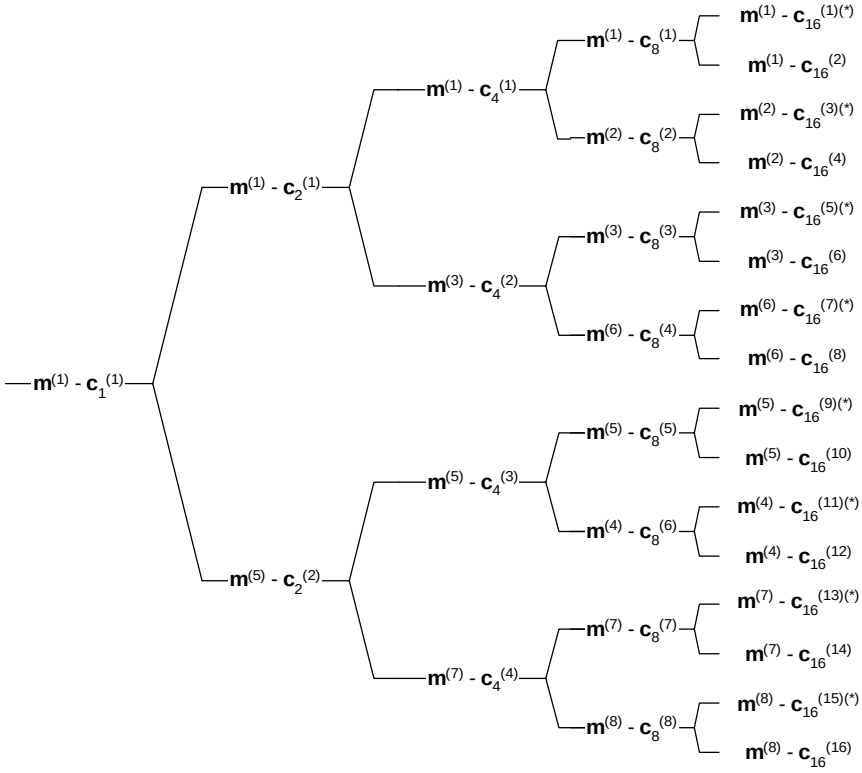

Figure A-2: Association of Midambles to Spreading Codes for Burst Type 1/3 and K_{Cell}=8

A.3.3 Association for Burst Type 1/3 and K_{Cell}=4 Midambles

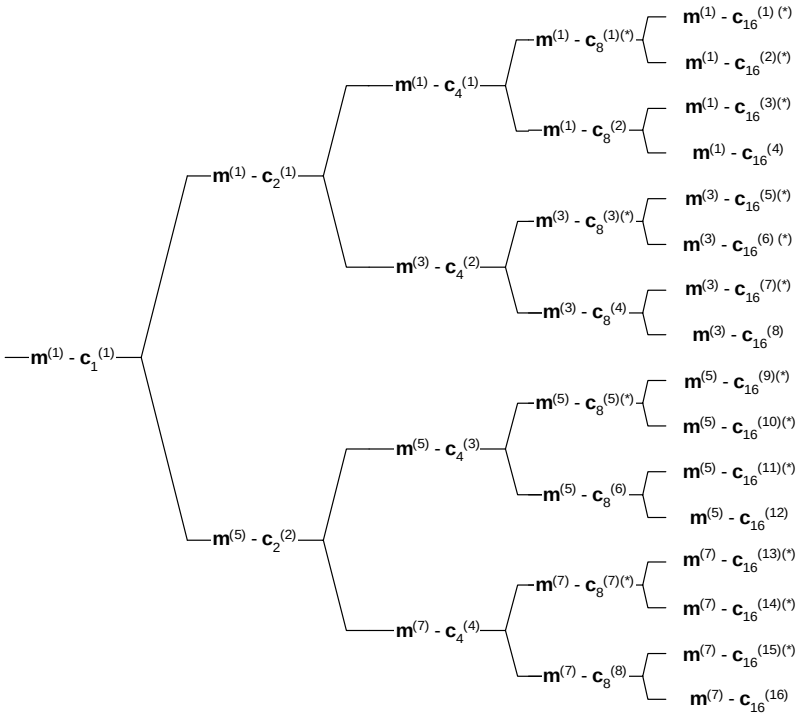

Figure A-3: Association of Midambles to Spreading Codes for Burst Type 1/3 and K_{Cell}=4

A.3.4 Association for Burst Type 2 and K_{Cell}=6 Midambles

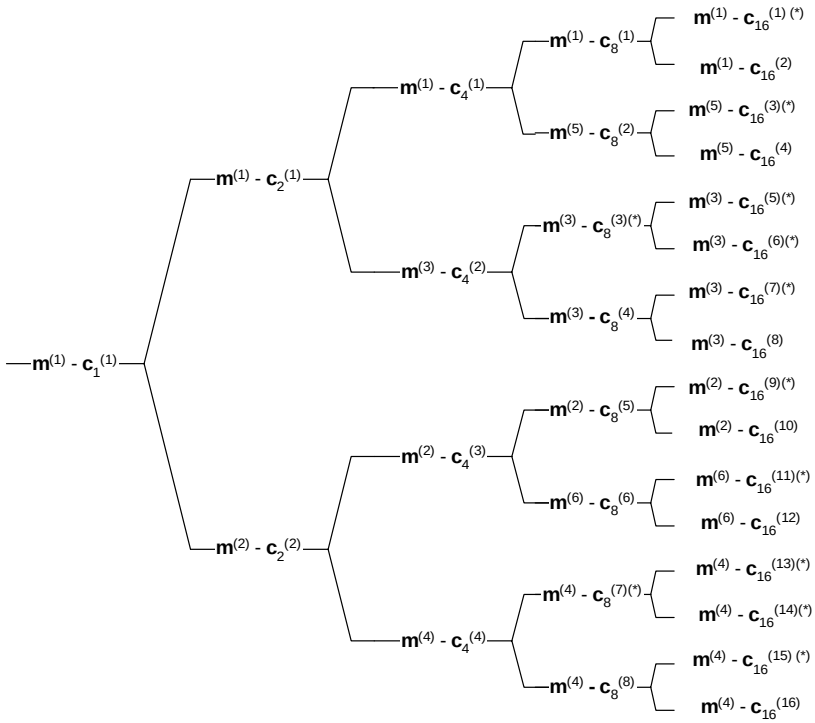

Figure A-4: Association of Midambles to Spreading Codes for Burst Type 2 and K_{Cell}=6

A.3.5 Association for Burst Type 2 and K_{Cell}=3 Midambles

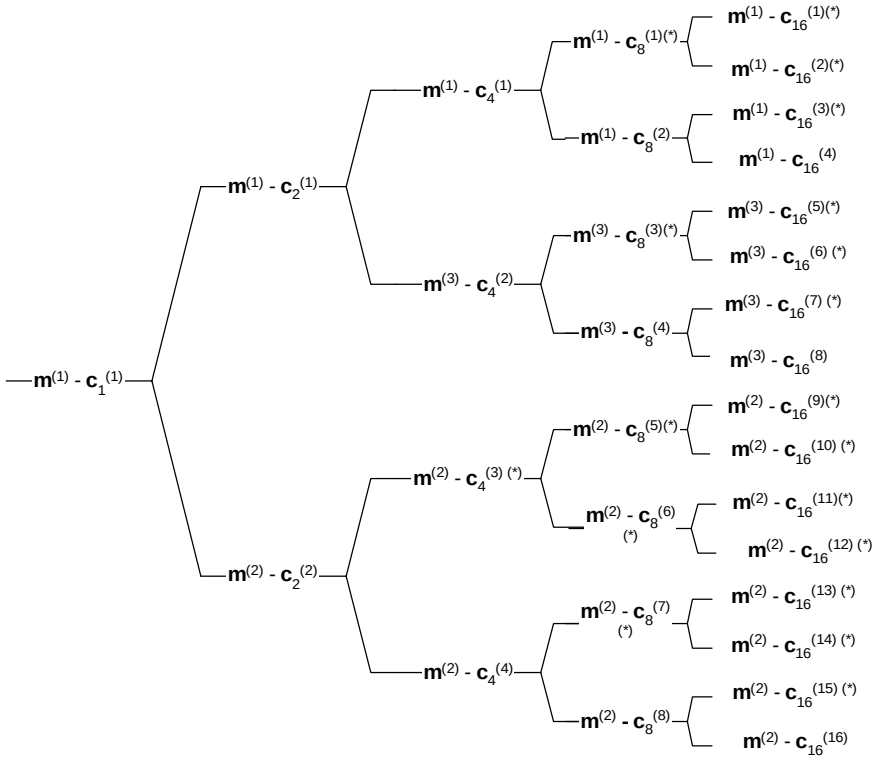

Figure A-5: Association of Midambles to Spreading Codes for Burst Type 2 and K_{Cell}=3

Note that the association for burst type 2 can be derived from the association for burst type 1 and 3, using the following table:

Burst Type 1/3	m(1)	m(2)	m(3)	m(4)	m(5)	m(6)	m(7)	m(8)
Burst Type 2	m(1)	m(5)	m(3)	m(6)	m(2)	m(4)	-	-

Annex B (normative): Signalling of the number of channelisation codes for the DL common midamble case

The following mapping schemes shall apply for the association between the number of channelisation codes employed in a timeslot and the use of a particular midamble shift in the DL common midamble case. In the following tables the presence of a particular midamble shift is indicated by '1'. Midamble shifts marked with '0' are left unused. Mapping schemes B.3 and B.4 are not applicable to beacon timeslots where a P-CCPCH is present, because the default midamble allocation scheme is applied to these timeslots. Note that in mapping schemes B.3 and B.4, the fixed and pre-allocated channelisation code for the beacon channel is included into the number of indicated channelisation codes.

B.1 Mapping scheme for Burst Type 1 and K_{Cell}=16 Midambles.

m1	m2	m3	m4	m5	m6	m7	M8	m9	m10	m11	m12	m13	m14	m15	m16	
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1 code
0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2 codes
0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	3 codes
0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	4 codes
0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	5 codes
0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	6 codes
0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	7 codes
0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	8 codes
0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	9 codes
0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	10 codes
0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	11 codes
0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	12 codes
0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	13 codes
0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	14 codes
0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	15 codes
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	16 codes

B.2 Mapping scheme for Burst Type 1 and K_{Cell}=8 Midambles.

M1	m2	m3	m4	m5	m6	m7	m8	
1	0	0	0	0	0	0	0	1 code or 9 codes
0	**1**	0	0	0	0	0	0	2 codes or 10 codes
0	0	**1**	0	0	0	0	0	3 codes or 11 codes
0	0	0	**1**	0	0	0	0	4 codes or 12 codes
0	0	0	0	**1**	0	0	0	5 codes or 13 codes
0	0	0	0	0	**1**	0	0	6 codes or 14 codes
0	0	0	0	0	0	**1**	0	7 codes or 15 codes
0	0	0	0	0	0	0	**1**	8 codes or 16 codes

B.3 Mapping scheme for Burst Type 1 and K_{Cell}=4 Midambles.

m1	m3	m5	m7	
1	0	0	0	1 or 5 or 9 or 13 codes
0	**1**	0	0	2 or 6 or 10 or 14 codes
0	0	**1**	0	3 or 7 or 11 or 15 codes
0	0	0	**1**	4 or 8 or 12 or 16 codes

B.4 Mapping scheme for beacon timeslots and K_{Cell}=16 Midambles.

m1	m2	m3	M4	m5	m6	m7	M8	m9	m10	m11	M12	m13	m14	m15	m16	
1	x(*)	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	1 codes or 13 codes
1	x(*)	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	2 codes or 14 codes
1	x(*)	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	3 codes or 15 codes
1	x(*)	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	4 codes or 16 codes
1	x(*)	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	5 codes
1	x(*)	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	6 codes
1	x(*)	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	7 codes
1	x(*)	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	8 codes
1	x(*)	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	9 codes
1	x(*)	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	10 codes
1	x(*)	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	11 codes
1	x(*)	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	12 codes

(*) In case of Block-STTD encoding for the P-CCPCH, midamble shift 2 is used by the diversity antenna

B.5 Mapping scheme for beacon timeslots and K_{Cell}=8 Midambles.

m1	m2	m3	m4	m5	m6	m7	M8	
1	x(*)	**1**	0	0	0	0	0	1 or 7 or 13 codes
1	x(*)	0	**1**	0	0	0	0	2 or 8 or 14 codes
1	x(*)	0	0	**1**	0	0	0	3 or 9 or 15 codes
1	x(*)	0	0	0	**1**	0	0	4 or 10 or 16 codes
1	x(*)	0	0	0	0	**1**	0	5 codes or 11 codes
1	x(*)	0	0	0	0	0	**1**	6 codes or 12 codes

(*) In case of Block-STTD encoding for the P-CCPCH, midamble shift 2 is used by the diversity antenna

B.6 Mapping scheme for beacon timeslots and K_{Cell}=4 Midambles.

m1	m3	m5	m7	
1	**1**	0	0	1 or 4 or 7 or 10 or 13 or 16 codes
1	0	**1**	0	2 or 5 or 8 or 11 or 14 codes
1	0	0	**1**	3 or 6 or 9 or 12 or 15 codes

B.7 Mapping scheme for Burst Type 2 and K_{Cell}=6 Midambles.

m1	m2	m3	m4	m5	m6	
1	0	0	0	0	0	1 or 7 or 13 codes
0	**1**	0	0	0	0	2 or 8 or 14 codes
0	0	**1**	0	0	0	3 or 9 or 15 codes
0	0	0	**1**	0	0	4 or 10 or 16 codes
0	0	0	0	**1**	0	5 or 11 codes
0	0	0	0	0	**1**	6 or 12 codes

B.8 Mapping scheme for Burst Type 2 and K_{Cell}=3 Midambles.

m1	m2	m3	
1	0	0	1 or 4 or 7 or 10 or 13 or 16 codes
0	**1**	0	2 or 5 or 8 or 11 or 14 codes
0	0	**1**	3 or 6 or 9 or 12 or 15 codes

3GPP TSG RAN Meeting #13
Beijing, China, 18th – 21st , September, 2001

R1-01-0811

CR-Form-v3

CHANGE REQUEST

⌘ **25.221** **CR** **061** ⌘ rev **-** ⌘ Current version: **3.7.0** ⌘

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Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network **X** Core Network ☐

Title:	⌘	Addition and correction of the reference
Source:	⌘	TSG RAN WG1
Work item code:	⌘	TEI
Date:	⌘	August 21, 01
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
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2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	The reference to 25.427 in section 5.3.7.2 "Structure of the PICH over multiple radio frames" is incorrect since 25.427 deals with dedicated channels. The correct reference is 25.435 the frame protocol specification that deals with PICH.
Summary of change:	⌘	The reference 25.435 is added and referred to in section 5.3.7.2 . The reference to 25.427 in this section is removed and replaced by the reference to 25.435.
Consequences if not approved:	⌘	Misleading reference.

Clauses affected:	⌘	2., 5.3.7.2
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
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[1] 3GPP TS 25.201: "Physical layer - general description".

[2] 3GPP TS 25.211: "Physical channels and mapping of transport channels onto physical channels (FDD)".

[3] 3GPP TS 25.212: "Multiplexing and channel coding (FDD)".

[4] 3GPP TS 25.213: "Spreading and modulation (FDD)".

[5] 3GPP TS 25.214: "Physical layer procedures (FDD)".

[6] 3GPP TS 25.215: "Physical layer – Measurements (FDD)".

[7] 3GPP TS 25.222: "Multiplexing and channel coding (TDD)".

[8] 3GPP TS 25.223: "Spreading and modulation (TDD)".

[9] 3GPP TS 25.224: "Physical layer procedures (TDD)".

[10] 3GPP TS 25.225: "Physical layer – Measurements (TDD)".

[11] 3GPP TS 25.301: "Radio Interface Protocol Architecture".

[12] 3GPP TS 25.302: "Services Provided by the Physical Layer".

[13] 3GPP TS 25.401: "UTRAN Overall Description".

[14] 3GPP TS 25.402: "Synchronisation in UTRAN, Stage 2".

[15] 3GPP TS 25.304: " UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode".

[16] 3GPP TS 25.427: "UTRAN Iur and Iub interface user plane protocols for DCH data streams".

[17] 3GPP TS 25.435: "UTRAN I_{ub} Interface User Plane Protocols for Common Transport Channel Data Streams

5.3.7.2 Structure of the PICH over multiple radio frames

As shown in figure 17, the paging indicators of N_{PICH} consecutive frames form a PICH block, N_{PICH} is configured by higher layers. Thus, $N_P=N_{PICH}*N_{PI}$ paging indicators are transmitted in each PICH block.

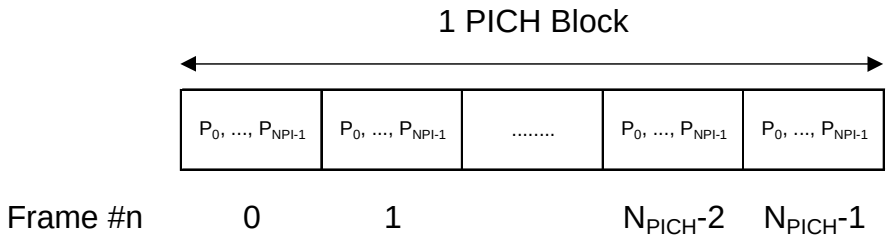

Figure 17: Structure of a PICH block

The value PI (PI = 0, ..., N_P-1) calculated by higher layers for use for a certain UE, see [15], is associated to the paging indicator P_q in the nth frame of one PICH block, where q is given by

$q = PI \bmod N_{PI}$

and n is given by

$n = PI \operatorname{div} N_{PI}$.

The PI bitmap in the PCH data frames over Iub contains indication values for all possible higher layer PI values, see [16 7]. Each bit in the bitmap indicates if the paging indicator P_q associated with that particular PI shall be set to 0 or 1. Hence, the calculation in the formulas above is to be performed in Node B to make the association between PI and P_q.

3GPP TSG RAN Meeting #13
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R1-01-0811

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CHANGE REQUEST

⌘ **25.221 CR 062** ⌘ rev **-** ⌘ Current version: **4.1.0** ⌘

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Title:	⌘	Addition and correction of the reference
Source:	⌘	TSG RAN WG1
Work item code:	⌘	TEI
Date:	⌘	August 21, 01
Category:	⌘	**A**
Release:	⌘	REL-4

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Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

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[11] 3GPP TS 25.301: "Radio Interface Protocol Architecture".

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[15] 3GPP TS 25.304: " UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode".

[16] 3GPP TS 25.427: "UTRAN Iur and Iub interface user plane protocols for DCH data streams".

[17] 3GPP TS 25.435: "UTRAN I_{ub} Interface User Plane Protocols for Common Transport Channel Data Streams

5.3.7.2 Structure of the PICH over multiple radio frames

As shown in figure 17, the paging indicators of N_{PICH} consecutive frames form a PICH block, N_{PICH} is configured by higher layers. Thus, $N_P=N_{PICH}*N_{PI}$ paging indicators are transmitted in each PICH block.

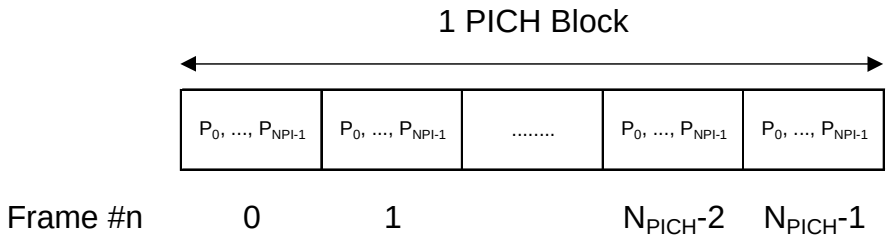

Figure 17: Structure of a PICH block

The value PI (PI = 0, ..., N_P-1) calculated by higher layers for use for a certain UE, see [15], is associated to the paging indicator P_q in the nth frame of one PICH block, where q is given by

$q = PI \bmod N_{PI}$

and n is given by

$n = PI \operatorname{div} N_{PI}$.

The PI bitmap in the PCH data frames over Iub contains indication values for all possible higher layer PI values, see [16 7]. Each bit in the bitmap indicates if the paging indicator P_q associated with that particular PI shall be set to 0 or 1. Hence, the calculation in the formulas above is to be performed in Node B to make the association between PI and P_q.

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R1-01-0933

CR-Form-v4

CHANGE REQUEST

⌘ **TS 25.221 CR 063** ⌘ rev **-** ⌘ Current version: **4.1.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network **X** Core Network ☐

Title:	⌘	Clarification of notations in TS25.221 and TS25.223
Source:	⌘	TSG RAN WG1
Work item code:	⌘	TEI
Date:	⌘	21-08-2001
Category:	⌘	**A**
Release:	⌘	REL-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	The letter K is used in the specifications for three different purposes. It currently indicates the number of codes per time slot, the number of supported midambles in a cell, and the max. number of possible midambles for the different basic midamble codes. New abbreviations are introduced to distinguish between those purposes.
Summary of change:	⌘	K is used to indicate the max. Number of possible midambles for the different basic midambles. K_{CELL} is used to indicate the number of supported midambles in a cell. K_{CODE} is used to indicate the number of codes.
Consequences if not approved:	⌘	Ambiguous specifications

Clauses affected:	⌘	5.2.3, 5.3.1.3, 5.6.1, A.1-A.3, B.1-B.8
Other specs affected:	⌘	☐ Other core specifications ⌘ TS25.223 ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

5.2.3 Training sequences for spread bursts

In this subclause, the training sequences for usage as midambles in burst type 1, 2 and 3 (see subclause 5.2.2) are defined. The training sequences, i.e. midambles, of different users active in the same cell and same time slot are cyclically shifted versions of one cell-specific single basic midamble code. The applicable basic midamble codes are given in Annex A.1 and A.2. As different basic midamble codes are required for different burst formats, the Annex A.1 shows the basic midamble codes $\mathbf{m}_{PL}$ for burst type 1 and 3, and Annex and A.2 shows $\mathbf{m}_{PS}$ for burst type 2. It should be noted that burst type 2 must not be mixed with burst type 1 or 3 in the same timeslot of one cell.

The basic midamble codes in Annex A.1 and A.2 are listed in hexadecimal notation. The binary form of the basic midamble code shall be derived according to table 6 below.

Table 6: Mapping of 4 binary elements m_i on a single hexadecimal digit

4 binary elements m_i	Mapped on hexadecimal digit
-1 -1 -1 -1	0
-1 -1 -1 1	1
-1 -1 1 –1	2
-1 -1 1 1	3
-1 1 -1 –1	4
-1 1 -1 1	5
-1 1 1 –1	6
-1 1 1 1	7
1 -1 -1 –1	8
1 -1 -1 1	9
1 -1 1 –1	A
1 -1 1 1	B
1 1 -1 –1	C
1 1 -1 1	D
1 1 1 –1	E
1 1 1 1	F

For each particular basic midamble code, its binary representation can be written as a vector $\mathbf{m}_{\mathrm{P}}$:

$$\mathbf{m}_{\mathrm{P}} = (m_1, m_2, ..., m_P) \tag{1}$$

According to Annex A.1, the size of this vector $\mathbf{m}_{\mathrm{P}}$ is P=456 for burst type 1 and 3. Annex A.2 is setting P=192 for burst type 2. As QPSK modulation is used, the training sequences are transformed into a complex form, denoted as the complex vector $\underline{\mathbf{m}}_{\mathrm{P}}$:

$$\underline{\mathbf{m}}_{\mathrm{P}} = (\underline{m}_1, \underline{m}_2, ..., \underline{m}_P) \tag{2}$$

The elements $\underline{m}_i$ of $\underline{\mathbf{m}}_{\mathrm{P}}$ are derived from elements m_i of $\mathbf{m}_{\mathrm{P}}$ using equation (3):

$$\underline{m}_i = (\mathrm{j})^i \cdot m_i \text{ for all } i = 1, ..., P \tag{3}$$

Hence, the elements $\underline{m}_i$ of the complex basic midamble code are alternating real and imaginary.

To derive the required training sequences (different shifts), this vector $\underline{\mathbf{m}}_{\mathrm{P}}$ is periodically extended to the size:

$$i_{\max} = L_m + (K' - 1)W + \lfloor P / K \rfloor \tag{4}$$

Notes on equation (4):

- L_m: Midamble length

- K': Maximum number of different midamble shifts in a cell, when no intermediate shifts are used. This value depends on the midamble length.
- K: Maximum number of different midamble shifts in a cell, when intermediate shifts are used, K=2K'. This value depends on the midamble length.
- W: Shift between the midambles, when the number of midambles is K'.
- $\lfloor x \rfloor$ denotes the largest integer smaller or equal to x

Allowed values for L_m, K' and W are given in Annex A.1 and A.2.

So we obtain a new vector $\underline{\mathbf{m}}$ containing the periodic basic midamble sequence:

$$\underline{\mathbf{m}} = \left(\underline{m}_1, \underline{m}_2, ..., \underline{m}_{i_{\max}}\right) = \left(\underline{m}_1, \underline{m}_2, ..., \underline{m}_{L_m + (K'-1)W + \lfloor P/K \rfloor}\right) \quad (5)$$

The first P elements of this vector $\underline{\mathbf{m}}$ are the same ones as in vector $\underline{\mathbf{m}}_{\mathrm{P}}$, the following elements repeat the beginning:

$$\underline{m}_i = \underline{m}_{i-P} \text{ for the subset } i = (P+1), ..., i_{\max} \quad (6)$$

Using this periodic basic midamble sequence $\underline{\mathbf{m}}$ for each shift k a midamble $\underline{\mathbf{m}}^{(k)}$ of length L_m is derived, which can be written as a shift specific vector:

$$\underline{\mathbf{m}}^{(k)} = \left(\underline{m}_1^{(k)}, \underline{m}_2^{(k)}, ..., \underline{m}_{L_m}^{(k)}\right) \quad (7)$$

The L_m midamble elements $\underline{m}_i^{(k)}$ are generated for each midamble of the first K' shifts (k = 1,...,K') based on:

$$\underline{m}_i^{(k)} = \underline{m}_{i+(K'-k)W} \text{ with } i = 1, ..., L_m \text{ and } k = 1, ..., K' \quad (8)$$

The elements of midambles for the second K' shifts (k = (K'+1),...,K = (K'+1),...,2K') are generated based on a slight modification of this formula introducing intermediate shifts:

$$\underline{m}_i^{(k)} = \underline{m}_{i+(K-k-1)W+\lfloor P/K \rfloor} \text{ with } i = 1, ..., L_m \text{ and } k = K'+1, ..., K-1 \quad (9)$$

$$\underline{m}_i^{(k)} = \underline{m}_{i+(K'-1)W+\lfloor P/K \rfloor} \text{ with } i = 1, ..., L_m \text{ and } k = K \quad (10)$$

The number K_{Cell} of midambles that is supported in each cell can be smaller than K, depending on the cell size and the possible delay spreads, see annex A. The number K_{Cell} ~~Whether intermediate shifts are allowed in a cell~~ is signalled by higher layers.

The midamble sequences derived according to equations (7) to (10) have complex values and are not subject to channelisation or scrambling process, i.e. the elements $\underline{m}_i^{(k)}$ represent complex chips for usage in the pulse shaping process at modulation.

The term 'a midamble code set' or 'a midamble code family' denotes K specific midamble codes $\underline{\mathbf{m}}^{(k)}$; k=1,...,K, based on a single basic midamble code $\mathbf{m}_{\mathrm{P}}$ according to (1).

5.3.1.3 P-CCPCH Training sequences

The training sequences, i.e. midambles, as described in subclause 5.2.3 are used for the P-CCPCH. For those timeslots in which the P-CCPCH is transmitted, the midambles $m^{(1)}$ and $m^{(2)}$ are reserved for P-CCPCH in order to support Block STTD antenna diversity and the beacon function, see 5.4 and 5.5. The use of midambles depends on whether Block STTD is applied to the P-CCPCH:

- If no antenna diversity is applied to P-CCPCH, $m^{(1)}$ is used and $m^{(2)}$ is left unused. The maximum number K_{Cell} of midambles in a cell may be 4, 8 or 16.

- If Block STTD antenna diversity is applied to P-CCPCH, $m^{(1)}$ is used for the first antenna and $m^{(2)}$ is used for the diversity antenna. The maximum number K_{Cell} of midambles in a cell may be 8 or 16. The case of 4 midambles is not allowed for Block STTD.

5.6.1 Midamble Allocation for DL Physical Channels

Beacon channels shall always use the reserved midambles $m^{(1)}$ and $m^{(2)}$, see 5.5. For DL physical channels that are located in the same time slot as the P-CCPCH, midambles shall be allocated based on the default midamble allocation scheme, using the association for burst type 1 and K_{Cell}=8 midambles. For all other DL physical channels, the midamble is explicitly assigned by higher layers or allocated by layer 1.

Annex A (normative): Basic Midamble Codes for the 3.84 Mcps option

A.1 Basic Midamble Codes for Burst Type 1 and 3

In the case of burst type 1 or 3 (see subclause 5.2.2) the midamble has a length of Lm=512, which is corresponding to:

K'=8; W=57; P=456.

Depending on the possible delay spread cells are configured to use K_{Cell} midambles which are generated from the Basic Midamble Codes (see table A-1)

- for all k=1,2,...,K; K=2K' or
- for k=1,2,...,K', only, or
- for odd k=1,3,5,...,≤ K', only.

Depending on the cell size midambles for PRACH are generated from the Basic Midamble Codes (see table A-1)

- for k=1,2,...,K' or
- for odd k=1,3,5,...,≤ K', only.

The cell configuration is broadcast on BCH.

The mapping of these Basic Midamble Codes to Cell Parameters is shown in TS 25.223.

Table A-1: Basic Midamble Codes $\mathbf{m}_p$ according to equation (5) from subclause 5.2.3 for case of burst type 1 and 3

Code ID	Basic Midamble Codes m_{PL} of length *P*=456
m_{PL0}	8DF65B01E4650910A4BF89992E48F43860B07FE55FA0028E454EDCD1F0A09A6F029668F55427253FB8A71E5EF2EF360E539C489584413C6DC4
m_{PL1}	4C63F9BC3FD7B655D5401653BE75E1018DC26D271AADA1CF13FD348386759506270F2F953E93A44468E0A76605EAE8526225903B1201077602
m_{PL2}	8522611FFCAEB55A5F07D966036C852E7B15B893B3ABA9672C327380283D168564B8E1200F0E2205AF1BB23A58679899785CFA2A6C131CFDC4
m_{PL3}	F58107E6B777C221999BDE9340E192DC6C31AB8AE85E70AA9BBEB39727435412A5A27C0EF73AB453ED0D28E5B032B94306EC1304736C91E922
m_{PL4}	89670985013DFD2223164B68A63BD58C7867E97316742D3ABD6CBDA4FC4E08C0B0CBE44451575C72F887507956BD1F27C466681800B4B016EE
m_{PL5}	FCDEF63500D6745CDB962594AF171740241E982E9210FC238C4DD85541F08C1A010F7B3161A7F4DF19BAD916FD308AB1CED2A32538C184E92C
m_{PL6}	DB04CE77A5BA7C0E09B6D3551072B11A7A43B6A355C1D6FDCF725D587874999895748DD09832ABC35CEC3008338249612E6FE5005E13B03103
m_{PL7}	D2F61A622D0BA9E448CD29587D398EF8CDC3B6582B6CDD50E9E20BF5FE2B3258041E14D60821DC6725132C22D787CD5D497780D4241E3B420D
m_{PL8}	7318524E62D806FA149ECC5435058A2B74111524B84727FE9A7923B4A1F0D8FCD89208F34BEE5CADEB90130F9954BB30605A98C11045FF173D
m_{PL9}	8E832B4FA1A11E0BF318E84F54725C8052E0D099EF0AF54BC342BEE44976C9F38DE701623C7BF6474DF90D2E2222A4915C8080E7CD3EC84DAC
m_{PL10}	CFA5BAC90780876C417933C43103B55699A8AD51164E590AF9DA6AF0C18804E1F74862F00CE7ECC899C85B6ABB0CAD5E50836AD7A39878FE2F
m_{PL11}	AD539094A19858A75458F1B98E286A4F7DC3A117083D04724CBE83F34102817C5531329CDB437FFF712241B644BDF0C1FEC8598A63C2F21BD7
m_{PL12}	BEB8483139529BDE23E42DA6AB8170DD0BFBB30CE28A4502FAF3C8EDA219B9A6D5B849D9C9E4451F74E2408EA046061201E0C1D69CF48F3A94
m_{PL13}	C482462CA7846266060D21688BA00B72E1EC84A3D5B7194C8DA39E21A3CE12BF512C8AAB6A7079F73C0D3E4F40AC555A4BCC453F1DFE3F6C82
m_{PL14}	9663373935FD5C213AC58C0670206683D579D2526C05B0A81030DDF61A221D8A68EAD8D6F7AA0D662C07C6DCD0115A54D39F03F7122B0675AC
m_{PL15}	387397AE5CD3F2B3912C26B8F87CE82CEFEC55507DB08FB0C4CF2FD6858896201ACA7264281D0298440DD3481E5E9DDB24C16F30EB7A22948A
m_{PL16}	AFE9266843C892571B6230D808788C63B9065EA3BDFF687B92B8734A8D7099559FEA22C9416576D0C087EB4503E87E356471B330182A24A3E6
m_{PL17}	6E6C550A4CB74010F6C3E0328651DF421C456D9A5E8AE9D3946C10189D72B579184552EE3E799970969C870FE8A37B6C4BA890992103486DC0
m_{PL18}	D803CA71B6F99CFB3105D40F4695D61EB0B62E803F79302EE3D2A6BF12EA70D304B181E8B38B3B74F5022B67EB8109808C62532688C563D4BE
m_{PL19}	E599ED48D01772055DBE9D343A4EA5EABE643DA38F06904FC7523B08C4101F021B199AF759A00D9AC298881D79413A77470992A75C771492D0
m_{PL20}	9F30AC4162CE5D185953705F3D45F026F38E9B5721AEFE07370214D526A2C4B344B508B57BFB2492320C05903C79CBEE08C6E7F218B57E14D6
m_{PL21}	B5971060DA84685B4D042ED0189FAF13C961B2EF61CC164E363B22AAB14AC8AF607906C1C6E04F2054C687AA6741A9E70639857DA02B6FFFFA
m_{PL22}	97135FC2226C4B4A5CBA5FCA3732763B87455F73A1148006F3DF214BD4C936D061E04045160E2CE33B9CD09D08FDE2A37F4E998322B4401D27
m_{PL23}	4D256D57C861B9791151A78D5299C56D116B6178B2A2D04BB95FB76540AF28341DC6EC4E7ED3BF9E508478D9C8F44914805DA82429E1CF320E
m_{PL24}	858EF5C84CE32D18D9ABA110EEA7474CF0CD70254D2928C3F4DFF6BB3A518587CADA19029078AC90A8336C8178203BE3289E601F07D089CB64
m_{PL25}	920A8796A511650AEF32F93DD3C39C624E07AE03CE8C96139973F54DCB9803C5164ADB502D4FF561564D607037FCD172921F1982B102C3312C
m_{PL26}	485C5DAE76B360A9C56E20B8422EA3E6ACF07CB093B5587CB0E6A5498A4714081EA98DBCDB0482B26E0D097C03444473D233BEF3C8E440DEBF
m_{PL27}	565A9D54EA789892B024F97E728E8EE112411942C48BD0C5BC8AA457D8DC9941F0F7424B38643FFE6521CD306FBC56FE10F1428D4C245B5606
m_{PL28}	5AEF2C0C2C378179A1AC36242E6B3EDB72C42D3624437674F8D51260C0898C201837CBA14E9E23D1EF6451C4ACF27AB031F457A8A1BFD148AE
m_{PL29}	87D8FE685417822A23D925307E6C11081ADAC4702BCCD9BE448E78984D109B50DEF5B7C58BC71EA1F0A6826BA8AD1978843E7697F3E416AADA

Code ID	Basic Midamble Codes m_{PL} of length *P*=456
m_{PL30}	84802B72AF27B5BE724D1FB629E0E627BDB0D9061292562F98350C1D0C9D4B9D8E2BF71123C82EBB161003AE9829E07244D78F19926F8847A2
m_{PL31}	8CCB5128238BCB088E30972D62792AEF02B9BBDDCAD68C9916C00BF91CBE788B0F03851FAAF88605534FD73436C259D270B1013CB14226F658
m_{PL32}	62F4E6FAC2BF1979CE6854AA2D33534BFB2F946519101A6589131C3640707D40E67ED804AF8736AD213CAF5935741900061967E8285C27E34C
m_{PL33}	4095E5B4EEAFCDF68A34B267EEA28D8444FA533900F41499E260D2E65C256A52E1DD5861F5227C98E00687D107233F51A1167BCF72FB184654
m_{PL34}	5630E9A79FCAD303404D9E5A802299162657AAC734761C6E90DA8BCE4F61A763E0BB48D3FEB3F78468C828ABA4828DAD06E0F904CFD40421DC
m_{PL35}	CD12B24C0BCA8AAC1FCBF0500A3BC684A180E863D888F2506B48C68ECF17F76CB285991FBA18EB6397211FAD002F482D57A258CD45DE3FF1A6
m_{PL36}	AFCF2A50877286CD3405442730C45514F082D9EC296B367C0F64F04C4E0007DCA9E50BEED5C102126E319ACBC64F1729272F2F72C9397029FE
m_{PL37}	18F89EE8589D20882A72A44DCCDF0050F0A3D88DBA6531614973D26905FDF41E3F779FF0648E8AF1540928511BCF4C25D9C64AF34AC31B8965
m_{PL38}	F890D550F33F032ECDA3A51FED427D634F64EB29AF1332A23CD961258E4BAED040E7B336918E250EC272A12816B9EBFFA1E0AE401185F08C10
m_{PL39}	ACE5DD61506047E80FB7D41BD3992DF4D7F18EB46CC145C0E9105428C2F8F299141F5D66691904A7DC2513A3B83994ACB1292246B32818FE9D
m_{PL40}	150680FF900C9B46E1E24D54BE2238CB950A934E5CCDE9BC3939EB51CB0AE202B7D339EEC2018B33A0AB9B63DA5D512D64FB58C0E51A1C82C2
m_{PL41}	51A579EED2663A002D32D10A0753173612F4D5BA167D1807C61F25C4D42C063682E8E9DD019F79D446A046EB3F75E50FEB228DC52F08E694B6
m_{PL42}	CDC644FE4C0C6897604F9D14D714123BF16FFF0E49F35F674908CA60653702FE27BCCA2A47098453AF8661055C8C549EB6A951A8396AD4B94D
m_{PL43}	750A10366C595373C5001CA3E4239764B1409D602CF6052B39BC6A3255A15FE06C782C4C5F847026A7E79838A2933A61C77BB6CBF5915B2DA5
m_{PL44}	B7490686D78E409082C4C48FE18D4C35429C20AADF96076B92FC4E85490664753DB0891A0B27FD849BB7FCA99E3B38F22F8C662852C0D35AA6
m_{PL45}	D86E1B575B47D23DA811806A54C231281F03317830E7BD305D3CAA7D6382A5233104CFD54D22DF9F34535E5B390D9040CF1375FEA44CEC29E2
m_{PL46}	828655960C026EC67B683480992AC2ED2C43ABC606F5220C2945F373470BE7ED5BCCF7C1AA0986BBCCC84F11F1658AA568FAA0A60C5F0B5BFA
m_{PL47}	D76230E02C8533653AAB99B288AA2ADE25A1C1BF28516C04239240EAF1EFC0B98974B51F886861D8A1E9F5D62CFFEC309F071A9716B325101B
m_{PL48}	EA207662865B8A07D69648964DED818EE474A90B94473408871880E63EF0596B9FCFEC3C06B86EA6AD2B06C91672EFB33C70241A5450B59B8A
m_{PL49}	9CB5459549909835FAB22F0D99298C120ACF479F814CCE749079D40688F28101037762F125C776DA9C5FA1FCE0E76E452F8185354FDCDE94E2
m_{PL50}	227506304AEC1D6F93569B51FDC3405A0F38194F65BE17163A3CB9827A35AECEA757D020FE249377ECD561428A38FEED004EC859C272563185
m_{PL51}	96B9AEC9938910F0E533422A3977519B05CD4AD3909BC15A7502D48D49C124FA192A8E57027CFEB11DF542010603CE5C9FDF8E626D4FBF8CF4
m_{PL52}	A6AAD06E095A9BE0BD9F8A2ED40C3CBDBAE91C700CBB778C8696CC06F3A675C16BDB2918E5F2111005A8727206DC6A9684E05655185C398EEB
m_{PL53}	CD168D384A78DA172991AD333EE2A9880905AFE59E2A2A4AC4414C40F82874F98A3CBE7B44F4C7F4710B35FD88AFC0399FAEB070EB9CA4D30A
m_{PL54}	22016CA87AD1549174A8699DD65599697871091457E83E0912E7E77A06531C209394D283D18A38662B73681DD9C5BF330FED978BDA7D487CA8
m_{PL55}	B9401B0843AA6F7827A13BD66C922287E8886C31EB5B90B82B472CCD6DA3D8D4FBF78B8F8496DFA8252B06429D5DD17142F1C908ACCD70EA0C
m_{PL56}	E42B9EFDC5D09AC27B3C7DA28D02493A70521223B9D7A76A9D13E9C171017964D16A70C08EAD02C3DC948889C23E365AFCF01BF20B89B0BF5C
m_{PL57}	9DA0180168DB915E9F3597B59312198E1B5CC00D743C2ECB0DBAADA3E35A2465ED1EAA9D74734D49A313CE4DFF020D0760E3153DC485603943
m_{PL58}	B6C966619ECB98191D719C187C07BD503425650CAA3A2D1F2DF5212B1441D7A0C1D36A4C9C2550240AD17CA43BB3943DFFFBF1E283D81299CC
m_{PL59}	DB0E8C41F08A03D477C1AA548799274C4BF3EB68F2636166FDC8D4B1E7132539930297E228BA232BB5C279FA5ECA3AC10E24361AF050A453B8
m_{PL60}	89BCE2DE2974EEBA833CF32F224C85A2891484478527DB48FA6ECEA84C5E288CC3914CB54ADA0476278750187F68FBEA41017E1E58DF1A5A3D
m_{PL61}	70A457D1314A278625443EEB52520815EC92CEF17417B97440DCB531BC1CE83212F63270418D0FBDE71F6DB9E0EA88772E1E4535B6633E4425

Code ID	Basic Midamble Codes m_{PL} of length *P*=456
m_{PL62}	C388460AD54B36C4452CF0433BD347100ACCC24C79C535AD3E1F23FE0425E93A044C553BFA 116E09AA4BB32F13CFA76FBA1BC17520F45EFD44
m_{PL63}	0BAFCADCDF9AA2846681782CD3B90CA036A863C78EE1507620BC394D0C6804B4C97A15BC9 C0D7B79E6892EA1BFF1A0DD9573A9213AB140D0D2
m_{PL64}	833B0226789A62882FCD27A30885E67872B1A1C2FA484AD498011599DD57E8E2A07A560B4716 7AA5F60EF47177DBB1632D5387A2896348640B
m_{PL65}	8F52820323ABA5E6C6B465821B621600B980E59F53A599DA5646BA103214336836CF17E3386C E4FB2BC5F25CCB30CF7F500546828EC8786B8E
m_{PL66}	E2E9A29C3C8207B9A4508FD2F667A159F068EEE8D00686F46EA904C3692C1D79DFF1B32E510 3720D47B4B58AC35384A26087027E141B3126A8
m_{PL67}	70E7C39FD2D3AE1DCE341699A544D801A8688A6EE47C5CB3630022147DDC06241FC5337A34 8A462B2472DEC5E104DD520ADA5114DB065D4B0D
m_{PL68}	9E3483CAB164BD053C4971D4D87494CC689033D589EF80E5453376E4A8DCC02183B98C36B0 FF7DDC0AD07FCE8B4D5164371BD03A2110AD1247
m_{PL69}	04DA1C649B0608938DAADD3FE920A4F681690C54505429DBDCDCF10067AB5714BCDDFE1F2 8692710F794765781C1D233344E119BEE8A8416DC
m_{PL70}	7A18D6D30BDF44410714C3DCA27D8F9EA8A542D87122205640B98313C91AD9A0B993A5A7BC 3E035F93B88BBE6D4204BC82A9FA8D4C1A7618CF
m_{PL71}	EB9525E10265A48733C8E0E77E459310112A71DCA680F68AC044B64BC0A31D02EEA0F7ACAA AB7F1E574E94FEA2D1301CB14B03263DA8122B76
m_{PL72}	E706C6ED2D6F89153835079BE0C6D45310845EF2F9F6C6AE91B7419810508BA501C0148BF09 955BAD90D6391BA8EBA5CEFBD23221CC75143D7
m_{PL73}	DF071A10AC4120CD1431590BEDCFF9483CA7047B19590D035D309240BDB4264E9A3A2761402 EC97FD8BC51B4AF32E37FBC47162A2357D18751
m_{PL74}	F0F952B2238139F46D8254D1A2C1C22A16BA71EC0C0C900ED1442452D7F44C798BC65FF4067 1B88074BA0B74C6510996EEAC495C5B49C37DEB
m_{PL75}	1C86BD82EDA81FD65418D3837B5552A853791456D93B06C62C650D86CFBEC269AFFD772763 064062C03751B9428C6DA2E60383025F9E404B70
m_{PL76}	B390978DD2552C88AABA7838489A6F5A8E9C41E95FFA2215819BF8A5BFE39C8A706CC658E5 49E966611B843A1468406C41C09D1560BEDA4F1B
m_{PL77}	1A69EC9D053C7E84BAE7A48CCC71857D0C6B06D1065E3EA4633B133AA022B8104F6EE7C69B 6184B746C8822958B0A16686F27C8A0E3B4EFEAD
m_{PL78}	C95B2070816DC97C6D8DD2583263E73F9AAAFD13F0548D2EBD835824418F11E54111005FB71 3AB234BE412347358281C7DE331EDD21B8BEA52
m_{PL79}	56D6408399F23C2ED85EE0F68111D69A91A3AD9A732AC57CA08F86CC28B3CF4E4B02EBBA0 BCE5CAE5BACC4D52004070797C04093A84BB18DBA
m_{PL80}	E662E7043867BE250764DA0596D34A582A619B408B505E6211DD6286E93A37F95B1EA680C0C 5F3E777E3F71E8D75495D59043217FC0E222E16
m_{PL81}	27D5E681C222297AD478A079EF12F1A98F744B66335303322EF8880B931FEBF8322F4302944E 80BED468A0A516D410B183D863795992DA7DDB
m_{PL82}	5100336C05F9E5BF35201906C1C588858E0DAF56130DF5554B9AB21CA15311A90290624CD63 E03F5EDA49DB7A0C32AB5F1CA427A2D5635FDA5
m_{PL83}	C696DC993BFAEA9A61B781B9C5C3F5CFAA4C8339D8B03A9B0387883D0482A41AC78D652242 5959846E561D26A30FF79A205C801A85889736B2
m_{PL84}	D562297561AFF42D3168296C1153E4E39BE7B2EB0348BC704625AA08391235075EE0DE0A79A B03222FEDB27218C56F96EAC2F91CC8FCE64B12
m_{PL85}	DD0B6768FC01CC0A551F8ACC36907129623E975AB8B3FF58037F1859E2FA8C62C2D9D1E850 6916029A2C3F8CAD9A26AE2CC652F48800859F5C
m_{PL86}	923920696EB3AB413786C41854822282BB83F6900D33A232D470BE198BBF086067B72613300C 593B74251E2F079857ADBBCD86583A9DCAA6DC
m_{PL87}	B8EF30C797D8D2C4EF11244F137D806E556A436626D0115A621C92C34D166A68BCEDFA0040 DA8FD6F987B1CD5C2AA1C1B045E64475F0F8DABD
m_{PL88}	E1887001D414405ED6419E9EE1D1D346D924ED57ADF04B31B7948099976B2D1501A60DFFB28 7AD44C8783DF0C1EA5AA5D273D1389C8EA22DCC
m_{PL89}	8C2E379A58AA96748141CA84C35987905F984A49D3AD9BFF7807AC244C16C1DF74343C2E1F2 5514F5A0954CFBB3C92E25EF783136844998AC5
m_{PL90}	78F8A99E0A54E27F51C0726FE7A11EB26B1E29FE65F55AC8AC58011465900B958488A90F6DF 614A58431DC8B6C6B9A6F032EE0E0B1306EC4B4
m_{PL91}	88F7A31B7B20E0F05CA26E729B4F8A1933962D7BD7BE3E1EB130B28C794C0B4D01CADE0900 6FF97E80117509733F3A9DC225413A0AE08CA662
m_{PL92}	BE4DFCEAC18905AC8D5DA27A794F88A4D3058D2EFA3B075A819DEAE688EAF8940A653ED71 04E7B403D490F0A9030264E1F12B8922C75775E61
m_{PL93}	5BA4B79FC4550234D8922963BF3537485E3C8745A5DB90D3E2E454B30FF61112F508155B7C2B 3C4C628AF846240C2021ACDE547E5A41F666B8

Code ID	Basic Midamble Codes m_{PL} of length *P*=456
m_{PL94}	00556D35649F7610AB24A43C4F16D6AC0571FD126F11880C5CD72100D730E4E4D6BB73C33F837FAF1072743B249ADA2E09598B1EB23F1180A7
m_{PL95}	7A0CC9F21BD69CF3023E944545C2176EF0D4F450B765C28359FB8A32137D043D0E5713E67B3F61320985D2C6106605081F87D2296321468A2F
m_{PL96}	DA669880995B0671201172BABFF141D5854A245E211879EF3038A7C84170DADBD368455F24653161E7886E15B253F93E3A3C568EFB17CDEB1A
m_{PL97}	4E294E53D1661C1F6F748302A7723DA951C00FDB8BEBBF67A68710BA0F1A255DFB1627059D41A23D3961726DE6FEB10E5D209CC4505B209812
m_{PL98}	73385DF701414E144768A67EF72924B1653479E962FB1554B7E54BC5284D9B3E41C0C133F878972230721918AA425501B920B204FECE0C7F8A
m_{PL99}	F4492160805F258CE592DF4D1200566F81D173458D78EA3ABED79A14AF88170DB1D4A9A5931D2B80C58C27FE17D806E3E6A66CDAAD09F118D4
m_{PL100}	44D562D9012D8B07B8F44596467C11A163982BB7EAEAC184078B6B8CE46B5D7E17C39CEF576A025491183017FA09931D070B307B86524B03FF
m_{PL101}	FCAEEFCC49A13B4FFA12C0CC6A2B90CF4F57D78B1E98294B04675C2F0991661FDC61A452A247F8C29E0284AA21026F368307375AA2C3F1E12C
m_{PL102}	C486DF0510DCAD5AB86E178A686D398E11A0ECFAC5A326C10129257E5456B22FB8E147E9190D9929A5DFFE44715FA47D62F04CFC9B1C201414
m_{PL103}	C10AF383DC708E257E15A8AB337BCE684A2F4AC7A22DC2C25C277F8E8D0858E79317CDDD9AA2EA6CBE604D24AC0945026103E7B4126FD361A4
m_{PL104}	A5C60A181148D9A931B2DDDB9D169648BA54F366B4EFAE88F6861909EE0F07C037EE349D0EC59A823286E366CA3943589EEA7F828C3728085F
m_{PL105}	96136AEBD5E28462B0421DF292BA899FFA660D80EA01620D2C7490E5347127884AA3C3D1FF44BCEEF6C29EC589CDEF200C5742C5964F8B2B52
m_{PL106}	40F63C04ACAD986255D1E16B769A6D4C11A1D075E804BDC0AC61923E9A67F5D7417756328072455F6E22B1C64E06F367D1B0808295C2D90E22
m_{PL107}	F4B82D413578C4888C5F002CF6D0E03778134A860436551FD57537E4CED334B3C9CEBACE615238271717AA762448B86FA53D2074BCE35658A7
m_{PL108}	BCCC92D72C920E685530591FC351743D1E23DE044BF81D32650406113E23ECC757FDE4E386B6E2E7195EE4969717A7BD0812AC312B33A54308
m_{PL109}	6ED59DE0D44370A861CE2B42CF5E578E764A682AB5777905EE027D7160490EDC6C28989B23805AA697FCD215CB401BC5E4D430624C01B16192
m_{PL110}	DE80C0E273B92CC3C5034F7A20DB3914643C430B425C8B9249EAF73ACE8C3BCF17957242CF534D87A67D4DC0252275262E737F4095450CFA14
m_{PL111}	9505C4FEF2A397D5059F4729D013292A8321FFFA929ACB0A210D0A13E13061227C44A68FBD8CE6B66CE3D783363CD039AB35EE52603E09B758
m_{PL112}	E8BE90D7F954B14D8002A4CAC20765ABEED80634498C836D79B0F9338DBC17B28F05CF4E79136779E1C55AA30B6215F890882887B3B53C23E2
m_{PL113}	9F4B622C1358AE5468DC31E4B2CA320E5E20458C1DE5405BF4F9AD7D45A5BCAA39EC0626FFFC698C16A009CCCB7A18A64E85E70BA71731BA24
m_{PL114}	B91B2624843CF48299AFC2B1442570B41F28F578530D1E322E0B54282372131C71ACB924E70768A243EEC3200E7A5EBFA77111D9FB07FEA8AE
m_{PL115}	965F42DDA3A4650FE2F5103932B68F166FA424B9F0F7045311D962C2A9F66B9BC6C66FB480F9800354E0C54A72251071422CF1DFC44F94C00C
m_{PL116}	08ADCE48699FC30FA0788073BDAADB9177BBB4C1CED41F93085218364B8BAD8488561EF0FE1B0DDAA403C602494CB35697D62AA0A2B93A64CF
m_{PL117}	9A313BED80B1220D77C8ADA4B2E0B3D284A5120A94B741380923C78D3AD32BC3E71EC6EEA520E9D447D8727697598BB987F17506F482003ABD
m_{PL118}	24C9AD4C14EFEC002A3473FCAB04E492F2E269161A2960BA8AF09FD710B444A40C4E8B138418E62301E91FBA97AFDC58759A76D00F676736C7
m_{PL119}	6514C7733711CE4942CD2123AB37186EB7FECB7E78ABB28744864942FCF4C0F810054AF55B1042EB53064F0857C61D85B2CF0D2DC5826AF22F
m_{PL120}	B2C80CDC83E48C36BC6FDAB8661208EAD392F3A0571BE41DFAD765E744932ADEA50061E66C05498A5381B2A1F1B446587089DC4E4A2DF03D82
m_{PL121}	639368BA75CC709A3D9F28EDA237E32C2017A9BF1E382045B9426AEE0A4049DCB4E1D7EBE4647B855212824557497CFA039885A3BA42F98F63
m_{PL122}	6A70DDC17D0C8024B1C853F0C1948561EF32510151BE0C63BCA9171F20217891D1021EE72586CAFF557F8973336913A94A2A699B8740B054B8
m_{PL123}	2E32E3A35CCD001172CE310B63B4E406126045A0FA3795BE3E3D9B56F72405FC94FD89946818BAECD24A61BABBBE2D23052AB01EF73CA0CF4A
m_{PL124}	829395C35205A480AC1351C25E234BF52D384A3DE1C5138A650A6F82F739757D812D9C38231AB9FD81AA0648B11F6F6113F9312C57624FC746
m_{PL125}	D98FFE19C0AAAAB0571A9075ECDFD3E7373F5255DC669116A8C6913F0123E598F930934C5F6A601C37C529C371A0C391B59AC5A9E286D04011

Code ID	Basic Midamble Codes m_{PL} of length *P*=456
m_{PL126}	C1A108192BCE96C2430A63C189BB33856BE6B8B524703FCB205DAEF37EF544CD43CA09B618 1B417398083FF2F781BA4AE89A5CA291DB928D71
m_{PL127}	42568DF9F61849BF9E7DEE750604BE2E0BC16CC464B1CDE15015E01D6498E9F3E6D6950E58 24651F212BA0057CE9529B9CCAB88D8136B8545E

A.2 Basic Midamble Codes for Burst Type 2

In the case of burst type 2 (see subclause 5.2.2) the midamble has a length of Lm=256, which is corresponding to:

K'=3; W=64; P=192.

Depending on the possible delay spread cells are configured to use K_{Cell} midambles which are generated from the Basic Midamble Codes (see table A-2)

- for all k=1,2,...,K; K=2K' or
- for k=1,2,...,K', only.

The cell configuration is broadcast on BCH.

The mapping of these Basic Midamble Codes to Cell Parameters is shown in TS 25.223.

Table A-2: Basic Midamble Codes $\mathbf{m}_p$ according to equation (5) from subclause 6.2.3 for case of burst type 2

Code ID	Basic Midamble Codes m_{PS} of length *P*=192
m_{PS0}	5D253744435A24EF0ECC21F43AA5B8144FBDB348C746080C
m_{PS1}	9D7174187201B5CE0136B7A6D85D39A9DD8D4B00E23835E4
m_{PS2}	AE90B477C294E55D28467476C6011029CDE29B7325DF0683
m_{PS3}	BC8A44125F823E51E568641EC12A6C68EAFDFA2350E3233C
m_{PS4}	898B7317B830D207C9BC7B521D5715680824DC08347B2943
m_{PS5}	466C7482C8827655BC13F479C7C1417290679A9841297C4A
m_{PS6}	AC0734C27C7DC1B818A8492744290DFE866B0EBA62B0B56E
m_{PS7}	0A92106325B15A8C15FC3764724CE67A5056D50A77F9360E
m_{PS8}	AE69F62E23035083E6094B89493D33E06FDB6532D473A280
m_{PS9}	B485D4E3614C9C373EA1365FA6FA890E9844084EBA90EB0C
m_{PS10}	66182885E2D28360D2FEAB842C65304FFC956CE8DC8A90C7
m_{PS11}	CC30A9B0A742FCC1E9A408415368391F1299AEA3CB6509FE
m_{PS12}	673928915886947F464FDDAAD29A07D182328EBC5839089A
m_{PS13}	4418861C14D62B46EE6D70D4BF05A3ED801A01BD6CDC5235
m_{PS14}	DAD62DC88F52F2D140062C2330BE6540E6F86192322AFB04
m_{PS15}	A2122BAF24529CEA9855FB43CE40923E7CA7B30D92E40702
m_{PS16}	6C44AB41E11F54B0929DF65673BD231F92A380132D9F1712
m_{PS17}	1DC2742E756CDA6421340D0087DD087A615E4B8688CB2F75
m_{PS18}	2E0105328B56E9E07D9B5A62F38B08AF8D8C2817B54F3302
m_{PS19}	88315EC30A94CA4EDB2C77079D9BD810A2E280B50DABB213
m_{PS20}	440E0093D28CB2B2B0A95D18CEB4AB934C33FA45C1CFC7B0
m_{PS21}	CC9BF85D41A96A6EC314F9611D5E1C0672556C8850801BB4
m_{PS22}	1ABEA04C99BC26972715F01957C0B6B959CC71CD88120817
m_{PS23}	EC5A33DA0BA4470442C5CB324A8E47B0A9F7968FC8108EE8
m_{PS24}	F82086290271DB446B5B1DC15D9BE96414B19B3D5E0F540C
m_{PS25}	11A1A790D6958FD3A9157DF1E05D1378248CA201EBCC7592
m_{PS26}	AA8564882231907BCE78092DC6C9DD4F5A0E4A34AFCFB809
m_{PS27}	912EE2238212F87BC7CDA7F30441ED184A6AA954EC4D20C8
m_{PS28}	2D200D8B8891B804673E380A1AF5AB875986E29D37D3FDC9
m_{PS29}	75E086B6C818423491BF9D6365C52FD1C5E42A576E268170
m_{PS30}	50ADBF27DA2A3701470186B699118E16DDB0D10F705607B1
m_{PS31}	656C0692B4E22023590A906D2A74DFD471C883A7B1E0B3A2
m_{PS32}	C21FDACD09A3CDCE74C4794010A3E45769B142505C56A0E6
m_{PS33}	CD9392A87C2D4D7CE5801CDDA8A76339B6F900F008B290E2
m_{PS34}	956426FEFD8B8D52073E87984E10C4D255064E1372C04A24
m_{PS35}	C4F4D6DF1B754AD6063FD10C331C1428ABB27B0700134B94
m_{PS36}	B65548082B34E9FAF43F33C4070F79099758CFD41B491A11
m_{PS37}	C8317EA111A82B04E78B88B864B1EF5D711BBEB4A0527036
m_{PS38}	8FB7AD1188E8D1A5219845013672560FD38904E70537403B
m_{PS39}	B41A324E0D80AA0598A8D391C1D7FFC82B4A075218E98EC3
m_{PS40}	49A6350A62E208B011E86528B9A481A0E76D723F6675FF82

Code ID	Basic Midamble Codes m_{PS} of length P=192
m_{PS41}	C344C8C23C42A7B7442E6022E95AE4B08A4BFA786F35F911
m_{PS42}	28F430CF67D69C9DF60E25656413BC5F932A022DB1406C44
m_{PS43}	2FA5D70CF0FED4213F32116051450391C2A627D9B670C428
m_{PS44}	959537D988FDD4F1360B4E84701AE5409229C30EDF8BC404
m_{PS45}	CDD2E0450F9EC12F81391AD4633CB29F315B4A0A890A9A22
m_{PS46}	158776A20B4B82C563EC08F086830EA66DBD2DCCB4DF6026
m_{PS47}	431FCACBE48208975950342709D11F19AD5FB047F3B440C9
m_{PS48}	86B141AC571BA6B42653B12FF04D4F0E6C81F3EB608660A2
m_{PS49}	86D297ABD34E8510F6CDB0EA617F1F1051C8799117B02211
m_{PS50}	80B2D9530B34E781311D95CFA3857F277CC07014D324AF5A
m_{PS51}	2B607B93FD8B45601C1E574E14CFC6912C22AEC1045ADC49
m_{PS52}	D234C5C45E105A837E6DD74BC4E534523A20317BA0625A29
m_{PS53}	768CCDB3E2A7A2B863128382590946B25472BE2BFFC40641
m_{PS54}	3DA38212E0A987EE1F665D4E13C2AA4446E00A76C948A073
m_{PS55}	09173135E4A2CFC8F2678750AB5257110906F013587BDE82
m_{PS56}	522E070B266F35E99C1F3C42D2017F8E415550492B72F086
m_{PS57}	D63E4BD805262A3DEF05C7D86C422E5048921E5531784132
m_{PS58}	564AF806E28131611E5F884229265D446A50E1E488EAFBBA
m_{PS59}	A2603E009D3D30147727B750C35C62299AF754D3E4A54E1C
m_{PS60}	938504B02599D33E28246E4271C375AE81A3BBE8D3F8A920
m_{PS61}	461516B2CAC6FC42A4B707CC6073BBE573C014892C811776
m_{PS62}	29186DE4CCAAB2CD0100BB19EA595879D63F0F0CFA881AA5
m_{PS63}	A064B449CB784A91B803369CDC5EF61A670AAAC044BA3E68
m_{PS64}	8719C454D88FF5149DB943CB6CADA01D0B9664B357A18203
m_{PS65}	A27EC68720F00A714AA2C45A7EF232286984D7B193F5C916
m_{PS66}	AC8361676AB424E48F0789082B0CD2EFB8D2E627D041DD66
m_{PS67}	ABA1BEB0064733A0620906BF2B29C95883F069D7E4C35D39
m_{PS68}	9E22EEDED47D92CA1D0B7530EC6062287BD83A04874AE00C
m_{PS69}	0BADEF288B20F5686C5DE3A71219AC2172054326BE831696
m_{PS70}	953801EB2AF58C2F80E49A6CC46085CB554243E3B3BBEC8C
m_{PS71}	333A504C51C8FAC5025994565C3F600F154F64FAEF4EA484
m_{PS72}	A6583E19647662005474153A6F8DD88A473853E94B720CE7
m_{PS73}	90ACAF707D18AF34F5848C58166830AF620ACDC1B2DFDDA8
m_{PS74}	39C5C598A374EA82F3F83378258248DAD3808812DD0E74BB
m_{PS75}	F79525DE694629346D73F6256CC0F140F82603197AAA1844
m_{PS76}	B8C2A8F139097699A693022E78588D4058DB0A65FF52F813
m_{PS77}	449B50C2A52996FA5A828A907F30F9F460EE3D99930DF890
m_{PS78}	62CEC9574D30184BCB4F94EECF0CC23D2D2A8D0003F0AA33
m_{PS79}	B56D258889703F76A0738EE3A7D355994159A4851833E198
m_{PS80}	65894AA54C0F6C9A206521C9FC379A8AAF6E621C03CF849C
m_{PS81}	2D47F3414E30CC02C6835D95C9BA204488F0FFCB4852677D
m_{PS82}	12BE4DD8B906B584010F8A330AB67B278E8642FA33D51B68
m_{PS83}	BC928A90A4B10906CAEE638BF768E08542F48F1676006DF0

Code ID	Basic Midamble Codes m_{PS} of length P=192
m_{PS84}	30C544E437C8ADA143566CD1BC4E9E7BA84139A08505C2F4
m_{PS85}	84FD5B05506192B753FBA2C719B584E0EDA01814999867D2
m_{PS86}	191F14DD00034E03AB5BB4342F1138B2CD33784E60CFD75A
m_{PS87}	B8ACE7990B6A98A80A61162C4D2D5F88F24E8F7DE4207590
m_{PS88}	EC1DBE72E8EED0C61054FC2695422AC0AD2D888265B21AB0
m_{PS89}	9A1B4CA467AB7E082AF4278E44D177EA78424508C23E8B08
m_{PS90}	999EE541C608164AC975214F3A37A677FC2CA03E2C2A4B20
m_{PS91}	1BDCC20265031432917A2EB828FB356A22DF9CB609C0F8F3
m_{PS92}	EB4A81859C93338B8A1B87C02C815AE09D765F6F2249B958
m_{PS93}	E6A5D1629F4CF09A1F280DE0C480D4C73B26ADE321A50AEE
m_{PS94}	BAAB7286DD24C80B15A7958039B904F1CA83C310C8C7AFF2
m_{PS95}	12220F72619E983717C68FFE1C4148F2354B7B1955B65620
m_{PS96}	A198706E24FAA08BD09EE392414816038E667BB34307D6B2
m_{PS97}	30B3493B4C035881A7A722E4546527AAE787FA2C0893AC46
m_{PS98}	5A7318126522843DCB7F00A2D9F9BA8F88963E4152BC923C
m_{PS99}	844844B0CACAB702C332CE2692B4166F4B0C63E62BF151BF
m_{PS100}	B829738952641031369 2F861DC60DA86A23607F7DDE24755
m_{PS101}	6C1144CF8BC01538D655D29ED62DE6E74A3180EC905BF1E0
m_{PS102}	E9DB3221FACFC5C88691A7013EF09672A130D52C3413AAE2
m_{PS103}	2FD0508615EC4CD4BF18ADD46D777078869130C8921A4F0E
m_{PS104}	40911B4E0525AC874228F6EF642E59154730CB187C7E417A
m_{PS105}	2034C6A027D4D850F5184AA64C3153231F4651B616BBFCF9
m_{PS106}	57833235451525A1DFA213FCE0B419B6494BC7B99F488410
m_{PS107}	6DC3D57F2E39158D036825F8804810D77CA1ECA610ECD894
m_{PS108}	F5C50DE43AA7B731CAB7683524021701F97650499A7070E4
m_{PS109}	F2184D2699785442E09FA22CC2D60A5A13FFF22AE660A470
m_{PS110}	EF0029DE0D79207205458CF4D7328E81A93518D93C9A74BD
m_{PS111}	9D6D8992482FB885AA5E878C3BA2045538B09886C23CDC2D
m_{PS112}	C0A5AB67D1CEA126F6476C75443F0A11CBE749412EF03104
m_{PS113}	1853A5C20CDF968C5A180D8EB5E72BF15517D06680D98412
m_{PS114}	8CEA1223227ADF37D0DAAB320906E1C79029F480D25181A7
m_{PS115}	5561038E96A658EF3EC665612FF92B064065D1ACC1F54812
m_{PS116}	C55A6263F08D664A1E53584560DFF5E611640D8281D9A843
m_{PS117}	4386A8EA59124D043F29056A4598735A4FC7BC11119B90C1
m_{PS118}	D6571B20668BED50BD7C80388C162632BCB069AA67C7FC22
m_{PS119}	4F9F09ABBC1391EC2CCA5359FB52250E533BF04324154106
m_{PS120}	662659F42188C9453F6E6DF00C579627045DA1461A3A0EA5
m_{PS121}	8DCC9274C0C2A9BA6096BF27FACA542CD01CA8653D60A80F
m_{PS122}	5C1210A1E50E505F6B73C90156C9D9F19AE2310BBD820DF0
m_{PS123}	B1E0A7CE26202E223D4FC06D5C9BBA4E5F6D98204D2D5286
m_{PS124}	DB506776958E34552F7E60E4B400D836153218F918E22FA6
m_{PS125}	ECAA60300439B2360B2AC3C43FB6241ACDE5055B295FA71C
m_{PS126}	BF1E6D9AA9CA4AC092BE60500C77D0DC7A6A236520F86722

Code ID	Basic Midamble Codes m_{PS} of length *P*=192
m_{PS127}	051C5FA122845A30B4EC306B38016B45667C7754F92F13A0

A.3 Association between Midambles and Channelisation Codes

The following mapping schemes apply for the association between midambles and channelisation codes if no midamble is allocated by higher layers. Secondary channelisation codes are marked with a (*). These associations apply both for UL and DL.

A.3.1 Association for Burst Type 1/3 and K_{Cell}=16 Midambles

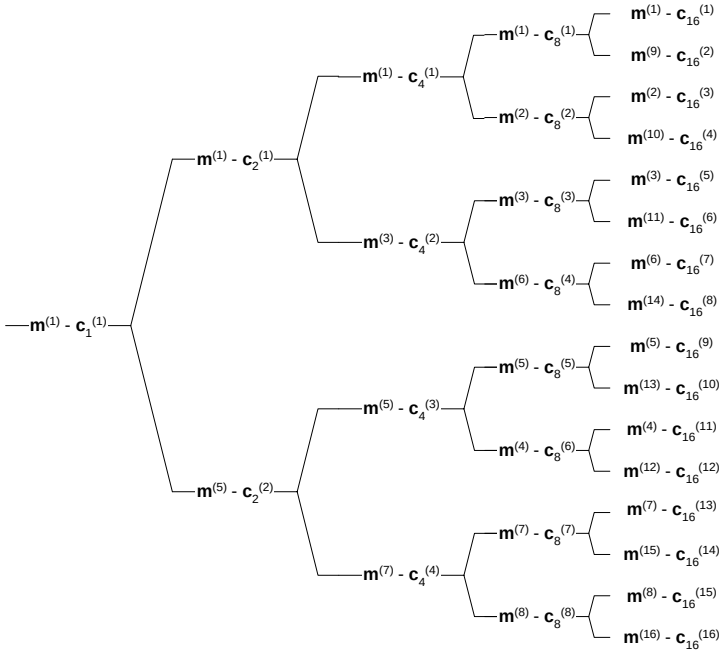

Figure A-1: Association of Midambles to Spreading Codes for Burst Type 1/3 and K_{Cell}=16

A.3.2 Association for Burst Type 1/3 and K_{Cell}=8 Midambles

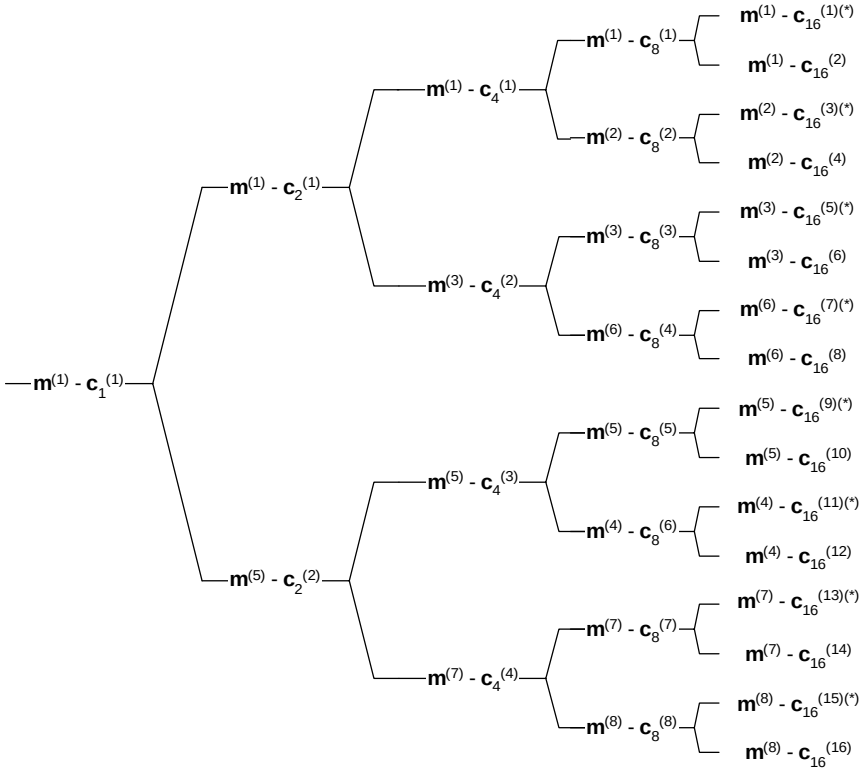

Figure A-2: Association of Midambles to Spreading Codes for Burst Type 1/3 and K_{Cell}=8

A.3.3 Association for Burst Type 1/3 and K_{Cell}=4 Midambles

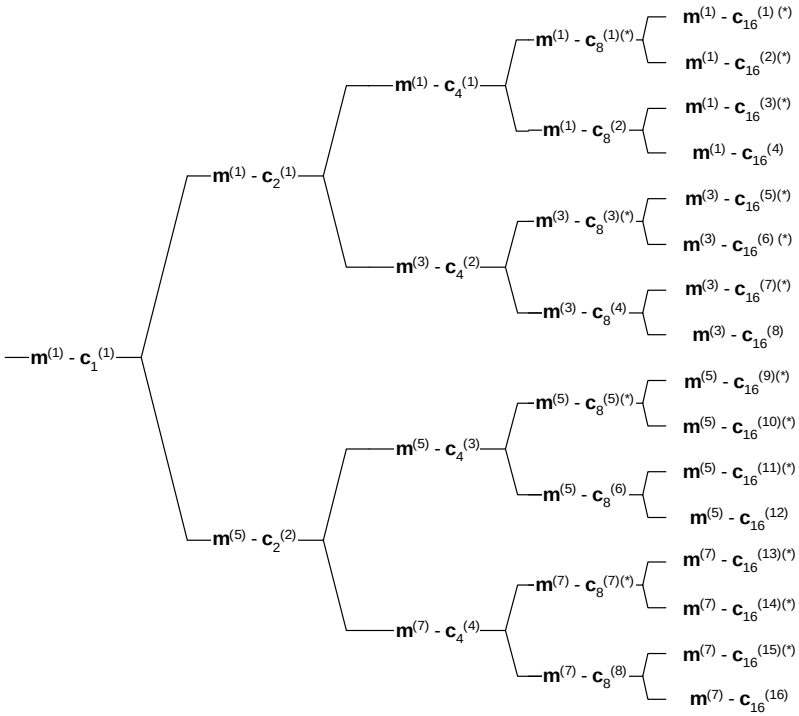

Figure A-3: Association of Midambles to Spreading Codes for Burst Type 1/3 and K_{Cell}=4

A.3.4 Association for Burst Type 2 and K_{Cell}=6 Midambles

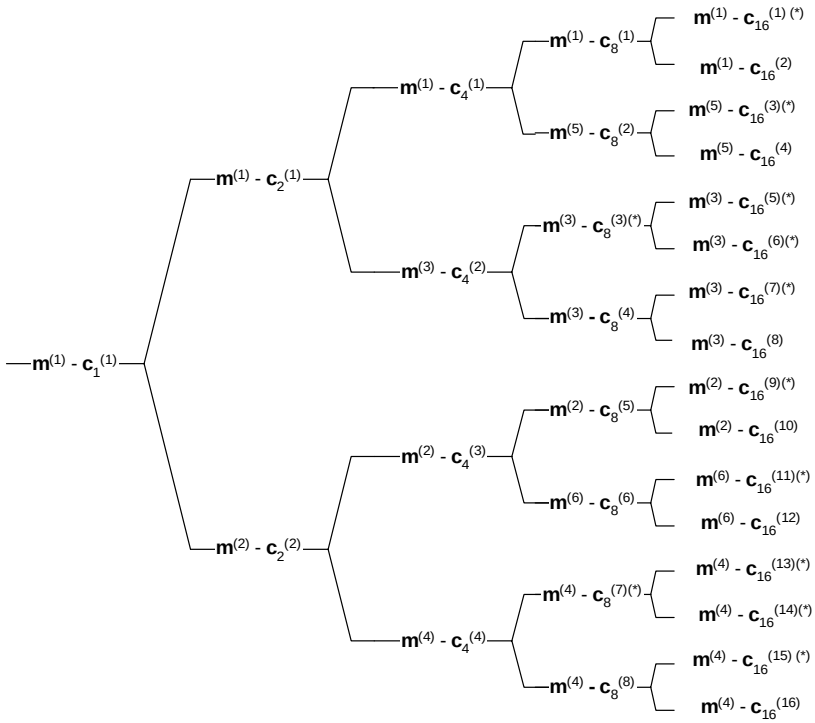

Figure A-4: Association of Midambles to Spreading Codes for Burst Type 2 and K_{Cell}=6

A.3.5 Association for Burst Type 2 and K_{Cell}=3 Midambles

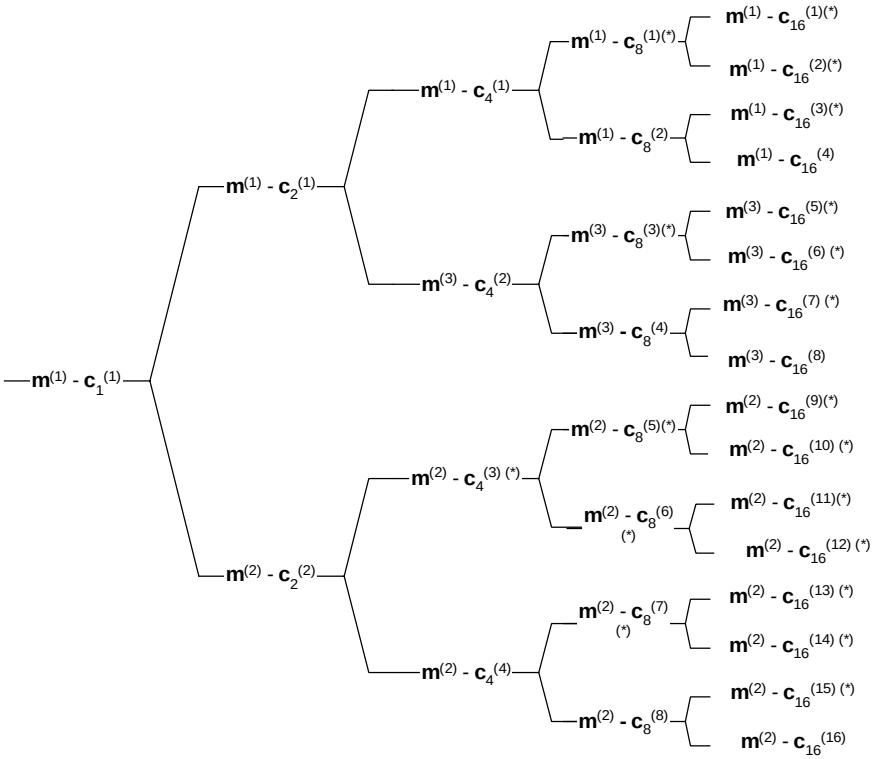

Figure A-5: Association of Midambles to Spreading Codes for Burst Type 2 and K_{Cell}=3

Note that the association for burst type 2 can be derived from the association for burst type 1 and 3, using the following table:

Burst Type 1/3	m(1)	m(2)	m(3)	m(4)	m(5)	m(6)	m(7)	m(8)
Burst Type 2	m(1)	m(5)	m(3)	m(6)	m(2)	m(4)	-	-

Annex C (normative): Signalling of the number of channelisation codes for the DL common midamble case for 3.84Mcps TDD

The following mapping schemes shall apply for the association between the number of channelisation codes employed in a timeslot and the use of a particular midamble shift in the DL common midamble case. In the following tables the presence of a particular midamble shift is indicated by '1'. Midamble shifts marked with '0' are left unused. Mapping schemes B.3 and B.4 are not applicable to beacon timeslots where a P-CCPCH is present, because the default midamble allocation scheme is applied to these timeslots. Note that in mapping schemes B.3 and B.4, the fixed and pre-allocated channelisation code for the beacon channel is included into the number of indicated channelisation codes.

C.1 Mapping scheme for Burst Type 1 and K_{Cell}=16 Midambles.

m1	m2	m3	m4	m5	m6	m7	M8	m9	m10	m11	m12	m13	m14	m15	m16	
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1 code
0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2 codes
0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	3 codes
0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	4 codes
0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	5 codes
0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	6 codes
0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	7 codes
0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	8 codes
0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	9 codes
0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	10 codes
0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	11 codes
0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	12 codes
0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	13 codes
0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	14 codes
0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	15 codes
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	16 codes

C.2 Mapping scheme for Burst Type 1 and K_{Cell}=8 Midambles.

M1	m2	m3	m4	m5	m6	m7	m8	
1	0	0	0	0	0	0	0	1 code or 9 codes
0	**1**	0	0	0	0	0	0	2 codes or 10 codes
0	0	**1**	0	0	0	0	0	3 codes or 11 codes
0	0	0	**1**	0	0	0	0	4 codes or 12 codes
0	0	0	0	**1**	0	0	0	5 codes or 13 codes
0	0	0	0	0	**1**	0	0	6 codes or 14 codes
0	0	0	0	0	0	**1**	0	7 codes or 15 codes
0	0	0	0	0	0	0	**1**	8 codes or 16 codes

C.3 Mapping scheme for Burst Type 1 and K_{Cell}=4 Midambles.

m1	m3	m5	m7	
1	0	0	0	1 or 5 or 9 or 13 codes
0	**1**	0	0	2 or 6 or 10 or 14 codes
0	0	**1**	0	3 or 7 or 11 or 15 codes
0	0	0	**1**	4 or 8 or 12 or 16 codes

C.4 Mapping scheme for beacon timeslots and K_{Cell}=16 Midambles.

M1	m2	m3	M4	m5	m6	m7	M8	m9	m10	m11	M12	m13	m14	m15	m16	
1	x(*)	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	1 codes or 13 codes
1	x(*)	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	2 codes or 14 codes
1	x(*)	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	3 codes or 15 codes
1	x(*)	0	0	0	**1**	0	0	0	0	0	0	0	0	0	0	4 codes or 16 codes
1	x(*)	0	0	0	0	**1**	0	0	0	0	0	0	0	0	0	5 codes
1	x(*)	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	6 codes
1	x(*)	0	0	0	0	0	0	0	0	**1**	0	0	0	0	0	7 codes
1	x(*)	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	8 codes
1	x(*)	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	9 codes
1	x(*)	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	10 codes
1	x(*)	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	11 codes
1	x(*)	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	12 codes

(*) In case of Block-STTD encoding for the P-CCPCH, midamble shift 2 is used by the diversity antenna

C.5 Mapping scheme for beacon timeslots and K_{Cell}=8 Midambles.

m1	m2	m3	m4	m5	m6	m7	M8	
1	x(*)	**1**	0	0	0	0	0	1 or 7 or 13 codes
1	x(*)	0	**1**	0	0	0	0	2 or 8 or 14 codes
1	x(*)	0	0	**1**	0	0	0	3 or 9 or 15 codes
1	x(*)	0	0	0	**1**	0	0	4 or 10 or 16 codes
1	x(*)	0	0	0	0	**1**	0	5 codes or 11 codes
1	x(*)	0	0	0	0	0	**1**	6 codes or 12 codes

(*) In case of Block-STTD encoding for the P-CCPCH, midamble shift 2 is used by the diversity antenna

C.6 Mapping scheme for beacon timeslots and K_{Cell}=4 Midambles.

m1	m3	m5	m7	
1	**1**	0	0	1 or 4 or 7 or 10 or 13 or 16 codes
1	0	**1**	0	2 or 5 or 8 or 11 or 14 codes
1	0	0	**1**	3 or 6 or 9 or 12 or 15 codes

C.7 Mapping scheme for Burst Type 2 and K_{Cell}=6 Midambles.

m1	m2	m3	m4	m5	m6	
1	0	0	0	0	0	1 or 7 or 13 codes
0	**1**	0	0	0	0	2 or 8 or 14 codes
0	0	**1**	0	0	0	3 or 9 or 15 codes
0	0	0	**1**	0	0	4 or 10 or 16 codes
0	0	0	0	**1**	0	5 or 11 codes
0	0	0	0	0	**1**	6 or 12 codes

C.8 Mapping scheme for Burst Type 2 and K_{Cell}=3 Midambles.

m1	m2	m3	
1	0	0	1 or 4 or 7 or 10 or 13 or 16 codes
0	**1**	0	2 or 5 or 8 or 11 or 14 codes
0	0	**1**	3 or 6 or 9 or 12 or 15 codes