

RETLIF TESTING LABORATORIES
TEST REPORT R-4209N1
March 10, 2004

FCC COMPLIANCE TEST REPORT
ON

LAB PARTNERS ASSOCIATES, INC.
KODAK DIGITAL CAMERA WITH TR60 RF TRANSCEIVER
FCC ID: KDS-PW-KTR1

APPLICANT Lab Partners Associates, Inc. 1350 Shelburne Road, Suite 265 South Burlington, VT 05403	MANUFACTURER SAME
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TEST SPECIFICATION: FCC Rules and Regulations Part 15, Subpart C, Para. 15.231

TEST PROCEDURE: ANSI C63.4:1992

TEST SAMPLE DESCRIPTION

BRANDNAME: Kodak MODEL: DCS PRO14n

TYPE: Digital Camera with TR60 RF Transceiver

POWER REQUIREMENTS: 3.3VDC via Battery

FREQUENCY BAND OF OPERATION: 344.04MHz to 354.04MHz (32 Discrete Channels)

MODULATION: Pulsed (On/Off Keying)

TYPE OF TRANSMISSION: Control Signal (Pulse Recognition Codes)

FREQUENCIES TESTED: 346.5MHz, 353.5MHz

FCC ID: KDS-PW-KTR1

APPLICABLE RULE SECTION: Part 15, Subpart C, Section 15.231

TESTS PERFORMED

15.231 (b) Spurious Radiated Emissions (30MHz to 3.6GHz)

15.231 (b) Field Strength of Fundamental

15.231 (c) Occupied Bandwidth, 0.25% of Fundamental Frequency

Duty Cycle Determination

NOTE: Testing was performed at 2 frequencies (low and high) within the operational band per the requirements of 15.31 (m) for devices operating within a 1 - 10MHz band but not exceeding 10MHz.

TEST SAMPLE OPERATION

The EUT is powered by 3.3VDC by internal battery. The device is normally manually operated and transmits a control signal for remote triggering of a flashpack. Normal operation of the EUT complies with the parameters required in Part 15, Subpart C, Section 15.231. For testing purposes only the EUT was configured to continuously transmit. All testing was performed with new batteries installed.

TEST SAMPLE / TEST PROGRAM

- The transmitter is manually activated and automatically ceases transmission within five seconds after activation.
- The transmitter does not perform periodic transmissions at regularly predetermined intervals.
- The device can not be employed for RC purposes involving security.
- The fundamental field strength at 346.40MHz did not exceed 7354.05 μ V/M (Average) at a test distance of 3 meters.
The fundamental field strength at 353.50MHz did not exceed 7645.91 μ V/M (Average) at a test distance of 3 meters.
- The peak value of fundamental emissions did not exceed a peak field strength limit corresponding to 20dB above the maximum permitted average limit.
- The field strength of harmonic and spurious emissions did not exceed 735.41 μ V/M or 500 μ V/M as applicable for a fundamental frequency of 346.5MHz.
The field strength of harmonic and spurious emissions did not exceed 764.59 μ V/M or 500 μ V/M as applicable for a fundamental frequency of 353.5MHz.
No harmonic or spurious emissions were observed within 20dB of the specified limit at test distances of 1 or 3 meters.
- The device can operate at 32 channels within the range of 344.04 to 354.04MHz. The device was tested at the frequencies of 346.50MHz and 353.50MHz. The bandwidth of emissions did not exceed 0.25% of the operating frequency and was determined as follows:

Fundamental Frequency	=	346.5MHz
0.25% of Center Frequency	=	0.866MHz
0.860 divided by 2	=	0.433MHz
Bandwidth Range	=	Fundamental Frequency + and - 0.433MHz
346.5MHz - 0.433MHz	=	346.07MHz
346.5MHz + 0.433MHz	=	346.93MHz
Bandwidth Range	=	346.07MHz - 346.93MHz

TEST SAMPLE / TEST PROGRAM (continued): (Bandwidth)

Fundamental Frequency	=	353.50MHz
0.25% of Center Frequency	=	0.884MHz
0.885 divided by 2	=	0.442MHz
Bandwidth Range	=	Fundamental Frequency + and - 0.442MHz
354.50MHz - 0.442MHz	=	354.06MHz
354.50MHz + 0.442MHz	=	354.94MHz
Bandwidth Range	=	354.06MHz - 354.94MHz

- The device uses an external detachable rubber coated copper spring antenna. This antenna plugs into the pc connector on the camera. The pc connector (no relation to IBM PC) referenced above is a photography industry unique connector normally used for a wired connection between a camera and flashpack. This connector type is unique to the photography industry. It has been verified with the FCC that this connector satisfies the requirements of 15.203 for a unique antenna connector. Attached as an exhibit with this application is a copy of e-mail correspondence from the FCC which confirms this fact.
- Radiated Emissions from the EUT were measured in all three axis. The attached Radiated Emissions test data is representative of the worst case orientation.

DETERMINATION OF FIELD STRENGTH LIMITS

The field strength limits shown below were calculated as instructed in Section 15.231.

Fundamental Frequency: 346.50MHz

Where F is the frequency in MHz, the formula for calculating the maximum permitted fundamental field strength for the band 260-470MHz, $\mu\text{V/m}$ at 3 meters is as follows:

$$\begin{aligned} 41.6667(F) - 7083.3333 &= \text{Field Strength Limit } (\mu\text{V/m}) \\ 41.6667 \times 346.5 &= 14437.512 \\ 14437.512 - 7083.3333 &= 7354 \\ \text{Field Strength Limit} &= 7354\mu\text{V/m} = 77.33\text{dBuV/M} \end{aligned}$$

The maximum permitted unwanted emission level is 20dB below the maximum permitted fundamental level which equals $735.4\mu\text{V/m} = 57.33\text{dBuV/M}$.

TEST SAMPLE / TEST PROGRAM (continued)

Field Strength Limit Calculations continued:

Fundamental Frequency: 353.50MHz

Where F is the frequency in MHz, the formula for calculating the maximum permitted fundamental field strength for the band 260-470MHz, $\mu\text{V/m}$ at 3 meters is as follows:

$$\begin{aligned} 41.6667(F) - 7083.3333 &= \text{Field Strength Limit } (\mu\text{V/m}) \\ 41.6667 \times 353.50 &= 14729.178 \\ 14729.178 - 7083.3333 &= 7645.845 \\ \text{Field Strength Limit} &= 7645.845 \mu\text{V/m} = 77.67\text{dBuV/M} \end{aligned}$$

The maximum permitted unwanted emission level is 20dB below the maximum permitted fundamental level which equals $764.58 \mu\text{V/m} = 57.67\text{dBuV/M}$

DETERMINATION OF DUTY CYCLE

The transmitter controls were adjusted to maximize the transmitted duty cycle. The analyzer was set for a frequency span of 0Hz. The sweep time was then adjusted in order to display one full pulse train. The transmitter on time was then summed and compared to the time for one full cycle in order to obtain the duty cycle. As the pulse train exceeded 100msec in duration the worst case duty cycle was determined by measuring/calculating the 100msec period with the greatest on time. The on times were determined as follows:

The worst case 100msec period contained 3 identical pulse bursts. The individual pulses within each burst were measured and summed in order to obtain the total "on time" within each burst. The total "on time" within each burst was then multiplied by three (as there were 3 pulse bursts within the 100msec period) to determine total "on time" within the 100msec period.

Fundamental Frequency: 346.5MHz

$$\begin{aligned} \text{Transmitter On Time} &= 4.492 \text{ milliseconds (maximum)} \\ \text{Transmitter Cycle Time} &= 100 \text{ milliseconds} \\ \text{Transmitter Duty Cycle} &= 4.492 \% \\ \text{On Time divided by Cycle Time} &= \text{Duty Cycle Factor} \\ 4.492 \text{ divided by } 100 &= 0.04492 \\ 0.04492 \text{ converted to dB (LOG}_{10} .04492)20 &= -26.95 \\ \text{Duty Cycle Factor} &= \text{-26.95dB} \end{aligned}$$

DETERMINATION OF DUTY CYCLE (continued)

Fundamental Frequency: 353.50MHz

Transmitter On Time	=	4.971 milliseconds (maximum)
Transmitter Cycle Time	=	100 milliseconds
Transmitter Duty Cycle	=	4.971 %
On Time divided by Cycle Time	=	Duty Cycle Factor
4.971 divided by 100	=	0.04971
0.04971 converted to dB ($\text{LOG}_{10} .04971$)20	=	-26.07
<i>Duty Cycle Factor</i>	=	<i>-26.07dB</i>

Duty Cycle Factor Determination Plots are included with this application as a separate attachment.

GENERAL NOTES

1. All readings were taken utilizing a peak detector function at a test distance of 3 meters.
2. The duty cycle factor was applied to the peak readings in order to determine the average value of the pulsed emissions.

EQUIPMENT LISTS

Field Strength of Fundamental

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due Date
4029B	Test Site Attenuation	Retlif	3 / 10 Meters	RNH	07/30/2003	07/30/2004
4202	Biconilog	EMCO	26 MHz - 2 GHz	3142	08/29/2003	08/29/2004
713	EMI Test Receiver	Rohde & Schwarz	20 Hz - 26.5 GHz	ESI26	09/05/2003	09/05/2004

Spurious Emissions

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due Date
3258	Double Ridge Guide	EMCO	1 - 18 GHz	3115	05/14/2003	05/14/2004
4029B	Test Site Attenuation	Retlif	3 / 10 Meters	RNH	07/30/2003	07/30/2004
4202	Biconilog	EMCO	26 MHz - 2 GHz	3142	08/29/2003	08/29/2004
713	EMI Test Receiver	Rohde & Schwarz	20 Hz - 26.5 GHz	ESI26	09/05/2003	09/05/2004

Occupied Bandwidth/Duty Cycle

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due Date
713	EMI Test Receiver	Rohde & Schwarz	20 Hz - 26.5 GHz	ESI26	09/05/2003	09/05/2004

RETLIF TESTING LABORATORIES

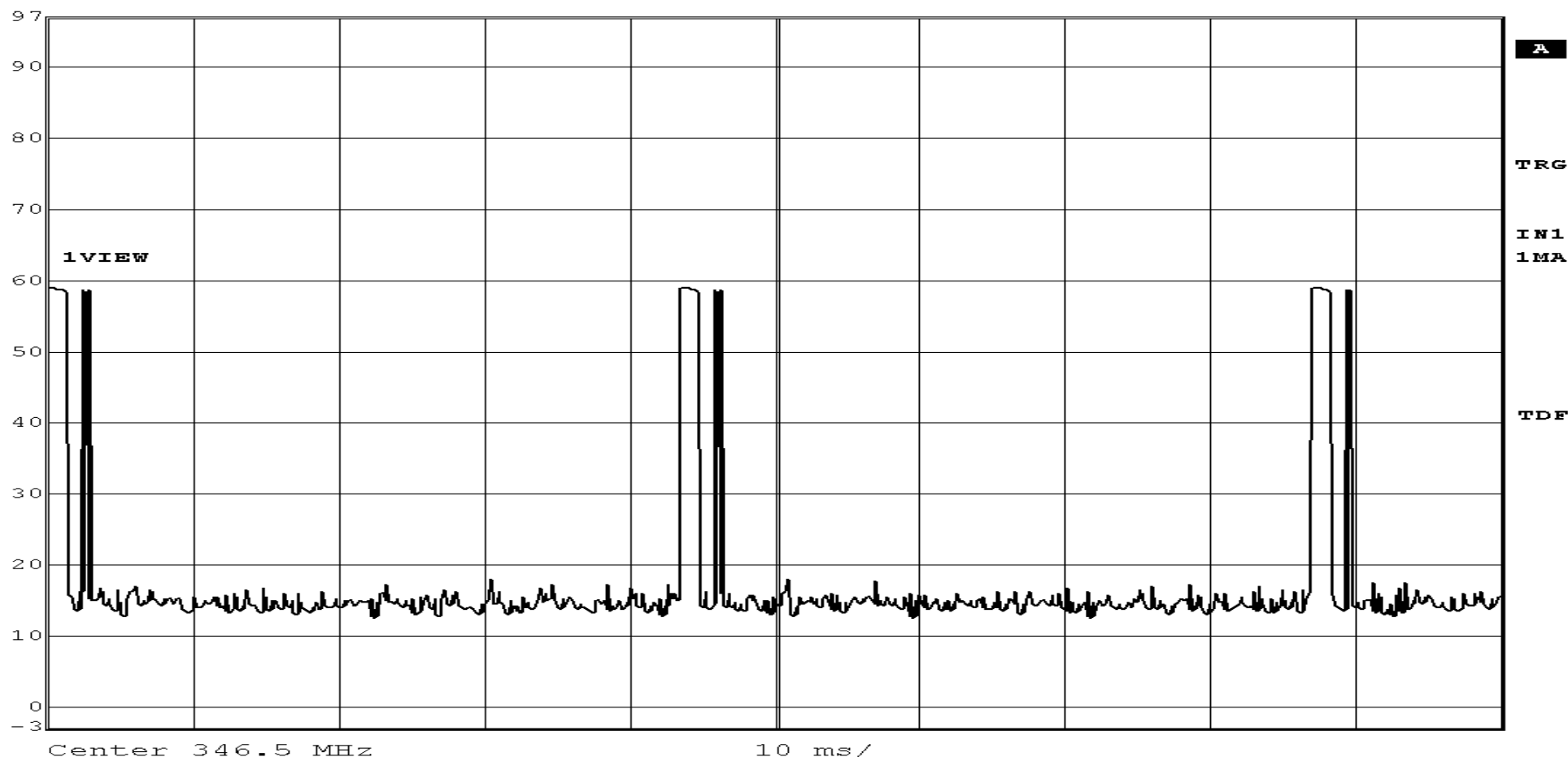
EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 346.5 MHz		Date: 1/19/2004



Ref Lvl
97 dBμV

RBW 100 kHz RF Att 0 dB
VBW 300 kHz
SWT 100 ms Unit dBμV



Date: 19.JAN.2004 12:45:47

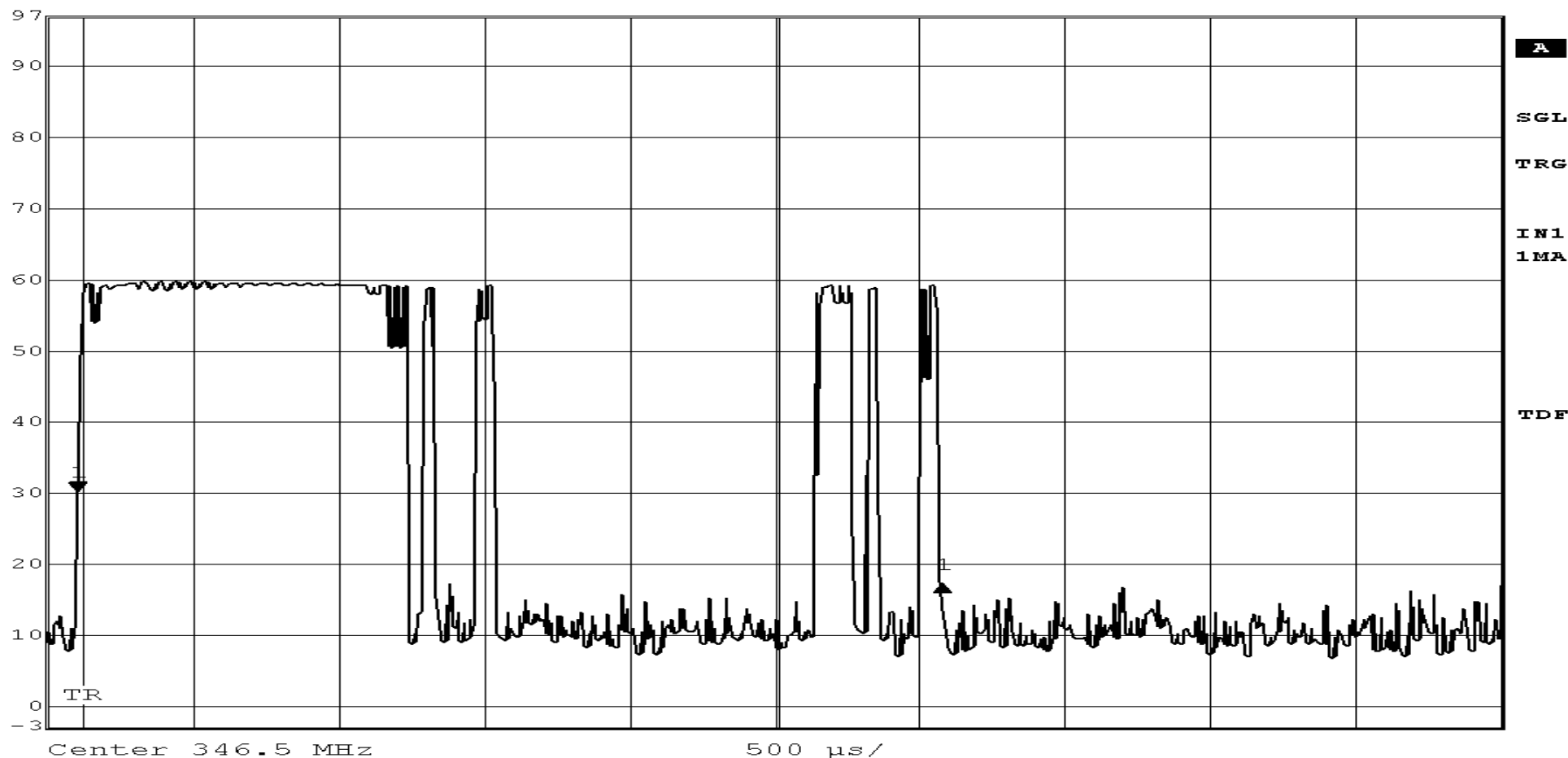
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Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 346.5 MHz		Date: 1/19/2004



Delta 1 [T1]	RBW	100 kHz	RF Att	0 dB
Ref Lvl	VBW	300 kHz		
97 dBμV	SWT	5 ms	Unit	dBμV



Date: 19.JAN.2004 12:49:08

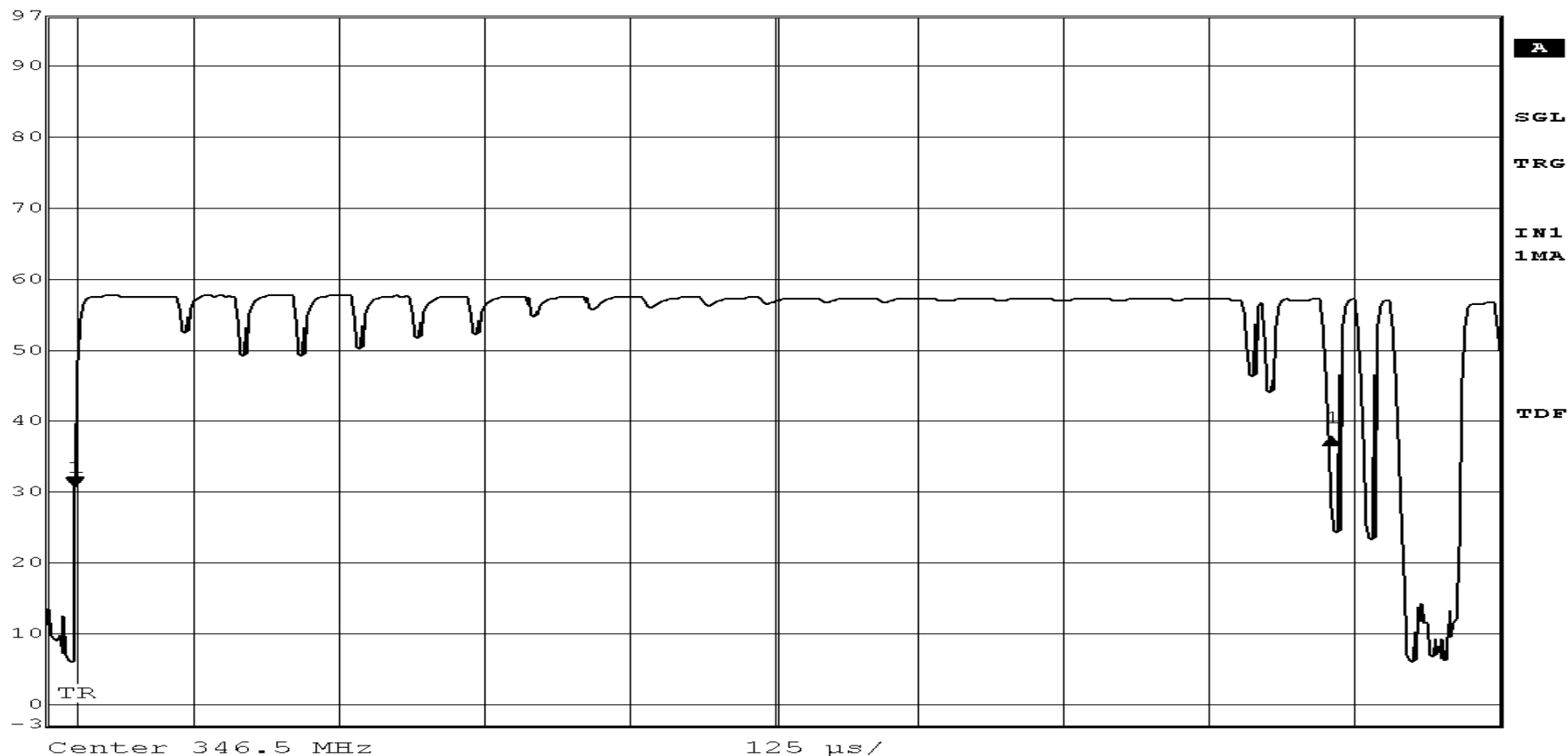
RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 346.5 MHz		Date: 1/19/2004



Delta 1 [T1]	RBW	100 kHz	RF Att	0 dB
Ref Lvl	6.82 dB	VBW	300 kHz	
97 dBμV	1.082164 ms	SWT	1.25 ms	Unit dBμV



Date: 19.JAN.2004 13:02:30

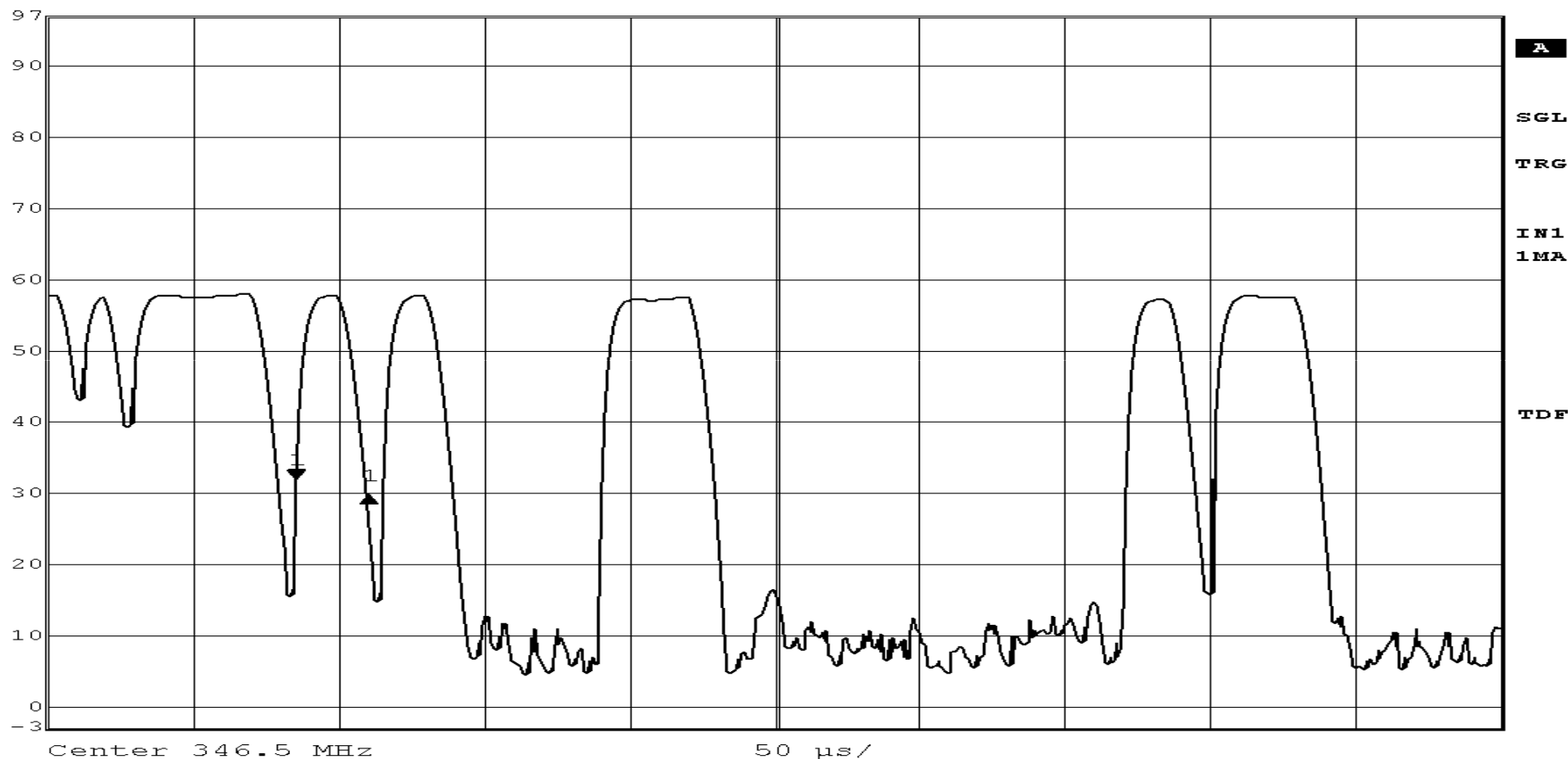
RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 346.5 MHz		Date: 1/19/2004



Ref Lvl	Delta 1 [T1]	RBW	100 kHz	RF Att	0 dB
97 dBμV	-2.17 dB	VBW	300 kHz		
	25.050100 μs	SWT	500 μs	Unit	dBμV



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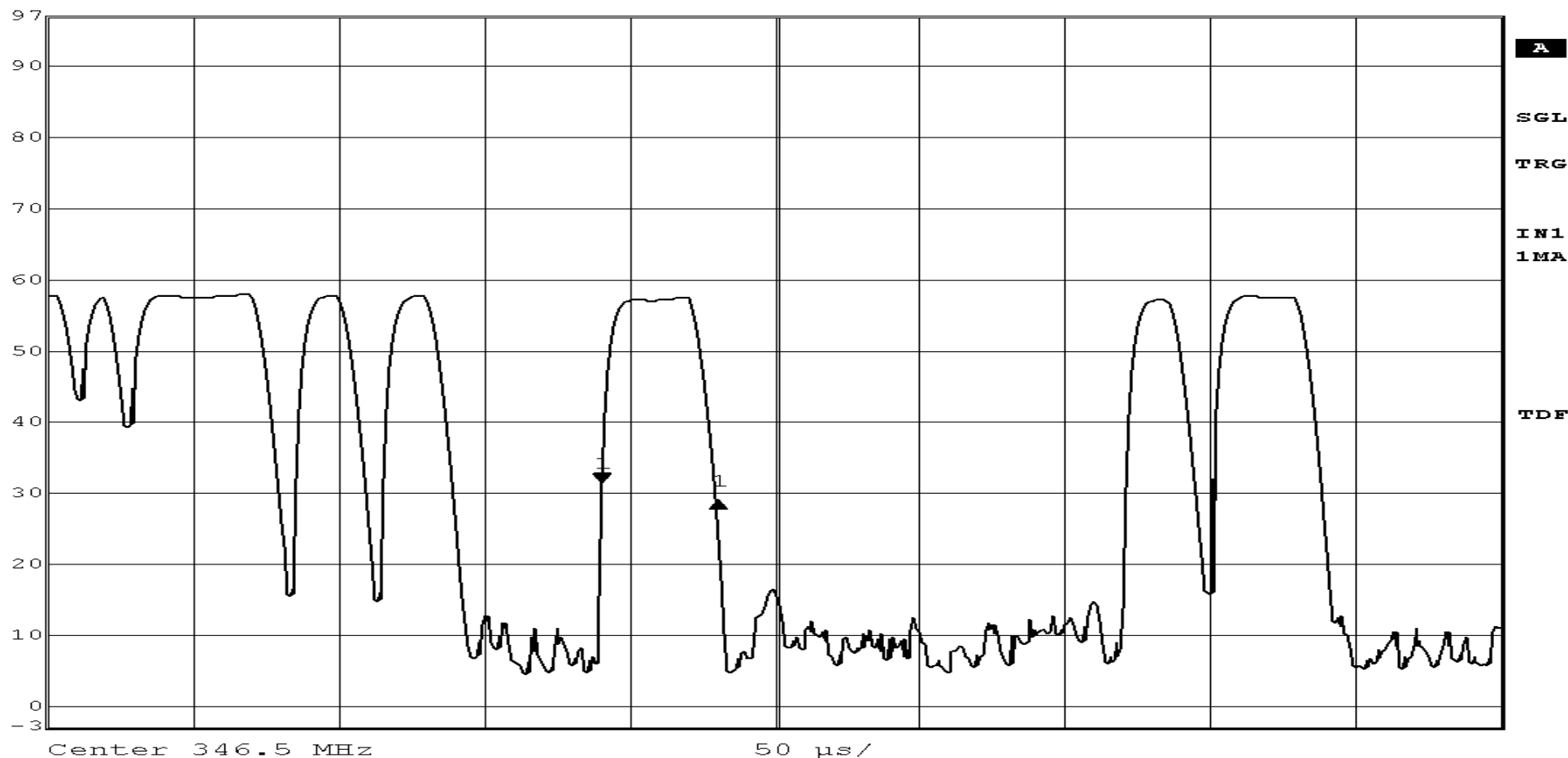
RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 346.5 MHz		Date: 1/19/2004



Ref Lvl	Delta 1 [T1]	RBW	100 kHz	RF Att	0 dB
97 dBμV	-2.49 dB	VBW	300 kHz		
	40.080160 μs	SWT	500 μs	Unit	dBμV



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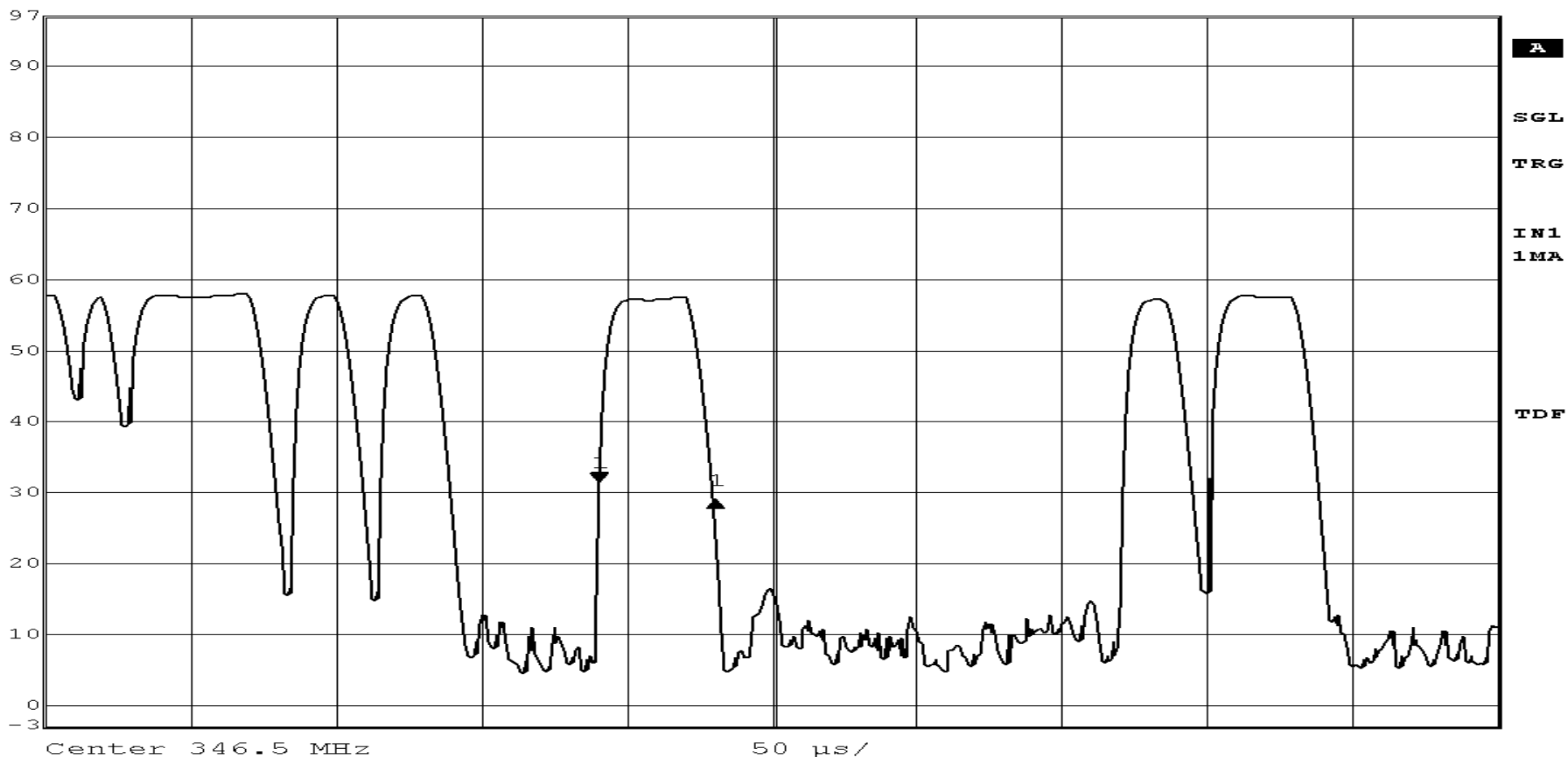
RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 346.5 MHz		Date: 1/19/2004



Ref Lvl	Delta 1 [T1]	RBW	100 kHz	RF Att	0 dB
97 dBμV	-2.49 dB	VBW	300 kHz		
	40.080160 μs	SWT	500 μs	Unit	dBμV



Date: 19.JAN.2004 13:07:16

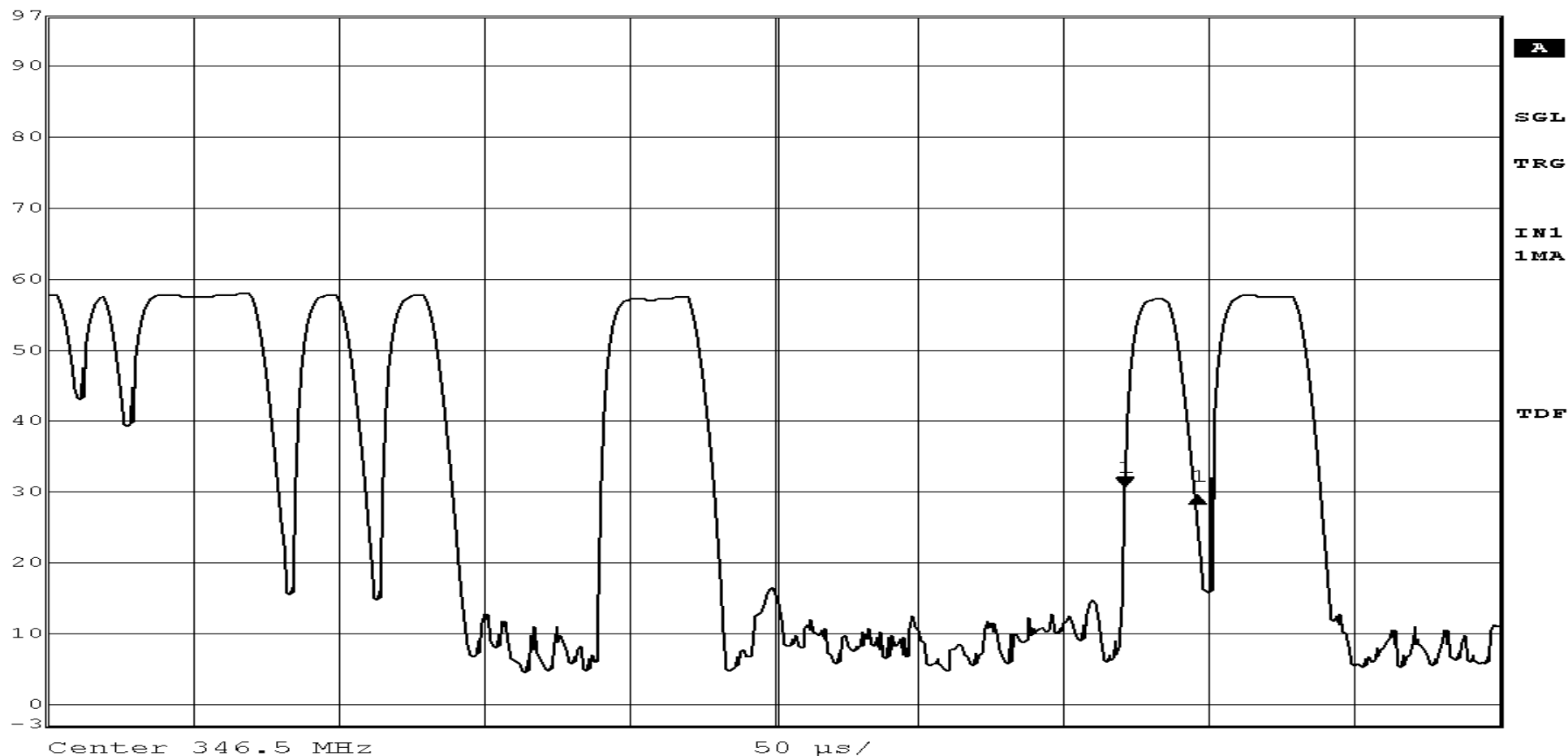
RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 346.5 MHz		Date: 1/19/2004



Delta 1 [T1]	RBW	100 kHz	RF Att	0 dB
Ref Lvl	VBW	300 kHz		
97 dBμV	SWT	500 μs	Unit	dBμV
-1.35 dB				
25.050100 μs				



Date: 19.JAN.2004 13:08:34

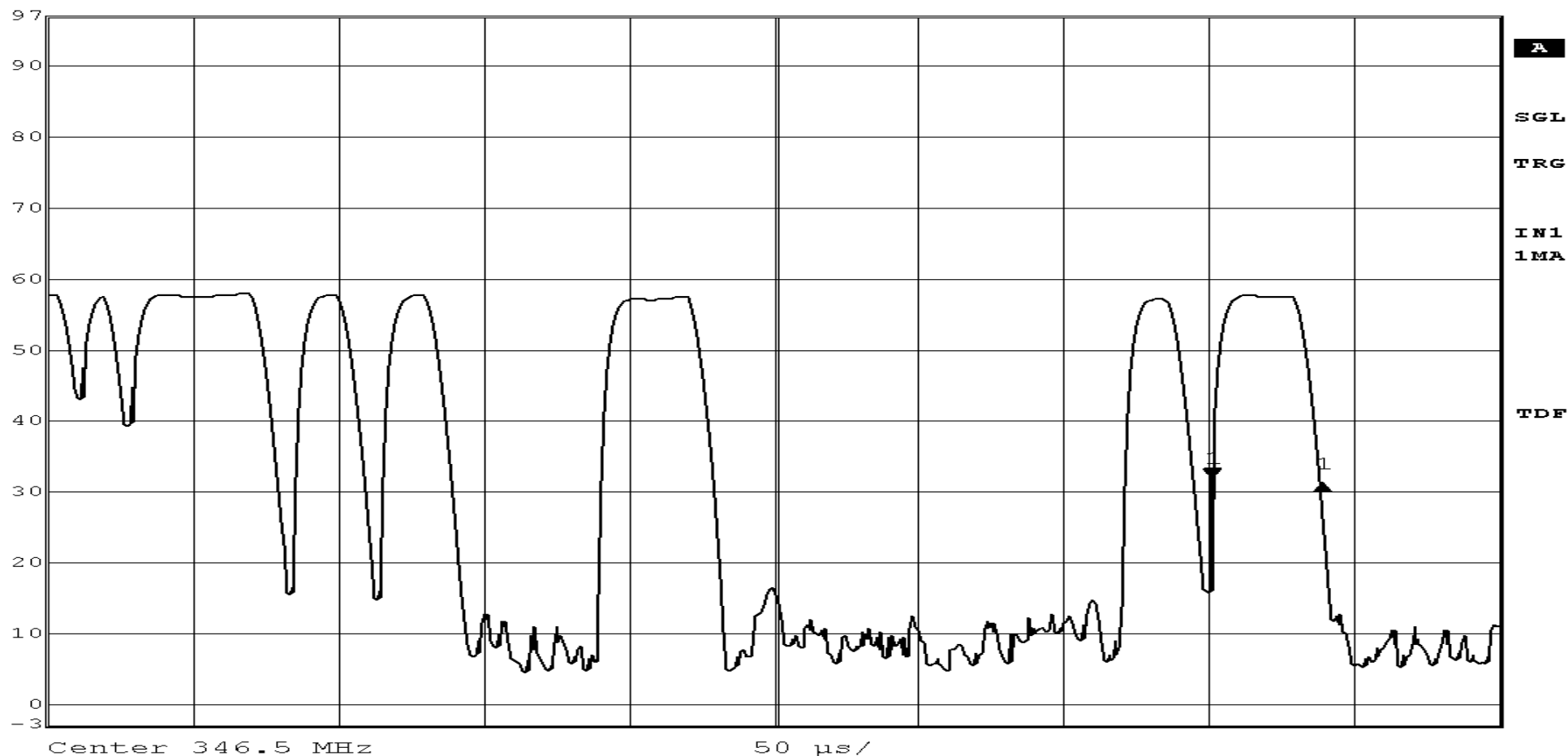
RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 346.5 MHz		Date: 1/19/2004



Ref Lvl	Delta 1 [T1]	RBW	100 kHz	RF Att	0 dB
97 dBμV	-0.72 dB	VBW	300 kHz		
	38.076152 μs	SWT	500 μs	Unit	dBμV



Date: 19.JAN.2004 13:09:49

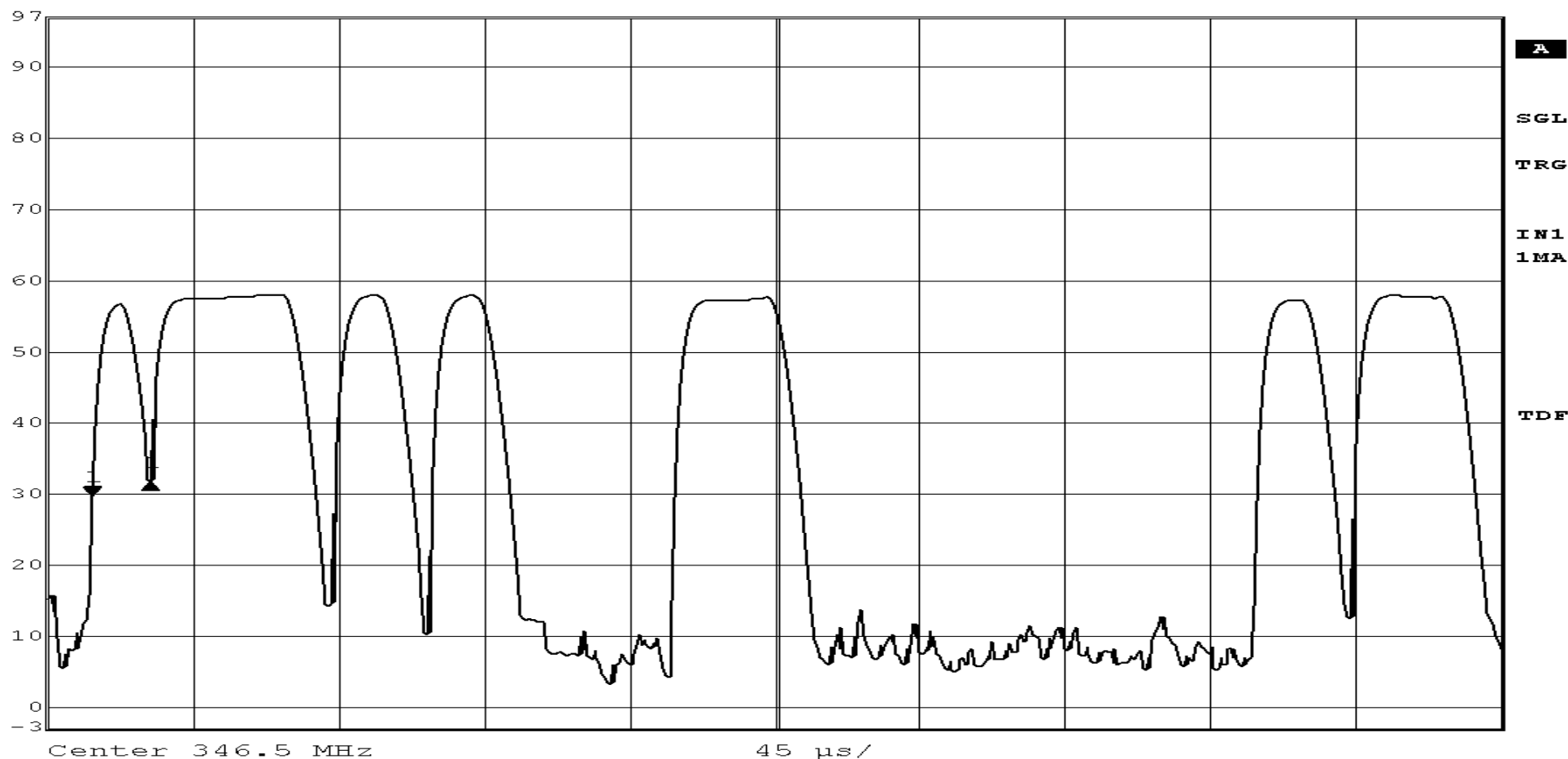
RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		
Notes:	Transmit Frequency 346.5 MHz		
	Technician: T. Firkowski		
	Date: 1/19/2004		



Delta 1 [T1]	RBW	100 kHz	RF Att	0 dB
Ref Lvl	VBW	300 kHz		
97 dBμV	SWT	450 μs	Unit	dBμV
2.04 dB				
18.036072 μs				



Date: 19.JAN.2004 13:28:55

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 346.5 MHz		Date: 1/19/2004



Delta 1 [T1]

RBW 100 kHz RF Att 0 dB

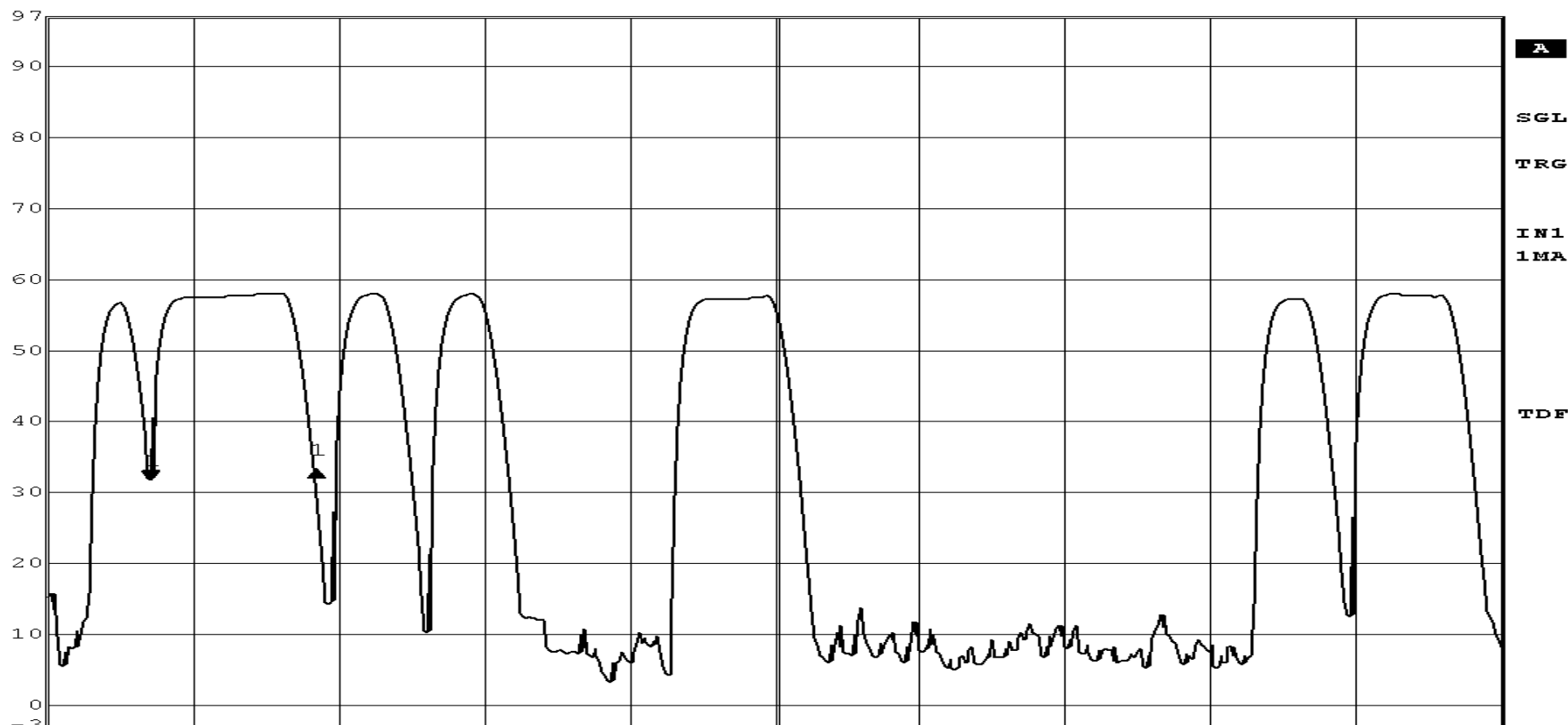
Ref Lvl 1.49 dB

VBW 300 kHz

97 dBμV 51.402806 μs

SWT 450 μs

Unit dBμV



Center 346.5 MHz

45 μs/

Date: 19.JAN.2004 13:30:03

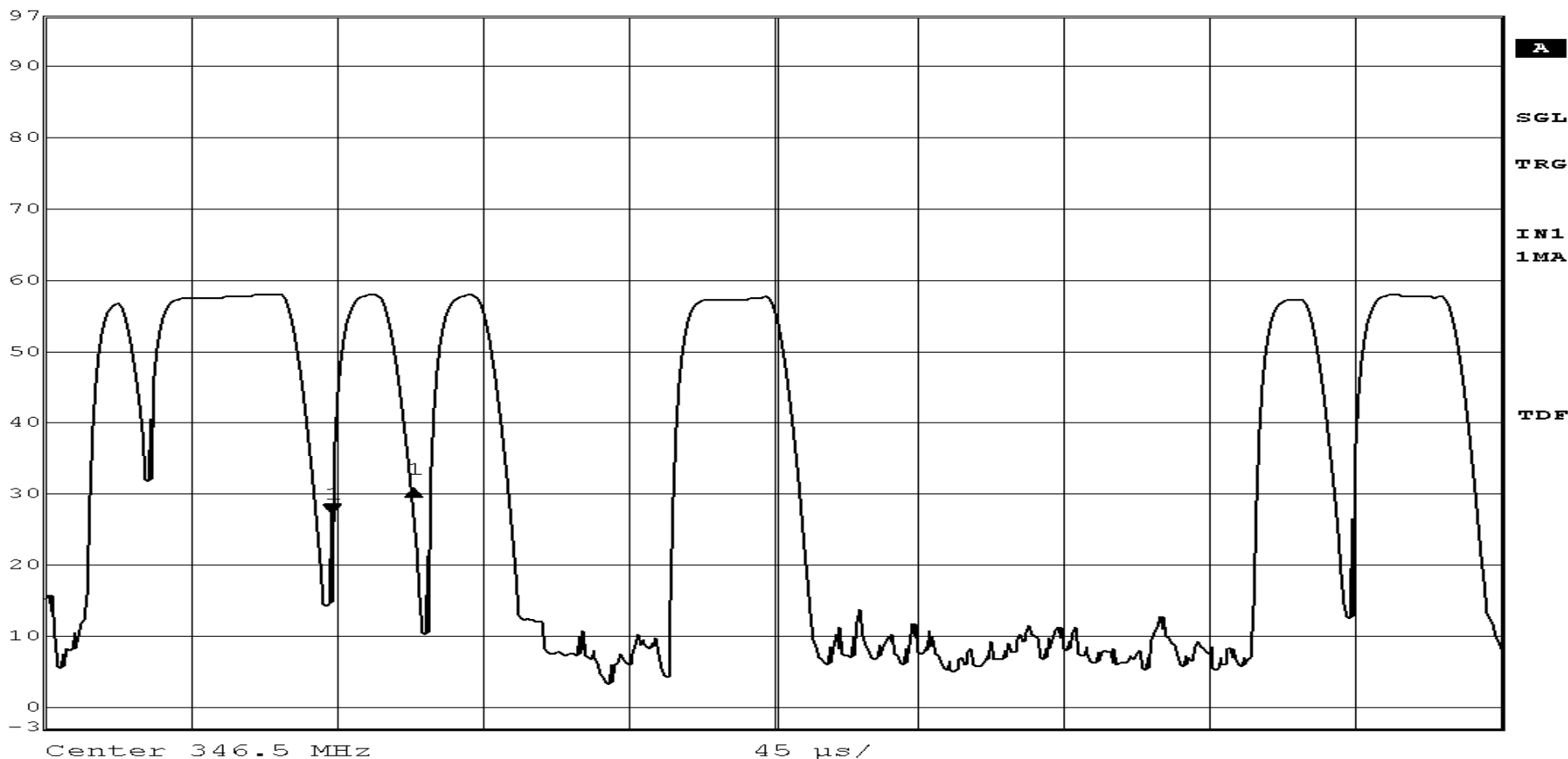
RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 346.5 MHz		Date: 1/19/2004



Ref Lvl	Delta 1 [T1]	RBW	100 kHz	RF Att	0 dB
97 dBμV	3.64 dB	VBW	300 kHz		
	25.250501 μs	SWT	450 μs	Unit	dBμV



Date: 19.JAN.2004 13:31:25

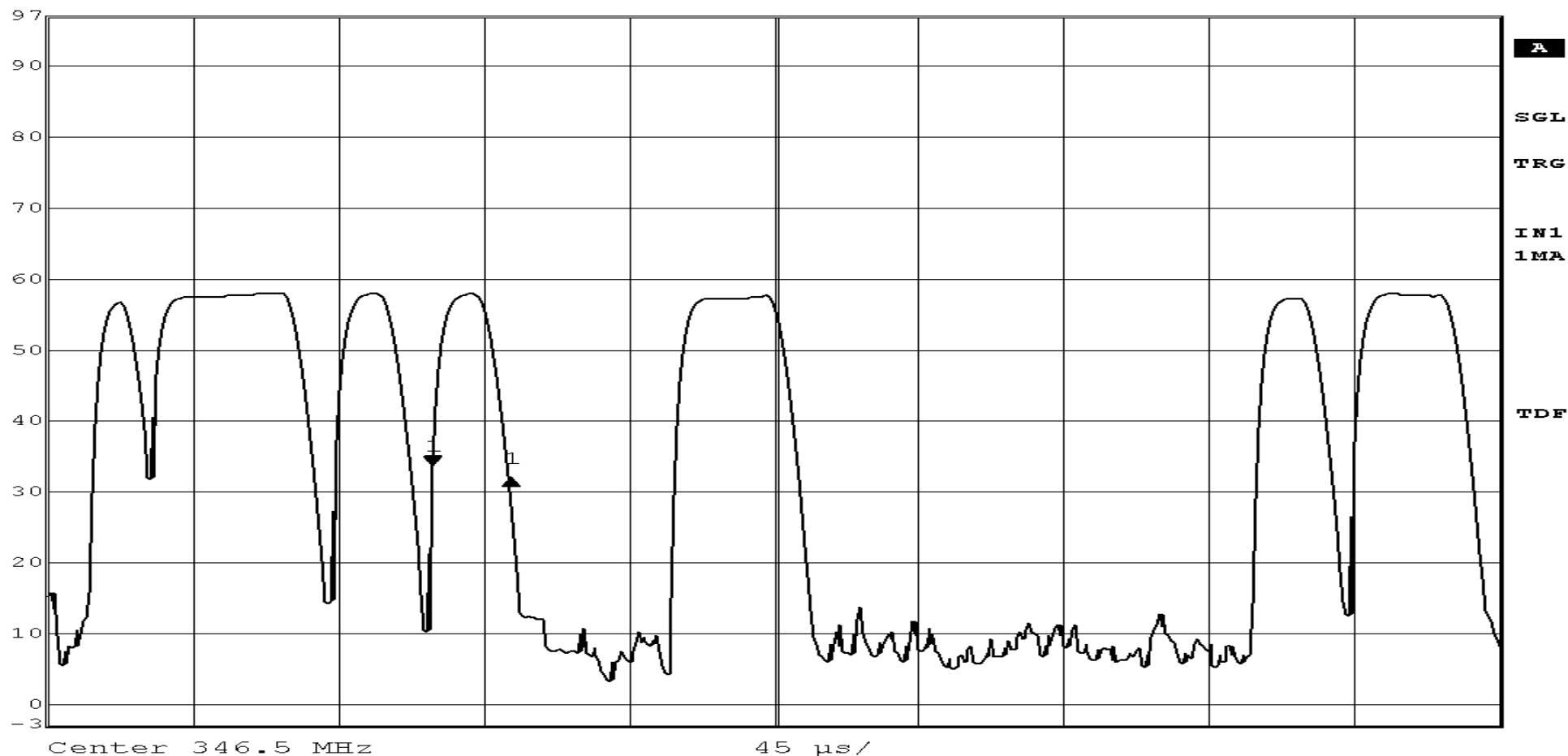
RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 346.5 MHz		Date: 1/19/2004



Delta 1 [T1]	RBW	100 kHz	RF Att	0 dB
Ref Lvl	VBW	300 kHz		
97 dBμV	SWT	450 μs	Unit	dBμV



Date: 19.JAN.2004 13:32:39

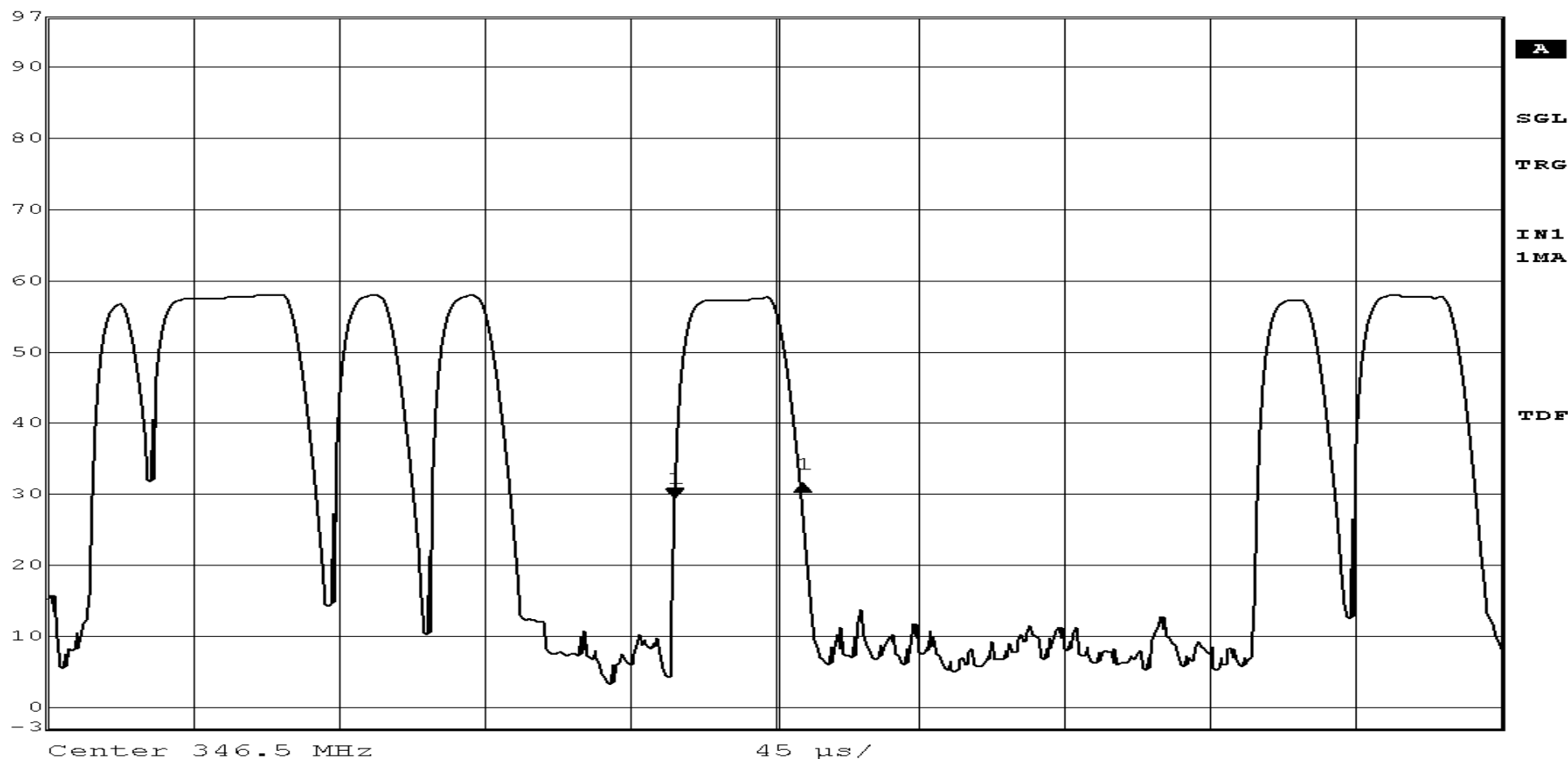
RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

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Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 346.5 MHz		Date: 1/19/2004



Delta 1 [T1] RBW 100 kHz RF Att 0 dB
 Ref Lvl 2.00 dB VBW 300 kHz
 97 dBμV 39.679359 μs SWT 450 μs Unit dBμV



Date: 19.JAN.2004 13:52:47

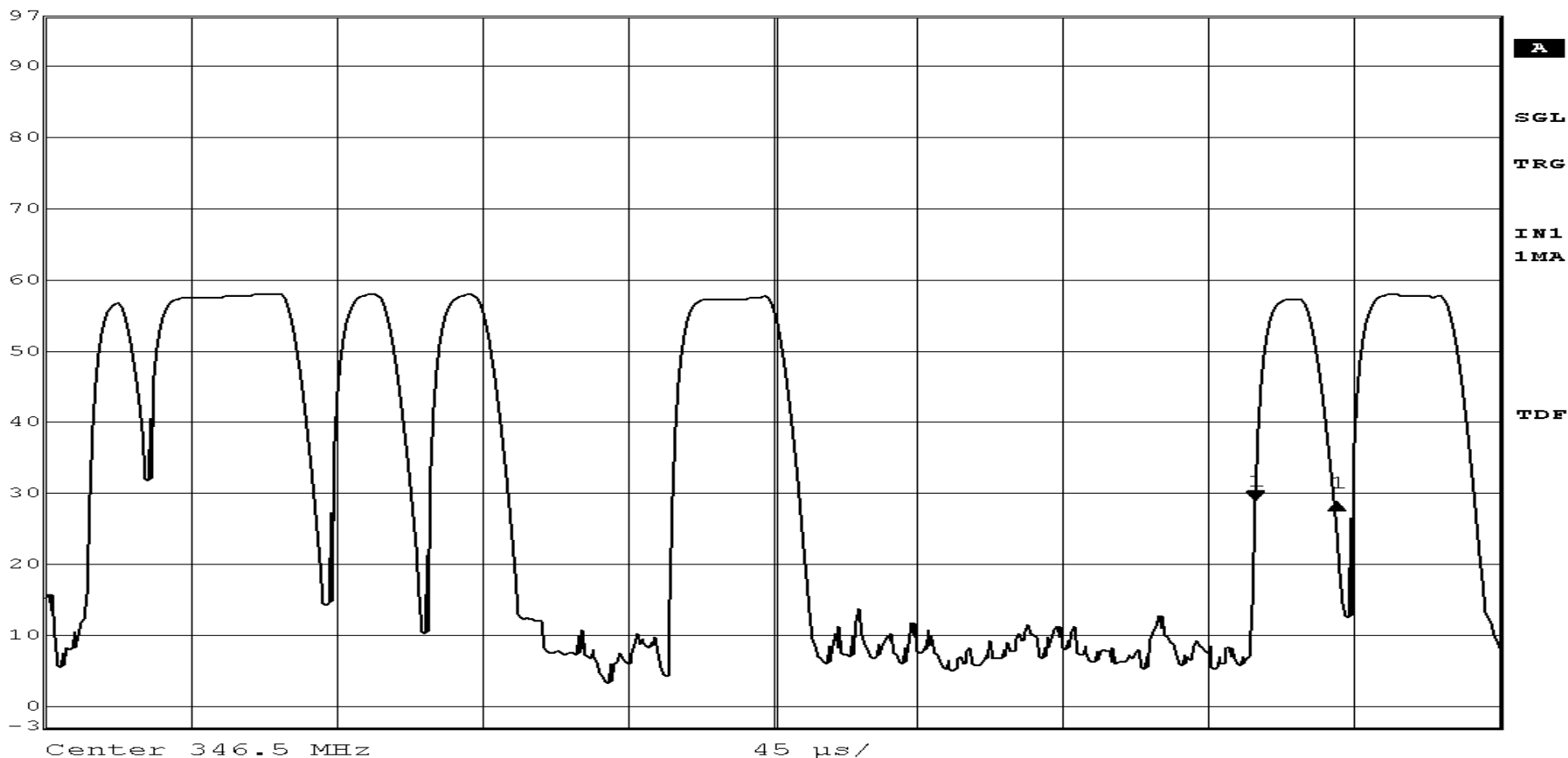
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Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 346.5 MHz		Date: 1/19/2004



Ref Lvl	Delta 1 [T1]	RBW	100 kHz	RF Att	0 dB
97 dBμV	-0.19 dB	VBW	300 kHz		
	25.250501 μs	SWT	450 μs	Unit	dBμV



Date: 19.JAN.2004 13:54:02

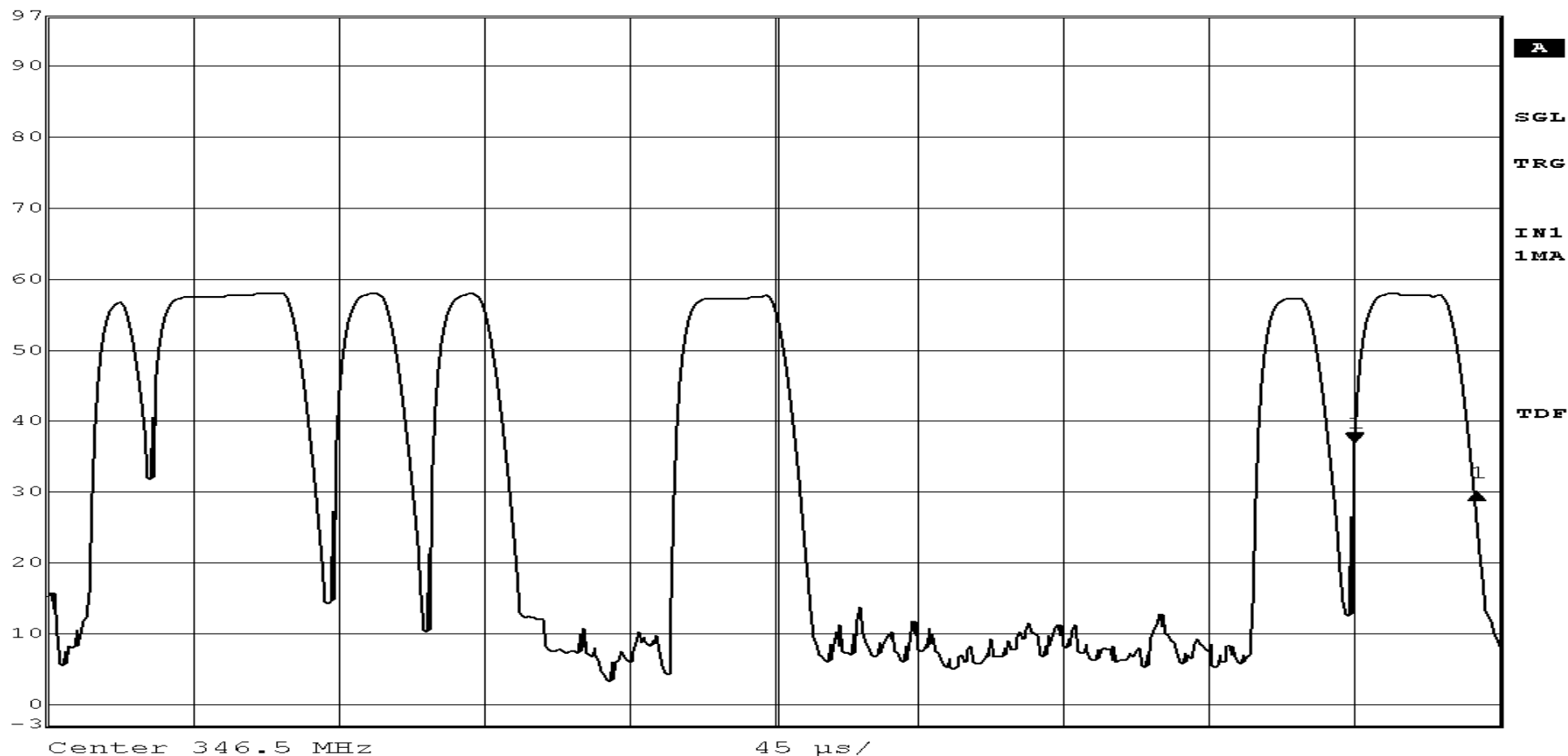
RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

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Model No:	DCS Pro 14n	Serial No:	P14N-1174
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Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 346.5 MHz		Date: 1/19/2004



Delta 1 [T1]	RBW	100 kHz	RF Att	0 dB
Ref Lvl	VBW	300 kHz		
97 dBμV	SWT	450 μs	Unit	dBμV
37.875752 μs				



Date: 19.JAN.2004 13:55:17

RETLIF TESTING LABORATORIES

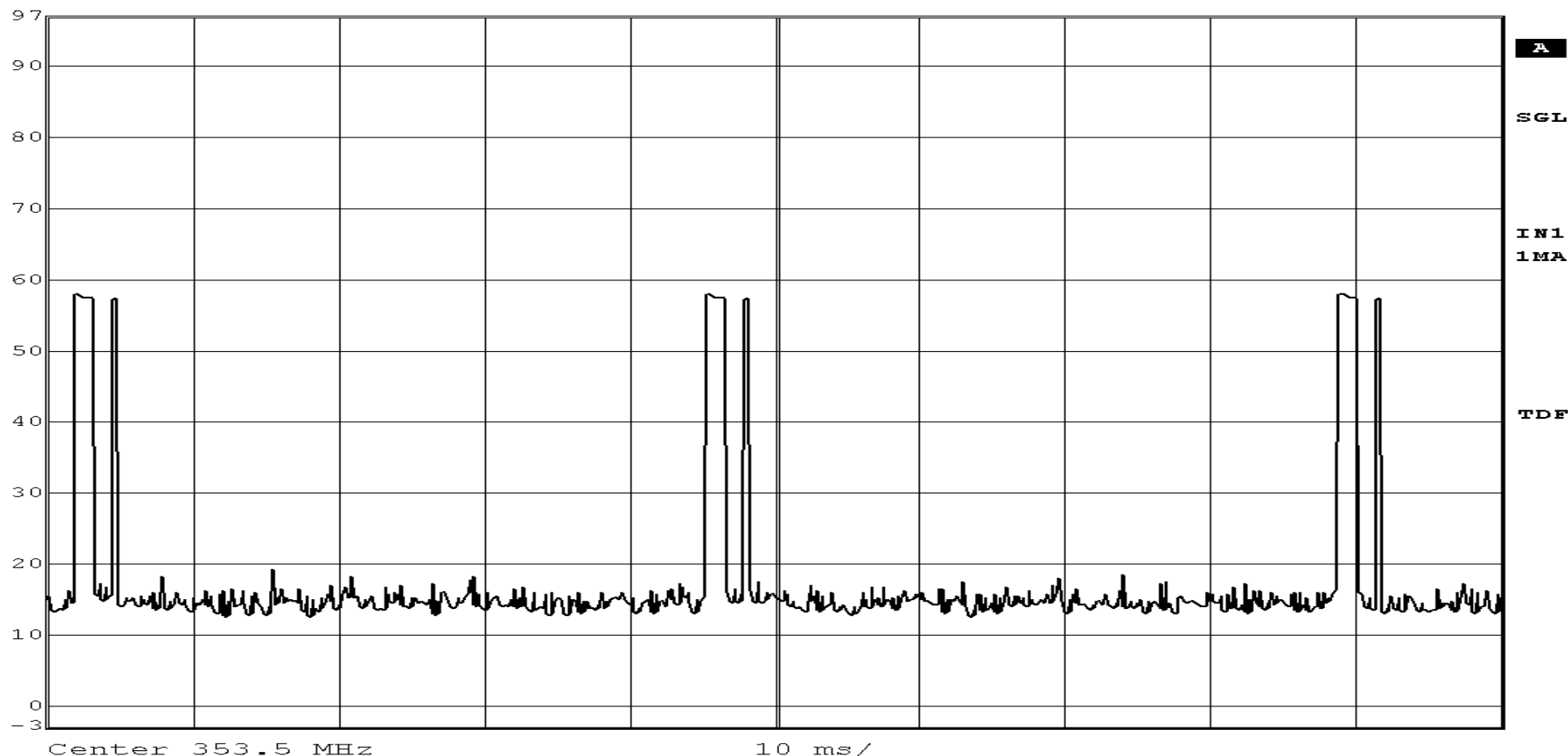
EMISSIONS DATA SHEET

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Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 353.5 MHz		Date: 1/19/2004



Ref Lvl
97 dBμV

RBW 100 kHz RF Att 0 dB
VBW 300 kHz
SWT 100 ms Unit dBμV



Date: 19.JAN.2004 15:39:00

RETLIF TESTING LABORATORIES

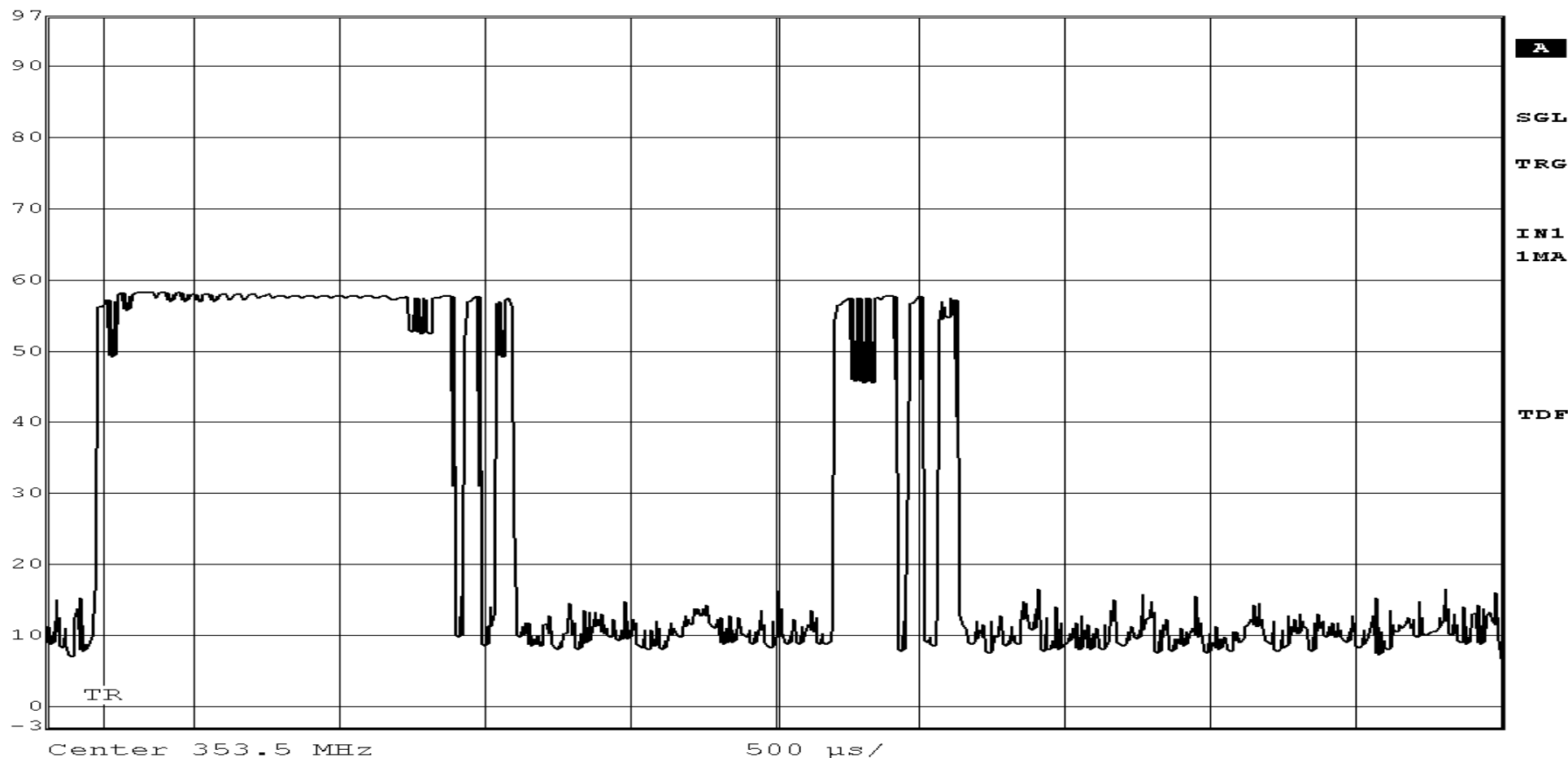
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Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 353.5 MHz		Date: 1/19/2004



Ref Lvl
97 dBμV

RBW 100 kHz RF Att 0 dB
VBW 300 kHz
SWT 5 ms Unit dBμV



Date: 19.JAN.2004 15:42:30

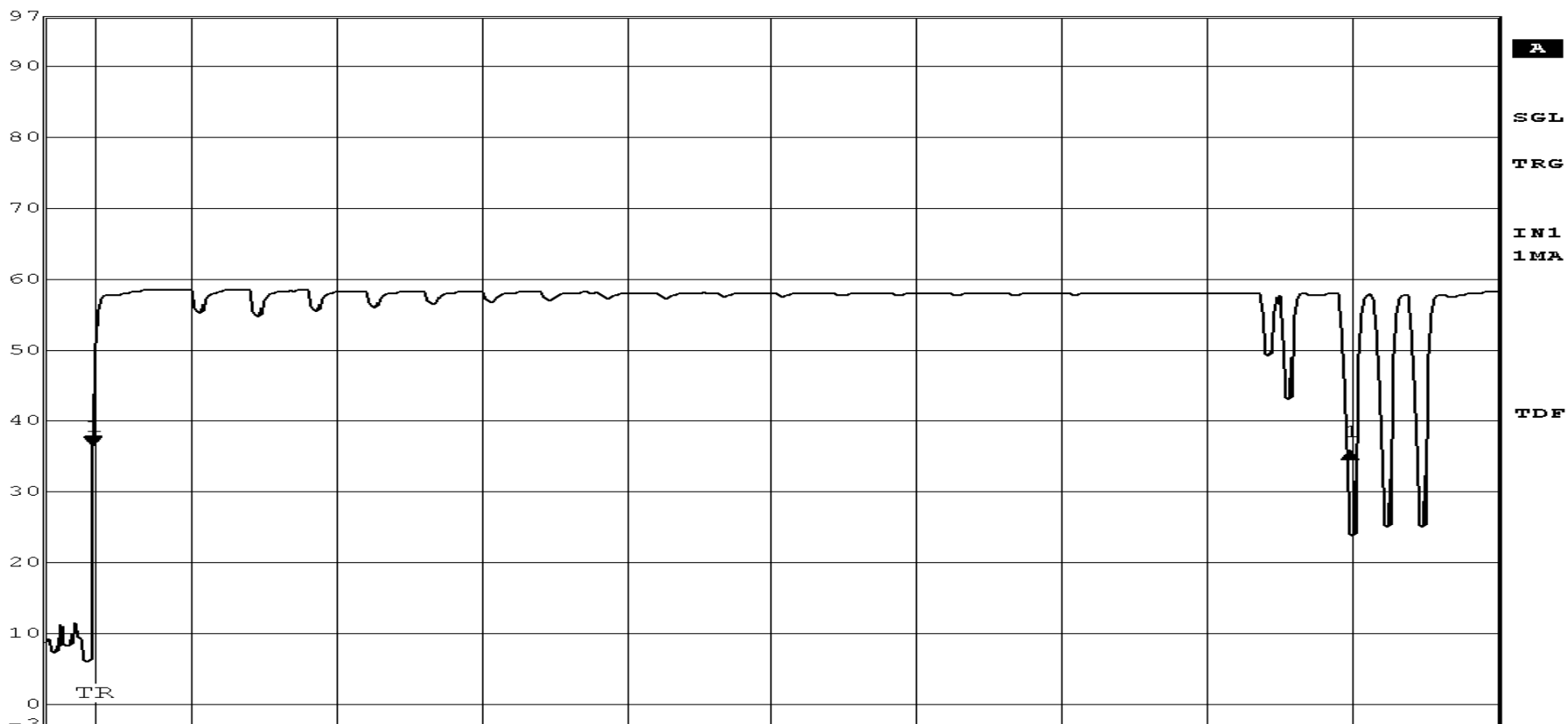
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Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 353.5 MHz		Date: 1/19/2004



Ref Lvl	Delta 1 [T1]	RBW	100 kHz	RF Att	0 dB
97 dBμV	-0.68 dB	VBW	300 kHz		
	1.082164 ms	SWT	1.25 ms	Unit	dBμV



Center 353.5 MHz

125 μs/

Date: 19.JAN.2004 15:46:22

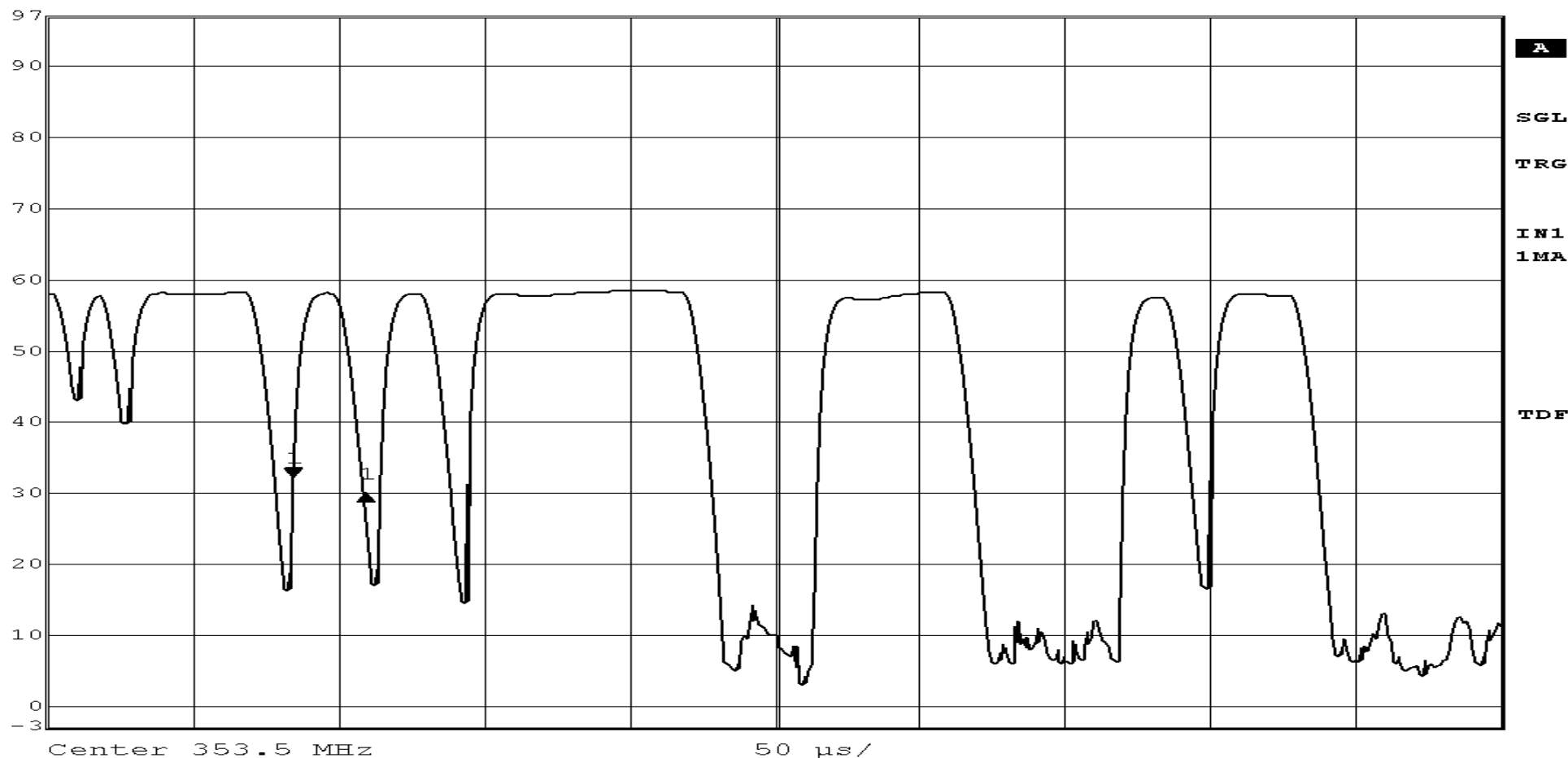
RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 353.5 MHz		Date: 1/19/2004



Ref Lvl	Delta 1 [T1]	RBW	100 kHz	RF Att	0 dB
97 dBμV	-2.39 dB	VBW	300 kHz		
	25.436273 μs	SWT	500 μs	Unit	dBμV



Date: 19.JAN.2004 15:48:36

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 353.5 MHz		Date: 1/19/2004



Delta 1 [T1]

RBW 100 kHz RF Att 0 dB

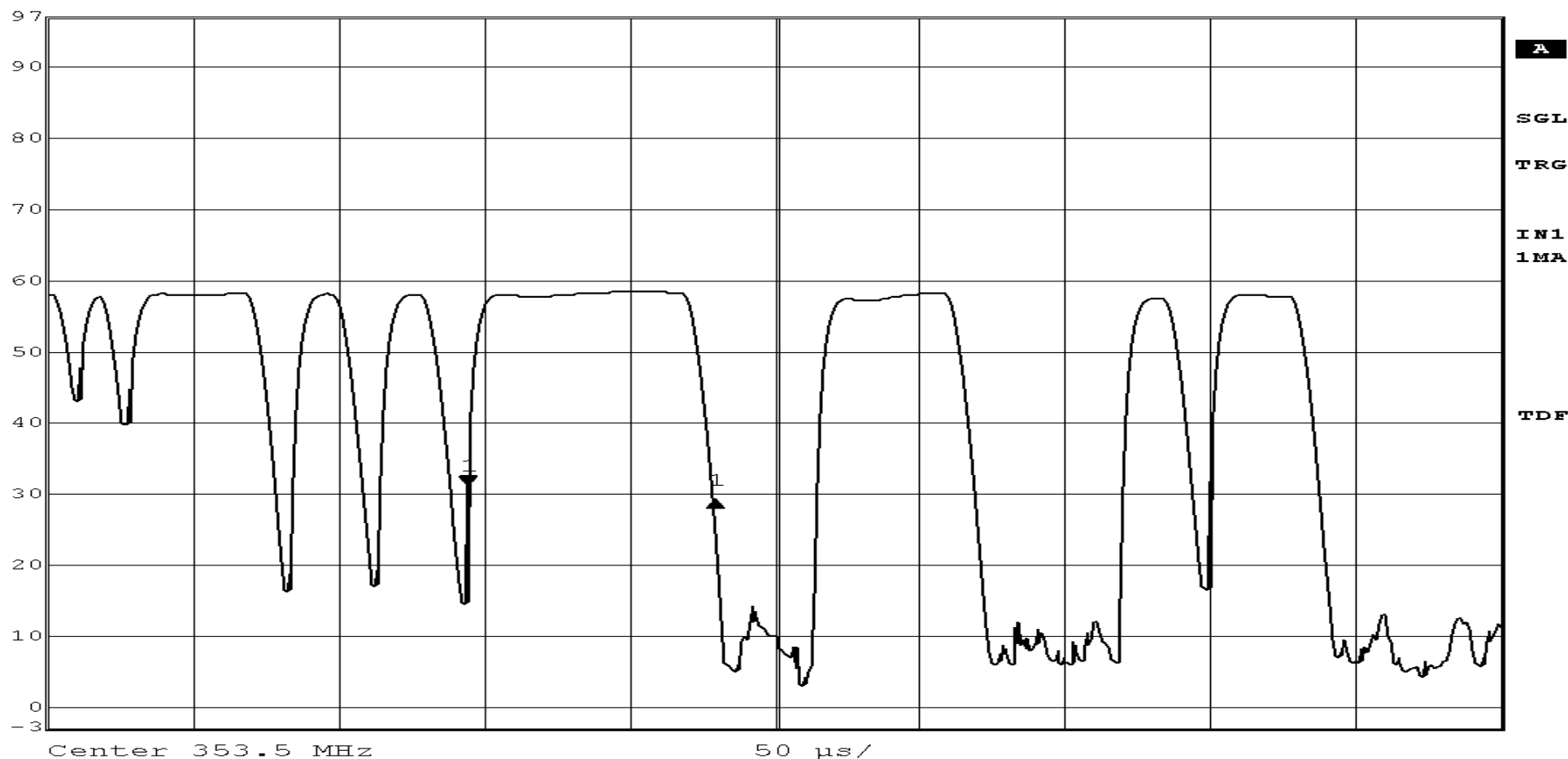
Ref Lvl -2.10 dB

VBW 300 kHz

97 dBμV 85.556513 μs

SWT 500 μs

Unit dBμV



Date: 19.JAN.2004 15:50:01

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 353.5 MHz		Date: 1/19/2004



Delta 1 [T1]

RBW

100 kHz

RF Att

0 dB

Ref Lvl

-1.27 dB

VBW

300 kHz

Unit

dBμV

97 dBμV

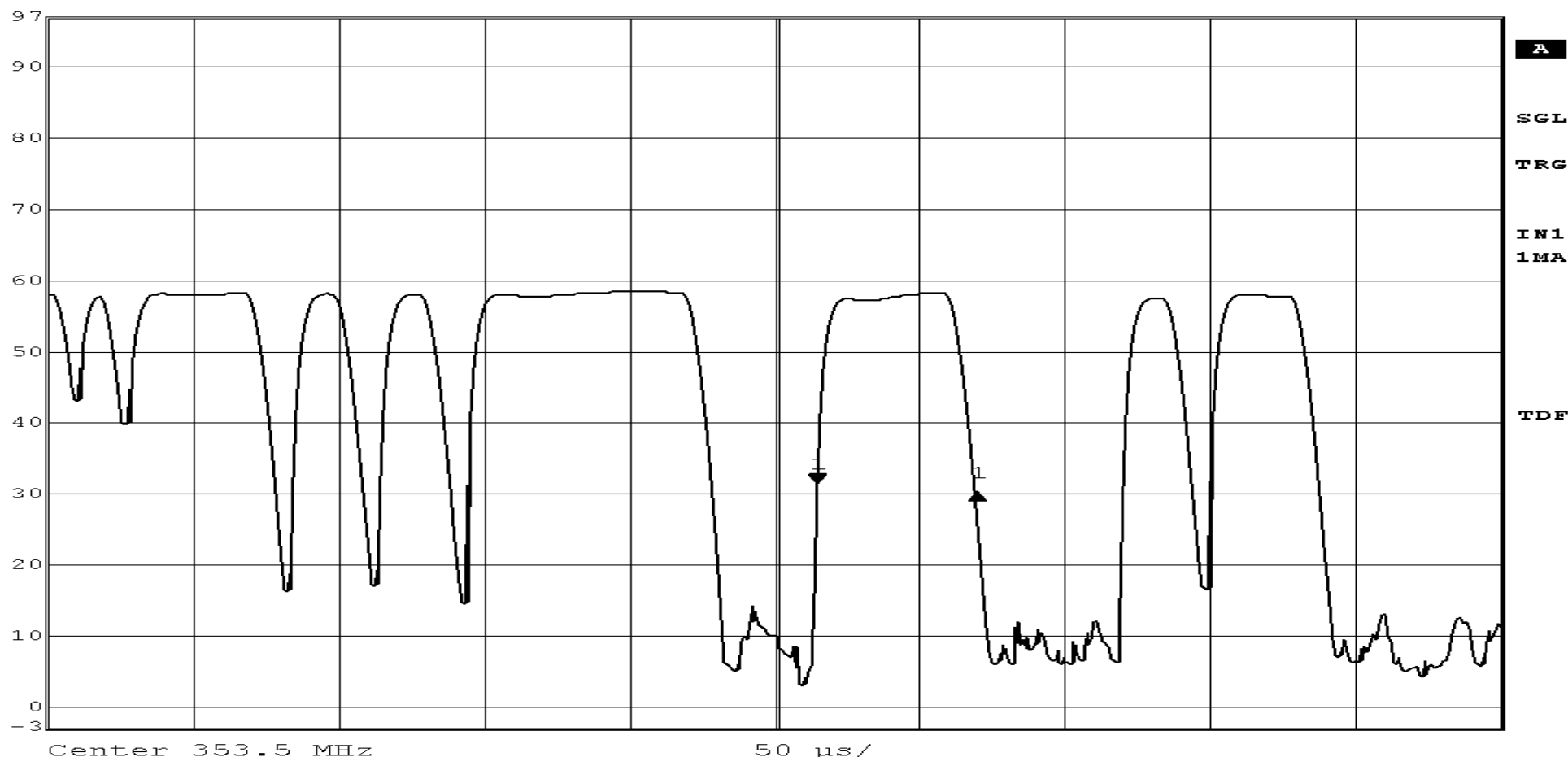
55.496393 μs

SWT

500 μs

Unit

dBμV



Date: 19.JAN.2004 15:51:11

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 353.5 MHz		Date: 1/19/2004



Delta 1 [T1]

RBW 100 kHz RF Att 0 dB

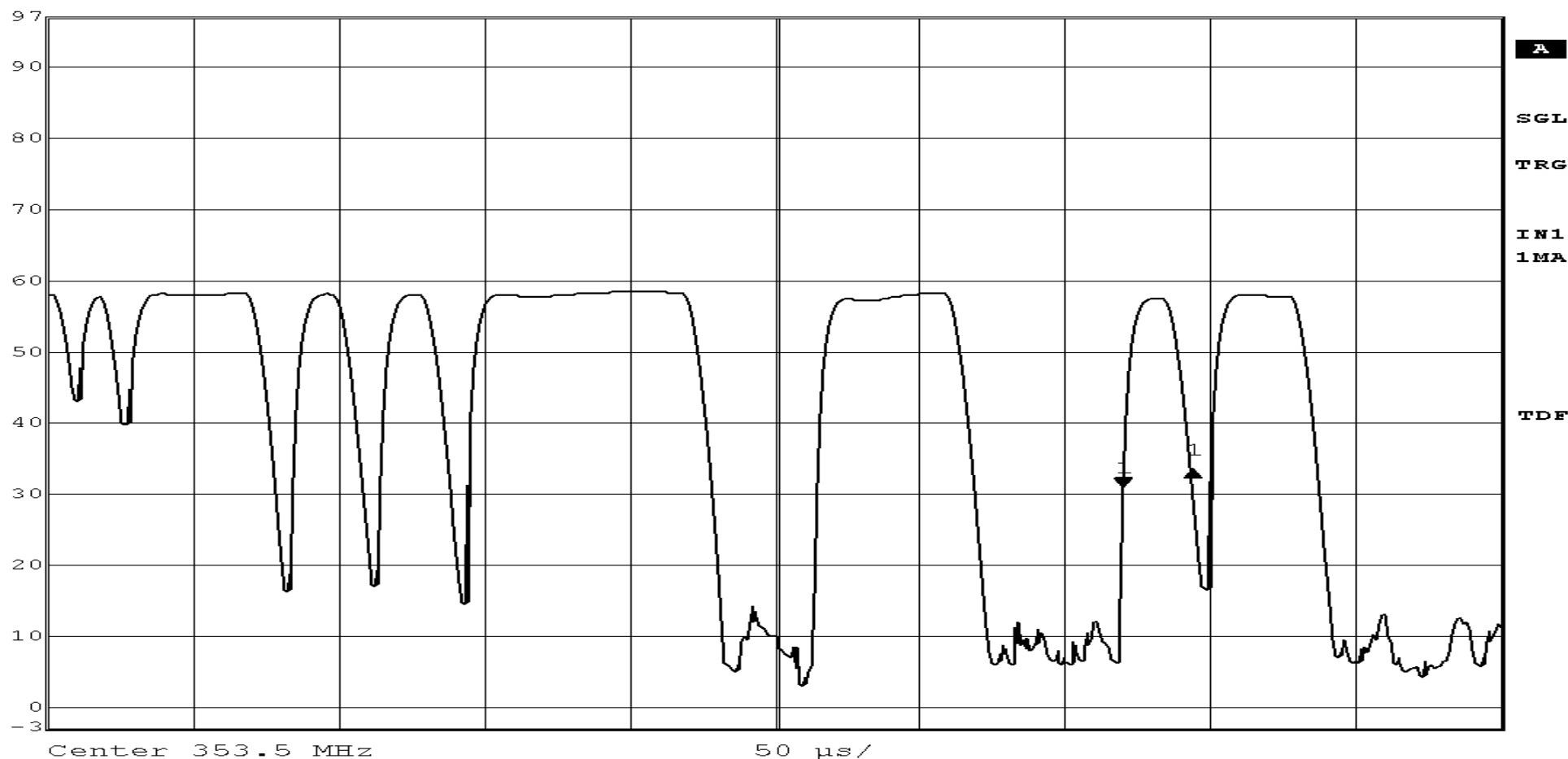
Ref Lvl 2.55 dB

VBW 300 kHz

97 dBμV 24.434269 μs

SWT 500 μs

Unit dBμV



Date: 19.JAN.2004 15:52:21

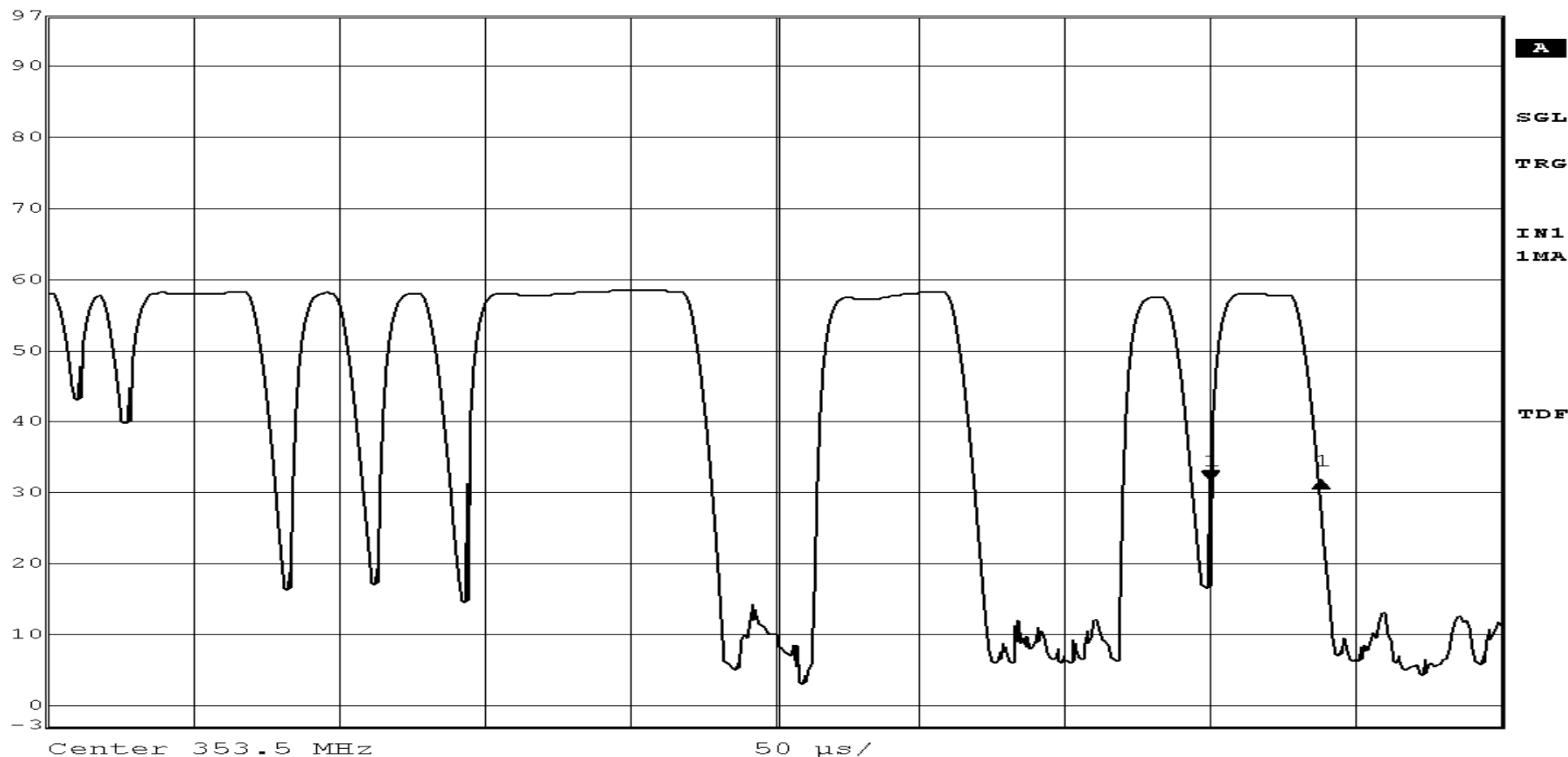
RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 353.5 MHz		Date: 1/19/2004



Delta 1 [T1] RBW 100 kHz RF Att 0 dB
 Ref Lvl 0.20 dB VBW 300 kHz
 97 dBμV 38.462325 μs SWT 500 μs Unit dBμV



Date: 19.JAN.2004 15:53:24

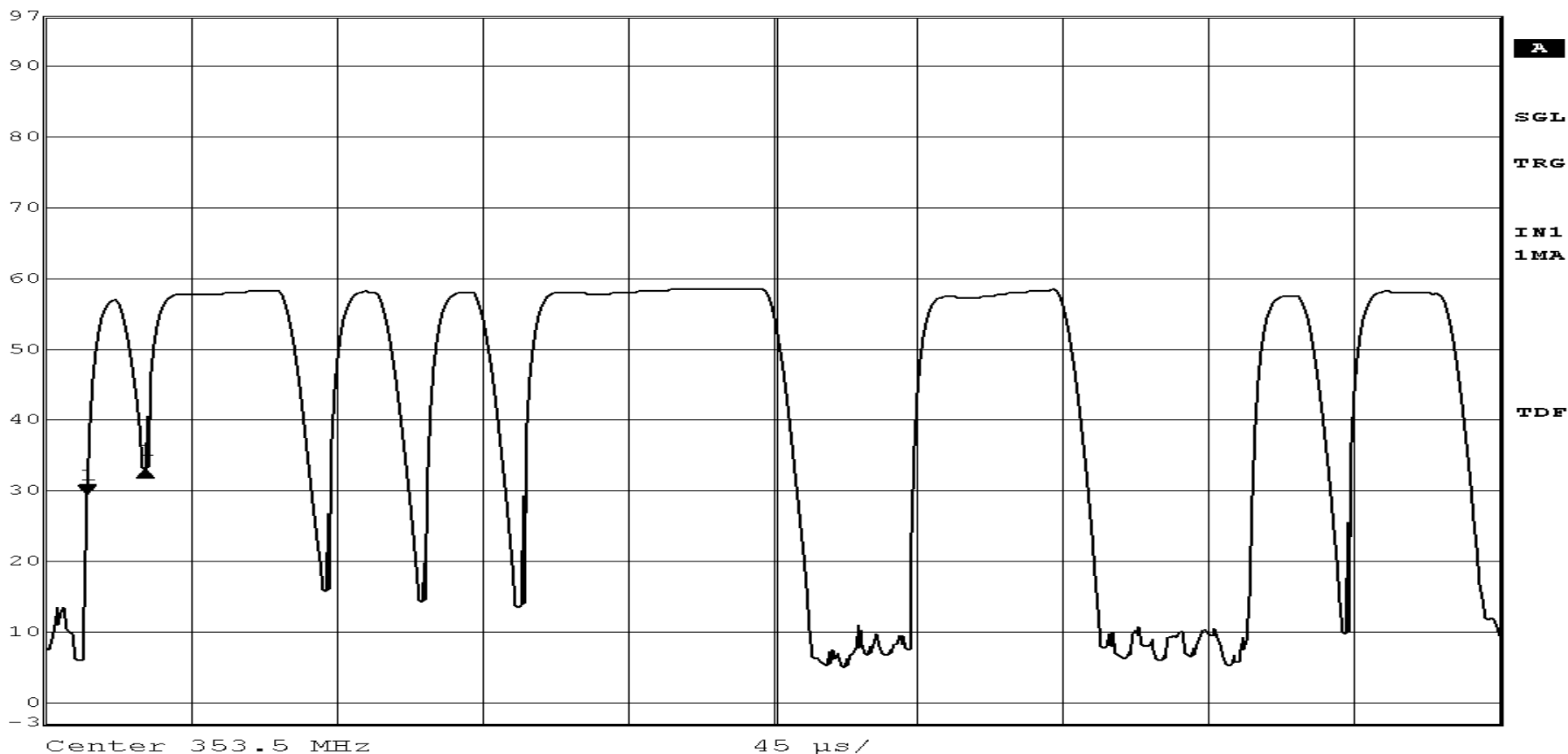
RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 353.5 MHz		Date: 1/19/2004



Ref Lvl	Delta 1 [T1]	RBW	100 kHz	RF Att	0 dB
97 dBμV	3.66 dB	VBW	300 kHz		
	18.036072 μs	SWT	450 μs	Unit	dBμV



Date: 19.JAN.2004 15:56:27

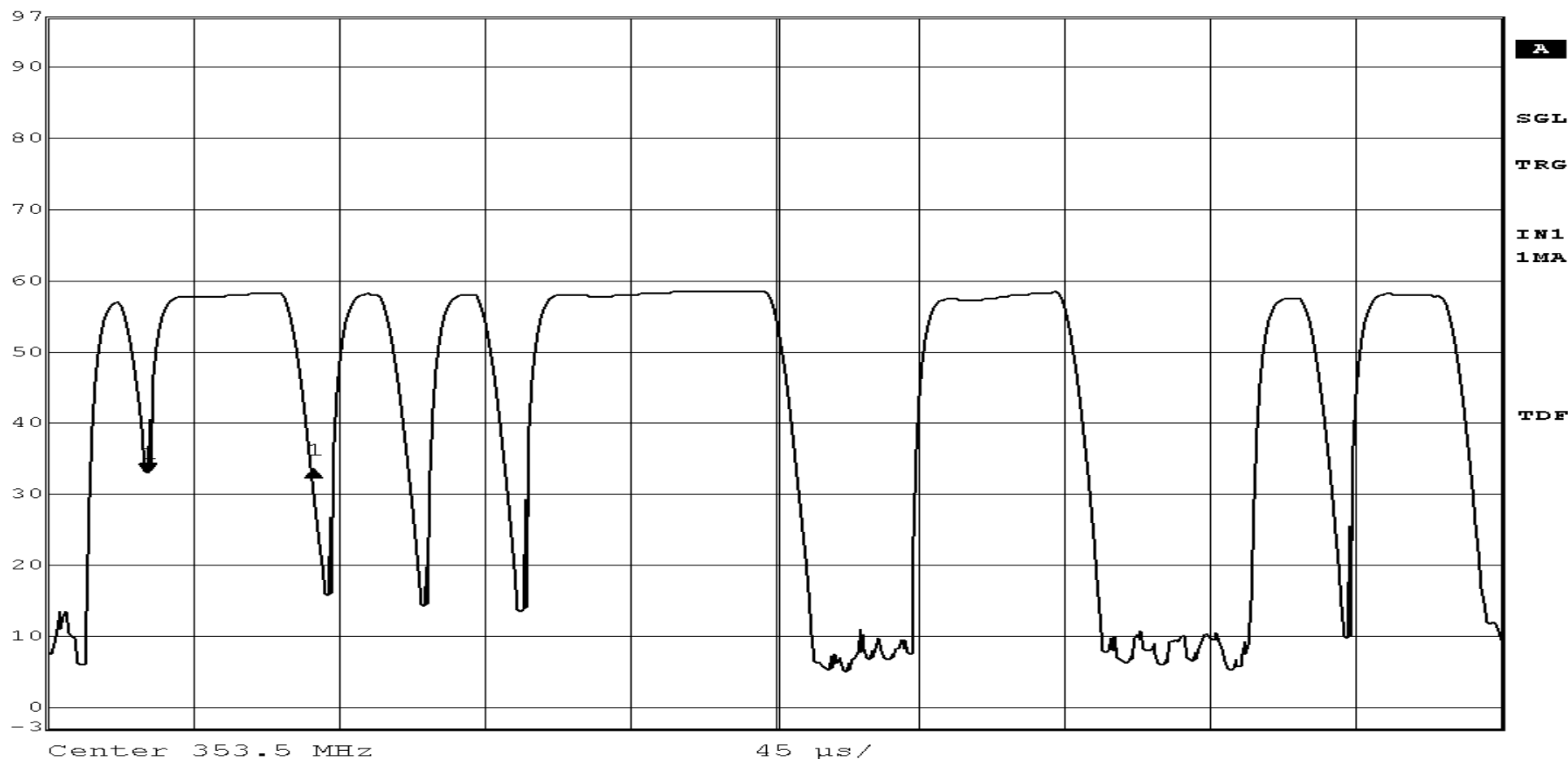
RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 353.5 MHz		Date: 1/19/2004



Ref Lvl	Delta 1 [T1]	RBW	100 kHz	RF Att	0 dB
97 dBμV	0.47 dB	VBW	300 kHz		
	51.402806 μs	SWT	450 μs	Unit	dBμV



Date: 19.JAN.2004 15:57:28

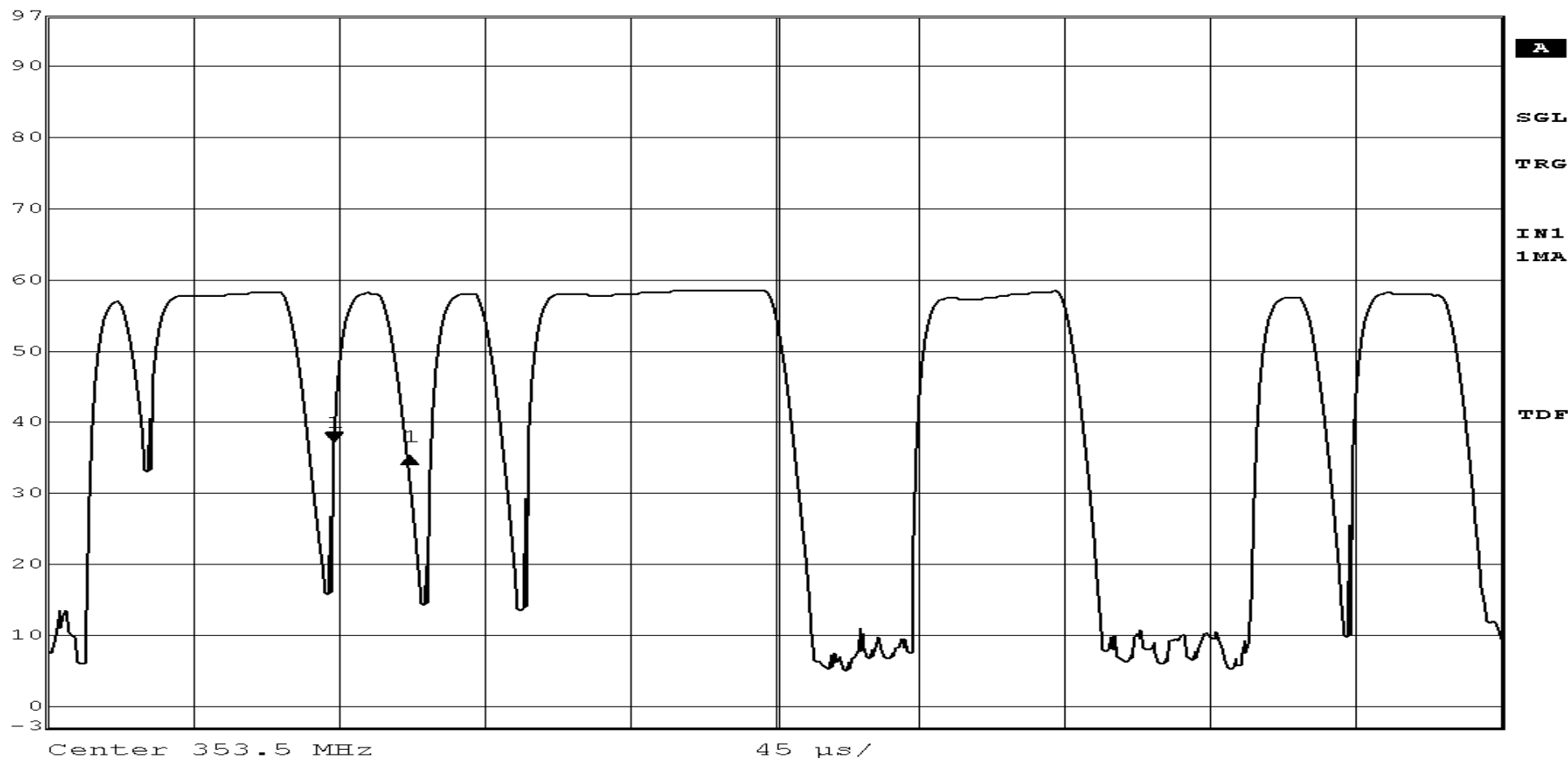
RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 353.5 MHz		Date: 1/19/2004



Ref Lvl	Delta 1 [T1]	RBW	100 kHz	RF Att	0 dB
97 dBμV	-2.02 dB	VBW	300 kHz		
	23.446894 μs	SWT	450 μs	Unit	dBμV



Date: 19.JAN.2004 15:58:37

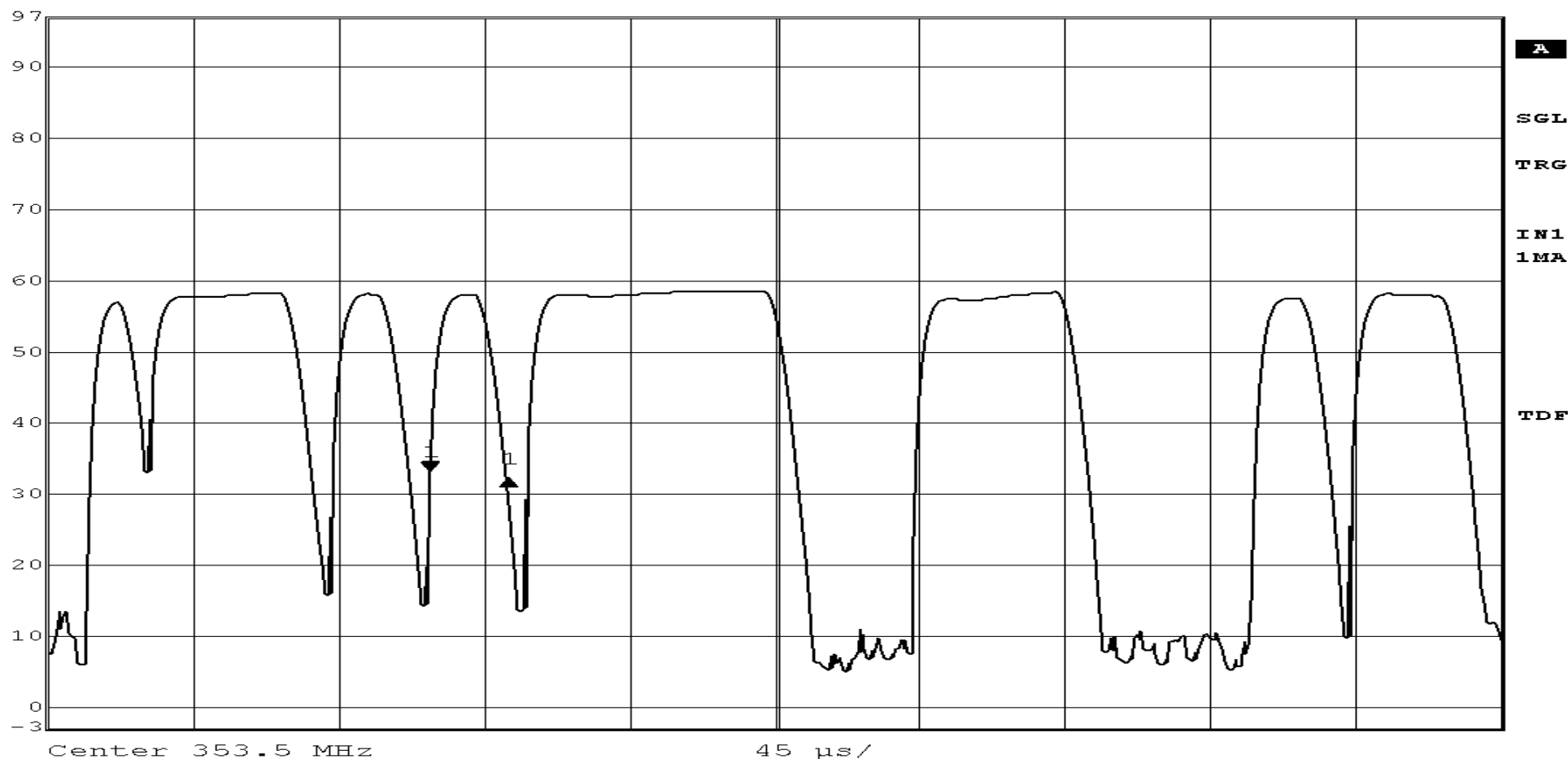
RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 353.5 MHz		Date: 1/19/2004



Delta 1 [T1]	RBW	100 kHz	RF Att	0 dB
Ref Lvl	VBW	300 kHz		
97 dBμV	SWT	450 μs	Unit	dBμV



Date: 19.JAN.2004 15:59:39

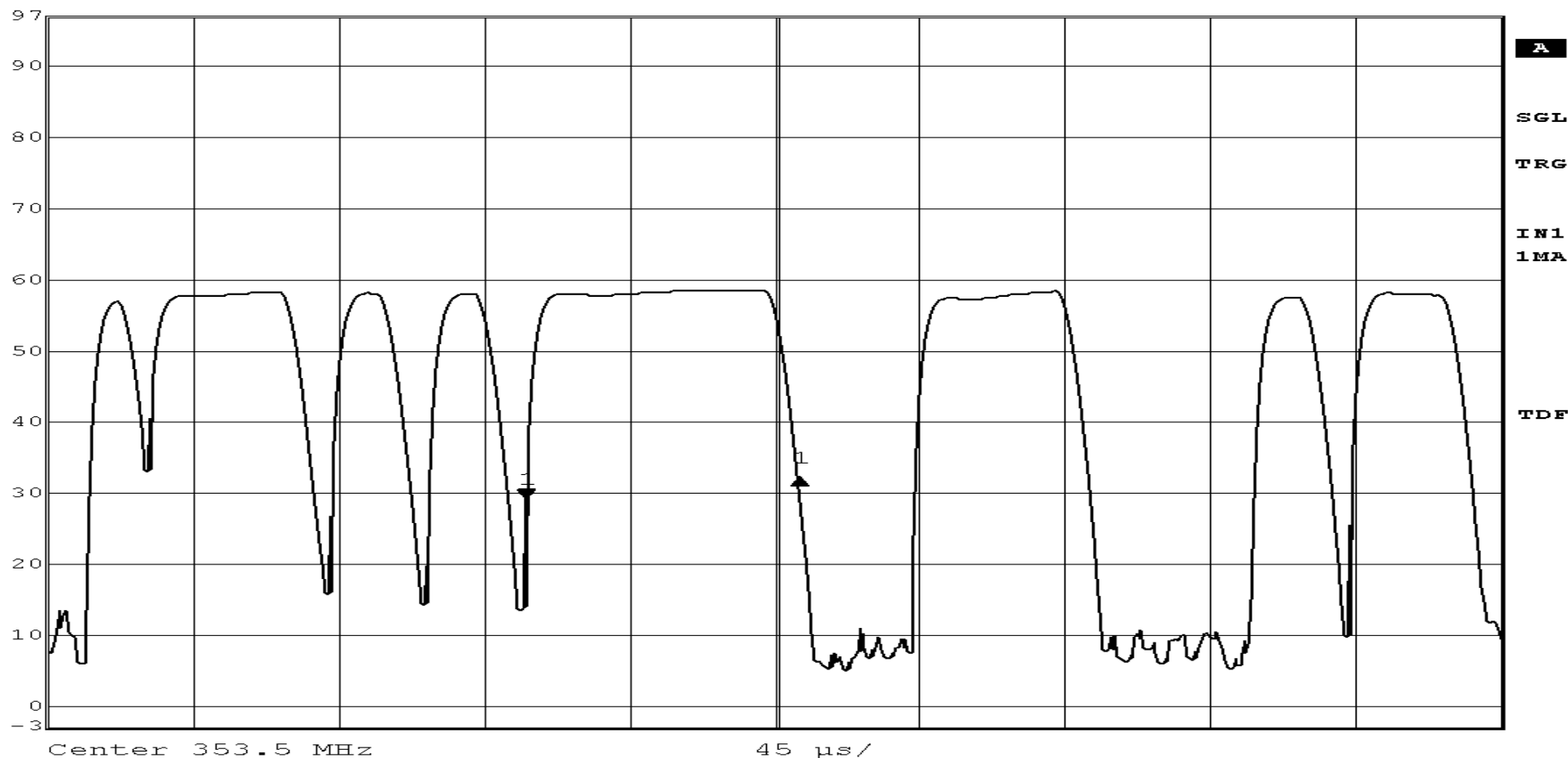
RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 353.5 MHz		Date: 1/19/2004



Delta 1 [T1]	RBW	100 kHz	RF Att	0 dB
Ref Lvl	2.81 dB	VBW	300 kHz	
97 dBμV	84.769539 μs	SWT	450 μs	Unit dBμV



Date: 19.JAN.2004 16:00:51

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 353.5 MHz		Date: 1/19/2004



Delta 1 [T1]

RBW 100 kHz RF Att 0 dB

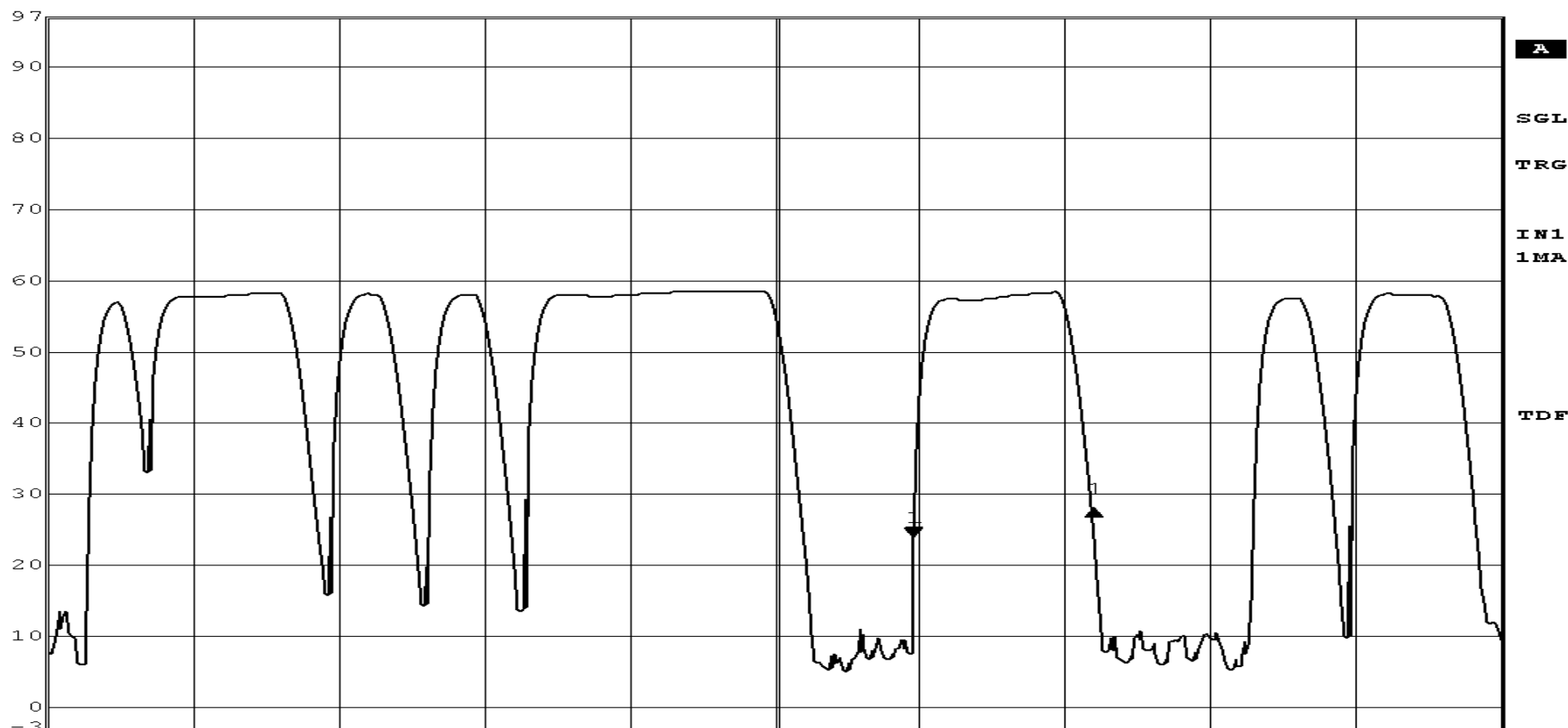
Ref Lvl 3.90 dB

VBW 300 kHz

97 dBμV 55.911824 μs

SWT 450 μs

Unit dBμV



Center 353.5 MHz

45 μs/

Date: 19.JAN.2004 16:03:30

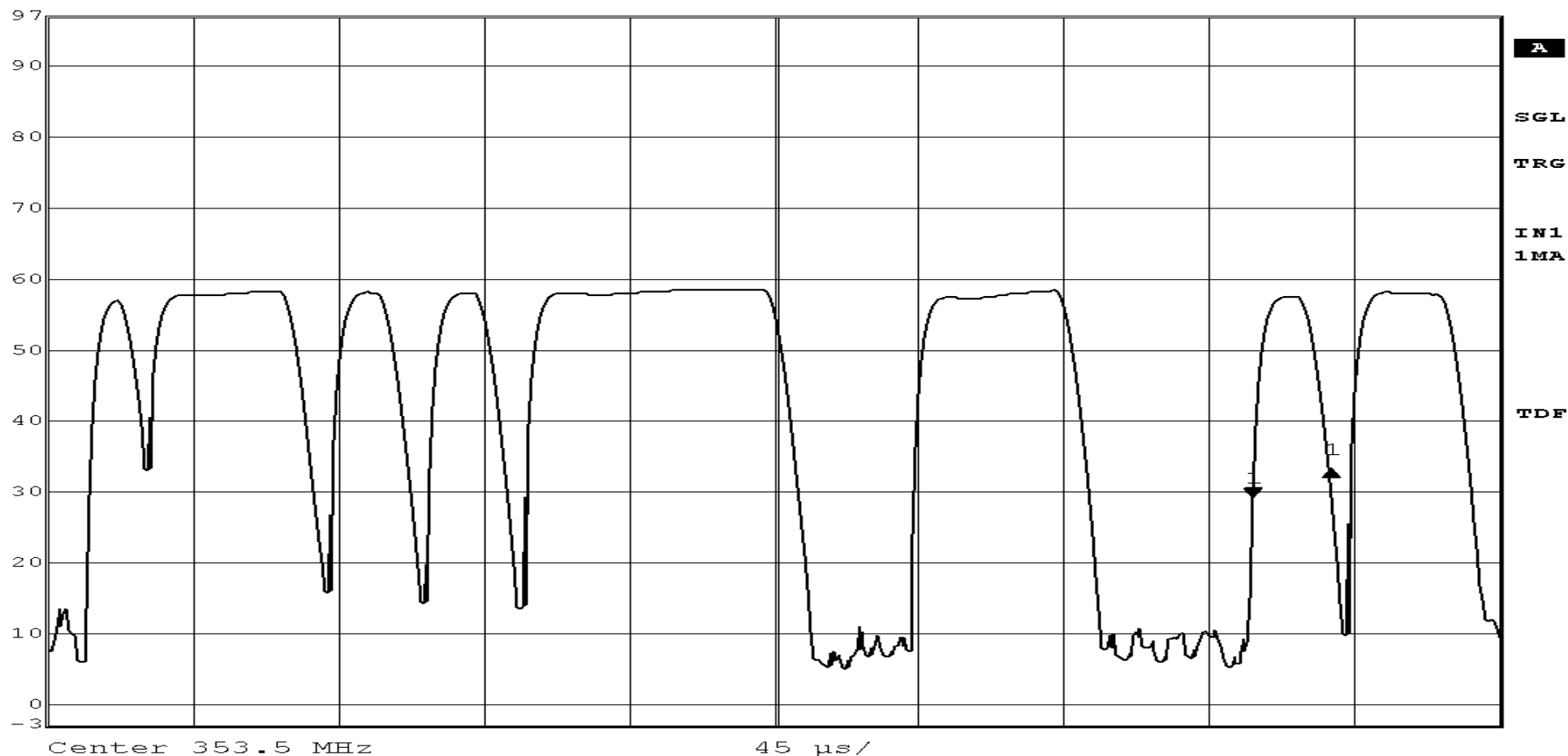
RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 353.5 MHz		Date: 1/19/2004



Delta 1 [T1]	RBW	100 kHz	RF Att	0 dB
Ref Lvl	VBW	300 kHz		
97 dBμV	SWT	450 μs	Unit	dBμV
4.08 dB				
24.348697 μs				



Center 353.5 MHz

45 μs/

Date: 19.JAN.2004 16:04:44

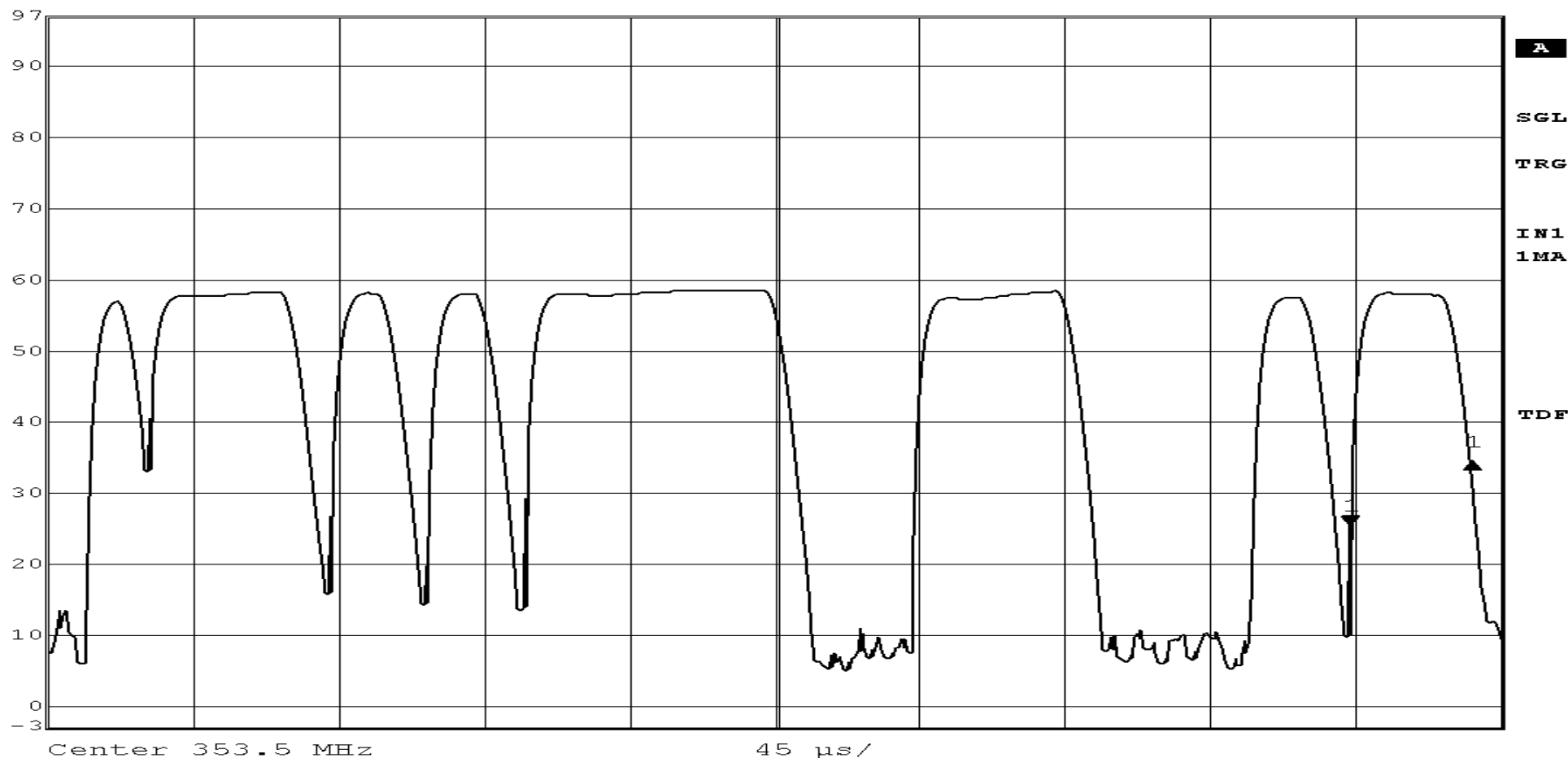
RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Duty Cycle Plots		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(b)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Transmit Frequency 353.5 MHz		Date: 1/19/2004



Delta 1 [T1] RBW 100 kHz RF Att 0 dB
 Ref Lvl 8.99 dB VBW 300 kHz
 97 dBμV 37.875752 μs SWT 450 μs Unit dBμV



Date: 19.JAN.2004 16:05:48

TABULAR DATA SHEET

Test Method:	Fundamental Field Strength		
Customer:	LPA Design, Inc.	Job No:	R-4209N1
Test Sample:	Kodak Digital Camera w/ RF transceiver		
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C Paragraph: 15.231(b)		
Operating Mode:	Transmitting		
Technician:	T. Firkowski	Date:	01/19/2004
Notes:	Corrected peak readings meet peak limit (20dB above average limit) per 15.35		

[illegible]

RETLIF TESTING LABORATORIES

TABULAR DATA SHEET

Test Method:	Spurious Emissions 30MHz to 3.6GHz		
Customer:	LPA Design, Inc.	Job No:	R-4209N1
Test Sample:	Kodak Digital Camera w/ RF transceiver		
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C Paragraph: 15.231(b)		
Operating Mode:	Transmitting		
Technician:	T. Firkowski	Date:	1/19/2004
Notes:	Fundamental Frequency: 346.5 MHz Tested at 1 and 3 meters		

[illegible]

RETLIF TESTING LABORATORIES

TABULAR DATA SHEET

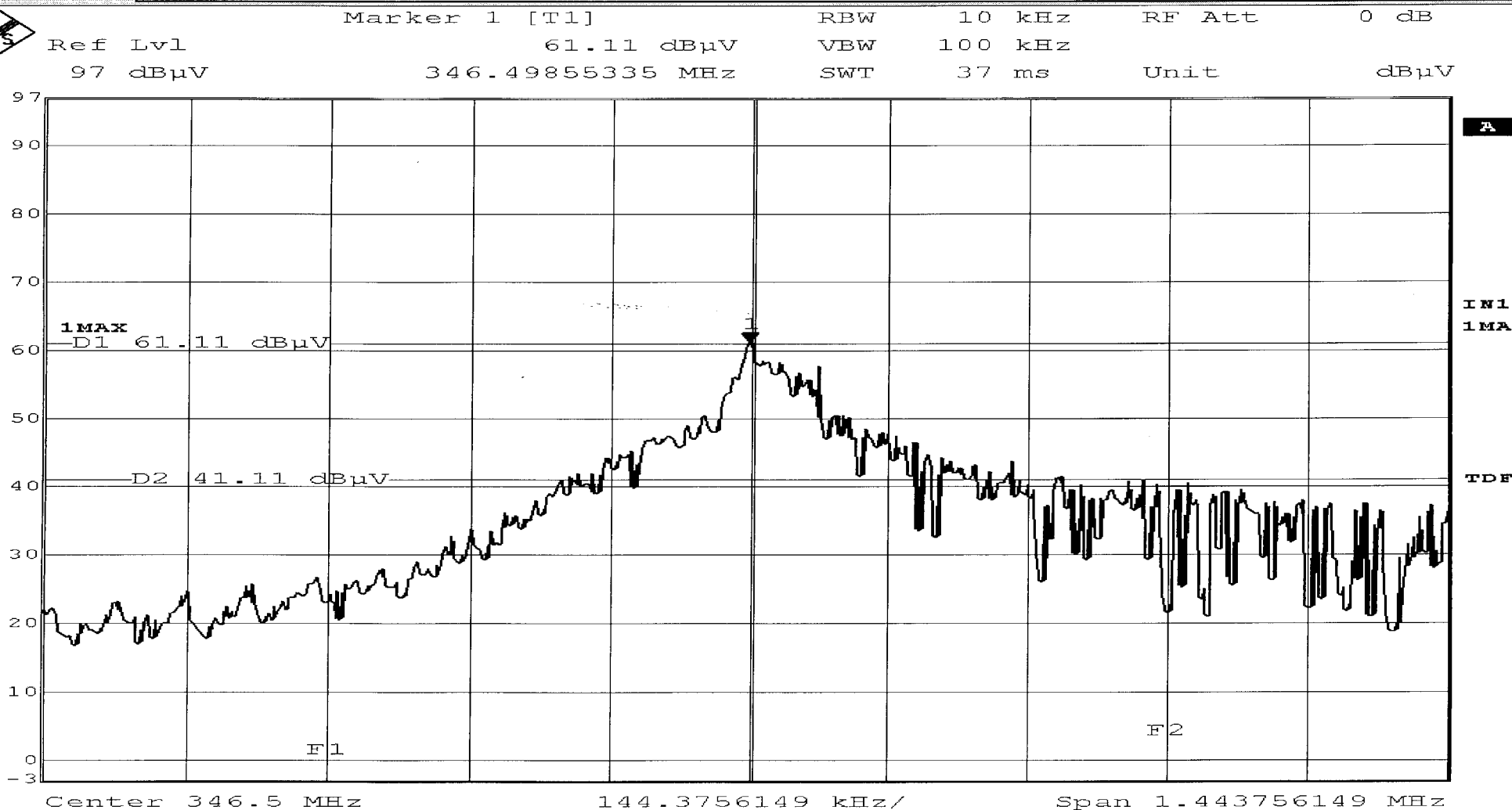
Test Method:	Spurious Emissions 30MHz to 3.6GHz		
Customer:	LPA Design, Inc.	Job No:	R-4209N1
Test Sample:	Kodak Digital Camera w/ RF transceiver		
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C Paragraph: 15.231(b)		
Operating Mode:	Transmitting		
Technician:	T. Firkowski	Date:	1/19/2004
Notes:	Fundamental Frequency: 353.5 MHz Tested at 1 and 3 meters		

[illegible]

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Occupied Bandwidth		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(c)	Job No: R-4209N1
Operating Mode:	Transmitting		Technician: T. Firkowski
Notes:	Date: 1/19/2004		



Center 346.5 MHz

144.3756149 kHz/

Span 1.443756149 MHz

Date: 19.JAN.2004 17:48:02

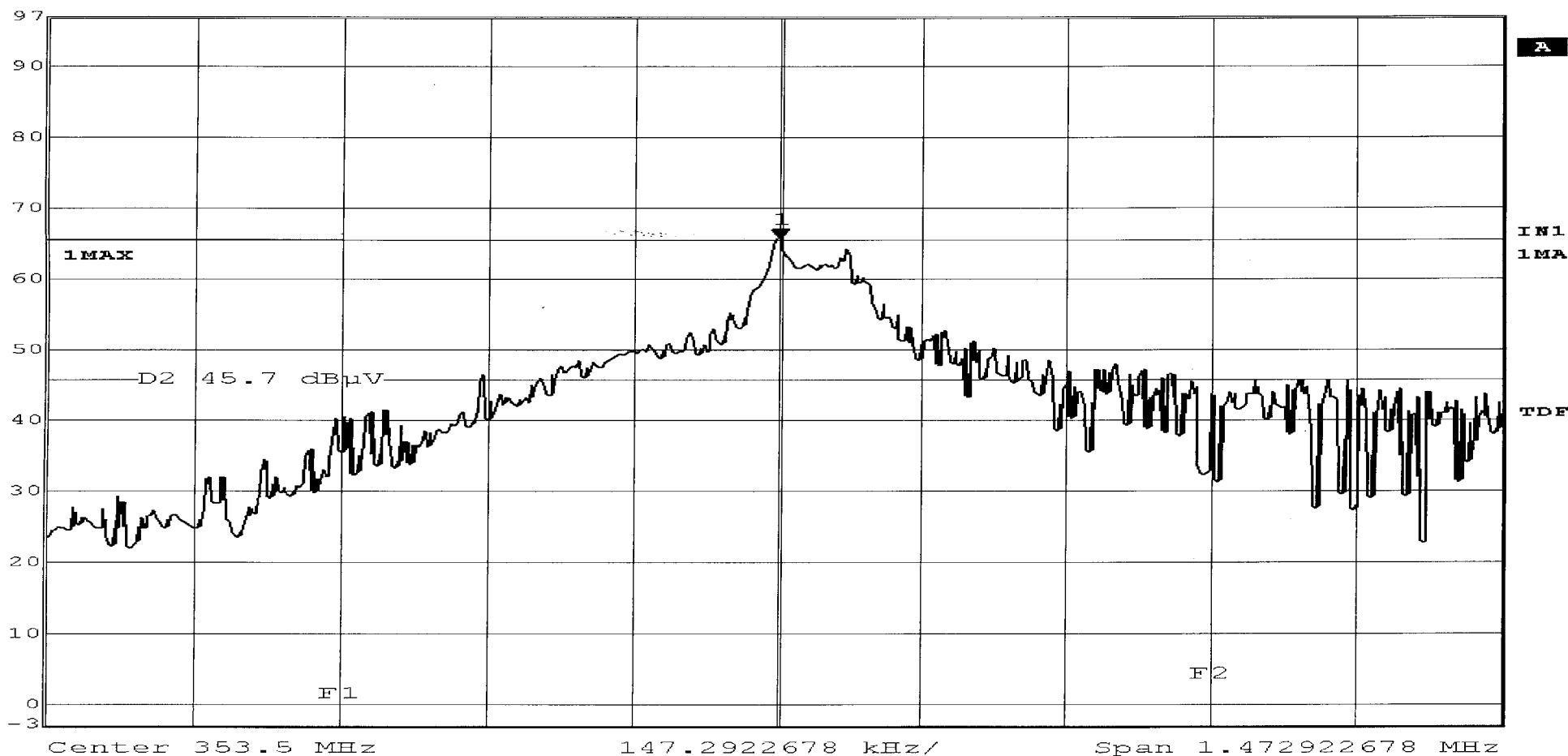
RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Occupied Bandwidth		
Customer:	LPA Design, Inc.	Test Sample:	Kodak Digital Camera w/ RF transceiver
Model No:	DCS Pro 14n	Serial No:	P14N-1174
Test Specification:	FCC Part 15, Subpart C	15.231(c)	Date: 1/19/2004
Operating Mode:	Transmitting		
Notes:			



Marker 1 [T1] RBW 10 kHz RF Att 0 dB
 Ref Lvl 65.70 dBμV VBW 100 kHz
 97 dBμV 353.50147587 MHz SWT 37 ms Unit dBμV



Date: 19.JAN.2004 17:44:00