**IEEE Standards Interpretation Request**

Requests for interpretations should only be submitted for seeking clarification of:

* The meaning of portions of standards as they relate to specific applications; and/or
* The exact nature of the contents of the standard.

If the interpretation request meets the above criteria, complete the following and send to the [stds-interps@ieee.org](mailto:stds-interps@ieee.org?subject=Interpretation%20Request).

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IEEE Std:** **802.15.4TM** **- 2006  
Standard Title: Part 15.4: Wireless Medium Access Control (MAC) and Physical Layer (PHY) Specifications for Low-Rate Wireless Personal Area Networks (WPANs)**

**Topic: O-QPSK PHY Filtering Requirements  
  
Clause, Subclause, Annex, Figure, or Table: 6.8.2.5, 6.8.3.2**The following interpretation request concerns the IEEE 802.15.4-2006, subsections 6.8.2.5 and 6.8.3.2:

While the BPSK PHY and the ASK PHY of the 868 MHz specifications use raised-cosine and root-raised-cosine pulse shape filtering to represent the baseband chips, the O-QPSK PHY uses half-sine pulse shaping for baseband-chip representation (see section 6.8.2.5). Furthermore, section 6.8.3.2 specifies that, using the 868 MHz band, "the signal shall be

filtered" with a raised-cosine filter. Does this mean that the baseband chips are first half-sine filtered and then additionally raised-cosine filtered? Or is the raised-cosine filtering optional?

**NOTE FOR RESPONDERS:**

**Two questions were asked, hence the following consists of two responses:**

Question 1: Does this mean that the baseband chips are first half-sine filtered and then additionally raised-cosine filtered?

Response to Question 1: Yes; the noted filtering is for pulse shaping purposes.

Question 2: Or is the raised-cosine filtering optional?

Response to Question 2: No, raised-cosine filtering is mandatory. This filtering is for spectral emissions purposes.