TECHNICAL BULLETIN

N. 26 November 2018

This month:

TV REPACKING

NicomUsa Inc is not just about FM Broadcasting. Since the very beginning, it has had ties to TV equipment such as transmitters and antennas. In this monthly technical bulletin, I want to talk about one of the most complicated issues concerning the Television Spectrum Repacking. As you probably know, the upper part of the UHF band has been given away through auction to Cell phone companies. This shows the ever changing landscape of technology with in America and abroad.

The stations that had been broadcasting in those channels have been moved to the lower part of the band with other stations that were already broadcasting there. This move must be meticulously coordinated to minimize interference between transmitters. The Repack timeline has been thoughtfully planned as gradual process through a certain number of phases. The 600 band is gone forever and we are now facing multiple adjustments that can bring many changes to the antenna and transmitter systems.

What is Nicom doing about this?

Most of the stations affected with this change will need to redo their antenna system because they have been using narrow band antennas. These only cover their particular channel. At Nicom, we have always thought that a wide band antenna system (like for FM) is best. This is because when moments like this happen the antenna can still perform well. We also believe that dependable antennas should be sturdy, and well protected with a fiberglass radome. From the antenna specs displayed down below, you can see that the whole UHF band is covered by the same panel. You can also see the gain supplied by the 8 dipoles enclosed inside the radome. (Most panels are made with a big fiberglass circuit with dipoles printed on it and coupled still with a circuit designed on the

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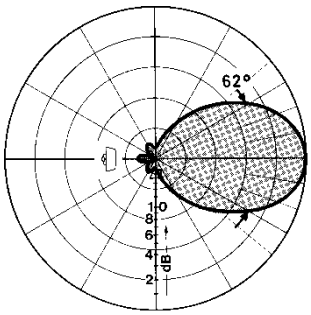
fiberglass.) Our panel has 8 solid copper elements which provide high gain and durability. The back of the panel that is the only partially exposed to the elements is made with stainless steel for long lasting performance. The antenna comes with a 7/16 DIN connector because every panel can handle up to 1500W.

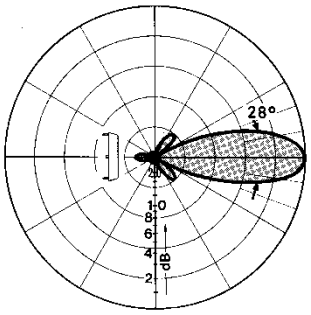
Not only do we beat the completion with this design; we are also very competitively priced. In working with the low power market all of these years; we know that low power TV projects, like FM do not come with big budgets.

TECHNICAL SPECIFICATIONS

Antenna type	4 dipole panel antenna	Radiation H plane	62º -3 dB
Frequency range	470-890 MHz	Radiation V plane	28º -3 dB
Bandwidth	420 MHz	Lightning protection	all parts grounded
Impedance	50 ohms	Max wind velocity	140 mph (225 km/h)
Connectors	7/16" 1.5 KW max	Wind load (@100mph)	front/ 180 lbs lat.55 lb
		Materials (external)	stainless steel
Radome	fiberglass		
Polarization	horizontal	Mounting	from 2" to 4"
Center Band Gain	11.5 dB ref to ½ wave dipole	Weight	40 Lbs (18 kg)
Max VSWR	-20 dB	Dimensions	42"×18"×9"



Horizontal



Vertical

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Nicom TV transmitters and transponders

Nicom is a company that specializes in small to medium power transmitters. We offer the same range of power and antennas for TV as well. The DTV Series is an amazing achievement as it combines a complete transmitter with an output power of up to 150W with multiple interfaces in a single 1U 19” rack chassis. This is rather good and unique engineering work in the current TV market. This little transmitter is supporting ATSC, ISDB-T/Tb,DVB-T/H/T2, PAL and NTSC modulations (dual cast Analog and Digital also supported). It offers adaptive pre-correction circuits and a built in GPS/GLONASS receiver for accurate synchronization and SFN operations. NTV Transmitter is one of Nicom’s amazing achievements, as it combines a complete transmitter with output power up to 150W rms or 250W p.s. and multiple input interfaces in a single 1U 19” rack chassis. This astonishing engineering is an unequaled solution in our market.

This picture shows the simple TV transmitter with a slot with 4 ASI input. On the left there is another slot that can accommodate more options.

This picture shows the same unit in a repeater configuration. The software can be managed directly via the USB port or through the Ethernet connector via remote. Options are:

- 4 x ASI inputs (TS, BTS, T2MI, SMPTE-310M) + Analog input
- 2 x ASI inputs and 2 x Gigabit Ethernet
- 4 x ETI or 2 x ETI + 2 x EDI inputs
- 1 x DVB-S/S2 Satellite Receiver input
- 1 x RF input

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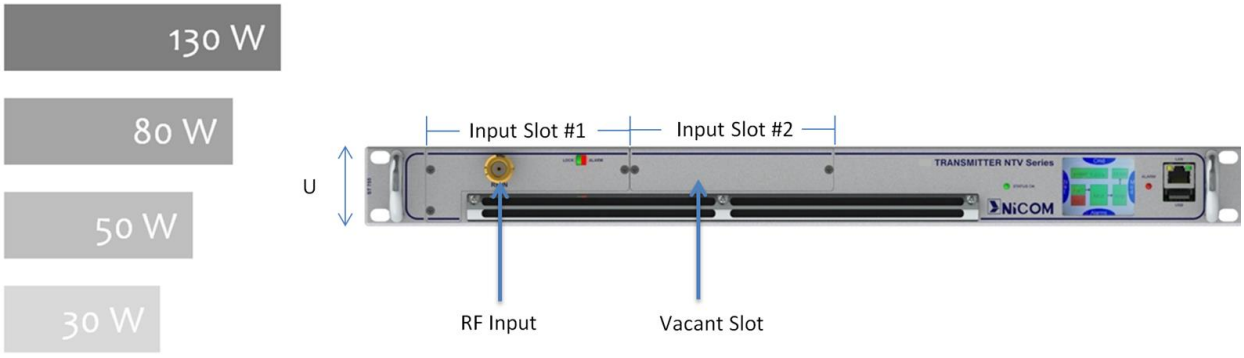


The standard transmitter is supplied in 5 digital power configurations: 15-30-50-80 and 130 W.

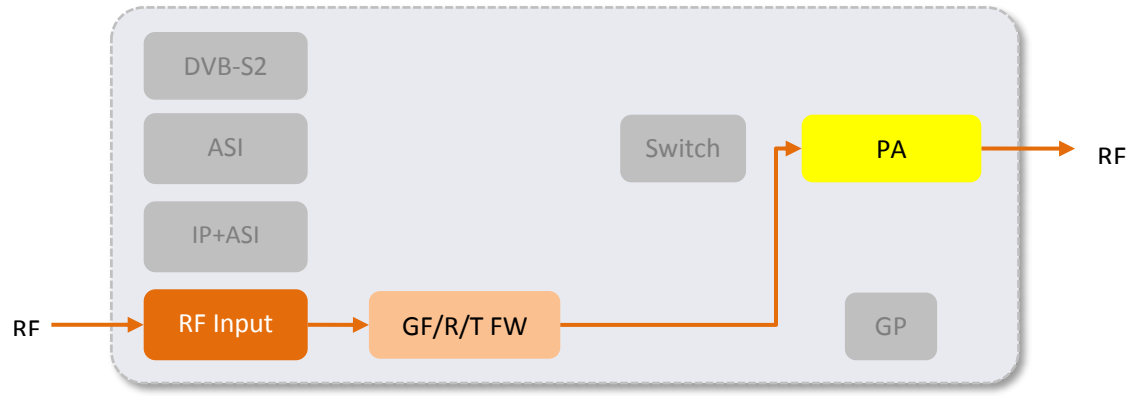
The analog transmitter is suppled in 4 analog configurations: 50-70-125-220 W.

These lines of products are efficiently designed and made allowing for much less lead time. Higher level of power (up to 1200 W) requires just a bit longer lead time.

Nicom new regenerative ATSC gap filler/on-channel repeater (EDOCR) with SFN capability

This newly developed circuit design enables the spectrum restorer to demodulate, error correct, and re-modulate incoming signals in a very fast and effective way. Even while preserving proper SFN operation; it features a very high output MER regardless of the input signal MER thanks to the superfast regenerative processing. Nicom spectrum restorer features input sensitivity up to -72dBm and noise cancellation up to 40dB.

These units (from DTV series) are equipped with an RF Input board for Gap Filler, Repeater or Transposer use.
Processing Firmware loaded within the unit is for Gap Filler, Repeater or Transposer use.



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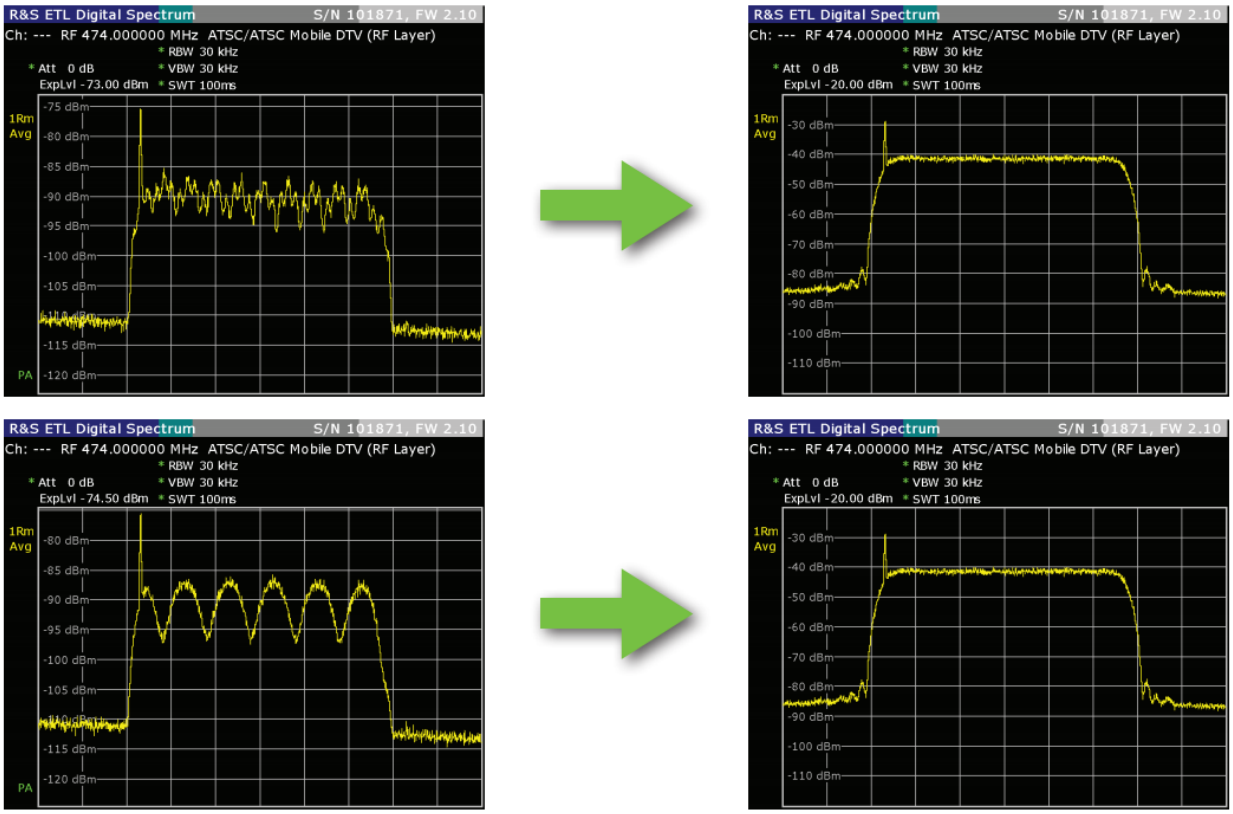
In these examples, it is possible to see in the spectrum analyzer the “restoration process” Performed by the unit.



This regenerative process ATSC gap filler -on channel is an incredible feature that only our DTV series can offer.

The great performance of our DTV series does not mean high cost; as always, we here at Nicom work every day to maximize your options with technology while keeping an eye focused on the price.

We invite you to contact our sales team. We can prepare quotes tailored to your specific needs. We also offer on hand technicians and engineers that can answer any questions or concerns you may have with your upcoming projects. Let us help you prepare for tomorrow TODAY, by delivering equipment that you can depend on.