

# TX5KPS - TX10KPS

## 5 and 10 KW Hot-Pluggable version



### FM Solid State Power Amplifier

### 87.5 - 108 MHz range

- Built-in RF power combiner and splitter.
- Each power amplifier module has its own with switching power supply.
- Available with double exciter and built-in changeover unit.
- Available with two parallel main transformers/rectifiers, each one being able to supply all the amplifier.
- Totally self-protected and self-controlled by means of a network of microprocessor.

- Plug-in technology.
- Easy mounting modules.

MOSFET

### Maintenance

The power supply is mounted on slide-out wheels in order to ease installation and maintenance operations.  
Totally plug-in, no wiring needed



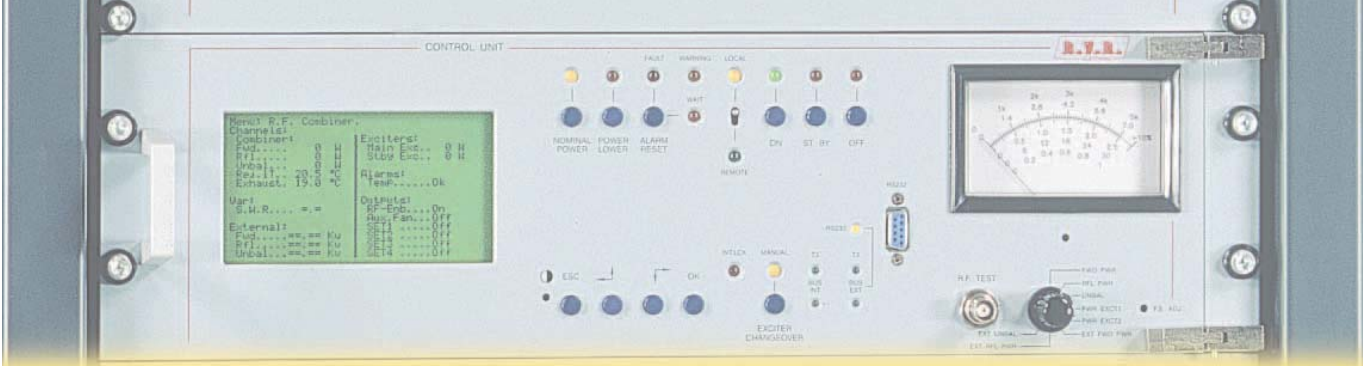
The TX5KPS is also available with two parallel power supplies, to provide a total redundancy, a better endurance and easy maintenance of the main transformer/rectifier.

**R.V.R.**  
USA



TX10KPS

These specifications are subject to change without notice.



On the PJxxHPS's front panel, on a user-friendly graphic interface, all the amplifier's diagnostic and control capabilities are displayed.

```

Overall Status:

Control Unit....On-Exot.1
Power Supply....On
R.F. Combiner...On
R.F. Unit-1.....On
R.F. Unit-2.....On
R.F. Unit-3.....On
R.F. Unit-4.....On
R.F. Unit-5.....On

Press <Esc> for Menu - Hours: 00015
  
```

General status menu

Release menu

```

Menu: Release.

Control Unit  4  5000  1.33  1.0
Power Supply  1  5000  1.89  1.0
RF Combiner   4  5000  1.89  1.0
RF Unit1      8  5000  1.89  1.0
RF Unit2      9  5000  1.89  1.0
RF Unit3     10  5000  1.89  1.0
RF Unit4     11  5000  1.89  1.0
RF Unit5     12  5000  1.89  1.0
  
```

```

XXXXXXXXXXXXXXXX Menu Select XXXXXXXXXXXXXXXXXXXX

Control Unit
Power Supply
R.F. Combiner
R.F. Units
Alarms
Service
Settings
Exciters
Info
Release
  
```

Select menu

Service menu

```

Menu: Service.
Fwd: 5000 W

Unb: 0 W

          Fwd  | Rf1
RF Unit1 - On .. 1023 W | 0 W
RF Unit2 - On .. 1012 W | 0 W
RF Unit3 - On .. 1018 W | 0 W
RF Unit4 - On .. 1023 W | 0 W
RF Unit5 - On .. 1018 W | 0 W
  
```

```

Menu: Settings:
Nominal Pwr..... 95 % - ( 4.75 kW)
Low Power.....40 % - ( 2.00 kW)

Set  Assgn  Limit
SET1 Ch-1  80 % - ( 4.00 kW)
SET1 Ch-1  50 % - ( 2.50 kW)
SET1 Ch-2  20 % - ( 240 W)
SET1 Ch-1  50 % - ( 2.50 W)

Exc s wait time: 10 sec.
Talk Address    4
Time (h-m)      14-49
Date (d-m-y)    12-02-02

Write Config.  All
  
```

Setting menu

Alarms menu



```

Menu: Alarms. Pg. 1 of 1

Unit  Err.  Time  Date
C.U.  E-Mute Flt  14:14  12-02-02
R.F.5  R-In       14:13  12-02-02
P.S.  U-Tap.     14:09  12-02-02
P.S.  F-Clk.    14:05  12-02-02
P.S.  F-Fuse     14:02  12-02-02
P.S.  F-C.B. Blw  13:57  12-02-02
P.S.  F-C.B. Blw  13:56  12-02-02
P.S.  F-C.B. Blw  13:55  12-02-02
P.S.  F-Fuse     13:37  12-02-02
P.S.  F-Fuse     13:32  12-02-02
P.S.  F-C.B. Blw  13:15  12-02-02
  
```

```

Menu: Exciters

Main Exc..... 22 W
Stby Exc..... 0 W

Main Exciter:  1      | Push (OK)
Exc.1          On     | to change
Exc.2          Off

Exciter s Mains: On.
  
```

Exciters menu

RF units menu

```

Menu: R.F. Unit 01.
Channels:
Fwd.... 5000 W
Rf1..... 0 W
Input....3.1 W
P.R.U....50.5 W
Bias.U....9.1 W
Temp....29.5 °C
Driver.I. 0.11 A
MOS-1.I...8.1 A
MOS-2.I...8.1 A
MOS-3.I...8.2 A
MOS-4.I...8.0 A

Total I..32.4 A
Eff..... 63 %

Alarms:
Temp.....OK
Fuse.....OK
Unit.Intl.OK

Action:
RF-emb....On
  
```

```

Menu: Info.

Type          TJSKPSU1-1
Talk Addr.    4
Baud Rate     115.2 Kb.P.s.

Power Supply  Single
Exciter       Dual
Reset Safety  Disabled
Cfs. N-1     Automatic

  
```

Information menu

Power supply menu

```

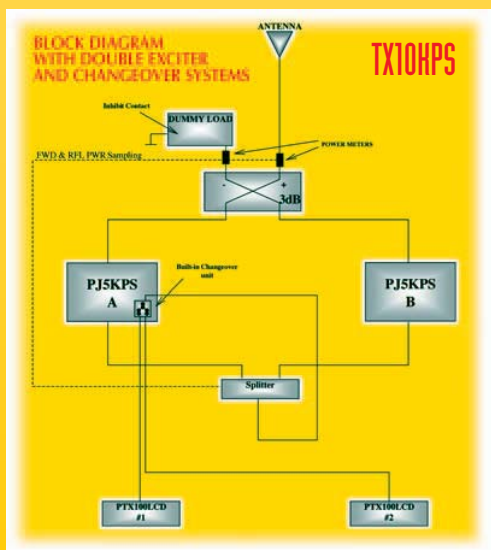
Menu: Power SUPPLY.
Channels:
Bus Bar...79.8 W
Room T... 25.7 °C

Safety.... OK
Mains.....OK

Alarms:
Trafo-1T...OK
Fuse-1.....OK
Trafo-2T...OK
Fuse-2.....OK
C.B.Blower.OK

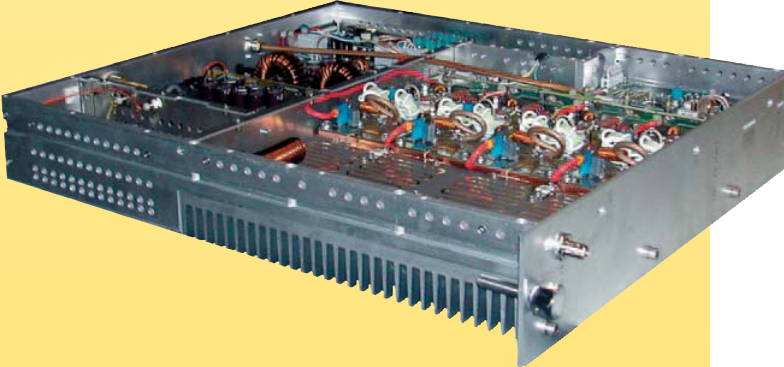
OutPuts:
SUPPLY-1....On
SUPPLY-2....On
Blower.....On

Press.....OK
  
```



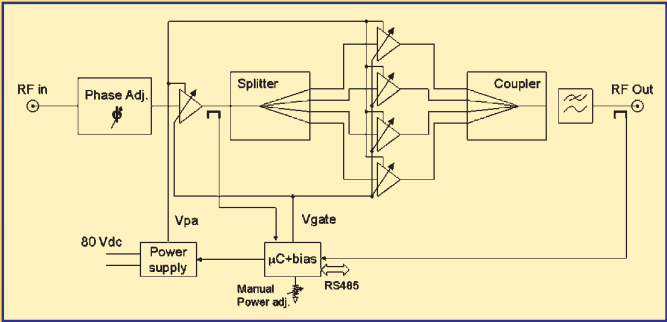


# TECHNICAL SPECIFICATIONS TX5KPS - TX10KPS

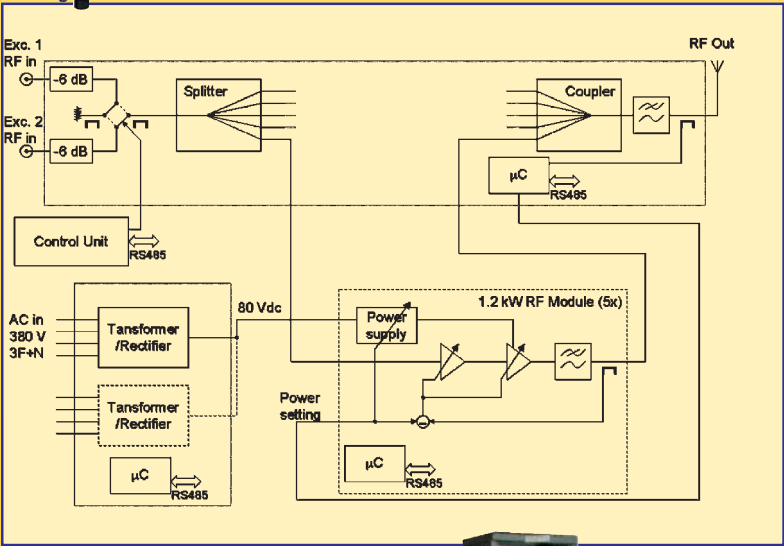


## plug-in 1.2KW power amplifier modules

Each module is self-protected and self-controlled by means of an internal microprocessor.



Each 5KW amplifier (PJ5KPS) is provided with a one internal fan, inlet and outlet air.  
 For each PJ5KPS the output air flow is 600 m<sup>3</sup>/h.  
 The outlet air hole is placed on rear cover of rack, but other outlet on top cover of the rack is available.





# TX5KPS

## BROADBAND POWER

# TX10KPS

### TX5KPS Features

- Composed of 5 plug-in 1.2KW power amplifier modules easy to remove without put-off the amplifier.
- Built-in RF power combiner and splitter.
- Each power amplifier module has its own with switching power supply.
- Available with double exciter and built-in changeover unit.
- Available with two parallel main transformers/rectifiers, each one being able to supply all the amplifier.
- Totally self-protected and self-controlled by means of a network of microprocessor.

### TX10KPS Features

- Composed of 2 TX5KPS, 5KW plug-in power amplifiers coupled by means a 3dB coupler.
- A 2.5 KW dummy load absorbs the unbalanced power between the two 5 KW amplifiers.
- Available with double exciter and changeover unit system.

### TX5KPS

Frequency Range:	87.5 – 108 MHz
AC Power Source:	Threephase: 380-415 Vac with neutral, 50-60 Hz
Output Power:	5000 W
RF Output Connector:	1 5/8" EIA flange
Output Impedance:	50 Ω
RF input connector:	N-type
RF input impedance:	50 Ω
Input Driver Power:	20 W
Power Consumption:	< 9 kW
Power Factor:	0.95
Harmonic & Spurious Suppression:	Meets or exceeds all FCC and CCIR requirements
Cooling:	Forced ventilation
Operating Temperature:	From -10° C to 50° C
Maximum humidity:	90% non-condensing
Cabinet Dimensions:	1895 mm (74.61") H 565 mm (22.24") W 850 mm (33.46") D



### TX10KPS

Frequency Range:	87.5 – 108 MHz
AC Power Source:	Threephase: 380-415 Vac with neutral, 50-60 Hz
Output Power:	10000 W
RF Output Connector:	1 5/8" EIA flange
Output Impedance:	50 Ω
RF input connector:	N-type
RF input impedance:	50 Ω
Input Driver Power:	60 W
Power Consumption:	< 19 kW
Power Factor:	0.95
Harmonic & Spurious Suppression:	Meets or exceeds all FCC and CCIR requirements
Cooling:	Forced ventilation
Operating Temperature:	From -10° C to 50° C
Maximum humidity:	90% non-condensing
Cabinet Dimensions:	2 cabinets: 2073 mm (81.61") H 565 mm (22.24") W 850 mm (33.46") D



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# TECHNICAL SPECIFICATIONS TX5KPS - TX10KPS

## MONO and STEREO

Rated output power PTX30LCD: 0-30 W continuously variable (A.L.C.)  
 Rated output power PTX60LCD: 0-60 W continuously variable (A.L.C.)  
 Rated output power PTX100LCD: 0-100 W continuously variable (A.L.C.)  
 R.F output connector: "N" type  
 R.F output impedance: 50 Ohm  
 Frequency range: 87.5 MHz to 108 MHz  
 Frequency programmability: direct from front panel  
 Frequency stability:  $\pm 1$ ppm from -10°C to 50°C  
 Modulation type: direct carrier frequency modulation  
 Spurious & Harmonic suppression: meets or exceeds all FCC and CCIR requirements  
 Modulation capability: meets or exceeds all FCC and CCIR requirements (typical 240kHz MPX or Mono 210 KHz Stereo)  
 Asynchronous AM S/N ratio: >70 dB below reference carrier with 100% amplitude modulation at 400Hz. no de-emphasis no FM modulation  
 Synchronous AM S/N ratio: <50 dB or better below reference carrier with 100% amplitude modulation at 400Hz. Without de-emphasis, FM modulation = +75KHz at 400Hz less than 0.1% (typical 0.05%)

Transient intermodulation distortion: measured with a 3.18KHz square wave and a 15KHz sine wave at 100% modulation  
 AC power requirement: 110-130V, 50-60%  
 198-250V, 50-60%  
 Power consumption PTX30LCD: approx 120VA from AC  
 Power consumption PTX60LCD: approx 200VA from AC  
 Power consumption PTX100LCD: approx 300VA from AC  
 Panel size: 483mm (19") W x 88 mm (3 1/2") H (2 standard rack spaces high)  
 Overall depth: 344 mm (26 1/2")  
 Weight PTX30LCD: 13Kg  
 Weight PTX60LCD: 15.5Kg  
 Weight PTX100LCD: 15.5Kg  
 Ambient temperature range: -10°C to 50°C  
 Preemphasis: 0  
 25 microsec. (CCIR)  
 75 microsec. (FCC)

## AUDIO INPUTS

Left/Mono-Right/Stereo input : balanced or unbalanced  
 Left/Mono-Right/Stereo connector: "XLR" female  
 MPX Input: unbalanced  
 MPX connector: BNC  
 Input Impedance: 10Kohm or 600Ohm front panel selectable  
 Input Level: from +14 to -13dBm, 1dB step front panel selectable, internal continuously selectable

## MONAURAL OPERATION

FM S/N ratio: PTX30LCD > 83dB (90 dB typical) below +75KHz deviation at 400Hz measured in a 20Hz to 20KHz bandwidth with 50 microsec. de-emphasis (RMS)  
 PTX60LCD and PTX100LCD > 79dB below +75KHz deviation at 400Hz measured in a 20Hz to 20KHz bandwidth with 50 microsec. de-emphasis (RMS)  
 Audio frequency response:  $\pm 0.5$ dB, from 20Hz to 15KHz  
 Total harmonic distortion: less than 0.02%  
 Intermodulation distortion: 0.02% or less, measured with a 1KHz and a 1.3KHz tones, 1:1 ratio, at 100% modulation

## COMPOSITE OPERATION

Composite FM S/N ratio: PTX30LCD 83dB (90 dB typical) below +75KHz deviation at 400Hz measured in a 20Hz to 200KHz bandwidth with 50 microsec. de-emphasis (RMS)  
 PTX60LCD and PTX100LCD > 79dB below +75KHz deviation at 400Hz measured in a 20Hz to 200KHz bandwidth with 50 microsec. de-emphasis (RMS)  
 Composite amplitude response:  $\pm 0.1$ dB from 20Hz to 53KHz  
 $\pm 0.5$ dB from 53KHz to 100KHz  
 Composite total harmonic distortion: less than 0.02%  
 Composite intermodulation distortion: 0.03% or less measured with a 1KHz and a 1.3KHz tones, 1:1 modulation  
 Stereo separation: > 50dB (60dB typical)

## STEREO OPERATION

Stereo FM S/N ratio: PTX30LCD/S > 83 below (90 dB typical) +75 KHz deviation at 400 Hz measured in a 20 Hz to 200 KHz bandwidth with 50 microsec. De-emphasis (RMS)  
 PTX60LCD/S and PTX100LCD/S > 79 below +75 KHz deviation at 400 Hz measured in a 20 Hz to 200 KHz bandwidth with 50 microsec. De-emphasis (RMS)

Audio amplitude response:  $\pm 0.5$  dB, from 20 Hz to 15 KHz  
 Total harmonic distortion: 0.03% or less  
 Intermodulation distortion: 0.03% or less, measured with a 1 KHz and a 1.3 KHz tones, 1:1 ratio, at 100% modulation  
 Stereo separation: > 50 dB (60 dB typical)

## SCA INPUTS

SCA input: 3 unbalanced  
 SCA connector: "BNC" type  
 SCA input impedance: 10Kohm  
 SCA input levels: +10 to -20dBm adjustable  
 SCA amplitude response:  $\pm 0.2$ dB, from 40KHz to 100KHz

Crosstalk 67KHz SCA to main or to stereo channel: 65 dB  
 Crosstalk 92KHz SCA to main or to stereo channel: 70 dB

## OUTPUT SIGNALS

Monitor MPX: 0dBm at 75KHz, minimum load 600Ohm  
 19KHz Pilot tone: 1Vpp, minimum load 4K7  
 R.F. output impedance: 50Ohm  
 R.F. Test: -30dB, 50Ohm impedance

## REMOTE SIGNAL

Remote Connector: "DB15 female" type  
 Adjustable external AGC FWD & RFL power  
 6 analog/digital inputs  
 1 Inhibit power interlock, BNC type connector  
 2 relay outputs  
 1 I2C serial interface

## SERIAL INTERFACE

Serial Interface: RS232, DTE/DCE selectable  
 Serial Interface: RS485 (Optional), DTE/DCE selectable  
 Serial Connector: "DB9 female" type

## TELEMETRY INTERFACE (Optional)

Telemetry signal: 8 Analog/Digital Input  
 2 Digital Outputs  
 1 I2C serial interface  
 Telemetry Connector: "DB25 female" type

## OPTIONS

/03 External 24V battery  
 /08 Telemetry interface  
 /AUDINP-DIG Digital audio Input (AES-EBU balanced, TOS-LINK and S/PDIF)  
 /TRDSP Digital audio Input, DSP, RDS built-in



## TRDSP

### Analogue Audio Input

Conversion: 24bit  
 Connector: XLR electronically balanced  
 Impedance: 600/10K $\Omega$  - software selectable  
 Input level: Software adjustable  
 Maximum Input Level: 6/18/30 dBu

### Digital Audio Input

Connector: XLR Balanced + optical toslink  
 Data Formats: AES/EBU - S/PDIF - EIAJ-340  
 Sampling frequencies: from 32 to 96 KHz

### Digital Audio Output

Connector: PIN - RCA Unbalanced  
 Data format: S/PDIF  
 Sampling frequencies: 96 KHz

### MPX Output

D/A converter: 24 bit  
 Pilot tone: 19 KHz  $\pm 0.5$  Hz  
 Pilot level: Adjustable  
 Pilot phase: Adjustable  
 Attenuation: with 38 KHz carrier suppressed min. -90 dB  
 MPX output level: Adjustable  
 Stereo separation: 65 dB from 30 HZ to 15 KHz  
 Noise Output: MPX -90 dBu  
 Preemphasys: 50/75 microsec.  
 Preemphasys: linearity from 30 Hz to 15 KHz  $\pm 0.01$  dB

### Low pass filter:

$\pm 0.01$  dB  
 Low pass filter: attenuation 19 KHz -90 dB  
 Clipper: Left and Right channels  
 Clipper: MPX composite  
 AGC: Left and Right channels

### RDS

Specification: Cenelec 50067 (PI: Program Identification, PS: Program Service, PTY: Program Type, TP: Traffic Program Identification, TA: Traffic Announcement, AF: Alternative Frequencies, M/S: Music/Speech, PIN: Program Item Number, RT: Radio Text, EON: Enhanced Other Networks, TDC: Transparent Data Channel, IH: In-house Application)  
 57 KHz  $\pm 1.5$  Hz  
 Internal or external

### Sub-carrier frequencies:

Synchronization: Internal or external  
**Elaboration**  
 A/D conversion: 24 bit  
 D/A conversion: 24 bit  
 DSP elaboration: 32 bit

### AUDINP-DIG

**General Specifications**  
 D/A converter: 24 bit  
 Sampling frequency: From 32 to 96 KHz  
 2 Regulations audio level normalize to the level set for analog input  
 External switch to select the balanced or unbalanced/optic Input

### Digital Inputs

1 Unbalanced for coaxial cable with PIN/RCA connector (SPDIF)  
 1 Input for optical fibre TOSLINK  
 1 Balanced with XLR female connector (AES/EBU)

### Emergency input

Connector: JACK 3.5  
 Connected to ground force the selection of analog input  
**Data formats**  
 S/PDIF, AES/EBU, IEC958 and EIAJ CP340/1201

Revision: 02/2006



USA

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