RS232 control of T+A R-System Power Amplifiers A1220R/1230R/1260R, A1520R/1530R/1560R

R-series power amplifiers can be controlled by any control device having a RS232 serial output port (PC, CRESTRON home automation system etc.) through the T+A RS232/R-Link interface adapter.

For details about connecting and operating the adapter see the user manual of the adapter "UM_RS232_Adapt.doc".

Settings for the RS232 interface of the control device are as follows:

Baud rate:	115.200
Data bits:	8
Stop bits:	1
Parity:	none
Flow Control:	none

T+A RS_232 Protocol

The R-series devices use the standard T+A RS232 command protocol as described in detail in the documents "TA_RS232_protocol.doc" and "RS_232_Command_Codes.doc".

The control commands for power amplifiers are sent to the R-system master device (= PreAmplifier). The PreAmp will then transfer the commands to the power amplifiers.

Format of the command telegrams

A command telegram to a T+A R-System device consists of 6 bytes. The complete telegram should be sent without pauses between the bytes.

Example: SYSTEM_ON command to master device (PreAmp)

Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6
RS232 adapter Address	Telegram length	R-Link Address	R-Link command	R-Link flag byte	Check sum
(always 0x01)	(R-Link address + R-Link command + R-Link flag byte = 0x03)	(0xC8= Master Device)	(here: SystemON = 0x57) → see command table "appendix 1"	(always 0x02)	= sum of bytes 1..5 mod. 0x100
0x01	0x03	0xC8	0x57	0x02	0x25

Byte 1, 2, 3, 5 : these bytes have the fixed values as shown in the table above for all R-System power amplifiers

Byte 4 : R-Link command according to the table of RCII commands (see "RS_232_Command_Codes.doc")

Byte 6 : check sum == (byte1+byte2+byte3+byte4+byte5) modulo 0x100

Acknowledge (ACK) telegrams

The R-System master device will process each received command telegram and it will send an acknowledge telegram approx. 25...35 ms after receiving the command.

The ACK telegram consists of 2 bytes:
Byte_1 is the RS232 address of the command telegram received before (=byte 1 of the command telegram = 0x01).
Byte_2 is the acknowledge byte. If this byte is equal to the check sum of the command telegram (byte6 of the command) then the command was received correctly.
If byte 2 has a value different from the check sum of the command, an error has occurred (see table below).

Format of the ACK telegram:

Byte 1	Byte 2
RS232 address	ACK byte
0x01	= check sum of command: command correctly received = check sum –1: command ignored (system busy) = check sum –2: command not executed
	Note: If no ACK telegram is received within 35 milli-seconds after sending a command, there is either a hardware problem (cable etc.) or the telegram is erroneous (wrong address, wrong check sum ....)

After the ACK telegram, the master device is ready for the next command.

Appendix 1:   List of Power Amplifier commands (Address $C8)

Command	Command Code (HEX)	toggle	Remark
ON/OFF	0x01	x	**Hint**: better use the "discrete" System ON, OFF, STANDBY commands.
System ON	0x57		Switch the master device ON
System Standby	0x77		Switch the system (master and source devices) to STANDBY
System OFF	0x7A		Switch the system completely OFF
Output Control			
SPKR	0x13	x	Switches the speaker outputs in sequence ON and OFF: A -> B -> A+B -> OFF -> A -> ...... **Hint**: better use the "discrete" Speaker_A / Speaker_B ON + OFF commands
Speaker_A ON	0x68		Speaker A output ON
Speaker_A OFF	0x48		Speaker A output OFF
Speaker_B ON	0x58		Speaker B output ON
Speaker_B OFF	0x78		Speaker B output OFF
Speaker_C ON	0x6C		Speaker C output control
Speaker_C OFF	0x4C		(*) external A1230/A1530 with special firmware required
Speaker_D ON	0x5C		Speaker D output control
Speaker_D OFF	0x7C		(*) external A1230/A1530 with special firmware required

Document History

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