

Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >
Title	Modifications to Block and Convolutional Turbo Coding for OFDM
Date Submitted	2004-01-15
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Abstract	This submission addresses changes required to the Turbo Coding sections of OFDM to accommodate shorter blocks found in subchannel mode.
Purpose	Submitted for review by 802.16 members.
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Modifications to Block and Convolutional Turbo Coding for OFDM

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Introduction

Subchannels in OFDM result in smaller block sizes, and the descriptions for block Turbo Codes (BTC) and convolutional Turbo Codes (CTC) must be modified to accommodate the smaller block sizes. The included text allows for blocks of arbitrary length for the BTC and CTC modes.

[Insert into the end of section 8.3.3.2.2, fix up the table and figure numbers as required:]

When subchannelization is used, the coding block size is limited to blocks at least 96 bits in length. The number of bits is calculated as followed:

$$\frac{N_{full}}{16} \cdot N_{activeSubs}$$

where:

N_{full} = number of bits for 16-subchannel (full) mode

$N_{activeSubs}$ = number of active subchannels (1-16)

Coded Bits	Approximate Rate	Constituent Code	Code Parameters
96	1/2	(32, 26), (4, 3)	$I_x=8, I_v=0, B=0, Q=6$
	2/3	(16, 15), (8, 7)	$I_x=0, I_v=2, B=0, Q=3$
	3/4	(16, 15), (8, 7)	$I_x=0, I_v=2, B=0, Q=3$
144	1/2	(16, 11), (8, 7)	$I_x=4, I_v=4, B=0, Q=5$
	2/3	(32, 26), (8, 7)	$I_x=8, I_v=2, B=0, Q=2$
	3/4	(16, 15), (16, 15)	$I_x=4, I_v=4, B=0, Q=1$
192	1/2	(16, 11), (16, 15)	$I_x=2, I_v=2, B=4, Q=1$
	2/3	(32, 26), (8, 7)	$I_x=4, I_v=1, B=4, Q=0$
	3/4	(16, 15), (16, 15)	$I_x=2, I_v=2, B=4, Q=5$
288	1/2	(32, 26), (16, 15)	$I_x=14, I_v=0, B=0, Q=4$
	2/3	(32, 26), (16, 15)	$I_x=11, I_v=2, B=6, Q=5$
	3/4	(32, 31), (16, 15)	$I_x=14, I_v=0, B=0, Q=7$
384	1/2	(32, 26), (16, 11)	$I_x=4, I_v=2, B=8, Q=6$
	2/3	(32, 26), (16, 11)	$I_x=4, I_v=2, B=8, Q=6$
	3/4	(32, 26), (16, 15)	$I_x=0, I_v=4, B=0, Q=6$
576	1/2	(32, 26), (32, 26)	$I_x=8, I_v=8, B=0, Q=4$
	2/3	(32, 26), (32, 26)	$I_x=8, I_v=8, B=0, Q=4$
	3/4	(16, 15), (64, 57)	$I_x=4, I_v=16, B=0, Q=3$
768	1/2	(32, 26), (32, 26)	$I_x=0, I_v=8, B=0, Q=4$
	2/3	(32, 26), (32, 26)	$I_x=0, I_v=8, B=0, Q=4$
	3/4	(64, 57), (16, 15)	$I_x=7, I_v=2, B=30, Q=4$
1152	1/2	(64, 63), (32, 26)	$I_x=3, I_v=13, B=7, Q=5$
	2/3	(64, 63), (32, 26)	$I_x=3, I_v=13, B=7, Q=5$
	3/4	(32, 31), (64, 57)	$I_x=13, I_v=3, B=7, Q=5$

[Change section 8.3.3.2.3 as follows, fix up the table and figure numbers as required:]

Append:

“The encoder is fed by blocks of k bits or N couples ($k = 2*N$ bits). For all the frame sizes k is a multiple of 8 and N is a multiple of 4. N shall be limited to $8 \leq N/4 \leq 1024$.”

With:

“For subchannelization mode, the coding block size is limited to blocks at least 48 bits in length, and no more than 1024 bits in length. Also, k cannot be a multiple of 7.”