



Measurements on  
1300 Watt ATSC  
Digital TV Transmitter  
model AT71K3  
S/N: PG00006

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## 1 Introduction

This document presents the measurements performed on the equipment with the following characteristics:

- Model: AT71K3
- Output Power: 1470 W (before mask filter)
- Channel: 48 (677 MHz)

## 2 Measurements

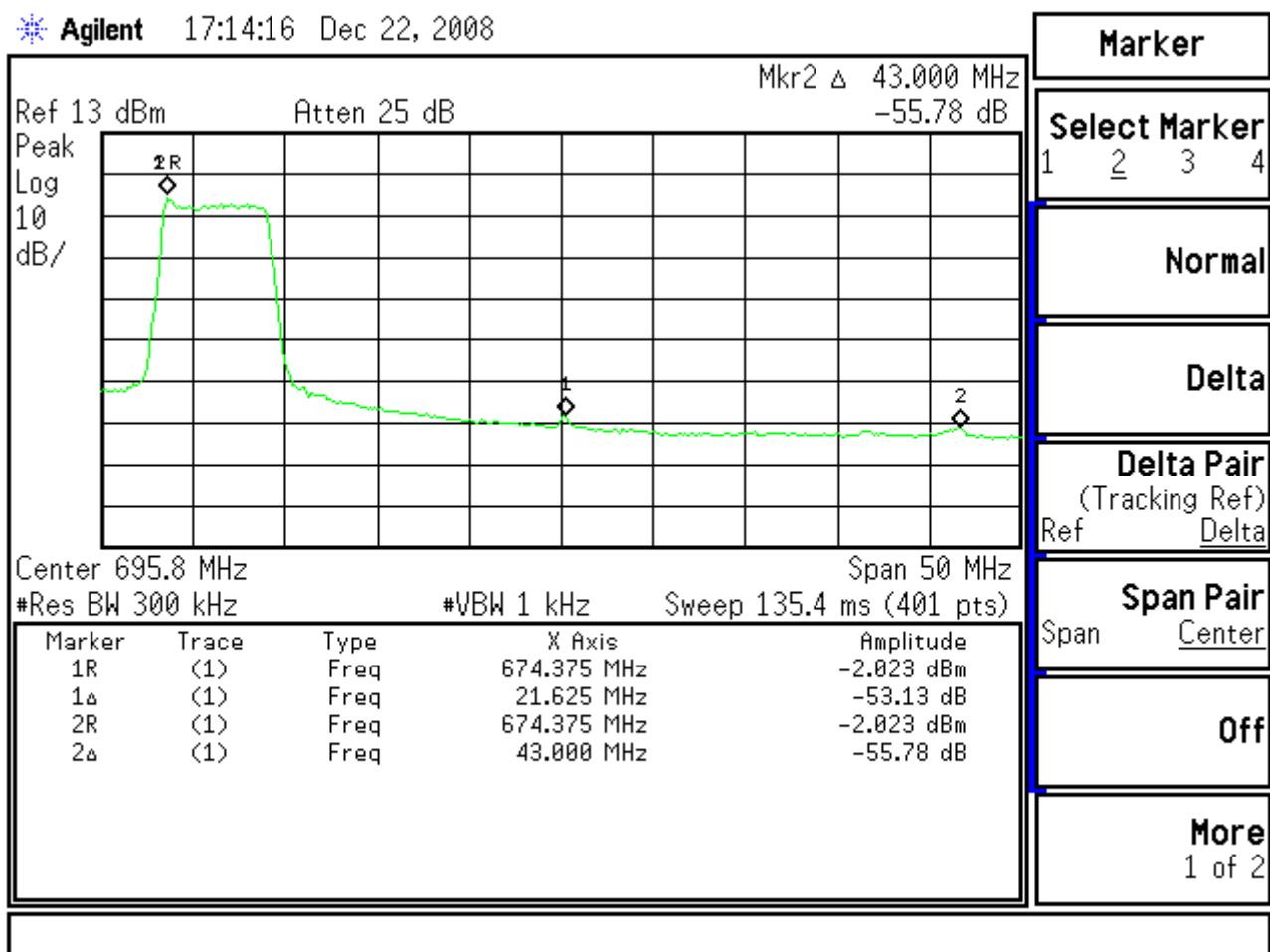


Figure 2-1. LO nulling and Image Cancelling

\* Agilent 17:12:16 Dec 22, 2008

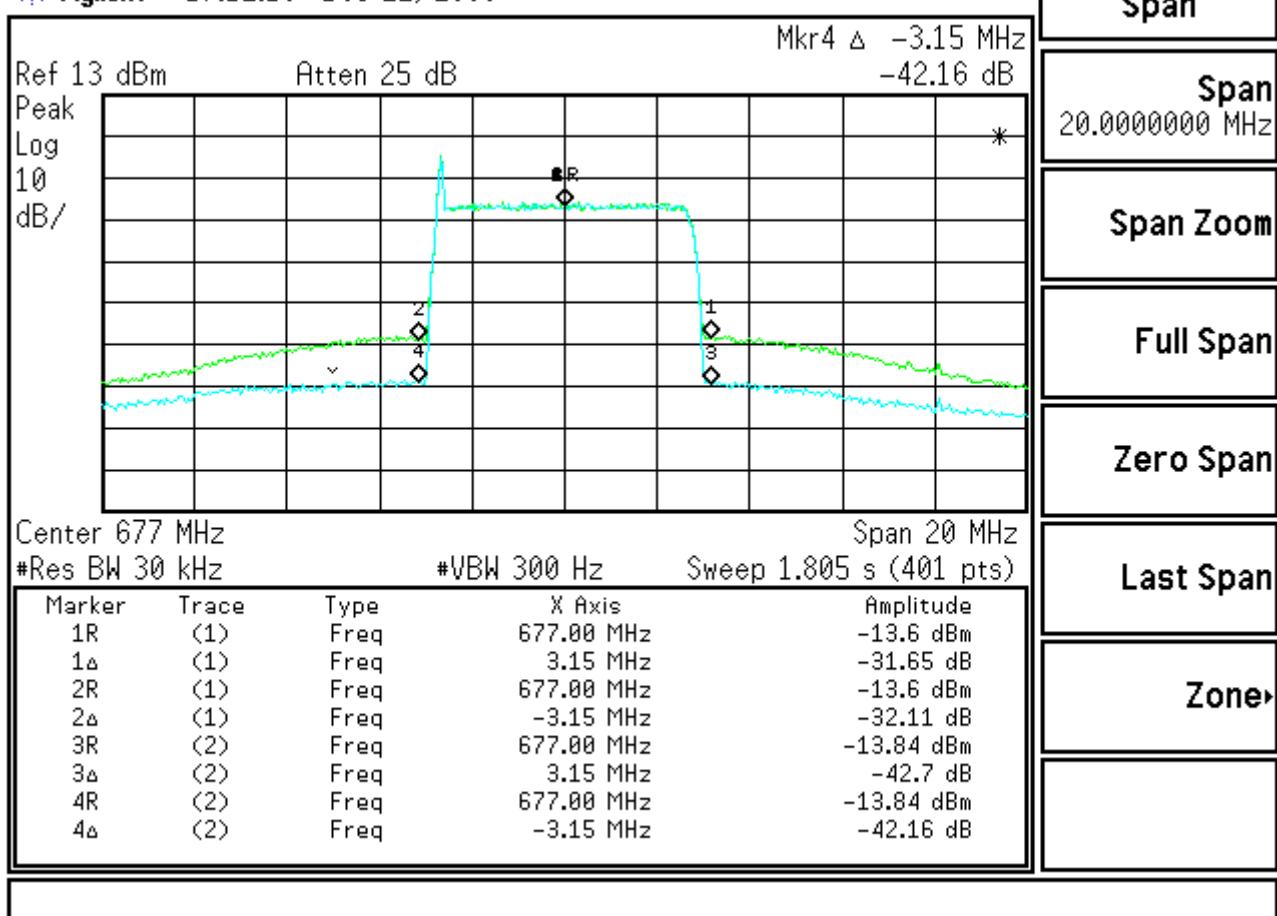


Figure 2-2(a). Output Spectrum with and without DPD

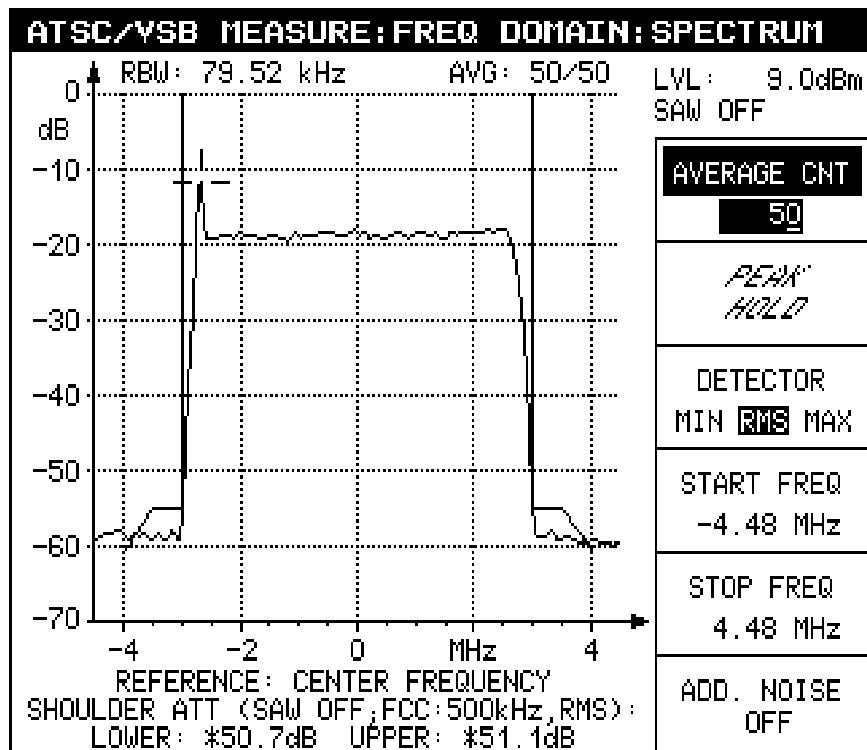


Figure 2-2(b). Channel spectrum before mask filter with DPD

ATSC/VSB MEASURE			
CENTER FREQ <b>677.00 MHz</b>	CHANNEL <b>48</b>	ATTEN : 55 dB <b>9.1 dBm</b>	
SET CENTER FREQ	677.0000000 MHz	CONSTELL DIAGRAM...	
SET PILOT FREQ	674.3094406 MHz		
CALC PILOT FREQ	674.3095497 MHz		
PILOT FREQ OFFSET	109.1 Hz	FREQUENCY DOMAIN...	
SYMBOL RATE OFFSET	1.7 Hz		
MODULATION	8VSB		
MER (REAL,RMS)	29.7 dB	TIME DOMAIN...	
MER (REAL,RMS)	3.23 %		
BER BEFORE RS	0.0E-7 (9/10)	VSB PARA- METERS...	
BER AFTER RS	0.0E-6 (7/10)		
SEG ERR RATIO	0.0E-4 (7/10)		
SEG ERR / s	00000	RESET BER	
TS BIT RATE	19.393 Mbit/s		
SAW:OFF		ADD. NOISE OFF	

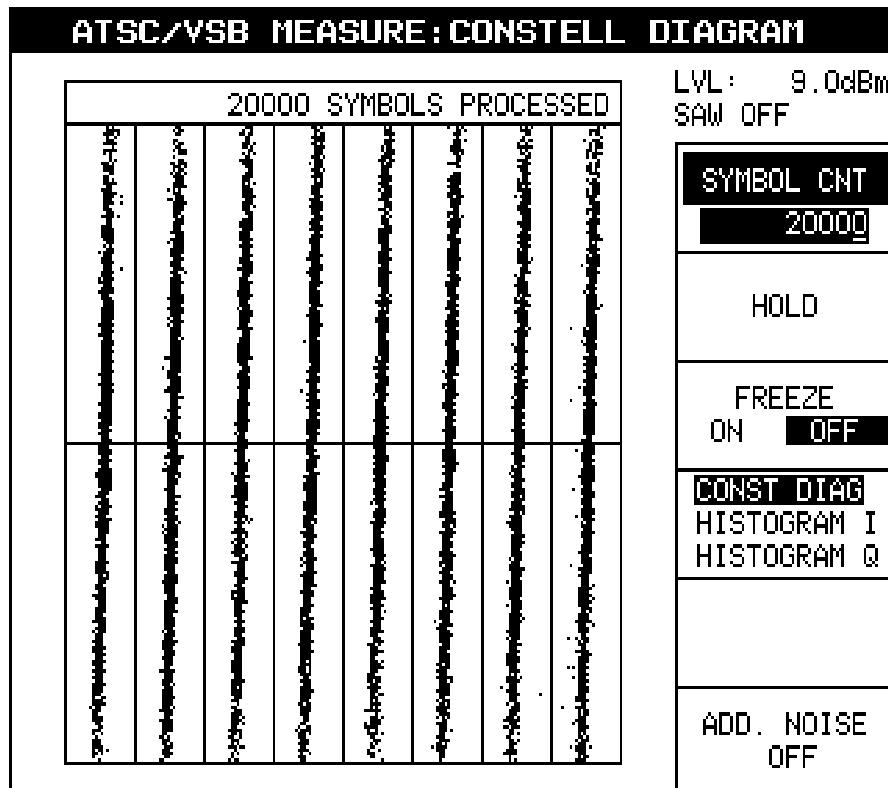
Figure 2-3(a). MER before mask filter without DPD (receiver equalizer OFF) and frequency measurement

ATSC/VSB MEASURE			
CENTER FREQ <b>677.00 MHz</b>	CHANNEL <b>48</b>	ATTEN : 55 dB <b>8.9 dBm</b>	
SET CENTER FREQ	677.0000000 MHz	CONSTELL DIAGRAM...	
SET PILOT FREQ	674.3094406 MHz		
CALC PILOT FREQ	674.3095429 MHz		
PILOT FREQ OFFSET	102.3 Hz	FREQUENCY DOMAIN...	
SYMBOL RATE OFFSET	1.6 Hz		
MODULATION	8VSB		
MER (REAL,RMS)	31.3 dB	TIME DOMAIN...	
MER (REAL,RMS)	2.71 %		
BER BEFORE RS	0.0E-8 (30/100)	VSB PARA- METERS...	
BER AFTER RS	0.0E-7 (24/100)		
SEG ERR RATIO	0.0E-5 (24/100)		
SEG ERR / s	00000	RESET BER	
TS BIT RATE	19.393 Mbit/s		
SAW:OFF		ADD. NOISE OFF	

Figure 2-3(b). MER before mask filter with DPD (receiver equalizer OFF).

ATSC/VSB MEASURE			
CENTER FREQ <b>677.00 MHz</b>	CHANNEL <b>48</b>	ATTEN : 55 dB <b>9.0 dBm</b>	
SET CENTER FREQ 677.0000000 MHz			CONSTELL DIAGRAM...
SET PILOT FREQ 674.3094406 MHz			
CALC PILOT FREQ 674.3095442 MHz			
PILOT FREQ OFFSET 103.6 Hz			
SYMBOL RATE OFFSET 1.7 Hz			
MODULATION 8VSB			
MER (REAL,RMS) 38.3 dB			
MER (REAL,RMS) 1.20 %			
BER BEFORE RS 0.0E-8 (21/100)			
BER AFTER RS 0.0E-7 (17/100)			
SEG ERR RATIO 0.0E-5 (17/100)			
SEG ERR / s 00000			
TS BIT RATE 19.393 Mbit/s			
SAW:OFF			
			ADD. NOISE OFF

Figure 2-3(c). MER before mask filter with DPD (receiver equalizer ON).



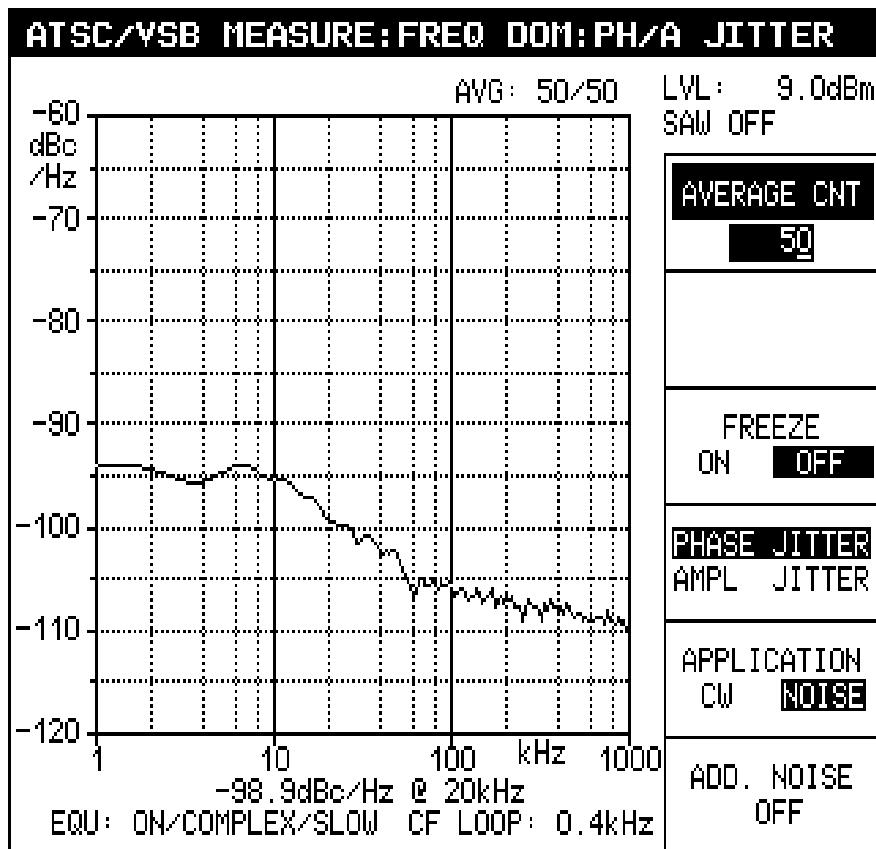


Figure 2-5. Carrier phase noise

### 3 Test Equipment

The test equipment used is listed in table 3-1.

Table 3-1. Test Equipment

Model	Manufacturer	Description	Serial #
EFA	Rohde Schwarz	TV Test Receiver	100144
E4403B	Agilent	Spectrum Analyzer	MY45102038