Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	Sub-Channel Concatenation for CTC of SM with 2 and 4 Transmit Antennas
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Re:	IEEE 802.16-REVe/D5a, BRC recirc
Abstract	Clean up of the sub-channel concatenation for CTC in the MIMO mode
Purpose	To incorporate the changes here proposed into the 802.16e D5a draft.
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Sub-Channel Concatenation for CTC of SM with 2 and 4 Transmit Antennas

1 Introduction

In the 802.16e/D5a draft standard, Table 323 is designed to apply to single transmit antenna case. To support spatial multiplexing with 2 and 4 antennas, we need to modify the concatenation Table 323. We can also extend Table 324 to increase the maximal block size.

2 Text Proposal

Modify table 323 to include j corresponding to 2 Tx antennas

Start text proposal

[Add a new section 8.4.8.3.4.1 as follows]

Table 323 Encoding sub-channel concatenation for different rates in CTC

Modulation and rate	j_1 (for 1 transmit antenna)	j_2 (for SM with 2 transmit antennas)	j_4 (for SM with 4 transmit antennas)
QPSK 1/2	10	5	2
QPSK 3/4	6	3	1
16-QAM 1/2	5	2	1
16-QAM 3/4	3	1	0
64-QAM 1/2	3	1	0
64-QAM 2/3	2	1	0
64-QAM 3/4	2	1	0
64-QAM 5/6	2	1	0

Table 323 specifies the concatenation of sub-channels for different allocations and modulation for the case of single antenna and the cases of SM with 2 antennas and 4 antennas. For SM with 4 antennas, if j_4 is equal to zero, the sub-channel concatenation shall follow the rule for the case of SM with 2 antennas, i.e. CTC is done to the data streams of antennas 0&1 and antennas 2&3 separately.

End text proposal