

Maxiva™ ATSC Spectrum Restorer

Regenerative ATSC On-Channel SFN Repeater/Gap-Filler



GatesAir's new Maxiva™ ATSC Spectrum
Restorer provides the capability to add an
on-channel SFN gap-filler to an existing
ATSC/8-VSB transmission system. The
Equalized Digital On-Channel Repeater
(EDOCR) technology coupled with a
highly-effective echo-cancellation system
provides unparalleled performance. This
unique design from Gates Air incorporates
extremely fast signal demodulation, errorcorrection and remodulation, to effectively
maintain critical SFN timing, while providing
top-quality SNR/MER performance.

The ATSC Spectrum Restorer assures maximum flexibility in network design, providing the highest signal quality at any target receive location, whether it is served by the main transmitter, or by the Spectrum Restorer.

The GatesAir ATSC Spectrum Restorer, provides an input sensitivity of -72dBm and an effective echo-cancellation of up to 40dB.

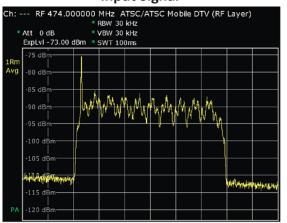
The ATSC Spectrum Restorer is an option that can be added (at the time of order) to any of our Maxiva 1 RU Ultra-Compact Translator systems (15W to 150W) and comprises a replacement Modulator, RF input module and software.

Product Features

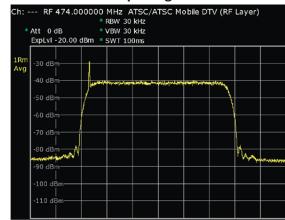
- Compact 1 RU 19" rack chassis
- Power levels as per standard Maxiva™ Ultra-Compact series product range: 15W to 150W
- High adjacent channel rejection
- Low multi-hop noise/error accumulation provided by the Equalizer with Short Viterbi correction slicer
- Input sensitivity to -72dBm and Echo Cancellation of up to 12dB over the main Rf signal
- 4 μS pre-equalizer and 36 μS postequalization for Multipath and ACI

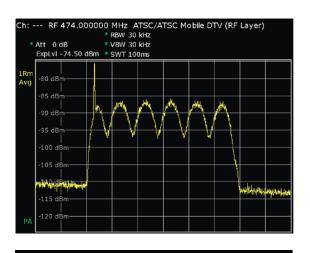
- Equipment latency ~24 μS with Linear precorrection and pre-equalization, otherwise ~16 μS
- Optional internal demodulator with equalizer for regenerative Translators
- Linear pre-correction Adaptive Direct Learning FIR with 96 taps
- Non-Linear Adaptive Pre-distortion module with "memory-effect" compensation for Doherty high-efficiency final PA stage
- Includes SNMP, Web Interface and Touch Screen LCD display

Input Signal



Output Signal







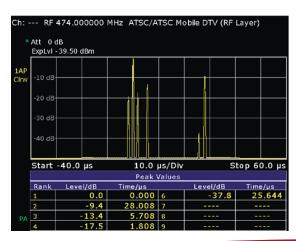
Ch: RF 474.000000 MHz ATSC/ATSC Mobile DTV (RF Layer) * RBW 30 kHz * Att 0 dB * VBW 30 kHz Expl.vl -20.00 dBm * SWT 100ms									
1Rm Avg	-30 dBm								
	-50 dBm-								
	-70 dBm	h.							
	-90 dBm	Antonionista							
	-110 dBm-								





* Att 20 dB ExpLvI -19.50 dBm				
MER (rms)			39.1	dB
Pass	Limit <	Results	< Limit	Unit
Level	-60.0	-18.7	10.0	dBm
Constellation		8VSB / Normal		
MER (rms)	24.0	39.1		dB
MER (peak)	10.0	22.3		dB
EVM (rms)		0.72	4.40	%
EVM (peak)		5.02	22.00	%
BER before RS		2.5e-5(10/10)	2.0e-4	
BER after RS		0.0e-8(198/1K00)	1.0e-10	
Packet Error Ratio		0.0e-6(198/1K00)	1.0e-8	
Packet Errors		0	1	/s
Carrier Freq Offset	-30000.0	-640.4	30000.0	Hz
Symbol Rate Offset	-10000.0	-4.1	10000.0	Symb/s

Ch: --- RF 474.000000 MHz ATSC/ATSC Mobile DTV (RF Layer)





	Ch: RF 474.000000 MHz ATSC/ATSC Mobile DTV (RF Layer) * Att 0 dB Explvi -20.00 dBm									
1AP Clrw	-10 dB-									
	-20 dB-									
	-40 dB		6.0.	o (Div		ton 43.0 us				
	Start -18.0 µs 6.0 µs/Div Stop 42.0 µs Peak Values									
	Rank	Level/dB	Time/µs		Level/dB	Time/µs				
	1	0.0	0.000							
	3			7 8						
	4			9						