

Analog and POCSAG digital radio pager tester PS 622

User Manual



General Notes

The PS 622 is the original portable device allows functional tests on analog and digital (POCSAG) radio pagers on the spot, for example after programming or repair of paging receivers.

Important Notes

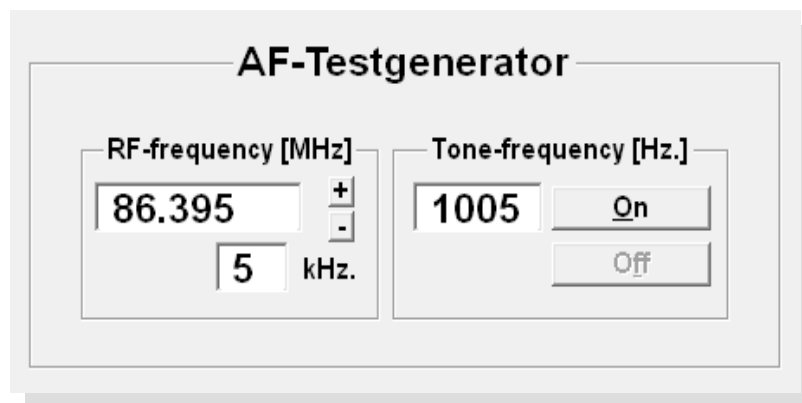
The PS 622 complies with EMV standard EN 61000-6-1 and EN 61000-6-3 with respect to all unwanted emissions. However, the wanted radio signals according to the intended use of the product are stronger by a small amount. Therefore, please do not have the PS 622 in transmission mode unnecessarily. This is important especially for microphone or test tone mode.

- Keep the PS 622 away from children. In case of swallowed batteries or other parts call a doctor or emergency centre!
- Dispose used or damaged batteries properly according to current waste specifications!
- Do not dispose batteries in fire - they may explode!

Carrier Frequency Input

- <Frequenz> 86455 <OK> sets the carrier frequency to 86.455 MHz
- <Frequenz> 173250 <OK> sets the carrier frequency to 173.250 MHz
- <Frequenz> 4480375 <OK> sets the carrier frequency to 448.0375 MHz

Transmission of a Test Tone



- <Pegelton> 1000 <OK> turns on the carrier with recently chosen frequency and modulated with a test tone of 1000 Hz

The frequency of the test tone can be chosen in the range 350 ... 3800 Hz.

Every time the <OK> button is pressed, the modulated carrier is turned off and on (the last function is repeated automatically).

Transmission of a tone sequence

Every time the <OK> button is pressed, the recently keyed-in tone sequence is transmitted again (the last function is repeated automatically).

<SHIFT><Tonreihe> 0 <OK>	tone sequence only
<SHIFT><Tonreihe> 1 <OK>	ZVEI-1 tone sequence
<SHIFT><Tonreihe> 2 <OK>	CCIR tone sequence
<SHIFT><Tonreihe> 3 <OK>	EEA tone sequence
<SHIFT><Tonreihe> 4 <OK>	tone sequence incl. 675 / 1240 Hz double tone
<SHIFT><Tonreihe> 5 <OK>	tone sequence incl. 675 / 1860 Hz double tone
<SHIFT><Tonreihe> 6 <OK>	tone sequence incl. Sirene 'Kat'
<SHIFT><Tonreihe> 7 <OK>	tone sequence incl. Sirene 'Heul'
<SHIFT><Tonreihe> 8 <OK>	tone sequence incl. 675 / 1010 Hz double tone
<SHIFT><Tonreihe> 9 <OK>	tone sequence incl. Sirene 'ABC'
<Tonfolge> 12345 <OK>	Transmission of 5-tone sequence 12345
<Tonfolge> 123 <OK>	Transmission of 3-tone sequence 123

Transmission of a POCSAG data stream

The screenshot shows a software interface for transmitting a POCSAG data stream. It is titled "POCSAG" and contains several sections:

- RF-frequency [MHz]:** A text input field containing "170.500".
- RIC:** A text input field containing "4711".
- Transmit:** A button located below the RIC field.
- System values:** A section with radio buttons for "Function A" (selected), "Function B", "Function C", and "Function D". To the right, there are radio buttons for "512 Baud", "1200 Baud" (selected), and "2400 Baud". Below these is a "Preamble [ms]" field containing "600".
- Data inversion:** A checkbox that is unchecked.
- Alpha:** A checkbox that is unchecked.
- Text:** A text area containing "Test-Text PS622".
- TX progress:** A progress bar at the bottom of the interface.

Transmission of a POCSAG data stream, no encryption mode

- | | |
|--------------------------|------------------------------------|
| <SHIFT><Baudrate> 1 <OK> | sets the baud rate to 512 bps |
| <SHIFT><Baudrate> 2 <OK> | sets the baud rate to 1200 bps |
| <SHIFT><Baudrate> 3 <OK> | sets the baud rate to 2400 bps |
| <SHIFT><Baudrate> 4 <OK> | baud rate 512 bps / inverted data |
| <SHIFT><Baudrate> 5 <OK> | baud rate 1200 bps / inverted data |
| <SHIFT><Baudrate> 6 <OK> | baud rate 2400 bps / inverted data |

POCSAG

RF-frequency [MHz]

RIC

System values

Function A 512 Baud
 Function B 1200 Baud
 Function C 2400 Baud
 Function D Preamble [ms]
 Data inversion
 Alpha

Text

TX progress

BOSKRYPT

KEY

TIME (hh mm ss dd mm yy) IV

PADDED LENGTH .. MAX TEXT SIZE MAX AGE

TEXT

Transmission of a POCSAG data stream in BOSKRYPT mode

POCSAG

RF-frequency [MHz]

RIC

System values

Function A 512 Baud
 Function B 1200 Baud
 Function C 2400 Baud
 Function D Preamble [ms]
 Data inversion
 Alpha

Text

TX progress

BOS PV

KEY

ID (message encrypted)

TEXT

Transmission of a POCSAG data stream in BOS PV mode

Alter the function sub-address

<RIC> 4711 <OK>	input of the RIC number
<SHIFT><Fkt.0><OK>	transmission of the RIC with function 00 (or A)
<SHIFT><Fkt.1><OK>	transmission of the RIC with function 01 (or B)
<SHIFT><Fkt.2><OK>	transmission of the RIC with function 10 (or C)
<SHIFT><Fkt.3><OK>	transmission of the RIC with function 11 (or D)

Every time the <OK> button is pressed, the recently keyed-in POCSAG data stream is transmitted again (the last function is repeated automatically).

POCSAG Groupcall (only by PC-Software)

POCSAG Groupcall

RF-frequency [MHz]

System values

Preamble [ms] 512 Baud
 Data inversion 1200 Baud
 Alpha 2400 Baud

Groupcall

	A	B	C	D
<input type="checkbox"/> Alarm-RIC 1 <input type="text" value="0"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Alarm-RIC 2 <input type="text" value="0"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Alarm-RIC 3 <input type="text" value="0"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Alarm-RIC 4 <input type="text" value="0"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Alarm-RIC 5 <input type="text" value="0"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Text-RIC <input type="text" value="0"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Text

TX progress

Transmission of a POCSAG group data stream, in no encryption and BOSKRYPT mode

POCSAG Groupcall

RF-frequency [MHz]

System values

Preamble [ms] 512 Baud
 Data inversion 1200 Baud
 Alpha 2400 Baud

Groupcall

	A	B	C	D
<input type="checkbox"/> Alarm-RIC 1 <input type="text" value="0"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Alarm-RIC 2 <input type="text" value="0"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Alarm-RIC 3 <input type="text" value="0"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Alarm-RIC 4 <input type="text" value="0"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Alarm-RIC 5 <input type="text" value="0"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/> Text-RIC <input type="text" value="0"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

TX progress

Text

BOS PV

KEY

TEXT

Transmission of a POCSAG group data stream, in BOS PV mode

The tactical group call (or *accelerated alarming*) allows the fast sending of a POCSAG telegram to several radio call numbers.

Up to 5 alarm-RICS per group call are possible.

The alarm-RICS are only taken into account when the respective checkmarks are set.

If the Text-RIC checkmark is not set, then text to be sent top each of 1-5 Alarm-RIC. Otherwise the Alarm-RICs to be sent without text, and Text-RIC to be sent with message from the "Text" field.

The other settings correspond to the previous section.

Transmission of German FMS call (TR BOS / 1200 Baud FFSK)

FMS (FFSK)

RF-frequency [MHz] kHz

FMS-data

System values

Unmod. preamble [ms]

No. of transmissions

Gap [ms]

Every time the <OK> button is pressed, the recently keyed-in FMS call is transmitted again (the last function is repeated automatically).

<FMS> **6866011012** <OK>

transmits the FMS call 6866011012

Transmission of ZVEI / digital call (1200 Baud FFSK)

ZVEI (FFSK)

RF-frequency [MHz] +
-
 kHz

ZVEI-data

System values

Unmod. preamble [ms]
No. of transmissions
Gap [ms]

<SHIFT><ZVEI> **4A155224**<OK>

transmits the ZVEI / digital call
4A155224

Any time the <OK> button is pressed, the recently keyed-in ZVEI / digital call is transmitted again (the last function is repeated automatically).

Save settings

<SHIFT><Speichern> **0** <OK>

saves all settings in memory number 0

Altogether there are 10 memory slots (0 ... 9) available for individual settings.

Edit memory

Memory 0 ▼

RF-freq. MHz

AF test-generator

Tone-freq. Hz

Tone sequential

Sequence ZVEI-I CCIR EEA

Siren w/o Fire Test Kat. Howl Clear ABC

POCSAG

RIC 512 bps 1200 bps 2400 bps

Data inversion

Text

BOS PV encrypted Key

FMS (FFSK)

FMS Data

ZVEI (FFSK)

ZVEI Data

Transmission level

low mid high

Hint:
'Store' set current memory slot in PS622 only

The PS 622 comes with a PC software that can handle these memory slots very comfortably.

The PS 622 is booted with the settings stored in memory location „0“ when switched on.

The alphanumeric text for the POCSAG generator and the settings for the transmission level can only be changed via the PS 622 PC software.

Load individual settings

<Laden> 0 <OK> loads settings from the chosen memory slot 0

Carrying out loaded settings

1. Press key(s) according to the wanted function
- 2. Do not enter data!**
3. Press <OK> button

Examples:

<Tonfolge><OK>	transmission of a tone sequence (as stored in memory)
<Pegelton><OK>	transmission of a test tone (as stored in memory)
<FMS><OK>	transmission of a stored FMS call
<SHIFT><ZVEI><OK>	transmission of a stored ZVEI / digital call
<SHIFT><Fkt. X><OK>	transmission of a stored POCSAG message

Deletion of input errors

Any function can be stopped by pressing the <Löschen> button in case of incorrect inputs.

Testing analog voice pagers

To turn on the RF carrier with activated microphone (according to the last chosen frequency) press the <Mikro> button. To stop transmission please press the <Mikro> button again. To avoid acoustical feedback (howling noise) the distance between PS 622 and pager should be at least 50 cm.

Advice for numerical input

The FMS and ZVEI / digital protocols not only use the numbers 0...9, but additionally the characters (codes) A...F. The <SHIFT> button of the PS620 allows selection of these characters (codes):

<SHIFT> 7	input of code „ A “
<SHIFT> 8	input of code „ B “
<SHIFT> 9	input of code „ C “
<SHIFT> 4	input of code „ D “
<SHIFT> 5	input of code „ E “
<SHIFT> 6	input of code „ F “

LED indicators

Yellow Is turned on when modulation starts, and the RF carrier is on, respectively.

Green PLL control signal, normally flashes whenever the RF carrier is turned on.

Multi-flash indicates that the battery is low.

Red Flashes once a second as an operation indicator.

Meaning of the acoustic messages / beeps

1 x very short.....Pressing a button

1 x short.....Switch on the PS 622

2 x long.....Error

1 x very long.....Load or save memory

External connectors

USB port

To use in combination with the supplied cable and PC software for complete control via PS 622 PC software, or just to power the unit to use without batteries.

RJ-45 connector

To connect the optional adapter cable (D-Sub 9-pin socket, 622.9800) to use the external control and signal lines (output POCSAG modulation for external transmitters, output transmitters, input for external dynamic microphone as well as external modulation).

Accessories (optional)

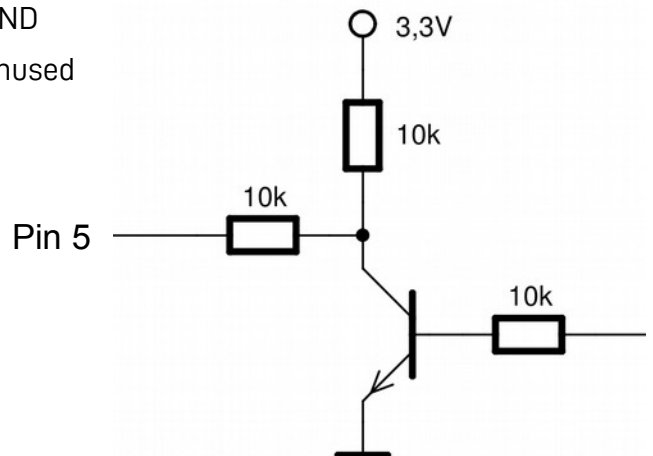
RG-45 to 9-pin D-Sub accessory cable



Pin assignment D-Sub:

Pin 1	Input Modulation (DC 3.3V)
Pin 2	Input Modulation (DC-filtered for external microphone)
Pin 3	GND for microphone
Pin 4	TX on / off (3.3V / GND)
Pin 5	Output POCSAG modulation
Pin 6	unused
Pin 7,8	GND
Pin 9	unused

USB wall-mount power adapter



PS 622 Technical Specifications

Frequency Range	68...87.5 MHz, 146...174 MHz, 430...470 MHz
Signaling scheme (protocol)	Analog: Tone Sequence (ZVEI, CCIR, EEA) Digital: POCSAG (512, 1200, 2400 Baud) FFSK: FMS / ZVEI digital 1200 Baud
Range	max. 5 m
Power Supply	6 V (4 x battery Micro AAA 1,5 V) or USB / optional USB power adapter
Size	appr. 155 mm x 84 mm x 31 mm
Weight	appr. 210 g with battery included
Temperature range	+5 °C ... +35 °C
Test tone range	350 Hz ... 3800 Hz

Conformity

Oelmann Elektronik GmbH herewith declares that the device is made in accordance with the essential requirements and regulations of the directives 2004/108/EC and 2006/95/EC.

The complete declaration can be requested by the manufacturer.

Disposal of electronic and electrical equipment

Electronic and electrical devices as well as electronic or electrical accessories should not be included in household waste. In some countries or parts of the country, there is a disposal system for the disposal of electrical and electronic equipment. Within the EU, please contact the local representative or service representative of your equipment supplier who can provide you with information on waste disposal / collection.

Service / Repair

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