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Subject: Two-way messenger model CNI-810D
(FCC ID: N79CNI-810D)

The SAR measurement is used CW mode with test firmware modified but on DataTac network does not allow the mobile device to control the timing of transmitted packets on a message transaction basis.
This makes that the duty factor is limited to the maximum allowable over all network transactions

Duty cycle calculation

The Two Way Messenger model CNI-810D (FCC ID: N79CNI-810D) is designed to use Motorola protocol RD-LAP3.2 and 19200 bps half duplex is data speed.

Transmission unit is PDU(Program Data Unit) and 1 PDU required 512 byte for transmission.

It requires 4 PDU (equals 2,048 byte)maximum for one transmission.

12 byte waiting time is required between each PDU.

It will take 10 second in order to get final deliver successful response from other application terminal.

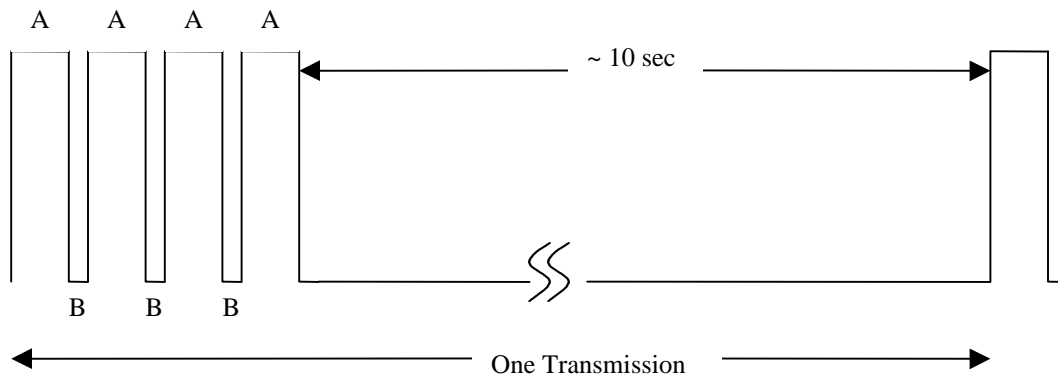
The maximum transmission duty cycle will be:

$$\frac{\text{Send PDU}}{\text{send PDU} + \text{RX response} + \text{successful response}} \times 100 = \text{duty}$$

$$\frac{0.85 \text{ sec}}{0.85 \text{ sec} + 0.005 \text{ sec} + 10 \text{ sec}} \times 100 = 7.83 \%$$

Remarks:

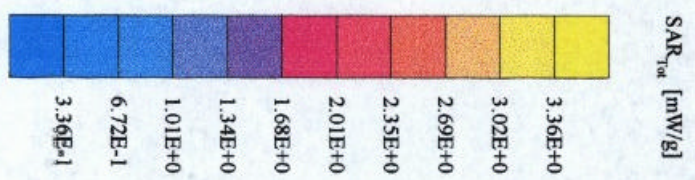
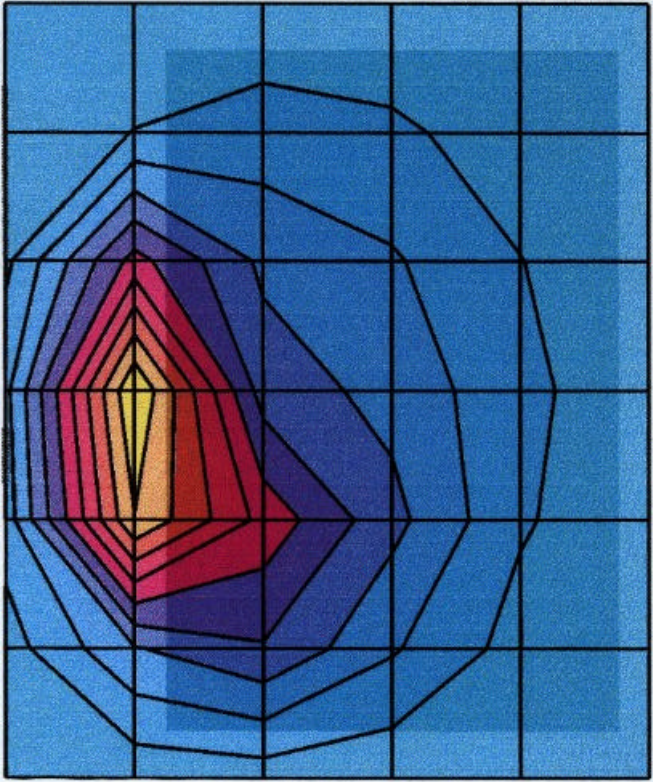
1. 0,85 sec = 2,048 x 8 / 19,200
2. 0.005 sec = 12 x8 / 19,200
3. 10 sec = shortest response time (worst case)
remarks: it will take at least 10 sec. to set-up for next transmit.



A: 512 byte
B: 12 byte

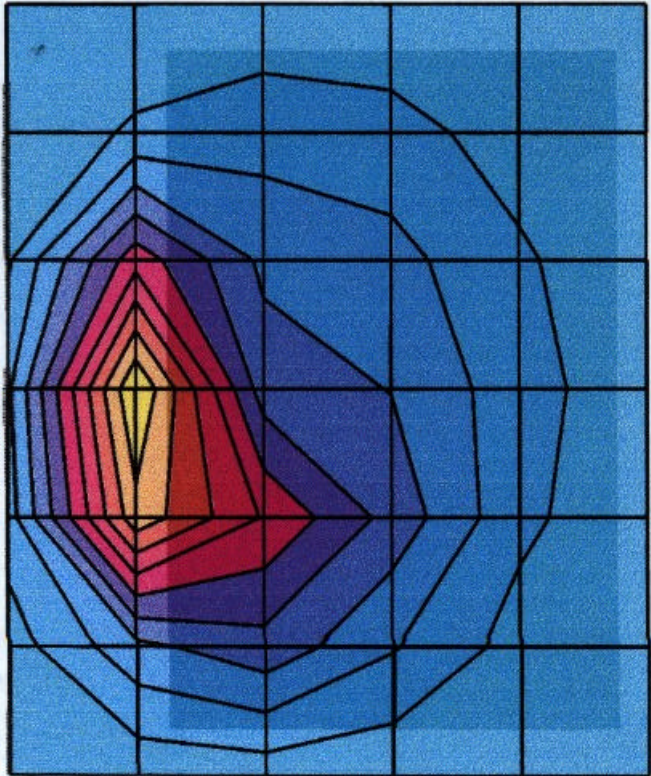
N79CNI-810D

Generic Twin Phantom; Flat Section; Position: (90°, 90°); Frequency: 806 MHz
Probe: ET3DV5 - SNI333; ConvF(5,85,5,85); Crest factor: 1.0; Muscle 815 MHz: $\sigma = 0.94 \text{ mho/m}$, $\epsilon_r = 56.5$, $\rho = 1.00 \text{ g/cm}^3$
Cube 5x5x7: SAR (1g): 3.52 mW/g, SAR (10g): 1.98 mW/g * Max outside, (Worst-case extrapolation)
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: -0.34 dB
CW mode, EUT Back touching flat phantom



N79CNI-810D

Generic Twin Phantom; Flat Section; Position: (90°, 90°); Frequency: 815 MHz
Probe: ET3DV5 - SN1333; ConvF(5,85,5,85); Crest factor: 1.0; Muscle 815 MHz: $\sigma = 0.94$ mho/m $\epsilon_r = 56.5$ $\rho = 1.00$ g/cm³
Cube 5x5x7: SAR (1g): 3.56 mW/g, SAR (10g): 2.04 mW/g * Max outside, (Worst-case extrapolation)
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: -0.44 dB
CW mode, EUT Back touching flat phantom.



N79CNI-810D

Generic Twin Phantom; Flat Section; Position: (90°, 90°); Frequency: 821 MHz
Probe: ET3DV5 - SNI333; ConvF(5.85, 5.85); Crest factor: 1.0; Muscle 815 MHz: $\sigma = 0.94 \text{ mho/m}$, $\epsilon_r = 56.5$, $\rho = 1.00 \text{ g/cm}^3$
Cube 5x5x7: SAR (1g): 3.83 mW/g, SAR (10g): 2.20 mW/g * Max outside, (Worst-case extrapolation)
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdft: -0.12 dB
CW mode, EUT Back touching flat phantom

