

## R&S®EU4200 Multichannel VHF Receiver

#### New radio generation for ATC communications

- AM voice with 25 kHz and 8.33 kHz channel spacing
- Excellent receive sensitivity
- Compact dimensions
- TCP/IP remote control interface
- USB service port
- Low life-cycle costs
- Built-in test functionality



#### Specifications

Mechanical		
Dimensions	19"/2, 3 HU 220 mm × 132 mm × 413 mm including handles and rear protectors	
Weight	≤5 kg	
Operating temperature range	-20 °C to +55 °C	
Electrical		
Power supply AC	115/230 V $-10\%/+15\%$ at 47 Hz to 63 Hz	
Power supply DC	19 V to 32 V	
	primary power on AC, automatic switch- over to DC in case of AC supply failure	
Power consumption AC (Standby/Rx)	typ. 6/32 W	
Power consumption DC (Standby/Rx)	typ. 1/30 W	
Electrical safety	in line with EN 60950	
Electromagnetic compatibility	in line with EN 301489-1/-22	
Common data		
Frequency range		
Standard	118 MHz to 136.975 MHz	
Extended	112 MHz to 143.975 MHz	
Channel spacing	25 kHz, 8.33 kHz	
Frequency accuracy		
With TCXO	±1.0 ppm (-20 °C to +55 °C)	
Standards complied with	EN 300676, ICAO Annex 10, Vol. III	

Antenna connectorBNC, 50 ΩReceive sensitivity <sup>11</sup> <-107 dBmOscillator reradiation<-110 dBmSpurious response rejection≥80 dBCross-modulation rejection≥90 dBAdjacent channel rejection≥90 dBAt 25 kHz spacing≥75 dBAt 8.33 kHz spacing≥65 dBDesensitization (blocking)At Δf ≥ 1 MHz≥100 dB3rd order intermodulation rejection≥80 dBIF bandwidthAt Δf ≥ 100/200 kHz≥80 dBIF bandwidthAt 25 kHz spacing±11 kHz/6 dB, ±25 kHz/80 dBAt 8.33 kHz spacing±3.5 kHz/6 dB, ±8.33 kHz/70 dBAt 25 kHz spacing300 Hz to 3400 Hz, ≥30 dB at 5 kHzAt 25 kHz spacing350 Hz to 2500 Hz, ≥25 dB at 3.2 kHzAt 8.33 kHz spacing350 Hz to 2500 Hz, ≥25 dB at 3.2 kHzAf eoutput-30 dBm to +10 dBm in 1 dB steps (0 dBm nom.) into 600 ΩSquelchMute attenuation≥70 dBSetting range(S+N)/N6 dB to 20 dB	Receiver		
Oscillator reradiation<-110 dBmSpurious response rejection>80 dBCross-modulation rejection>90 dBAdjacent channel rejection>75 dBAt 25 kHz spacing>75 dBAt 8.33 kHz spacing>65 dBDesensitization (blocking)>100 dBAt $\Delta f \ge 1$ MHz≥100 dB3rd order intermodulation rejection>80 dBIF bandwidth>80 dBIF bandwidth>80 dBAt 25 kHz spacing\$11 kHz/6 dB, ±25 kHz/80 dBAt 8.33 kHz spacing±11 kHz/6 dB, ±8.33 kHz/70 dBAt 25 kHz spacing300 Hz to 3400 Hz, ≥30 dB at 5 kHzAt 8.33 kHz spacing\$50 Hz to 2500 Hz, ≥25 dB at 3.2 kHzAt 8.33 kHz spacing\$00 dBm to +10 dBm in 1 dB steps (0 dBm nom.) into 600 ΩSquelch>70 dBMute attenuation\$70 dBSetting range	Antenna connector	BNC, 50 Ω	
Spurious response rejection≥80 dBCross-modulation rejection≥90 dBAdjacent channel rejection≥975 dBAt 25 kHz spacing≥75 dBAt 8.33 kHz spacing≥65 dBDesensitization (blocking)≥100 dBAt $\Delta f \ge 1$ MHz≥100 dB3rd order intermodulation rejection≥80 dBIF bandwidth≥80 dBAt 25 kHz spacing≥80 dBIF bandwidth≥101 dB, ±25 kHz/80 dBAt 25 kHz spacing±11 kHz/6 dB, ±25 kHz/80 dBAt 25 kHz spacing±3.5 kHz/6 dB, ±8.33 kHz/70 dBAt 25 kHz spacing300 Hz to 3400 Hz, ≥30 dB at 5 kHzAt 8.33 kHz spacing350 Hz to 2500 Hz, ≥25 dB at 3.2 kHzAf eoutput-30 dBm to +10 dBm in 1 dB steps (0 dBm nom.) into 600 $\Omega$ Squelch≥70 dBMute attenuation≥70 dB	Receive sensitivity <sup>1)</sup>	≤–107 dBm	
Cross-modulation rejection≥90 dBAdjacent channel rejectionAt 25 kHz spacing≥75 dBAt 8.33 kHz spacing≥65 dBDesensitization (blocking)At $\Delta f \ge 1$ MHz≥100 dB3rd order intermodulation rejection≥80 dB3rd order intermodulation rejection≥80 dBIF bandwidth≥111 kHz/6 dB, ±25 kHz/80 dBAt $\Delta f \ge 100/200$ kHz≥80 dBIF bandwidth±11 kHz/6 dB, ±25 kHz/80 dBAt 8.33 kHz spacing±3.5 kHz/6 dB, ±8.33 kHz/70 dBAt 8.33 kHz spacing300 Hz to 3400 Hz, ≥30 dB at 5 kHzAt 8.33 kHz spacing350 Hz to 2500 Hz, ≥25 dB at 3.2 kHzAf F output350 Hz to 2500 Hz, ≥25 dB at 3.2 kHzAF output>30 dBm to +10 dBm in 1 dB steps (0 dBm nom.) into 600 $\Omega$ SquelchMute attenuation≥70 dBSetting range	Oscillator reradiation	≤–110 dBm	
Adjacent channel rejectionAt 25 kHz spacing>75 dBAt 8.33 kHz spacing>65 dBDesensitization (blocking)>100 dBAt $\Delta f \ge 1$ MHz>100 dB3rd order intermodulation rejection>80 dBIF bandwidth>101 dB, ±25 kHz/80 dBAt $\Delta f \ge 100/200$ kHz $\ge 80 dB$ IF bandwidth $= 111 \text{ kHz/6 dB}, \pm 25 \text{ kHz/80 dB}$ At 25 kHz spacing $\pm 11 \text{ kHz/6 dB}, \pm 25 \text{ kHz/80 dB}$ At 8.33 kHz spacing $\pm 3.5 \text{ kHz/6 dB}, \pm 8.33 \text{ kHz/70 dB}$ AF response (+1/-3 dB referenced $\lor$ tkHz)At 8.33 kHz spacingAt 8.33 kHz spacing $300 \text{ Hz to 3400 Hz} \ge 30 \text{ Bat 5 kHz}$ At 8.33 kHz spacing $350 \text{ Hz to 2500 Hz} \ge 25 \text{ dB at 3.2 kHz}$ AF output $-30 \text{ dBm to +10 dBm in 1 dB steps}$ ( $0 \text{ dBm nom.}$ ) into $600 \Omega$ Squelch $\checkmark$ Mute attenuationMute attenuation $\ge 70 \text{ dB}$	Spurious response rejection	≥80 dB	
At 25 kHz spacing≥75 dBAt 8.33 kHz spacing≥65 dBDesensitization (blocking)≥100 dBAt Δf ≥ 1 MHz≥100 dB3rd order intermodulation rejection>At Δf ≥ 100/200 kHz≥80 dBIF bandwidth±11 kHz/6 dB, ±25 kHz/80 dBAt 25 kHz spacing±11 kHz/6 dB, ±25 kHz/80 dBAt 8.33 kHz spacing±3.5 kHz/6 dB, ±8.33 kHz/70 dBAF response (+1/-3 dB referenced ∪ kHz)At 8.33 kHz spacingAt 25 kHz spacing300 Hz to 3400 Hz, ≥30 dB at 5 kHzAt 8.33 kHz spacing350 Hz to 2500 Hz, ≥25 dB at 3.2 kHzAf eoutput-30 dBm to +10 dBm in 1 dB steps (0 dBm nom.) into 600 ΩSquelch≥70 dB	Cross-modulation rejection	≥90 dB	
At 8.33 kHz spacing $\geq 65 \text{ dB}$ Desensitization (blocking) $\geq 100 \text{ dB}$ At $\Delta f \geq 1$ MHz $\geq 100 \text{ dB}$ 3rd order intermodulation rejection IV $\geq 80 \text{ dB}$ At $\Delta f \geq 100/200 \text{ kHz}$ $\geq 80 \text{ dB}$ IF bandwidth $\pm 11 \text{ kHz/6 dB}, \pm 25 \text{ kHz/80 dB}$ At 25 kHz spacing $\pm 11 \text{ kHz/6 dB}, \pm 25 \text{ kHz/80 dB}$ At 8.33 kHz spacing $\pm 3.5 \text{ kHz/6 dB}, \pm 8.33 \text{ kHz/70 dB}$ AF response (+1/-3 dB referenced $\lor 1 \text{ kHz}$ )At 8.33 kHz spacingAt 25 kHz spacing $300 \text{ Hz to } 3400 \text{ Hz}, \geq 30 \text{ dB at } 5 \text{ kHz}$ At 8.33 kHz spacing $350 \text{ Hz to } 2500 \text{ Hz}, \geq 25 \text{ dB at } 3.2 \text{ kHz}$ AF output $-30 \text{ dBm to } + 10 \text{ dBm in } 1 \text{ dB steps}$ ( $0 \text{ dBm nom.}$ ) into $600 \Omega$ Squelch $\checkmark 70 \text{ dB}$ Mute attenuation $\ge 70 \text{ dB}$	Adjacent channel rejection		
Desensitization (blocking)At $\Delta f \ge 1$ MHz $\ge 100 \text{ dB}$ 3rd order intermodulation rejection $\exists$ At $\Delta f \ge 100/200 \text{ kHz}$ $\ge 80 \text{ dB}$ At $\Delta f \ge 100/200 \text{ kHz}$ $\ge 80 \text{ dB}$ IF bandwidth $= 111 \text{ kHz/6 dB}, \pm 25 \text{ kHz/80 dB}$ At 25 kHz spacing $\pm 11 \text{ kHz/6 dB}, \pm 25 \text{ kHz/80 dB}$ At 8.33 kHz spacing $\pm 3.5 \text{ kHz/6 dB}, \pm 8.33 \text{ kHz/70 dB}$ AF response (+1/-3 dB referenced $\lor 1 \text{ kHz}$ )At 8.33 kHz spacingAt 25 kHz spacing $300 \text{ Hz to 3400 Hz}, \ge 30 \text{ dB at 5 kHz}$ At 8.33 kHz spacing $350 \text{ Hz to 2500 Hz}, \ge 25 \text{ dB at 3.2 \text{ kHz}}$ AF output $-30 \text{ dBm to +10 dBm in 1 dB steps}$ ( $0 \text{ dBm nom.}$ ) into $600 \Omega$ Squelch $= 70 \text{ dB}$ Mute attenuation $\ge 70 \text{ dB}$	At 25 kHz spacing	≥75 dB	
At $\Delta f \ge 1$ MHz $\ge 100 \text{ dB}$ 3rd order intermodulation rejection $\exists$ At $\Delta f \ge 100/200 \text{ kHz}$ $\ge 80 \text{ dB}$ At $\Delta f \ge 100/200 \text{ kHz}$ $\ge 80 \text{ dB}$ IF bandwidth $= 111 \text{ kHz/6 dB}, \pm 25 \text{ kHz/80 dB}$ At 25 kHz spacing $\pm 111 \text{ kHz/6 dB}, \pm 25 \text{ kHz/80 dB}$ At 8.33 kHz spacing $\pm 3.5 \text{ kHz/6 dB}, \pm 8.33 \text{ kHz/70 dB}$ AF response (+1/-3 dB referenced $> 1 \text{ kHz}$ )At 25 kHz spacing $300 \text{ Hz to 3400 Hz}, \ge 30 \text{ dB at 5 kHz}$ At 8.33 kHz spacing $350 \text{ Hz to 2500 Hz}, \ge 25 \text{ dB at 3.2 kHz}$ AF output $-30 \text{ dBm to +10 dBm in 1 dB steps}$ ( $0 \text{ dBm nom.}$ ) into $600 \Omega$ Squelch $\ge 70 \text{ dB}$ Mute attenuation $\ge 70 \text{ dB}$	At 8.33 kHz spacing	≥65 dB	
NumeProcess3rd order intermodulation rejectionINAt $\Delta f \ge 100/200 \text{ kHz}$ $\ge 80 \text{ dB}$ IF bandwidth $\ge 80 \text{ dB}$ At 25 kHz spacing $\pm 11 \text{ kHz/6 dB}, \pm 25 \text{ kHz/80 dB}$ At 8.33 kHz spacing $\pm 3.5 \text{ kHz/6 dB}, \pm 8.33 \text{ kHz/70 dB}$ AF response (+1/-3 dB referenced $\lor 1 \text{ kHz}$ )At 25 kHz spacing $300 \text{ Hz to 3400 Hz}, \ge 30 \text{ dB at 5 kHz}$ At 8.33 kHz spacing $350 \text{ Hz to 2500 Hz}, \ge 25 \text{ dB at 3.2 kHz}$ AF output $-30 \text{ dBm to +10 dBm in 1 dB steps}$ (0 dBm nom.) into $600 \Omega$ Squelch $\ge 70 \text{ dB}$ Mute attenuation $\ge 70 \text{ dB}$	Desensitization (blocking)		
At $\Delta f \ge 100/200 \text{ kHz}$ $\ge 80 \text{ dB}$ IF bandwidth $= 111 \text{ kHz/6 dB}, \pm 25 \text{ kHz/80 dB}$ At 25 kHz spacing $\pm 11 \text{ kHz/6 dB}, \pm 25 \text{ kHz/80 dB}$ At 8.33 kHz spacing $\pm 3.5 \text{ kHz/6 dB}, \pm 8.33 \text{ kHz/70 dB}$ AF response (+1/-3 dB referenced $> 1 \text{ kHz}$ )         At 25 kHz spacing $300 \text{ Hz to 3400 Hz}, \ge 30 \text{ dB at 5 kHz}$ At 8.33 kHz spacing $350 \text{ Hz to 2500 Hz}, \ge 25 \text{ dB at 3.2 kHz}$ AF output $-30 \text{ dBm to +10 dBm in 1 dB steps}$ $O \text{ dBm nom.}$ ) into $600 \Omega$ $\Omega$ Squelch $= 70 \text{ dB}$ Mute attenuation $\ge 70 \text{ dB}$	At $\Delta f \ge 1 \text{ MHz}$	≥100 dB	
IF bandwidth         If kHz/6 dB, ±25 kHz/80 dB           At 25 kHz spacing         ±11 kHz/6 dB, ±25 kHz/80 dB           At 8.33 kHz spacing         ±3.5 kHz/6 dB, ±8.33 kHz/70 dB           AF response (+1/–3 dB referenced to 1 kHz)         IkHz           At 25 kHz spacing         300 Hz to 3400 Hz, ≥30 dB at 5 kHz           At 8.33 kHz spacing         350 Hz to 2500 Hz, ≥25 dB at 3.2 kHz           AF output         -30 dBm to +10 dBm in 1 dB steps (0 dBm nom.) into 600 Ω           Squelch	3rd order intermodulation rejection IM3		
At 25 kHz spacing       ±11 kHz/6 dB, ±25 kHz/80 dB         At 8.33 kHz spacing       ±3.5 kHz/6 dB, ±8.33 kHz/70 dB         AF response (+1/-3 dB referenced to 1 kHz)         At 25 kHz spacing       300 Hz to 3400 Hz, ≥30 dB at 5 kHz         At 8.33 kHz spacing       350 Hz to 2500 Hz, ≥25 dB at 3.2 kHz         AF output       -30 dBm to +10 dBm in 1 dB steps (0 dBm nom.) into 600 Ω         Squelch       ≥70 dB         Mute attenuation       ≥70 dB	At $\Delta f \ge 100/200 \text{ kHz}$	≥80 dB	
At 8.33 kHz spacing $\pm 3.5$ kHz/6 dB, $\pm 8.33$ kHz/70 dB         AF response ( $\pm 1/-3$ dB referenced to 1 kHz)         At 25 kHz spacing       300 Hz to 3400 Hz, $\geq 30$ dB at 5 kHz         At 8.33 kHz spacing       350 Hz to 2500 Hz, $\geq 25$ dB at 3.2 kHz         AF output $-30$ dBm to $\pm 10$ dBm in 1 dB steps (0 dBm nom.) into 600 $\Omega$ Squelch $= 70$ dB         Setting range $= 70$ dB	IF bandwidth		
AF response (+1/-3 dB referenced to 1 kHz)At 25 kHz spacing $300$ Hz to $3400$ Hz, $\geq 30$ dB at 5 kHzAt 8.33 kHz spacing $350$ Hz to $2500$ Hz, $\geq 25$ dB at $3.2$ kHzAF output $-30$ dBm to $+10$ dBm in 1 dB steps (0 dBm nom.) into $600 \Omega$ Squelch $\sim$ 70 dBMute attenuation $\geq$ 70 dBSetting range	At 25 kHz spacing	±11 kHz/6 dB, ±25 kHz/80 dB	
At 25 kHz spacing300 Hz to 3400 Hz, $\geq$ 30 dB at 5 kHzAt 8.33 kHz spacing350 Hz to 2500 Hz, $\geq$ 25 dB at 3.2 kHzAF output $-30$ dBm to $+10$ dBm in 1 dB steps (0 dBm nom.) into 600 $\Omega$ Squelch $\geq$ 70 dBSetting range $\geq$	At 8.33 kHz spacing	±3.5 kHz/6 dB, ±8.33 kHz/70 dB	
At 8.33 kHz spacing       350 Hz to 2500 Hz, ≥25 dB at 3.2 kHz         AF output       -30 dBm to +10 dBm in 1 dB steps (0 dBm nom.) into 600 Ω         Squelch       -370 dB         Mute attenuation       ≥70 dB         Setting range	AF response (+1/-3 dB referenced to 1 kHz)		
AF output     -30 dBm to +10 dBm in 1 dB steps (0 dBm nom.) into 600 Ω       Squelch       Mute attenuation     ≥70 dB       Setting range	At 25 kHz spacing	300 Hz to 3400 Hz, ≥30 dB at 5 kHz	
(0 dBm nom.) into 600 Ω       Squelch       Mute attenuation       ≥70 dB       Setting range	At 8.33 kHz spacing	350 Hz to 2500 Hz, ≥25 dB at 3.2 kHz	
Mute attenuation ≥70 dB Setting range	AF output	•	
Setting range	Squelch		
	Mute attenuation	≥70 dB	
(S+N)/N 6 dB to 20 dB	Setting range		
, ,	(S+N)/N	6 dB to 20 dB	
Carrier override ≥–85 dBm	Carrier override	≥—85 dBm	

<sup>1)</sup> For ICAO ATC band.

### Ordering information

Designation	Туре	Order No.
VHF Receiver, 112 MHz to 144 MHz	R&S®EU4200	6130.2100.02
VHF Receiver, 118 MHz to 137 MHz	R&S®EU4200	6130.2100.07

# R&S<sup>®</sup> Series 4200





#### www.rohde-schwarz.com

Europe: +49 1805 12 4242, customersupport@rohde-schwarz.com USA and Canada: 1-888-837-8772, customer.support@rsa.rohde-schwarz.com Asia: +65 65 130488, customersupport.asia@rohde-schwarz.com