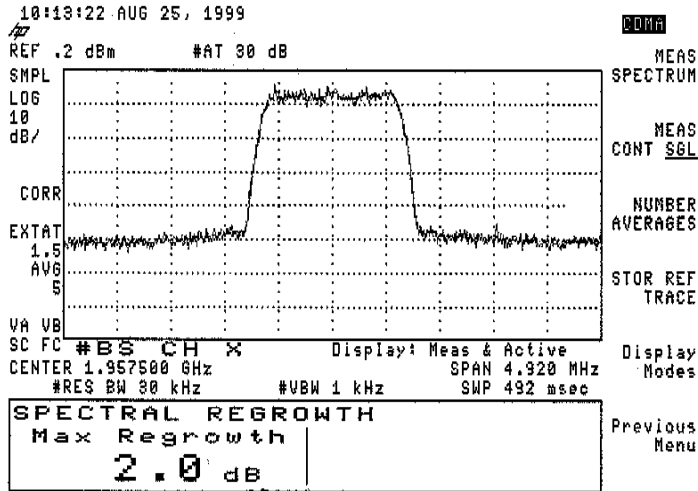
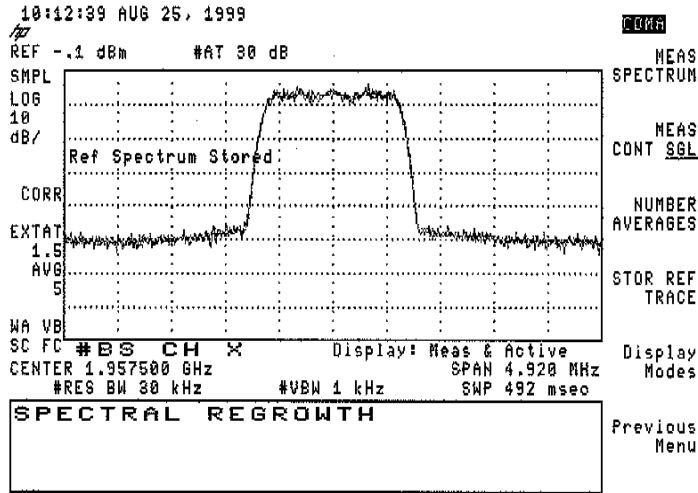


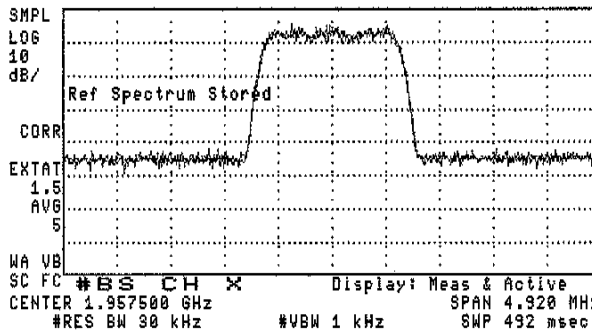
# CDMA B Band



10:16:50 AUG 25, 1999

CONF

REF -5.8 dBm #AT 20 dB



MEAS SPECTRUM

MEAS CONT SGL

NUMBER AVERAGES

STOR REF TRACE

Display Modes

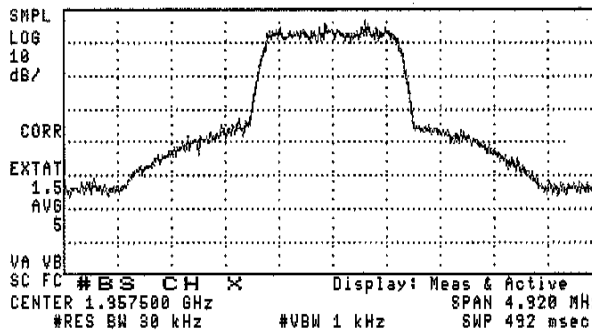
SPECTRAL REGROWTH

Previous Menu

10:17:05 AUG 25, 1999

CONF

REF 9.9 dBm #AT 30 dB



MEAS SPECTRUM

MEAS CONT SGL

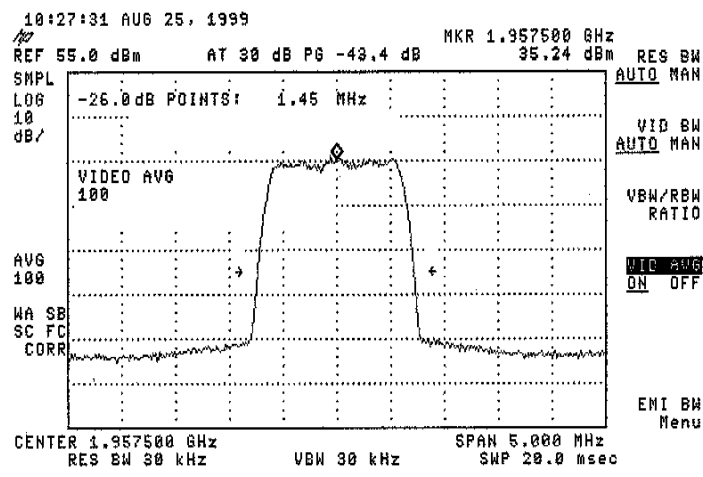
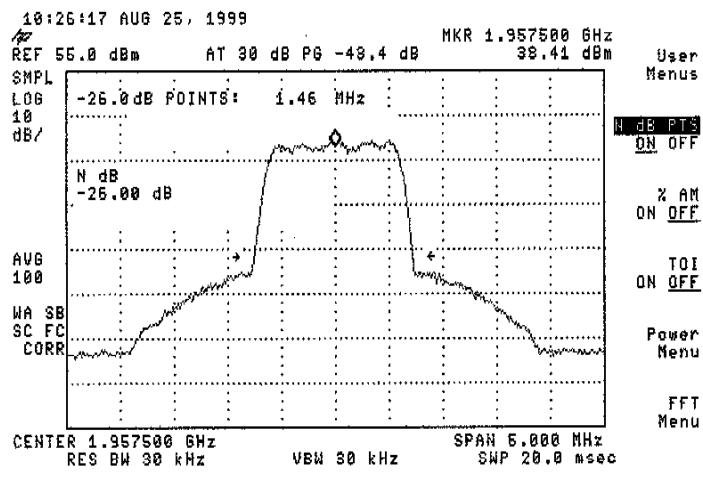
NUMBER AVERAGES

STOR REF TRACE

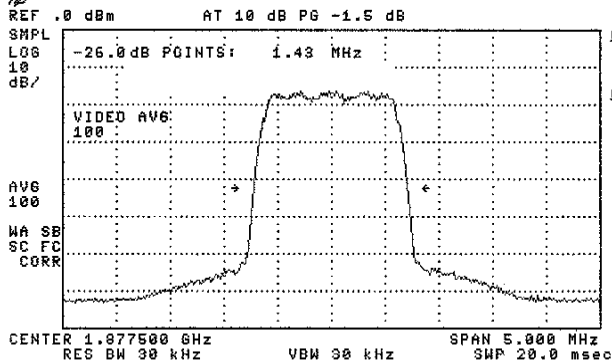
Display Modes

SPECTRAL REGROWTH  
Max Regrowth  
10.2 dB

Previous Menu



14:19:11 AUG 25, 1999



RES BW  
AUTO MAN

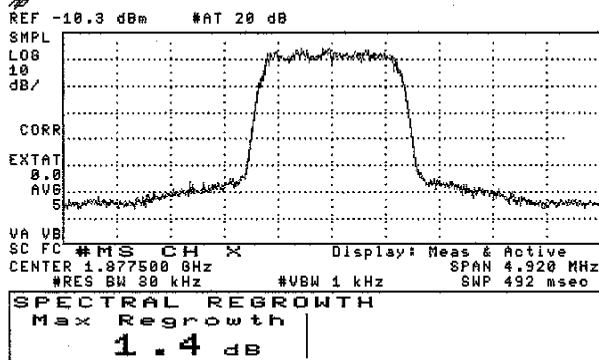
VID BW  
AUTO MAN

VBW/RBW  
RATIO

REF AVG  
ON OFF

EMI BW  
Menu

14:22:37 AUG 25, 1999



COMM

MEAS  
SPECTRUM

MEAS  
CONT SGL

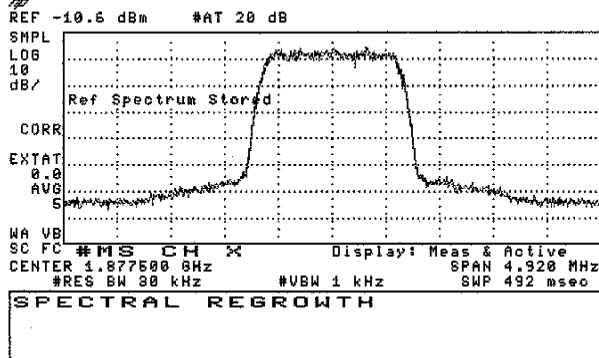
NUMBER  
AVERAGES

STOR REF  
TRACE

Display  
Modes

Previous  
Menu

14:23:35 AUG 25, 1999



COMM

MEAS  
SPECTRUM

MEAS  
CONT SGL

NUMBER  
AVERAGES

STOR REF  
TRACE

Display  
Modes

Previous  
Menu

ATDE

<< Setup Common Parameter (CDMA) >>

Frequency

Channel & Frequency : [1092CH] = [1957.500000MHz]  
Channel Spacing : [ 1.250000MHz]

Level

Reference Level : [ 10.0dBm]

Signal

Measuring Object : [Forward]  
Data Rate : [ 9600bps/14400bps]  
Modulation Analysis Length : [10] \* 64 PNchip  
Filter : [Filter+EQ]

PN Synchronization

PN Offset : [ 0] \* 64 PNchip  
τ Reference : [ Nothing]  
PN Trigger Edge : [Rise]  
PN Trigger Delay : [ 0.000PNchip]

User Cal Factor : [ 1.50dB]

TX Measure

→  
All Measure

→  
Modulation Analysis

→  
RF Power

→  
Occupied Bandwidth

→  
Spurious close to the Carrier

→  
Code Domain Analysis

1 2

1

TX Measure				
------------	--	--	--	--

Main Func On Off

ATDE  
<< All Measure (CDMA) >>

**M** Storage : Average ( 10/ 10)  
**U** Page(1/5) Pass/Fail

All Measure

Frequency  
Carrier Frequency : 1 957.499 999 6 MHz  
Carrier Frequency Error : -0.000 4 kHz  
Waveform Quality  
ρ(Waveform Quality Factor) : 0.99435  
RF Power  
TX Power : 13.99 dBm  
Occupied Bandwidth (FFT)  
Occupied Bandwidth : 1.27 MHz  
Spurious close to the Carrier (Spectrum)  
Offset Frequency Lower Upper  
750kHz : -42.37 dB -45.93 dB  
885kHz : -45.87 dB -45.43 dB  
900kHz : -46.25 dB -45.55 dB  
1250kHz : -49.65 dB -48.50 dB  
1980kHz : -60.51 dB -59.50 dB

Previous Page

Next Page

Storage Mode \*

Calibration \*

Adjust Range

Back Screen →

1

Channel : 1092CH Frequency : 1957.500 000MHz Level : 10dBm

1

Main Func  
On Off

Channel #	Frequency #	Level #		
-----------	-------------	---------	--	--

ATDE

<< Spurious close Carrier(CDMA) >>

M

Storage : Average ( 10/ 10)

U

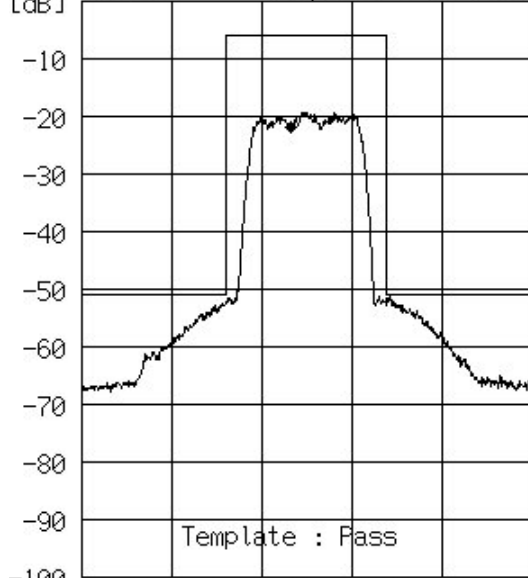
Method : Spectrum

Adj. CH

[dB]

Forward

Template : J-STD-008(Forward, Relative)



Tx Power :

13.98 dBm

Offset Freq. vs Power

-0.885 MHz : -32.15 dBm

0.885 MHz : -32.41 dBm

Marker :

Offset Frequency

-0.17 MHz

Power(RBW:30kHz)

-2.04 dBm

Measure \*  
Method

Unit \*

Storage \*  
Mode

Calibration \*

Adjust  
Range

Back  
Screen →

1 2

1

Span : 5.00MHz RBW: 30kHz

Channel : 1092CH Frequency : 1957.500 000MHz Level : 10dBm

Channel #

Frequency #

Level #

Span #

RBW #

Main Func  
On Off

ATDE  
<< Modulation Analysis (CDMA) >>

**M**  
**U** Storage : Average ( 10/ 10)

Mod. Anal.

Frequency

Carrier Frequency : 1 957.499 999 8 MHz  
Carrier Frequency Error : -0.000 2 kHz

→  
Waveform  
Display

Waveform Quality

$\rho$ (Waveform Quality Factor) : 0.99718

\*  
Storage  
Mode

Modulation

RMS Vector Error : 4.53 % (rms)  
Peak Vector Error : 11.35 %  
Phase Error : 1.82 deg. (rms)  
Magnitude Error : 3.23 % (rms)  
Origin Offset : -30.85 dB

\*  
Calibration

Adjust  
Range

→  
Back  
Screen

**1**

Channel : 1092CH Frequency : 1957.500 000MHz Level : 10dBm

**1**

Channel #	Frequency #	Level #		
-----------	-------------	---------	--	--

Main Func  
On **Off**

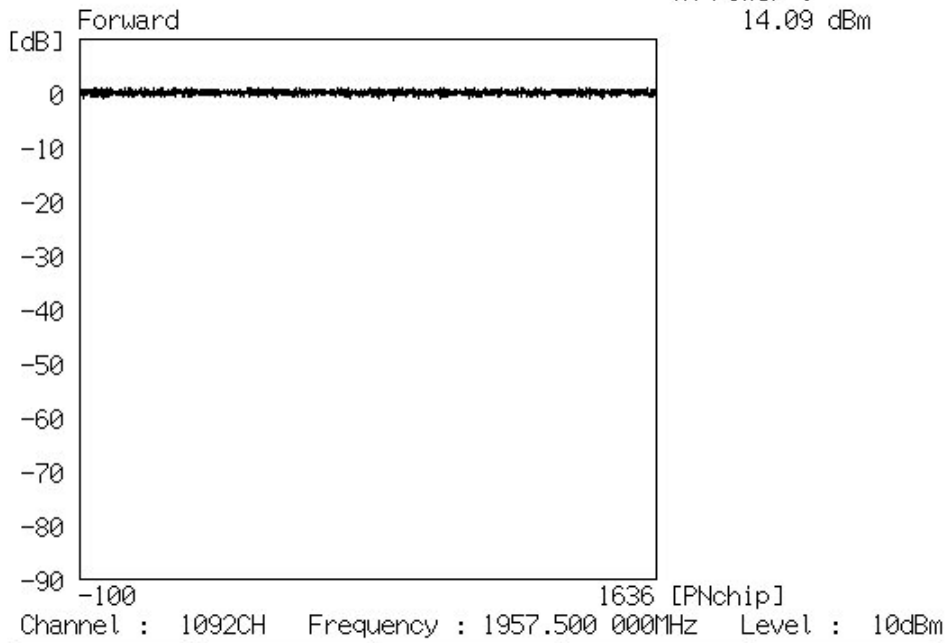


ATDE  
<< RF Power (CDMA) >>

**M** Storage : Average ( 10/ 10)  
**U**

Tx Power :  
14.09 dBm

RF Power



Window \*

Marker \*

Storage \*  
Mode

Calibration \*

Adjust  
Range

Back  
Screen →

1 2

1

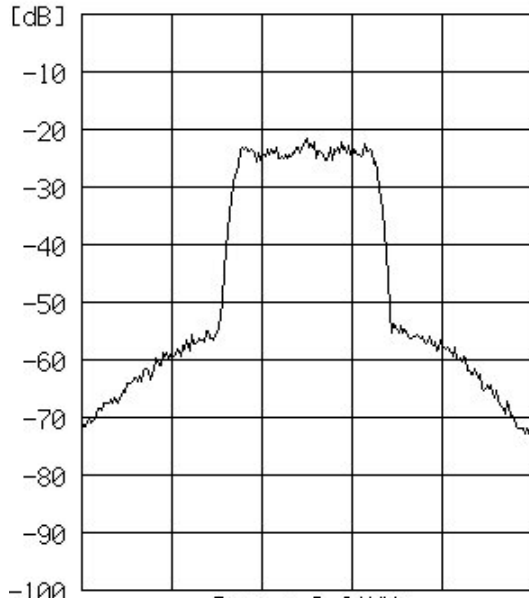
Channel #	Frequency #	Level #		

Main Func  
On Off

ATDE  
<< Occupied Bandwidth (CDMA) >>

**M** Storage : Average ( 10/ 10)  
**U** Method : FFT

Occ. BW



OCC BW (99%) : 1.27 MHz

Upper Limit : 0.63 MHz

Lower Limit : -0.63 MHz

Center (Upper+Lower)/2 :  
1957.500 MHz

Measure \*  
Method

Storage \*  
Mode

Calibration \*

Adjust  
Range

Back  
Screen →

1

1

Channel : 1092CH Frequency : 1957.500 000MHz Level : 10dBm

Channel #	Frequency #	Level #		

Main Func  
On Off

ATDE  
<< Spurious Emission (CDMA) >>

**M**

**U** Spurious : Spot

Frequency Table : Not Named	RBW:3kHz	RBW:30kHz	RBW:1MHz
f 1 = 1 775.300 000 MHz :	-73.00 dBm	-62.87 dBm	-47.67 dBm
f 2 = 2 662.950 000 MHz :	-71.60 dBm	-61.48 dBm	-47.00 dBm
f 3 = - . . . . . MHz :			
f 4 = - . . . . . MHz :			
f 5 = - . . . . . MHz :			
f 6 = - . . . . . MHz :			
f 7 = - . . . . . MHz :			
f 8 = - . . . . . MHz :			
f 9 = - . . . . . MHz :			
f10 = - . . . . . MHz :			
f11 = - . . . . . MHz :			
f12 = - . . . . . MHz :			
f13 = - . . . . . MHz :			
f14 = - . . . . . MHz :			
f15 = - . . . . . MHz :			

Spurious

\*  
Spurious  
Mode

\*  
Unit

\*  
Calibration

Adjust  
Range

→  
Back  
Screen

1 2

Channel : 1092CH Frequency : 1957.500 000MHz Level : 10dBm

1

Channel #	Frequency #	Level #		

Main Func  
On Off

ATDE  
<< Code Domain Analysis (CDMA) >>

**M** Measure : Continuous  
Storage : Normal  
**U**

Code Domain

Vertical Scale \*

Marker \*

Storage Mode \*

Calibration \*

Adjust Range

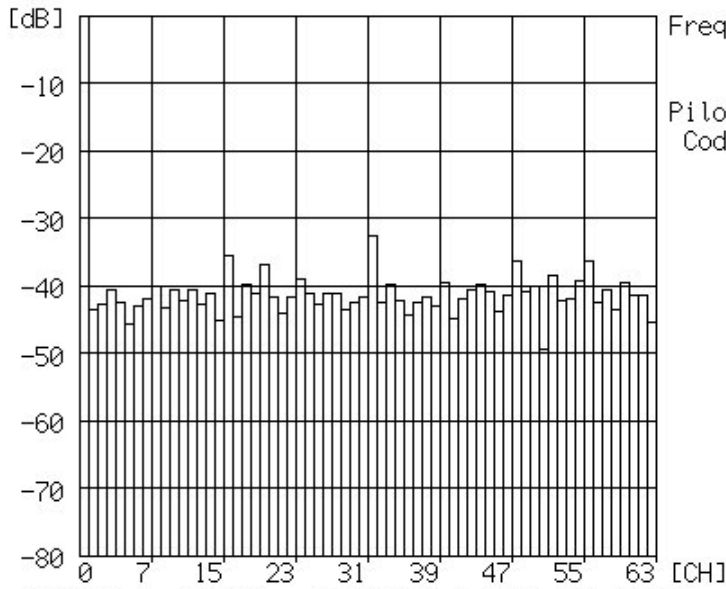
Back Screen →

1

1

Main Func  
On Off

Tx Power : 14.00 dBm  
Frequency Error : 0.000 0 kHz  
Pilot Channel  
Code Domain Power : -0.02 dB



Channel : 1092CH Frequency : 1957.500 000MHz Level : 10dBm

Channel #	Frequency #	Level #		

ATDE  
<< Code Domain Analysis (CDMA) >>

**M** Measure : Continuous  
**U** Storage : Normal

Code Domain

Vertical Scale \*

Marker \*

Storage Mode \*

Calibration \*

Adjust Range

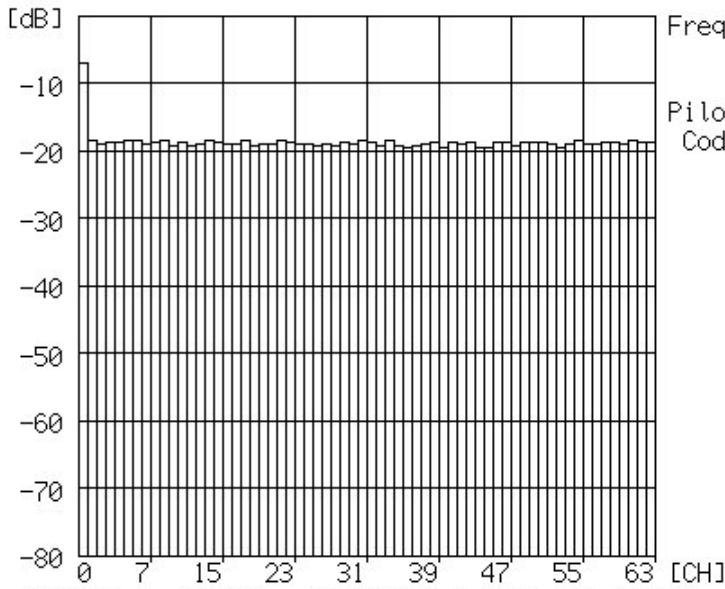
Back Screen →

1

1

Main Func On Off

Tx Power : 14.07 dBm  
Frequency Error : 0.001 0 kHz  
Pilot Channel Code Domain Power : -6.99 dB



Channel #	Frequency #	Level #		

ATDE  
<< Waveform Display (CDMA) >>

**M** Measure : Continuous  
Storage : Normal  
**U** Trace : Constellation

Waveform

Trace \*  
Format

Marker \*

Storage \*  
Mode

Calibration \*

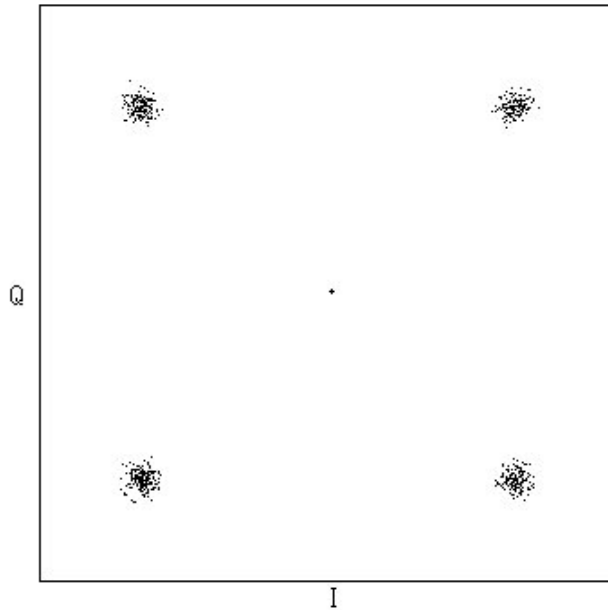
Adjust  
Range

Back  
Screen →

1

1

Main Func  
On Off



Frequency :  
1 957.500 000 1 MHz  
Frequency Error :  
0.000 1 kHz  
 $\rho$  : 0.99733

Channel : 1092CH Frequency : 1957.500 000MHz Level : 10dBm

Channel #	Frequency #	Level #		
-----------	-------------	---------	--	--

ATDE

<< Spurious close Carrier(CDMA) >>

M

Storage : Average ( 10/ 10)

U

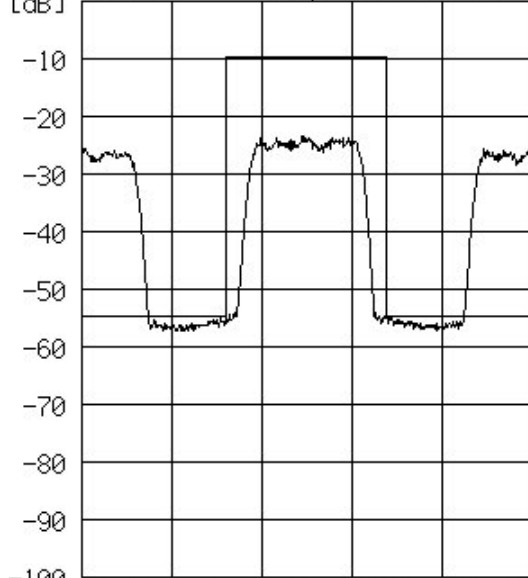
Method : Spectrum

Adj. CH

[dB]

Forward

Template : J-STD-008(Forward, Relative)



Tx Power :

10.01 dBm

Offset Freq. vs Power

-0.885 MHz : -35.30 dBm

0.885 MHz : -34.79 dBm

Marker :

Offset Frequency

-0.17 MHz

Power(RBW:30kHz)

-5.24 dBm

Span : 5.00MHz RBW: 30kHz

Channel : 1092CH Frequency : 1957.500 000MHz Level : 10dBm

Measure \*  
Method

Unit \*

Storage \*  
Mode

Calibration \*

Adjust  
Range

Back  
Screen →

1 2

1

Channel #

Frequency #

Level #

Span #

RBW #

Main Func  
On Off

ATDE  
<< Modulation Analysis (CDMA) >>

**M**  
**U** Storage : Average ( 10/ 10)

Mod. Anal.

Frequency

Carrier Frequency : 1 957.500 000 0 MHz  
Carrier Frequency Error : 0.000 0 kHz

→  
Waveform  
Display

Waveform Quality

$\rho$ (Waveform Quality Factor) : 0.99520

\*  
Storage  
Mode

Modulation

RMS Vector Error : 6.55 % (rms)  
Peak Vector Error : 23.98 %  
Phase Error : 3.09 deg. (rms)  
Magnitude Error : 3.74 % (rms)  
Origin Offset : -31.13 dB

\*  
Calibration

Adjust  
Range

→  
Back  
Screen

**1**

Channel : 1092CH Frequency : 1957.500 000MHz Level : 10dBm

**1**

Channel #	Frequency #	Level #		
-----------	-------------	---------	--	--

Main Func  
On **Off**

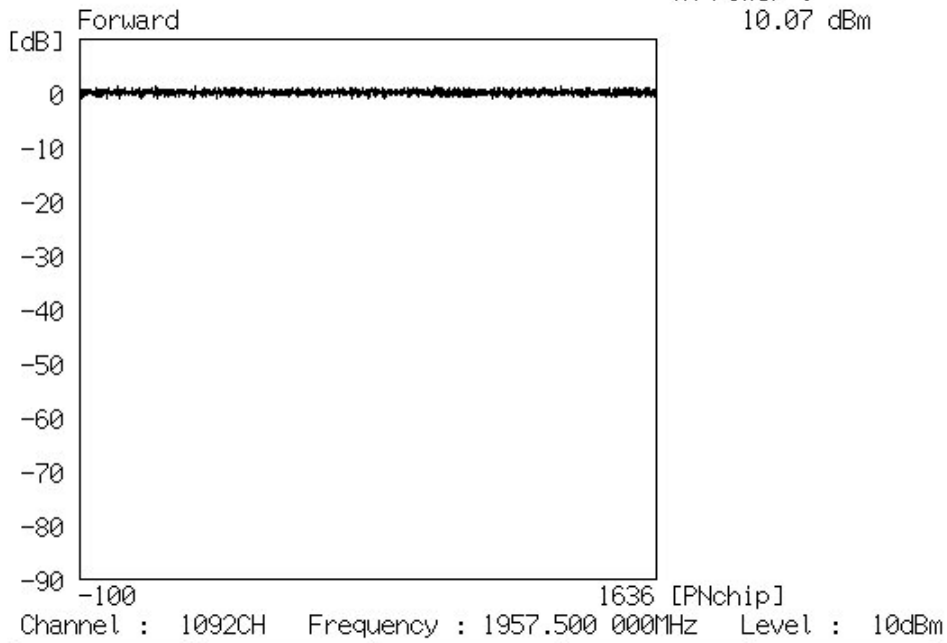


ATDE  
<< RF Power (CDMA) >>

**M** Storage : Average ( 10/ 10)  
**U**

Tx Power :  
10.07 dBm

RF Power



Window \*

Marker \*

Storage \*  
Mode

Calibration \*

Adjust  
Range

Back  
Screen →

1 2

1

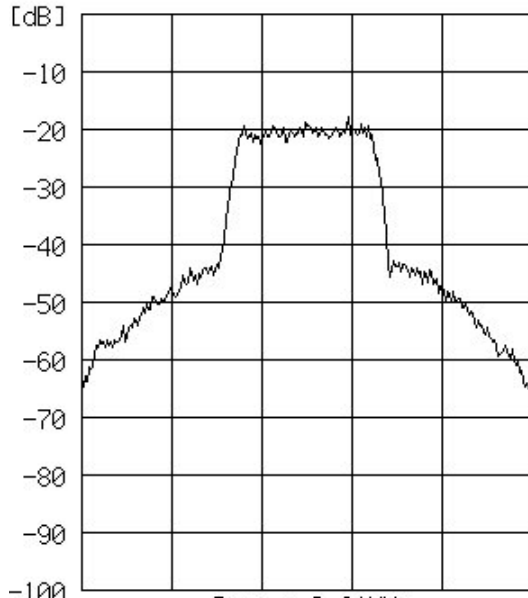
Channel #	Frequency #	Level #		

Main Func  
On Off

ATDE  
<< Occupied Bandwidth (CDMA) >>

**M** Storage : Average ( 10/ 10)  
**U** Method : FFT

Occ. BW



OCC BW (99%) : 1.28 MHz

Upper Limit : 0.64 MHz

Lower Limit : -0.64 MHz

Center (Upper+Lower)/2 :  
1957.498 MHz

Measure  
Method \*

Storage  
Mode \*

Calibration \*

Adjust  
Range

Back  
Screen →

1

Span : 3.91MHz  
Channel : 1092CH Frequency : 1957.500 000MHz Level : 10dBm

1

Channel #	Frequency #	Level #		

Main Func  
On Off

ATDE  
<< Spurious Emission (CDMA) >>

**M**

**U** Spurious : Spot

Frequency Table : Not Named	RBW:3kHz	RBW:30kHz	RBW:1MHz
f 1 = 1 775.300 000 MHz :	-71.63 dBm	-62.30 dBm	-47.49 dBm
f 2 = 2 662.950 000 MHz :	-71.89 dBm	-62.23 dBm	-46.80 dBm
f 3 = - . . . . . MHz :			
f 4 = - . . . . . MHz :			
f 5 = - . . . . . MHz :			
f 6 = - . . . . . MHz :			
f 7 = - . . . . . MHz :			
f 8 = - . . . . . MHz :			
f 9 = - . . . . . MHz :			
f10 = - . . . . . MHz :			
f11 = - . . . . . MHz :			
f12 = - . . . . . MHz :			
f13 = - . . . . . MHz :			
f14 = - . . . . . MHz :			
f15 = - . . . . . MHz :			

Spurious

\*  
Spurious  
Mode

\*  
Unit

\*  
Calibration

Adjust  
Range

→  
Back  
Screen

1 2

Channel : 1092CH Frequency : 1957.500 000MHz Level : 10dBm

1

Channel #	Frequency #	Level #		

Main Func  
On Off

ATDE  
<< Code Domain Analysis (CDMA) >>

**M** Measure : Continuous  
**U** Storage : Normal

Code Domain

Vertical Scale \*

Marker \*

Storage Mode \*

Calibration \*

Adjust Range

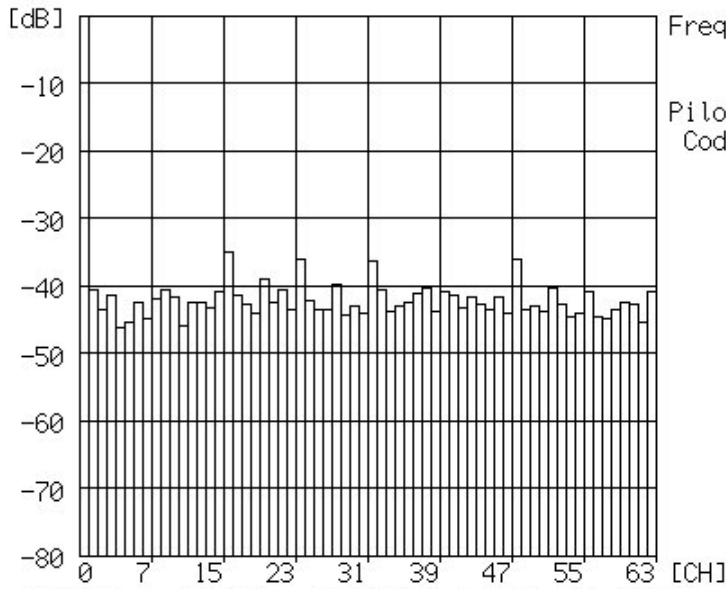
Back Screen →

1

1

Main Func  
On Off

Tx Power : 10.02 dBm  
Frequency Error : 0.000 6 kHz  
Pilot Channel  
Code Domain Power : -0.02 dB



Channel #	Frequency #	Level #		

ATDE  
<< Code Domain Analysis (CDMA) >>

**M** Measure : Continuous  
**U** Storage : Normal

Code Domain

Vertical Scale \*

Marker \*

Storage Mode \*

Calibration \*

Adjust Range

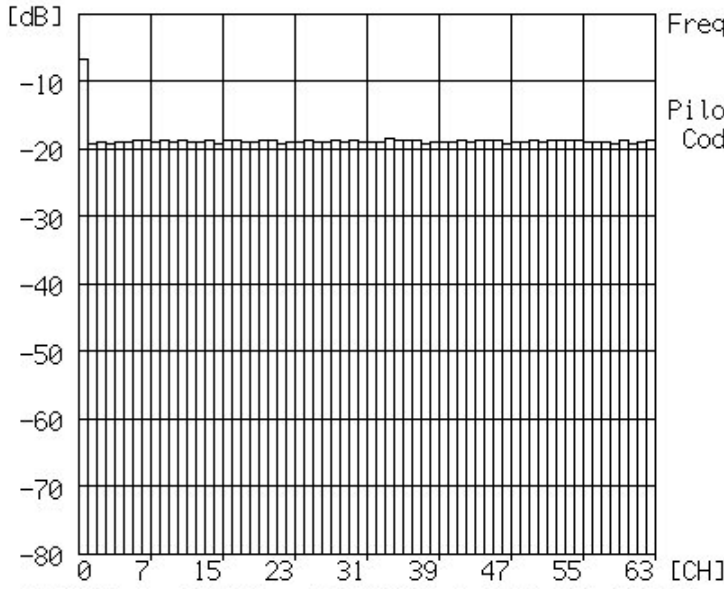
Back Screen →

1

1

Main Func  
On Off

Tx Power : 9.95 dBm  
Frequency Error : -0.000 5 kHz  
Pilot Channel  
Code Domain Power : -6.92 dB



Channel #	Frequency #	Level #		

ATDE  
<< Waveform Display (CDMA) >>

**M** Measure : Continuous  
Storage : Normal  
**U** Trace : Constellation

Waveform

Trace \*  
Format

Marker \*

Storage \*  
Mode

Calibration \*

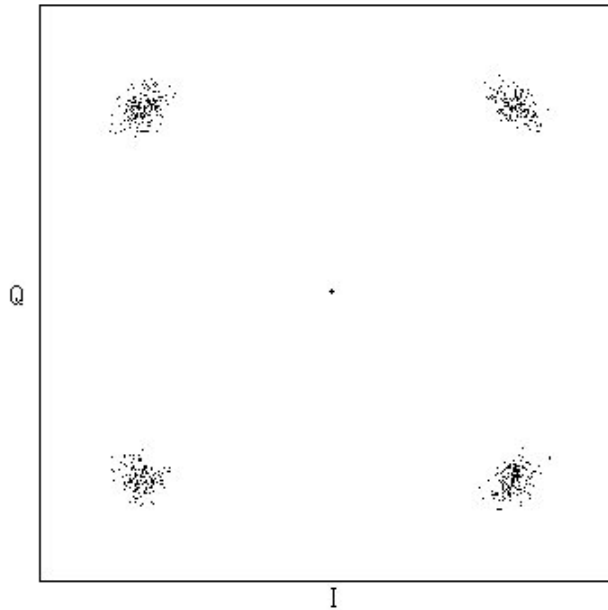
Adjust  
Range

Back  
Screen →

1

1

Main Func  
On Off



Frequency :  
1 957.500 000 1 MHz  
Frequency Error :  
0.000 1 kHz  
 $\rho$  : 0.99544

Channel : 1092CH Frequency : 1957.500 000MHz Level : 10dBm

Channel #	Frequency #	Level #		
-----------	-------------	---------	--	--

ATDE

<< Setup Common Parameter (CDMA) >>

Frequency

Channel & Frequency : [1092CH] = [1877.500000MHz]  
Channel Spacing : [ 1.250000MHz]

Level

Reference Level : [ 10.0dBm]

Signal

Measuring Object : [Reverse]  
Data Rate : [ 9600bps/14400bps]  
Modulation Analysis Length : [ 615PNchip]  
Filter : [Filtering]

PN Synchronization

PN Offset : [ 0] \* 64 PNchip  
τ Reference : [ Nothing]  
PN Trigger Edge : [Rise]  
PN Trigger Delay : [ 0.000PNchip]

User Cal Factor : [ 1.90dB]

TX Measure

→  
All Measure

→  
Modulation  
Analysis

→  
RF Power

→  
Occupied  
Bandwidth

→  
Spurious  
close to  
the Carrier

→  
Code Domain  
Analysis

1 2

1

TX Measure				
------------	--	--	--	--

Main Func  
On Off

ATDE  
<< All Measure (CDMA) >>

**M** Storage : Average ( 10/ 10)  
**U** Page(1/1) Pass/Fail

All Measure

Frequency  
Carrier Frequency : 1 877.500 000 2 MHz  
Carrier Frequency Error : 0.000 2 kHz Pass  
Waveform Quality  
ρ(Waveform Quality Factor) : 0.99560 Pass  
RF Power  
TX Power : 0.36 dBm Pass  
Occupied Bandwidth (FFT)  
Occupied Bandwidth : 1.26 MHz Pass  
Spurious close to the Carrier (Spectrum)  
Offset Frequency Lower Upper  
750kHz : -48.50 dB -50.28 dB Pass  
885kHz : -65.81 dB -64.60 dB Pass  
900kHz : -65.29 dB -64.58 dB Pass  
1250kHz : -67.80 dB -65.61 dB Pass  
1980kHz : -69.58 dB -68.51 dB Pass

\*  
Storage  
Mode

\*  
Calibration

Adjust  
Range

→  
Back  
Screen

Total Judgement  
Pass

1

Channel : 1092CH Frequency : 1877.500 000MHz Level : 5dBm

1

Channel #	Frequency #	Level #		

Main Func  
On Off



ATDE  
<< Modulation Analysis (CDMA) >>

**M**  
**U** Storage : Average ( 10/ 10)

Mod. Anal.

Frequency

Carrier Frequency : 1 877.499 998 2 MHz  
Carrier Frequency Error : -0.001 8 kHz

→  
Waveform  
Display

Waveform Quality

$\rho$ (Waveform Quality Factor) : 0.99595

\*  
Storage  
Mode

Modulation

RMS Vector Error : 6.18 % (rms)  
Peak Vector Error : 23.68 %  
Phase Error : 2.75 deg. (rms)  
Magnitude Error : 3.87 % (rms)  
Origin Offset : -30.71 dB

\*  
Calibration

Adjust  
Range

→  
Back  
Screen

**1**

Channel : 1092CH Frequency : 1877.500 000MHz Level : 5dBm

**1**

Channel #	Frequency #	Level #		
-----------	-------------	---------	--	--

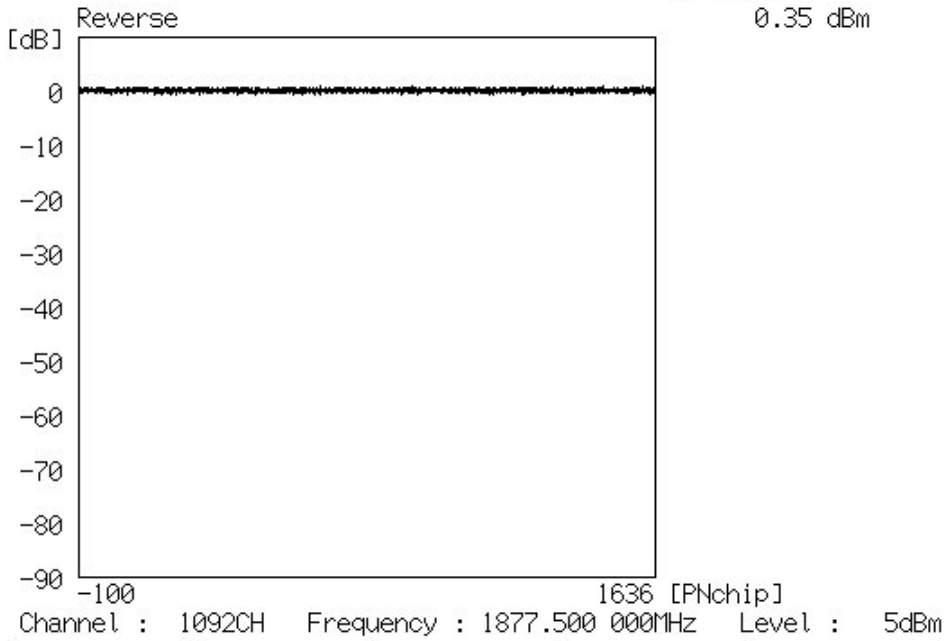
Main Func  
On **Off**

ATDE  
<< RF Power (CDMA) >>

**M** Storage : Average ( 10/ 10)  
**U**

Tx Power :  
0.35 dBm

RF Power



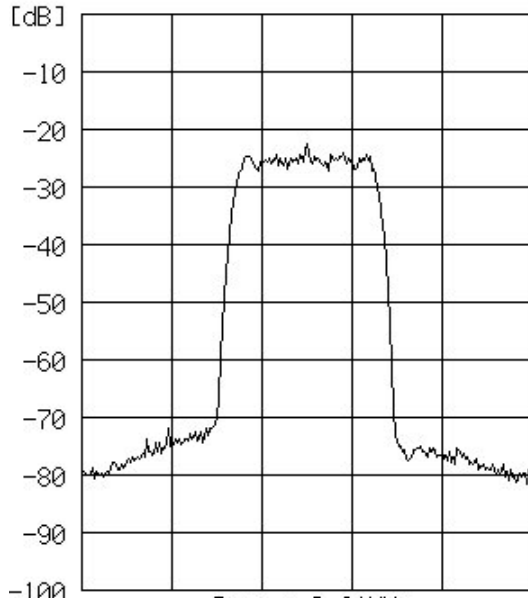
- Window \*
- Marker \*
- Storage \*  
Mode
- Calibration \*
- Adjust  
Range
- Back  
Screen →
- 1 2
- 1
- Main Func  
On Off

Channel #	Frequency #	Level #		
-----------	-------------	---------	--	--

ATDE  
<< Occupied Bandwidth (CDMA) >>

**M** Storage : Average ( 10/ 10)  
**U** Method : FFT

Occ. BW



OCC BW (99%) : 1.26 MHz

Upper Limit : 0.63 MHz

Lower Limit : -0.63 MHz

Center (Upper+Lower)/2 :  
1877.501 MHz

Measure  
Method

Storage  
Mode

Calibration

Adjust  
Range

Back  
Screen

1

1

Span : 3.91MHz  
Channel : 1092CH Frequency : 1877.500 000MHz Level : 5dBm

Channel #	Frequency #	Level #		

Main Func  
On Off

ATDE

<< Spurious close Carrier(CDMA) >>

M

Storage : Average ( 10/ 10)

U

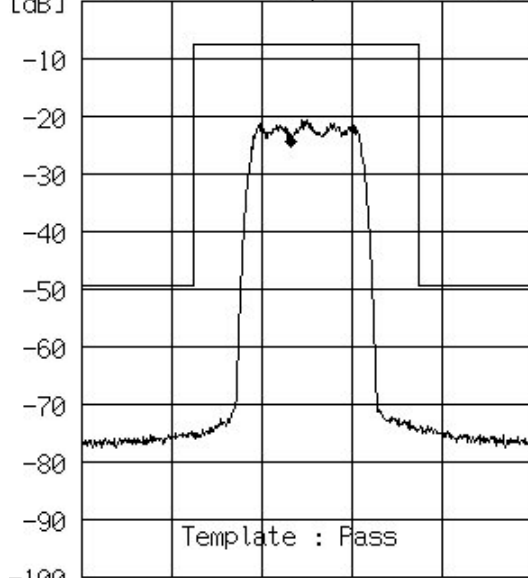
Method : Spectrum

Adj. CH

[dB]

Reverse

Template : J-STD-008(Reverse, Relative)



Tx Power :

0.36 dBm

Offset Freq. vs Power

-1.250 MHz : -67.03 dBm

1.250 MHz : -66.48 dBm

Marker :

Offset Frequency

-0.17 MHz

Power(RBW:30kHz)

-16.45 dBm

Span : 5.00MHz RBW: 30kHz

Channel : 1092CH Frequency : 1877.500 000MHz Level : 5dBm

Measure \*  
Method

Unit \*

Storage \*  
Mode

Calibration \*

Adjust  
Range

Back  
Screen →

1 2

1

Channel #

Frequency #

Level #

Span #

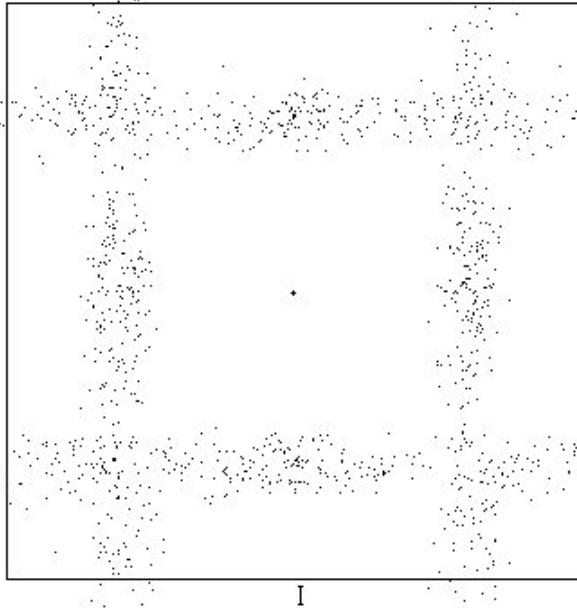
RBW #

Main Func  
On Off

ATDE  
<< Waveform Display (CDMA) >>

**M** Measure : Continuous  
Storage : Normal  
**U** Trace : Constellation

Waveform



Frequency :  
1 877.499 999 9 MHz  
Frequency Error :  
-0.000 1 kHz  
 $\rho$  : 0.99585

- Trace  \*
- Format
- Marker  \*
- Storage  \*
- Mode
- Calibration  \*
- Adjust Range
- Back Screen  →
- 1
- 1
- Main Func On  Off

Channel : 1092CH Frequency : 1877.500 000MHz Level : 5dBm

Channel #	Frequency #	Level #		
-----------	-------------	---------	--	--

ATDE

<< Spurious Emission (CDMA) >>

**M**

**U** Spurious : Spot

Spu. Mode

Spot

Frequency Table : Not Named

	RBW:3kHz	RBW:30kHz	RBW:1MHz
f 1 = 1 775.300 000 MHz :	-83.97 dBm	-74.57 dBm	-59.30 dBm
f 2 = 2 662.950 000 MHz :	-82.69 dBm	-73.52 dBm	-58.43 dBm
f 3 = - . . . . . MHz :			
f 4 = - . . . . . MHz :			
f 5 = - . . . . . MHz :			
f 6 = - . . . . . MHz :			
f 7 = - . . . . . MHz :			
f 8 = - . . . . . MHz :			
f 9 = - . . . . . MHz :			
f10 = - . . . . . MHz :			
f11 = - . . . . . MHz :			
f12 = - . . . . . MHz :			
f13 = - . . . . . MHz :			
f14 = - . . . . . MHz :			
f15 = - . . . . . MHz :			

Search

return

**1**

Channel : 1092CH Frequency : 1877.500 000MHz Level : 5dBm

**1**

Channel #	Frequency #	Level #		
Channel #	Frequency #	Level #		

Main Func  
On **Off**

ATDE

<< Spurious close Carrier(CDMA) >>

M

Storage : Average ( 10/ 10)

U

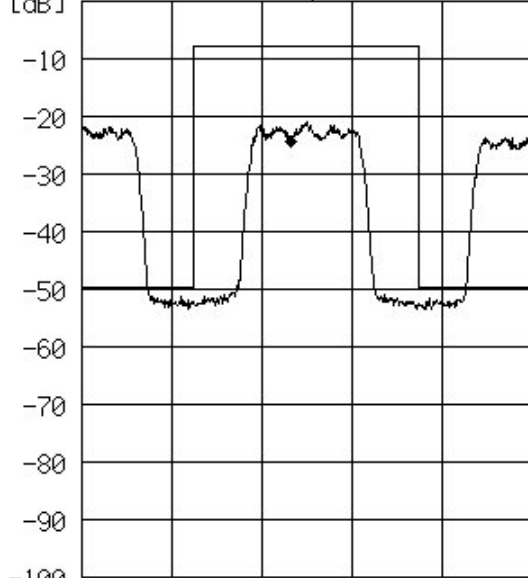
Method : Spectrum

Adj. CH

[dB]

Reverse

Template : J-STD-008(Reverse, Relative)



Tx Power :

0.07 dBm

Offset Freq. vs Power

-1.250 MHz : -44.60 dBm

1.250 MHz : -44.96 dBm

Marker :

Offset Frequency

-0.17 MHz

Power(RBW:30kHz)

-16.40 dBm

Span : 5.00MHz RBW: 30kHz

Channel : 1092CH Frequency : 1877.500 000MHz Level : 5dBm

Measure \*  
Method

Unit \*

Storage \*  
Mode

Calibration \*

Adjust  
Range

Back  
Screen →

1 2

1

Channel #

Frequency #

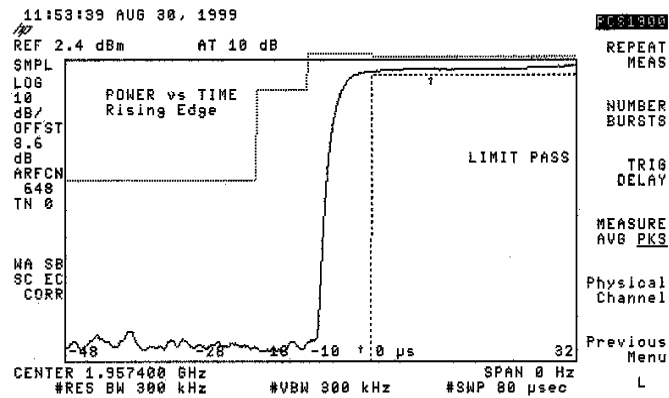
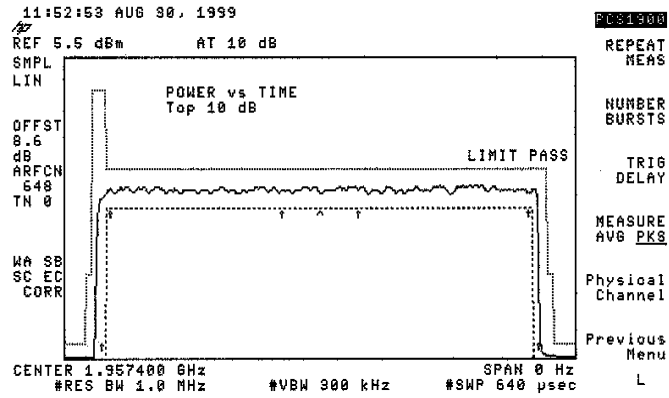
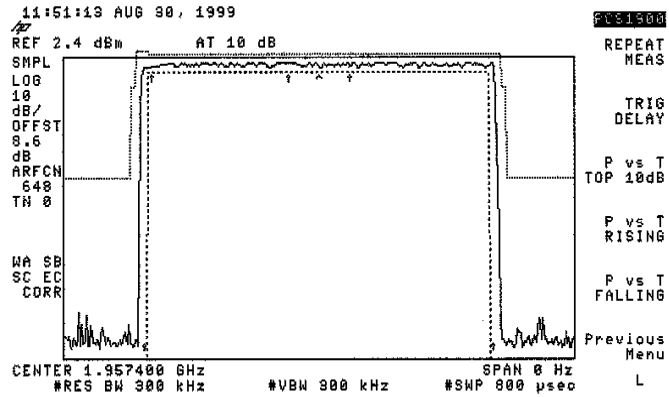
Level #

Span #

RBW #

Main Func  
On Off

# GSM B Band





11:53:55 AUG 30, 1999

PC81400

REF 2.4 dBm AT 10 dB

SNPL

REPEAT  
MEAS

LOG

10

dB/

OFFST

8.6

dB

ARFCN

648

TN 0

WA SB

SC EC

CORR

NUMBER  
BURSTS

TRIG  
DELAY

MEASURE  
AUG PK

Physical  
Channel

Previous  
Menu

CENTER 1.957400 GHz

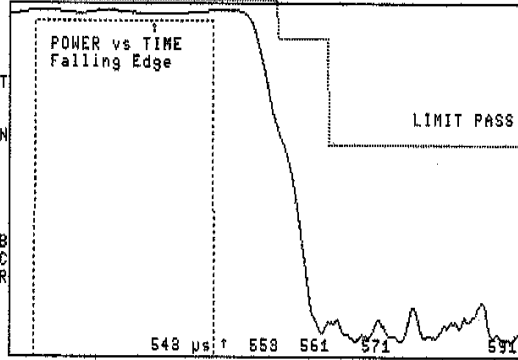
#RES BW 300 kHz

#VBW 300 kHz

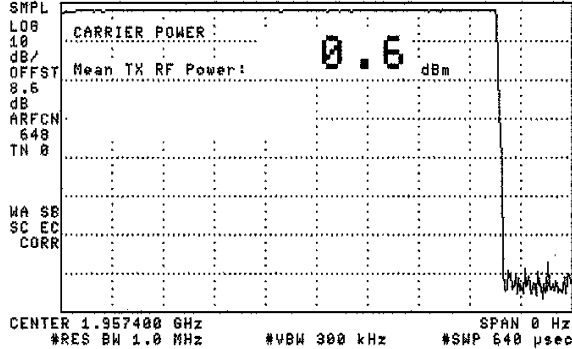
SPAN 0 Hz

#SWP 80  $\mu$ sec

L

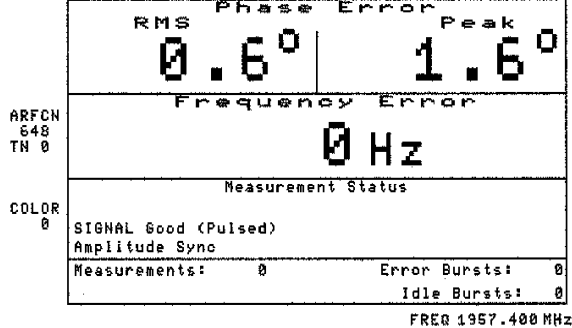


12:01:05 AUG 30, 1999  
 REF 2.7 dBm AT 10 dB



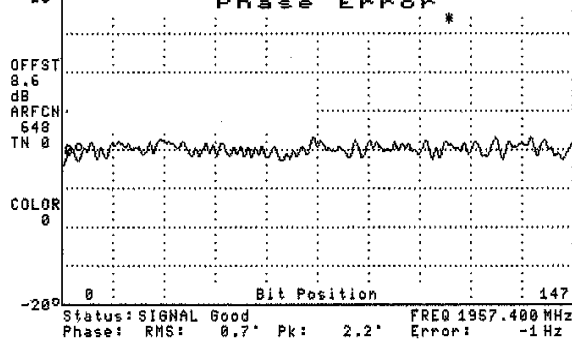
PC31300  
 REPEAT MEAS  
 NUMBER BURSTS  
 Physical Channel  
 Previous Menu  
 L

12:09:54 AUG 30, 1999  
 REF -4.0 dBm AT 10 dB



PC31300  
 REPEAT MEAS  
 NUMBER BURSTS  
 MEASURE AVG PKGS  
 STD DEV ON OFF  
 Physical Channel  
 Previous Menu  
 L

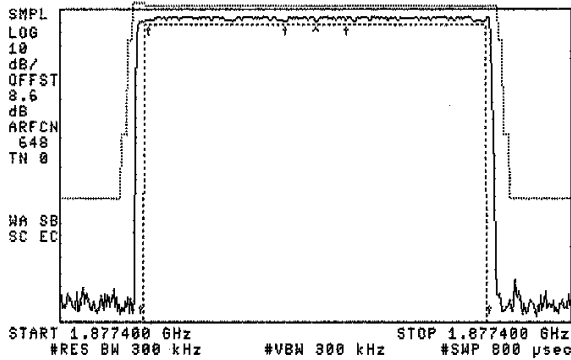
12:14:54 AUG 30, 1999  
 REF -4.1 dBm AT 10 dB



PC31300  
 REPEAT MEAS  
 NUMBER BURSTS  
 MEASURE AVG PKGS  
 Zoom  
 Physical Channel  
 Previous Menu

12:18:44 AUG 30, 1999

REF .2 dBm AT 10 dB



RES1900

REPEAT MEAS

TRIG DELAY

P vs T TOP 10dB

P vs T RISING

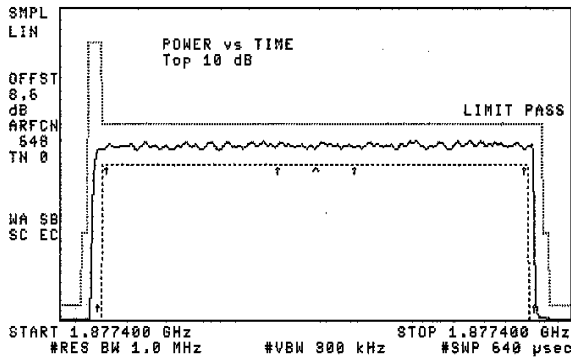
P vs T FALLING

Previous Menu

L

12:19:07 AUG 30, 1999

REF 3.4 dBm AT 10 dB



RES1900

REPEAT MEAS

NUMBER BURSTS

TRIG DELAY

MEASURE AVG PK

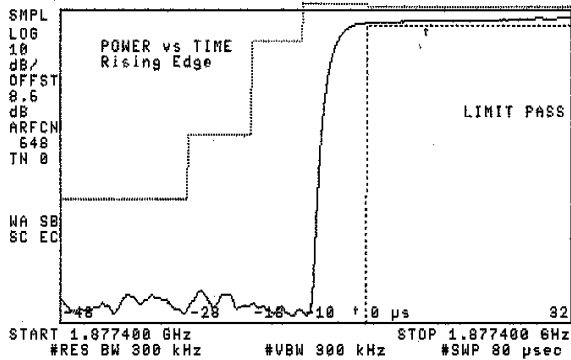
Physical Channel

Previous Menu

L

12:19:21 AUG 30, 1999

REF .2 dBm AT 10 dB



RES1900

REPEAT MEAS

NUMBER BURSTS

TRIG DELAY

MEASURE AVG PK

Physical Channel

Previous Menu

L

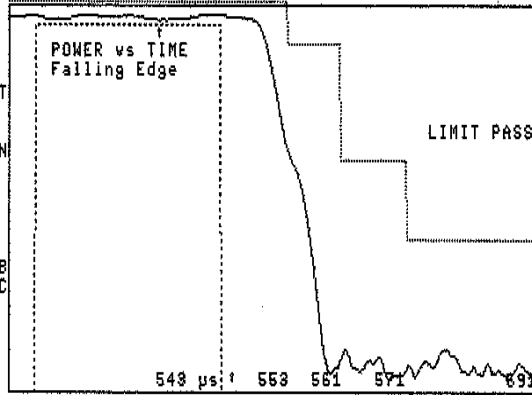
12:19:34 AUG 30, 1999

REF .2 dBm AT 10 dB

000000

SAMPL  
LOG  
10  
dB/  
OFFST  
8.5  
dB  
ARFCN  
548  
TN 0

NA SB  
SC EC



REPEAT  
MEAS

NUMBER  
BURSTS

TRIG  
DELAY

MEASURE  
AVG PKS

Physical  
Channel

Previous  
Menu

START 1.877400 GHz #RES BW 300 kHz #VBW 300 kHz #SNP 80  $\mu$ sec  
STOP 1.877400 GHz

L

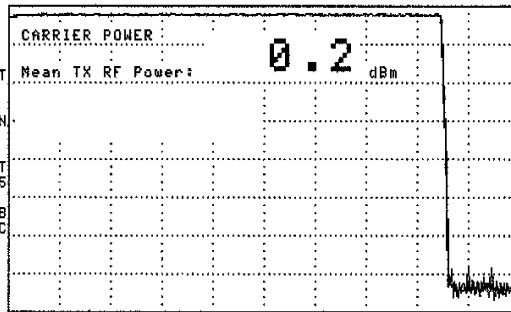
13:25:14 AUG 30, 1999

PCS1900

REF 2.4 dBm AT 10 dB

REPEAT MEAS

SMPL LOG  
10 dB  
OFFST 8.6 dB  
ARFCN 648  
TN 0  
BURST 5  
VA WB  
SC EC



NUMBER BURSTS

Physical Channel

Previous Menu

L

CENTER 1.877400 GHz SPAN 0 Hz  
#RES BW 1.0 MHz #VBW 300 kHz #SWP 640 μsec

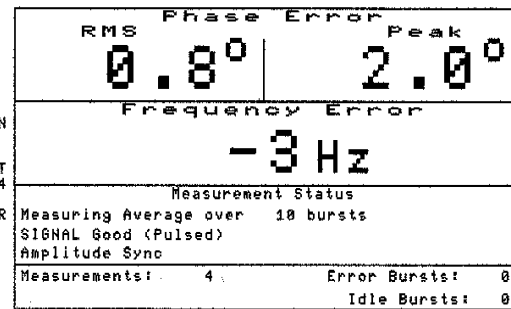
13:25:56 AUG 30, 1999

PCS1900

REF -2.4 dBm AT 10 dB

REPEAT MEAS

ARFCN 648  
TN 0  
BURST 4  
COLOR 0



NUMBER BURSTS

MEASURE AVG PKS

STD DEV ON OFF

Physical Channel

Previous Menu

Phase: RMS: 0.7° Pk: 1.9° FREQ 1877.400 MHz  
Error: 3 Hz

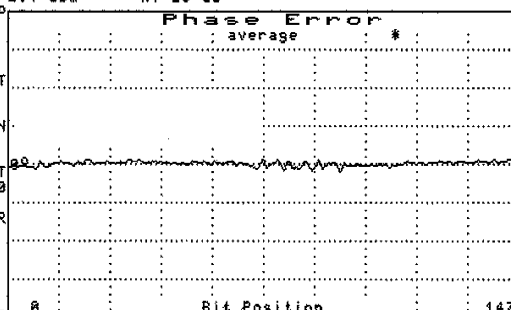
13:26:55 AUG 30, 1999

PCS1900

REF -2.4 dBm AT 10 dB

REPEAT MEAS

OFFST 8.6 dB  
ARFCN 648  
TN 0  
BURST 10  
COLOR 0



NUMBER BURSTS

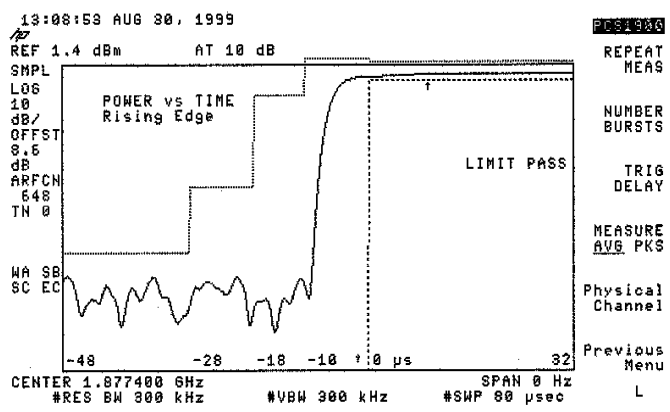
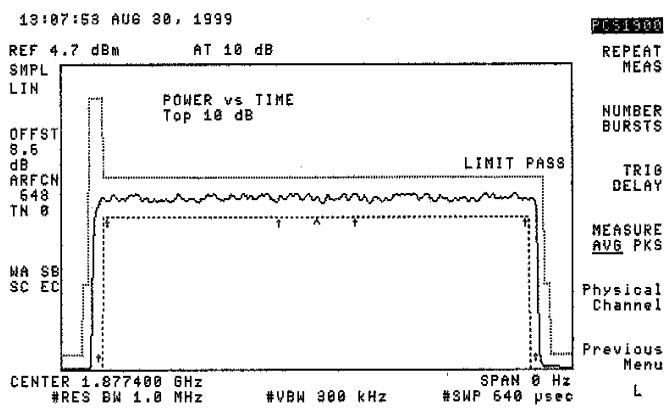
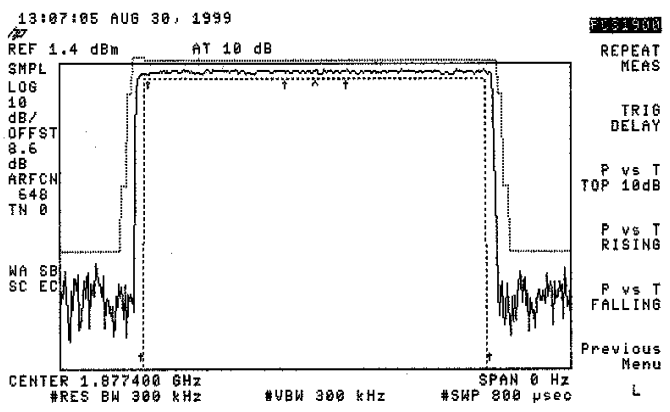
MEASURE AVG PKS

Zoom

Physical Channel

Previous Menu

Status: SIGNAL Good FREQ 1877.400 MHz  
Phase: RMS: 0.7° Pk: 2.0° Error: -3 Hz

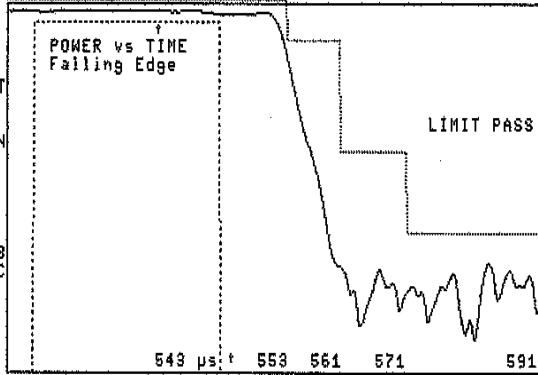


13:14:25 AUG 30, 1999

PC1100

REF 1.5 dBm AT 10 dB

SMPL  
LOG  
10  
dB/  
OFFST  
0.6  
dB  
ARFCN  
648  
TN 0



REPEAT  
MEAS

NUMBER  
BURSTS

TRIG  
DELAY

MEASURE  
AVG PKS

Physical  
Channel

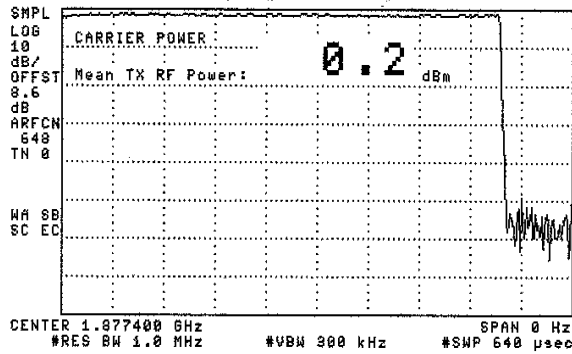
Previous  
Menu

CENTER 1.877400 GHz SPAN 0 Hz  
#RES BW 300 kHz #VBW 300 kHz #SWP 80 μsec

L

18:19:21 AUG 30, 1999

REF 1.7 dBm AT 10 dB



PCS1900

REPEAT MEAS

NUMBER BURSTS

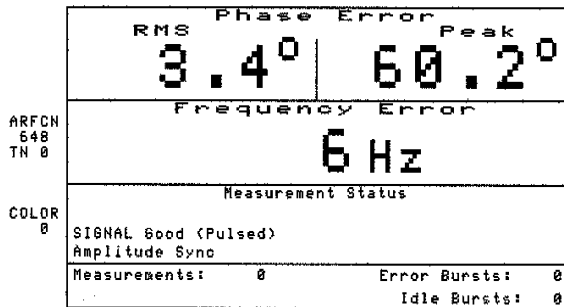
Physical Channel

Previous Menu

L

18:21:48 AUG 30, 1999

REF -2.4 dBm AT 10 dB



PCS1900

REPEAT MEAS

NUMBER BURSTS

MEASURE AVG PKS

STD DEV ON OFF

Physical Channel

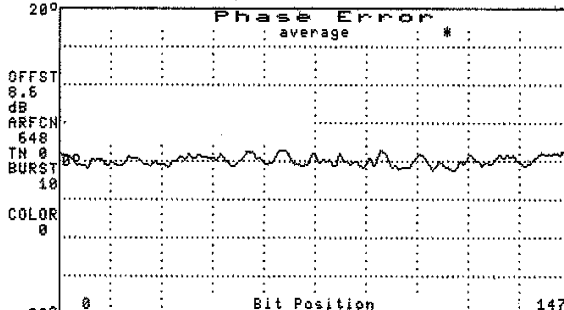
Previous Menu

L

FREQ 1877.400 MHz

18:24:08 AUG 30, 1999

REF -2.4 dBm AT 10 dB



PCS1900

REPEAT MEAS

NUMBER BURSTS

MEASURE AVG PKS

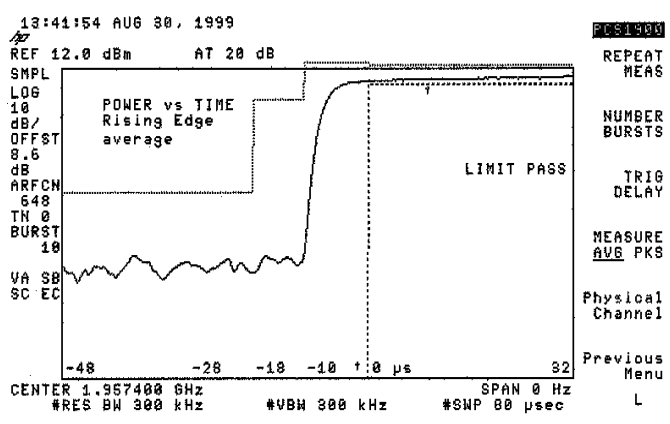
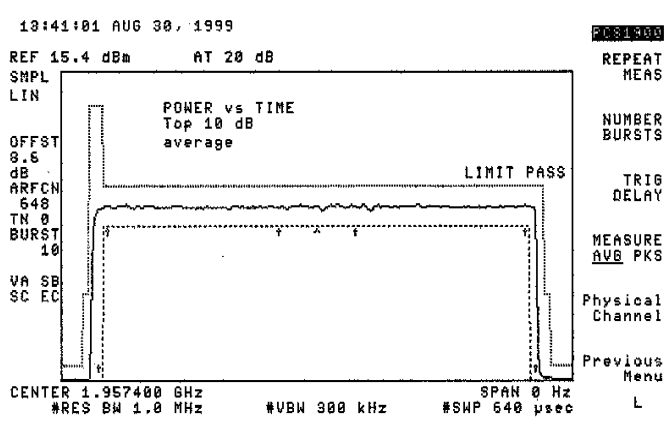
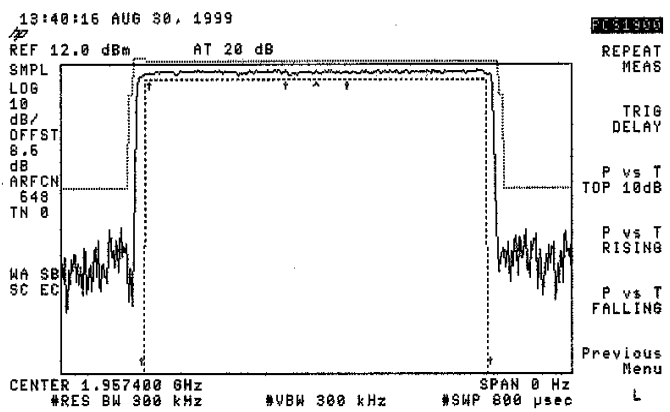
Zoom

Physical Channel

Previous Menu

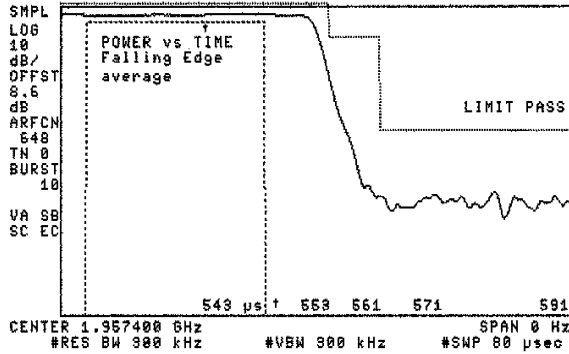
Status: SIGNAL Good FREQ 1877.400 MHz  
Phase: RMS: 1.7° Pk: 4.3° Error: 8 Hz





13:42:56 AUG 30, 1999

REF 12.0 dBm AT 20 dB



PC1900

REPEAT MEAS

NUMBER BURSTS

TRIG DELAY

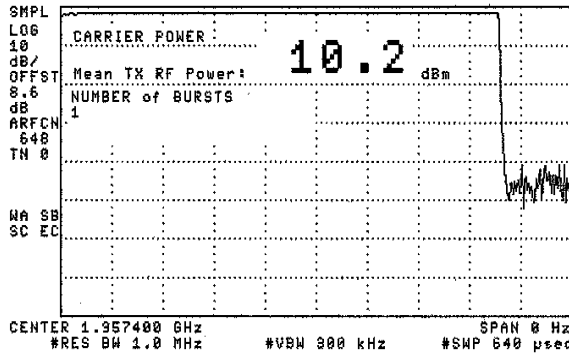
MEASURE AVG PK5

Physical Channel

Previous Menu L

13:59:54 AUG 30, 1999

REF 11.0 dBm AT 20 dB



PC1900

REPEAT MEAS

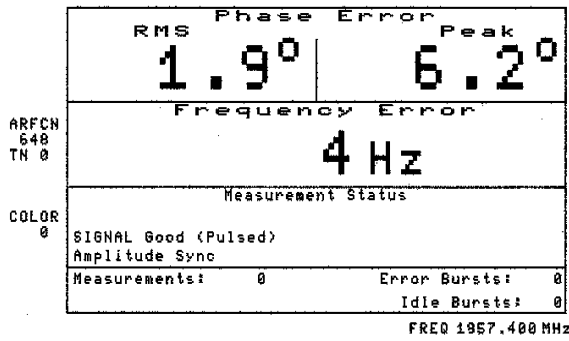
NUMBER BURSTS

Physical Channel

Previous Menu L

13:57:42 AUG 30, 1999

REF 7.5 dBm AT 10 dB



PC1900

REPEAT MEAS

NUMBER BURSTS

MEASURE AVG PK5

STD DEV ON OFF

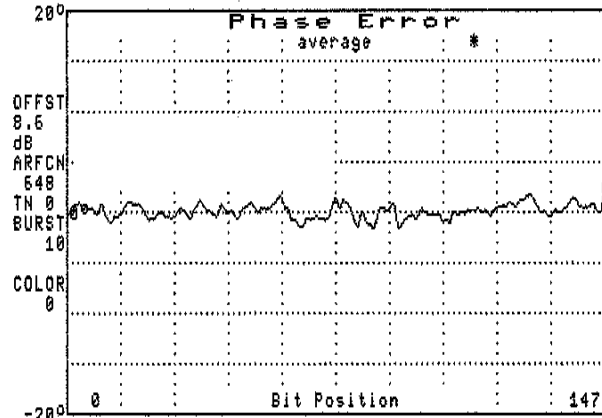
Physical Channel

Previous Menu L

14:01:15 AUG 30, 1999

REF 7.2 dBm AT 10 dB

PCS1900



REPEAT MEAS

NUMBER BURSTS

MEASURE AVG PKS

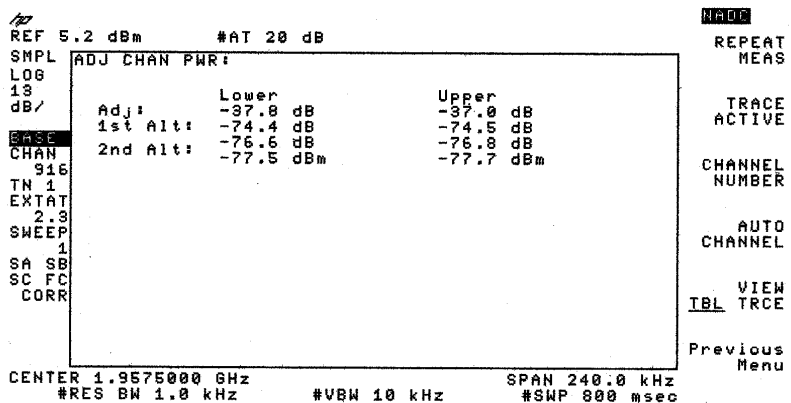
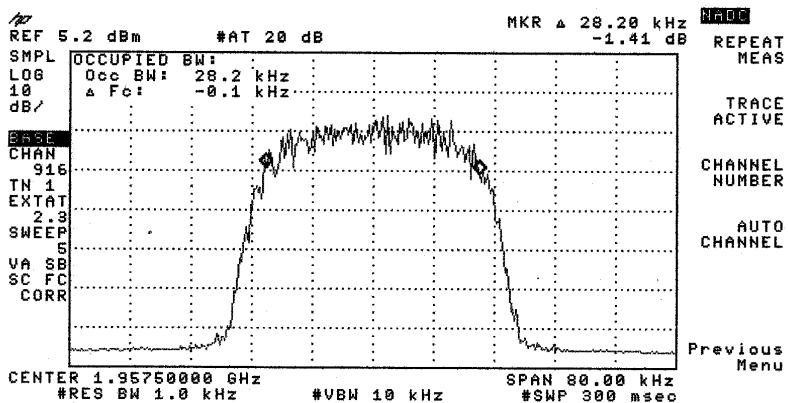
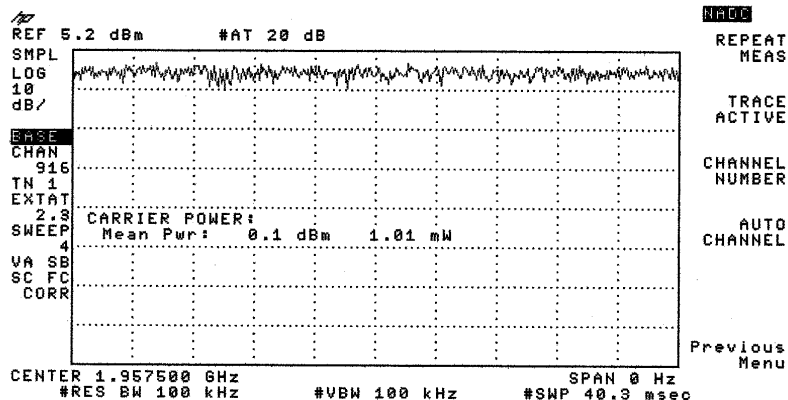
Zoom

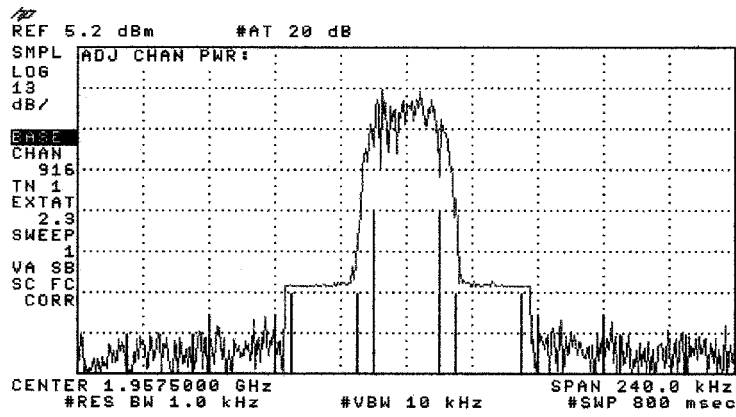
Physical Channel

Previous Menu

Status: SIGNAL Good FREQ 1957.400 MHz  
Phase: RMS: 2.0' Pk: 5.3' Error: 3 Hz

# TDMA B Band





REPEAT MEAS

TRACE ACTIVE

CHANNEL NUMBER

AUTO CHANNEL

VIEW TRCE

Previous Menu

STATISTICS for sample of 10 timeslots:

	Mean	Std dev	Max	Min
RMS EVM (%):	1.1	0.44	1.9	0.7
RMS MAG ERR (%):	0.7	0.03	0.8	0.6
RMS PHASE ERR (°):	0.4	0.34	1.0	0.0

RMS EVM Uncertainty (for N=10)

Temp. Range 20-30 °C:	1.5 %	> RMS EVM >	0.5 %
Temp. Range 0-55 °C:	1.5 %	> RMS EVM >	0.5 %

	Mean
ORIGIN OFFSET (dB):	-36.1
FREQUENCY ERROR (Hz):	1.7
DROOP (dB/symbol):	-0.0000

CHANNEL 916	FREQ 1957.50 MHz	SYNC WORD 1
BASE	TRIG FRAME	EVM CORR

MODULATN ACCURACY

SINGLE CONT

FULL PARTIAL

Demod Main

More 1 of 2

MODULATION ACCURACY: [single timeslot]

Measurement complete

RMS EVM:	1.1 %
RMS MAG ERR:	0.7 %
RMS PHASE ERR:	0.5 °
PEAK EVM:	6.9 %
ORIGIN OFFSET:	-37.4 dB
FREQUENCY ERR:	-9.0 Hz
DROOP (dB/sym):	0.0000

CHANNEL 916	FREQ 1957.50 MHz	SYNC WORD 1
BASE	TRIG FRAME	EVM CORR

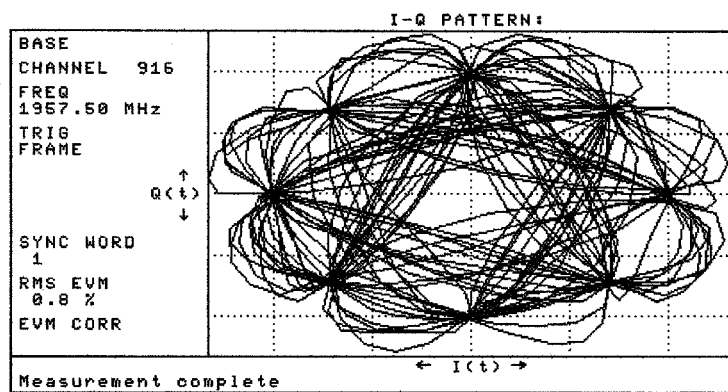
MODULATN ACCURACY

SINGLE CONT

FULL PARTIAL

Demod Main

More 1 of 2



**NRDC**

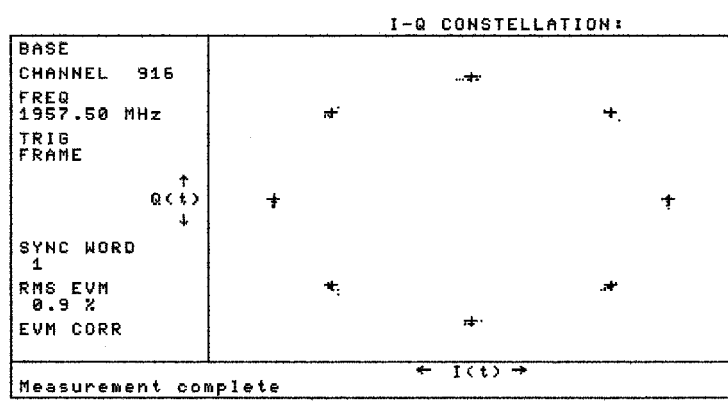
I-Q  
PATTERN

8 POINT  
CONSTLN

SINGLE  
CONT

SAV MEAS  
ON OFF

Demod  
Main



**NRDC**

I-Q  
PATTERN

8 POINT  
CONSTLN

SINGLE  
CONT

SAV MEAS  
ON OFF

Demod  
Main

**DIGITAL DEMODULATOR STATUS:**

BASE	FT Acquisition Status (1=OK):	1
CONT	FT Time Record Status:	0
CHANNEL 916	FT Acquisition Sync Number:	1
CF 1957.50 MHz	FT Acquisition Sync errors:	0
TRIG FRAME	FT Sync Bit Location:	36826
WRD SYNC ON	Measurement Status (0=OK):	0
TIMESLOT NUM 1	Measurement Time Record Status:	0
CORRECTION:	Time Slot (SYNC WORD) Number:	1
1.0457 °	Sync Match (1=PERFECT MATCH):	1
1.3706 %	Sync Word Errors:	0
DLP REV	Pass 1&2 Bit Compare Errors:	0
961021	IQ Null Flag:	1
DSP FW REV	IQ Null Count:	1
961027	Low Magnitude Points:	4
SA FW REV	RMS EVM (%):	0.7
980615	PEAK EVM (%):	5.7
	ORIGIN OFFSET (dB):	-35.2
	FREQUENCY ERROR (Hz):	1.8
	DROOP (dB/symbol):	-0.0000

**NRDC**

Modulatn

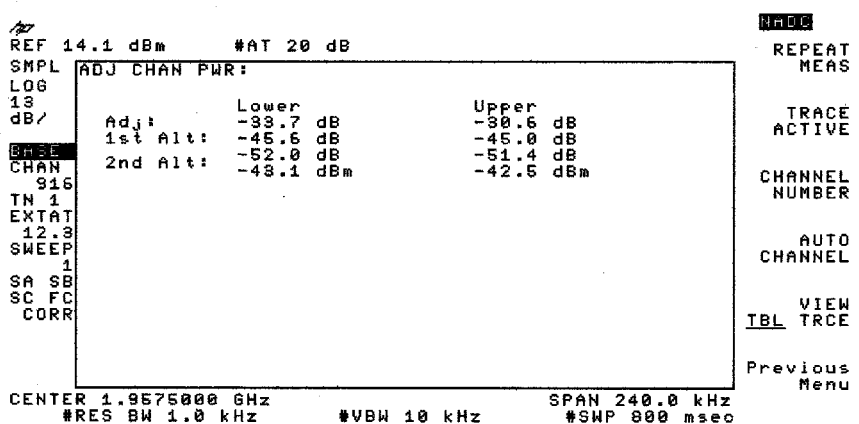
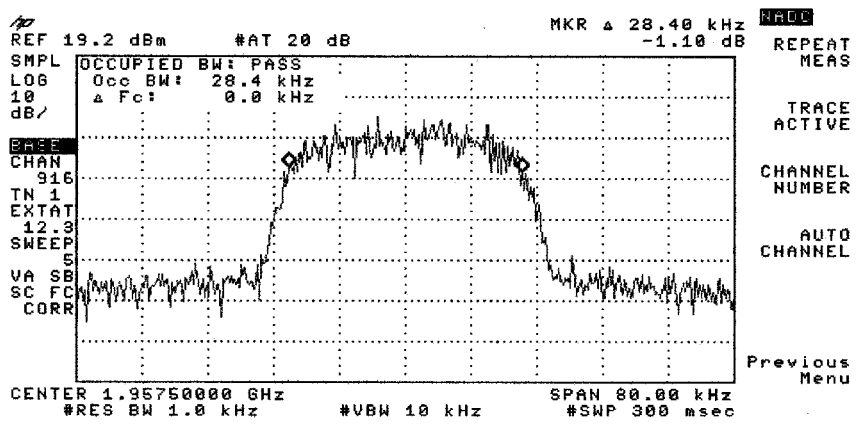
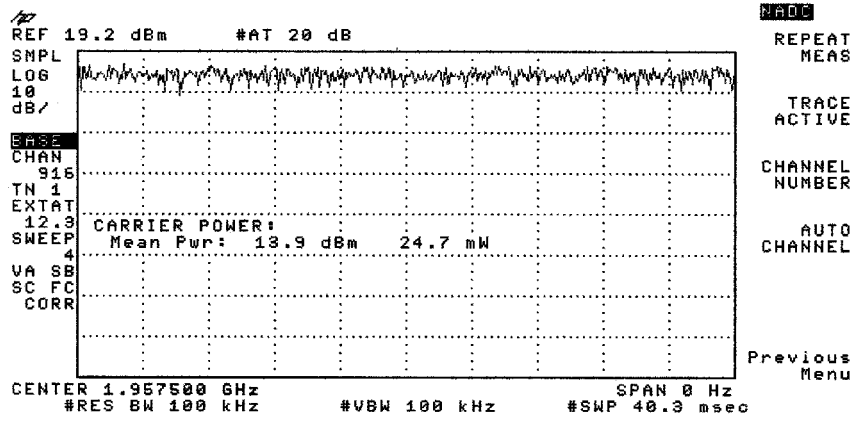
Graphs

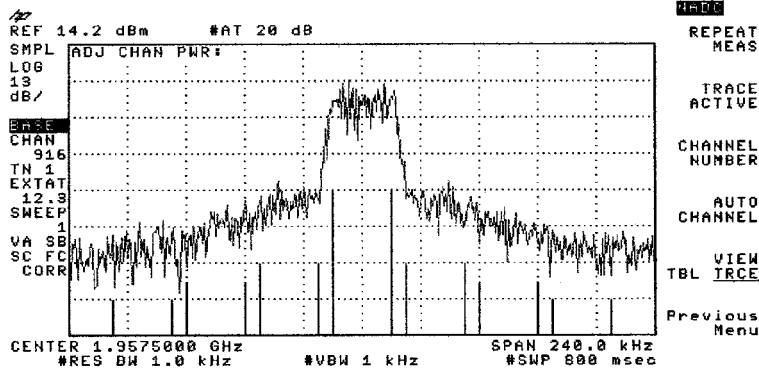
Data

STATUS

Demod  
Config

Main  
Menu





MODULATION ACCURACY: [single timeslot]  
 Measurement complete

RMS EVM:	1.2 %
RMS MAG ERR:	1.1 %
RMS PHASE ERR:	0.3 °
PEAK EVM:	7.1 %
ORIGIN OFFSET:	-37.0 dB
FREQUENCY ERR:	-7.6 Hz
DROOP (dB/sym):	-0.0000

CHANNEL 916	FREQ 1957.50 MHz	SYNC WORD 1
BASE	TRIG FRAME	EVM CORR

MODULATN ACCURACY  
 SINGLE CONT  
 FULL PARTIAL  
 Demod Main  
 More 1 of 2

STATISTICS for sample of 10 timeslots:

	Mean	Std dev	Max	Min
RMS EVM (%):	2.0	0.67	3.4	1.4
RMS MAG ERR (%):	1.1	0.13	1.4	1.0
RMS PHASE ERR (°):	0.9	0.44	1.8	0.5

RMS EVM Uncertainty (for N=10)

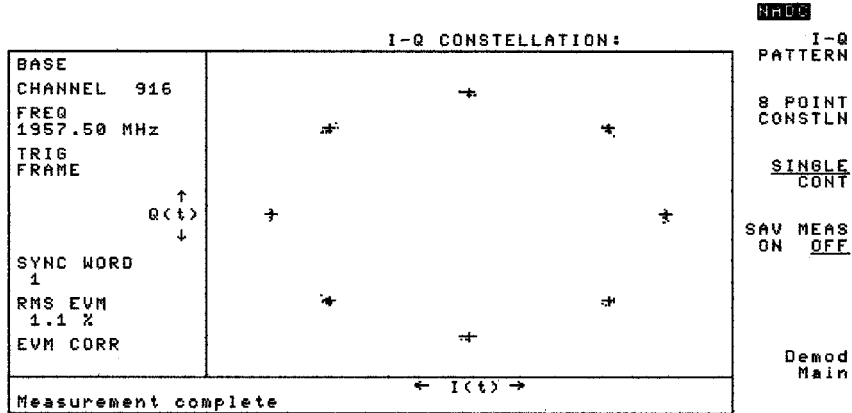
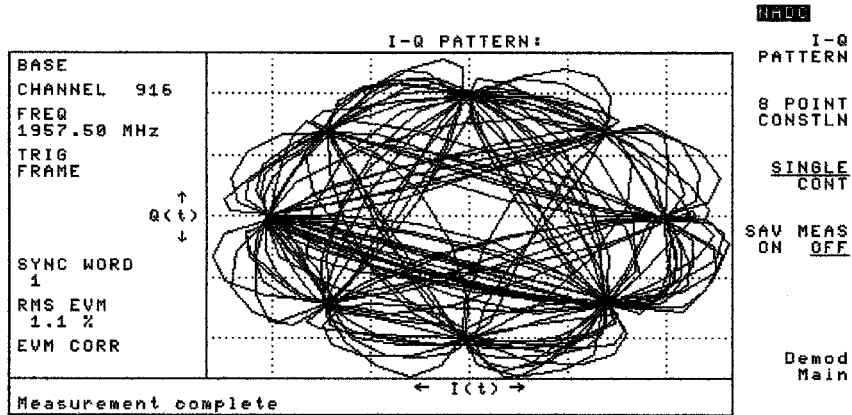
Temp. Range 20-30 °C:	2.7 % > RMS EVM >	1.0 %
Temp. Range 0-55 °C:	2.7 % > RMS EVM >	1.0 %

	Mean
ORIGIN OFFSET (dB):	-35.9
FREQUENCY ERROR (Hz):	2.1
DROOP (dB/symbol):	-0.0000

CHANNEL 916	FREQ 1957.50 MHz	SYNC WORD 1
BASE	TRIG FRAME	EVM CORR

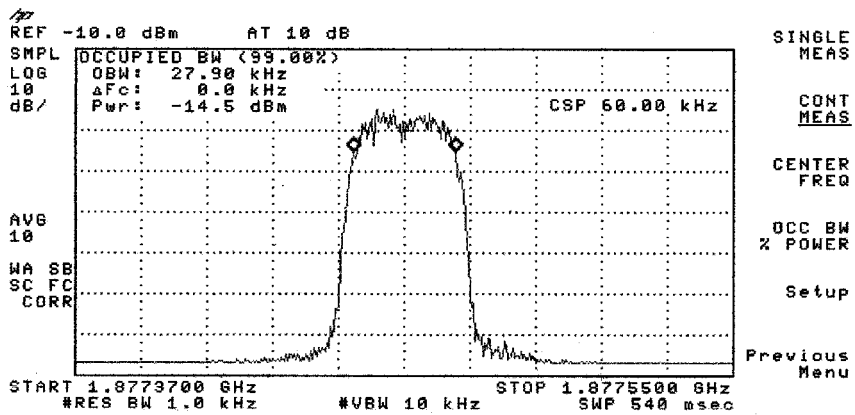
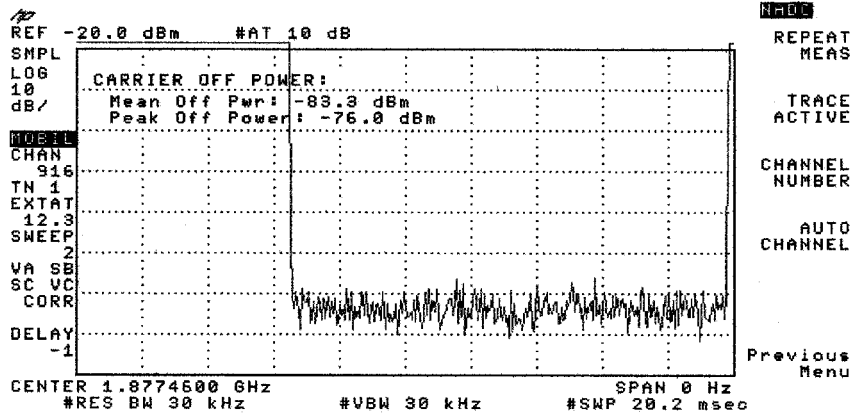
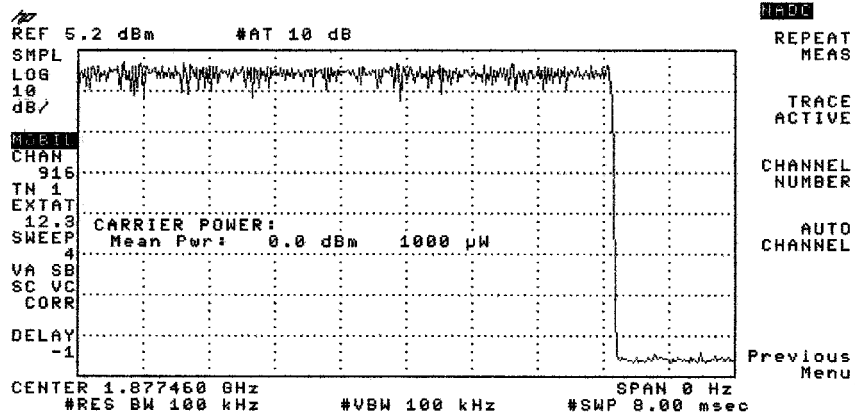
MODULATN ACCURACY  
 SINGLE CONT  
 FULL PARTIAL  
 Demod Main  
 More 1 of 2



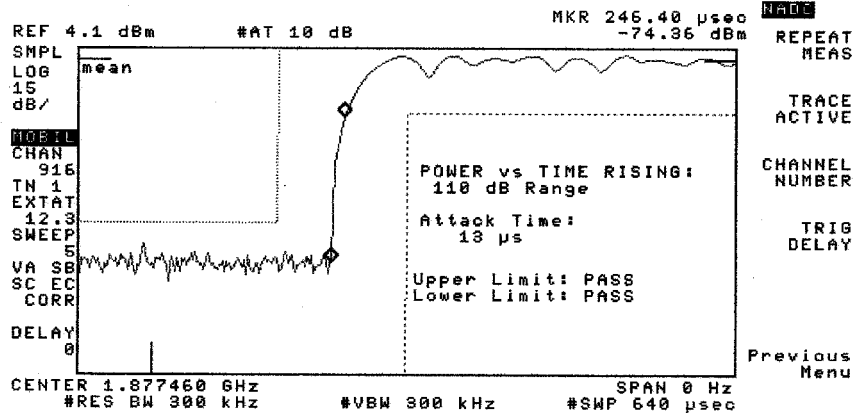
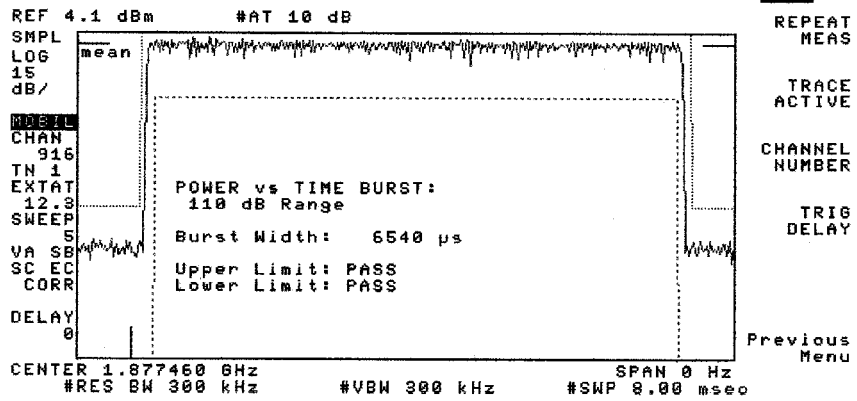
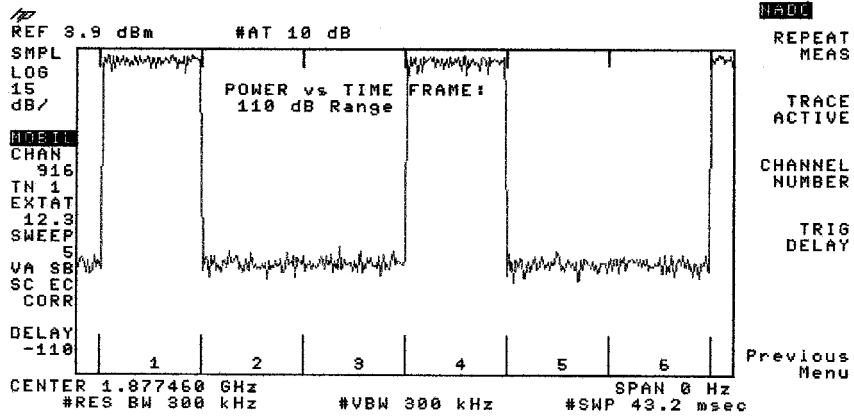


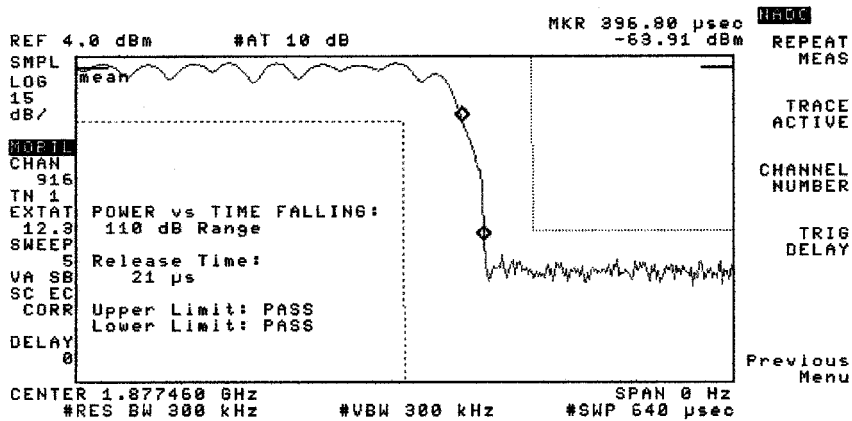
**DIGITAL DEMODULATOR STATUS:**

<p>BASE CONT</p> <p>CHANNEL 916 CF 1957.50 MHz</p> <p>TRIG FRAME NRD SYNC ON TIMESLOT NUM 1</p> <p>CORRECTION: 1.0457 ° 1.4547 %</p> <p>DLP REV 961021</p> <p>DSP FW REV 951027</p> <p>SA FW REV 980615</p>	<p>FT Acquisition Status (1=OK): 1 FT Time Record Status: 0 FT Acquisition Sync Number: 1 FT Acquisition Sync errors: 0 FT Sync Bit Location: 36826</p> <p>Measurement Status (0=OK): 0 Measurement Time Record Status: 0 Time Slot (SYNC WORD) Number: 1 Sync Match (1=PERFECT MATCH): 1 Sync Word Errors: 0 Pass 1&amp;2 Bit Compare Errors: 0 IQ Null Flag: 1 IQ Null Count: 1 Low Magnitude Points: 10</p> <p>RMS EVM (%): 1.1 PEAK EVM (%): 6.6 ORIGIN OFFSET (dB): -35.9 FREQUENCY ERROR (Hz): -5.7 DROOP (dB/symbol): 0.0001</p>	<p>Modulatn</p> <p>Graphs</p> <p>Data</p> <p>STATUS</p> <p>Demod Config</p> <p>Main Menu</p>
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\* +12.3 dB Atten





MODULATION ACCURACY: [single burst]

Measurement complete

RMS EVM:	1.9 %
RMS MAG ERR:	0.9 %
RMS PHASE ERR:	0.9 °
PEAK EVM:	13.9 %
ORIGIN OFFSET:	-34.0 dB
FREQUENCY ERR:	1.2 Hz
DROOP (dB/sym):	0.0000

CHANNEL	916	FREQ	1877.46 MHz	SYNC WORD	1
MOBILE		TRIG	FRAME	EVM CORR	

MODULATN ACCURACY

SINGLE CONT

FULL PARTIAL

1 BURST  
10 BURST

Demod Main

More 1 of 2

MODULATION ACCURACY: [10 symbol, 10 burst average]

Measurement complete

RMS EVM:	4.9 %
RMS MAG ERR:	0.8 %
RMS PHASE ERR:	2.8 °

[single (full) burst measured]:

ORIGIN OFFSET:	-34.1 dB
FREQUENCY ERR:	-3.3 Hz
DROOP (dB/sym):	0.0001

CHANNEL	916	FREQ	1877.46 MHz	SYNC WORD	1
MOBILE		TRIG	FRAME		

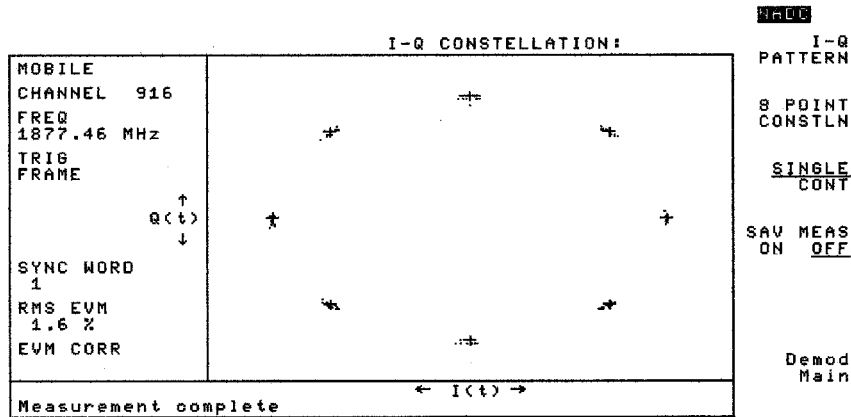
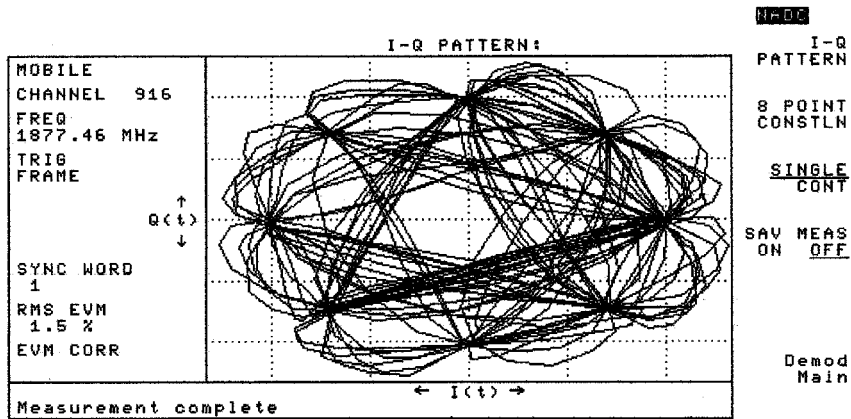
MODULATN ACCURACY

SINGLE CONT

1 BURST  
10 BURST

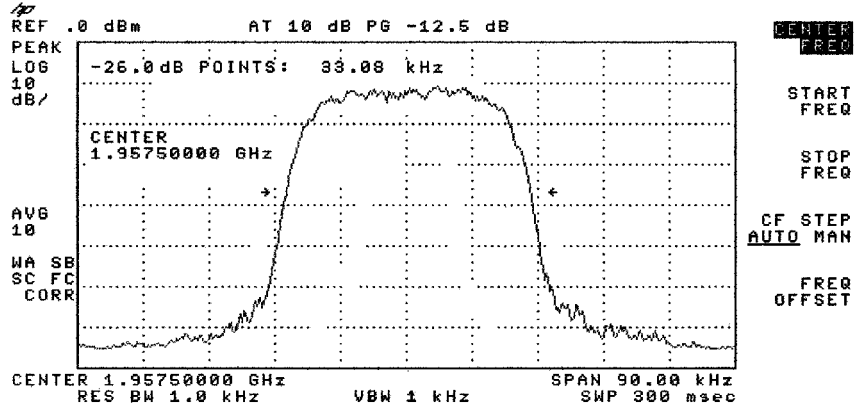
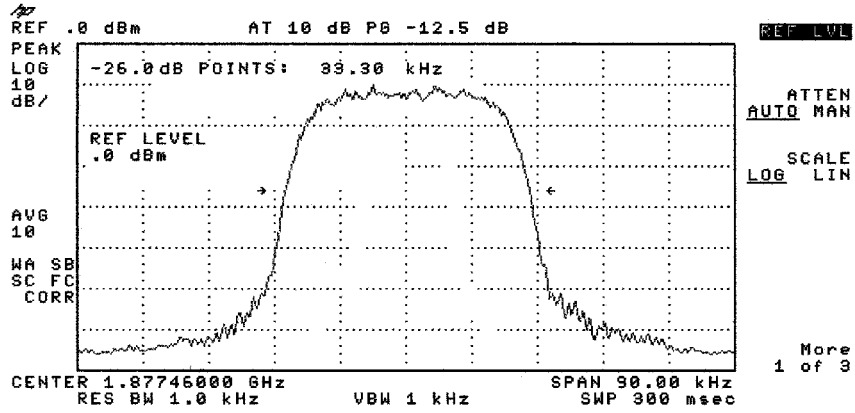
Demod Main

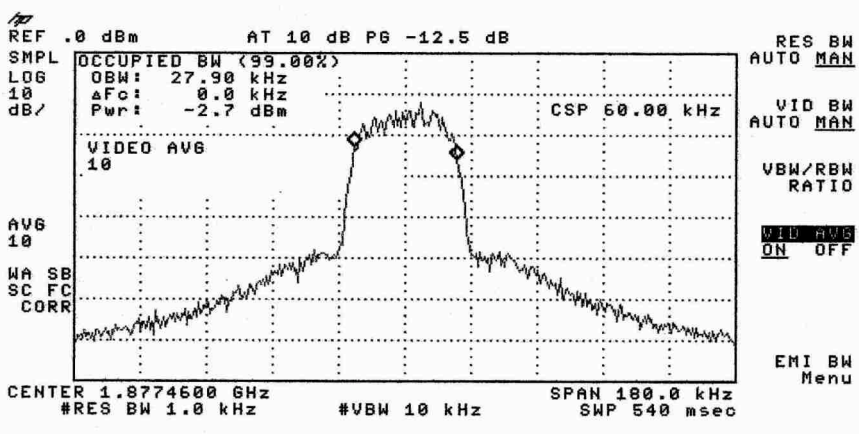
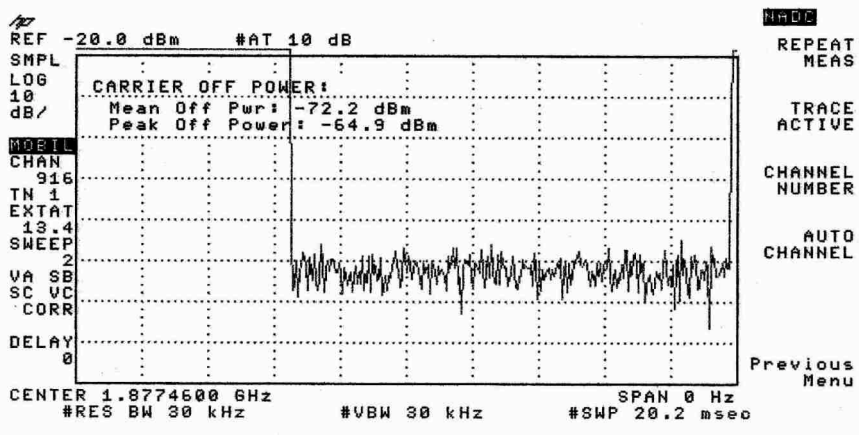
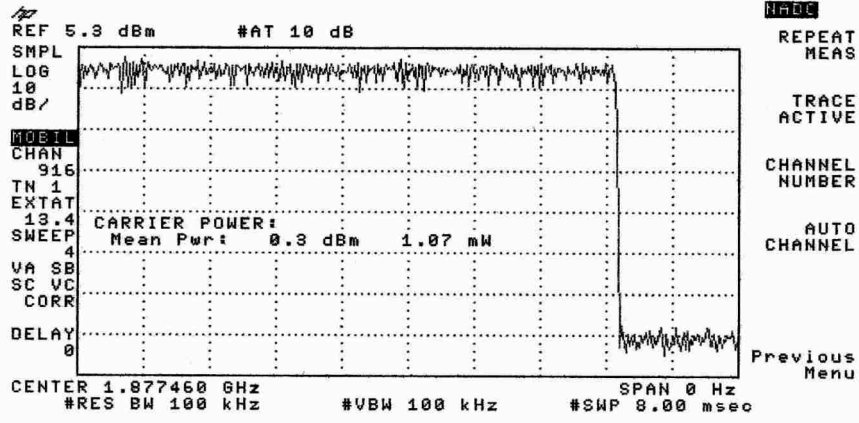
More 1 of 2

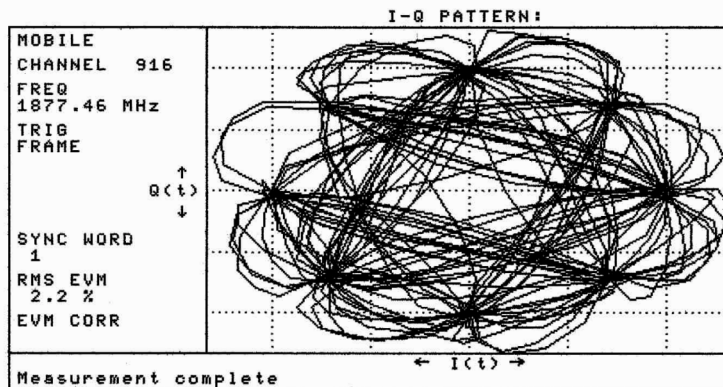


**DIGITAL DEMODULATOR STATUS:**

<b>MOBILE</b>	FT Acquisition Status (1=OK):	1	Modulatu  Graphs  Data  STATUS  Demod Config  Main Menu
<b>BURST</b>	FT Time Record Status:	0	
<b>CHANNEL 916</b>	FT Acquisition Sync Number:	1	
<b>CF 1877.46 MHz</b>	FT Acquisition Sync errors:	0	
<b>TRIG FRAME</b>	FT Sync Bit Location:	36798	
<b>WRD SYNC ON</b>	Measurement Status (0=OK):	0	
<b>TIMESLOT NUM 1</b>	Measurement Time Record Status:	0	
<b>CORRECTION:</b>	Time Slot (SYNC WORD) Number:	1	
1.0457 °	Sync Match (1=PERFECT MATCH):	1	
1.6750 %	Sync Word Errors:	0	
<b>DLP REV</b>	Pass 1&2 Bit Compare Errors:	0	
961021	IQ Null Flag:	1	
<b>DSP FW REV</b>	IQ Null Count:	1	
961027	Low Magnitude Points:	8	
<b>SA FW REV</b>	RMS EVM (%):	1.6	
980615	PEAK EVM (%):	7.3	
	ORIGIN OFFSET (dB):	-35.5	
	FREQUENCY ERROR (Hz):	-5.6	
	DROP (dB/symbol):	-0.0000	







**NADC**

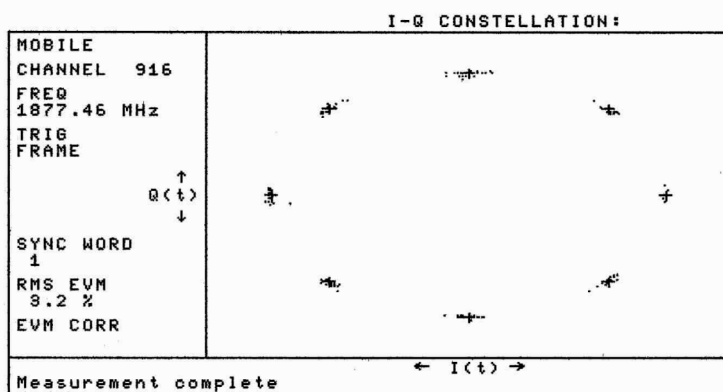
I-Q  
PATTERN

8 POINT  
CONSTLN

SINGLE  
CONT

SAV MEAS  
ON OFF

Demod  
Main



**NADC**

I-Q  
PATTERN

8 POINT  
CONSTLN

SINGLE  
CONT

SAV MEAS  
ON OFF

Demod  
Main

**DIGITAL DEMODULATOR STATUS:**

MOBILE	FT Acquisition Status (1=OK):	1
BURST	FT Time Record Status:	0
CHANNEL 916	FT Acquisition Sync Number:	1
CF 1877.46 MHz	FT Acquisition Sync errors:	0
TRIG FRAME	FT Sync Bit Location:	36798
WRD SYNC ON	Measurement Status (0=OK):	0
TIMESLOT NUM 1	Measurement Time Record Status:	0
CORRECTION:	Time Slot (SYNC WORD) Number:	1
1.0457 °	Sync Match (1=PERFECT MATCH):	1
1.6706 %	Sync Word Errors:	0
DLP REV	Pass 1&2 Bit Compare Errors:	0
961021	IQ Null Flag:	1
DSP FW REV	IQ Null Count:	1
961027	Low Magnitude Points:	9
SA FW REV	RMS EVM (%):	3.2
980615	PEAK EVM (%):	12.6
	ORIGIN OFFSET (dB):	-41.7
	FREQUENCY ERROR (Hz):	-5.9
	DROOP (dB/symbol):	0.0002

**NADC**

Modulatn

Graphs

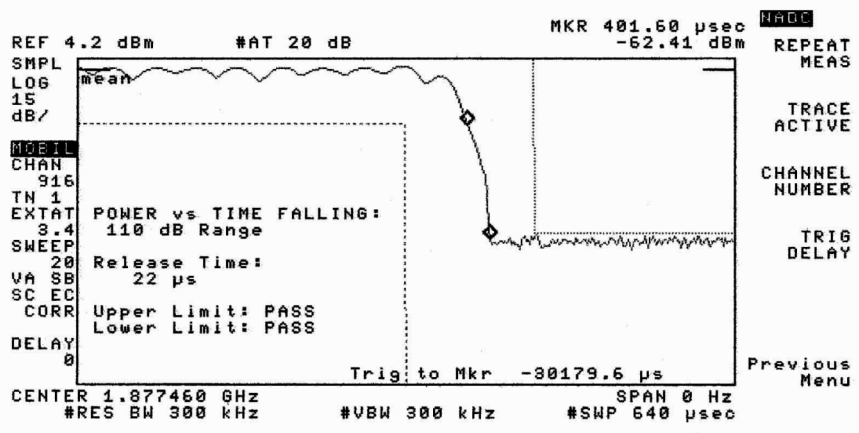
Data

STATUS

Demod  
Config

Main  
Menu





MODULATION ACCURACY: [single burst]

Measurement complete

RMS EVM:	1.8 %
RMS MAG ERR:	1.1 %
RMS PHASE ERR:	0.8 °
PEAK EVM:	8.4 %
ORIGIN OFFSET:	-35.1 dB
FREQUENCY ERR:	-2.6 Hz
DROOP (dB/sym):	-0.0001

CHANNEL 916	FREQ 1877.46 MHz	SYNC WORD 1
MOBILE	TRIG FRAME	EVM CORR

AVERAGE ON OFF

EVM CORR ON OFF

SAV MEAS ON OFF

Evm Cal

Demod Main

More 2 of 2

MODULATION ACCURACY: [10 symbol, 10 burst average]

Measurement complete

RMS EVM:	4.9 %
RMS MAG ERR:	1.0 %
RMS PHASE ERR:	2.8 °

[single (full) burst measured]:

ORIGIN OFFSET:	-36.5 dB
FREQUENCY ERR:	0.3 Hz
DROOP (dB/sym):	0.0003

CHANNEL 916	FREQ 1877.46 MHz	SYNC WORD 1
MOBILE	TRIG FRAME	

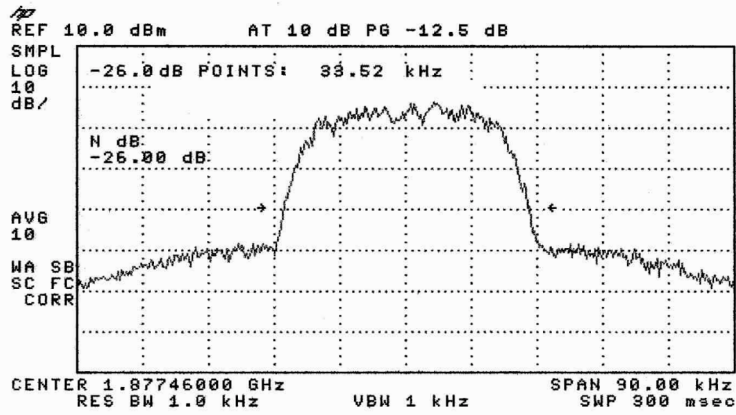
MODULATN ACCURACY

SINGLE CONT

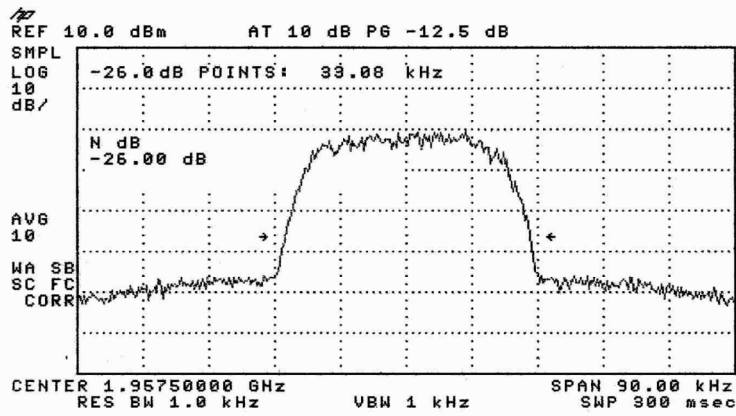
1 BURST 10 BURST

Demod Main

More 1 of 2



User  
 Menus  
 N dB PTS  
 ON OFF  
 % AM  
 ON OFF  
 TOI  
 ON OFF  
 Power  
 Menu  
 FFT  
 Menu



User  
 Menus  
 N dB PTS  
 ON OFF  
 % AM  
 ON OFF  
 TOI  
 ON OFF  
 Power  
 Menu  
 FFT  
 Menu