

All enclosed data was taken at Transcept, Inc. except for 47CFR parts 2.1055, 15.207, and 15.209. The excepted parts were recorded in the labs of National Technical Services, Inc. (NTS). As the TransCell 1900TM is an intentional radiator, the more stringent 15.207 and 15.209 limits were adhered to. This data is found in 04-11-01 Transcept 36864-01C Rev. 1.PDF. To meet sizing requirements of three megabytes per file, the original NTS report has been divided into an “a”, “b”, and “c” section in this submittal.

## **FCC Requirements for 47 CFR 15.247**

Part 15.247 Section	Requirement	Test Description	Results
(a)(2)	For direct sequence sysyems, the minimum 6 dB bandwidth shall be at least 500 KHz.	Hub channel 2 with attenuator set to 10 dB. Using a spectrum analyzer with max hold on, set marker to peak power. Set marker delta so that marker is located 6dB below peak marker on low sideband. Repeat for high sideband.	6 dB bandwith of datalink transmit signal is > 3 MHz. (See attachment E1)
(b)(1)	The maximum peak output power shall not exceed 1 Watt.	Spectrum analyzer resolution bandwidth set to 1 MHz. The frequency span at 1 MHz. Video average 10 times. The peak power level was then recorded. The center frequency was incremented by 1 MHz +/- 20 MHz from the channel frequency. The total transmitter peak power was then calculated by summing the maximum power level in each 1 MHz span. A power measurement was also taken using a power meter.	The output power measured at the antenna terminal of the enclosure is < 1 Watt. In normal operation there would be > 100 ft of cable between the antenna terminal of the enclosure and the microwave dish with 4.5 dB of loss per 100 ft of cable. (See attachment E2)

## **FCC Requirements for 47 CFR 15.247 Cont.**

Part 15.247 Section	Requirement	Test Description	Results
(b)(1)(ii)(iii)	Systems operating in the 5725-5850 MHz band are used exclusively for fixed point to point operations may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter peak output power. The instruction manual furnished with the equipment shall contain language in the installation instructions informing the operator and the installer of this responsibility.		The systems microwave datalink is used exclusively for fixed point to point operation as stated in the Transcell 1900 TM Installation and Integration Manual 1000462. (See attachment E3)
(d)	For direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dB in any 3 KHz band during any time interval of continuous operation.	Hub channel 2 with attenuator set to 10 dB. Using a spectrum analyzer with max hold on, and resolution bandwidth set to 3KHz Set marker to peak power.	The peak power in a 3 KHz band is < 6 dBm. (See attachment E4)

## **FCC Requirements for 47 CFR 15.247 Cont.**

(e)	The processing gain of a direct sequence system shall be at least 10 dB.	Test equipment set-up is shown in figure 1. With signal generator turned off ( Jammer signal ) measure power level of datalink signal on the power meter. Turn the datalink transmitter off and turn the signal generator on. Adjust the frequency of the signal generator so that it is set for center frequency of channel being tested and is 8dB below that of the datalink signal. Set the signal generator frequency so that its 8.5 MHz above datalink center frequency and verify power level is still 8 dB below. Repeat for 8.5 MHz below datalink center freq. Turn on datalink transmitter and measure bit error rate. Step the signal generator frequency in 50 KHz steps across entire band (+/- 8.5 MHz from datalink chan. center frequency). Record bit error rate at each step. Make note of any steps that have a bit error rate of $10^{-3}$ or higher. These are considered to be bad data points. If there are less than 20% bad data points, the processing gain is >10 dB and the test is considered a pass. Repeat test for other datalink Channels.	The processing gain of the system is > 10 dB. (See attachment E5)
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