UPCS / US-DECT Compliance
GN9300

The RTX Telecom DECT implementation is according to mandatory requirements in ETSI EN 300 175-1 to EN 300 175-8 and EN 301 406.

With reference to FCC part 15 (released on November 5, 2004) following sections are already fulfilled by DECT standard or have been changed to meet FCC requirements (marked ***new***):

Section 15.319(c)
Transmit power has been reduced compared to DECT in order to meet this requirement (***new***).

Section 15.319(d)
Transmit power has been reduced compared to DECT in order to meet this requirement (***new***).

Section 15.319(e)
Antenna gain is below 3dBi.

Section 15.319(f)
According to DECT the devices already stop transmission in case of no data to transmit or in case of internal failure.

Section 15.323(a)
In the band 1920 – 1930 MHz, 5 channels are defined. The defined center frequencies are: 1921.536, 1923.264, 1924.992, 1926.720 and 1928.448MHz (***new***).

Section 15.323(c)(1)
Frame length is 10ms. The portable part monitors the combined spectrum and time slot one frame just before initiating any transmission. Both receive and transmit slot will be monitored (***new***).

Section 15.323(c)(2)
Monitoring threshold is 30dB above thermal noise (***new***).

Section 15.323(c)(3)
A duplex connection on a frequency and timeslot pair is kept for maximum 8 hours (***new***).

Section 15.323(c)(4)
According to DECT when establishing a duplex connection, the initialing transmission from PP must be acknowledged by FP within 10ms. During an established duplex connection system identity is transmitted by both PP and FP at regular intervals. If system identity is not received within a period of 5 seconds by either party, transmission is stopped.
A simplex connection (dummy bearer) will stay on a frequency and timeslot for maximum 30 seconds (***new***).

Section 15.323(c)(5)

The DECT system defines 12 duplex channels on each frequency, i.e. 60 duplex channels are available in the system. In order for the base station to reach frequency lock in timeslots on separate frequency channels the system must have blind slots. This halves the amount of actual channels, but the blind slots should still count as duplex channels (ANSI-C63.17-1998 draft 1.1 chapter 7.3.1.1 line 25 to 32) hereby enabling the upper monitoring threshold level.

All channels (frequency / timeslot combinations) are monitored within 10 seconds. Channels with lowest level below 50dB above the thermal noise may be accessed provided that signal level has not increased 10ms before initial transmission (***new***). RSSI monitoring resolution is better that 6dB.
Both FP and PP only contains one RF transmitter, hence occupied bandwidth are always well below 6MHz.

Section 15.323(c)(6)
According to DECT another channel is selected.

Section 15.323(c)(7)
The RSSI monitoring system has a reaction time of less than 35usec.

Section 15.323(c)(8)
The same antenna is used for RSSI monitoring, receiving and transmission.

Section 15.323(c)(9)
There is provision for reduction of transmit power. Maximum power is fixed in the low-cost variant set and menu driven in the high-end set. PP reduces transmit power when maximum power is not needed (based on RSSI monitoring).

Section 15.323(c)(10)
The PP (initiating device) monitors both intended receive and transmit timeslots (***new***). If the FP (responding device) can decode data correctly (no CRC errors), it responds immediately (after 5ms) in the receiving timeslot of the PP.

Section 15.323(c)(11)
Provision is not utilized (no connection setup on dummy bearer).

Section 15.323(c)(12)
Not used.

Section 15.323(d)
According to DECT. Check RF measurements.

Section 15.323(e)
Already according to DECT.

Section 15.323(f)

According to DECT. Check RF measurements.

GN9300 Time/Spectrum access.
The GN9300 utilizes both single and double slot in compliance with EN 300 175-2. According slot allocations are illustrated in Figure 1a and Figure 1b.
For single slot see figure 1a. It is possible to set up connection in slot 0,2,4,6,8 and 10. The single slot connection is used for 8 kHz audio. When a PP sets up a single slot connection it reacts as a 60 duplex system and enables the upper monitoring threshold level.

For double slot see Figure1b. It is possible to setup connection in slot 0, 4 and 8. The double slot connection is used for data communication. When a PP sets up a double slot connection it reacts as a 30 duplex system and enables the lower monitoring threshold level.

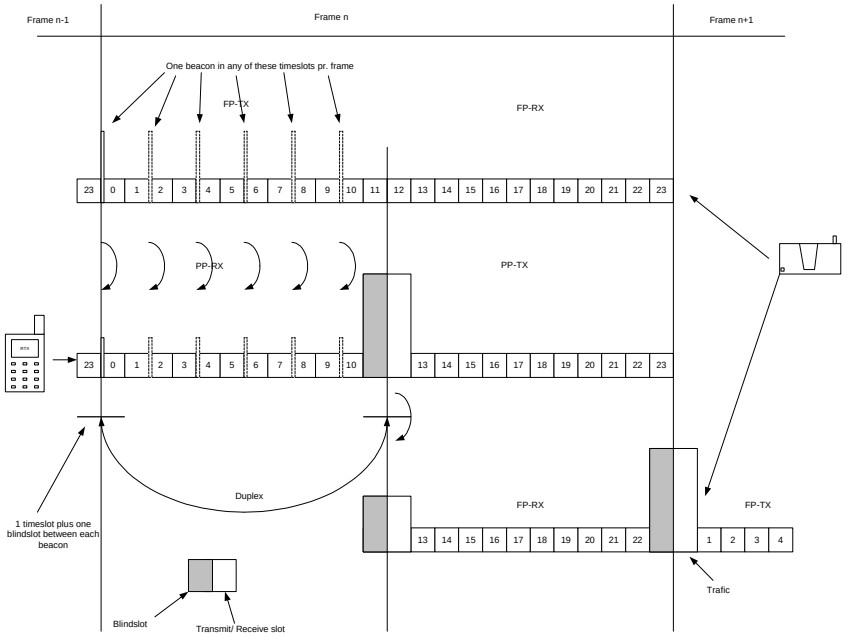

Figure 1a: GN9300 duplex channels in single slot mode.

As seen from Figure 1a there are 6 duplex channels and 6 blind slots duplex channels per frequency channel. Having 5 frequency channels the device utilizes a total of 60 duplex channels and therefore reacts as a system over 40 duplex channels.

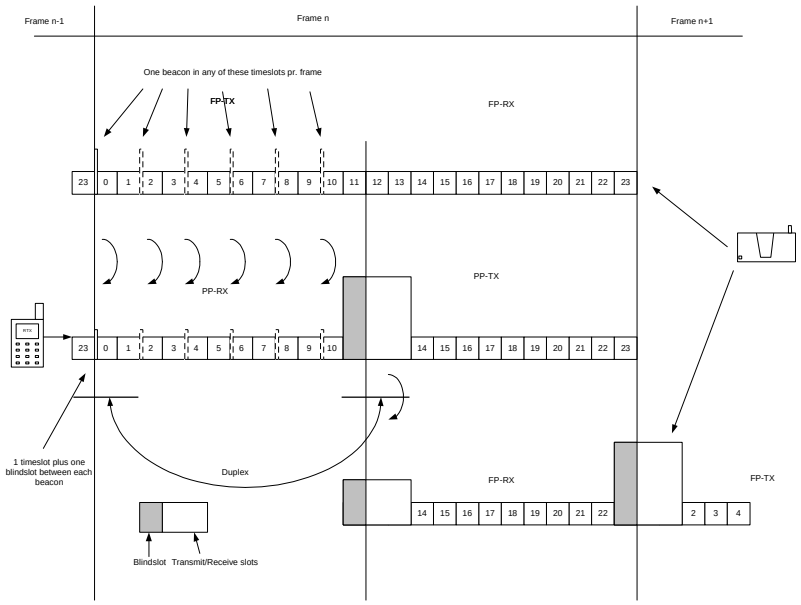

Figure 1b: GN9300 duplex channels in double slot mode.

As seen in figure 1b a PP can set up a double slot connection for data (one blind slot and 2 traffic slots). It is possible to set up 3 duplex connections and 3 blind slots duplex channels per frequency channel. Having 5 frequency channels the device utilizes a total of 30 duplex channels and therefore reacts as a system below 40 duplex channels.