

## Specific RP Section Comments

### 4.1 Sensitivity

Recommended Spec : -83dBm to -8dBm  
Our proposal : -78dBm to -8dBm

We believe -83dBm is very difficult target to guarantee for 100% of production units.

We request changing the -83dBm to -78dbm to provide adequate margin.

### 4.4.1 Co-channel Rejection

#### Co-channel D/U Ratio

Recommended Spec : DTV interference into DTV : +15.5  
Our proposal : DTV interference into DTV : +16.5

Recommended Spec : NTSC interference into DTV : +2.5  
Our proposal : NTSC interference into DTV : +5

The +15.5/+2.5 limits are very difficult target to guarantee for all channels for 100% of production units.

We request WG to relax +15.5/+2.5 as much as possible.

### 4.5.3.1.1 Typical Echo Range

Recommended Spec : from -10us to +40us  
Our proposal : from -10us to +35us

### 4.5.3.1.2 Single Static Echoes Amplitude/Equalizer Profile

Recommended Spec : -10 to -5us : 5dB  
                          -5 to 0us : 2dB  
                          0 to 5us : 1dB  
                          5 to 10us : 2dB  
                          10 to 20us : 3dB  
                          20 to 35us : 6dB  
Our proposal : -10 to -5us :12dB  
                          -5 to 0us : 5dB  
                          0 to 5us : 2dB  
                          5 to 10us : 3dB  
                          10 to 20us : 6dB  
                          20 to 35us :12dB

We believe the RP limits may be possible for typical units. But, we request the above proposed margins for a 100% unit guarantee.

We would also like to delete the following sentence.

"The broken lines between -25us and -10us and between +40us and +50us represent suggested profiles outside the recommended minimum equalizer span range."

Because, these are out of recommended range, so it is no need to mention in this document.

## In Conclusion:

In general, if all existing RP recommended limits are met , the tuner and front-end IC circuits may be very costly, without a corresponding real performance benefit for the consumer.

## ATSC RP Performance Measurement Data

Apr. 2, 2004 measured by Panasonic

### Typical Yr 2004 Tuner and Front-end IC.

Shaded areas indicate problem areas.

Note: Even if typical Tuner - Front end meet the RP limit, some margin is necessary to satisfy the RP value for 100% of the production units.

#### 4.1 Sensitivity

	measured	specification
Sensitivity(dBm)	-82.7 to 0	-83 to -7

#### 4.4.1 Co-channel Rejection

	Weak Desired(-68dBm)		Moderate Desired(-53dBm)	
	measured	specification	measured	specification
DTV interference into DTV	13.8	15.5	14.8	15.5
NTSC interference into DTV	3.1	2.5	3.1	2.5

#### 4.4.2 First Adjacent Channel Thresholds

	Weak Desired(-68dBm)		Moderate Desired(-53dBm)		Strong Desired(-28dBm)	
	measured	specification	measured	specification	measured	specification
Lower DTV interference into DTV	-32.2	-33	-32.3	-33	<-20.3	-20
Upper DTV interference into DTV	-35	-33	-33	-33	<-21.3	-20
Lower NTSC interference into DTV	-35.7	-40	-36.7	-35	<-30.5	-26
Upper NTSC interference into DTV	-38.5	-40	-39.5	-35	<-30.7	-26

#### 4.4.3.1 DTV Interference into DTV

	Weak Desired(-68dBm)		Moderate Desired(-53dBm)		Strong Desired(-28dBm)	
	measured	specification	measured	specification	measured	specification
N+/-2	-34.1	-44	-35.1	-40	<-21.1	-20
N+/-3	-45	-48	-45	-40	<-22	-20
N+/-4	-46.6	-52	-46.6	-40	<-21.6	-20
N+/-5	-49.6	-56	-45.6	-42	<-20.6	-20
N+/-6	-51.6	-57	-44.6	-45	<-19.6	-20
N+/-13	-55.5	-57	-45.5	-45	<-20.5	-20
N+/-14	-53.3	-50	-44.3	-45	<-19.3	-20

#### 4.4.3.2 NTSC Interference into DTV

	Weak Desired(-68dBm)		Moderate Desired(-53dBm)		Strong Desired(-28dBm)	
	measured	specification	measured	specification	measured	specification
N+/-2	-39.2	-44	-39.2	-40	-	-20
N+/-3	-45.7	-48	-42.7	-40	-	-20
N+/-4	-47.7	-52	-42.7	-40	-	-20
N+/-5	-49.9	-56	-42.9	-42	-	-20
N+/-6	-50.2	-57	-43.2	-45	-	-20
N+/-13	-50.2	-57	-43.2	-45	-	-20

N+/-14	-50.4	-50	-43.4	-45	-	-20
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#### 4.5.3.1.2 Single Static Echos Amplitude / Equalizer Profile

delay (usec)	measured	specification
-10	15.5	5
-9	15.5	5
-8	15.5	5
-7	15.5	5
-6	15.5	5
-5	7.7	2
-4	7.5	2
-3	4.9	2
-2	3.4	2
-1	1.9	2
-0.5	1.1	2
0.5	0.4	1
1	0.4	1
2	0.6	1
3	2	1
4	2	1
5	0.8	1
6	1	2
7	1.4	2
8	1.4	2
9	1.4	2
10	1.8	2
11	1.6	3
12	1.8	3
13	2.4	3
14	2.2	3
15	2.2	3
16	2.6	3
18	2.4	3
20	2.8	3
22	3.2	6
24	4.6	6
26	4.2	6
28	4.2	6
30	4.4	6
32	4.6	6
34	4.6	6
36	4.6	6
38	3.8	6
40	3.8	6

#### 4.4.4 Burst Noise Performance

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**Various ATSC DTV Turner and front-end IC combinations from various Manufacturers**

<b>Approx. Yr. Made</b>	<b>circa 1999</b>	<b>circa 2000</b>	<b>circa 2001</b>	<b>circa . 2003</b>	<b>circa 2004</b>
Sensitivity	- 80 dBm	- 84 dBm	- 84 dBm	- 83 dBm	- 83 dBm
C/N	16.7	14.9	14.7	15.2	---
NTSC Co-CH	6.0 dB	10.0 dB	--- dB	1.0 dB	2.5 dB
Adjacent NTSC	- 42 dB	- 46 dB	- 42 dB	- 40 dB	- 35 dB
Static Multi-pass	--- dB @-1usec --- dB @0.1usec 6.0 dB @1usec 6.0 dB @6usec	4.0 dB @-1usec 0.6 dB @0.1usec 1.2 dB @1usec 5.7 dB @6usec	1.7 dB @-1usec 1.2 dB @0.1usec 1.8 dB @1usec 1.8 dB @6usec	2.2 dB @-1usec 0.0 dB @0.1usec 0.0 dB @1usec 0.1 dB @6usec	---
Dynamic Multi-pass @1usec	17.8 dB @ 2Hz 17.6 dB @ 5Hz --- dB @10Hz	3.7 dB @ 2Hz 4.8 dB @ 5Hz 5.9 dB @10Hz	2.0 dB @ 2Hz 2.3 dB @ 5Hz 2.9 dB @10Hz	0.7 dB @ 2Hz 0.5 dB @ 5Hz 1.2 dB @10Hz	---

--- No data measured