

MEASUREMENT OF OCCUPIED BANDWIDTH
SECTION 2.1049 and 22.901 (d) (2)

SECTION 2.1049

MEASUREMENT OF OCCUPIED BANDWIDTH

The occupied bandwidth of the FCC ID: **AS5CMP-43** PCBR was measured using a Rohde & Schwarz FSEK Spectrum Analyzer and a HP Model 520 DeskJet Printer. The RF power level was measured using RF power meter as shown in the test setup in Figure 3A. The RF output from the transmitter to spectrum analyzer was reduced (to an amplitude usable by the spectrum analyzer) by using a calibrated attenuator. This attenuation was offset on the display and the signal adjusted to the -16.1 dB level corresponding to the corrected RF power level for a 30 kHz resolution bandwidth. The reference-line on the spectrum analyzer display corresponds to level measured by the RF power meter.

Occupied Bandwidth plots show measurements made at RF Power output terminals of PCBR for an output of 0.0126 watts (11 dBm)

IS 97 channel allocation consists of following channel Blocks:

Block	FCC Cellular Frequency Bands Per FCC 22.905 MHz	Valid CDMA Channels & Frequency Range	
		Channel No.	MHz
A'' (1 MHz)	869.000 - 870.000	1013 -1023	869.700 – 870.000
A (10 MHz)	870.000 - 880.000	0001- 0311	870.030 – 879.330
B (10 MHz)	880.000 - 890.000	0356 - 0644	880.680 – 889.320
A' (1.5 MHz)	890.000 - 891.500	0689 - 0694	890.670 – 890.820
B' (2.5 MHz)	891.500 - 894.000	0739 - 0777	892.170 – 893.310

The edge channels are 1013 and 0777.

The frequencies and channels used for measurements are tabulated on the bottom of each plot. The PCBR output signals are plotted at each frequency blocks/bands. Plots are provided for Left Edge, and Right Edge of cellular bands A'', A', and B'. Plots are also provided for Left Edge, Center and Right Edge of each cellular bands A and B (Blocks of 10 MHz wide). These frequencies were chosen to show the occupied bandwidth in the channels in each of the Cellular bands in which this radio can be operated, in compliance with Section 22.905 of the Commission code. There are no SAT or Wide band data signals associated with CDMA. The signal used to show the occupied bandwidth is defined in Table 3.1. This is the signal recommended in IS-97. The power output level was adjusted to provide the documented power levels at the bottom of each chart.

Type	Number of Channels	Fraction of Power (Linear)	Fraction of Power (dB)	Comments
Pilot	1	0.2000	-7.0	Walsh 0
Sync	1	0.0471	-13.3	Walsh 32, always 1/8 rate
Paging	1	0.1882	-7.3	Walsh 1, full rate only
Traffic	6	0.09412 each	-10.3 each	Variable Walsh Assignments, full rate only

TABLE 3.1 Base Station Test Model, Nominal

The minimum standard presented in PN-3383 and IS-97.

“Suppression Inside the Licensee’s Frequency Block(s)”

For all frequencies within the base station transmit band of 869 to 894 MHz that are within the specific block(s) allocated to the operator’s system. The total conducted spurious emissions in any 30 kHz band greater than 750 kHz for the CDMA channel center frequency shall not exceed a level of -45 dBc....

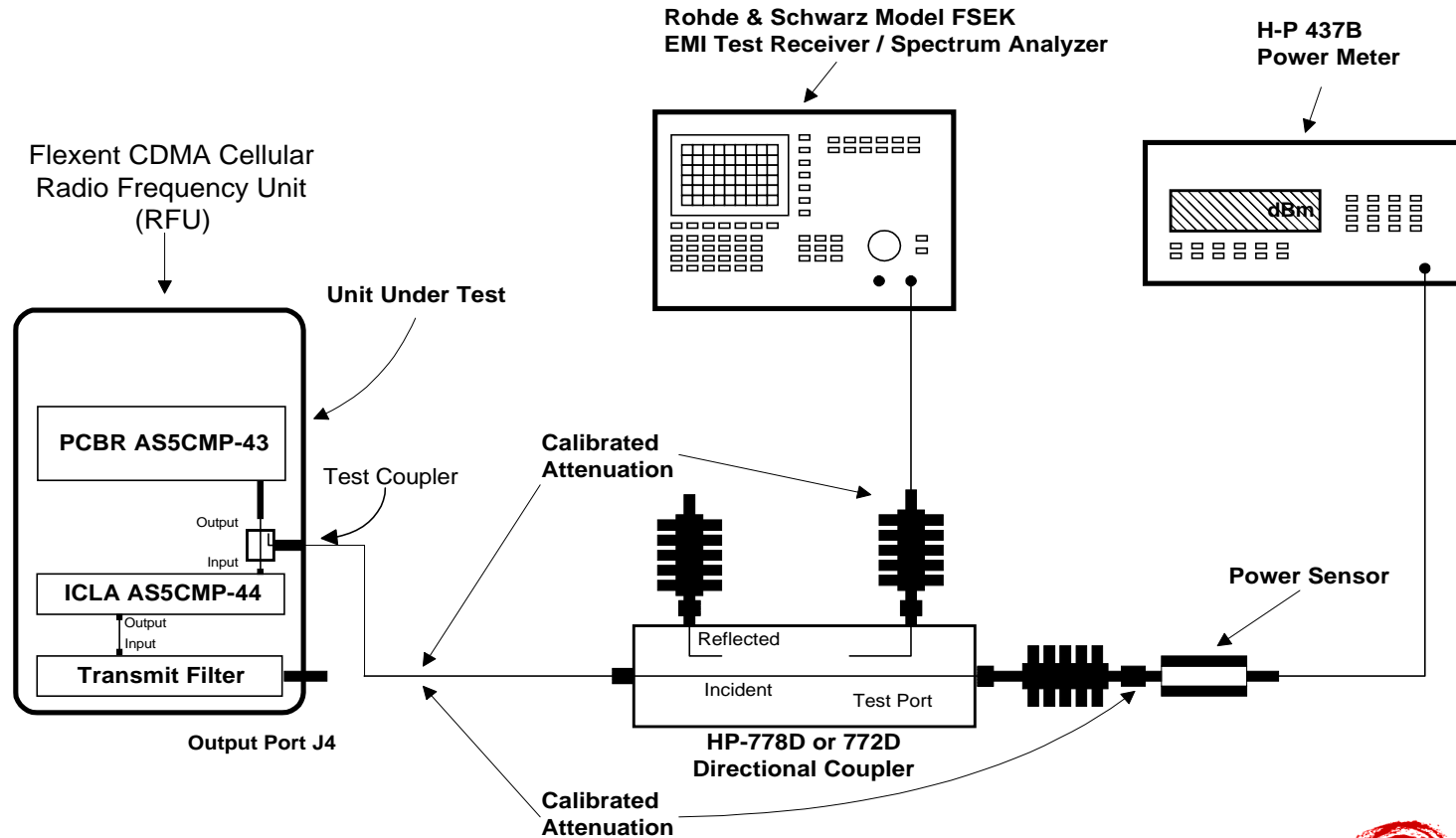
The spectrum analyzer output plots show the CDMA channel signal is 16.1 dB below the reference line of the spectrum analyzer for the following reason: For the CDMA system there is no carrier without modulation. The CDMA transmit bandwidth is 1.23 MHz. Since spectrum analyzer does not have Resolution Bandwidth setting for 1.23 MHz, the following relationship was used to provide the correct level for an unmodulated carrier vs. modulated signal.

$$10 \cdot \log (\text{Resolution Bandwidth} / \text{Transmit Bandwidth}) = \text{Signal Offset}$$

For the peak of the CDMA signal measured with a resolution bandwidth of 30 kHz the signal offset is:

$$\text{Signal Offset} = 10 \cdot \log (30 \text{ kHz} / 1.23 \text{ MHz}) = -16.1 \text{ dB}$$

Figure 3A. TEST CONFIGURATION FOR MEASUREMENT OF OCCUPIED BANDWIDTH



Lucent Technologies Inc. - Proprietary
Use pursuant to Company Instructions

APPLICANT: Lucent Technologies

FCC ID: AS5CMP - 43

All components are calibrated over the frequency range of interest



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MEASUREMENT

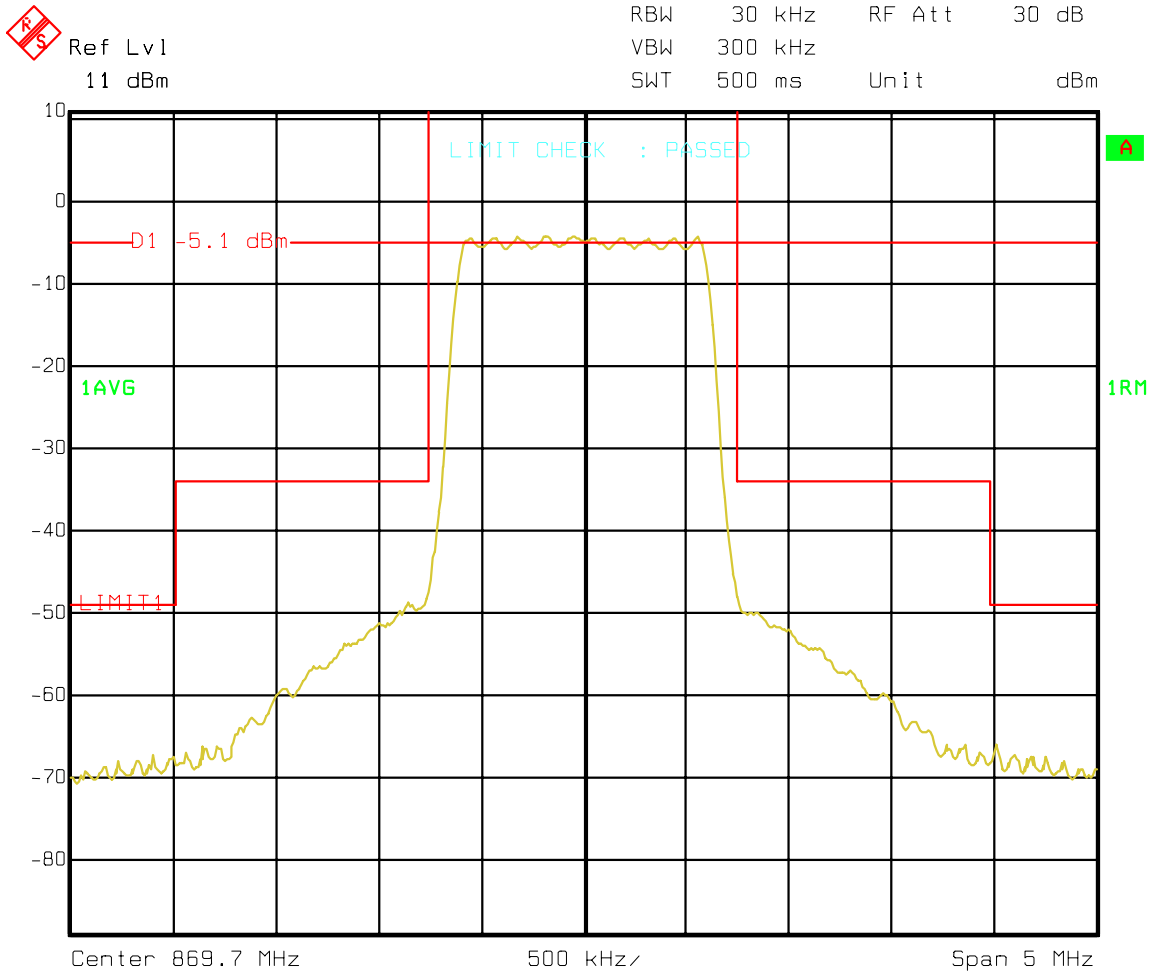
OF

OCCUPIED BANDWIDTH

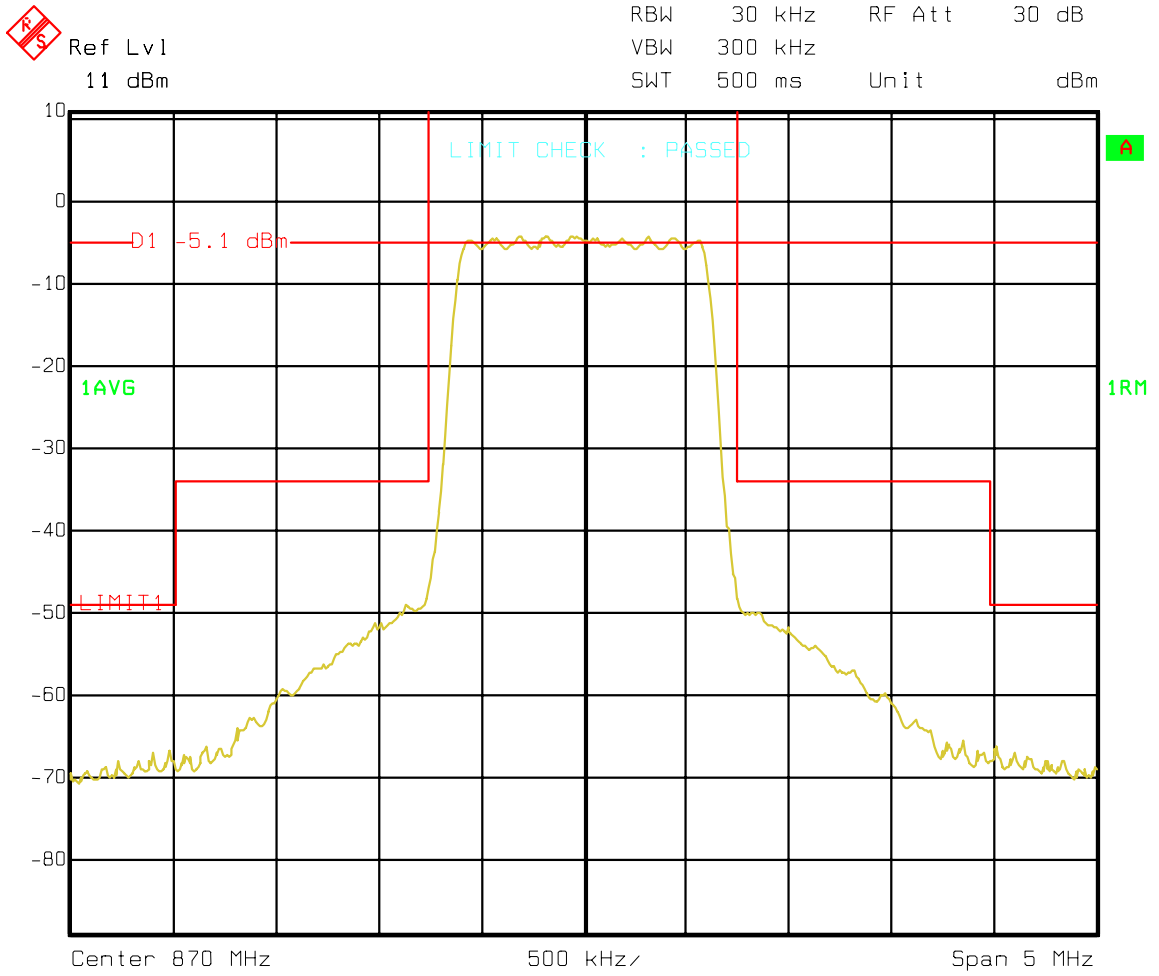
BLOCK A”

(869-870 MHz)

Left Edge:	869.7 MHz (Channel 1013)
Right Edge:	870.0 MHz (Channel 1023)



Title: Occupied Bandwidth
Comment A: FCC ID: AS5CMP-43.FLEXENT CDMA MICRO-MINI CELL
CHANNEL 1013. PCBR OUTPUT POWER 11 dBm.
Date: 25.OCT.2000 11:21:50



Title: Occupied Bandwidth
Comment A: FCC ID: AS5CMP-43.FLEXENT CDMA MICRO-MINI CELL
CHANNEL 1023. PCBR OUTPUT POWER 11 dBm.
Date: 25.OCT.2000 11:25:26

MEASUREMENT: 3

MEASUREMENT

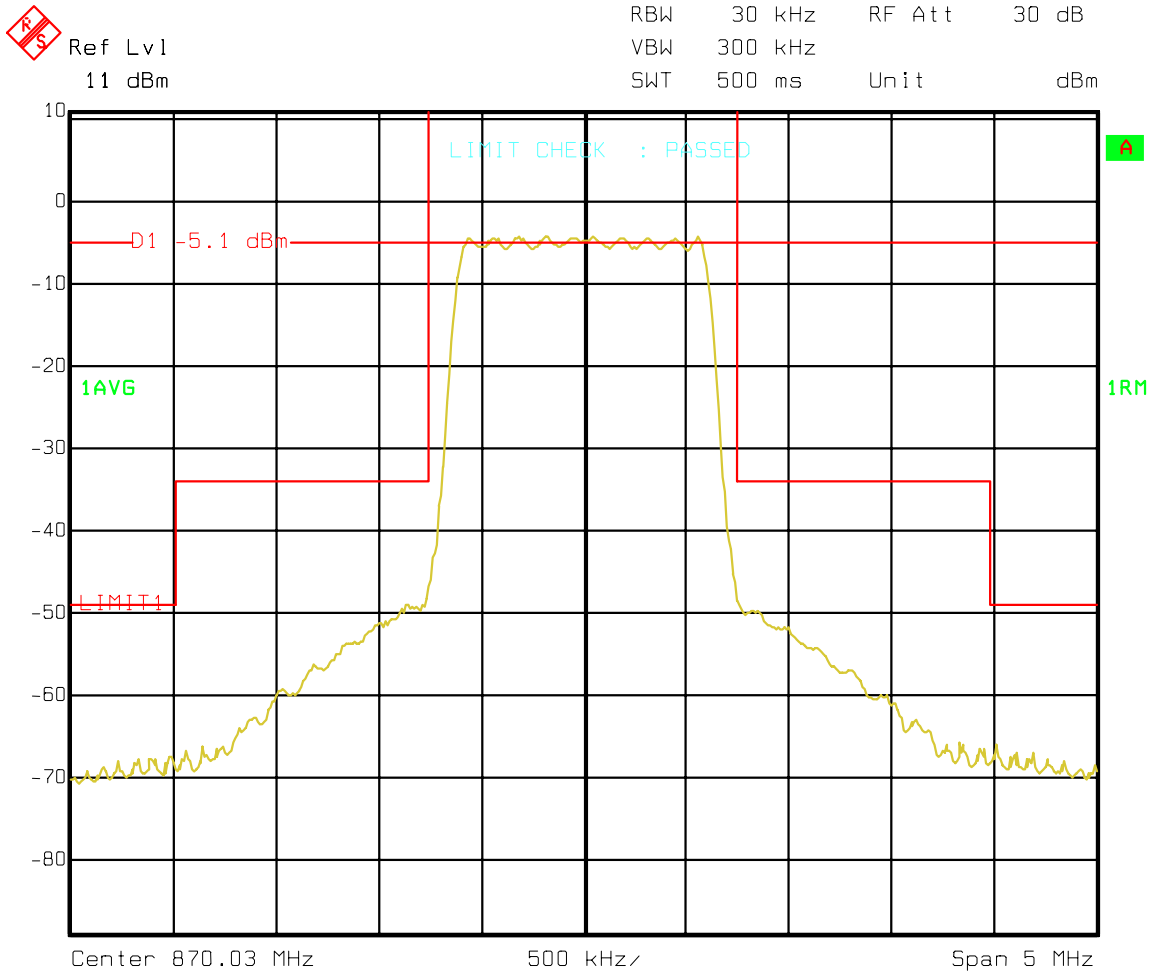
OF

OCCUPIED BANDWIDTH

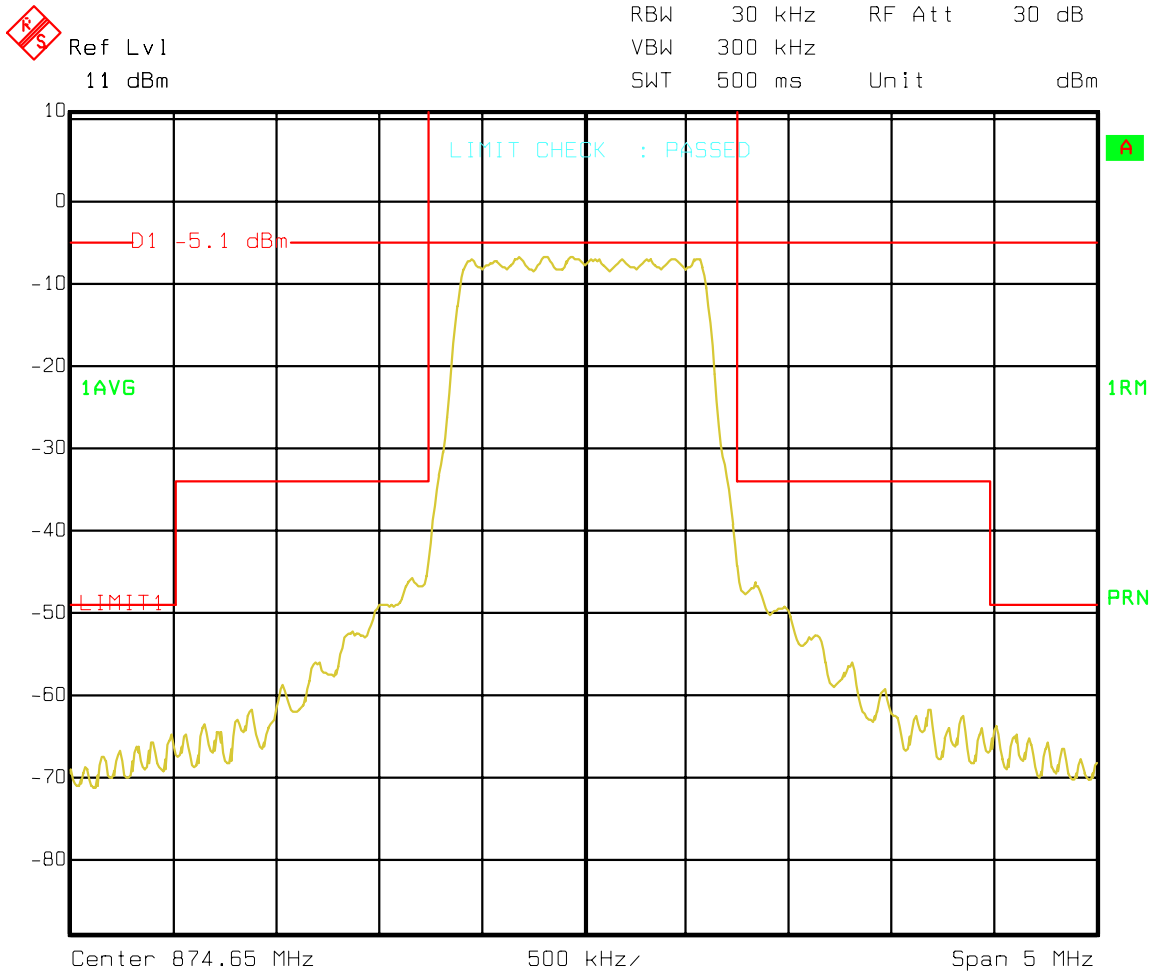
BLOCK A

(870-880 MHz)

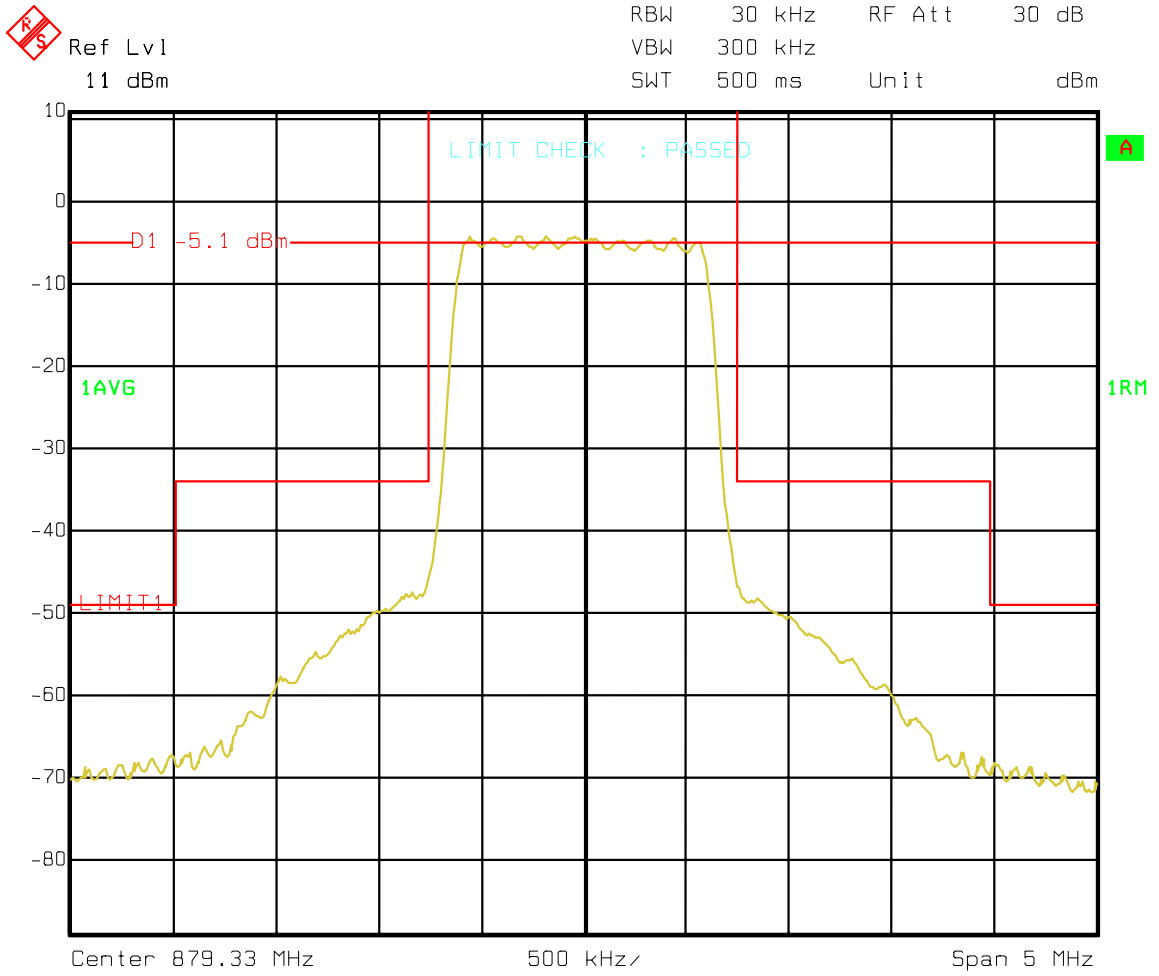
Left Edge:	870.03 MHz (Channel 001)
Center:	874.65 MHz (Channel 155)
Right Edge:	879.33 MHz (Channel 311)



Title: Occupied Bandwidth
Comment A: FCC ID: AS5CMP-43.FLEXENT CDMA MICRO-MINI CELL
CHANNEL 1. PCBR OUTPUT POWER 11 dBm.
Date: 25.OCT.2000 11:29:32



Title: Occupied Bandwidth
Comment A: FCC ID: AS5CMP-43.FLEXENT CDMA MICRO-MINI CELL
CHANNEL 155. PCBR OUTPUT POWER 11 dBm.
Date: 25.OCT.2000 11:42:50



Title: Occupied Bandwidth
Comment A: FCC ID: AS5CMP-43.FLEXENT CDMA MICRO-MINI CELL
CHANNEL 311. PCBR OUTPUT POWER 11 dBm.
Date: 25.OCT.2000 11:46:41

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MEASUREMENT

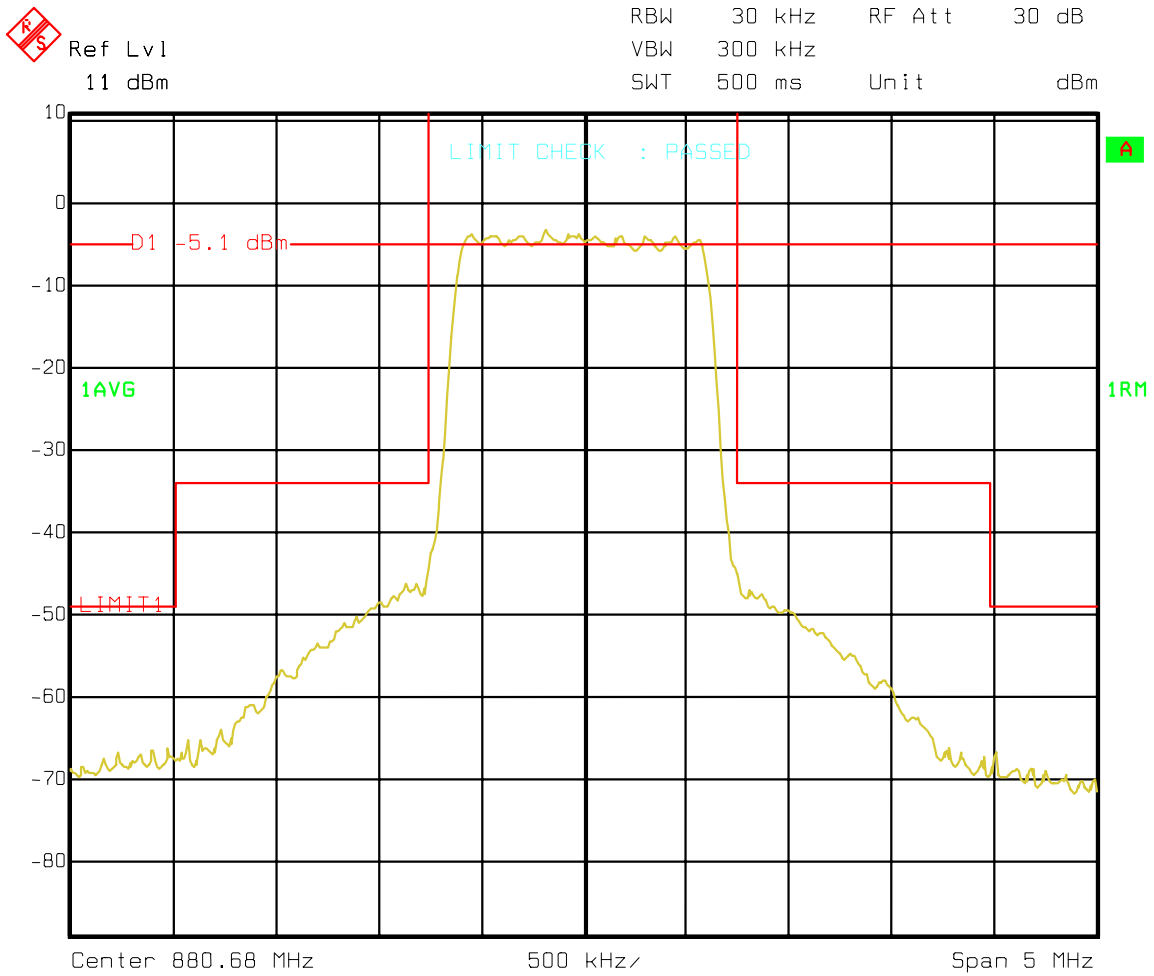
OF

OCCUPIED BANDWIDTH

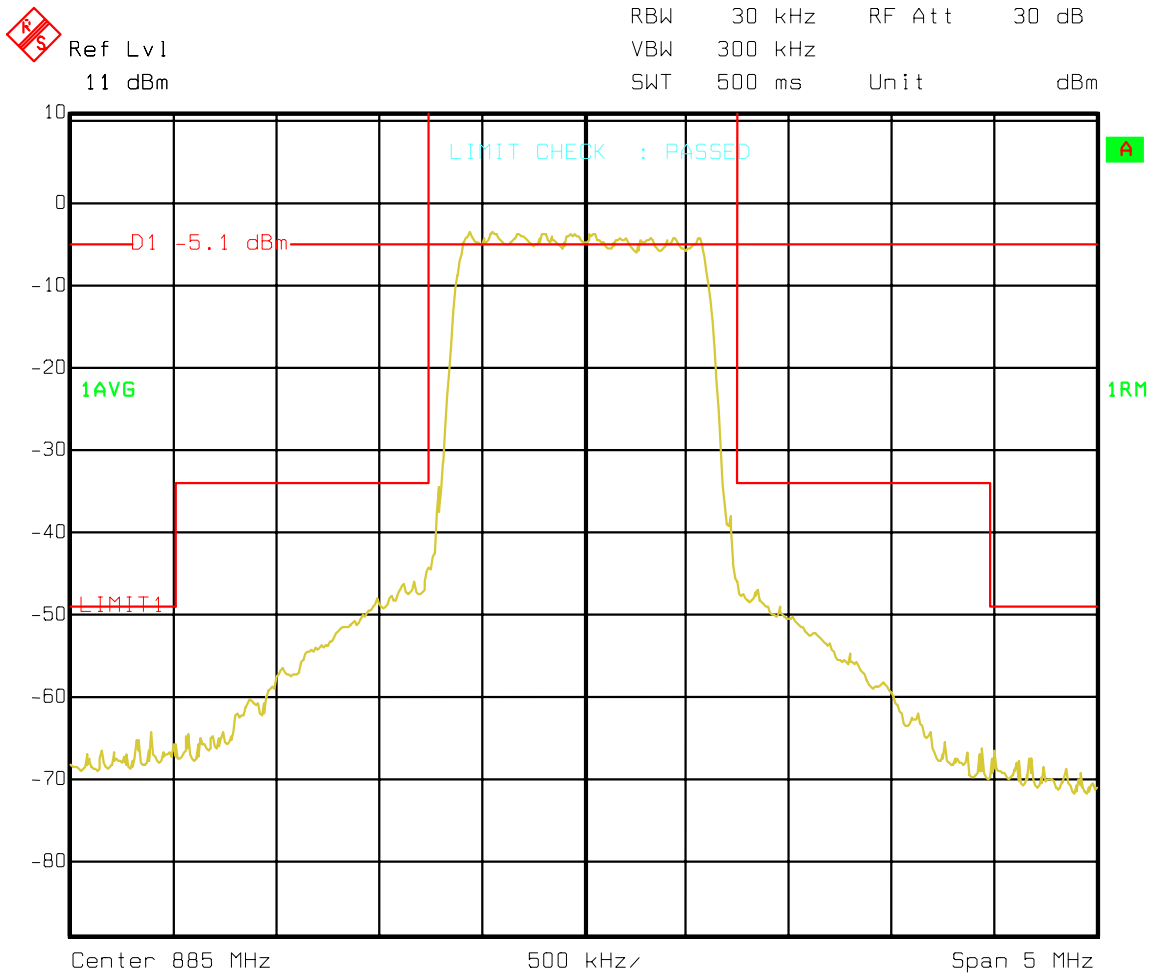
BLOCK B

(880-890 MHz)

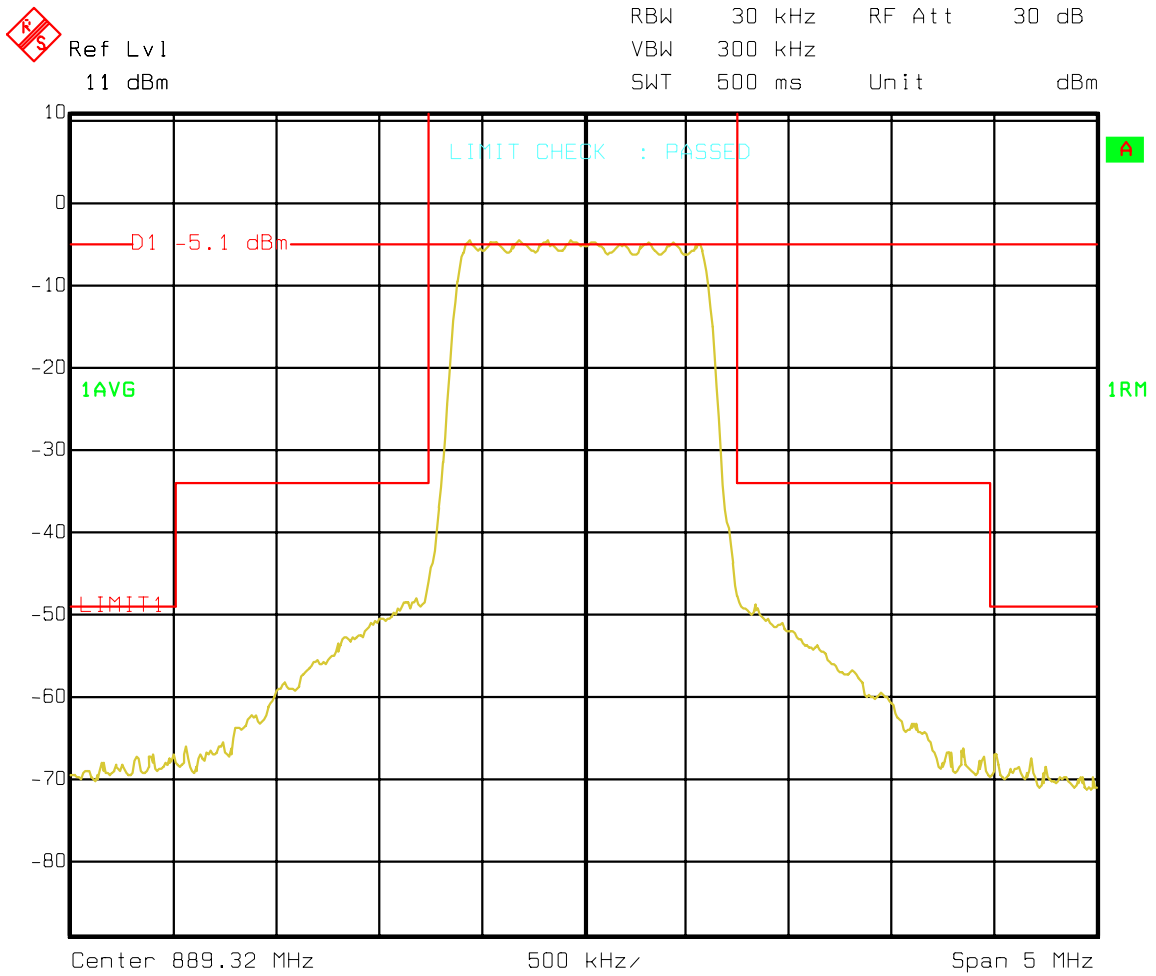
Left Edge:	880.68 MHz (Channel 356)
Center:	885.00 MHz (Channel 500)
Right Edge:	889.32 MHz (Channel 644)



Title: Occupied Bandwidth
Comment A: FCC ID: AS5CMP-43.FLEXENT CDMA MICRO-MINI CELL (DUPLEX)
CHANNEL 356. PCBR OUTPUT POWER 11dBm.
Date: 24.OCT.2000 11:11:47



Title: Occupied Bandwidth
Comment A: FCC ID: AS5CMP-43.FLEXENT CDMA MICRO-MINI CELL (DUPLEX)
CHANNEL 500. PCBR OUTPUT POWER 11dBm.
Date: 24.OCT.2000 11:03:40



Title: Occupied Bandwidth
Comment A: FCC ID: AS5CMP-43.FLEXENT CDMA MICRO-MINI CELL (DUPLEX)
CHANNEL 644. PCBR OUTPUT POWER 11dBm.
Date: 24.OCT.2000 10:50:38

MEASUREMENT: 3

MEASUREMENT

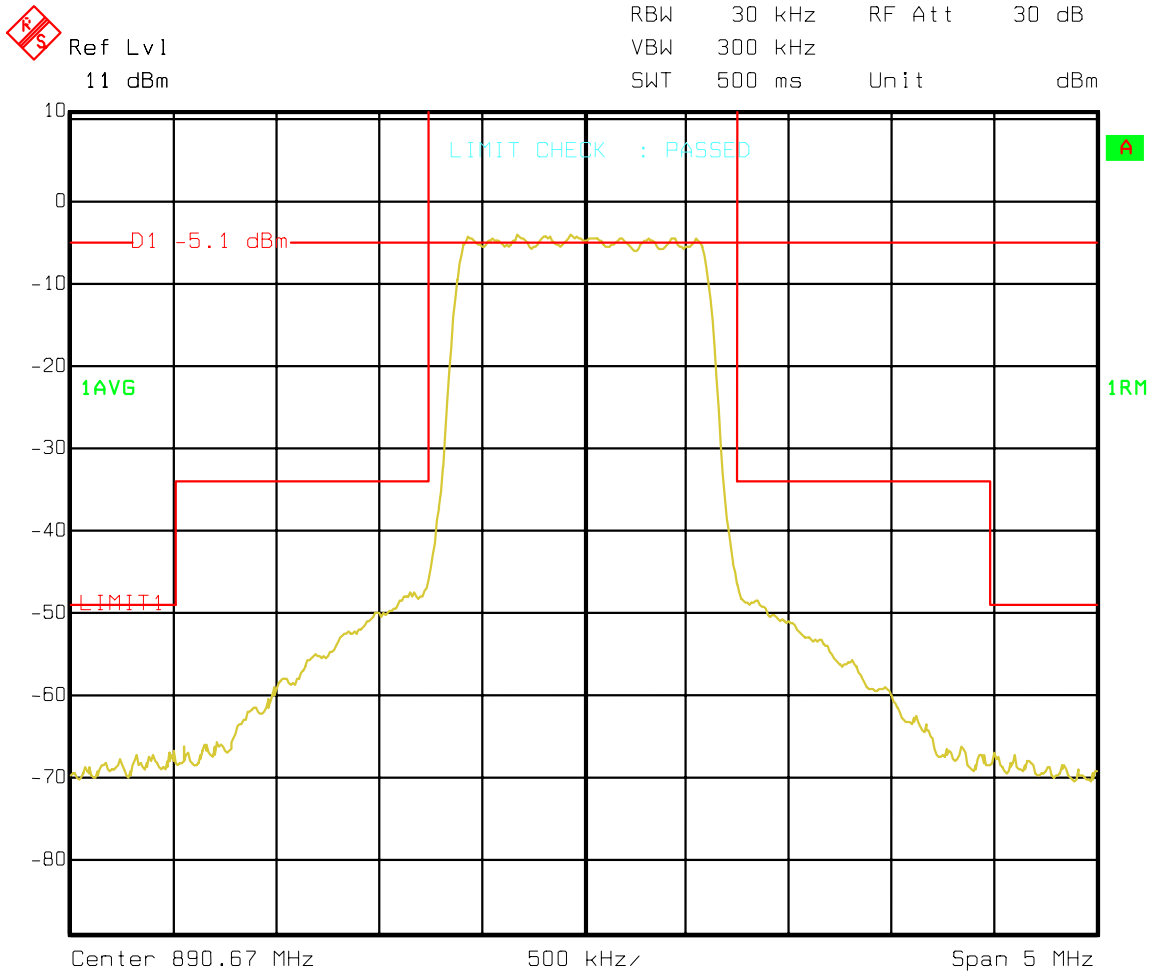
OF

OCCUPIED BANDWIDTH

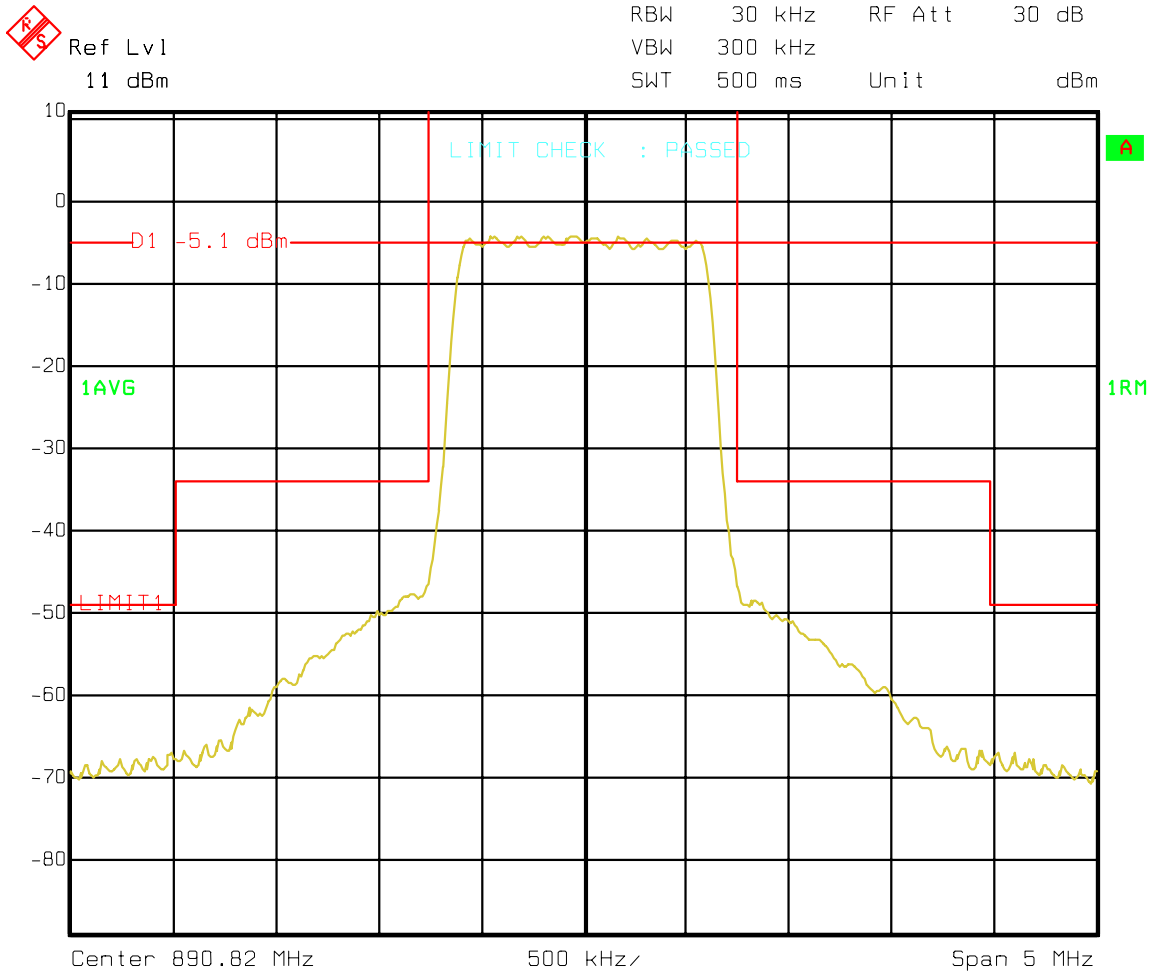
BLOCK A'

(890-891.5 MHz)

Left Edge:	890.67 MHz (Channel 689)
Right Edge:	890.82 MHz (Channel 694)



Title: Occupied Bandwidth
Comment A: FCC ID: AS5CMP-43.FLEXENT CDMA MICRO-MINI CELL
CHANNEL 689. PCBR OUTPUT POWER 11 dBm.
Date: 25.OCT.2000 13:10:52



Title: Occupied Bandwidth
Comment A: FCC ID: AS5CMP-43.FLEXENT CDMA MICRO-MINI CELL
CHANNEL 694. PCBR OUTPUT POWER 11 dBm.
Date: 25.OCT.2000 13:14:30

MEASUREMENT: 3

MEASUREMENT

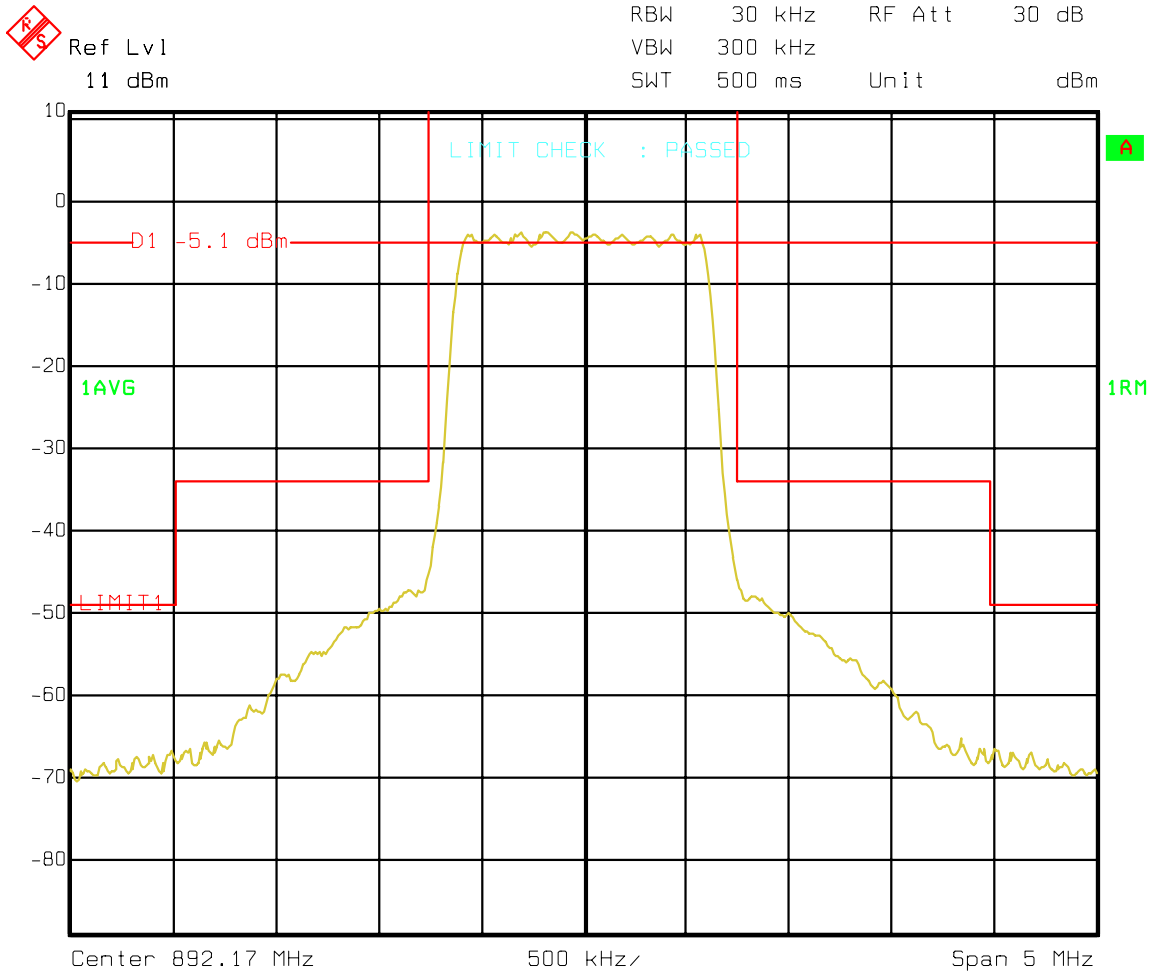
OF

OCCUPIED BANDWIDTH

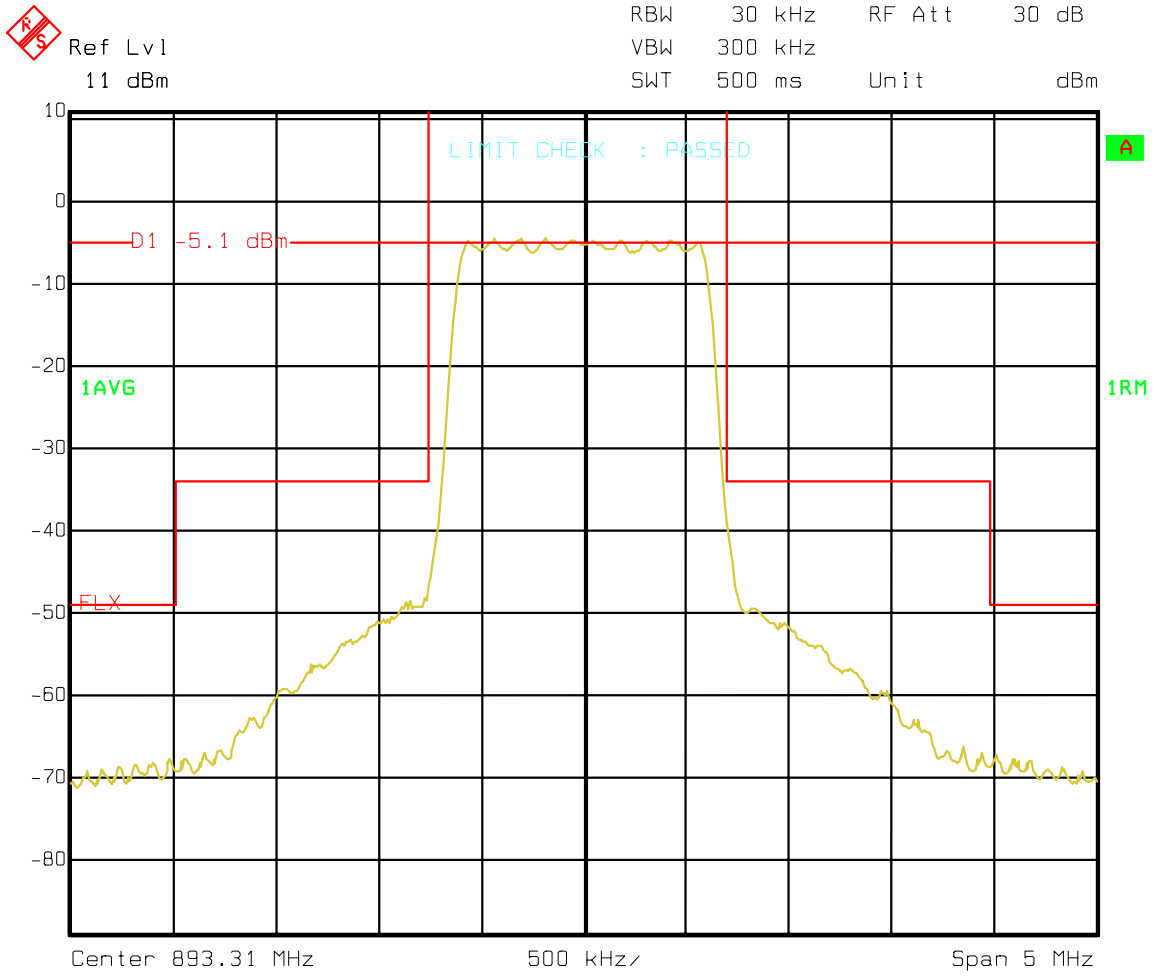
BLOCK B'

(891.5-894.0 MHz)

Left Edge:	892.17 MHz (Channel 739)
Right Edge:	893.31 MHz (Channel 777)



Title: Occupied Bandwidth
Comment A: FCC ID: AS5CMP-43.FLEXENT CDMA MICRO-MINI CELL (DUPLEX)
CHANNEL 739. PCBR OUTPUT POWER 11dBm.
Date: 24.OCT.2000 10:57:42



Title: Occupied Bandwidth
Comment A: FCC ID: AS5CMP-43.FLEXENT CDMA MICRO-MINI CELL (DUPLEX)
CHANNEL 777. PCBR OUTPUT POWER 11dBm.
Date: 24.OCT.2000 10:29:50