

**TSG-RAN Working Group 1 meeting #15**  
Berlin, Germany, August 22-25, 2000

*TSGR1(00)1016*

**Agenda Item:** AH21  
**Source:** CWTS  
**To:** TSG RAN WG1  
**Title:** Basic midamble codes and midamble allocation schemes  
for the 1.28 Mcps TDD  
**Document for:** Decision

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## 1. Summary

A new Annex C has been created, showing the basic midamble sequences, used for the 1.28Mcps TDD and the association of midambles and channelisation codes if no midamble is allocated by higher layers.

## 2. Proposal

We propose to modify the Annex C in the working CR for the TS25.221 as the description of the basic midamble codes and the association between midambles and spreading codes for the 1.28Mcps TDD, described in Annex C.

## Annex C (normative): Basic Midamble Codes for the 1.28 Mcps option

### C.1 Basic Midamble Codes

The midamble has a length of  $L_m=144$ , which is corresponding to:

$$K=2, 4, 6, 8, 10, 12, 14, 16, \quad W = \left\lfloor \frac{P}{K} \right\rfloor, \quad P=128$$

Note: that  $\lfloor x \rfloor$  denotes the largest integer number less or equal to  $x$ .

Depending on the possible delay spread cells are configured to use midambles which are generated from the Basic Midamble Codes (see table C.1). The cell configuration is broadcast on BCH.

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

**Table C.1: Basic Midamble Codes  $m_p$  according to equation (5) from subclause 6.2.3**

Code ID	Basic Midamble Codes $m_p$ of length $P=128$
$m_{p0}$	B2AC420F7C8DEBFA69505981BCD028C3
$m_{p1}$	0C2E988E0DBA046643F57B0EA6A435E2
$m_{p2}$	D5CEC680C36A4454135F86DD37043962
$m_{p3}$	E150D08CAC2A00FF9B32592A631CF85B
$m_{p4}$	E0A9C3A8F6E40329B2F2943246003D44
$m_{p5}$	FE22658100A3A683EA759018739BD690
$m_{p6}$	B46062F89BB2A1139D76A1EF32450DA0
$m_{p7}$	EE63D75CC099092579400D956A90C3E0
$m_{p8}$	D9C0E040756D427A2611DAA35E6CD614
$m_{p9}$	EB56D03A498EC4FEC98AE220BC390450
$m_{p10}$	F598703DB0838112ED0BABB98642B665
$m_{p11}$	A0BC26A992D4558B9918986C14861EFF
$m_{p12}$	541350D109F1DD68099796637B824F88
$m_{p13}$	892D344A962314662F01F9455F7BC302
$m_{p14}$	49F270E29CCD742A40480DD4215E1632
$m_{p15}$	6A5C0410C6C39AA04E77423C355926DE
$m_{p16}$	7976615538203103D4DBCC219B16A9E1
$m_{p17}$	A6C3C3175845400BD2B738C43EE2645F
$m_{p18}$	A0FD56258D228642C6F641851C3751ED
$m_{p19}$	EFA48C3FC84AC625783C6C9510A2269A
$m_{p20}$	62A8EB1A420334B23396E8D76BC19740
$m_{p21}$	9E96235699D5D41C9816C921023BC741
$m_{p22}$	4362AE4CAE0DCC32D60A3FED1341A848
$m_{p23}$	454C068E6C4F190942E0904B95D61DFB
$m_{p24}$	607FEEA6E2E99206718A49C0D6A25034
$m_{p25}$	E1D1BCDA39A09095B5C81645103A077C

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mp26	994B445E558344DE211C8286DDD3D1A3
mp27	C15233273581417638906ADB61FDCA3C
mp28	8B79A274D542F096FB1388098230F8A1
mp29	DF58AC1C5F44B2A40266385CE1DA5640
mp30	B5949A1CC69962C464401D05FF5C1A7A
mp31	85AC489841ED3EAA2D83BBB0039CC707
mp32	AE371CC144BC95923CA8108D8B49FE82
mp33	7F188484A649D1C22BDA1F09D49B5117
mp34	ADAA3C657089DEF7C0284903A491C9B0
mp35	C3F96893C7504DC3B51488604AF64F4C
mp36	B4002F5AE0CE8623AC979D368E9148C1
mp37	0EEBCC0C795C02A106C24ABB36D08C6E
mp38	4B0F537E384A893F58971580D9894433
mp39	08E0035AB29B7ECC53C15DAA0687CC8F
mp40	8611ACBC4C82781D77654EE862506D60
mp41	63315261A8F1CB02549802DBFD197C07
mp42	9A2609A434F43E7DCADC0E22B2EF4012
mp43	F4C9F0A127A88461209ABF8C69CE4D00
mp44	C79124EE3FFC28C5C4524D2B01670D42
mp45	C91985C4FED53D09361914354BA80E79
mp46	82AA517260779ECFF26212C1A10BDC29
mp47	561DE2040ACB458E0DBD354E43E111D9
mp48	2E58C7202D17392BC1235782CEFABB09
mp49	C4FAA121C698047650F6503126A577C1
mp50	E7B75206A9B410E44346E0DAE842A23C
mp51	3F8B1C32682B28D098D3805ED130EA7F
mp52	8D5FC2C1C6715F824B401434C8D4BB82
mp53	0B2A43453ACC028FE6EB6E1CB0740B59
mp54	BC56948FC700BA4883262EE73E12D82A
mp55	558D136710272912FA4F183D1189A7FD
mp56	5709E7F82DC6500B7B12A3072D182645
mp57	86D4F161C844AE5E20EE39FD5493B044
mp58	8729B6EDC382B152185885F013DAE222
mp59	154C45B50720F4C362C14C77FE8335A1
mp60	C6A0962890351F4EB802DE43A7662C9E
mp61	D19D69D6B380B4B22457CB80033519F0
mp62	C7D89509FB0DAE9255998E0A00C2B262
mp63	DFD481C652C0C905D61D66F1732C4AA2
mp64	06C848619AF1D6C910A8EAC4B622FC06
mp65	0635E29D4E7AC8ABC189890241F45ECA
mp66	B272B020586AAD7B093AC2F459076638
mp67	B608ACE46E1A6BC96181EEDD88B54140
mp68	0A516092B3ED7849B168AFE223B8670E

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m <sub>P69</sub>	D1A658C5009E04D0D7D5E9205EE663E8
m <sub>P70</sub>	AC316DC39B91EB60B1AABD8280740432
m <sub>P71</sub>	E3F06825476A026CD287625E514519FC
m <sub>P72</sub>	A56D092080DDE8994F387C175CC56833
m <sub>P73</sub>	15EA799DE587C506D0CD99A408217B05
m <sub>P74</sub>	A59C020BAB9AF6D3F813C391CA244CD2
m <sub>P75</sub>	74B0101EB9F3167434B94BABC8378882
m <sub>P76</sub>	CE752975C8DA9B0100386DB82A8C3D20
m <sub>P77</sub>	BBB38DCDB1E9118570AC147DC05241A4
m <sub>P78</sub>	944ABBF0866098101F6971731AB2E986
m <sub>P79</sub>	2BB147B2A30C68B4853F90481A166EB6
m <sub>P80</sub>	444840ACCF3F23C45B56D7704BF18283
m <sub>P81</sub>	87604F7450D1AD188C452981A5C7FC9B
m <sub>P82</sub>	8C3842EBC948A65BC4C8B387F11B7090
m <sub>P83</sub>	10B4767D071CF5DB2288E4029576135A
m <sub>P84</sub>	6F07AAB697CD0089572C6B062E2018E4
m <sub>P85</sub>	D3D65B442057E613A8655060C8D29E27
m <sub>P86</sub>	5EDA330514C604BF4E0894E09EC57A74
m <sub>P87</sub>	B0899CD094060724DED82AE85F18A43A
m <sub>P88</sub>	B2D999B86DF902BC25015CAE3A0823C4
m <sub>P89</sub>	C23CD40F04242B92D46EED82CD9A9A18
m <sub>P90</sub>	D22DDCC5CB82960125DD24655F3C8788
m <sub>P91</sub>	54987218FBD99AE4340FD4C9458E9850
m <sub>P92</sub>	BE4341822997A7B11EA1E8A1A2767005
m <sub>P93</sub>	255200FBA6EE48E6DE0A82B0461B8D0F
m <sub>P94</sub>	6FBD58A663932423503690CF9C171701
m <sub>P95</sub>	D215033A4AA87EC1C232BAC7EDA09370
m <sub>P96</sub>	CA0959B01AE48E80204F1E4A3F29CE55
m <sub>P97</sub>	582043413B9B825903E3A3545ED59463
m <sub>P98</sub>	5016541922971C703D16E284CBDF633B
m <sub>P99</sub>	7347EF160A1733CA98D43608A83A920B
m <sub>P100</sub>	908B22AD433CCA00B3FD47C691F1A290
m <sub>P101</sub>	BB22A272FC6923DF1B43BA4118806570
m <sub>P102</sub>	0FA75C87474836B47DC7624D61193802
m <sub>P103</sub>	A22EBA0658A4D0FF1E9CA5030A65CC06
m <sub>P104</sub>	6C9C51CA15F1F4981F4C46180A6A6697
m <sub>P105</sub>	4C847ACF8BC15359C405322851C9BDE2
m <sub>P106</sub>	C1D29499C0082C9DE473ED15B14D63E0
m <sub>P107</sub>	7E85ECC98AC761005076C5572869A431
m <sub>P108</sub>	D8F11121595B8F49F78A7039E44126A0
m <sub>P109</sub>	1A0BC814445FD71C8E5B1A9163ED2059
m <sub>P110</sub>	A7591F27F8B0C00C68CC41697954FA04
m <sub>P111</sub>	6CA2CE595E7406D79C4840183D41B9D0

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m <sub>P112</sub>	C093D3CC701FC20E66F5AB22516C5460
m <sub>P113</sub>	D0E0CDE9B595546B96C4F8066B469020
m <sub>P114</sub>	E99F743A451431C8B427054A4E6F2007
m <sub>P115</sub>	C0D21A344A2C07DF2A6EBE6250C7B91E
m <sub>P116</sub>	F031223E282CF7A4D8EF174A908668AE
m <sub>P117</sub>	E4BD244AC16C55C7137FB068FD44280C
m <sub>P118</sub>	C44920DE2028F19FC2AAB36A0DCFDAD0
m <sub>P119</sub>	3FA7054E77135250699E6C8A11600742
m <sub>P120</sub>	D5740B4D8870C1C5B5A214C4266FC537
m <sub>P121</sub>	F0B7942D43BB6F38446442EB8126AB80
m <sub>P122</sub>	83DB9534EAD6238FA8968798CDF04848
m <sub>P123</sub>	EB9663CDDC2B291690703125BACB800
m <sub>P124</sub>	84D547225D4BBD20DEF1A583240C6E0F
m <sub>P125</sub>	B51F6A771838BE934724AEA6A2669802
m <sub>P126</sub>	D92AC05E10496794BBDC115233B1C068
m <sub>P127</sub>	D3ACF0078EDA9856BBB0AF8651132103

## C.2 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 (\*). These associations apply for both UL and DL.

### C.2.1 Association for K=16 Midambles

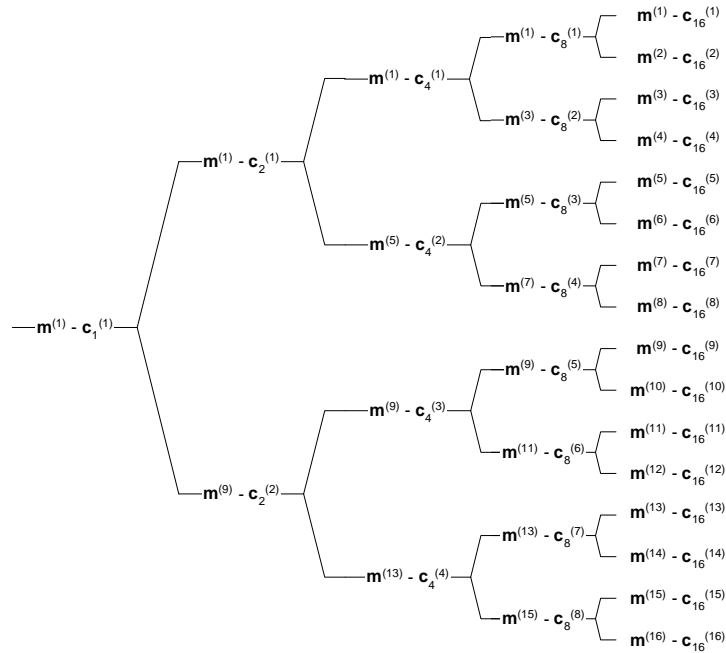


Figure C.2.1: Association of Midambles to Spreading Codes for K=16

### C.2.2 Association for K=14 Midambles

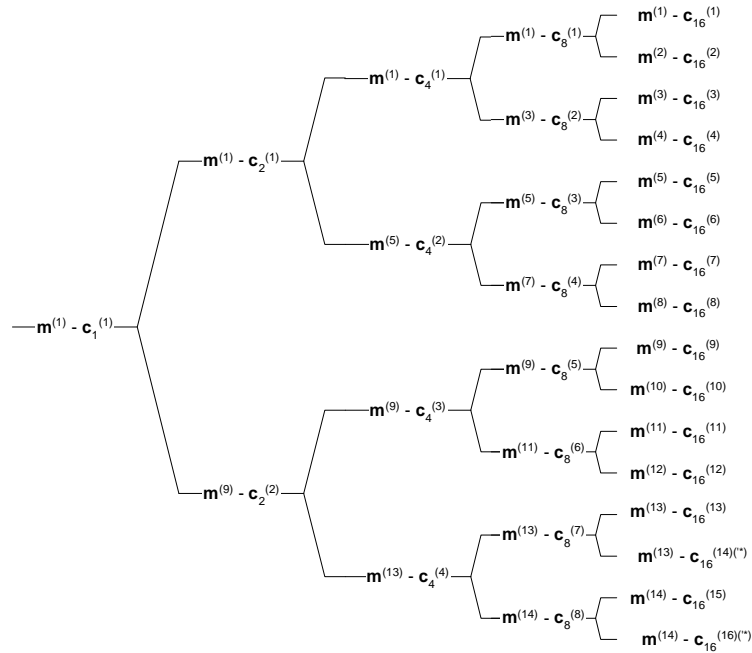


Figure C.2.2: Association of Midambles to Spreading Codes for K=14

### C.2.3 Association for K=12 Midambles

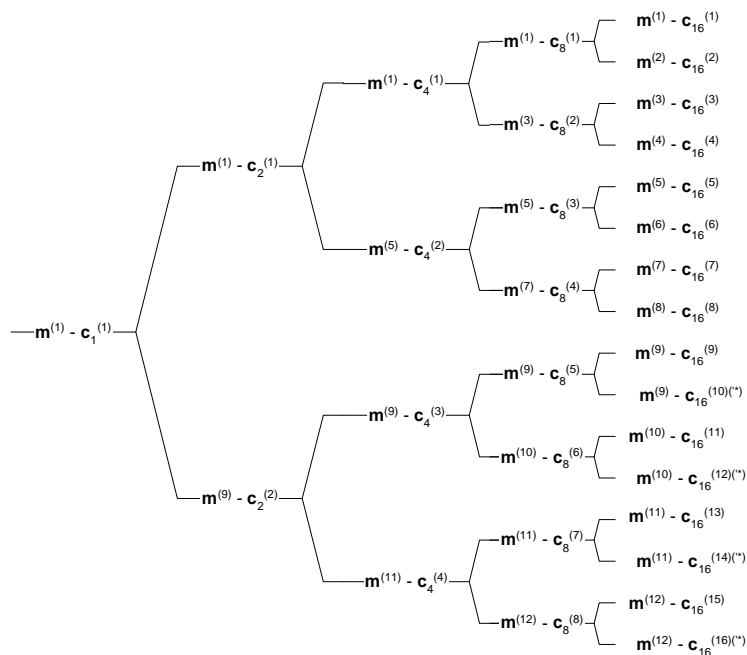


Figure C.2.3: Association of Midambles to Spreading Codes for K=12

### C.2.4 Association for K=10 Midambles

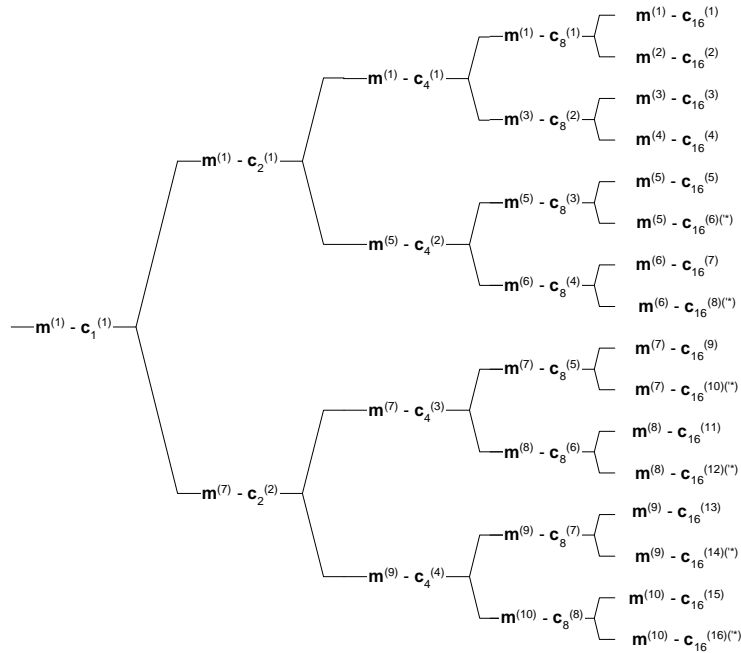


Figure C.2.4: Association of Midambles to Spreading Codes for K=10

### C.2.5 Association for K=8 Midambles

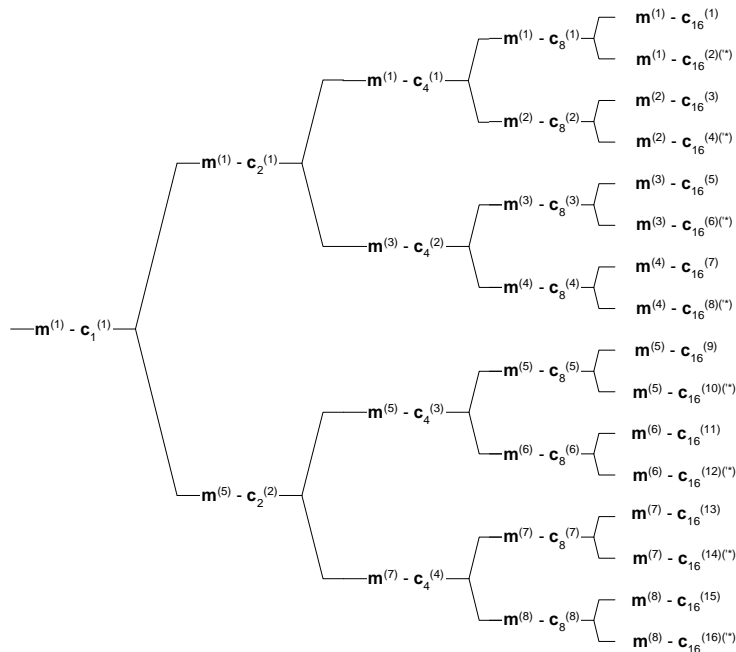


Figure C.2.5: Association of Midambles to Spreading Codes for K=8



### C.2.6 Association for K=6 Midambles

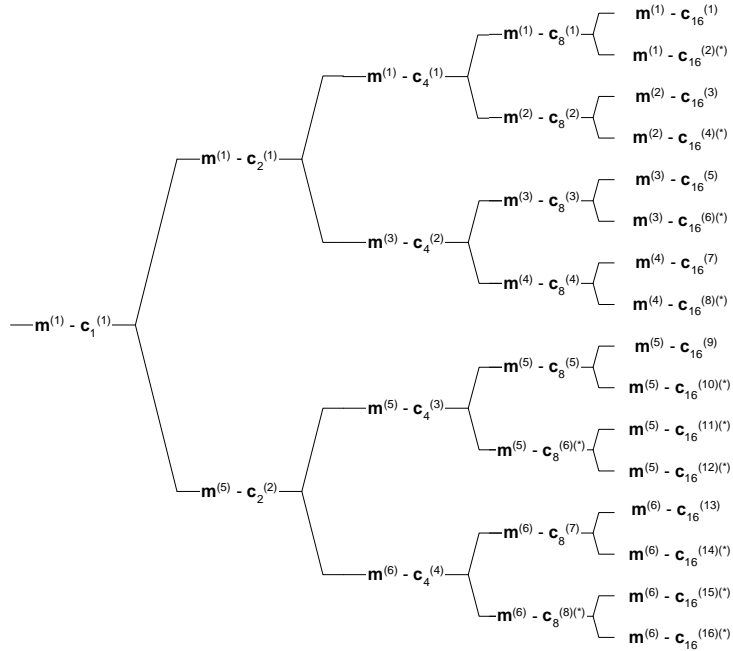


Figure C.2.6: Association of Midambles to Spreading Codes for K=6

### C.2.7 Association for K=4 Midambles

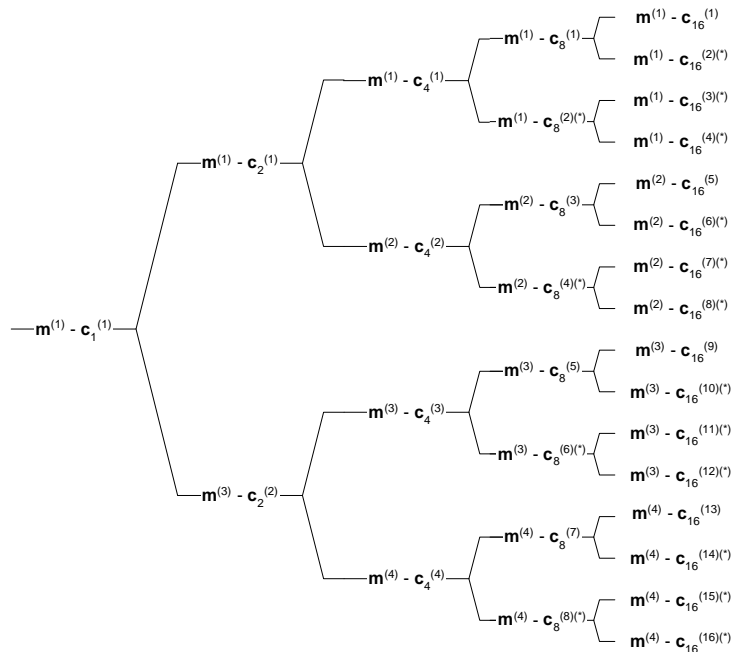


Figure C.2.7: Association of Midambles to Spreading Codes for K=4

## C.2.8 Association for K=2 Midambles

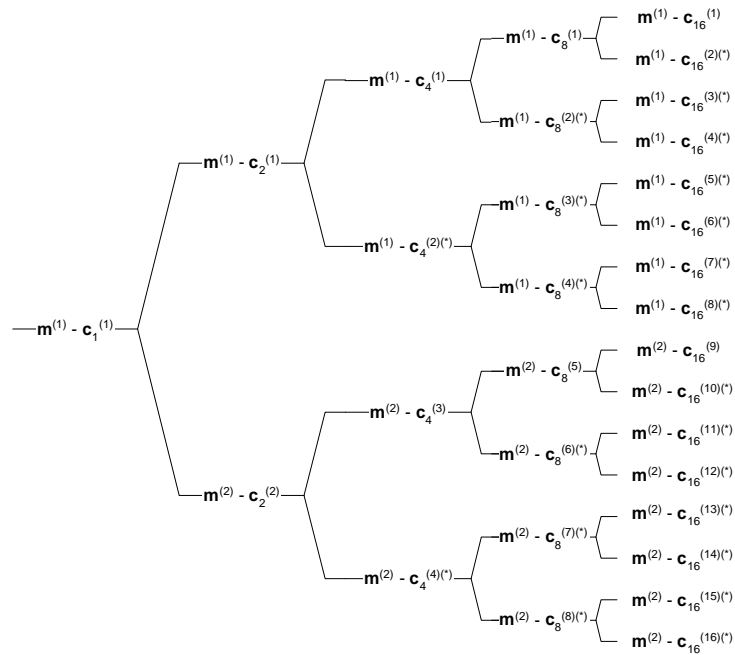


Figure C.2.8: Association of Midambles to Spreading Codes for K=2