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FIG 1 Control Unit R&S NetCCU®700.

Transmitter Control Unit R&S NetCCU®700

Transmitter control and remote monitoring in one unit

The globally successful R&S®Netlink has been integrated in the new Transmitter Control Unit R&S NetCCU®700. Only one unit is therefore required for the control, monitoring and remote control of low-power transmitters.

Compact transmitter control with numerous functions

In the TV transmitter family R&S®Nx7000, the control unit (CCU) is integrated in the Exciter R&S®Sx700. Remote control and monitoring is performed via an R&S®NetLink, a separate unit that has met with great success worldwide [1, 2].

The new Control Unit R&S NetCCU®700 (FIG 1) combines these closely linked tasks in one unit and more functions have been added. The R&S NetCCU®700 is used in the low-power transmitters of the R&S®SV7002 family together with the DTV Exciter R&S®SV702 (see box on page 28). The control unit contains the transmitter control unit and the automatic switchover unit for single transmitters, exciter standby, passive transmitter standby and (n+1) transmitter standby configurations. In the case of passive

standby or (n+1) standby configurations, the R&S NetCCU®700 controls both exciter switchover and output stage switchover. The respective transmitter can be remote-controlled and monitored via the integrated R&S®NetLink software. The new control unit is also provided with a display for local operation and an Ethernet interface for control from a local PC or from a notebook.

Uniform control software

In contrast to the Windows-based user interface of the R&S®Nx7000, no special software is required on the PC for remote operation of a transmitter containing the new control unit. The user only needs a Web browser to access the transmitter via R&S®NetLink (FIG 2). This means that menu guidance via the Web browser is identical for transmitter control from a PC and by remote control.

The user is not confronted with different “control philosophies” and the software can be easily updated.

Menu guidance in the local display is largely identical to that used in the R&S®Nx7000 transmitter family (FIG 3). Operation of the R&S NetCCU®700 will therefore be easy for all customers familiar with the high-power and medium-power transmitters.

Linux operating system

The new R&S NetCCU®700 uses the Linux operating system because high reliability and short booting times are essential features of the instrument concept. Based on Linux, a basic software system was developed with a core of tree-structured XML files for the instruments to be controlled by the R&S NetCCU®700, e.g. exciters and amplifiers. The software applications read all information about instrument parameters from these XML files. Software applications exchange data via the new VDT (virtual device tree) bus (FIG 4) that has been especially developed for this purpose.

The R&S®NetLink software was ported to Linux for use in the new control unit. Applications such as Web server and SNMP agent – same as the graphical user interface described above – run within a Java virtual machine.

Integrated transmitter components

The R&S NetCCU®700 also contains other important functions required for a complete transmitter system so that only a minimum of external components is needed. Two rectifiers are included, for instance, for connecting a Directional Coupler R&S®GD 700 or for measuring the reflected power or the transmitter

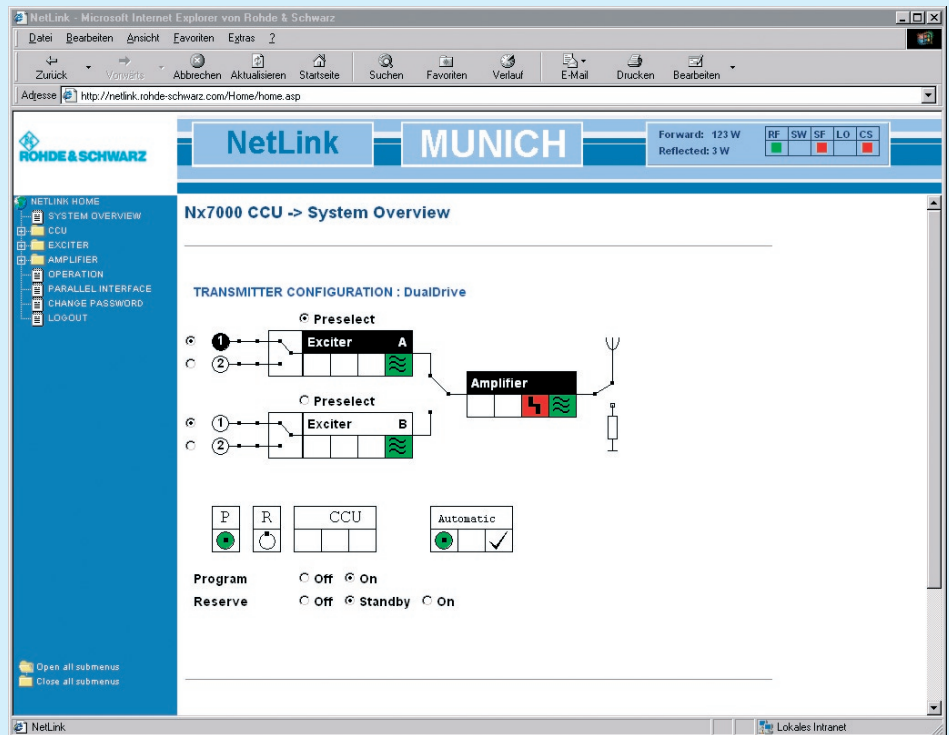


FIG 2 System overview in Web browser (remote transmitter control).

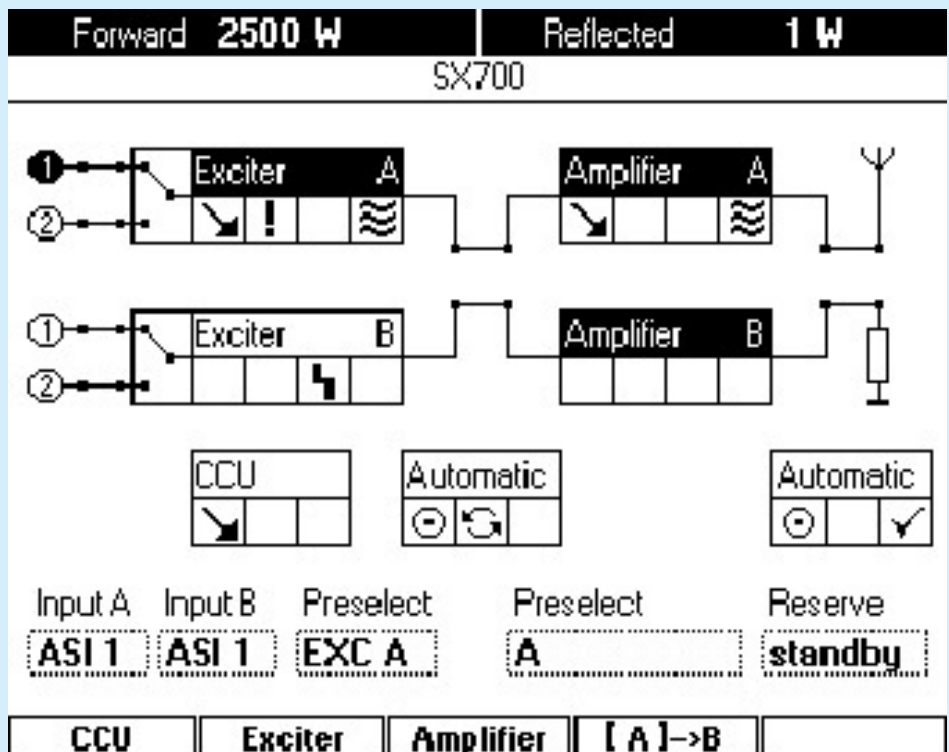


FIG 3 System overview on the display of the R&S NetCCU®700.

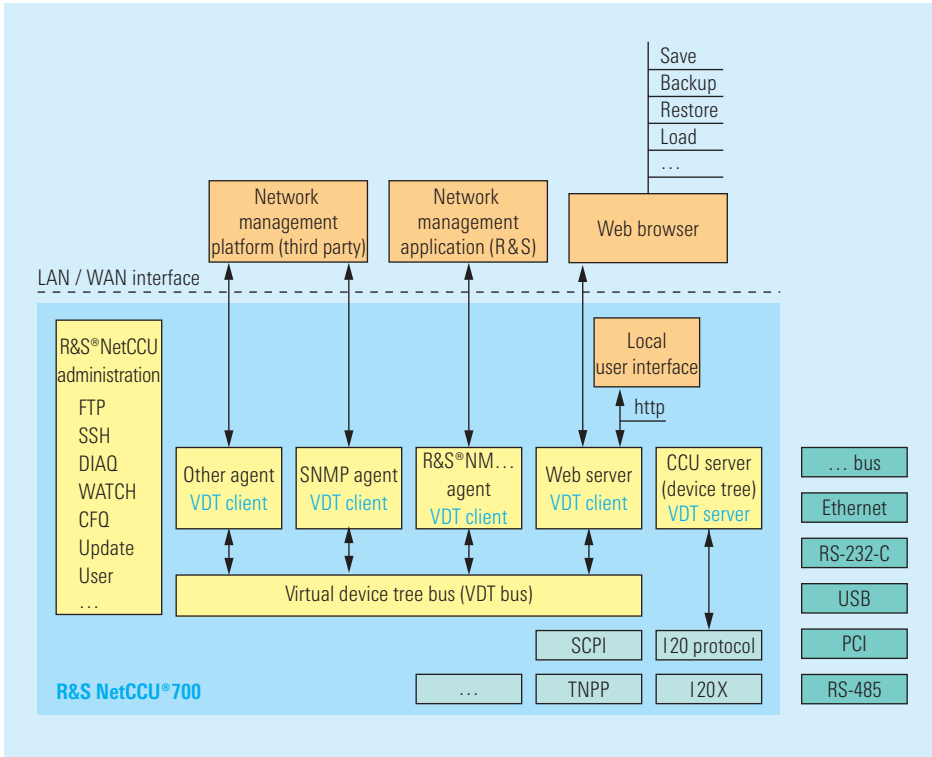


FIG 4 Software architecture of the R&S NetCCU®700.

► output power after an additional output filter. An ASI distributor as is required for exciter standby or passive transmitter standby configurations may be optionally included. The emergency control provided in the unit ensures transmitter operation even if the control unit fails.

The R&S NetCCU®700 also contains a free PCI slot, e.g. for an I/O card with eight or 16 relay contacts, and a serial interface for modem connection.

Since several low-power transmitters can be accommodated in a rack, the control unit can also be used for operating and monitoring several single transmitters in an (n+0) configuration.

Thomas Janner

The members of the new Transmitter Family R&S®SV7002 at a glance

The new Transmitter Family R&S®SV7002 [3] includes the DTV Amplifiers R&S®VH610A2 / 620A2 with DVB-T power of 55 W and 120 W, respectively, and two new low-power amplifiers, the 12.5 W R&S®VH6010A2 and the 25 W R&S®VH6020A2. With the new four-way coupler, up to four amplifiers can be interconnected. The family is complemented by the new DTV Exciter R&S®SV702 [4] and the Control Unit R&S NetCCU®700.



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Compact low-power TV Transmitter R&S®SV7002 for DVB-T with 2 x 12.5 W output power (R&S NetCCU®700, two Exciters R&S®SV702 and two Amplifiers R&S®VH6010A2).

More information and data sheets for the comprehensive program of sound and TV broadcasting equipment at www.rohde-schwarz.com

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- [1] R&S®NetLink: Remote control and monitoring of transmitters on the Internet. News from Rohde & Schwarz (2001) No. 170, pp 27–29
- [2] R&S®NetLink: Enhanced capabilities for management of broadcasting networks. News from Rohde & Schwarz (2003) No. 177, pp 42–43
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