Technical data

Frequency range :10 kHz to 29999,99 kHz.

Frequency resolution :10 Hz increments.
Keyboard entry or single knob flywheel at 500 Hz or 5 kHz per revolution.

Frequency tuning : 10 Hz, 100 Hz selectable.

Frequency synthesizer : Triple PLL, lowest reference frequency 10 kHz.

Frequency change-over time : Within frequency decades: < 20 ms.
Between frequency decades: ≤ 100 ms.

Frequency stability
Internal frequency standard : 5.10^{-7} per day.
TXCO – 10 Mhz : 1.10^{-6} per year.

Additional external standard 1 MHz or 10 MHz (BFO II) : Input level: 0 dBm ± 3 dB / 50 Ω.

BFO : ± 5 kHz in 10 Hz steps, synthesized.

Channel memory : 99 channels capable of being loaded with receiver parameters: mode, frequency, bandwidth, RF gain, preselector and antenna attenuator.

SCAN functions : SCAN by time.
: SCAN channel per channel.

SCAN stop : Stop time programmable 0.1 – 0.9 s.
: Dwell time 1 – 9 s and ∞.
: AGC threshold 5 – 95 dBµV.

Modes of operation : DSB: A2A, H2A, A3E, H3E.
USB: J3E, R3E, H3E.
LSB: J3E, R3E, H3E.
CW: A1A.
FSK: F1B, F1C, F3C.

Antenna impedance : 50 Ω SWR < 2 : 1 and antenna attenuation = 0 dB.

Max. antenna input voltage : 30 V_{EMF} for 10 kHz to 1.5 MHz – 10 minutes.
100 V_{EMF} for 1.5 MHz to 30MHz – 10 minutes.
50 V_{EMF} for 30 MHz to 400 MHz – 10 minutes.

Input attenuator : 0 dB, 20 dB selectable; manual or automatic.

Spurious emission at antenna input : ≤ 1.10^{-9} W.

Spurious radiations at antenna input : ≤ -97dBm.

Image and IF rejection : > 100 dB.

Intermediate frequencies : 1st IF 63.078 MHz.
: 2nd IF 4.9985 MHz.

IF Output 1 : 30 kHz, 600 Ω, 0 dBm.
IF Output 2 : 4.9985 MHz, 50 Ω, -10 dBm.

AGC characteristics : Output is within 6 dB for input level variation of 120 dB between 0.5 µV and 500 mV.
(90 dB for frequency range 10 kHz to 80 kHz)

AGC time constants (SSB 30 dB steps)	: Attack	Hold	Decay
Long	: ≤ 10 ms	1.5 – 3.5 s	0.55 (± 25%)
Short	: ≤ 10 ms	-----	0.25 (± 25%)

Sensitivity without HF preselection : A3E B = 6 kHz, m = 0.5
10 dB SINAD with CCITT filter

20….40 kHz	≤ 7 μV_{EMF}
40….200 kHz	≤ 4 μV_{EMF}
0.2….30 kHz	≤ 3 μV_{EMF}

A1A B = 300 Hz

10….40 kHz	≤ 1 μV_{EMF}
40….200 kHz	≤ 0.5 μV_{EMF}
0.2….30 kHz	≤ 0.5 μV_{EMF}

J3E B = 0.3 …2.7 kHz

10….40 kHz	≤ 3 μV_{EMF}
0.04…1.6 MHz	≤ 1 μV_{EMF}
1.6….30 MHz	≤ 1 μV_{EMF}

IF Bandwidth

Filter bandwidth (kHz)	Min. bandwidth (kHz) 6 dB	Max. bandwidth (kHz) 60 dB
0.1	0.1	0.75
0.15	0.15	0.80
0.3	0.3	0.90
0.6	0.6	1.70
1.5	1.5	4.00
2.4*	2.4	3.80
3.0**	3.0	4.60
6.0	6.0	15.60

* Special SSB design: USB 0.3 to 2.7, LSB –0.3 to –2.7
** Group delay ≤ 800 µsec at f_o ± 1.2 kHz (for SSB audio 600 to 800 Hz)

Intercept point : 26 dBm (1 – 30 MHz).

Crossmodulation : For a wanted signal 60 dBµV_{EMF}, the interference produced by an unwanted signal 20 kHz off-tune and 90 dBµV_{EMF} will be more than 30 dB below standard output.

Intermodulation : Out of band:
3rd order –60dB or better, for two equal signals of 100 dBµV_{EMF} each at f_o +50 kHz and f_o +100 kHz (f_o > 200 kHz).

In band:
Unwanted signals –45dB for two equal signals of 100 dBµV_{EMF} each at f_o +800 Hz and f_o +1200 Hz (f_o > 200 kHz).

Blocking : For a wanted signal 60 dBµV_{EMF} , an unwanted carrier 20 kHz off-tune must exceed 110 dBµV_{EMF} to effect the output by 3 dB or SINAD < 14 dB.

Level indication
RF LED-band : 0 to 110 dBµV, 10 dB steps.
AF LED-band : -15 to +6 dBm.

Audio outputs
Built-in speaker : 1.5 W.
External speaker : 3W into 4 Ω.
Headphones : 10 mW into 600 Ω.
Line : 0 dBm ± 10 dB adjustable, 600 Ω balanced.

Audio distortion : < 5% for SSB.
for 1 kHz at standard output power < 5% for DSB at 80% modulation.

AF1 output : -7 dBm 600Ω line output for remote control.

AF2 output : -7 dBm 600Ω line output for remote control.

IF output : 30 kHz 600Ω, typically 0 dBm.

BCD frequency output : TTL level.

AGC output : 2 – 3.2 V.

Antenna diversity : 2 – 3.2 V.

Power supplies
AC operation : 110 – 120 V ± 10% - 45 to 400 Hz.
220 – 240V ± 10% - 45 to 400 Hz.
Power consumption 65 VA ± 20%.

DC operation : 21 to 32V floating
Power consumption 50 VA ± 20%.

Environmental conditions

Temperature		
Operating	: -15 to +55 °C.	
Storage	: -40 to +85 °C.	
Humidity	: 95% up to 40°C.	
Vibration without shockmounts	: 0 to 12.5 Hz	3.2 mm amplitude.
	12.5 to 25 Hz	0.7 mm amplitude.
	25 to 50 Hz	0.4 mm amplitude.
Additional	: 0 – 50 Hz 0.3 mm peak to peak.	
	50 – 500 Hz 2g acceleration.	
Shock	: 30g, 11 ms all sides.	
MILspec	: above tests according to respective section of VG95332	
Weight	: approx. 15 kg.	
Dimensions	: 19” standard.	
Height	: 132.5 mm (3RU).	
Depth	: 450 mm (with handles).	
Width	: 483 mm.	

Option V (Preselector module)

Frequency range	: Lowpass filter < 1.6 MHz. 1.6 to 30 MHz; 3-stage bandpassfilter, motor - driven, microprocessor – controlled.
Input protection	: Max. 100 V_{eff} . $U_{HF} \leq 100\ V_{eff}$ and $I \leq 2$ A.
Selectivity	: typ. 6 dB , max. 10 dB in bandpass. Bandpass min. 10 kHz at 3 dB, min. 40 dB at 10% frequency range.


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RX 1001M
H
MIN
kHz
KANAL
MHz
kHz
51 UHR STELLEN
52 EINST. KANALZEIT
53 ABFR. KANALZEIT
54 KANAL D. UHR
61 AGC LANG
62 AGC KURZ
21 VORSELEKT. EIN
31 ANT. DÄMPF. 20 dB
11 A3E/A2A
12 J3E OSB
13 J3E USB
14 A1A
15
16 F1B/F1C/F3C
41 KANALFOLGE
FEHLERMELDUNG
81 0,10 kHz
82 0,15 kHz
83 0,30 kHz
84 0,60 kHz
85 1,50 kHz
86 2,40 kHz
87 3,00 kHz
88 6,00 kHz
TEST
(BITE)
EIN
AUS
NF


KANÄLE
LÖSCHEN
BEDIENUNG
LOKAL FERN
EINGABE
EIN AUS
TEST
(BITE)
H
MIN
kHz
51 UHR STELLEN
52 EINST. KANALZEIT
53 ABFR. KANALZEIT
54 KANAL D. UHR
61 AGC LANG
62 AGC KURZ
21 VORSELEKT. EIN
31 ANT. DÄMPF. 20 dB
EIN
EIN
NF
AUS
AUS


HF
0 20 40 60 80 100
dBµV
NF
-15 -6 0 3 6
dBm
1 2 3
4 5 6
7 8 9
* 0 ⌑
ORSELEKTION AUS
NT. DÄMPF. AUS
ANALWECHSEL AUS
HRZEIT ANZEIGE
GC AUS
N FREQUENZEINGABE
M KANALWAHL
9 KANAL PROGRAMMIEREN
70 ABSTIMMKNOPF AUS
71 ABSTIMMKNOPF EIN
BATTERIE
RX SPERRUNG
BFO
10 Hz
HF
ABSTIMMSCHRITTE


BFO
VCO-A
VCO-B
IF-OUT
LOOP-BFO
LOOP
LOOP
IF-OUT
5MHz
DEM
IF-
OUT
10 KHz
AF-OUT
600Ω AF 1/2 AGC 4
ITG 5
AF-LEVEL
10 KHz
LEVEL


IF-OUT
BFO
VCO-A
VCO-B
525 KHz
IF-OUT
5MHz
IF-IN
5 MHz
DEM
LOOP
30 kHz
IF-OUT
IF-
OUT
10 KHz
AF-OUT
600Ω AF 1/2 AGC
ITG
10 KHz
LEVEL
AF-LEVEL


LUBRICATION
USE ONLY AEROSH
FLUID 12. LOOK AT
LUBRICATION INST
85 86 87 88 89 90
MUTE
TTY-FAX
DEM
30 kHz
IF-OUT
ANT.
BCD-OUT