



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

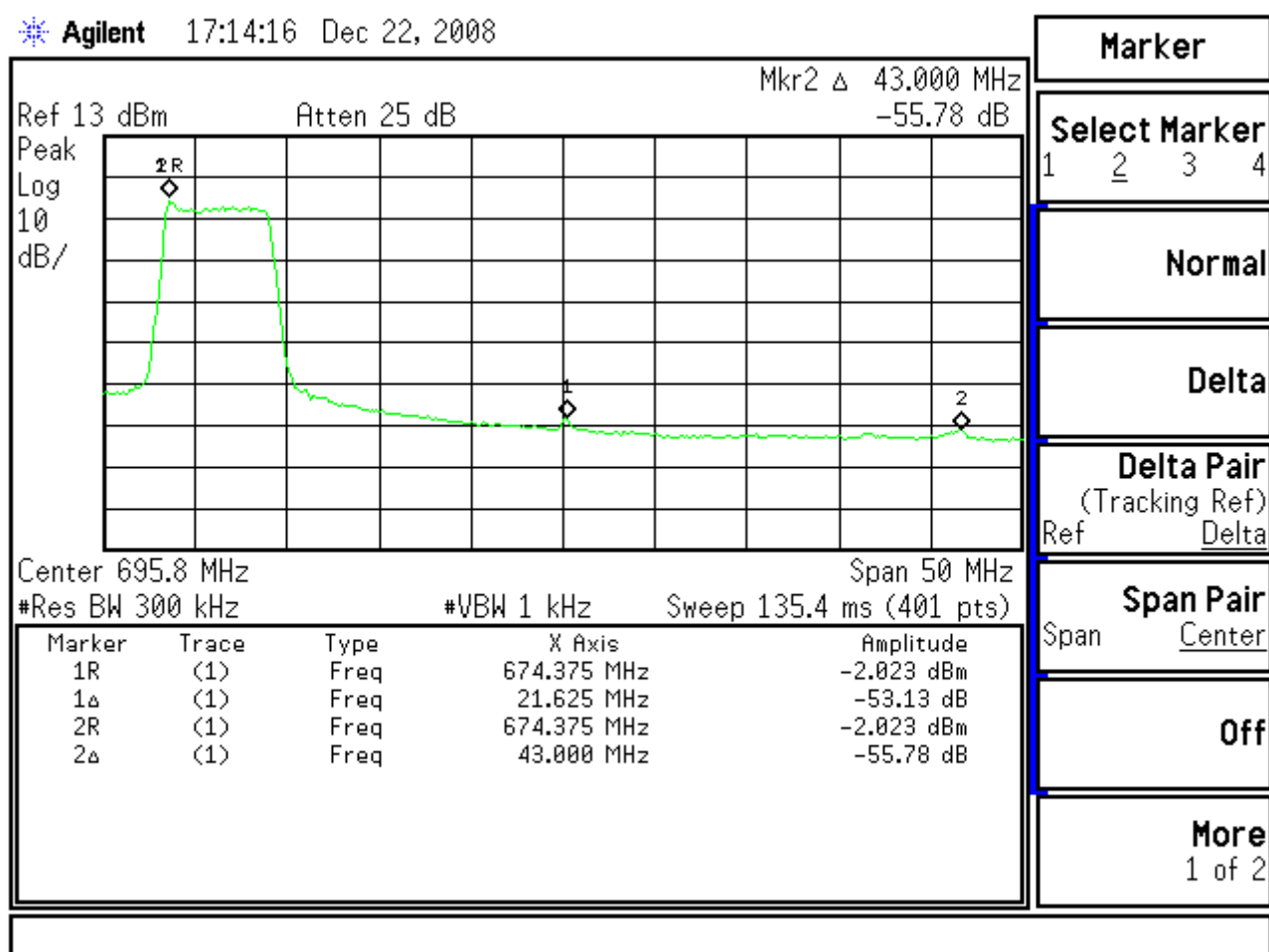


Figure 2-1. LO nulling and Image Cancelling

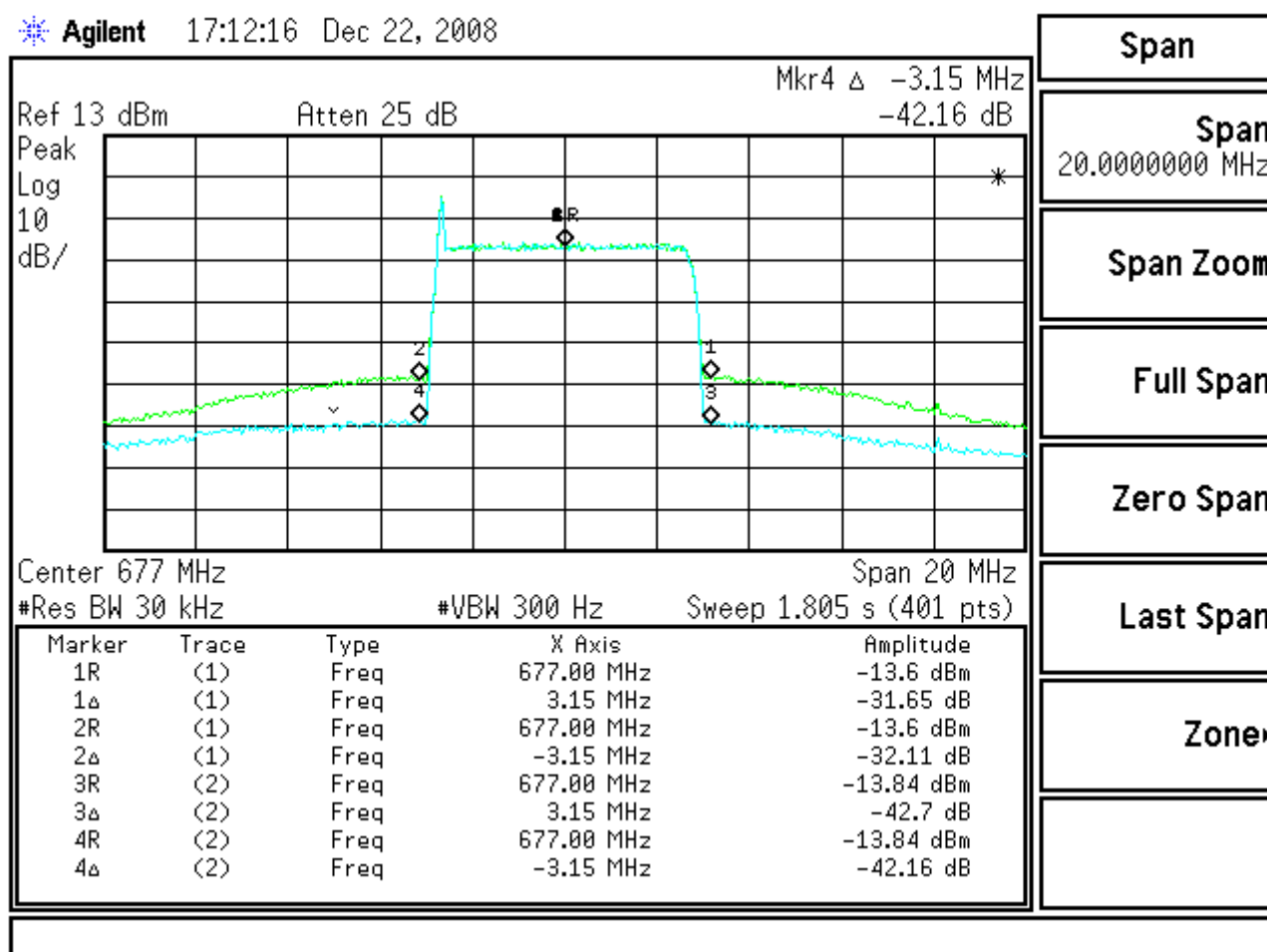


Figure 2-2(a). Output Spectrum with and without DPD

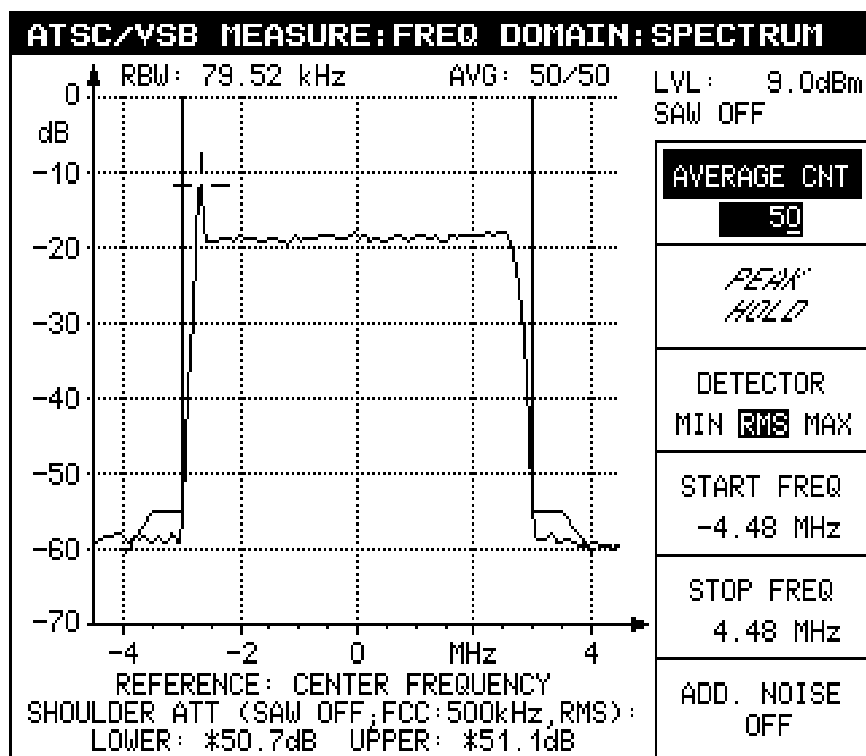


Figure 2-2(b). Channel spectrum before mask filter with DPD

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

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

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

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

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

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

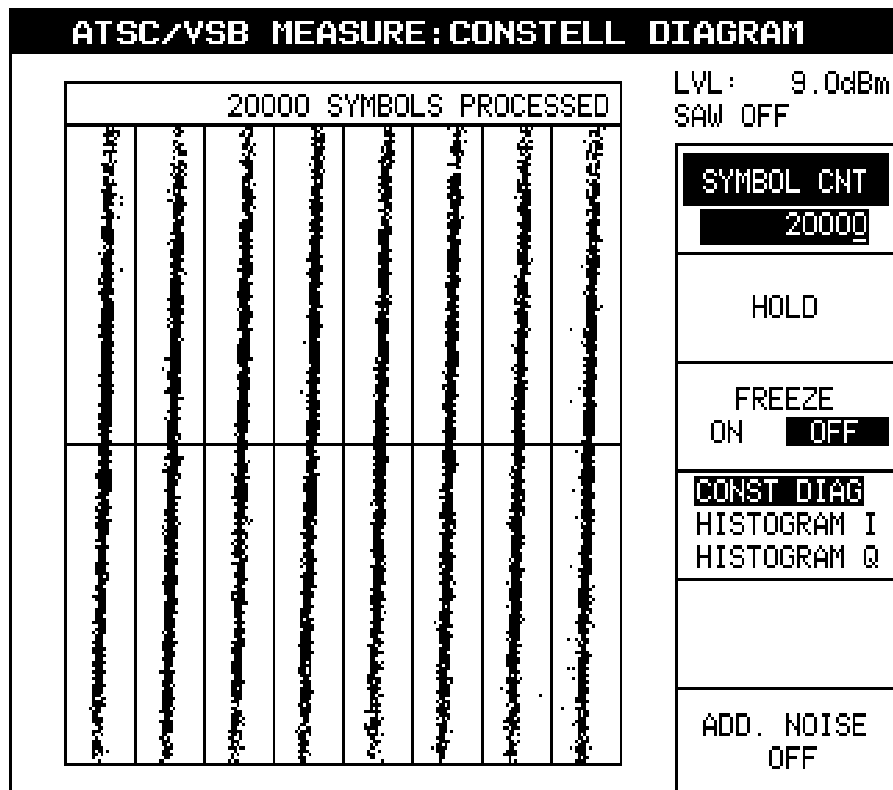


Figure 2-4. Constellation Diagram before mask filter with DPD (receiver equalizer OFF)

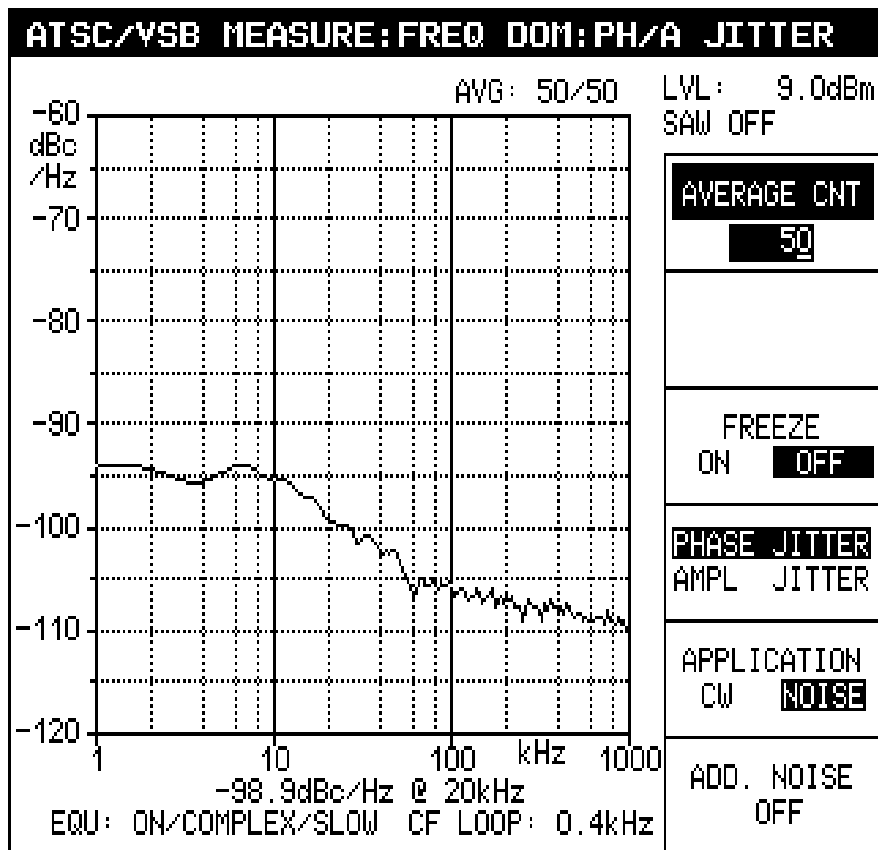


Figure 2-5. Carrier phase noise

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