Editors, suggest adding as the last subclause in section 100.2.9

100.2.9.7 CNU RF transmitter time reporting requirements

In EPoC, the upstream CNU PMD RF power amplifier (PA) may be turned off between bursts as shown in Figure 100-1X. PMD_SIGNAL.request(ON) is asserted when the first bit of the burst is conveyed from the PCS to the PMA via PMA_UNITDATA.request() (see 101.4.1.2.1). The delay time through the EPoC PMA (TPMA) is no less than the sum of the *RBframe* size multiplied by the OFDM symbol time (*RBsize* of 8 times or 16 times 20 μsec, see 100.2.9.1) plus the implementation specific processing time of the IDFT (nominal range 10 μsec to 40 μsec). For any given implementation and US Profile configuration, TPMA is fixed and the CNU is required to meet the PMD delay variance requirements in 100.2.1.1. The time to turn on and stabilize the PA for meeting burst transmission fidelity requirements (see 100.2.9.2) is represented by R_{on}. The time from PMD_SIGNAL.request(ON) to initiate PA turn on is implementation specific. PMD_SIGNAL.request(OFF) is asserted when the last bit of the burst is conveyed from the PCS to the PMA. PA turn off is initiated after the TPMA delay and after the last OFDM symbol of the burst. The time for the PA to turn off is represented by R_{off}.

The RF transmission of burst energy begins at the beginning of the grant after R_{on}. The R_{on} time period of one CNU may overlap completely with the R_{off} time period of another CNU. Turning the PA off achieves two purposes: meeting the energy efficiency requirements of 100.5 and to minimize the cumulative impact on CLT receiver SNR by avoiding all CNU PAs powered on 100% of the time.

R_{on} and R_{off} times are not included in burst overhead calculations (see 103.x.x.x). TPMA in either *RBsize* configuration is longer than R_{on} maximum (see Table 100-1) and does not impact adjusting grant lead time (see 103.x.x.x).
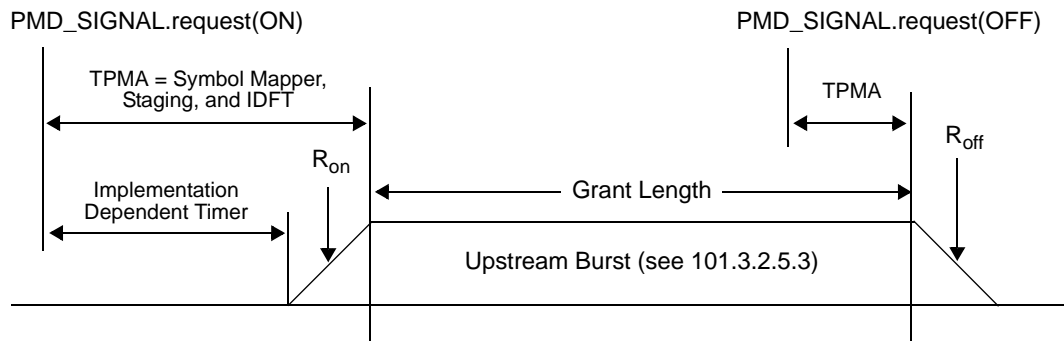

Figure 100–1—Details of RF power amplifier turn on and turn off timing

Editors, add the following two rows to Table 100-11 after "Modulation format":
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Table 100–11— CNU transmitter output signal characteristics

Parameter	Value	Units
R_{on} max (see 100.2.9.7)	100	μsec
R_{off} max (see 100.2.9.7)	100	μsec

Editors: add to Clause 102.3.1.4 for upstream PHY Link transmission detection.

CNU only operation: upon initialization of the CNU, the PMD_SIGNAL.request(tx_enable) primitive is set to the value OFF in the PHY Link. When the first bit of a PHY Link message arrives at the PHY Link symbol mapper (see 102.x.x.x) the CNU sets the PMD_SIGNAL.request(tx_enable) primitive to the value ON, instructing the PMD sublayer to start the process of turning the RF power amplifier ON (see Figure 100-3 and 100.2.9.7). When the last bit of a PHY Link message arrives at the PHY Link symbol mapper (see 102.x.x.x) the CNU sets the PMD_SIGNAL.request(tx_enable) primitive to the value OFF, instructing the PMD sublayer to start the process of turning the RF power amplifier off.

Editors: add PMD_SIGNAL.request() arrow in Figure 102-4 from PHY Link Message Engine pointing down to "PMD".

Editors: add PMD_SIGNAL.request() arrow in Figure 100-3 from PHY Link box down to PMD functions.

Editors: add separate new paragraph to end of PMD_SIGNAL.request() text in 100.2.1.4

In the CNU only both the PCS data detector and the PHY Link may set PMD_SIGNAL.request() (see 101.x.x.x and 102.x.x.x). In the PMD, the ON value is the OR product of the PMD_SIGNAL.request() set to the value ON from the PCS data detector with that from the PHY Link, signaling RF power amplifier turn on to the PMD; either the PCS data detector or the PHY Link may signal ON. When both the PCS and the PHY Link set the value to OFF, this signals RF power amplifier turn off to the PMD.

Editors: Clause 103.3.3.1, Page 299, Line 24. Remove the two capabilities from the constants subclause. Clause 103.3.3.2. Page 300, Line 8, move variables rfOffTime and rfOnTime to Clause 103.3.3.1 as constants. Set value to "0". Consider changing description as appropriate to indicate this constants are here for consistency with Clause 77 definitions.