

SIEMENS

**5 kW Medium Wave
Broadcast Transmitter**

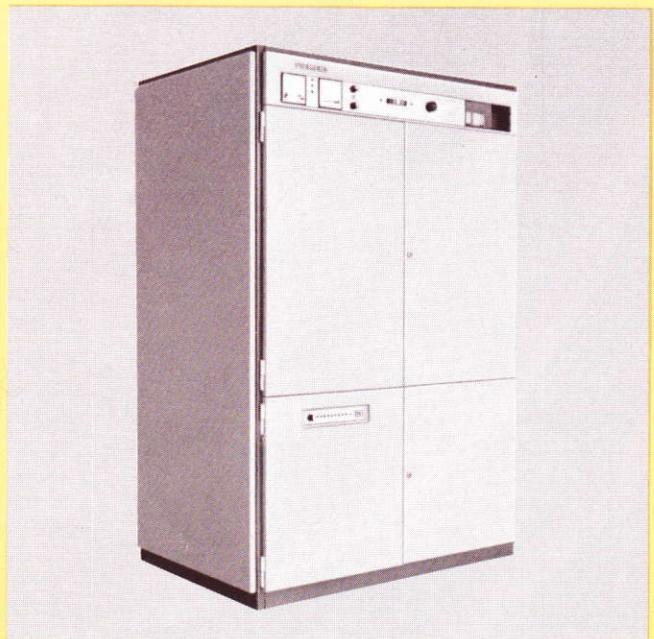


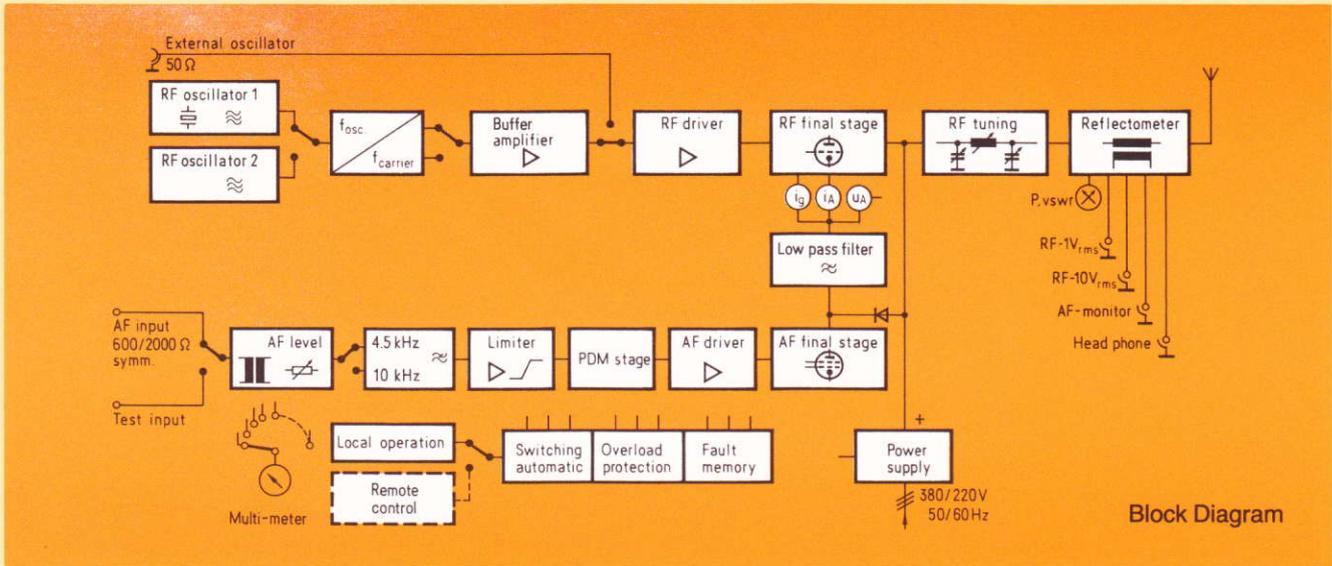
The Siemens MF-Transmitter type WR Send 5 M-03 for broadcasting in amplitude modulation works with a carrier power of 5 kW. As per demand it can be driven by an oscillator adjusted to a specified frequency or by a synthesizer. The electrical data are corresponding to the CCIR and ARD standard. All safety equipments and control function being necessary are available.

Special Characteristics

- 2 valves only (air cooled)
- Pulse duration modulation (advantage for modulation capability and efficiency)
- Automatic re-start in case of interference
- Automatic re-start in case of power failure (duration not limited)
- Fault memory
- Power reduction for operation and adjustment
- Electronic heating voltage regulator
- RF measuring outputs and demodulator
- Crosspointer instrument for RF output power and VSWR
- Suitable for installation in shelters and vehicles
- Small dimensions
- Reduced weight
- Simple installation and operation
- Easy maintenance
- All tuning and service work can be done from the front
- Conducted inlet and exhaust air possible
- Suitable for unmanned operation

5 kW Medium Wave Broadcast Transmitter





Block Diagram

Technical Data

Frequency range	525... 1605 kHz
Frequency stability	± 5 Hz
Power output	5 kW
Power reduction	to 2.5 kW
Carrier shift	3% or less with 90% modulation at 1000 Hz
RF harmonic radiation	less than 50 mW
RF non-harmonic radiation	less than 70 dB
Type of transmission	9 A3 or 20 A3 (Amplitude modulation, broadcasting, double-side band, band-width 9 or 20 kHz)
Output impedance	50 Ohms unbalanced, RF-connection 13/30
VSWR	less than 1.5
Audio input	2000 or 600 Ohms balanced
Input level	-4...+ 10 dBm at 100% modulation and $f = 1$ kHz
Audio frequency response	100... 4000 Hz ± 1 dB 60... 10000 Hz +2...-3 dB } without low pass filter
Audio frequency distortion	less than 3% at 60... 120 Hz less than 2% at 120...2250 Hz } with 80% modulation
Modulation capability	100%
Noise (unweighted)	50 dB or better
Noise (weighted)	60 dB or better
Power supply	three phases 380/220 V $\pm 10\%$, 50/60 Hz
Power consumption	approx. 14 kVA at $m = 0$ approx. 17 kVA at $m = 1$
Power factor	95% or better
Tubes	1 tetrode RS 2014 CL (AF) 1 triode RS 2015 CL (RF)
Dimensions	1.26 m \times 1.83 m \times 0.84 m $\hat{=}$ W \times H \times D
Weight	approx. 730 kp

Terms of delivery and rights to change design reserved

SIEMENS AKTIENGESELLSCHAFT

Ordering No. B/2143-101
Printed in Germany
PA 06810.5

SIEMENS

**20 kW Tropical Band Short Wave
Broadcast Transmitter**



The Siemens HF-Transmitter type WR Send 20 K-03 is intended for amplitude modulation with a carrier power of 20 kW and may be provided either as a single channel transmitter or for two channel operation with semi-automatic frequency changing.

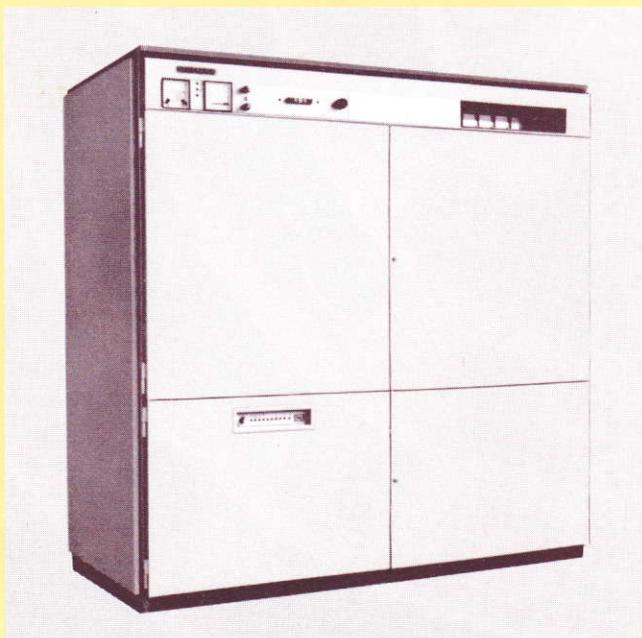
The electrical data are corresponding to the CCIR and ARD standard.

All safety equipments and control function being necessary are available.

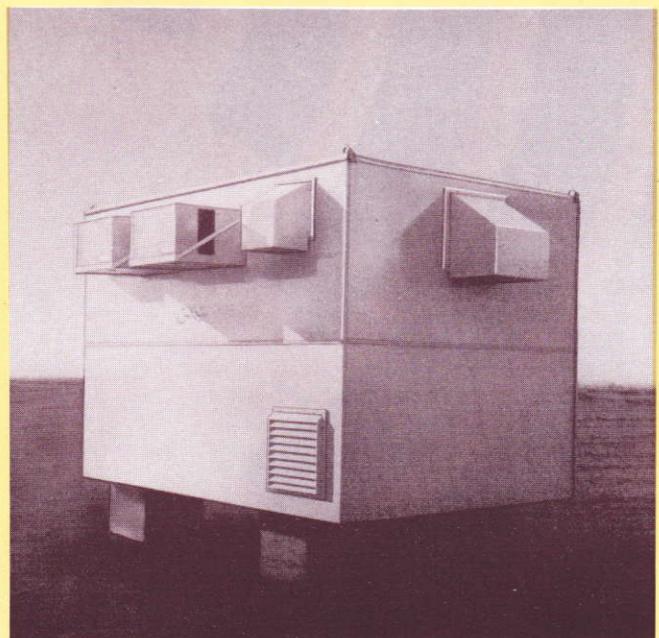
Special Characteristics

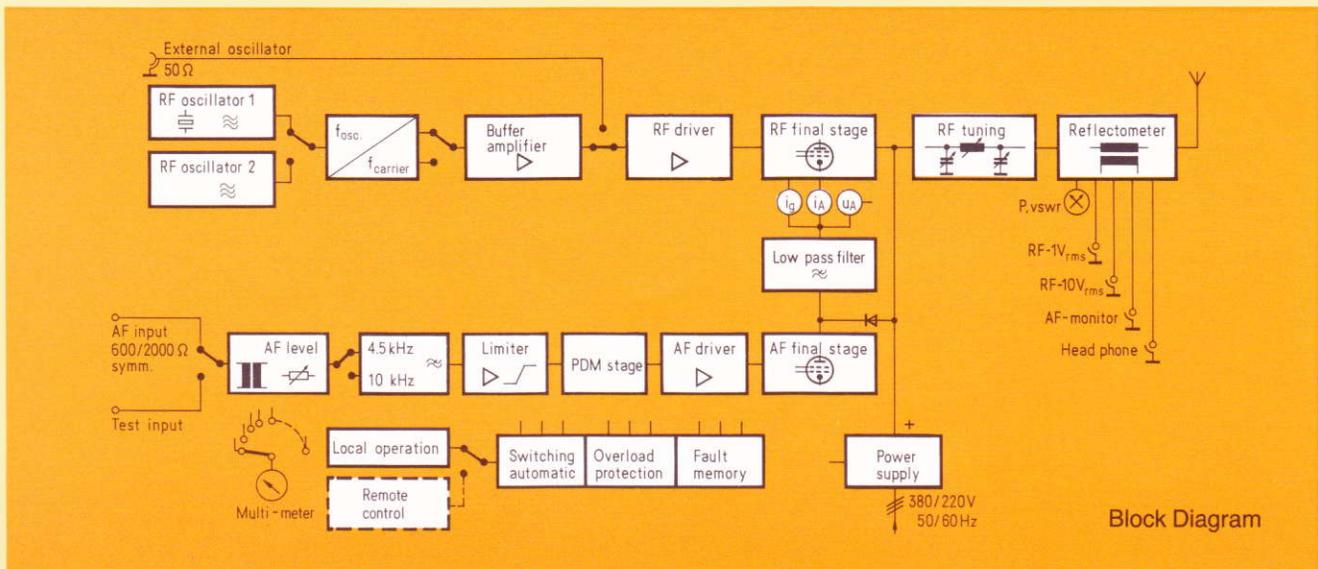
- 2 valves only (air cooled)
- Pulse duration modulation (advantage for modulation capability and efficiency)
- Automatic re-start in case of interference
- Automatic re-start in case of power failure (duration not limited)
- Fault memory
- Power reduction
- Electronic heating voltage regulator
- RFmeasuring outputs and demodulator
- Crosspointer instrument for RF output power and VSWR
- Suitable for installation in shelters and vehicles
- Small dimensions
- Reduced weight
- Simple installation and operation
- Easy maintenance
- All tuning and service work can be done from the front
- Conducted inlet and exhaust air possible
- Suitable for remote control

20 kW Short Wave Broadcast Transmitter



Containerized Broadcast Station





Block Diagram

Technical Data

Frequency range	3.2 ... 9.775 MHz (tropical bands 90, 75, 60, 49, 41 and 31 m)
Frequency stability	± 5 Hz
Power output	20 kW
Power reduction	to 10 kW
Carrier shift	4% or less with 90% modulation at 1000 Hz
RF harmonic radiation	less than 50 mW
RF non-harmonic radiation	less than 70 dB
Type of transmission	9 A3 (Amplitude modulation, broadcasting, double-side band, band-width 9 kHz)
Output impedance	50 Ohms unbalanced, RF-connector EIA
VSWR	less than 2
Audio input	2000 or 600 Ohms balanced
Input level	-4 ... +10 dBm at 100% modulation and $f = 1$ kHz
Audio frequency response	100 ... 4000 Hz ± 1 dB without low pass filter
Audio frequency distortion	less than 3% at 60 ... 2250 Hz with 80% modulation
Modulation capability	100%
Noise (unweighted)	50 dB or better
Noise (weighted)	60 dB or better
Power supply	three phases 380/220 V $\pm 10\%$, 50/60 Hz, others on request
Power consumption	approx. 40 kVA at $m = 0$ approx. 60 kVA at $m = 1$
Power factor	95% or better
Tubes	1 tetrode YL 1500 (AF) 1 tetrode YL 1500 (RF)
Dimensions	1.84 m \times 1.83 m \times 0.84 m $\hat{=}$ W \times H \times D
Weight	approx. 1000 kp

Terms of delivery and rights to change design reserved

SIEMENS AKTIENGESELLSCHAFT

Ordering No. B/2507-101
Printed in Germany
PA 07811.

SIEMENS

**20 kW Medium Wave
Broadcast Transmitter**

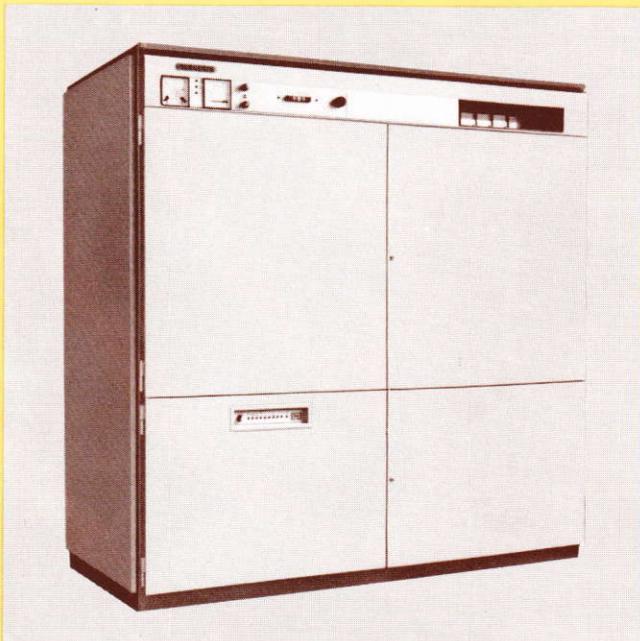


The Siemens MF-Transmitter type WR Send 20 M-03 for broadcasting in amplitude modulation works with a carrier power of 20 kW. As per demand it can be driven by an oscillator adjusted to a specified frequency or by a synthesizer. The electrical data are corresponding to the CCIR and ARD standard. All safety equipments and control function being necessary are available.

Special Characteristics

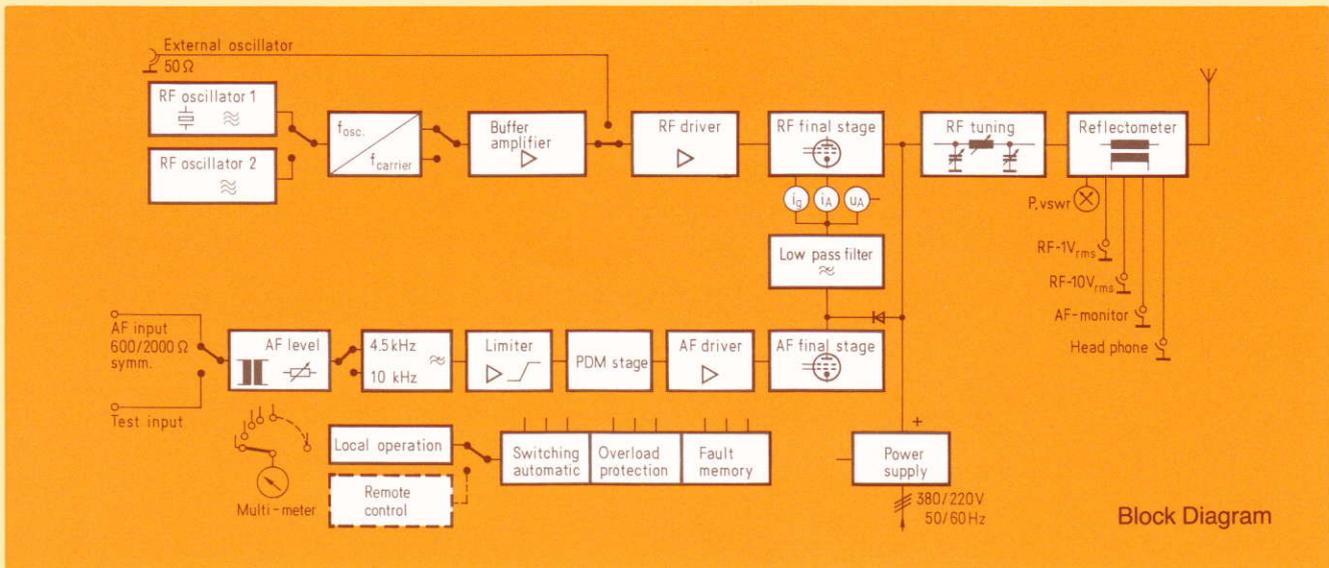
- 2 valves only (air cooled)
- Pulse duration modulation (advantage for modulation capability and efficiency)
- Automatic re-start in case of interference
- Automatic re-start in case of power failure (duration not limited)
- Fault memory
- Power reduction for operation and adjustment
- Electronic heating voltage regulator
- RFmeasuring outputs and demodulator
- Crosspointer instrument for RF output power and VSWR
- Suitable for installation in shelters and vehicles
- Small dimensions
- Reduced weight
- Simple installation and operation
- Easy maintenance
- All tuning and service work can be done from the front
- Conducted inlet and exhaust air possible
- Suitable for unmanned operation

20 kW Medium Wave Broadcast Transmitter



Mobile Broadcast Station





Block Diagram

Technical Data

Frequency range	525 ... 1605 kHz
Frequency stability	± 5 Hz
Power output	20 kW
Power reduction	to 10 kW
Carrier shift	3% or less with 90% modulation at 1000 Hz
RF harmonic radiation	less than 50 mW
RF non-harmonic radiation	less than 70 dB
Type of transmission	9 A3 or 20 A3 (Amplitude modulation, broadcasting, double-side band, band-width 9 or 20 kHz)
Output impedance	50 Ohms unbalanced, RF-connection 13/30
VSWR	less than 1.5
Audio input	2000 or 600 Ohms balanced
Input level	-4... +10 dBm at 100% modulation and f=1 kHz
Audio frequency response	100... 4000 Hz ±1 dB 60... 10000 Hz +2... -3 dB } without low pass filter
Audio frequency distortion	less than 3% at 60... 120 Hz less than 2% at 120... 2250 Hz } with 80% modulation
Modulation capability	100%
Noise (unweighted)	50 dB or better
Noise (weighted)	60 dB or better
Power supply	three phases 380/220 V ±10%, 50/60 Hz
Power consumption	approx. 40 kVA at m = 0 approx. 60 kVA at m = 1
Power factor	95% or better
Tubes	1 tetrode YL 1500 (AF) 1 tetrode YL 1500 (RF)
Dimensions	1.84 m × 1.83 m × 0.84 m ≐ W × H × D
Weight	approx. 1000 kp

Terms of delivery and rights to change design reserved

SIEMENS AKTIENGESELLSCHAFT

Ordering No. B/2144 - 101
Printed in Germany
PA 03801.

SIEMENS

**50 kW Medium Wave
Broadcast Transmitter**



The Siemens MF-Transmitter type WR Send 50 M-03 for broadcasting in amplitude modulation works with a carrier power of 50 kW.

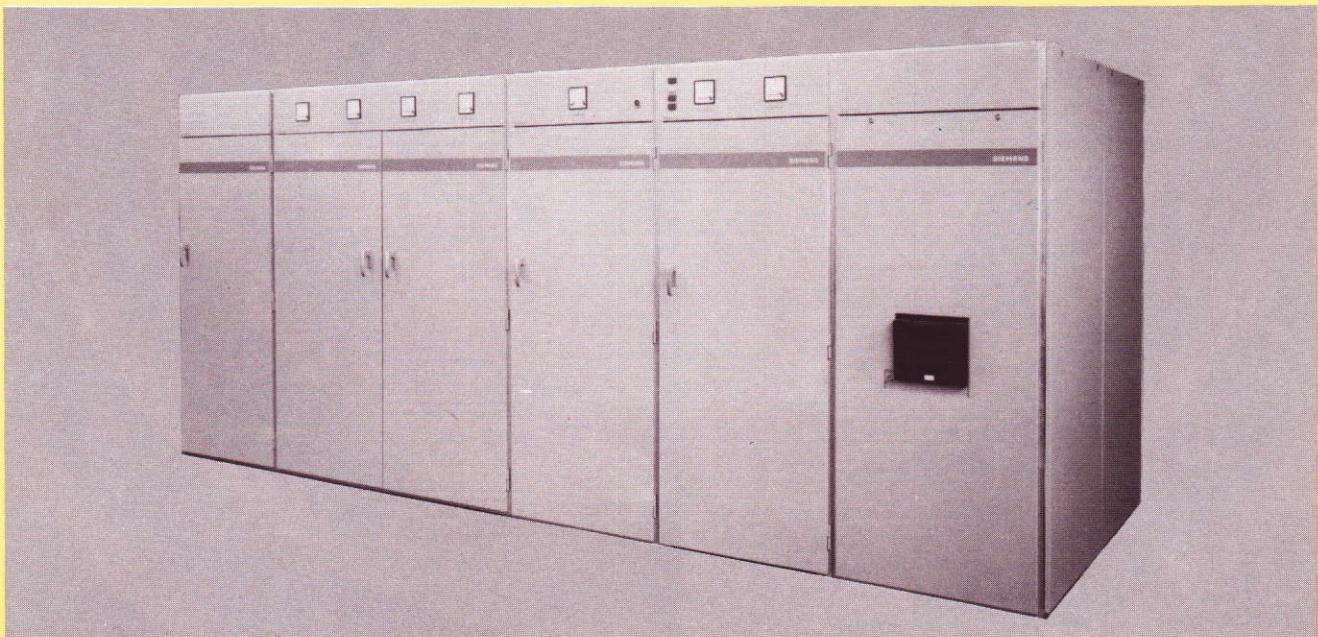
It is equipped with a crystal oscillator and can be adjusted to the operating frequency in the range of 525 ... 1605 kHz. The electrical data are corresponding to the CCIR and ARD standard.

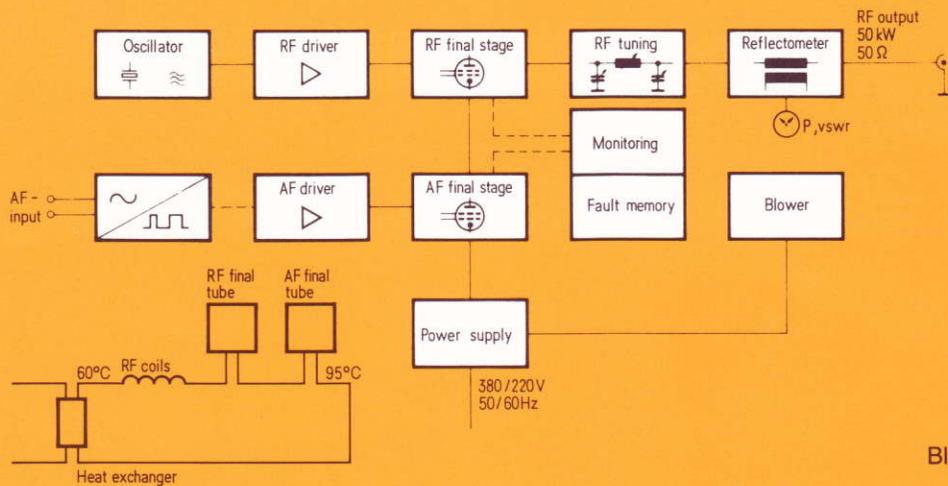
All safety equipments and control function being necessary are available.

Special Characteristics

- 2 valves only
- Pulse duration modulation (advantage for modulation capability and efficiency)
- Automatic re-start in case of interference
- Fault memory
- Logical monitoring
- Power reduction for operation and adjustment
- Utilisation of silicon semiconductors in the prestages, blocking devices and power supplies
- RF measuring outputs and demodulator
- Crosspointer instrument for RF output power and VSWR
- Constructure as per the unit principle
- Removable trolleys
- Small dimensions
- Simple installation and operation
- Easy maintenance
- Provided for remote control

50 kW Medium Wave Broadcast Transmitter





Block Diagram

Technical Data

Frequency range	525 ... 1605 kHz (transmitter prepared for 1 frequency)
Frequency stability	± 5 Hz
Power output	50 kW
Power reduction	to 25 kW
Carrier shift	4% or less with 90% modulation at 1000 Hz
RF harmonic radiation	less than 50 mW
Type of transmission	9 A3 or 20 A3 (Amplitude modulation, broadcasting, double-side band, band-width 9 or 20 kHz)
Output impedance	50 Ohms unbalanced
VSWR	less than 1.5
Audio input	2000 Ohms balanced
Input level	-4 ... +10 dBm
Audio frequency response	100 ... 4000 Hz ± 1 dB 60 ... 5000 Hz ± 2 dB
Audio frequency distortion	less than 3% at 60 ... 5000 Hz with 80% modulation
Modulation capability	100%
Noise (unweighted)	50 dB or better
Noise (weighted)	60 dB or better
Power supply	three phases 380/220 V ± 10%, 50 Hz ± 5%
Max. power consumption	120 kVA
Cos φ	0.9 or better
Total efficiency	65% or better
Tubes	2 tetrodes RS 1084 CJ
Dimensions (W × H × D)	4.0m × 2.0m × 1.8m (transmitter) 0.8m × 2.0m × 1.8m (HT transformer)

Terms of delivery and rights to change design reserved
Siemens AG
Dept. RS V SA
St.-Martin-Straße 76
D-8000 München 80
Germany
Tel. 089-4 1331 · Tx. 5210883

SIEMENS AKTIENGESELLSCHAFT

Ordering No. B/2288-101
Printed in Germany
PA 11801.

SIEMENS

**100 kW Short Wave
Broadcast Transmitter**



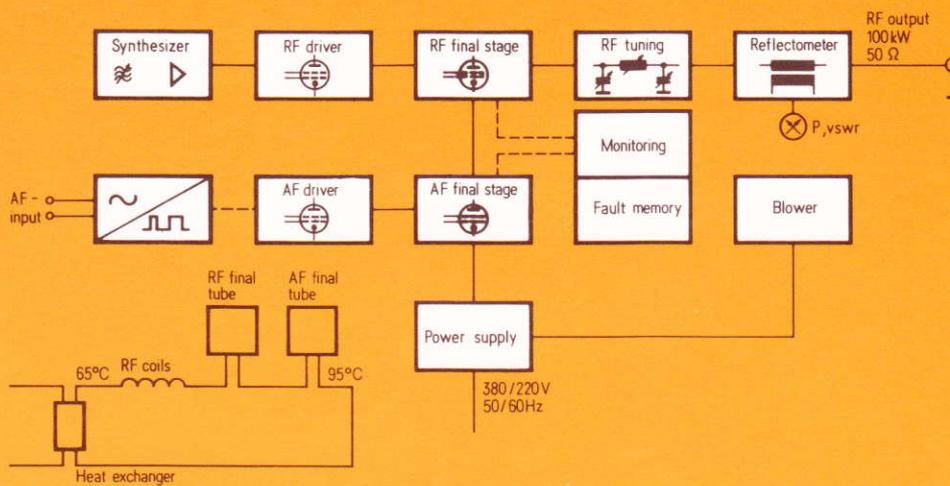
The Siemens HF transmitter type WR Send 100 k-04 with amplitude modulation operates with a carrier power of 100 kW. Being equipped with a synthesizer, it can be tuned to any frequency within the broadcasting bands of the frequency range. The technical data and the safety precautions comply essentially with the standards of CCIR and ARD.

Features:

- Power tubes cooled by vapor condensation
- Pulse duration modulation, PDM (without modulation transformer)
- Automatic re-start in case of interference
- Fault memory
- Logical monitoring
- Power reduction for operation
- Utilisation of silicon semiconductors in the prestages, blocking devices and power supplies
- RF measuring outputs and demodulator
- Crosspointer instrument for RF output power and VSWR
- Removable trolley-like stages
- Small dimensions
- Simple installation and operation
- Easy maintenance
- Provided for remote control

100 kW Short Wave Broadcast Transmitter





Block Diagram

Technical Data

Frequency range (i.e. all broadcasting bands within the frequency range of)	3, 2 to 17, 9 MHz or 4, 75 to 26, 1 MHz
Frequency stability	± 5 Hz
Power output	100 kW
Power reduction	to 50 kW
Carrier shift	4% or less with 90% modulation at 1000 Hz
RF harmonic radiation	less than 50 mW
Type of transmission	A 3 E (Amplitude modulation, broadcasting, double-side band, band-width 9 or 20 kHz)
Output impedance	50 Ohms unbalanced
VSWR	less than 1 : 2
Audio input	600 and 2000 Ohms balanced
Input level	-4... +10 dBm
Audio frequency response	60... 100 Hz +2/-3 dB 100... 4000 Hz ± 1 dB 4000... 5000 Hz ± 2 dB
Audio frequency distortion	less than 3% at 60... 5000 Hz with 80% modulation
Modulation capability	100%: 100... 3000 Hz; 80%: 60... 10000 Hz
Noise (unweighted)	50 dB or better
Noise (weighted)	60 dB or better
Power supply	three phases 380/220 V $\pm 10\%$, 50 Hz $\pm 5\%$
Max. power consumption	270 kVA (100% modulation)
Cos φ	0.9 or better
Total efficiency	$\geq 55\%$
Tubes	2 tetrodes RS 2054 SK 3 tetrodes YL 1050
Dimensions (W \times H \times D)	4.0m \times 2.0m \times 1.8m (transmitter) 0.8m \times 2.0m \times 1.8m (HT transformer)

Terms of delivery and rights to change design reserved.
Siemens AG
Dept. B V SA
St.-Martin-Straße 76
D-8000 München 80
Germany
Tel. 089-4 1331 · Tx. 5210883

SIEMENS AKTIENGESELLSCHAFT

Ordering No. B/2720 - 101
Printed in Germany
PA 08821.

SIEMENS

**100 kW Medium Wave
Broadcast Transmitter**



The Siemens MF-Transmitter type WR Send 100 M-03 for broadcasting in amplitude modulation works with a carrier power of 100 kW.

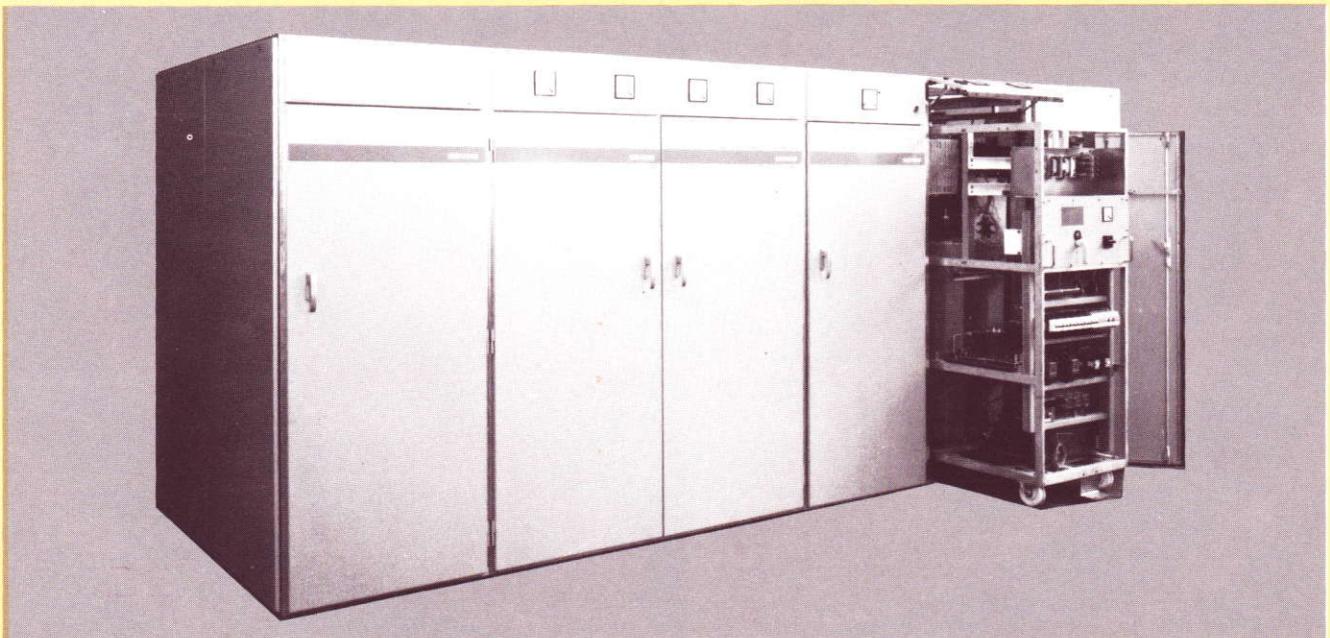
It is equipped with a crystal oscillator and can be adjusted to the operating frequency in the range of 525 ... 1605 kHz. The electrical data are corresponding to the CCIR and ARD standard.

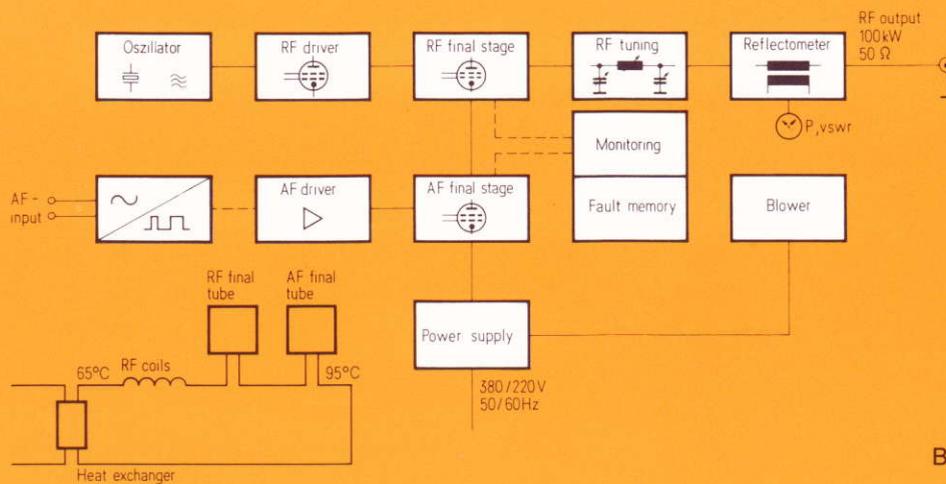
All safety equipments and control function being necessary are available.

Special Characteristics

- 3 valves only (vapor condensation cooling)
- Pulse duration modulation (advantage for modulation capability and efficiency)
- Automatic re-start in case of interference
- Fault memory
- Logical monitoring
- Power reduction for operation and adjustment
- Utilisation of silicon semiconductors in the prestages, blocking devices and power supplies
- RF measuring outputs and demodulator
- Crosspointer instrument for RF output power and VSWR
- Constructure as per the unit principle
- Removable trolleys
- Small dimensions
- Simple installation and operation
- Easy maintenance
- Provided for remote control

100 kW Medium Wave Broadcast Transmitter





Block Diagram

Technical Data

Frequency range	525...1605 kHz (transmitter prepared for 1 frequency)
Frequency stability	± 5 Hz
Power output	100 kW
Power reduction	to 50 kW
Carrier shift	4% or less with 90% modulation at 1000 Hz
RF harmonic radiation	less than 50 mW
Type of transmission	9 A3 or 20 A3 (Amplitude modulation, broadcasting, double-side band, band-width 9 or 20 kHz)
Output impedance	50 Ohms unbalanced
VSWR	less than 1.5
Audio input	2000 Ohms balanced
Input level	-4... +10 dBm
Audio frequency response	100...4000 Hz ± 1 dB 60...5000 Hz ± 2 dB
Audio frequency distortion	less than 3% at 60...5000 Hz with 80% modulation
Modulation capability	100%
Noise (unweighted)	50 dB or better
Noise (weighted)	60 dB or better
Power supply	three phases 380/220V ± 10%, 50 Hz ± 5%
Max. power consumption	230 kVA
Cos φ	0.9 or better
Total efficiency	65% or better
Tubes	2 tetrodes RS 2054 SK 1 tetrode RS 1072 C
Dimensions (W × H × D)	4.0m × 2.0m × 1.8m (transmitter) 0.8m × 2.0m × 1.8m (HT transformer)

Terms of delivery and rights to change design reserved.
Siemens AG
Dept. RS V SA
St.-Martin-Straße 76
D-8000 München 80
Germany
Tel. 089-4 1331 · Tx. 5210883

SIEMENS AKTIENGESELLSCHAFT

Ordering No. B/2155-101
Printed in Germany
PA 11801.