

SONNENBURG
ELECTRONIC AG
www.sonnenburg.de

Radio Control Receiver

Trigger your sirens in a very convenient way via radio with the modern radio control receivers by SONNENBURG. A special filtering method makes a quite high response sensitivity possible, even at poor radio network quality. With further relays you are capable to control gates, lighting, house alarms etc. The radio receivers are conforming to the BOS, ETS and VDE guidelines. They are ideally suited for the use in government agencies such as police, fire and rescue services.

Our radio control receivers are operating in the frequency range of 2 m, 4 m and 70 cm and are available for analog and digital networks.



COMMUNICATION THAT ARRIVES

...EVERYWHERE

Special filtering

Receive crystal clear signals even at a poor radio network quality ($< 0,3 \mu\text{V}$).

BOS-tested (BOS=Authorities with security tasks in Germany)

Use our receivers for BOS purposes. TR-BOS, -ETS & VDE are complied.

BOS-channel spacing

Use a clean 20 kHz channel or 12.5 kHz for further channels.

External input

Use the second external input for fire alarms etc. (1 x 230 V_{AC}, 1 x 24 V_{DC}).

High number of addresses

Up to 16 programs in 20 addresses allow a variety of alarm etc.

Modifiable

Alarm storage, locking time and siren clock pulse are programmable as required.

CONSTRUCTION

The design of the radio control receivers ensures a safe operation even at adverse conditions. All functions are controlled by a modern RISC processor. The individual assemblies are mounted on a metal plate. This is at the same time used as a counterweight for an optional mountable antenna. The compact design allows a very simple installation and maintenance. For the configuration and debugging a service program is available.

ANALOG RADIO CONTROL RECEIVER FEATURES (CR-220-ASE, CR-410-ASE, CR-710-ASE)

- Transmission via selcall system of the group D according to 9.4 DIN 45012 and the double tone continuous ringing system according to 5.2.13 DIN 45012
- The CR-410 is intended for BOS application
- Encoding according to the technical directive BOS „Devices for Radio Alerting“ (dated March 2000)
- Analog receivers (ASE) are convertible to digital (DSE)

DIGITAL RADIO CONTROL RECEIVER FEATURES (CR-220-DSE, CR-410-DSE, CR-710-DSE)

- A special hardware und software filtration allows a quiete high response to the received data.
- Baud rate selectable between 512 bit/s and 1200 bit/s
- Up to 20 addresses and 4 siren programs possible (from 2 rics up to 8 alarms)
- Demodulator for DFS modulation
- Broadcasting via Radio Paging Code nr. 1 (POCSAG)
- Coding according to TR-BOS „devices for digital radio alarm“

ANALOG & DIGITAL RADIO CONTROL RECEIVERS

- HF receiver
- 20 addresses
- 1 relay for siren programs
- 3 relays for control purposes (optional)
- DSE: 4 alarms (from 2 RIC up to 8)
- ASE: 6 alarms

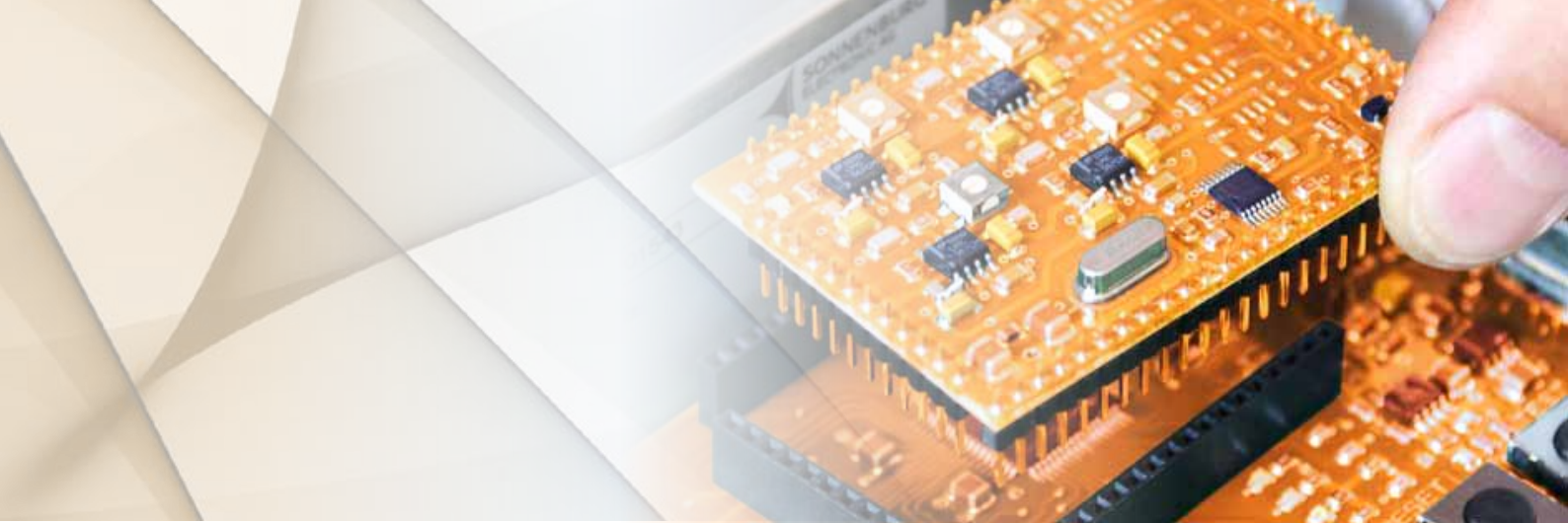
The radio control receivers can be operated on the following frequencies:

CR-220-DSE/ASE: 146 to 174 MHz (2 m - band)

CR-410-DSE/ASE: 68 to 87,5 MHz (4 m - band)

CR-710-DSE/ASE: 420 to 470 MHz (70 cm - band)





TECHNICAL DETAILS: ANALOG RADIO CONTROL RECEIVER

	CR-220-ASE	CR-410-ASE	CR-710-ASE
Operating voltage in DC standby activated (-25° C)		11 V _{DC} - 30 V _{DC} ca. 80 mA (24 V _{DC}) 230 mA (24 V _{DC})	
Operating voltage in AC standby activated (-25° C)		175~ - 255 V _{AC} 20 mA (5 VA) bei 230 V 35 mA (8 VA) bei 230 V	
Siren addresses (5-Tone sequence)		20	
Siren programmes	6 alerts	1-6 alerts	6 alerts
Inputs/fire alert button		1 x 230 V _{AC} + 1 x 10 - 30 V _{DC}	
Temperature range	-25° C - +55° C (-40° C - +70° C operativ)	-40° C - +70° C	-40° C - +70° C
Frequency deviation max	±800 Hz -40° C - +70° C, typical ±500	±600 Hz -40° C - +70° C	±900 Hz -40° C - +70° C, typical ±700
Frequency range	146 MHz - 174 MHz	68 MHz - 87,5 MHz	420 MHz - 470 MHz
Number of HF channels		1	
Channel spacing		20 kHz (12,5 kHz possible)	
Intermediate frequency		1 st I.F. = 21,4 MHz, 2 nd I.F. = 455 kHz	
Modulation		FM (F 3D)/PM	
Band width	±6,5 kHz	±9 kHz	±7,5 kHz
Input impedance		50 Ohm	
Antenna terminal		BNC socket	
Response sensitivity	< 0,30 µV U _a	< 0,25 µV U _a	< 0,25 µV U _a
Sensitivity at FM	< 0,5 µV U _a at 20 dB S/R	< 0,45 µV U _a at 20 dB S/R	< 0,4 µV U _a at 20 dB S/R
Damping / rejection:			
Adjacent channel	> 84 dB, typical 86 dB	> 83 dB, typical 86 dB	> 86 dB, typical 88 dB
Spurious response	to 4 GHz > 86 dB, typical 90 dB	to 4 GHz > 85 dB, typical 90 dB	to 4 GHz > 88 dB, typical 90 dB
Intermodulation	> 70 dB, typical 73 dB	> 73 dB, typical 76 dB	> 73 dB
Image ratio	> 90 dB	> 90 dB	> 90 dB
Blocking	> 92 dB	> 95 dB	> 91 dB typical 95 dB
Co-channel rejection	-6 dB	-8 dB	-4 dB
Total harmonic distortion		< 3 %	
Spurious radiation		< 2 nW (-57 dBm)	
Call system		Selcall system ZVEI / CCIR	
Siren triggering	double tone continuous sequence (also possible without double tone)	double tone continuous sequence	double tone continuous sequence (also possible without double tone)
Address configuration		via PC	
Switching outputs		1-4 potential free switch contact max 250 V ~ / 5 A 30 / 110 / 220 V _{DC} - 5 / 0,2 / 0,1 A	
Housing		plastic housing for wall fastening	
Protection class		IP 54	
Dimensions (b x h x d)		200 x 150 x 78 mm	
Weight		1,3 kg	
BOS approval number		ME IV - 20 06 / 05 (up to 6 alerts)ME III - 20 17 / 06 (1 alert)	
ETS guideline		300341	

SONNENBURG ELECTRONIC AG

Lauterbachstraße 45 | D-84307 Eggenfelden
Tel. +49 (0)8721 9588-0 | Fax-DW -60
info@sonnenburg.de | www.sonnenburg.de

TECHNICAL DETAILS: DIGITAL RADIO CONTROL RECEIVER

	CR-220-DSE	CR-410-DSE	CR-710-DSE
Operating voltage in DC standby activated (-25° C)		11 V _{DC} - 30 V _{DC} ca. 80 mA (24 V _{DC}) 230 mA (24 V _{DC})	
Operating voltage in AC standby activated (-25° C)		175~ - 255 V _{AC} 20 mA (5 VA) at 230 V 35 mA (8 VA) at 230 V	
Siren addresses (rics)		20	
Siren programmes		4 (from 2 rics 8 alarms)	
Inputs/fire alert button		1 x 230 V _{AC} + 1 x 10 - 30 V _{DC}	
Temperaturbereich	-25° C - +55° C (-40° C - +70° C functional)	-40° C - +70° C	-40° C - +70° C
Frequency deviation max	±800 Hz - 40° C - +70° C, typical ±500	±600 Hz - 40° C - +70° C	±900 Hz - 40° C - +70° C, typical ±700
Frequency range	146 MHz - 174 MHz	68 MHz - 87,5 MHz	420 MHz - 470 MHz
Number of HF channels		1	
Channel spacing		20 kHz (12,5 kHz possible)	
Intermediate frequency		1. ZF = 21,4 MHz, 2. ZF = 455 kHz	
Modulation		DFSK	
Band width	±6,5 kHz	±9 kHz	±7,5 kHz
Input impedance		50 Ohm	
Antenna terminal		BNC socket	
Response sensitivity	at ±4 kHz hub and 20 kHz channel spacing < 0,30 µV Ua	at ±4 kHz hub and 20 kHz channel spacing < 0,25 µV Ua	at ±4 kHz hub and 20 kHz channel spacing < 0,25 µV Ua
Sensitivity at FM	< 0,5 µV Ua at 20 dB S/R	< 0,45 µV Ua at 20 dB S/R	< 0,4 µV Ua at 20 dB S/R
Damping / rejection:			
Adjacent channel	> 84 dB typical 86 dB	> 83 dB typical 86 dB	> 86 dB typical 88 dB
Spurious response	to 4 GHz > 86 dB typical 90 dB	to 4 GHz > 85 dB typical 90 dB	to 4 GHz > 88 dB typical 90 dB
Intermodulation	> 70 dB, typical 73 dB	> 73 dB typical 76dB	> 73 dB
Image ratio	> 90 dB	> 90 dB	> 90 dB
Blocking	> 92 dB	> 95 dB	> 91 dB typical 95 dB
Co-channel rejection	-6 dB	-8 dB	-4 dB
Total harmonic distortion		< 3 %	
Spurious radiation		< 2 nW (-57 dBm)	
Call system		POCSAG	
Siren triggering		via PC	
Switching outputs		1-4 potential free switch contacts max 250 V ~ / 5 A; 30 / 110 / 220 V _{DC} - 5 / 0,2 / 0,1 A	
Housing		plastic housing for wall fastening	
Protection class		IP 54	
Dimensions (b x h x d)		200 x 150 x 78 mm	
Weight		1,3 kg	
ETS guideline		300341	