

S7HP NEO

MEDIUM WAVE RADIO TRANSMITTER



**New efficient
AM / DRM ready
radio transmitter**

AIR & LIQUID COOLED

**FROM 400kW
TO 1600kW**

THOMSON BROADCAST'S DNA

Thomson Broadcast benefits from proven experience with the biggest number of high power Long and Medium Wave transmitters installed on the 5 continents.

Based on decades of expertise in analog and digital signal processing and continuous research, the architecture of the S7HP Neo integrates all latest Thomson Broadcast innovations. High reliability and superior signal availability combined with high efficiency make the S7HP Neo a solution for energy savings.

The S7HP Neo integrates innovative technologies. This new transmitter allows radio broadcasters to deploy local, regional and national radio networks, while benefiting from the latest Digital Radio Mondiale (DRM) services.

With the biggest number of high-power Long and Medium-Wave transmitters installed on the 5 continents, **Thomson Broadcast** benefits from a long field AM/DRM experience and worldwide customers full satisfaction. The manufacturing of the different sub-assemblies of the transmitter relies on long standing know-how.

Enhanced reliability Optical fiber links, Silicium Carbide (SiC) transistors and an advanced compact Unit Control System (UCS) are part of the design of the S7HP Neo.

The use of optical fibers for controlling the amplifier modules results in simplified wiring, easier maintenance and better reliability.

SiC transistors allow for higher circuit efficiency as compared to the former Si-based technology and offer incomparable reliability and efficiency.

The design of new high-efficiency power modules allows to use twice as less amplifiers as the on the legacy S7HP for the same output power.

The cyclic operation of the active amplifier modules enhances outstanding reliability as equal workload is applied to all amplifier modules, thus guaranteeing less thermal stress and permitting a longer lifetime.

The compact user interface UCS combines the transmitter control and the AM / DRM modulation strategy. The built-in Web server allows simple local and remote control of the transmitter.



WE PROVIDE COMPLETE RADIO SOLUTIONS

PROJECT SUPPORT

Consulting services / Financial engineering / Project management / Coverage studies / Site surveys / Energy & system engineering

PRODUCTS

Complete radio transmitter range / All digital standards, High and medium power range, RF auxiliaries / Head-ends / Antennas

SERVICES

Installation / Commissioning / Training / Service Level Agreement (SLA)

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S7HP NEO

The new solid state power amplifier allows best redundancy and high reliability.

- ✓ **Modular configuration**
- ✓ **Significant energy savings**
- ✓ **Efficiency up to 93 %**
- ✓ **Real time status of transmitter**
- ✓ **Easy maintenance**
- ✓ **Small footprint**
- ✓ **Liquid and air cooling**
- ✓ **Ergonomic design**



Best efficiency

Thomson Broadcast provides the highest overall radio transmitter efficiency — up to 93% including the cooling system. Built-in energy saving modes of operation — Dynamic Carrier Control (DCC 1 to 4) algorithms as well as Amplitude Modulation Commanding / Enhanced (AMC/EHC) make it possible to reduce the power consumption without degrading the coverage. In digital modulation, the same coverage is achieved with substantial energy savings

Reduced operating costs

Cost of ownership, reducing monthly bills and simplification of serviceability are decisive for broadcasters.

The compact S7HP Neo combines lower footprint and high efficiency.

To meet all specific climatic conditions, dual air/ liquid cooling systems can be tailored to extreme environmental conditions.

Highly reliable amplifier modules and easy access to these ones, fast and easy maintenance procedures reduce the cost of serviceability.

Active redundancy

Active redundancy is guaranteed by amplifier modules kept in standby. InN multiple-block configurations, the failure of one block results in re configuring the system into N-1 mode, allowing for the maintenance of the faulty block on test load.

Complete Modularity

The S7HP Neo family provides solutions for all levels of output power based on 400 kW blocks that can be combined in high power

Advanced Monitoring

Thomson Broadcast has always been a leader in the ergonomic design of transmitter control and monitoring systems. Featured with a large touch screen, the local man machine interface provides the operator with all the necessary functions to operate a single amplifier unit. A high-level display control system operates multiple blocks. The web server and SNMP agent remotely deliver in real time comprehensive information showing the status of the transmitter. They also provide the identification and precise location of any fault, allowing rapid diagnosis and maintenance.



EWF : Emergency Warning Functionality

The DRM modulator allows for digital radio operation and the activation of the EWF function is the perfect tool for authorities to inform general public about Emergency situations before, during and after the event :

- Automatic wake up of the DRM receiver
- Maximum population reach as quickly possible
- Audio program and DRM text message
- Journalism advanced text service for multiple languages simultaneously

Turnkey Solution

The S7HPneo family represents a huge opportunity for the replacement of ageing equipment or for new deployments of digital radio. The S7HPneo transmitter family lets the broadcaster benefit from the most advanced energy-efficient technologies, combined with the latest advanced spectrum digital standards.

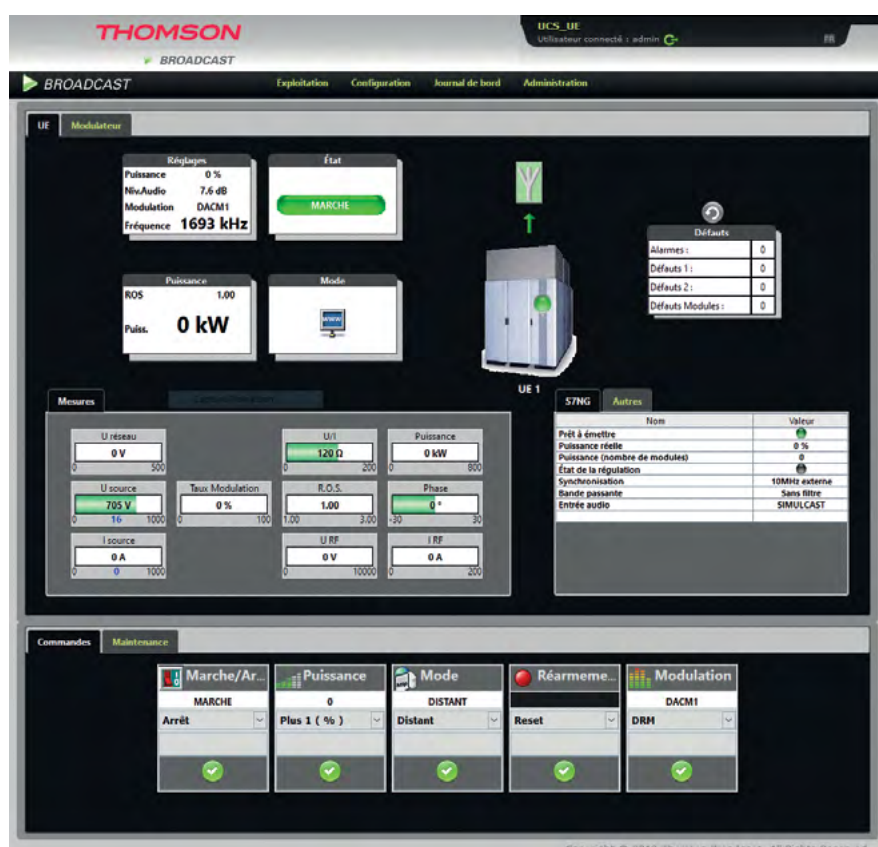
The system, which supports the DRM standard and surround sound audio quality, allows for multimedia and data services such as Journa-

line® (personalized news), Electronic Program Guide (EPG), text messages, MOT slideshow, traffic info, general alert feature as well as the Diveemo application (small-scale video transmission via Digital Radio Mondiale - DRM). All these features can create new revenue streams.

With a long history of offering turnkey complete radio broadcasting systems Thomson Broadcast proposes network planning and engineering services, antennas, masts, auxiliaries, as well as comprehensive Service Level Agreements.

Intuitive normal and remote control and monitoring

For quick remote monitoring purposes, each S7HP NEO includes as a standard feature, Web server and SNMP agent to remotely deliver a real-time comprehensive display of the transmitter's status as well as the identification and precise location of any fault. This monitoring interface is also accessible locally via a dedicated RJ45 LAN port.



Control and monitoring can be achieved with any standard devices including smartphones, tablets, or personal computer. The web interface has been in-house designed so to interoperate with a complete transmission Network Management System such as the **Thomson Broadcast Manager** or an existing one.

S7HP SPECIFICATIONS 1/2

Family specifications

LONG-WAVE & MEDIUM-WAVE				
Number of blocks	1	2	3	4*
Product name	RMW 400K	RMW 800 K	RMW 1200K	RMW 1600K
Carrier output power (kW)	400	800	1200	1600

*Higher output power on request

Main Data 's

- AM/DRM
- Long, Medium-Wave
- Optical fiber links
- Ergonomic touch screen
- Rotation of active modules
- New centralized UCS
- Embedded Web server
- SNMP included as standard

Analogue AM Modulation

Double Side Band (A3E) :

- With Dynamic Carrier Control (DCC) 4 standard curves
- With AM companding (AMC) 1 standard curve
- With Enhanced AM companding (EHC) 1 standard curve
- Other DCC customized curves may be available

Channel bandwidth :

Filter 4.5, 7.5, 10 KHz, Full band

Digital AM Modulation

DRM digital according Channel bandwidth:

- 4.5, 5 KHz – simulcast option
- 9, 10 KHz- SD
- 18, 20 kHz- HD option

Modulation capability

Positive Peak modulation capability 110%
positive peak modulation at 400kW.

Transmission Characteristics

Frequency Range	LONG WAVE : 148.5 kHz - 283.5 kHz MEDIUM WAVE : 531 kHz - 1602 kHz	Efficiency	Up to 93 %, including cooling
Transmission Standards	Analog AM, DRM		
DRM Modulation	Input Mode	DRM-MDI	
	Network Operation	MFN, SFN	
	RF Bandwidth	4.5, 5, 9, 10, 18, 20 kHz	
	Transmission Modes	A, B, C or D	
Output Power Level	Continuously adjustable in steps of 1 % from 50% to 100%		
Output Power Level Presets	Nominal Power and -3 dB		
RF Harmonics	< 50 mW @ 100% power		
Impedance	60 Ω or 120 Ω unbalanced (Other impedances, consult Thomson-Broadcast)		
VSWR	Permissible VSWR : 1.2:1 (Full Power)		
	Automatic power reduction with VSWR between 1.2:1 and 1.5:1		
	Transmitter shutdown with VSWR above 1.5:1		
Lightning Protection	Spark gaps in the RF Filter and in the Combiner		

S7HP SPECIFICATIONS 2/2

Mechanical Characteristics

	L (mm)	H (mm)	D (mm)	Weight (kg)
Amplifier Block 400 kW	2466	2923	1800	2200
RF Filter	1800	1800	1800	350
2 ways / 3 ways Combiner Unit	3877/4800	2120	1800	700/900
Air Handling Unit	1800	1200	1000	230
Management Cabinet	600	2042	600	120

Electrical Supply

Power Supply	3 Phase + Earth (no Neutral)
Standard Voltage	LV (400V) or MV (11kV / 20kV) voltages, consult Thomson Broadcast
Frequency	50 or 60 Hz (± 2 Hz)
LV Auxiliary Power Supply	380 V to 410 V ± 10 %, 3 Phases + Earth
Power Factor	> 0.95

Environment

Maximum Altitude	3000 m
Storage Temperature	-25°C to +65°C
Acoustic Noise	< 65 dBA @ 1 m / 1.5 m high
Ambient Air temperature	+5°C to +45°C
Relative Humidity	< 95% without condensation

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THOMSON BROADCAST FRANCE

Phenixya SAS

15, avenue Charles de Gaulle
97200 Colombes - France

T. +33 1 88 32 49 70
sales@thomson-broadcast.com

PHENIXYA