XT-3000 | XT-4000
XT-5000 | XT-6000

SinteckNext
RADIO EXPERTS

FM TRANSMITTERS – MEDIUM POWER

- Powerful, Compact, Cost-effective
- High Efficiency, High Reliability
- Proven, Best-in-class Audio Quality
- +48V DC Inlets (Batteries)
- Non-stop Transmission
- Optional Dual Exciter

Conceived from the RUS line, a range of innovative transmitters designed with energy efficiency and robustness as their primary goals, XT-FM is a transmitter series that delivers complete solutions for broadcasters seeking high signal quality combined with low operating costs.

The series is available in 10 power levels, which can be used either as exciters (XT-350 to XT-1200) or as direct transmitters (XT-2000 to XT-10000).XT-FM transmitters incorporate direct-on-channel FM modulation circuits with flat frequency response and high-fidelity audio performance, offered at a cost accessible to any broadcaster.

They feature robust, efficient, precise, and compact circuitry, combined with a harmonious mechanical design and a distinctive, unmatched appearance.

XT is exclusive, produced by those who truly understand radio and technology: Sinteck Next.

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A SINGLE FORMAT, FOUR POWER LEVELS

To achieve competitive pricing both nationally and internationally, we optimized production costs by minimizing the number of components across a single product line. Based on this principle, we introduced four power levels - 3 kW, 4 kW, 5 kW, and 6 kW - within a single 4RU cabinet (four rack units, 17.8 cm).

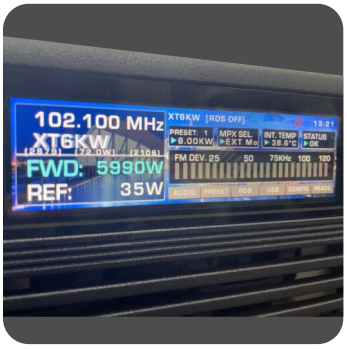
All models share the same board designs, including the microprocessor, control and voltage regulation boards, RF sensing and monitoring boards, the front-panel display and keypad, and a common power supply model, the Eltek or Huawei 3kW. Naturally, each equipment version incorporates a different RF pallet and a corresponding number of power supplies, depending on the output power level.

Despite the compact enclosure, higher-power models such as the XT-5000 and XT-6000 feature an efficient cooling and heat dissipation system capable of maintaining low internal temperatures. All models employ a fan management circuit that progressively increases airflow according to the equipment's internal temperature. Even when exposed to high ambient temperatures inside the shelter, the transmitters remain on the air, with a gradual reduction in output power as needed.

3.90" COLOR MONITOR

One of the key advantages of the XT series is the inclusion of a 3.90" color monitor. In addition to enhancing the equipment's visual appeal, it makes menu navigation significantly easier for the user. The screens are intuitive and user-friendly, eliminating the need for in-depth study of the manual to perform any configuration.Through this monitor, users have access to all operating parameters of the equipment, with clear visualization of forward and reflected power levels, current and voltage for each RF module, efficiency levels (overall and RF stage), AC and DC input levels, internal temperatures, audio levels, and many other parameters.

Beyond monitoring, the equipment can be easily configured and preset directly through the display. The XT series features no external adjustments — all settings are performed digitally. This includes menu options that allow output power adjustment based on time schedules, which greatly contributes to reducing overall energy consumption.It is also worth noting that all monitoring and configuration screens available on this display are fully accessible via the equipment's remote access interface (connectivity and telemetry).



POWERFUL MODULATOR, POWERFUL AUDIO

The audio quality of the XT series is unmatched - there is no modulation system as refined as the one developed by Sinteck. Those who are already familiar with Sinteck equipment can confidently attest to this.

The XT series introduced significant innovations in this area - what was already excellent has become even better. The modulator (VCO circuit) has reached a new level of precision. The selection of an exceptionally flat and highly linear varicap diode, combined with a carefully designed bias circuit, made all the difference.

The modulation response is extremely flat across the 20 Hz to 20 kHz spectrum. Tighter lows, more defined mids, and brighter highs - all delivered without distortion.

The true value of a radio station lies in the quality of its modulated audio and in its programming. The former is our responsibility.In addition to its outstanding modulator, the XT series also features a dual-band audio processing circuit and a high channel-separation DSP stereo generator.

Even if the station does not use an external digital audio processor, there is no cause for concern - the XT transmitter performs the processing and stereo generation internally, delivering maximum audio quality.

Stand above the competition. Deliver the best audio. Sinteck XT makes it happen for you.

EXCLUSIVE MP3 PLAYER!

Record an auxiliary radio program and keep it ready - you can schedule the player to start at any time.

The purpose of this feature is to provide audio redundancy, ensuring the station remains on air in case of issues with the link, audio processor, mixing console, or other external equipment. This feature plays back recorded audio from a USB flash drive with full audio quality.

In addition to playback, the player also displays track names or the name of the recorded program stored on the USB drive.The high on-air audio quality is achieved because the player feeds the audio directly into the internal audio processor, which balances lows and highs before routing the signal to the stereo generator. On air, the player performs just as well as programming coming from an external audio processor.

OFF THE AIR? NEVER AGAIN: USE BATTERIES… BATTERIES?!

Among all the advantages offered by the XT series, the most impactful is the ability to connect directly to DC power lines. To ensure the radio station remains on air even during power outages, the system incorporates a connection for four 12 V batteries connected in series, totaling 48 V, which supply power to all transmitter circuits. A dedicated DC input for this purpose is located on the rear panel.

This design significantly reduces the negative effects caused by AC power fluctuations. The DC line, continuously backed up by the batteries, operates in the background, preventing voltage spikes that could damage the power supplies. At the same time, it ensures the station remains on air for hours during power failures, effectively performing the function of a UPS (uninterruptible power supply).

A second circuit is also included in this section: the DC float charger. This means the transmitter itself automatically charges the batteries, and once they are fully charged, the circuit disengages. All of this greatly enhances the overall reliability and confidence level of our transmitters.

Do the math: consider the cost of a UPS, an audio processor, an RDS generator… when you can have all of this integrated into a single piece of equipment.

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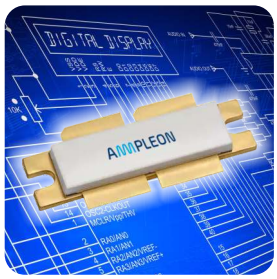

HIGH-ROBUSTNESS AMPLEON RF TRANSISTORS – VIRTUALLY BURNOUT-PROOF?

The answer to this question is: in a way, YES. Advances achieved in recent years in new RF transistor technologies have provided us with a range of components that are virtually burnout-proof. If we are able to properly control the current in each device, ensure correct drive conditions, and respect the maximum operating voltage, we can indeed achieve a system that operates without failures.

The XT line features an advanced protection circuit that guarantees full operation under extreme temperature conditions, wide AC power fluctuations, and variations in the antenna system. The guiding philosophy is always to keep the station on the air - even under unfavorable conditions, the XT continues operating reliably.

For power levels above 1 kW, the selected RF devices are the ART1K6 and ART2K0 models from Ampleon. We work with a significant power reserve across all equipment models, as these systems cannot afford downtime and are often required to operate at 100% of their rated output power. By using these devices, we typically operate at around 75% of their total capacity, maintaining a 25% safety margin and ensuring that the component is never stressed under any operating condition.

All XT equipment uses Eltek/Huawei power supplies, a globally recognized manufacturers known for delivering highly reliable products available on every continent. These are hot-swap power supplies that can be easily disconnected by simply removing the front panel and unplugging the module, without requiring advanced technical expertise.

EASE OF MAINTENANCE – EVERYTHING FULLY ACCESSIBLE

Ease of maintenance was one of the main objectives guiding Sinteck's engineering team in the development of a product that does not require extensive technical effort for board replacement or servicing.

Across all models, most circuit boards are standardized, from the 350 W units up to the 10 kW versions. We use the same modulator circuit, the same stereo generator, the same RDS encoder, the same control circuit, and the same power supplies throughout the entire product range.

Thanks to our experience in transmitter assembly and field installation, we clearly understand which boards and components are more vulnerable and may eventually require replacement. Typically, these include the AC input boards that protect the equipment from the power grid - always installed in easily accessible locations - the plug-in Huawei/Eltek power supplies, the RF pallets, which can be replaced by removing just six screws, and finally the RF filter, which may be affected by electrical discharges and can be replaced by removing only a few screws. All of these components are designed for simple servicing, with direct access through the top cover of the equipment.

ADVANCED REMOTE MONITORING

All information displayed on the equipment's front panel is also available via the web. In addition to monitoring, users can modify key settings such as output power levels, adjust audio levels, save and edit presets, and schedule their operating times.

There are three levels of remote connectivity. The first is direct access to the equipment through its own IP address. The second level provides external access, where data is retrieved from an Amazon server, as used in the RUS line. The third level is through mobile applications for iOS and Android.

This architecture gives users full control of the equipment at their fingertips, with access via a PC or smartphone. Control permissions are organized into hierarchical levels that can be configured by the station administrator, allowing full or intermediate access for any authorized operator.In addition, remote access connects to the Sinteck server, where our engineering team monitors all connected equipment on a daily basis. Each unit's parameters are checked regularly, and users are proactively notified if any abnormal condition is detected.

INTEGRATED RDS CODER - YES, TRULY INTEGRATED

An RDS generator has been integrated into the XT line, eliminating the need to purchaseadditional external equipment to perform this function. Moreover, if you are looking for an RDS coder for your radio station, why not choose a modern exciter that already delivers maximum audio quality with this feature built in?

In addition to the significant cost advantage, you will also provide listeners and advertisers with a noticeable improvement in on-air sound quality (equipment rated below 1 kW is also considered an FM exciter).

The internal RDS is extremely easy to operate and configure, either through the equipment's front panel or via the web interface. You can simply enter the station name and a promotional message, which will be instantly transmitted on air with correct RDS injection levels, internally adjusted by the system.Integrating the RDS did not result in high production costs that could lead to an increased sales price for the XT line.

It is well worth contacting our sales department to request a proposal for equipment of this level. We are confident that our pricing is highly competitive and our quality unmatched.

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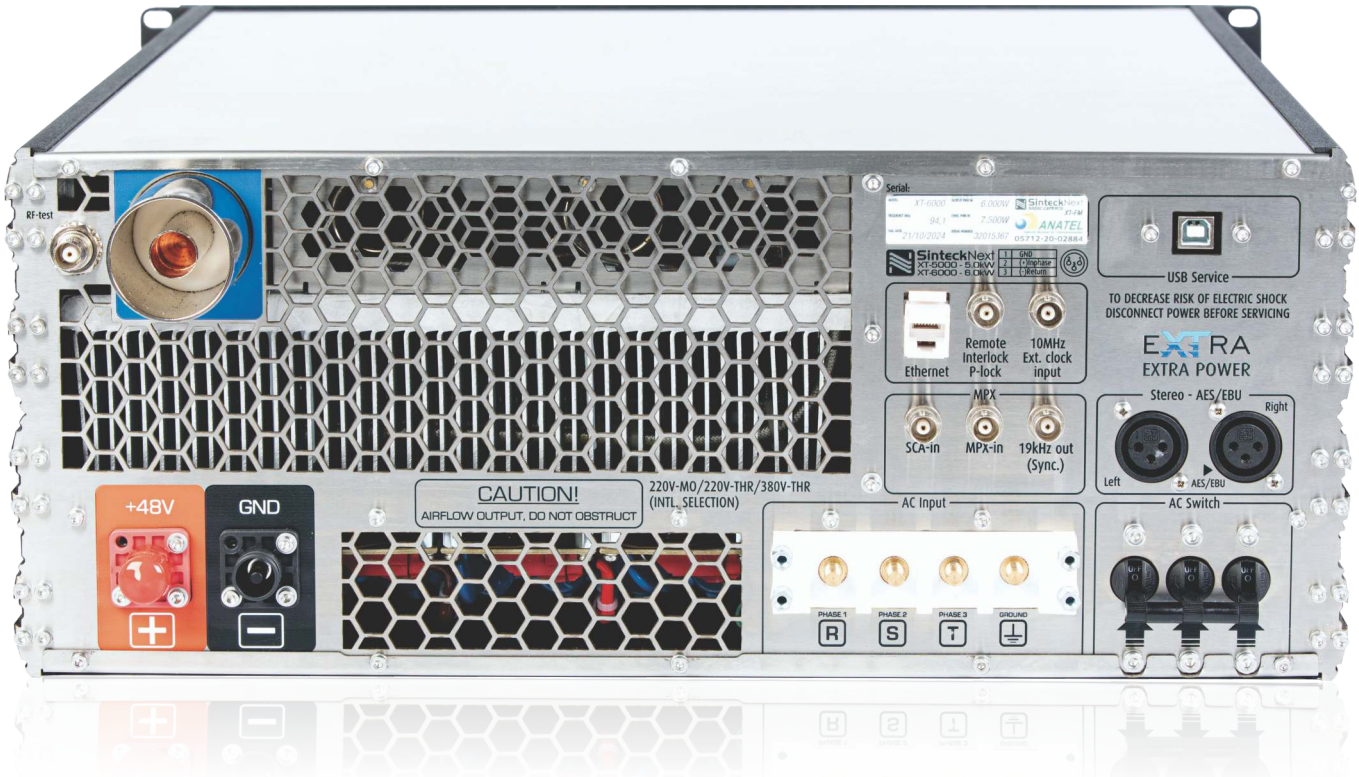
REAR PANEL OVERVIEW (ex. XT-6000):



TECHNICAL FEATURES XT-6000, XT-5000, XT-4000 / XT-3000

RF Output Power:	XT-6000: 6000W adjustable from 60W
	XT-5000: 5000W adjustable from 50W
	XT-4000: 4000W adjustable from 40W
	XT-3000: 3000W adjustable from 30W
RF output impedance:	50 Ohms
RF output connector:	EIA 1-5/8" XT-6000 / XT-5000. DIN 7/16" Female XT-4000 / XT-3000
Frequency range:	87,5 a 108,1MHz programable sinth. (76 to 108MHz under request)
Frequency steps:	10KHz
Settings input:	Frontal keyboard or via telemetry / connectivity inputs
Frequency stability:	1 ppm (High precision TCXO) max. frequency variation 100Hz
Modulation type:	F3, FM direct modulation (VCO in final frequency)
Harmonic attenuation:	>80dBc
Residual AM mod. (Assyncr.)	Approximately 0.1% (65dB)
Residual AM mod. (Syncr.)	Approximately 0.05% (55dB)
Intermodulation distortion:	<0.05% @ 1kHz
Frequency response:	20Hz to 200kHz
Signal/noise FM ratio:	>80dB

POWER SUPPLY SECTION:

AC Input:	220V or 380V monophase / three-phase (Intl. selection), 45 to 68Hz
DC Input:	48V from external battery bank - built-in automatic charging circuit
Surge protection:	Varistors, gas dischargers / transorbs, fast-action circuit breaker over AC
Efficiency:	Better than 72% in 220V AC, better than 85% in 48V DC
DC power supplies:	2 HUAWEI SMPS (4850G model) XT-3000 / 3 units for the other models
Overall consumption (full power):	XT-6000: 8300W
	XT-5000: 6950W
	XT-4000: 5500W
	XT-3000: 4200W
AC input connection:	Terminal bar in AC line / Amphenol in DC line

MECHANICAL FEATURES:

Weight:	32kgs
Dimensions:	483mm (19") wide, 178mm (7") high, 530mm (21") depth
Operating temperature:	0 to +45°C
Max. humidity:	95% for +45°C without condensation

RF SECTION:

RF Devices:	XT-6000: 6 RF devices AMPLEON ART2K0
	XT-5000: 5 RF devices AMPLEON ART2K0
	XT-4000: 4 RF devices AMPLEON ART1K6
	XT-3000: 3 RF devices AMPLEON ART1K6

CPU AND DISPLAY:

CPU:	Arm M7 ST Software XTV2020
Telemetry:	Incorporated, direct access via browser and Sinteck XT APP
Digital audio control:	Digital control of audio levels and presets, Internal RDS generator
Digital power control:	Power Raise, Lower and Lock (and others presets set by the user)
Monitor:	TFT Color, size 3.9" 480 x 128 pixels

XLR INPUTS (ANALOG / DIGITAL):

Conectors:	XLR Female
Digital audio input:	AES/EBU res. 24 bits, bitrate 32, 44.1, 48, 88.2, 96 e 192KHZ automatic sel.
Input impedance:	600 Ohms balanced
Frequency response:	20Hz to 15kHz (THD+N < 0,1%)
Analog input level:	0dB to 75KHz carrier deviation
Stereo separation:	Better than 60dB @ 1kHz
USB input (front panel):	MP3 player supporting mp3, mp2, mp1, asf, wma, m4a, 3gp, mp4 and wav

MPX INPUT:

Input connection:	1 MPX input (BNC), digital level adjust +15/-10dBm to 75KHz carrier deviaton
Frequency response:	± 0.05dB from 20Hz to 53KHz and ± 0.2dB from 53KHz to 100KHz, THD < 0.03%

SCA / RDS INPUTS:

Input connection:	BNC connector, digital level adjust from +15/-10dBm to 10kHz carrier deviation
Frequency response:	± 0.2dB from 53KHz to 100KHz

EXTERNAL EXCITER CONNECTION (OPTIONAL FOR DUAL EXCITER):

Input connection:	N connector, driver input 5-15W, 50 Ohms

RDS TONE SYNC. OUTPUT:

Output connection:	BNC connector, 1Vpp (fixed level)

REMOTE CONTROLS:

Remote control input:	BCN connector (level 1 enable presets, level 0 switch to RF POWER LOCK)

CERTIFICAÇÃO ANATEL: 05712-20-02884

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WHY CHOOSE SINTECK?

With a manufacturing facility spanning over 1,500 m², Sinteck Next operates a modern production complex capable of manufacturing high-performance, high-quality products. We have an efficient and highly committed engineering department, where every professional delivers outstanding work within their specific area of expertise.Our technical department enables us to deliver products that are fully tested and calibrated using high-precision instruments. Sinteck Next also operates a mechanical division equipped with state-of-the-art machinery, including machining centers, laser cutting, and CNC bending systems, allowing all production processes to be carried out entirely in-house. This ensures superior product quality and faster delivery times.

Technicians and assemblers are organized across dedicated production sectors, each assigned to specific equipment models. We also maintain a technical training department and place great importance on the continuous development of our professionals. All of this results in a product of exceptional quality at the end of the production chain.Our customer service team is structured into engineering, technical support, sales, after-sales/maintenance, administration, and finance departments.

If you are not yet a Sinteck customer, it will be our pleasure to assist you and offer cutting-edge products. If you are already a customer, feel free to contact us again. Your radio station is our success!

- Highly skilled customer service team
- Over 5,000 units installed in Brazil
- Over 25 years in the radio broadcast market
- Know it. Trust it. Recommend it

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