

**Dual mode
WiMAX 802.16e/m &
3GPP LTE
CTC encoder
product brief**

TurboBest

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Figure 1 - CTC encoder block diagram3

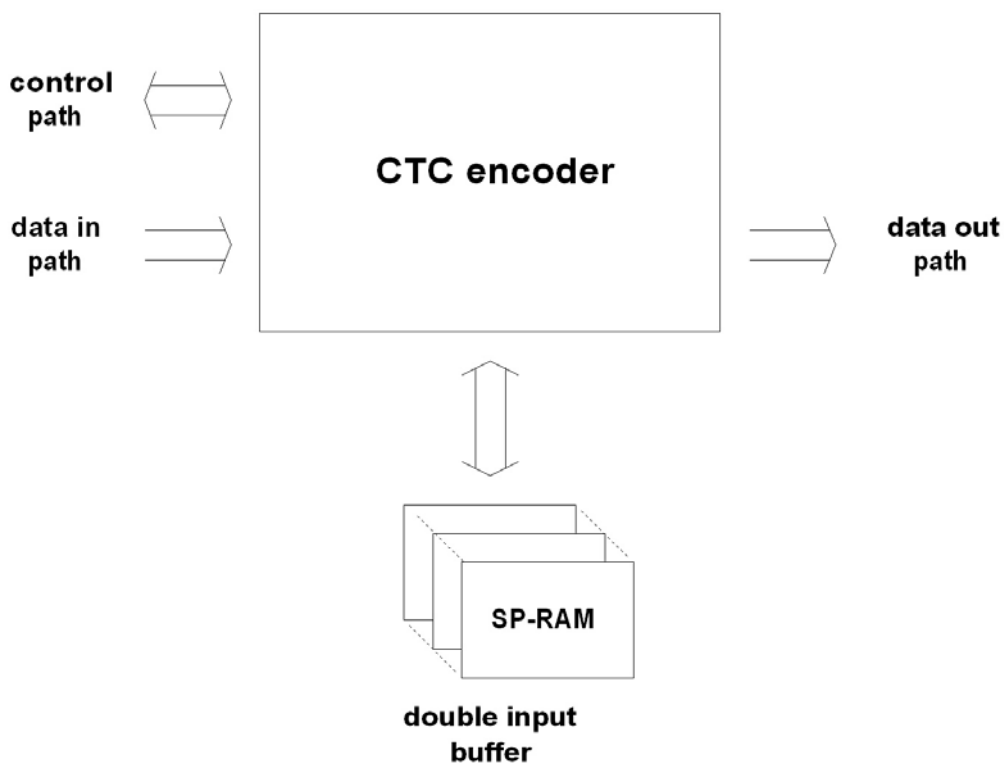
1. Introduction

The dual CTC decoder designed to meet the both of the *3GPP Mobile Communication System* specification [\[Ref 1\]](#) and the WiMAX IEEE802.16e/m specifications [\[Ref 2/3/4\]](#).

CTC encoder and decoder enable an extremely effective way of transmitting data reliably over noisy data channels.

2. Block diagram

Below is the CTC encoder block diagram.



* The CTC encoder does not have an output buffer, the encoded data is placed directly on the encoder output interface

Figure 1 - CTC encoder block diagram

3. Features

- Implements the 3GPP Long Term Evaluation (LTE) specifications [\[Ref 1\]](#)
- Implements the WiMAX IEEE802.16e/m specifications [\[Ref 2/3/4\]](#)
- All 188 3GPP LTE block size range supported (40–6114).
- All 802.16 block size range supported (40-4800).
- Block-by-block change of encoder mode / block size.
- Matlab bit exact model is available.

4. Throughput

The throughput is 2 bits per clock for LTE mode and 1 bit per clock for WiMAX mode.

5. Ordering information

For more information, please contact us at info@turbobest.com

You can visit our Web site at <http://www.turbobest.com>

We are offering hardware and software free evaluations.

6. References

1. 3G TS.36.212 V1.0.0 (2007-03), *Multiplexing and Channel Coding (Release 8)*, Technical Specification Group Radio Access Network, 3rd Generation Partnership Project.
2. IEEE Std 802.16TM-2004, Part 16: Air Interface for Fixed Broadband Wireless Access Systems.
8.4.9.2.3.1 CTC encoder
Table 326—Optimal CTC channel coding per modulation
Table 327—Optimal CTC channel coding per modulation when supporting H-ARQ
3. IEEE Std 802.16eTM-2005 and IEEE Std 802.16TM-2004/Cor1-2005, Part 16: Air Interface for Fixed Broadband Wireless Access Systems.
8.4.9.2.3.1 CTC encoder
Table 326—Optimal CTC channel coding per modulation
Table 327—Optimal CTC channel coding per modulation when supporting H-ARQ
4. IEEE P802.16m/D2 - October 2009, Part 16: Air Interface for Fixed and Mobile Broadband Wireless Access Systems
15.3.11.1.5.1 Convolutional turbo codes
Table 911—Interleaver Parameters