

# SelCom 4000

**Bedienungsanleitung**

**Operating instructions**

**Mode d'emploi**



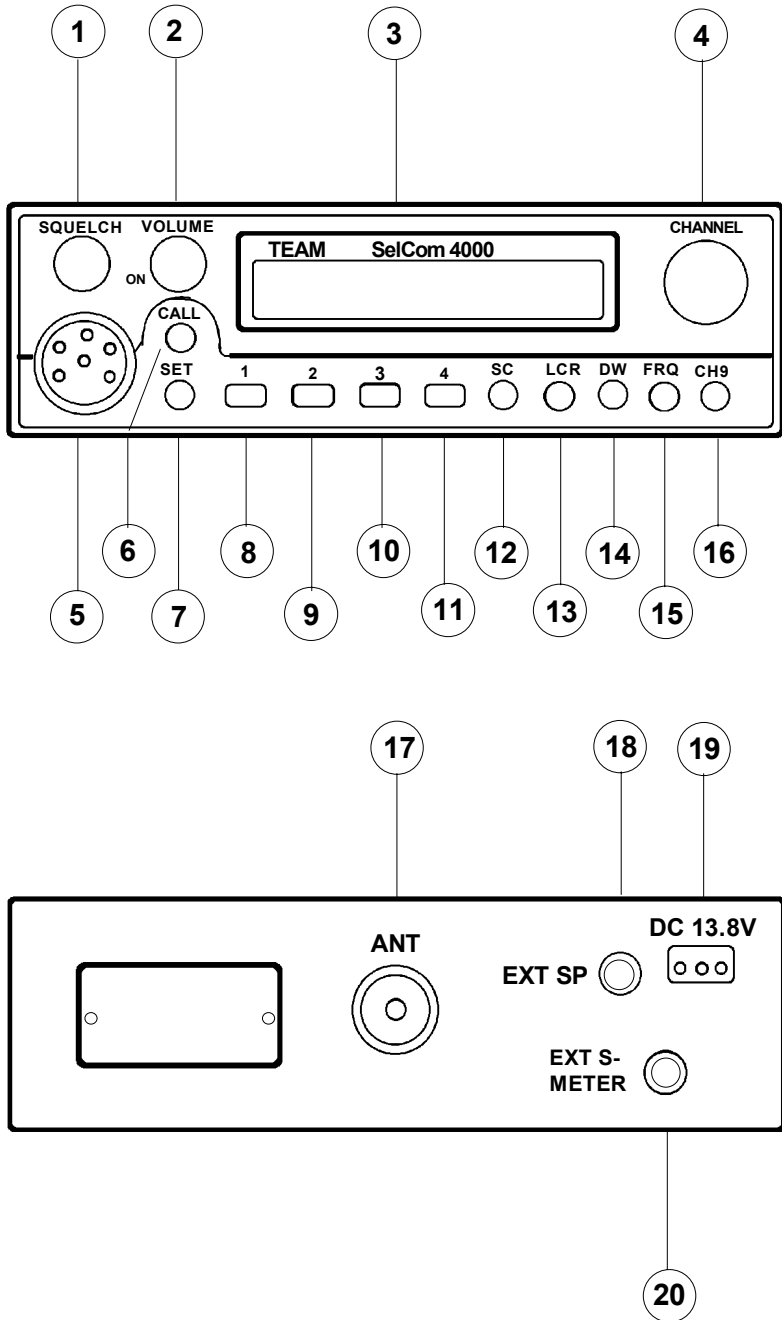
**ELECTRONIC**

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# TEAM SelCom 4000



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## OPERATION CONTROLS, DISPLAYS AND CONNECTORS

- ( 1 ) Squelch control [ **SQUELCH** ]
- ( 2 ) Volume control / ON switch [ **VOLUME / ON** ]
- ( 3 ) LCD display window for channel number, frequency, and S-meter
- ( 4 ) Rotary switch for channel selection UP/ DOWN [ **CHANNEL** ]
- ( 5 ) Microphone connector 6 pin for any microphone with or without UP/DOWN channel selection and amplifier
- ( 6 ) Call and encoding button for transmitting of the DTMF selective call [ **CALL** ]
- ( 7 ) Standby and encoding button for receiving of the DTMF selective call [ **SET** ]
- ( 8 ) Channel save [ **1** ] and encoding button for DTMF dual tone No. 1.
- ( 9 ) Channel save [ **2** ] and encoding button for DTMF dual tone No. 2.
- ( 10 ) Channel save [ **3** ] and encoding button for DTMF dual tone No. 3.
- ( 11 ) Channel save [ **4** ] and encoding button for DTMF dual tone No. 4.
- ( 12 ) Button for occupied channel search function SCAN [ **SC** ]
- ( 13 ) Button for last channel recall function [ **LCR** ]
- ( 14 ) Button for dual watch function [ **DW** ]
- ( 15 ) Toggle switch button for channel or frequency display [ **FRQ** ]
- ( 16 ) Priority channel selector button [ **CH9** ]
- ( 17 ) Antenna connector SO239 [ **ANT** ]
- ( 18 ) Socket for external speaker 3.5 mm [ **EXT SP** ]
- ( 19 ) Connector for DC supply cord ( 3 pin ) [ **DC 13.8V** ]
- ( 20 ) Socket for external S-meter 2.5 mm [ **EXT S-METER** ]

## SETTING UP THE TEAM SELCOM 4000

### 1. AERIAL CONNECTION :

The PL259 plug of the aerial cable ( coax ) is connected to the SO239 antenna socket ( **17** ) **ANT** on the rear panel. Make sure that the plug is firmly tightened and properly soldered to the 50 ohm coaxial cable. Unsatisfactory connections can damage the radio and will reduce the range of operation.

### 2. MICROPHONE :

Insert the 6 pin plug of the curl cord of the microphone into the microphone connector ( **5** ) on the left side of the front panel. Note it will only go in one way round. Tighten the plug firmly to secure it. No transmission and receiving of the **SelCom 4000** is possible without the microphone.

### 3. POWER SOURCE :

Before connecting the power source to the DC connector ( **19** ) the device must be switched off by turning the volume knob ( **2** ) **VOLUME / ON** counterclockwise as far as the stop and hearing a switching sound. The fused DC power cable supplied, is used to make the necessary power connection to the transceiver. The unit is designed to operate from a battery source of 13.8 volts DC, employing negative ground electrical system.

BLACK connect to ( - ) MINUS of the car battery / GROUND

RED connect to 12 volts ( + ) PLUS of the car battery. This wire can be connected to the ignition to prevent the use of the radio while the ignition is off.

For base-station operation connect the radio to a suitable power supply ( 13.2V / 1.5A ).

## OPERATION OF THE TEAM SelCom 4000

After the antenna, the microphone and the power source have been connected, radio operation can be undertaken.

### 1. SWITCHING ON [ VOLUME / ON ] :

Switch the radio on by turning the volume control ( **2** ) **VOLUME / ON** clockwise and adjust it to a comfortable listening level. If the transceiver is on a clear channel and not muted by the squelch function a noise should be heard from the speaker now. The back illumination of the display ( **3** ) and the front panel will light up. When the unit is switched on the first time or after being disconnected for a longer period the first channel will be channel 9. The display will show [ **9, FM and SRF** ]. If the power source is not disconnected after switching off the settings and functions will be stored ( memory backup ). All correct entries will be confirmed by a receipt tone.

## 2. [ SQUELCH ] :

Rotate the squelch control ( **1** ) **SQUELCH** slowly clockwise until the background noise just disappears while any incoming signal will be heard. The squelch control should only be turned up enough to stop the background noise on an unused channel. Turning the control further clockwise will increasingly suppress interfering signals as well as weak stations. The setting should be made on an unused channel.

## 3. CHANNEL SELECTION [ CHANNEL ] :

Select the desired channel 1 - 40 with the channel selector switch ( **4** ) **CHANNEL**. The display ( **3** ) shows the actual channel. The CH9 function **CH9** must not be activated which is indicated by a flashing "9" in the display. In parallel the channels can be controlled by the built in **UP/DOWN** buttons of the microphone. The channel numbers step in a ring like system **UP** from 40 to 1 and **DOWN** from 1 to 40 and opposite. It is also possible to show the actual frequency ( in MHz ) in the display instead of the channel numbers by pressing the button ( **15** ) **FRQ**. This has no influence on the following described functions. By pressing the button ( **15** ) **FRQ** a second time the channel number will appear in the display again.

Radio operation is only possible with the counter station at coinciding channel numbers or channel frequencies. By pressing the instant channel key ( **16** ) **CH9** channel 9 can be selected for transmit and receive immediately. A flashing " 9 " will appear in the display. No channel selection is possible now. Pressing **CH9** again will cancel this function and the unit returns to the previous selected channel.

## 4. LAST CHANNEL RECALL [ LCR ] :

By activating button ( **13** ) **LCR** the transceiver will tune to that channel where the last transmission was made. Now the actual channel is stored as the last channel. Pressing the key ( **13** ) **LCR** again will make the unit return to the actual channel.

## 5. OCCUPIED CHANNEL SEARCH ( SCAN ) [ SC ] :

Before selecting the SCAN function set the squelch control ( **1** ) **SQUELCH** according to Para "2" because this function does not work with unmuted receiver. Depress the key ( **12** ) **SC** now. In the display appears [ **SC** ] and the channels are stepping upwards. SCAN stops on the first occupied channel, where a signal can trigger the squelch threshold. It continues after 10 seconds when the signal falls below the squelch threshold. Depressing the key ( **12** ) **SC** again or any other, except ( **15** ) **FRQ**, will stop the SCAN function.

## 6. DUAL WATCH [ DW ] :

This function allows to watch activity on a second channel. Before selecting the DW function set the squelch control ( 1 ) **SQUELCH** according to Para "2". Select now the first channel which you want to survey and then depress briefly the button ( 14 ) **DW**. In the display appears a flashing [ DW ] sign. Start within 5 seconds selecting the second channel which you want to survey otherwise the DW function will stop automatically. After having reached the desired channel press the button ( 14 ) **DW** another time and [ DW ] will appear permanently. Now the DW function is completely activated. The DW function will remain on this channel if the incoming signal can open the squelch and is not longer interrupted than 10 seconds. Otherwise the unit will tune to the other channel. If no signal is found there the radio will step every second to the other channel. Depressing the key ( 14 ) **DW** again or any other, except ( 15 ) **FRQ**, will stop the DW function.

## 7. TRANSMIT ( PUSH TO TALK / PTT ) :

To transmit depress and hold the PTT key on the microphone. In the display appears [ TX ] and together with the symbol [ SRF ] = ( **S**ignal **R**adio **F**requency ) the relative output power will be shown in form of a progressively increasing number of bar sections. The microphone sensitivity has been set to give good results speaking normally at a distance of 2 - 4 inches. Speaking too loudly will cause distortion and make the signal difficult to understand especially in case of amplifier or echo microphones. While the set is in the transmitting mode there is no key entry possible and the receiver is muted. On completion of the transmission release the PTT key and the set will revert to receiving mode.

## 8. S-METER [ EXT S-METER ] :

Behind the letters [ SRF ] the relative transmit power and received fieldstrength will be displayed in the window ( 3 ), forming progressive bar sections. The **SelCom 4000** has on its rear panel a socket ( 20 ) **EXT S-METER** for the connection of an additional S-meter with a 2.5 mm plug.

## 9. EXTERNAL SPEAKER [ EXT SP ] :

The **TEAM SelCom 4000** has on its rear panel a socket ( 18 ) **EXT SP** for an external speaker of 4 - 8 ohm impedance with 3.5 mm plug. At 4 ohms the dissipation of the speaker can be up to 2 watts.

## 10. KEYS [ 1 - 4 ] FOR CHANNEL MEMORY :

The **TEAM SelCom 4000** can store up to 4 frequently used channels. The default settings of the memory keys ( 8 - 11 ) 1 - 4 are the channels 1, 9, 19, 40. These memories can be overwritten with other channel numbers. In case of data loss the default settings will be stored in the memories again. To save a

new channel first select it with the channel selector switch ( **4** ) **CHANNEL**. Then depress a memory key for 4 or 5 seconds until a second receipt tone indicates the overwriting of the new channel number into the corresponding memory. To call a saved channel depress briefly the corresponding memory key. On the left side of the display the actual memory number is displayed in case of data storage or recall. The memory number disappears by selecting a new channel.

## 11. DTMF SELECTIVE CALL SYSTEM [ CALL / SET ] :

### General :

The DTMF selective call system ( = **Dual Tone Modulation Frequency** ) enables the radio operator to open one or more muted receiver by transmitting a specially coded tone sequence. This is only possible on condition that all partners use the same channel, modulation mode and selective call system. The transceivers must be switched on and operate normally and the selective call system has to be set into standby mode to receive the coded tone calls. This will mute the receiver ( loudspeaker ) until the detection of a coded tone sequence, which corresponds with the own reception code of the transceiver. This will open the receiver and it will remain unmuted even when the calling station stops transmitting. So all activities on this channel can be heard, and those stations which are not equipped with a selective call system, too. It is also possible to communicate with them. They are only unable to open a receiver muted by a selective call system.

The **TEAM SelCom 4000** selective call system uses 4 dual tones in succession. There are 4 different dual tones. So there are 256 combinations possible. The reception code and the transmission code can be programmed separately from each other. For individual call it is recommended for each participant to program his own reception code. Example : 4 Partners, consisting of head office and 3 mobile stations: Head office = 1111 / Jack mobile = 1112 / Susan mobile = 1113 / John mobile = 1114. In case of group call all members have the same reception code. This will unmute all receivers if the transmitted code is sent out interference-free and free of noise. In all cases the transmission code of the calling station and the reception code of the listening station have to match. In our example the head office has to change its transmission code to reach every participant in case of individual call. The same applies to the mobile stations if they want to reach each other. If the communication is made with the help of the head office all mobile stations need only the transmission code 1111.

### Entry of the reception code :

Depress briefly the button ( **7** ) **SET** so that the symbol "music note" appears in the display on the top right of the channel number. The receiver is now muted. Depress the key ( **7** ) **SET** again but hold it for 3 or 4 seconds until a second

receipt tone indicates that the radio is ready for data input. The display shows now **0000** with a flashing first digit. Begin now entering within 3 - 4 seconds the reception code with the keys ( **8 - 11** ) **1 - 4**. With every new entry the flashing digit moves one step further to the right. After entering the last digit the inputs will be saved 3 - 4 seconds later automatically and the display will revert to the normal mode. The same procedure applies when you overwrite previous entries.

#### **Entry of the transmission code :**

Depress briefly the button ( **7** ) **SET** so that the symbol "music note" appears in the display. Then depress the key ( **6** ) **CALL** and hold it for 3 or 4 seconds until a second receipt tone indicates the readiness for data input. The display shows again **0000** with a flashing first digit. Begin now entering within 3 - 4 seconds the transmission code with the keys ( **8 - 11** ) **1 - 4**. With every new entry the flashing digit moves one step further to the right. After entering the last digit the inputs will be saved 3 - 4 seconds later automatically and the display will revert to the normal mode. The same procedure applies when you overwrite previous entries.

#### **Radio operation with the DTMF selective call system :**

To activate the DTMF selective call system depress briefly the button ( **7** ) **SET** so that the symbol "music note" appears in the display. This will mute the receiver and make it ready to decode received selective tone calls on the actual channel. In case of a previous sent out transmission code or recognition of a selective tone call the receiver will be opened. The symbol "music note" will remain in the display instead. If you want to make it silent again you have to cancel the DTMF function ( "music note" disappears ) and to reactivate it again by pressing the button ( **7** ) **SET** two times.

A transmission of a selective tone call is only possible with the activated DTMF function ( symbol "music note" ) in the display. To start the transmission depress the button ( **6** ) **CALL** briefly. The radio will switch over to transmission mode and starts sending out the transmission code. When the tone sequence is sent out completely it will revert to not muted receiving mode. If the channel is clear and the counter station within the range its receiver will be opened, too. The communication can begin now.

## **12. BATTERY BACKUP :**

As long as the **TEAM SelCom 4000** is connected without any interruption to a car battery or a switched on power supply the memory contents of selective call codes and channels will be kept stored, even when it is switched off at ( **2** ) **VOLUME / ON**. In addition it contains an built in rechargeable button cell which will only be charged when the unit is in operation. According to the periods of running and the periods of not working the charging condition may be quite different. So it is recommended to keep an eye on a reasonable charging time before writing to the memories. A completely charged battery can keep the memory contents stored for up to 100 hours even when the unit is disconnected from every power source.

### 13. SERVICING THE **TEAM SELCOM 4000** :

There are no user adjustable or user serviceable parts inside the radio. The casing must not be opened. Independent repairs or adjustments must not be carried out, since each modification or unauthorised intervention will immediately cancel all and any guarantee or repair claims, they are also likely to result in nonconformity to approval regulations which will render the set illegal. In the event of a defect becoming apparent, contact a properly equipped and authorised dealer.

### 14. APPROVAL OF THE **TEAM SELCOM 4000** :

The transceiver is approved according to ETS 300 135. In most of the member countries of the European Union the **CEPT / ETS** approval will be recognised. Therefore it is free of fees and notice to PTT authorities. Please check your local requirements.

# TEAM SelCom 4000

## TECHNISCHE DATEN / TECHNICAL DATAS / CARACTERISTIQUES

### Allgemein / General / Général

Kanal / Channel / Canaux	Frequenz / Frequency / Fréquence	Kanal / Channel / Canaux	Frequenz / Frequency / Fréquence
1 FM	26.965 MHz	21 FM	27.215 MHz
2 FM	26.975 MHz	22 FM	27.225 MHz
3 FM	26.985 MHz	23 FM	27.255 MHz
4 FM	27.005 MHz	24 FM	27.235 MHz
5 FM	27.015 MHz	25 FM	27.245 MHz
6 FM	27.025 MHz	26 FM	27.265 MHz
7 FM	27.035 MHz	27 FM	27.275 MHz
8 FM	27.055 MHz	28 FM	27.285 MHz
9 FM	27.065 MHz	29 FM	27.295 MHz
10 FM	27.075 MHz	30 FM	27.305 MHz
11 FM	27.085 MHz	31 FM	27.315 MHz
12 FM	27.105 MHz	32 FM	27.325 MHz
13 FM	27.115 MHz	33 FM	27.335 MHz
14 FM	27.125 MHz	34 FM	27.345 MHz
15 FM	27.135 MHz	35 FM	27.355 MHz
16 FM	27.155 MHz	36 FM	27.365 MHz
17 FM	27.165 MHz	37 FM	27.375 MHz
18 FM	27.175 MHz	38 FM	27.385 MHz
19 FM	27.185 MHz	39 FM	27.395 MHz
20 FM	27.205 MHz	40 FM	27.405 MHz

Betriebsspannung / Power Supply / Alimentation	13.2 Volt nominal
Stromaufnahme / Power Consumption / Consommation courant	RX = 490 mA (inklusive Nachtlicht) TX = 1350 mA
Gewicht, Weight, Poids	ca. 750 gr. ohne Zubehör und Verpackung
Maße, Dimensions, Dimension	B158, T135, H48 mm ( Gehäuse / Cabinet )

### RX - Empfänger / Receiver / Récepteur

Empfindlichkeit / Sensitivity / Sensibilité	FM = 0.9 $\mu$ V / 1.2KHz Dev.. 20 dB (S+N+D)/N
Zwischenfrequenz / Intermediate Frequency / Moyenne fréquence	1. ZF 10.695 MHz 2. ZF 455 KHz
Selektivität / Adjacent Channel Rejection / Sélectivité	=> 60 dB / ETS 300 135
NF-Ausgangsleistung / Audio Output / Sortie audio	1.0 Watt / 8 Ohm ( 10% THD )

### TX - Sender / Transmitter / Emetteur

Sendeleistung / RF output power / Puissance de sortie	4 Watt / 50 Ohm
Modulationshub / Deviation / Déviation	2.0 KHz max. ( begrenzt )
Betriebsart / Emission Mode / Emission	F3E (FM)
Oberwellen- Nebenwellenunterdrückung / Harmonic Spurious Rejection / Réjection des harmoniques	$\leq 2,5 \times 10^{-7}$ W