maxon CIC EUROPE

CM10 Multi European CB Radio
User Manual

maxon

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Contents

Specification

GENERAL

Channels..... 40 Ch AM/FM 4W

Frequency Range.....26.565 to 27.99125 MHz

Frequency Control.....PLL

Operating Temperature Range.....-10° / +55°C

DC Input Voltage.....13.2 V DC ±15%

Size.....180(L) X 35(H) X 140(D) mm

Weight.....750 g

RECEIVER

Receiving System.....Dual Conversion Super Heterodyne

Intermediate Frequency.....1st IF: 10.695 MHz, 2nd IF: 455 MHZ

Sensitivity.....0.5 μV for 20 db SINAD in FM mode

Audio Distortion.....Less Than 8% @ 1 KHz

Image Rejection.....65 dB

Adjacent Channel Rejection.....65 dB

Signal/ Noise Ratio.....45 dB

Current Drain at standby.....150 mA

Current Drain at maximum audio.....820 mA

TRANSMITTER

Output Power.....4W @ 13.2 V DC

Modulation.....FM: 1.8 KHz ±0.2 KHz

Frequency response.....From 400 Hz to 2.5 KHz

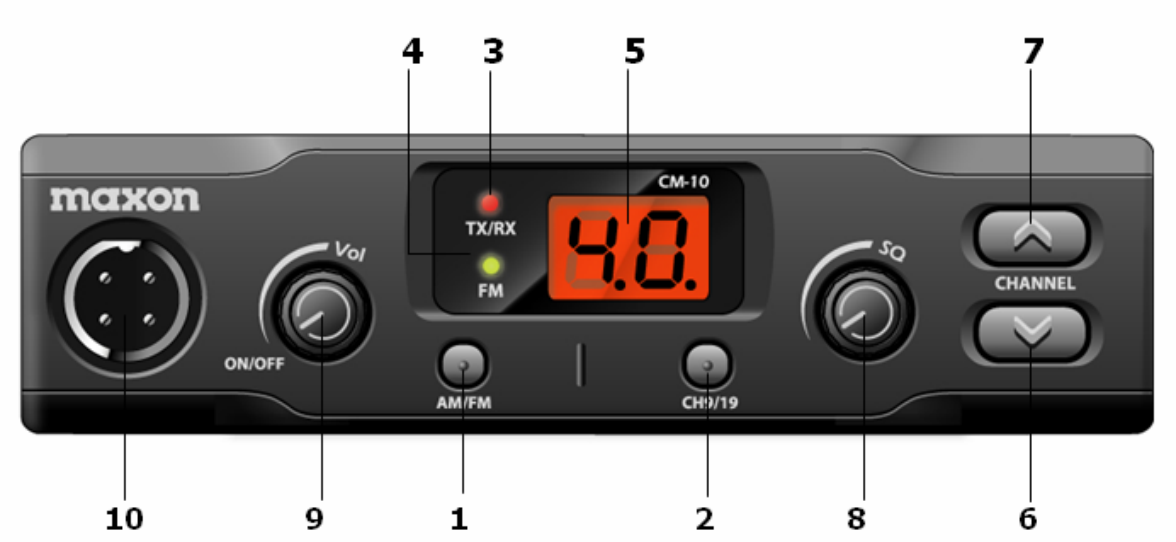
Output impedance.....RF 50 ohm Unbalance

Signal/ Noise Ratio.....40 dB MIN

Current Drain.....1100 mA

Control & Operation

Front Panel



1. AM/FM Selector
This key allows the user to select the AM or FM operating mode in both RX and TX. The AM/FM operating mode selection is possible only if it is enabled on the programmed frequency band.

2. CH9/CH19 Selector
This key allows quick access to one of the two pre-programmed emergency channels (CH9 and CH19). Each time this key is pressed, the radio will select CH9, then CH19, then again the normal operating channel. When one of the emergency channels is selected, EMG will appear on the LED display. The operating mode (AM or FM) for the emergency channels is factory pre-programmed.

3. TX Indicator
This red LED indicator lights up when the radio is in transmit mode.

4. FM Indicator
This green LED indicator lights up when the radio is in FM mode.

5. LED Display
The large two-digit LED display indicates the operating channel and the programmed frequency band code.

6. DN (Down) Key
This key allows selection of the operating channel in decrements. By keeping this key pressed, the quick channel selection mode will be enabled.

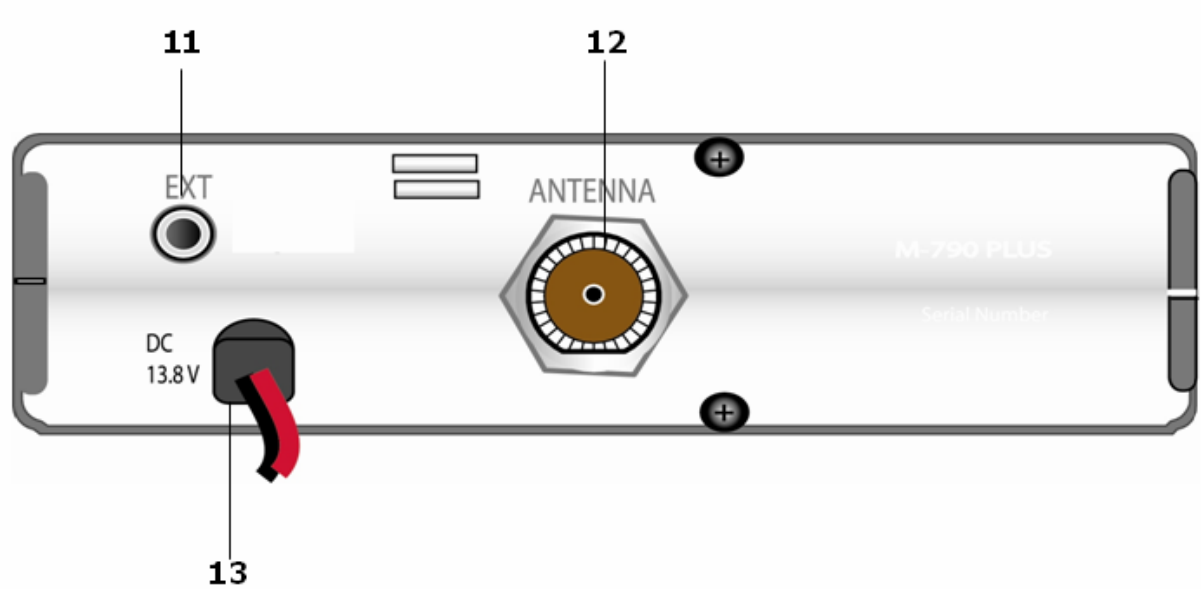
7. UP (Up) Key
This key allows the selection of the operating channel in increments. By keeping this key pressed, the quick channel selection mode will be enabled.

8. SQUELCH Control
The SQUELCH control allows the operator to silence the radio, blocking the background noise, when no signals are received on the operating channel. Turn the SQUELCH knob clockwise until the background noise stops. Turn the SQUELCH knob counterclockwise (SQUELCH opening) to listen to the weakest signals. If this switch is turned off the Automatic Squlech Control will be activated.

9. OFF / VOLUME Control
Use this knob to switch the radio ON and OFF, as well as to adjust the receiver volume to the desired level. To adjust the receiver volume (if no signals are received on the operating channel), open the SQUELCH and then adjust the receiver volume using the background noise as a reference.

10. Microphone Connector
Insert the microphone lead to this connector and turn the connector ring in a clockwise to lock it.

Rear

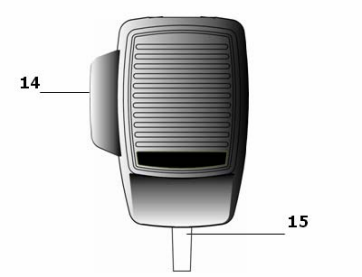


11. EXT (External) Speaker Jack
This jack is for connecting an (optional) external speaker.

12. ANTENNA Connector
Please refer to the section ANTENNA INSTALLATION (page 6).

13. 13.2VDC POWER CORD

Microphone



14. PTT (Push-to-Talk) Key
Transmitter key, press the PTT key to transmit and release to return to receive mode.

15. MICROPHONE Plug
The 4-pin microphone connector (with locking ring), this connects the handset to the microphone connector on the front panel of the radio.

Installation

Before installing the main unit in a vehicle, identify the most convenient location, so that the radio will be easy to reach and comfortable to operate, without disturbing or interfering with driving the vehicle. Use the supplied bracket and hardware to install the radio. The bracket screws must be well tightened to prevent loosening with the vehicle vibrations. The car mounting bracket can be installed over or below the radio and the radio may be tilted as desired according to the specific type of installation (under dashboard or track cabin roof installation).

Installation of Main Unit

Before connecting the radio to the vehicles electricity supply, ensure the radio is switched off, with the OFF/VOLUME knob completely turned counter clockwise at the OFF position. The DC power cable of the radio is complete with a fuse holder with the fuse located on the red positive (+) wire. Connect the DC power cable to the vehicles electricity supply, pay special attention with respect to correct polarity, even if the radio is protected against polarity inversion. Connect the red wire to the positive (+) pole and the black wire to the negative (-) pole of the vehicles electricity supply. Make sure that the wires and terminals are firmly and stably connected, in order to prevent cables from disconnecting or causing short circuits.

Installation of Antenna

A specific mobile antenna adjusted for 27 MHz frequency range must be used. The antenna installation must be carried out by a specialist technician or service centre. Please pay special attention to carefully install the antenna on the vehicle with perfect connection to ground. Before connecting the antenna to the radio, it is necessary to check the correct operation of the antenna with low standing wave ratio (S.W.R.), using appropriate instruments. If not, the transmitter circuit of the radio could be damaged. The antenna must be installed on the highest part of the vehicle, free from obstacles and as far away as possible from any source of electric or electromagnetic noise. The RF antenna coaxial cable must not be damaged or pressed on its way between antenna and the radio. The correct operation of the antenna and the low standing wave ratio (S.W.R.) must be checked periodically. Connect the RF antenna coaxial cable to the antenna connector, located on the rear side of the radio.

Operational Test

Once radio has been connected to the vehicles electricity supply and to the antenna, the correct operation of the system may be checked. Please proceed as follows:
1) Check that the power cable is correctly connected.
2) Check that the RF antenna coaxial cable is correctly connected.
3) Connect the microphone to the connector (located on the front side of the radio).
4) Rotate the SQUELCH knob counter clockwise.
5) Turn radio on using the OFF/VOLUME knob and adjust volume to the desired level.
6) Select the desired channel, using the channel selector keys.
7) Rotate the SQUELCH knob clockwise, to cut the background noise.
8) Press the PTT key to transmit and release it to receive.

If this check is successful the transceiver will work correctly.

Frequency Bands Table

The CM10 transceiver includes an advanced multi-standard programmable circuit, which allows programming on different frequency bands, specifications and operating modes, in conformity with the regulations in the country where the product is used. 8 programmable frequency bands are available, as per the below table:

COUNTRY CODE	COUNTRY	SPECIFICATIONS (CH, operating modes, TX power)
01	ITALY / SPAIN	40CH AM / FM 4W
02	ITALY	36CH AM / FM 4W
03	GERMANY	80CH FM 4W - 12CH AM 1W
04	GERMANY	40CH FM 4W - 12CH AM 1W
05	EUROPE / FRANCE	40CH FM 4W - 40CH AM 1W
06	CEPT	40CH FM 4W
07	UK	40CH FM 4W UK FREQUENCIES -40CH FM 4W CEPT FREQUENCIES
08	POLAND	40CH AM / FM 4W POLISH FREQUENCIES

Attention! This radio has been factory pre-programmed on the **CE** frequency band **(CEPT 40CH FM 4W)**, as this standard is currently accepted in all the European countries. Please refer to the information table at page 1 (Restrictions on the use of CB transceivers).

Frequency Band Selection / Programming

This two-way CB radio must be programmed and exclusively used on a frequency band allowed in the country where the product is used. When radio is switched ON, the current programmed frequency band code will be displayed (blinking) for around 3 seconds. To program a different frequency band, proceed as follows:
1) Turn the radio OFF.
2) Press and hold the UP key, then turn the radio ON using the OFF/VOLUME knob.
3) The current frequency band code will blink on the display.
4) Now select the new desired frequency band code by pressing the UP or DN key; during the frequency band selection process, the frequency band display will blink at a faster rate.
5) Press and hold the DN key to confirm and store the new selected frequency band code.

Reset

To restore the original factory settings (CE frequency brand), follows the below process:
1) Turn the radio OFF.
2) Press and hold the DN key, then turn the radio ON using the OFF/VOLUME knob.
3) The CE frequency band code (code 06) will blink on the display for 3 seconds.

Table of Restrictions on the Use of CB Transceivers

The following information is only to be used as an indication. They are believed to be correct at the time of printing this manual. It is however the user's responsibility to check that, in the country where radio is used, providing the regulations for the use of CB transceivers have not been modified. It is therefore suggested that the user contact the local dealer or local authority, in order to check the current regulations for the use of CB transceivers, before operating this product. The manufacturer does not accept any responsibility if the product is used in violation of the regulations of the country where the product is used.

COUNTRY	CB Introd.	Use restrictions and other comments	Settings				
AUSTRIA	NO	Not allowed					
BELGIUM	YES	40 CH - 4W FM - Individual license is required		EU	FR		CE
		40 CH - 1W AM - Individual license is required					
DENMARK	YES	40 CH - 4W FM - Free use					CE
FINLAND	YES	40 CH - 4W FM - Free use		EU	FR		CE
		e 1W AM - Free use					
FRANCE	YES	40 CH - 4W FM - Free use		EU	FR		CE
		40 CH - 1W AM - Free use					
GERMANY	YES	80 CH - 4W FM - Free use (restrictions for use as a base station on channels 41-80 in some border areas)	DE				
		12 CH - 1W AM - Free use					
		40 CH - 1W AM Free use (only CH 4-15 allowed)		EU			
		40 CH - 4W FM - Free use	D2				CE
		12 CH - 1W AM - Free use					
		REGTP Vfg41 issued on September 10, 2003					
GREECE	YES	40 CH - 4W FM - Free use		EU	FR		CE
		40 CH - 4W AM - Free use					
		T/R 20-02					
IRELAND	YES	40 CH - 4W FM - Free use	SP	EU	FR	I0	CE
		40 CH - 4W AM - Free use					
		S.I. No 436 of 1998. WIRELESS TELEGRAPHY ACT, 1926 (SECTION3) (EXEMPTION OF CITIZENS' BAND (CB) RADIOS) ORDER, 1998					
ITALY	YES	40 CH - 4W FM - A Declaration to the Italian Ministry is required (art. 145 - dl 259 of 01/08/2003)	SP	EU	FR	I0	CE
		40 CH 1W AM - A Declaration to the Italian Ministry is required (art. 145 - dl 259 of 01/08/2003)					
		34 CH - 4W FM, 1W AM (erp). Nota: AM mode allowed on CH1-CH23 only. General authorisation is required (art. 104 - dl259 of 01/08/2003)				I2	
		P.N.F. issued on DM 08.07.02 Notes: 49 A/B/C/D/E/G					
LUXEMBOURG	YES	40 CH - 4W FM - Free use. (Following frequencies are not allowed : 29.995, 27.045, 27.095, 27.145, 27.195 MHz)					CE
NORWAY	YES	40 CH - 4W FM - Free use					CE
NETHERLANDS	YES	40 CH - 4W FM - Free use		EU	FR		CE
		40 CH - 1W AM - Free use					
PORTUGAL	YES	40 CH - 4W FM - Individual license is required		EU	FR		CE
		40 CH - 1W AM - Individual license is required					
UNITED KINGDOM	YES	40 CH - 4W FM - Individual licence is required	UK				CE
		UK-RA-MPT 1382/MPT1320; UK-R&TTE -S.IL. 2000:730					
SPAIN	YES	40 CH - 4W FM - Individual licence is required	SP	EU	FR		CE
		40 CH - 4W AM - Individual licence is required					
		Ministerial decree of 18th November 2002 issued by "Secretaría de Estado de Telecomunicaciones y para la Sociedad de la Información"					
SWEDEN	YES	40 CH - 4W FM - Free use		EU	FR		CE
		40 CH - 1W AM - Individual licence is required					
SWITZERLAND	YES	40 CH - 4W FM - Individual licence is required		EU	FR		CE
		40 CH - 1W AM - Individual licence is required					

Updated information on National Restrictions

BELGIUM, UK, SPAIN, SWITZERLAND

In order to use this transceiver in Belgium, UK, Spain and Switzerland, users must have an individual licence. Users coming from abroad may freely use the radio in FM mode, while in order to use it in AM mode they must hold a licence issued in their country of residence.

ITALY

Foreigners arriving in Italy must get an Italian authorisation.

AUSTRIA

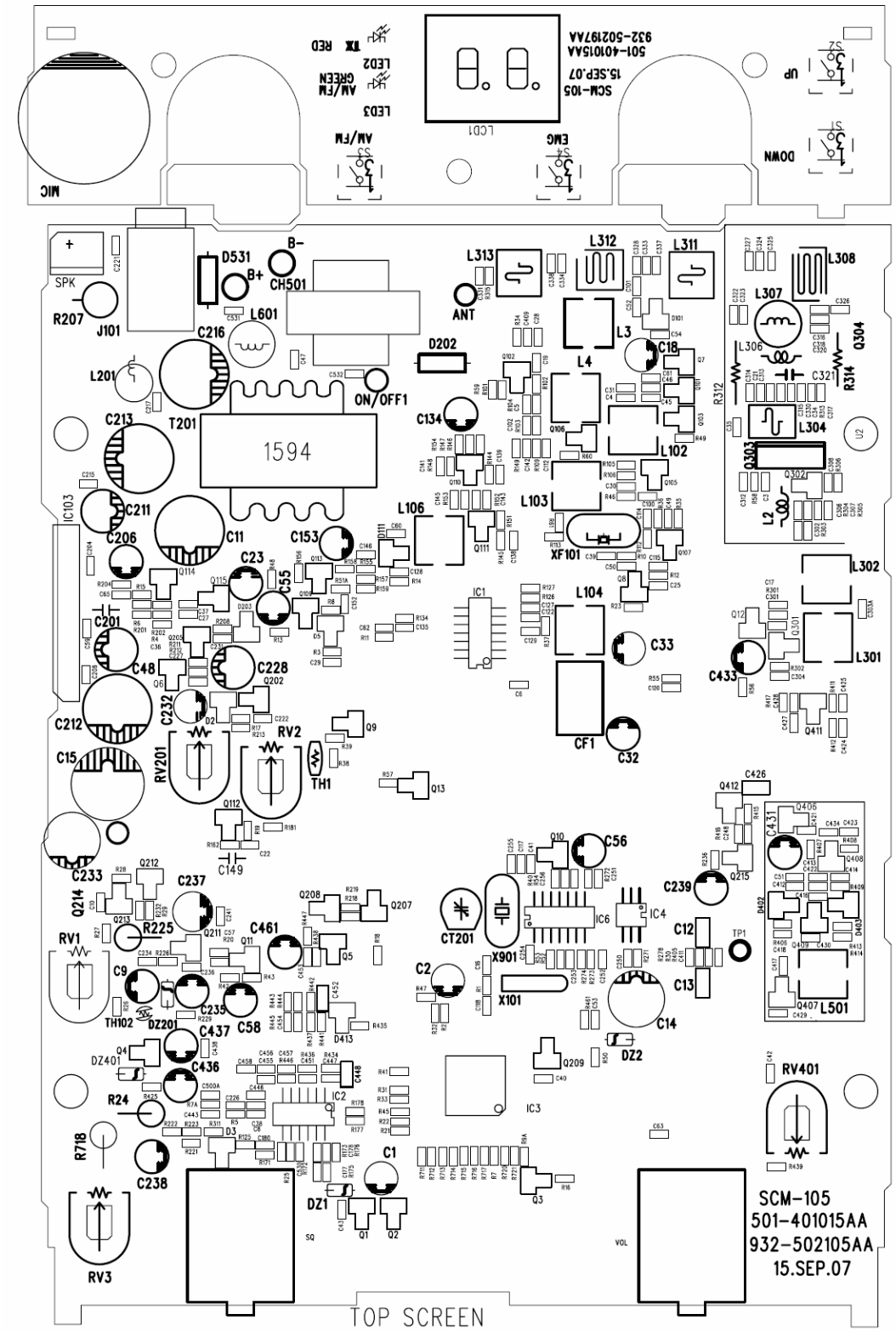
Austria does not allow using multi standard programmable CB radios. It is recommended that users carefully follow this directive and not to use the product in the Austrian territory.

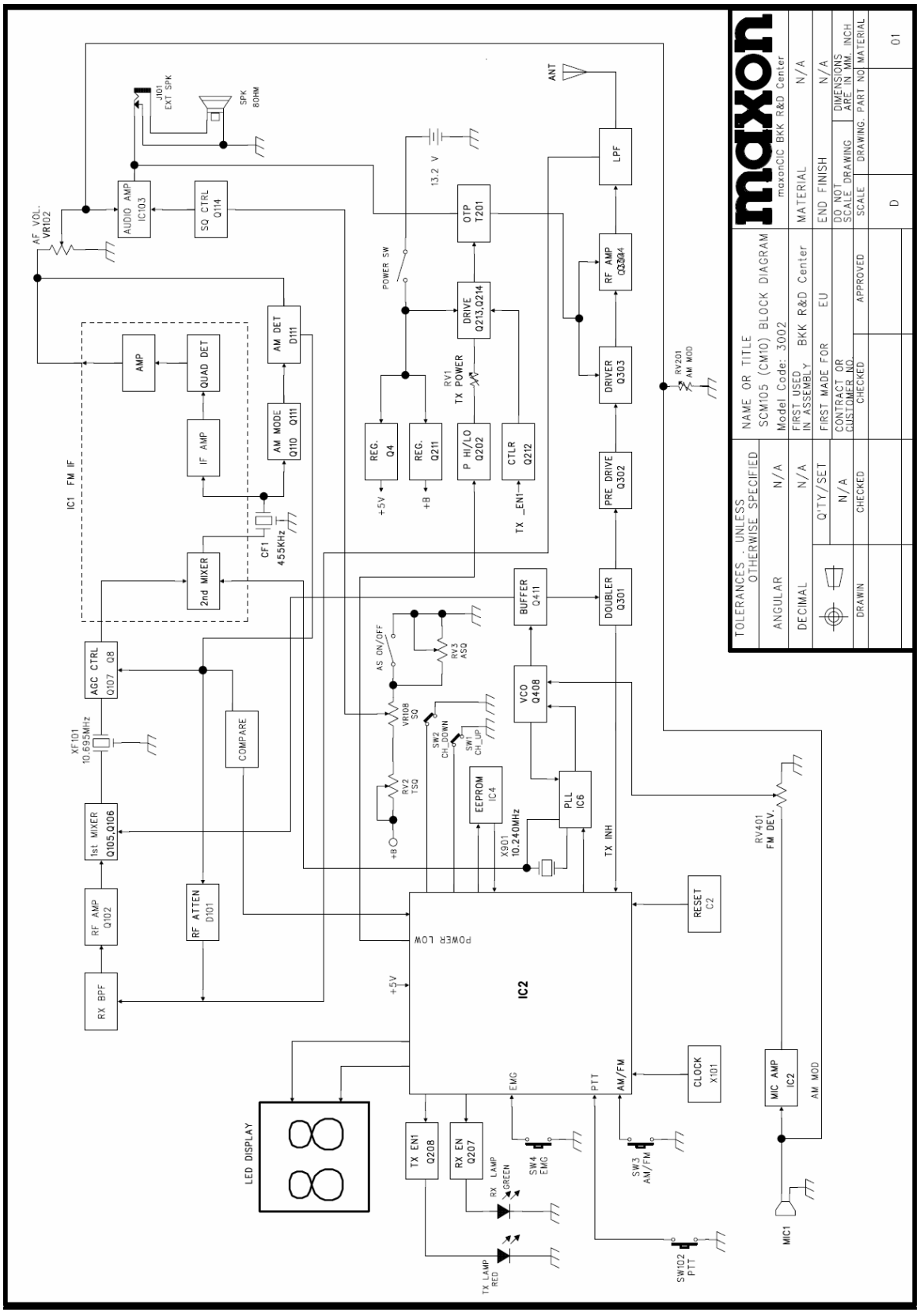
GERMANY

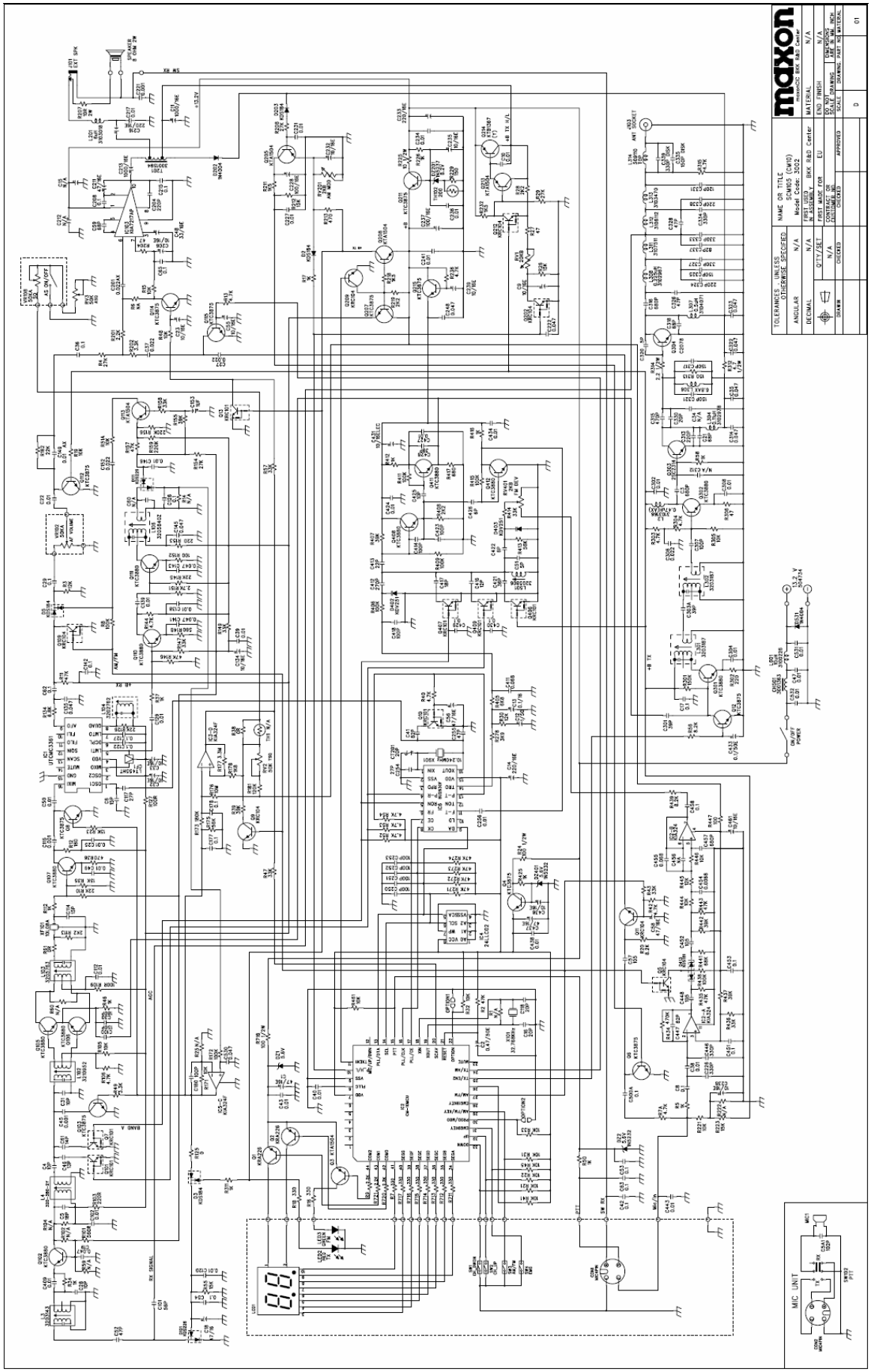
Along some border areas in Germany, the radio can not be used as a base station from Channel 41 to channel 80. Refer to local authority (notification office) for details.

Updated Information on National Restrictions

Diagrams




maxon
maxonCIC BKK R&D Center
NAME OR TITLE
SCM105 (CM10) BLOCK DIAGRAM
Model Code: 3002
MATERIAL N/A
END FINISH N/A
DO NOT SCALE DRAWING
DIMENSIONS ARE IN MM INCH
SCALE
DRAWING. PART NO
MATERIAL
D
01
TOLERANCES . UNLESS OTHERWISE SPECIFIED
ANGULAR N/A
DECIMAL N/A
Q'TY/SET N/A
DRAWN
CHECKED
FIRST USED IN ASSEMBLY BKK R&D Center
FIRST MADE FOR EU
CONTRACT OR CUSTOMER NO
APPROVED
CHECKED
ANT
LPF
RF AMP Q203,Q204
DRIVER Q303
PRE DRIVE Q302
DOUBLER Q301
BUFFER Q411
VCO Q408
PLL IC6
EEPROM IC4
DRIVE Q213,Q214
OTP T201
P HI/LO Q202
CTLR Q212
REG. Q4
REG. Q211
AM MODE Q110 Q111
AM DET D111
AMP
QUAD DET
IF AMP
2nd MIXER
IC1 FM IF
CF1 455KHz
AUDIO AMP IC103
SQ CTRL Q114
AF VOL. VR102
J101 EXT SPK
SPK 80HM
POWER SW
13.2 V
RV1 TX POWER
RV201 AM MOD
AS ON/OFF
RV3 ASQ
VR108 SQ
RV2 TSQ
SW2 CH_DOWN
SW1 CH_UP
+8 V
+5V
TX _EN1
TX INH
X901 10.240MHz
XF101 10.695MHz
ACC CTRL Q8 Q107
1st MIXER Q105,Q106
RF AMP Q102
RX BPF
RF ATTEN D101
COMPARE
RESET C2
CLOCK X101
IC2
POWER LOW
AM/FM
PTT
EMG
RV401 FM DEV.
MIC AMP IC2
AM MOD
MIC1
SW102 PTT
SW3 AM/FM
SW4 EMG
RX LAMP GREEN
TX LAMP RED
TX EN1 Q208
RX EN Q207
LED DISPLAY



CM10

This product is marked with

CE 0678 !

in accordance with the Class II product requirements specified in the R&TTE Directive, 1999/5/EC.

This equipment is intended for use in:-

Austria, Bulgaria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey & United Kingdom.

and requires authorisation (individual licence) for use.

We hereby declare that the above named product is in conformity to all the essential requirements of Directive 1999/5/EC.

Wir möchten hiermit bekanntgeben, daß das oben genannte Produkt in Übereinstimmung mit allen erforderlichen Bedürfnissen der 1999/5/EC Direktive seht

Certificamos que el aparato es conforme con lo establecido en las disposiciones de la Directiva 1999/5/CE.

Nous déclarons que le produit référencé ci-dessus satisfait aux exigences R&TTE 1999/5/EC qui lui sont applicables.

CM10 DoC
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