Recommendation T/R 71-02 (Malaga-Torremolinos 1975, revised at Ostend 1979, Innsbruck 1981, Cannes 1983, Montpellier 1984 and Nice 1985)

EXCHANGE OF APPROVAL TEST REPORTS FOR RADIO EQUIPMENT

Recommendation proposed by the "Radiocommunications" Working Group T/WG 3 (R)

Revised text of Recommendation adopted by the "Telecommunications" Committee:

"The European Conference of Posts and Telecommunications Administrations,

considering

(a) that several recommendations make reference to the fact that it would be of benefit to Administrations, users and manufacturers if approval test reports could be exchanged between Administrations where the latter so desired,

(b) that mutual acceptance by Administrations of these reports should be the ultimate aim,

recommends

that CEPT member Administrations use, for the exchange of approval test reports, the procedures described in the Annex to this Recommendation."

1. GENERAL PROVISIONS CONCERNING THE EXCHANGE OF TEST REPORTS

1.1. Test reports

Where a piece of radio equipment has been the subject of tests by the competent national authority, in accordance with the provisions of a CEPT Recommendation, and bears the name of the manufacturer and an indication of its type marked in a durable and readily identifiable way, measurement results in respect of it shall be recorded in standard report forms the patterns for which follow.

1.2. Exchange of test reports

Where a manufacturer intends subsequently to introduce equipment of the same type to another country where there is a CEPT member Administration, the authority responsible for testing in this country may accept the equipment on the basis of the foreign test report. To this end, at the request of the aforementioned authority and with the manufacturer's agreement, a copy of the test report in question shall be sent by the authority which tested the equipment.

Where a manufacturer lodges an application for type approval of a piece of equipment, Administrations may invite the manufacturer to state whether the equipment in question has already been the subject of approval tests by a CEPT member Administration.

1.3. Presentation of test reports

Test reports may be drafted in any language; however, where this is not one of the three languages used by the CEPT in its proceedings (German, English, French [arranged alphabetically in French. Trans.]), a translation into one of these languages shall be added.

2. STANDARD TEST REPORTS

Annex I

Reserved for use by Administrations

(With test report No.)

Equipment for the land mobile service

Type designation:

Manufacturer (and country):

Type approval No.:

Technical specifications ref.:

CEPT ref.: Recommendation T/R 24-01

Applicant:

— Address:

— Telephone No.: Telex No.:

Characteristics of the equipment as declared by the applicant

Type: ☐ transmitter ☐ receiver ☐ transmitter/receiver

Frequency range:

Adjacent channel separation: kHz

Class of emission:

Type of modulation: ☐ phase ☐ frequency

No. of switchable frequencies:

Maximum width of switchable band: MHz

Utilisation

☐ base ☐ relay ☐ mobile ☐ portable

Duplex operation ☐ yes ☐ no

☐ with filter type:

☐ with 2 antennas

Antenna ☐ coaxial socket ☐ integral

Transmitter

Carrier output power

☐ at the antenna feeder line: W

☐ effective radiated power: W

☐ facility for reducing power to: W

Quartz formula:

☐ or synthesizer

Microphone impedance: ohms

Consumption during transmission: W

Report No.

Characteristics as declared by the applicant (cont.)

Receiver

Quartz/formula:

PLL synthesizer

Intermediate frequencies

1st: 2nd: 3rd:

Audio-frequency output power

☐ loudspeaker: W ☐ earphone: mW

Audio-frequency impedance

☐ loudspeaker: ohms ☐ earphone: ohms

Consumption on standby: W

Selectiv ecalling ☐ yes ☐ no

Frequency ranges used:

Power source

☐ mains nominal voltage: V

☐ lead-acid battery on vehicle nominal voltage: V

☐ other nominal voltage: V

Test conditions

Ambient temperature	T_n	=	C	Humidity	=	%	
Extreme temperatures	T_{min}	=	C	T_{max}	=	C	
Normal test voltage	V_n	=	V				
Extreme test voltages	V_{min}	=	V	V_{max}	=	V	

Composition of equipment

☐ single unit ☐ several units (see Observations)

Observations:

Transmitter **Report No.**

Frequency error

Channel				
Nominal frequency (MHz)				
T_n	V_n			
	V_{min}			
	V_{max}			
T_{min}	V_n			
	V_{min}			
	V_{max}			
T_{max}	V_n			
	V_{min}			
	V_{max}			
Max. freq. error (Hz)				
Limit				

Transmitter carrier power

Channel				
Nominal power (W)				
T_n	V_n			
	V_{min}			
	V_{max}			
T_{min}	V_n			
	V_{min}			
	V_{max}			
T_{max}	V_n			
	V_{min}			
	V_{max}			
Error in normal conditions (dB)				
Error in extreme conditions (dB)				
Limits				

Remarks:

Transmitter **Report No.**

Frequency deviation

Normal test modulation	Frequency	Level	Deviation
	1000 Hz	mV	± kHz

Max. frequency deviation	Frequency	Level	Deviation	Limit
	Hz	mV	± kHz	

Response to modulation frequencies above 3 kHz							
Modulation freq. (Hz)	1000	3000		6000			
Freq. deviation (kHz)							
Error above 1000 Hz (dB)							
Limits							

Adjacent channel power

Carrier frequency: MHz

Method used: ☐ receiver ☐ spectrum analyser

Adjacent channel on	+ kHz	− kHz	Limit
Power (μW)			
Carrier power (dB)			

Spurious emissions

Carrier frequency: MHz

By conduction	Frequency (MHz)					
	Power (μW)					
	Limit					

By radiation	Frequency (MHz)					
	Power (μW)					
	Limit					

☐ Normal measurements (exterior) Distance: m

☐ Interior measurements

Remarks:

Transmitter Report No.

Intermodulation attenuation

Carrier frequency: MHz

Transmitter freq. less test freq. (kHz)							
Attenuation (dB)							
Limit							

Remarks:

Receiver **Report No.**

General

Normal test modulation: 1 kHz with ± kHz deviation

Method used ☐ SND/ND ☐ SND/N

Maximum usable sensitivity

Output power in normal conditions:

Output power variation in extreme conditions: + dB, − dB

e.m.f. (dB/1 µV) for a ratio of 20 dB				
Channel				
Nominal frequency (MHz)				
T_n	V_n			
	V_{min}			
	V_{max}			
T_{min}	V_n			
	V_{min}			
	V_{max}			
T_{max}	V_n			
	V_{min}			
	V_{max}			
Limits				

Amplitude characteristic

Output power:

e.m.f. (dB/1 µV)	6						100
Output power variation (dB)	0						
Max. variation (dB)							
Limits							

Co-channel rejection

Freqency of wanted signal	e.m.f. of wanted signal	Frequency of unwanted signal	Measured ratio	Limit
MHz	dB/1 µV	MHz	− dB	

Remarks:

Receiver Report No.

Adjacent channel selectivity

Frequency of wanted signal f_0 = MHz

Ratio (dB) of the unwanted signal to the wanted signal				
Frequency		f + kHz	f − kHz	Limits
T_0	V_0			
	V_{MIN}			
	V_{MAX}			
T_{MIN}	V_0			
	V_{MIN}			
	V_{MAX}			
T_{MAX}	V_0			
	V_{MIN}			
	V_{MAX}			

Spurious response rejection

Frequency of wanted signal f_0 = MHz

Frequency (MHz)	
Ratio (dB)	
Limit	

Intermodulation response

Nominal frequency of receiver f_0 = MHz

Adjacent channel separation f_d = kHz

Signal generator A	Signal generator B	Measured ratio (dB)	Limit
$f_0 - 2f_d$	$f_0 - f_d$		
$f_0 + 2f_d$	$f_0 + f_d$		
$f_0 - 4f_d$	$f_0 - 2f_d$		
$f_0 + 4f_d$	$f_0 + 2f_d$		
$f_0 - 6f_d$	$f_0 - 3f_d$		
$f_0 + 6f_d$	$f_0 + 3f_d$		
$f_0 - 8f_d$	$f_0 - 4f_d$		
$f_0 + 8f_d$	$f_0 + 4f_d$		

Receiver **Report No.**

Blocking or desensitisation

Wanted signal freq. less unwanted signal freq. (MHz)	Level (dB/1 µV) output power	For S/N ratio reduction	Limit

Spurious emissions

Nominal frequency: MHz

By conduction	Frequency (MHz)					
	Level (µW)					
	Limit					

By radiation	Frequency (MHz)					
	Level (µW)					
	Limit					

☐ Normal measurements (exterior) Distance: m

☐ Interior measurements

Remarks:

Report No.

Duplex Operation

General

Transmitter frequency: MHz

Receiver frequency: MHz

Audio-frequency output power: mW

Receiver desensitisation

Max. usable sensitivity of receiver	dB 1 µV	Limits
Desensitisation	dB	
Max. usable sensitivity in duplex operation	dB 1 µV	

Spurious response rejection

Frequency (MHz)	
Ratio (dB)	
Limit	

Remarks:

These tests were conducted
in the presence of Messrs
by Messrs

Transmitter (A.II) **Report No.**

Modulator limitation

Modulation 1000 Hz – level increased by 20 dB relative to ± kHz i.e. mV

	Max. deviation	Min. deviation
Values obtained in all conditions	± kHz	± kHz
Limit		

Modulator sensitivity

Frequency deviation at 1000 Hz vith a loudness level of 94 dB	± kHz	Limit

Audio-frequency response

Modulation ref.	Frequency	Deviation	Level
	1000 Hz	± kHz	mV

Mod. freq. (Hz)	300	500	1000	2000	2550/3000
Deviation (kHz)					
Mod. index					
Error/value 1000 Hz (dB)					
Limits					

Harmonic distortion

Normal test conditions

Frequency (Hz)	300	500	1000
Deviation (kHz)			
Distortion (%)			
Limit			

Extreme test conditions

Modulation 1000 Hz at ± kHz

	T_{min}	T_{max}	Limit
V_{min}			
V_{max}			

Residual modulation

Mod. 1000 Hz	± kHz	Limit
Residual mod.	dB	

Remarks:

Receiver (AM) Report No.

Audio-frequency response

Nominal frequency of receiver f_n = MHz

Reference output power: mW

Error relative to characteristic						
Frequency	(Hz)	300	500	1000	2000	2550 3000
at f_n	Hz (dB)					
at f_n	(dB)					
at f_n +	Hz (dB)					
Limits						

Harmonic distortion

Nominal frequency of receiver f_n = MHz

Normal test conditions

Frequency	(Hz)	300	500	1000	Limit
Deviation	(kHz)				
f_n at 60 dB/1 µV distortion (%)					
f_n at 100 dB/1 µV distortion					

Extreme test conditions

e.m.f. 60 dB/1 µV

Frequency		f_n – Hz	f_n	f_n + Hz
T_{min}	V_{min}			
	V_{max}			
T_{max}	V_{min}			
	V_{max}			
Limit				

Receiver (A.II) **Report No.**

e.m.f. 100 dB/1 µV

Frequency		f_n – kHz	f_n	f_n + kHz
T_{min}	V_{min}			
	V_{max}			
T_{max}	V_{min}			
	V_{max}			
Limit				

Noise and hum

dB relative to the level of the modulation signal

Consumption

During transmission: During reception:

Remarks:

These tests were conducted
in the presence of Messrs
by Messrs

Annex II

Reserved for use by Administrations
(With test report No.)

Report No.

PR 27 radiotelephone

Type designation:

Trademark:

Manufacturer (and country):

Type approval No.:

National technical specifications ref.:

CEPT reference: Recommendation T/R 20-02

Applicant:

- Address:
- Telephone No.: Telex No.:

Characteristics of the equipment as declared by the applicant

- Type: transmitter/receiver
- Frequency range:
- No. of switchable frequencies:
- Maximum width of switchable band: kHz
- Type of modulation: ☐ 8K50F3E
  ☐ 8K50G3E
- Utilisation: ☐ base
  ☐ mobile
  ☐ portable
- Antenna ☐ coaxial socket; load impedance for which equipment designed: ohms
  ☐ integral antenna; length: cm
- Transmitter

  Power: ☐ rated effetive radiated power: W
  ☐ rated output power at terminals: W
  ☐ facility for reducing power to: W

  Total nominal continuous current power input (without auxiliary equipment)

  with modulation: W
  without modulation: W

  Synthesizers: ☐ yes
  ☐ no; quartz formula:

  Microphone impedance: ohms

Report No.

Characteristics of the equipment as declared by the applicant (cont.)

Receiver:

Synthesizer: ☐ yes
☐ no: quartz formula:

Intermediate frequencies: 1st:
2nd:
3rd:

Audio-frequency output power: ☐ loudspeaker: W
☐ earphone: W

Audio-frequency impedance: ☐ loudspeaker: ohms
☐ earphone: ohms

Switchable muted reception: ☐ yes
☐ no

Standby power input: W

Selective calling: ☐ yes
☐ no

Range of audio-frequencies used:

Power source: ☐ integral
☐ external

☐ mains nominal voltage: V
☐ lead-acid battery on vehicle nominal voltage: V
☐ other nominal voltage: V

Test conditions

Humidity = %

Ambient temperature T_n = C

Extreme temperatures T_{min} = C
T_{max} = C

Normal test voltage V_n = V

Extreme test voltages V_{min} = V
V_{max} = V

Composition of equipment

Construction:
☐ single unit
☐ several units (see Observations)

Connection facilities:
☐ microphone ☐ power supply
☐ selective calling ☐ loudspeaker
☐ earphone ☐ charger only

Auxiliary equipment:

Observations:

Report No.

Photographs of the equipment

1. Exterior.

Report No.

Carrier frequencies and channel numbers (Annex II, paragraphs 1.-5.)

— The following channel numbers are available (delete the numbers not available):
1–2–3–4–5–6–7–8–9–10–11–12–13–14–15–16–17–18–19–20–21–22–23–24–25–26–27–28–29–30–31–32–33–34–35–36–37–38–39–40

The channel numbers correspond to the recommended carrier frequencies:

☐ yes
☐ no

— The physical and electrical design of the channel switching system permits operation on the authorised channels only:

☐ yes
☐ no

— Type of modulation
The apparatus is designed for frequency modulation only or for phase modulation only:

☐ yes
☐ no

— Observations:

TRANSMITTER **Report No.**

Frequency error (Annex III, paragraph 4.1.)

		Frequency error (Hz)		
Channel				
Nominal frequency (MHz)				
T_n	V_n			
	V_{min} (option)			
	V_{max} (option)			
T_{min}	V_n (option)			
	V_{min}			
	V_{max}			
T_{max}	V_n (option)			
	V_{min}			
	V_{max}			
Max. freq. error (Hz)				
Limit		± 600 Hz		

Transmitter carrier power (Annex III, paragraph 4.2.)

☐ coaxial socket

Nominal power: watts

		Power (watts)		
Channel				
T_n	V_n			
	V_{min} (option)			
	V_{max} (option)			
T_{min}	V_n (option)			
	V_{min}			
	V_{max}			
T_{max}	V_n (option)			
	V_{min}			
	V_{max}			
Error in normal conditions (dB)				
Error in extreme conditions (dB)				
Limit		4 watts		

☐ radiated measurement distance: m Report No.

Nominal power: watts

	Power (watts)		
Channel			
T_{nom} V_{nom}			
Error in normal conditions (dB)			
Limit	4 watts		

Total nominal continuous current power input (without auxiliary equipment) (Option)

	Unmodulated transmitter	Modulated transmitter
Nominal power (W)		
Measured power (W)		

Remarks:

Adjacent channel power (Annex III, paragraph 4.3.)

Audio-frequency level (= 1250 Hz) to produce a frequency deviation of ± 1 kHz (reference modulation): mV

Test modulation (= reference modulation + 20 dB): mV

Frequency deviation produced: kHz

Method used ☐ receiver
☐ spectrum analyser

	Adjacent channel power (microwatts)		
Channel			
Nominal frequency (MHz)			
− 10 kHz			
+ 10 kHz			
Limit	20 microwatts		

Synthesizers and PLL systems (Annex II, paragraph 9.)

When synchronisation is absent, the transmitter cannot be used.

☐ yes
☐ no

Spurious emission (Annex III, paragraph 4.4.) **Report No.**

By conduction

Channel/ Carrier frequency				
MHz	Frequency (MHz)			
	Power (nW)			
	Limit (nW)			
MHz	Frequency (MHz)			
	Power (nW)			
	Limit (nW)			
MHz	Frequency (MHz)			
	Power (nW)			
	Limit (nW)			

By radiation ☐ normal measurements (exterior); distance: m
☐ interior measurements

Channel/ Carrier frequency				
MHz	Frequency (MHz)			
	Power (nW)			
	Limit (nW)			
MHz	Frequency (MHz)			
	Power (nW)			
	Limit (nW)			
MHz	Frequency (MHz)			
	Power (nW)			
	Limit (nW)			

Report No.

By the transmitter on standby

Frequency (MHz)				
Power (mW)				
Limit				

Remarks :

RECEIVER **Report No.**

General

Normal test modulation: 1 kHz with ± kHz deviation

Method used ☐ SND/ND
☐ SND/N

Maximum usable sensitivity (Annex III, paragraph 5.1.)

Output power in normal conditions:

e.m.f. (dB/1 μV) for a ratio of 20 dB			
Channel			
Nominal frequency (MHz)			
e.m.f. (dB/1 μV)			
Limit	6 dB/1 μV		

Remarks:

RECEIVER Report No.

Adjacent channel selectivity (Annex III, paragraph 5.2.)

Channel			
f – 10 kHz			
f – 10 kHz			
Limit	60 dB 1 µV e.m.f.		

Spurious response rejection (Annex III, paragraph 5.3.)

Frequency of wanted signal f = MHz

Frequency (MHz)			
Level (dB 1 µV e.m.f.)			
Limit	60 dB 1 µV e.m.f.		

Intermodulation response (Annex III, paragraph 5.4.)

Nominal frequency of receiver f_n = MHz

Adjacent channel separation f_d = 10 kHz

Signal generator A	Signal generator B	Level measured (dB 1 µV e.m.f.) Limit	
$f_n - 2f_d$	$f_n - f_d$		60 dB/1 µV e.m.f.
$f_n + 2f_d$	$f_n + f_d$		

RECEIVER **Report No.**

Spurious emissions (Annex III, paragraph 5.5.)

Nominal frequency: MHz

By conduction	Frequency (MHz)			
	Level (nW)			
	Limit			

By radiation*	Frequency (MHz)			
	Level (nW)			
	Limit			

* ☐ Normal measurements (exterior); distance: m
☐ Interior measurements

Remarks:

These tests were conducted
in the presence of Messrs
by Messrs

Annex III

Reserved for use by Administrations
(With test report No.)

Telecommand and telemetry equipment

Type designation:

Manufacturer (and country):

Type approval No.:

Technical specifications ref.:

CEPT ref.: ☐ Recommendation T/R 20-03 E ☐ Recommendation T/R 20-04 E

Applicant:

— Address:

— Telephone No.: Telex No.:

Characteristics of the equipment as declared by the applicant

— Type: ☐ transmitter ☐ receiver

— Frequency range:

— Adjacent channel separation:

— Type of modulation: ☐ amplitude ☐ frequency or phase ☐ pulse

— No. of switchable frequencies:

— Maximum width of switchable band: MHz

— Transmitter:

Type designation (if different from that of complete system):

Utilisation ☐ base ☐ mobile ☐ portable

Antenna ☐ coaxial socket; load impedance for which transmitter is designed: ohms

☐ integral antenna; length: cm

Carrier power

☐ rated effective radiated power: mW

☐ rated output power at terminals: mW

☐ facility for reducing power to: mW

Telecommand/Telemetry Report No.

Total nominal continuous current power input: W

Quartz formula:
☐ or synthesizer

Power source ☐ integral ☐ external
☐ mains nominal voltage: V
☐ lead-acid battery on vehicle nominal voltage: V
☐ other nominal voltage: V

Auxiliary equipment:

Connection facilities:

Receiver

Type designation (if different from that of complete system):

Utilisation ☐ base ☐ mobile ☐ portable

Antenna ☐ coaxial socket: anticipated load impedance: ohms
☐ integral antenna: length: cm

Quartz formula:
☐ or synthesizer

Intermediate frequencies 1st: 2nd: 3rd:

Power input on standby: W

Power source ☐ integral ☐ external
☐ mains nominal voltage: V
☐ lead-acid battery on vehicle nominal voltage: V
☐ other nominal voltage: V

Auxiliary equipment:

Connection facilities:

Test conditions

Ambient temperature	T_n =	C	Humidity =	%	
Extreme temperatures	T_{min} =	C	T_{max} =	C	
Normal transmitter voltage	V_n =	V	Receiver V_n =	V	
Extreme transmitter voltages	V_{min} =	V	V_{max} =	V	

Observations:

Telecommand/Telemetry **Report No.**

TRANSMITTER

Frequency error

Nominal frequency: MHz

	V_{min}	V_n	V_{max}
T_{min}			
T_n			
T_{max}			
Max. freq. error (Hz)			
Limit			

Transmitter power

☐ coaxial socket ☐ radiated; measurement distance: m

Nominal power: mW

	V_{min}	V_n	V_{max}
T_{min}			
T_n			
T_{max}			
Limit			

Total continuous current power input

(Equipment in ISM bands only)

Nominal power (W)	
Measured power (W)	
Limit	2 W

Telecommand/Telemetry **Report No.**

Adjacent channel power

Carrier frequency: MHz

Test modulation

Method used: ☐ receiver ☐ spectrum analyser

Adjacent channel on	+ kHz	− kHz	Limit
Power (μW)			
Relative poxer (dB)			

Spurious emissions

Carrier frequency: MHz

By conduction	Frequency (MHz)					
	Level (nW)					
	Limit					

By radiation*	Frequency (MHz)					
	Level (nW)					
	Limit					

* ☐ Normal measurements (exterior); distance: m

☐ Interior measurements

Remarks:

Telecommand/Telemetry Report No.

RECEIVER

Spurious emissions

Nominal frequency: MHz

By conduction	Frequency (MHz)					
	Level (nW)					
	Limit	2 nW				

By radiation*	Frequency (MHz)					
	Level (nW)					
	Limit	2 nW				

* ☐ Normal measurements (exterior); distance: m

☐ Interior measurements

Remarks:

These tests were conducted
in the presence of Messrs
by Messrs

Annex IV

Reserved for use by Administrations
(With test report No.)

Personal paging equipment

Type designation:

Manufacturer (and country):

Type approval No.:

Technical specifications ref.:

CEPT ref.: ☐ Recommendation T/R 20-05 E

Applicant:

- Address:
- Telephone No.: Telex No.:

Characteristics of the equipment as declared by the applicant

- Type ☐ Call transmitter ☐ Call receiver
  ☐ Response transmitter ☐ Response receiver

Calling system

- Type designation (if different from that of complete set of equipment):
- Frequency range:
- Adjacent channel separation:

Type of modulation ☐ double-sideband amplitude ☐ SSB amplitude
☐ frequency or phase ☐ pulse

- Total capacity:

Spoken messages can be transmitted ☐ yes; duration limited to s
☐ no

Personal paging Report No.

Call transmitter

Type designation (if different from that of complete system):

Load impedance for which transmitter is designed: ohms

Power rated output power at terminals: W

☐ facility for reducing power to: W

Quartz formula:

☐ or synthesizer

Power input during transmission: W

Power source

Type: Nominal voltage: V

Auxiliary equipment:

Connection facilities:

Call receiver

Type designation (if different from that of complete system):

Antenna:

☐ coaxial socket; anticipated impedance: ohms

☐ integral antenna; length: cm

Quartz formula:

☐ or synthesizer

Intermediate frequencies: 1st: 2nd: 3rd:

Power input on standby: W

Power source: ☐ integral ☐ external

Type: Nominal voltage: V

Auxiliary equipment:

Connection facilities:

Response system

Type designation (if different from that of complete set of equipment):

Frequency range:

Adjacent channel separation:

Class of emission:

Type of modulation: ☐ double-sideband amplitude ☐ frequency or phase
☐ pulse

Response

Possible only if called ☐ yes ☐ no

Duration ☐ limited to s ☐ unlimited

Message ☐ spoken ☐ coded

Personal paging **Report No.**

Response Transmitter

Type designation (if different from that of complete system):

Length of integral antenna: cm

Rated effective radiated power: mW

Quartz formula:

☐ or synthesizer

Input power during transmission: mW

Power source:

Type: Nominal voltage: V

Auxiliary equipment:

Connection facilities:

Response receiver

Type designation (if different from that of complete system):

Antenna:

☐ coaxial socket; anticipated impedance: ohms

☐ integral antenna; length: cm

Quartz formula:

☐ or synthesizer

Intermediate frequencies: 1st: 2nd: 3rd:

Power input on standby: W

Power source: ☐ integral ☐ external

Type: Nominal voltage: V

Auxiliary equipment:

Connection facilities:

Test conditions

Ambient temperature	T_n	=	C	Humidity	=	%	
Extreme temperatures	T_{min}	=	C	T_{max}	=	C	
Normal call transmitter voltage	V_n	=	V	Call rec. V_n	=	V	
Extreme call transmitter voltages	V_{min}	=	V	V_{max}	=	V	
Normal response transmitter voltages	V_n	=	V	Response rec. V_n	=	V	
Extreme response transmitter voltages	V_{min}	=	V	V_{max}	=	V	

Observations:

Personal paging **Report No.**

CALL TRANSMITTER

Frequency error

Nominal frequency: MHz

	V_{min}	V_n	V_{max}
T_{min}			
T_n			
T_{max}			
Max. freq. error (Hz)			
Limit			

Transmitter power (at the coaxial socket)

☐ carrier power ☐ at peak modulation

Nominal power: W

	V_{min}	V_n	V_{max}
T_{min}			
T_n			
Tmax			
Limit	5 W		

Personal paging

Report No.

Adjacent channel power

Reference modulation for speech

Audio frequency	Level	To produce during freq. mod.	To produce during ampl. mod. double sideband	To produce during ampl. mod. SSB
1250 Hz	mV	see T/R 20-05 Annex III, 1.1.2.		
1250 Hz	mV		60 %	
400-2500 Hz	mV			Power at peak modulation

Test modulation for speech

Frequency: Hz Level: mV

Test modulation for calling

Carrier frequency: MHz

Method used: ☐ receiver ☐ spectrum analyser

Adjacent channel on	+ kHz	− kHz	Limit
Power (μW)			
Relative power (dB)			

Spurious emissions

Carrier frequency: MHz

By conduction	Frequency (MHz)					
	Level (nW)					
	Limit	250 nW				

By radiation*	Frequency (MHz)					
	Level (nW)					
	Limit	250 nW				

* ☐ Normal measurements (exterior); distance: m

☐ Interior measurements

Personal paging **Report No.**

CALL RECEIVER

Spurious emissions

Nominal frequency: MHz

By conduction	Frequency (MHz)					
	Level (nW)					
	Limit	2 nW				

By radiation*	Frequency (MHz)					
	Level (nW)					
	Limit	2 nW				

* ☐ Normal measurements (exterior); distance: m

☐ Interior measurements

Remarks:

Personal paging

Report No.

RESPONSE TRANSMITTER

Frequency error

Nominal frequency: MHz

	V_{min}	V_n	V_{max}
T_{min}			
T_n			
T_{max}			
Max. freq. error (Hz)			
Limit			

Transmitter power (Effective radiated power)

Nominal power: mW

	V_{min}	V_n	V_{max}
T_{min}			
T_n			
T_{max}			
Limit			

☐ Normal measurements (exterior): distance: m

☐ Interior measurements

Remarks:

Personal paging **Report No.**

Adjacent channel power

Reference modulation for speech

Audio frequency	Level	To produce	
		during ampl. mod. double sideband	during freq. mod.
1250 Hz	mV	60%	
1250 Hz	mV		± 3 kHz

Test modulation for speech

Frequency: Hz Level: mV

Test modulation for coded response

Carrier frequency: MHz

Method used: ☐ receiver ☐ spectrum analyser

Adjacent channel on	+ kHz	— kHz	Limit
Power (μW)			
Relative power (dB)			

Spurious emissions

Carrier frequency: MHz

By radiation*	Frequency (MHz)					
	Level (nW)					
	Limit	250 nW				

* ☐ Normal measurements (exterior); distance: m

☐ Interior measurements

Remarks:

Personal paging

RESPONSE RECEIVER

Report No.

Spurious emissions

Nominal frequency: MHz

By conduction	Frequency (MHz)					
	Level (nW)					
	Limit	2 nW				

By radiation*	Frequency (MHz)					
	Level (nW)					
	Limit	2 nW				

* ☐ Normal measurements (exterior); distance: m

☐ Interior measurements

Remarks:

These tests were conducted

in the presence of Messrs

by Messrs

Annex V

Reserved for use by Administrations

(With test report No.)

Cordless microphone

Type designation:

Manufacturer (and country):

Type approval No.:

Technical specifications ref.:

CEPT ref.: ☐ Recommendation T/R 20-06 E

Applicant:

— Address:

— Telephone No.: Telex No.:

Characteristics of the equipment as declared by the applicant:

— Type: ☐ transmitter ☐ receiver

— Frequency range:

— Type of modulation: ☐ frequency or phase ☐ amplitude

— No. of switchable frequencies:

— Maximum width of switchable band: MHz

— Transmitter:

Type designation (if different from that of complete system):

Nominal necessary bandwidth:

Utilisation ☐ base ☐ mobile ☐ portable

Antenna ☐ coaxial socket; load impedance for which transmitter is designed: ohms

☐ Integral antenna; length: cm

Carrier power

☐ rated effective radiated power: mW

☐ rated output power at terminals: mW

☐ facility for reducing power to: mW

Quartz formula:

Power input:

Power source Nominal voltage: V ☐ integral: ☐ external

Cordless microphone Report No.

Receiver

Type designation (if different from that of complete system):

Utilisation ☐ base ☐ mobile ☐ portable

Antenna ☐ coaxial socket: anticipated impedance: ohms

☐ integral antenna: length: cm

Quartz formula

☐ or synthesizer

Intermediate frequencies 1st: 2nd: 3rd:

Power input:

Power source: Nominal voltage: V

Test conditions

Ambient temperature	T_n =	C	Humidity =	%
Extreme temperatures	T_{min} =	C	T_{max} =	C
Normal transmitter voltage	V_n =	V	Receiver V_n =	V
Extreme transmitter voltages	V_{min} =	V	V_{max} =	V

Observations:

Cordless microphone **Report No.**

TRANSMITTER

Frequency error

Nominal frequency: MHz

	V_{min}	V_n	V_{max}
T_{min}			
T_n			
T_{max}			
Max. freq. error (Hz)			
Limit	± 10 kHz		

Transmitter power

☐ coaxial socket ☐ radiated; measurement distance: m

Nominal power: mW

	V_{min}	V_n	V_{max}
T_{min}			
T_n			
T_{max}			
Limit			

Cordless microphone **Report No.**

Necessary bandwith

Audio frequency	Level	Deviation	Band calculated	Limit
Hz	mV	± kHz	kHz	180 kHz
Hz	mV	± kHz	kHz	

Spurious emissions

Carrier frequency: MHz

By conduction	Frequency (MHz)					
	Power (nW)					
	Limit	4 nW				

By radiation*	Frequency (MHz)					
	Level (nW)					
	Limit	4 nW				

* ☐ Normal measurements (exterior); distance: m

☐ Interior measurements

Remarks:

These tests were conducted

in the presence of Messrs

by Messrs

Annex VI

Reserved for use by Administrations

(With test report No.)

Radiolocation equipment

Type designation:

Manufacturer (and country):

Type approval No.:

Technical specifications ref.:

CEPT ref.: ☐ Recommendation T/R 60-01 E

Applicant:

- Address:
- Telephone No.: Telex No.:

Characteristics of the equipment as declared by the applicant:

- Type: ☐ transmitter ☐ receiver ☐ Transmitter/receiver
  Frequency range:
- Type of modulation: ☐ amplitude ☐ frequency or phase ☐ pulse
- Utilisation: ☐ fixed ☐ mobile ☐ portable
- Type of antenna
  Isotropic gain:
- Transmitter
  Nominal value of total bandwidth used:
  Nominal value of peak envelope power (e.i.r.p.):
  Quartz formula:
  Power input during transmission:

Radiolocation

Report No.

Characteristics as declared by the applicant (cont.)

Receiver

Quartz formula:

Intermediate frequencies 1st: 2nd: 3rd:

Power input on standby:

Type of demodulation system:

Power source: ☐ integral ☐ external
☐ mains nominal voltage: V
☐ lead-acid battery on vehicle nominal voltage: V
☐ other nominal voltage: V

Test conditions

Ambient temperature	T_n	=	C	Humidity	=	%
Extreme temperatures	T_{min}	=	C	T_{max}	=	C
Normal test voltage	V_n	=	V			
Extreme test voltages	V_{min}	=	V	V_{max}	=	V

Composition of equipment

☐ single unit ☐ several units (see Observations)

Connection facilities:

Auxiliary equipment:

Observations:

Radiolocation **Report No.**

TRANSMITTER

Total bandwidth used Nominal frequency: MHz

Bandwidth at 10 μW (e.i.r.p.)

Lower frequency	Upper frequency	Difference between these frequencies
MHz	MHz	MHz

Carrier frequency in extreme conditions (MHz)

T_{min}			T_n			T_{max}		
V_{min}	V_n	V_{max}	V_{min}	V_n	V_{max}	V_{min}	V_n	V_{max}
Maximum carrier frequency variation: MHz								

Calculated total bandwidth used: MHz
Limit: MHz

Peak envelope power (e.i.r.p.)

Nominal power: mW

	V_{min}	V_n	V_{max}
T_{min}			
T_n			
T_{max}			
Limit	500 mW		

Radiolocation **Report No.**

Spurious emissions (e.i.r.p.)

Carrier frequency: MHz

Frequency (MHz)					
Power (μW)					
Limit	10 μW				

RECEIVER

Spurious emissions (e.i.r.p.)

Nominal frequency: MHz

Frequency (MHz)					
Level (μW)					
Limit	10 μW				

Remarks:

These tests were conducted
in the presence of Messrs
by Messrs

Annex VII

Reserved for use by Administrations
(With test report No.)

Radiotelephone transmitters and receivers in the maritime mobile service operating in VHF bands

Type designation:

Manufacturer (and country):

Type approval No.:

Technical specifications ref.:

CEPT ref.: Recommendation T/R 34-01

Applicant:

Address:

Telephone No.: Telex No.:

Characteristics of the equipment as declared by the applicant

Type: ☐ transmitter ☐ receiver ☐ transmitter/receiver

Frequency range:

No. of channels: International maritime channels

Additional channels:

Duplex operation: ☐ yes ☐ no

Transmitter

Carrier output power (nominal power):

Microphone impedance:

Consumption during transmission:

Receiver

Intermediate frequencies: 1st: 2nd: 3rd:

Local oscillator injection frequencies: 1st: 2nd: 3rd:

Other systems: ☐ yes ☐ no

Audio-frequency output power: Loudspeaker:
Earphone:

Audio-frequency impedance: Loudspeaker:
Earphone:

Selective calling: ☐ yes ☐ no

Two-channel watchkeeping device: ☐ yes ☐ no

Power source

Mains Nominal voltage:

Accumulator Nominal voltage:

Other Nominal voltage:

Characteristics of the equipment as declared by the applicant (cont.)

Test conditions

Normal temperature:	T_n =	°C	Humidity =		%
Extreme temperatures	T_{min} =	°C	T_{max} =		°C
Normal test voltage	V_n =	V			
Extreme test voltages	V_{min} =	V	V_{max} =		V

Composition of equipment

☐ single unit ☐ several units (see Observations)

Observations:

2. GENERAL CONDITIONS

The test report must state whether a test has not been carried out.

2.1. Construction

2.1.1.	Mechanical and electrical construction	Satisfactory:	☐ yes	☐ no
2.1.2.				
2.1.3.	Marker labels	Satisfactory:	☐ yes	☐ no
2.1.4.	Accessibility	Satisfactory:	☐ yes	☐ no
2.1.5.	Documentation	Satisfactory:	☐ yes	☐ no
2.1.6.	Channel selector	Satisfactory:	☐ yes	☐ no

2.1.7. Manual reception/transmission control

In simplex operation: ☐ yes ☐ no

In duplex operation: ☐ yes ☐ no

2.2. Controls

2.2.1. Obligatory controls:

On/off switch for the entire installation with visual indication	☐ yes	☐ no
Handset with manual non-locking carrier alternation control	☐ yes	☐ no
On/off switch for the loudspeaker	☐ yes	☐ no
Clear indication of channel 16	☐ yes	☐ no
Means of preventing operation on channels 75 and 76	☐ yes	☐ no
Switch for reducing the transmitter output power to no more than 1 watt	☐ yes	☐ no
Audio-frequency power volume control	☐ yes	☐ no
Squelch control	☐ yes	☐ no
Control for reducing the brightness of any equipment illumination to zero	☐ yes	☐ no

2.2.2. Optional control

Visual indication of transmission	☐ yes	☐ no

2.2.3. Compliance with the following requirements:

Access to preset controls	Satisfactory:	☐ yes	☐ no
Priority of control consoles and indication of priority	Satisfactory:	☐ yes	☐ no
Automatic power reduction on channels 15 and 17	Satisfactory:	☐ yes	☐ no

Remarks:

2.3. **loudspeaker and handset**

2.3.1 Telephone handset: ☐ yes ☐ no
Integral loudspeaker: ☐ yes ☐ no
Socket for external loudspeaker: ☐ yes ☐ no

2.3.2. Effect of switching the loudspeaker on the handset: Satisfactory: ☐ yes ☐ no

2.3.3. Receiver output cut-off during transmission in simplex operation: ☐ yes ☐ no

2.3.4. Automatic loudspeaker cut-off in duplex operation: ☐ yes ☐ no

2.4. **Switchover time**

Channel selection: Satisfactory: ☐ yes ☐ no
Reception transmission: Satisfactory: ☐ yes ☐ no

2.5. **Safety precautions**

2.5.1. Protection against the effects of overcurrent or overvoltage: Satisfactory: ☐ yes ☐ no

2.5.2. Protection against the effects of transient voltage variations and accidental reversal of polarity at the power source: Satisfactory: ☐ yes ☐ no

2.5.3. Earthing: Satisfactory: ☐ yes ☐ no

2.5.4. Protection against accidental access to voltages greater than 50 V: Satisfactory: ☐ yes ☐ no

2.5.5. Antenna terminals on open circuit or short circuit: Satisfactory: ☐ yes ☐ no

2.6. **Class of emission and modulation characteristics**

Satisfactory: ☐ yes ☐ no

2.7. **Number of channels**

Number of channels in accordance with Appendix 18 to the Radio Regulations:

Other channels:

2.8. **Frequency bands** Satisfactory: ☐ yes ☐ no

Remarks:

3.6. **Environmental tests**

Vibration:	Satisfactory:	☐ yes	☐ no
Damp-heat cycle:	Satisfactory:	☐ yes	☐ no
Low-temperature cycle:	Satisfactory:	☐ yes	☐ no
Corrosion test:	Satisfactory:	☐ yes	☐ no

3.7. **Warm-up time**

☐ Paragraph 3.7.1.
☐ Paragraph 3.7.2. ☐ Paragraph 3.7.3.

4.8. **Extended usage test** Satisfactory: ☐ yes ☐ no

Remarks:

5. TRANSMITTER

5.1. Frequency error

Temp.	Test voltage	Measured frequency (MHz)		
		Channel:	Channel:	Channel:
T_n	V_n			
	V_{max}			
	V_{min}			
T_{max}	V_n			
	V_{max}			
	V_{min}			
T_{min}	V_n			
	V_{max}			
	V_{min}			
Maximum frequency error		Hz	Hz	Hz
Limit		1500 Hz		

5.2. Transmitter carrier power

Nominal power: W M = Maximum power R = Reduced power

Temp.	Test voltage	Measured power (W)					
		Channel:		Channel:		Channel:	
		M	R	M	R	M	R
T_n	V_n						
	V_{max}						
	V_{min}						
T_{max}	V_n						
	V_{max}						
	V_{min}						
T_{min}	V_n						
	V_{max}						
	V_{min}						
Maximum error in norm. conds.		dB		dB		dB	
Limit		M: ±1.5 dB at nominal power in normal conditions M: 6-25 W in all test conditions R: 0.1-1 W in all test conditions					

5.3.1. *Maximum permissible frequency deviation*

Modulation level + 20 dB above normal test modulation level	
Modulation frequency (Hz)	
Maximum frequency deviation	
Limit	± 5 kHz

5.3.2. *Reduction in frequency deviation at modulation frequencies above 3 kHz*

Modulation frequency (Hz)		1000	3000		6000				
Frequency deviation	Hz	3000							
	dB	0							
Limits					1500 Hz − 6 dB				

Maximum permissible deviation at frequencies above 6 kHz: $1500 \left[\frac{6000}{f_{mod}}\right]^{2.325}$ (Hz)

or $-6 - 46.5 \log \left[\frac{f_{mod}}{6000}\right]$ (dB)

See also Figure 1 (T/R 71-02).

Remarks:

5.4. **Limitation characteristics of the transmitter modulator**

Temp.	Test voltage	Frequency deviation (kHz)	Limits
T_1	V_1		3.5-5 kHz
	V_{1+1}		
	V_{1-1}		
T_{max}	V_2		
	V_{max}		
	V_{max}		
T_{min}	V_3		
	V_{max}		
	V_{max}		

5.5. **Sensitivity of the modulator, including microphone**

Frequency deviation at 1000 Hz with a loudness level of 1 Pa	Limit
kHz	3-4.5 kHz

5.6. **Audio-frequency response of the transmitter**

Method of measurement used: ☐ Constant deviation ☐ Constant input level

Values obtained in Figure 2 (T R 71-02).

Remarks:

5.7. **Harmonic distortion of the emission**

Temp.	Test voltage	Modulation freq. (Hz)	Distortion ratio (%)	Limit
T_n	V_n	300		10%
		500		
		1000		
	V_{max}	300		
		500		
		1000		
	V_{min}	300		
		500		
		1000		
T_{max}	V_n	1000		
	V_{max}			
	V_{min}			
T_{min}	V_n	1000		
	V_{max}			
	V_{min}			

5.8. **Adjacent channel power**

Channel No.:

Method used: ☐ receiver ☐ spectrum analyser

	Maximum power		Reduced power	
Adjacent channel on	+25 kHz	−25 kHz	+25 kHz	−25 kHz
Power (μW)				
Carrier power (dB)				
Limits	−70 dB relative to the transmitter power level or ≤ 0.2 μW			

Remarks:

5.9. **Spurious emissions conveyed to the antenna by conduction**

Channel No.:

Frequency (MHz)							
Power (μW)							
Limit	2.5 μW						

Frequency (MHz)							
Power (μW)							
Limit	2.5 μW						

5.10. **Cabinet radiation and conducted spurious emissions other than those conveyed to the antenna**

5.11. **Residual modulation of the transmitter**

Mod. freq. 1000 Hz	Deviation ±3 kHz; 0 dB
Residual modulation	dB
Limit	−40 dB

Remarks:

6. **RECEIVER**

General: Methods of measurement used SND/ND SND/N

6.1. **Harmonic distortion and rated audio-frequency output power**

Channel No.: Nominal frequency (f_n):

Constant modulation index of 3. Rated output power:

Test frequency				f_n	$f_n - 1.5$ kHz	$f_n + 1.5$ kHz
Temp.	Test voltage	Input level (dBµV)	Mod. freq. (Hz)	Distortion ratio (%)	Distortion ratio (%)	Distortion ratio (%)
T_n	V_n	60	300			
			500			
			1000			
		100	300			
			500			
			1000			
T_{max}	V_{max}	60	1000			
	V_{min}					
	V_{max}	100	1000			
	V_{min}					
T_{min}	V_{max}	60	1000			
	V_{min}					
	V_{max}	100	1000			
	V_{min}					
Limits				10%		

6.2. **Response of the receiver**

Channel No.: Nominal frequency (f_n):

Test frequencies: f_n, $f_n - 1.5$ kHz and $f_n + 1.5$ kHz

Results in Figure 3 (T/R 71-02).

Remarks:

6.3. **Maximum usable sensitivity**

Output power in normal conditions:

Maximum output power variation in extreme conditions: dB

limit: ± 3 dB

Level of test signal (dBμV) for a ratio of 20 dB				
Temp.	Test voltage	Channel No.:	Channel No.:	Channel No.:
T_n	V_n			
	V_{nmax}			
	V_{nmin}			
T_{max}	V_n			
	V_{nmax}			
	V_{nmin}			
T_{min}	V_n			
	V_{nmax}			
	V_{nmin}			
Limits		Normal test conditions: + 6 dBμV Extreme test conditions: +12 dBμV		

6.4. **Co-channel rejection**

Channel No.:

Ratio of level of unwanted signal to level of wanted signal: dB

Limit: Between −8 dB and 0 dB

Remarks:

6.5. **Adjacent channel selectivity**

Channel No.: Nominal frequency (f_n):

Ratio (dB) of unwanted signal to wanted signal			
Temp.	Test voltage	$f_n - 25$ kHz	$f_n + 25$ kHz
T_n	V_n		
	V_{max}		
	V_{min}		
T_{max}	V_n		
	V_{max}		
	V_{min}		
T_{min}	V_n		
	V_{max}		
	V_{min}		
Limits		Normal test conditions: 70 dB Extreme test conditions: 60 dB	

6.6. **Spurious response rejection**

Channel No.: Nominal frequency (f_n):

Frequency (MHz)								
Ratio (dB)								
Limit	70 dB							

Remarks:

6.7. **Intermodulation response rejection**

Channel No.: Nominal frequency (f_n):

Signal generator A	Signal generator B	Measured ratio (dB)
$f_n - 50$ kHz	$f_n - 25$ kHz	
$f_n - 50$ kHz	$f_n + 25$ kHz	
$f_n - 100$ kHz	$f_n - 50$ kHz	
$f_n + 100$ kHz	$f_n + 50$ kHz	
$f_n - 150$ kHz	$f_n - 75$ kHz	
$f_n + 150$ kHz	$f_n + 75$ kHz	
$f_n - 200$ kHz	$f_n - 100$ kHz	
$f_n + 200$ kHz	$f_n + 100$ kHz	
Limit		70 dB

6.8. **Blocking or desensitisation**

Channel No.: Nominal frequency (f_n):

Level of wanted signal: +6 dBµV

$f_n - f_{unwtd}$ (MHz)	Level of unwanted signal for a reduction of (dBµV)	
	Output power	S/N ratio
Limit	90 dBµV	

Remarks:

6.9.1. *Conducted spurious emissions*

Channel No.: Nominal frequency:

Frequency (MHz)								
Level (nW)								
Limit	2 nW							

6.10. **Amplitude response of receiver**

Channel No.: Nominal frequency: Rated output power:

Level of input signal	+6 dBμV	+100 dBμV
Output power	−6 dB relative to the rated power	
Difference (dB)		
Limit	3 dB	

6.11. **Receiver noise and hum**

. . . . . dB relative to the level of the modulation signal (rated output power).

Limit: −40 dB

Remarks:

6.12. **Receiver mute or squelch facility**

Channel No.:

Input level (dBμV)		Position of squelch facility	Ratio (dB) of output power to rated power	Limits
(a)	+30	off	0	
	off	on		−40 dB
(b)	+6	off	−3	
		on	−3 and S/N = 20 dB	+6 dBμV
		Continuously adjustable squelch facility set to maximum	−3	+40 dBμV

Remarks:

7. DUPLEX OPERATION

7.1. Receiver desensitisation with simultaneous transmission and reception

Channel No.:	Maximum usable sensitivity (dBμV)		Difference (dB)
	Without simultaneous transmission	With simultaneous transmission	
Limits	+6 dBμV	+6 dBμV	3 dB

7.2. Receiver spurious response rejection

Channel No.:

Frequency (MHz)								
Ratio (dB)								
Limit	70 dB							

Remarks:

Figure 1 of T R 71-02

5.3.2 *Reduction in frequency deviation at modulation frequencies above 3 kHz*

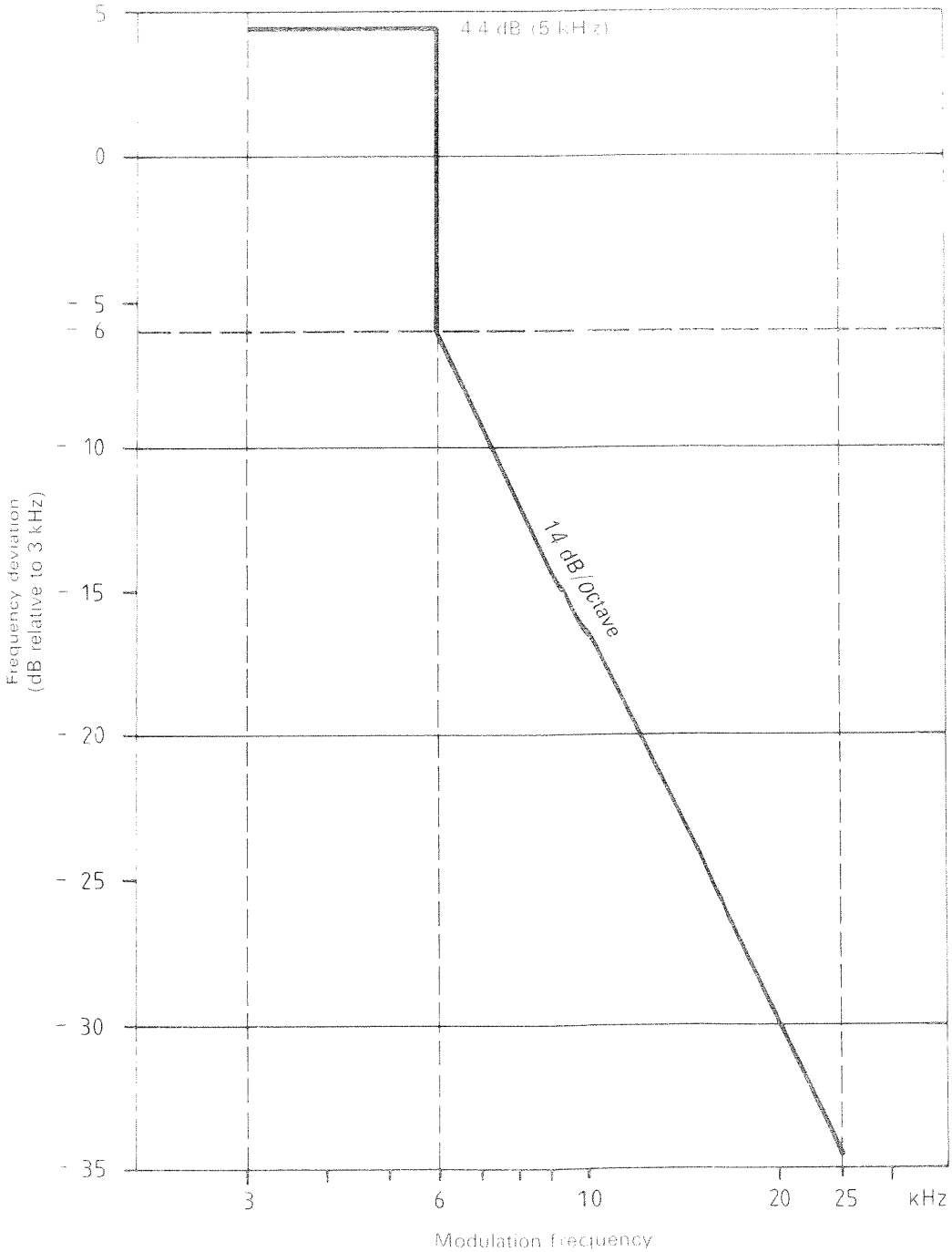
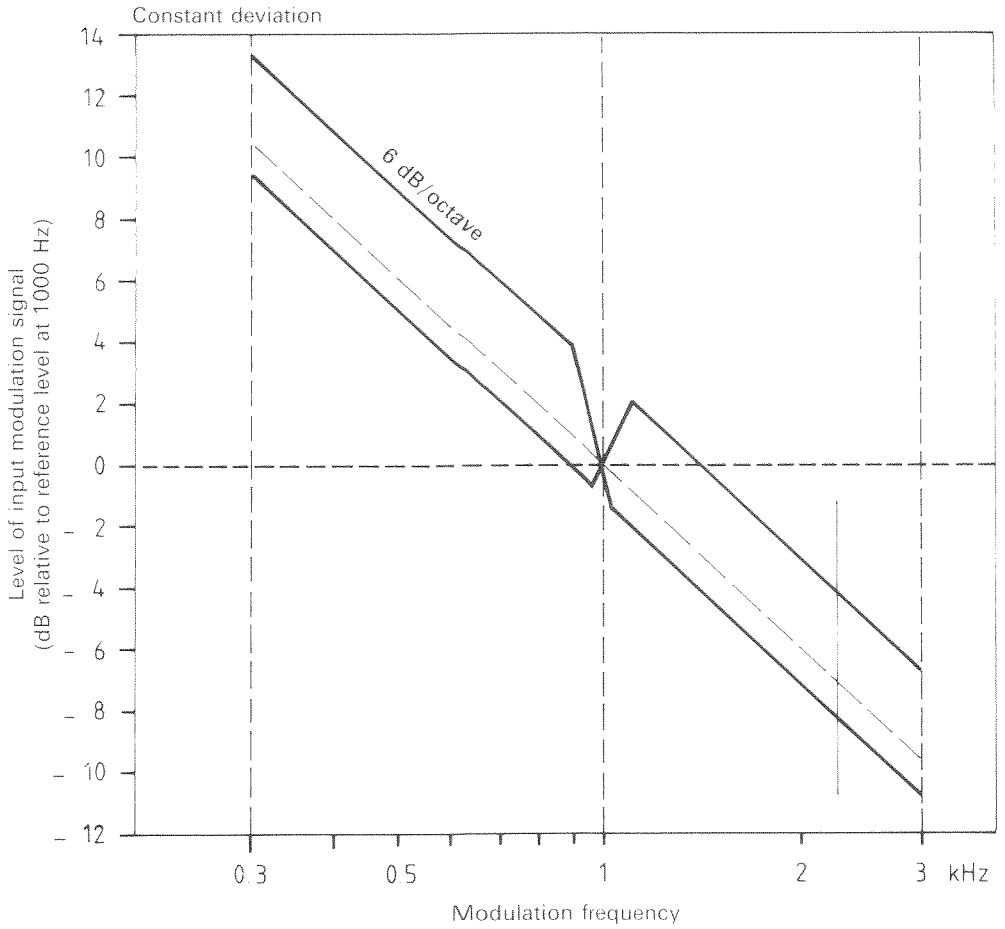


Figure 2 (T/R 71-02)

5.6. **Audio-frequency response of the transmitter**



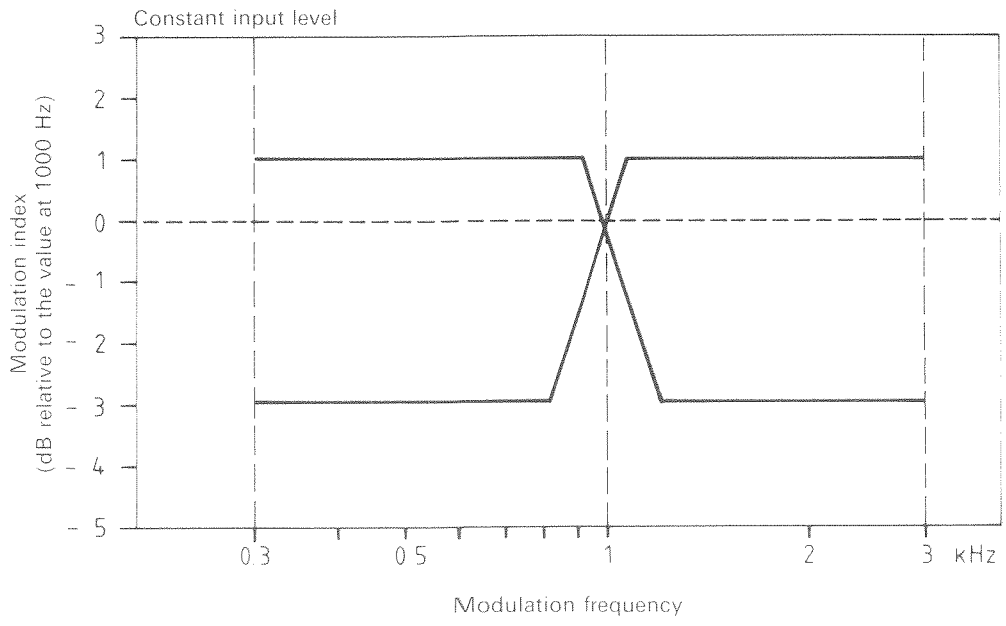
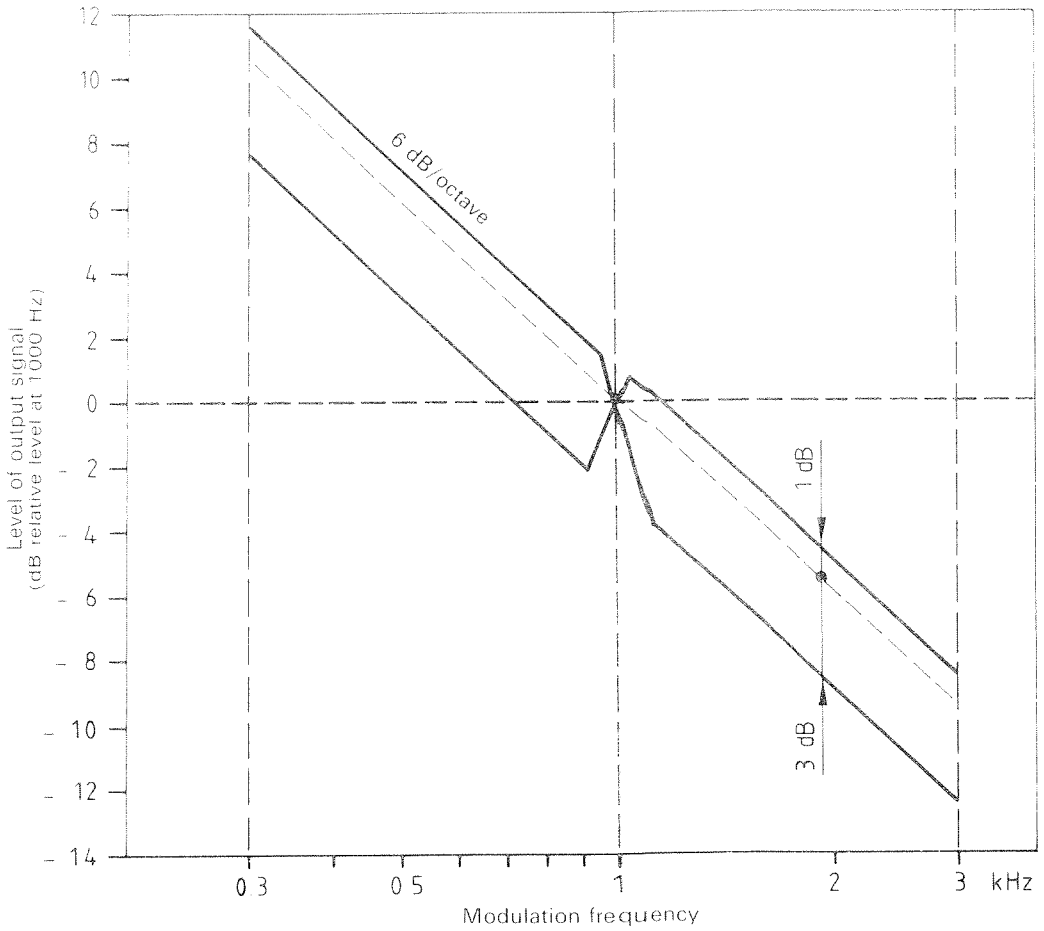


Figure 3 (TR 71-02)

6.2. Reponse of the receiver



Annex VIII

Reserved for use by Administrations
(With test report No.)

Specifications for single-sideband radiotelephone transmitters and receivers in the maritime mobile service operating in medium- and high-frequency bands

---

Type designation:

Manufacturer (and country):

Type approval No.:

Technical specifications ref.:

CEPT ref.: Recommendation T/R 34-01, Annex I

Applicant:

Address:

Telephone No.: Telex No.:

Characteristics of the equipment as declared by the applicant

Type: ☐ transmitter ☐ receiver ☐ transmitter/receiver

TRANSMITTER

Rated output power:

Microphone impedance:

Consumption during transmission:

RECEIVER

Intermediate frequencies:

Audio output power:

Loudspeaker impedance:

Earphone impedance:

TEST CONDITIONS

Normal temperature	T_n =	C	Humidity =	%
Extreme temperatures	T_{min} =	C	T_{max} =	C
Normal test voltage	V_n =	V		
Extreme test voltages	V_{min} =	V	V_{max} =	V

Direct voltage ☐ Alternating voltage ☐

Conclusion of type approval tests: Approved ☐ yes ☐ no

Observations:

GENERAL CONDITIONS

Construction

Mechanical and electrical construction	Satisfactory	☐ yes	☐ no
Marking with labels	Satisfactory	☐ yes	☐ no
Accessibility	Satisfactory	☐ yes	☐ no
Documentation	Satisfactory	☐ yes	☐ no
Duplex operation	Satisfactory	☐ yes	☐ no
Brightness reduction	Satisfactory	☐ yes	☐ no

Remarks:

Controls (General)

Frequency-changing	Satisfactory	☐ yes	☐ no
Loudspeaker cut-off	Satisfactory	☐ yes	☐ no
Switch for device to reduce the effects of impulsive noise		☐ yes	☐ no
Selection of transmission and reception frequencies independently	Satisfactory	☐ yes	☐ no
Selection of frequency 2182 kHz	Satisfactory	☐ yes	☐ no
Reception/transmission switchover	Satisfactory	☐ yes	☐ no

Remarks:

Safety precautions

Protection against the effects of overcurrent or overvoltage	Satisfactory	☐ yes	☐ no
Protection against the effects of transient voltage variations and accidental reversal of polarity at the power source	Satisfactory	☐ yes	☐ no
Earthing	Satisfactory	☐ yes	☐ no
Protection against accidental access to voltages greater than 50 V	Satisfactory	☐ yes	☐ no
Preservation of any memory system	Satisfactory	☐ yes	☐ no

Remarks:

Classes of emission and frequencies

Classes of emission

Transmitter:

J3E: ☐ yes ☐ no

Carrier/peak envelope power ratio: dB

H3E: ☐ yes ☐ no

Carrier/peak envelope power ratio: dB

R3E: ☐ yes ☐ no

Carrier/peak envelope power ratio: dB

Other classes of emission:

Receiver:

J3E: ☐ yes ☐ no

H3E: ☐ yes ☐ no

A3E: ☐ yes ☐ no

R3E: ☐ yes ☐ no

Other classes of emission:

Designation by carrier frequency ☐ yes ☐ no

Marking Satisfactory ☐ yes ☐ no

Remarks:

Frequency bands

Medium-frequency bands

Transmitter:

Receiver:

High-frequency bands

Transmitter:

Receiver:

Changing the class of emission Satisfactory ☐ yes ☐ no

Remarks:

Environmental tests

Vibration:	Satisfactory	☐ yes	☐ no
Dry-heat cycle:	Satisfactory	☐ yes	☐ no
Damp-heat cycle:	Satisfactory	☐ yes	☐ no
Low-temperature cycle:	Satisfactory	☐ yes	☐ no
Corrosion test:	Satisfactory	☐ yes	☐ no

Remarks:

Warm-up time

2182 kHz:	Satisfactory	☐ yes	☐ no
Other frequencies:	Satisfactory	☐ yes	☐ no
Applicable:		☐ yes	☐ no
When paragraph 3.7.3. applies:	Satisfactory	☐ yes	☐ no
Start-up:	Satisfactory	☐ yes	☐ no

Remarks:

TRANSMITTER

General

Class of emission on distress frequency 2182 kHz

H3E selected automatically ☐ yes ☐ no

H3E can be suppressed after automatic selection ☐ yes ☐ no

Remarks:

Radiotelephone alarm signal generator

The alarm generator is an integral part of the transmitter: ☐ yes ☐ no

Tone frequencies: Hz

Hz

Limits: 1280-1320 Hz

2167-2233 Hz

Duration of tones (1300): ms

(2200): ms

Limits: 240-260 ms

Interval between two successive tones: ms

Limit: < = 4 ms

Modulation factor (1300): %

(2200): %

Limit: > = 70%

Ratio of the amplitude of the stronger signal, modulated by one of the tones, to the amplitude of the weaker signal modulated by the other tone:

Limits: 1.2-1

Duration of alarm signal: s

Limits: 30-60 s

Transmission of the alarm signal can be interrupted ☐ yes ☐ no

The alarm signal can be transmitted on any available radio-telephone frequency ☐ yes ☐ no

Arrangements to prevent accidental transmission of the alarm signal ☐ yes ☐ no

Provision for connecting an external alarm generator ☐ yes ☐ no

Input impedance at the connection point: ohms

Level necessary for 70% modulation of the transmitter: V

Remarks:

Number of operating frequencies

1605-4000 kHz:

4 MHz band:

8 MHz band:

12 MHz band:

16 MHz band:

22 MHz band:

Transmitters controlled by frequency synthesizers

Capable of being programmed ☐ yes ☐ no

Remarks:

Frequency precision and stability

Nominal frequency of carrier kHz	Test voltage	Frequency error (Hz)		
		T_n	0 °C	40 °C
Limit		40 Hz		

Spurious frequency modulation

< = Hz

Remarks:

Output power

1605-4000 kHz

Nominal frequency of carrier kHz	Test voltage	Class of emission	Pep, W			Intermodulation level dB		
			T_n	0 °C	40 °C	T_n	0 °C	40 °C
Limits			60-400 W			25 dB		

4-28 MHz

Nominal frequency of carrier kHz	Test voltage	Class of emission	Pep, W			Intermodulation level dB		
			T_n	0 °C	40 °C	T_n	0 °C	40 °C
Limits			60-1500 W			25 dB		

Remarks:

Voice-activated modulation

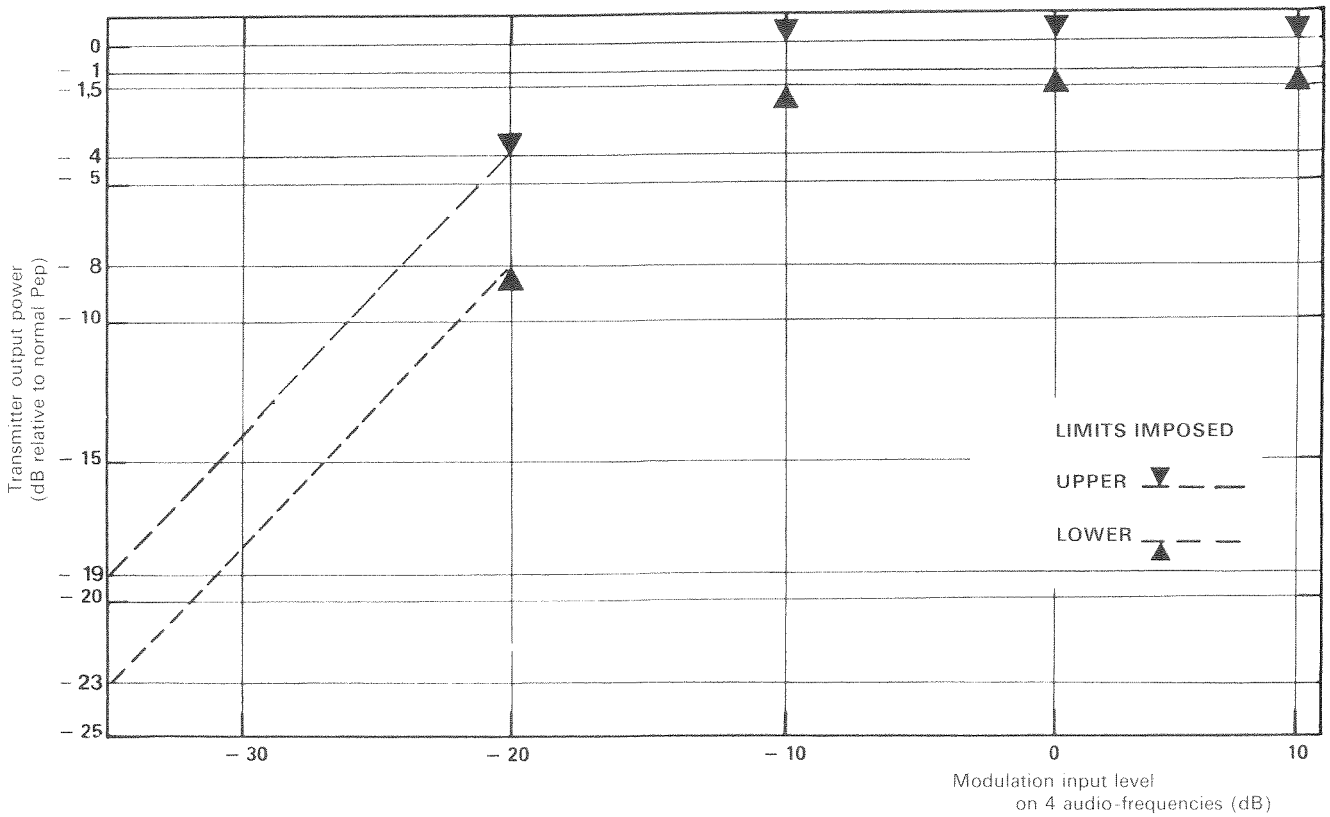
Satisfactory ☐ yes ☐ no

Automatic level control, limiter or combined level control/limiter

Carrier frequency: kHz

Value corresponding to 0 dB relative to Pep: W

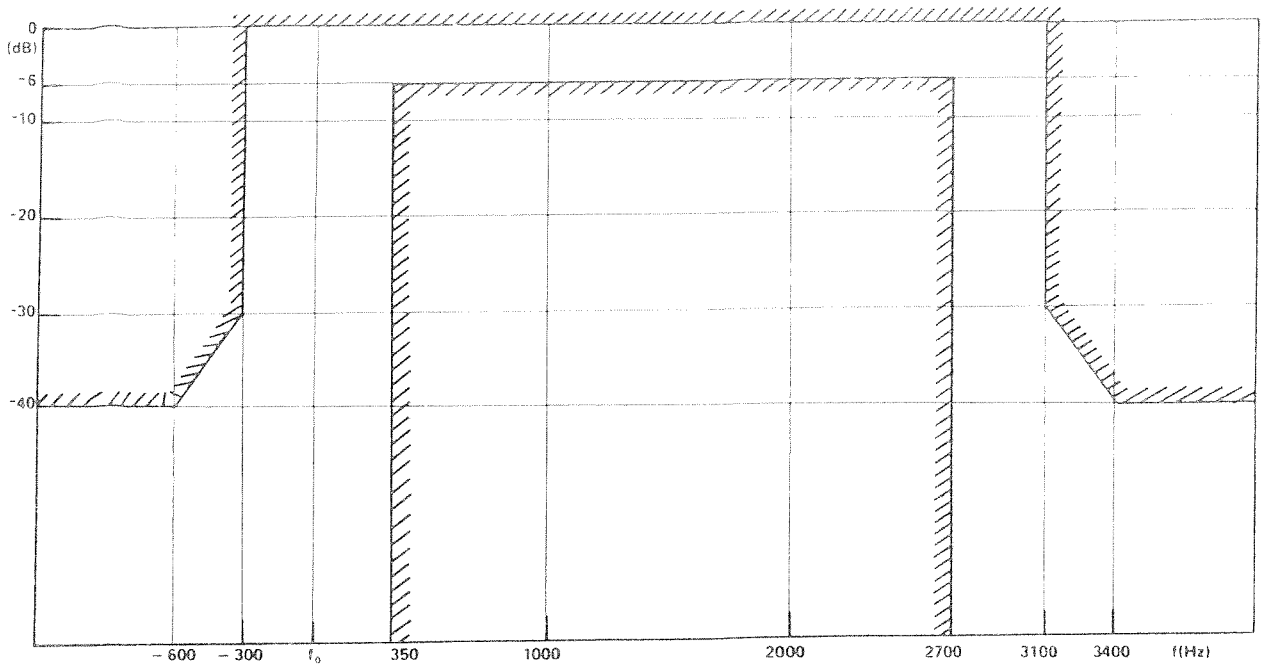
–10 dB relative to Pep corresponds to an input signal level of: V



Limitation characteristic, compression characteristic or the two effects combined.

Remarks:

Audio-frequency response



Remarks :

Spurious emission power

Modulation frequencies: f_1 = Hz

f_2 = Hz

Nominal frequency of carrier kHz	Class of emission	Attenuation (dB) below Pep of spurious emissions in the following frequency bands relative to the nominal frequency of the carrier (kHz)					
		< −6.1	−3.1 - −6.1	−0.1 - −3.1	+2.9 - +5.9	+5.9 - +8.9	> +8.9
Limits dB		43	38	31	31	38	43

Remarks:

Noise and hum power

Nominal frequency of the carrier kHz	Class of emission	Noise and hum power dB relative to normal Pep1	
		Audio-frequency input terminals	
		open circuit	short circuit
Limit		40 dB	

Continuous operation

Satisfactory operation for 15 minutes ☐ yes ☐ no

Remarks:

Transmitter protection

Antenna terminals on open circuit or short circuit

Satisfactory operation for 5 minutes:

On open circuit ☐ yes ☐ no

On short circuit ☐ yes ☐ no

Command and control equipment

Reduction of output power

Facility for reducing power to no more than 60 watts ☐ yes ☐ no

Combined transmitters exceeding 400 W:

Automatic limitation to 400 watts on medium frequencies: ☐ yes ☐ no

Tuning control

Satisfactory ☐ yes ☐ no

Remarks:

Measurement of current in the antenna

Antenna current measuring device ☐ yes ☐ no

Transmission on 2182 kHz

Fine-tuning (manual) ☐ yes ☐ no

Power obtained with fine tuning

Max: W

Min: W

Defective automatic tuning system

Manual tuning possible on 2182 kHz ☐ yes ☐ no

Remarks:

RECEIVER

Tuning systems for medium-frequency receivers

☐ Receivers controlled by frequency synthesizers

Frequency step Hz

Satisfactory tuning ☐ yes ☐ no

☐ Continuous tuning

☐ Reception on pre-set frequencies

Number of frequencies:

Tuning systems for high-frequency receivers

☐ Receivers controlled by frequency synthesizers

Frequency step Hz

Satisfactory tuning ☐ yes ☐ no

☐ Continuous tuning

☐ Reception on pre-set frequencies

Number of frequencies:

4 MHz band:

8 MHz band:

12 MHz band:

16 MHz band:

22 MHz band:

Remarks:

Receiver output

Harmonic distortion at output power of 500 mW: %

Limit: 10 %

Remarks:

Tuning error/drift

Tuning error

Tuning frequency indicated/kHz	Test voltage	Tuning error		
		T_n	0 °C	+40 °C
Limits:	50 Hz for step-by-step and pre-set tuning 150 Hz for continuous tuning			

Remarks:

Tuning drift

Tuning frequency indicated kHz	Test voltage	Tuning dritt over 15 min. Hz		
		T_n	0 °C	+40 °C
Limit: 20 Hz				

Remarks:

Frequency modulation due to vibration

Peak frequency deviation: Hz

Limit: 20 Hz

Clarifier

Control range:

Remarks:

Intermediate-frequency and audio-frequency passbands

J3E/R3E: Hz to Hz

A3E/H3E: Hz to Hz

Limites: 300 Hz to 2700 Hz

Maximum usable sensitivity

Frequency kHz	Class of emission	Maximum usable sensitivity dBμV
Limits: 1605-4000 kHz: 4-28 MHz:	J3E/R3E: +16 dBμV A3E/H3E: +30 dBμV J3E/R3E: +11 dBμV	

Remarks:

Adjacent channel signal-selectivity

f_0 = carrier frequency of the wanted signal
f = frequency of the unwanted signal

f_0 kHz	Selectivity dB									
	J3E/R3E						A3E/H3E			
	$f-f_0$ kHz						$f-f_0$ kHz			
	−5	−2	−1	+4	+5	+8	−20	−10	+10	+20
Limits	60	50	40	40	50	60	50	40	40	40

Two-signal selectivity tests (blocking and cross-modulation

Blocking

Wanted signal		Class of emission	Blocking level dBµV	
Frequency kHz	Level dBµV		−20 kHz	+20 kHz
Limits: 65 dBµV for wanted signal at MUS 100 dBµV for wanted signal at 60 dBµV				

Cross-modulation

Wanted signal	Class of emission	Cross-modulation level dBµV	
Frequency kHz		+ 20 kHz	− 20 kHz
Limit: 90 dBµV			

Intermodulation

Tuning frequency kHz	Class of emission	Frequency of unwanted signal		Intermodulation product	Intermodulation level
		f_1 kHz	f_2 kHz		dBµV
Limit: 80 dBµV					

Remarks:

Spurious response selectivity

Intermediate frequency/frequencies:

Tuning frequency kHz	Class of emission	Image frequency kHz	Protection ratio dB
Limit: 70 dB			

Remarks:

Harmonic output level

Tuning frequency kHz	Input level dBµV	Output power mW	Harmonic factor %

Limits: 5% at normal output power
10% at nominal output power

Audio-frequency intermodulation

Tuning frequency kHz	Intermodulation level dB

Limit: 25 dB

Remarks:

Spurious emission

Tuning frequency kHz	Spurious frequency kHz	Level nW
Limit: 1 nW		

Spurious signals originating internally

Satisfactory ☐ yes ☐ no

Frequencies:

Remarks:

Gain control

Manual audio-frequency gain control ☐ yes ☐ no

Manual RF/IF gain control ☐ yes ☐ no

Automatic gain control ☐ yes ☐ no

AGC can be switched off ☐ yes ☐ no

Manual RF IF gain control

Tuning frequency kHz	Class of emission	SND N or SND ND after 20 dB increase
Limit: 35dB		

Automatic gain control

Tuning frequency kHz	Input level dB µV	Class of emission	SND N or SND ND after 20 dB increase
Limit: 35 dB			

Remarks:

70 dB increase in input level

Tuning frequency kHz	Input level dBμV	Class of emission	Increase in output level
Limit: 10 dB			

Time constant of the AGC (forward and reverse action times)

Action time: ms

Limits: < = 10 ms

Return time: ms

Limits: 1-4 s

Protection of input circuits

Satisfactory ☐ yes ☐ no

Protection against electrostatic voltage

Satisfactory ☐ yes ☐ no

Remarks:

Annex IX

Reserved for use by Administrations
(With test report No.)

Equipment in the land mobile service not using voice modulation or using a combination of voice and non-voice modulation with a device enabling a specific response to be triggered in the receiver

---

Type of equipment:

Manufacturer (and country):

Type approval No.:

Technical specifications ref.:

CEPT ref.: Recommendation T/R 24-01, Annex V

Applicant:

Address:

Telephone No.: Telex No.:

Characteristics of the equipment as declared by the applicant

Type: ☐ transmitter ☐ receiver ☐ transmitter/receiver

Frequency range:

Adjacent channel separation: kHz

No. of switchable frequencies:

Maximum width of switchable band: MHz

☐ without voice modulation

☐ with combination of voice and non-voice modulation

Type of modulation:

Coding system:

Frequencies or codes used:

Utilisation:

☐ base ☐ relay ☐ mobile ☐ portable

Duplex operation ☐ yes ☐ no

☐ with filter type:

☐ with 2 antennas

Antenna ☐ coaxial socket ☐ integral

Power source

☐ mains nominal voltage: V

☐ lead-acid battery on vehicle nominal voltage: V

☐ other nominal voltage: V

Land mobile Report No.

Transmitter

Carrier power

- ☐ rated output power at terminals: W
- ☐ rated effective radiated power: W
- ☐ facility for reducing power to: W

Quartz synthesizer formula:

Consumption during transmission:

Receiver

Quartz synthesizer formula:

Intermediate frequencies 1st: 2nd: 3rd:

Call indicator system: ☐ loudspeaker ☐ lamps
☐ screen ☐ other

Consumption on standby: W

Test conditions

Ambient temperature	T_a =	C	Humidity =	%	
Extreme temperatures	T_{min} =	C	T_{max} =	C	
Normal test voltage	V_n =	V			
Extreme test voltages	V_{min} =	V	V_{max} =	V	

Composition of equipment

☐ single unit ☐ several units (see Observations)

Observations:

Land mobile **Report No.**

TRANSMITTER

Frequency error

Method of measurement (or calculation):

Channel				
Nominal frequency (MHz)				
T_n	V_n			
	V_{min}			
	V_{max}			
T_{min}	V_n			
	V_{min}			
	V_{max}			
T_{max}	V_n			
	V_{min}			
	V_{max}			
Max. freq. error (Hz)				
Limit				

Transmitter carrier power

Channel				
Nominal power (W)				
T_n	V_n			
	V_{min}			
	V_{max}			
T_{min}	V_n			
	V_{min}			
	V_{max}			
T_{max}	V_n			
	V_{min}			
	V_{max}			
Error in normal conditions (dB)				
Error in extreme conditions (dB)				
Limit				

Remarks:

Land mobile **Report No.**

TRANSMITTER

Adjacent channel power

Normal coded test signal

Carrier frequency: MHz

Method used: ☐ receiver ☐ spectrum analyser

Adjacent channel on	+ kHz	kHz	Limit
Power (μW)			
Carrier power (dB)			

Spurious emissions

Carrier frequency: MHz

By conduction

Transmitter in operation	Frequency (MHz)					
	Power (μW)					
	Limit					

Transmitter on standby	Frequency (MHz)					
	Power (μW)					
	Limit					

Land mobile

Report No.

TRANSMITTER

Spurious emissions by radiation

Transmitter in operation	Frequency (MHz)					
	Power (μW)					
	Limit					

Transmitter on standby	Frequency (MHz)					
	Power (μW)					
	Limit					

☐ Normal measurements (exterior): distance: m

☐ Interior measurements

Remarks:

Intermodulation attenuation

Carrier frequency: MHz

Transmitter freq. less test freq. (kHz)								
Attenuation (dB)								
Limit								

Remarks:

Land mobile **Report No.**

RECEIVER

Reference sensitivity for signal reception

e.m.f. (dB/1μV) for an 80% call success rate				
Channel				
Nominal freq. (MHz)				
T_n	V_n			
	V_{min}			
	V_{max}			
T_{min}	V_n			
	V_{min}			
	V_{max}			
T_{max}	V_n			
	V_{min}			
	V_{max}			
Maximum value				
Limits				

Co-channel rejection

Frequency of wanted signal	e.m.f. of wanted signal	Frequency of unwanted signal	Measured ratio	Limit
MHz	dB/1μV	MHz	dB	

Remarks:

Land mobile

Report No.

RECEIVER

Adjacent channel selectivity

Frequency of wanted signal f_0 = MHz

Level of unwanted signal (dB 1µV e.m.f.)				
Frequency		f kHz	f+ kHz	Limits (dB 1µV e.m.f.)
T_n	V_n			
	V_{min}			
	V_{max}			
T_{min}	V_n			
	V_{min}			
	V_{max}			
T_{max}	V_n			
	V_{min}			
	V_{max}			

Spurious response rejection

Frequency of wanted signal f_0 = MHz

Frequency (MHz)	
Protection (dB/1µV e.m.f.)	
Limit (dB/1µV e.m.f.)	

Intermodulation response

Nominal frequency of receiver f_0 = MHz
Adjacent channel separation f_d = kHz

Signal generator A	Signal generator B	Protection (dB 1µV e.m.f.)	Limit (dB 1µV e.m.f.)
$f_0 - 2f_d$	$f_0 - f_d$		
$f_0 + 2f_d$	$f_0 + f_d$		
$f_0 - 4f_d$	$f_0 - 2f_d$		
$f_0 + 4f_d$	$f_0 + 2f_d$		
$f_0 - 6f_d$	$f_0 - 3f_d$		
$f_0 + 6f_d$	$f_0 + 3f_d$		
$f_0 - 8f_d$	$f_0 - 4f_d$		
$f_0 + 8f_d$	$f_0 + 4f_d$		

Land mobile **Report No.**

RECEIVER

Blocking

Wanted signal freq. less unwanted signal freq. (MHz)	Level (dB/1μV e.m.f.)	Limit (dB/1μV e.m.f.)

Spurious emissions

Nominal frequency: MHz

By conduction	Frequency (MHz)					
	Power (μW)					
	Limit					

By radiation*	Frequency (MHz)					
	Power (μW)					
	Limit					

* ☐ Normal measurements (exterior); distance: m

☐ Interior measurements

Multipath signal reception sensitivity (as in Appendix B/V)

Speed (km/h)	E.m.f. (dB/1μV) for an 80% call success rate	Limit (dB/1μV e.m.f.)
90		
50		
10		

Remarks:

These tests were conducted
in the presence of Messrs
by Messrs

Annex X

Reserved for use by Administrations
(With test report No.)

Radio component of a cordless telephone

Type designation:

Manufacturer (and country):

Type approval No.:

Technical specifications ref.:

CEPT reference: Recommendation T/R 24-03

Applicant:

Address:

Telephone No.: Telex No.:

General technical specifications as declared by the applicant

Utilisation:

☐ only for incoming calls
☐ for incoming and outgoing calls

Single-channel or multi-channel equipment:

☐ single-channel
frequency used: MHz and MHz

☐ multi-channel
No. of channels:
frequency band used: MHz
and MHz

Modulation:

Voice

☐ frequency (F3E)
☐ phase (G3E)

Data:

☐ frequency-shift keying (FSK)
☐ (other)

Compressor expander:

☐ syllabic compressor

☐ regulated speech amplifier

☐ none

Channel separation: 25 kHz

Radio-frequency capture threshold: dBµV

Minimum observation time: msec

Identification procedure
No. of code combinations:
Interval at which the identification code is repeated: sec

Channel occupation time limit: min

Interruption of a connection due to low field strength: the average field strength level is: dBµV

Maximum duration of the radio link if the identification code is not received: sec

Frequency synthesis:

Transmitter: ☐ synthesizer
☐ (other)

Receiver: ☐ synthesizer
☐ (other)

Intermediate frequencies: 1 MHz
2 MHz
3 kHz

Base unit transmitter

Modulator impedance: ohms

Base unit receiver

Audio-frequency output impedance: ohms

Total power consumption of the base unit: W

Power consumption of the handset: W

Observations by the Administration concerning the technical specifications

Test conditions:

Normal temperature T_n = +15 to +35° C

Extreme temperatures T_{min} = 0° C; T_{max} = 55° C

(Relative) humidity from 20% to 75%

Extreme power supply values

Base unit		Handset	
☐ Mains voltage V nominal voltage: V_{min} (–15%) = V_{max} (+10%) =	V V V		
☐ Lead-acid battery nominal voltage: V_n = $V_{min} = 0.9 \times V_n$	V	☐ Lead-acid battery nominal voltage: V_n = $V_{min} = 0.9 \times V_n$	V
☐ Leclanché-type battery nominal voltage: V_n = $V_{min} = 0.85 \times V_n$	V	☐ Leclanché-type battery nominal voltage: V_n = $V_{min} = 0.85 \times V_n$	V
☐ Mercury-type battery nominal voltage: V_n = $V_{min} = 0.9 \times V_n$	V	☐ Mercury-type battery nominal voltage: V_n = $V_{min} = 0.9 \times V_n$	V
☐ Other types of battery nominal voltage: V_n = V_{min} =	V V	☐ Other types of battery nominal voltage: V_n = V_{min} =	V V

BASE UNIT TRANSMITTER

Frequency error

Nominal frequency (MHz)/ Channel No.		/	/	/
T_n = C	V_{min}			
	V_n			
	V_{max}			
T_{min}	V_{min}			
	V_n			
	V_{max}			
T_{max}	V_{min}			
	V_n			
	V_{max}			
Max. freq. error (Hz)				
Limit		$\leq \pm 2.5$ kHz		

Carrier power

Nominal power (stated by manufacturer)		mW		
Channel No.				
T_n = C	V_n			
Nominal power error (dB)				
Admissible error		± 1.5 dB		
T_n = C	V_{min}			
	V_{max}			
T_{min}	V_{min}			
	V_n			
	V_{max}			
T_{max}	V_{min}			
	V_n			
	V_{max}			
Max. power error measured in normal conditions (dB)				
Admissible error		± 2.0 dB		
Limit for all power values		≤ 10 mW		

Adjacent channel power

Carrier Frequency: MHz

Method of measurement:

☐ power measuring receiver ☐ spectrum analyser

	Frequency of adjacent channel	
	$f_c + 25$ kHz	$f_c - 25$kHz
Power measured	nW	nW
Limit	⩽ 50 nW	⩽ 50 nW

Modulator sensitivity

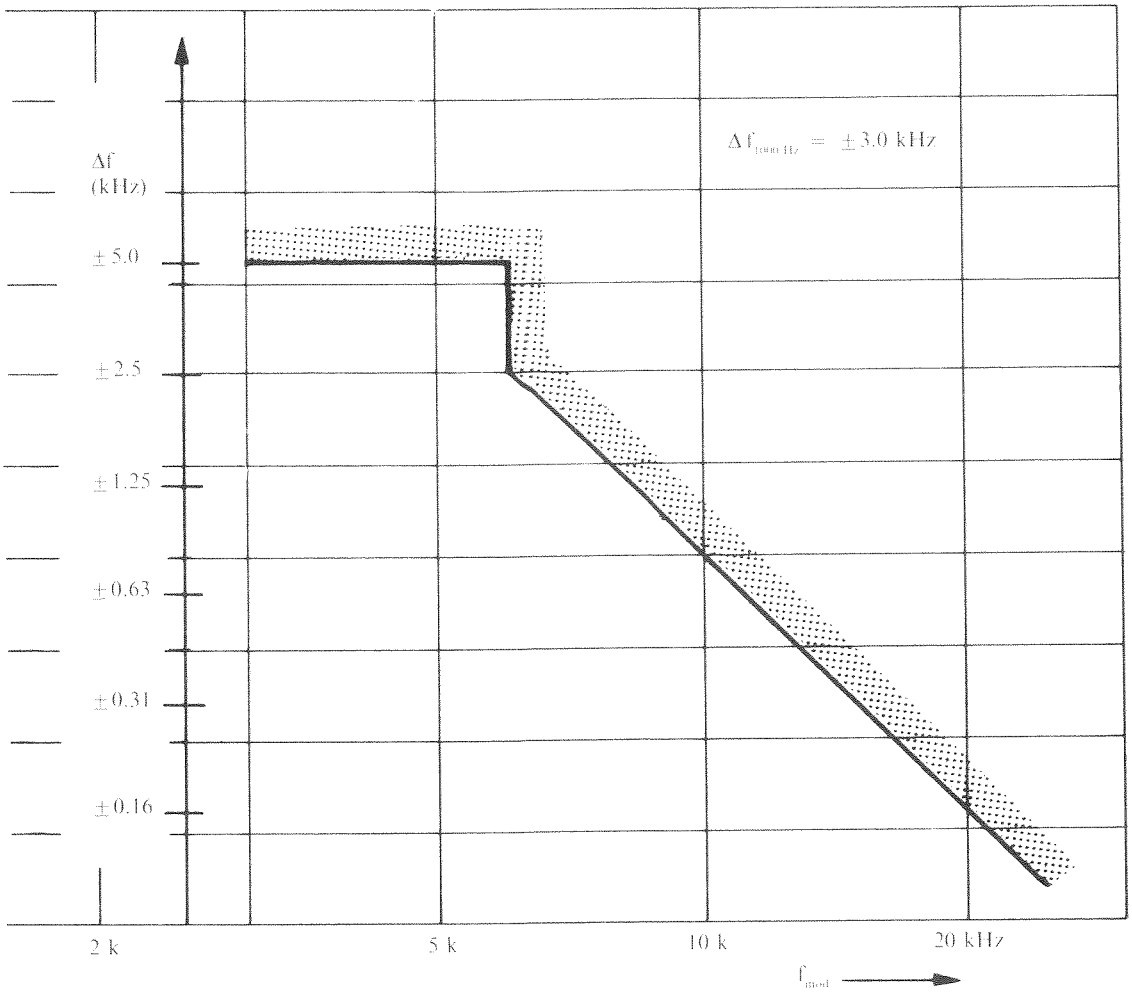
	Circuit level $V_{BF\ (800\ Hz)} = -24$ dBm$_{(600\ ohms)}$	
Deviation measured	+	kHz
	−	kHz
Limits	±3.0 kHz	±4.5 kHz

Maximum frequency deviation

$V_{mod\ (max)} = V_{mod\ (normal)} + 20$ dB; $f_{mod} \leqslant 3000$ Hz

	Modulation frequency			
	1000 Hz		Hz	
Maximum deviation	+	kHz	+	kHz
	−	kHz	−	kHz
Limit	±5.0 kHz			

Transmitter deviation in response to modulation frequencies greater than 3 kHz



Spurious emissions

Carrier frequency MHz (Channel No.)

Transmitter not modulated, anntenna in the operating position

	Frequencies up to 960 MHz			Frequency band 960 MHz-4 GHz		
Spurious emissions (MHz)						
Power (nW)						
Limits	4 nW			250 nW		

Transmitter not modulated, antenna perpendicular to the operating position

	Frequencies up to 960 MHz			Frequency band 960 MHz-4 GHz		
Spurious emissions (MHz)						
Power (nW)						
Limits	≤4 nW			≤250 nW		

Transmitter modulated by normal coded test signal

	Frequencies up to 960 MHz			Frequency band 960 MHz-4 GHz		
Spurious emissions (MHz)						
Power (nW)						
Limits	≤4 nW			≤250 nW		

Transmitter modulation with f_{mod} = 1000 Hz and Δf = +3.0 kHz

	Frequencies up to 960 MHz			Frequency band 960 MHz-4 GHz		
Spurious emissions (MHz)						
Power (nW)						
Limits	≤4 nW			≤250 nW		

Transmitter in "standby" position

	Frequencies up to 960 MHz			Frequency band 960 MHz-4 GHz		
Spurious emissions (MHz)						
Power (nW)						
Limits	≤4 nW			≤250 nW		

BASE UNIT RECEIVER

General

Normal test modulation: f_{mod} = 1 kHz, Δf = ±3.0 kHz

Audio-frequency measurement by SND/N through the filter described in CCITT Recommendation P.53A (S = signal; N = noise; D = distortion)

Maximum usable sensitivity

(minimum field strength for an SND/N ratio of 35 dB

Channel No.				
Receiver frequency (MHz)				
T_n = C	V_n			
Limit		≤45 dBµV/m		
T_n = C	V_{min}			
	V_{max}			
T_{min}	V_{min}			
	V_n			
	V_{max}			
T_{max}	V_{min}			
	V_n			
	V_{max}			
Limit		≤51 dBµV/m		
Minimum AF power measured in all conditions				
Limit		50% of nominal AF power = mW		

(The nominal AF power must be stated by the manufacturer)

Secondary sensitivity
(minimum field strength for an SND/N ratio of 45 dB)

Channel No.			
Receive frequency (MHz)			
T_1 = C / V_0			
Limit	⩽ 55 dBμV/m		

Signal sensitivity
(recognition of coded signal)

	No. of calls sent	No. of calls received
Field strength of signal 25 dBμV/m		
Percentage	%	
Limit	⩾ 80 %	

Co-channel rejection

	Wanted signal		Unwanted signal	
	Frequency	Level	Frequency	Level
	MHz	+ 55 dBμV/m	MHz	dBμV/m
Difference in level between unwanted and wanted signal	dB			
Limit	⩾ -20 dB			

Adjacent channel selectivity

Wanted level = +55 dBµV/m

Wanted frequency of receiver f_o (MHz)	Reduction of SND/N to 35 dB by the unwanted frequency (adjacent frequency)	Reduction of SND/N to 35 dB by the level of the unwanted signal (dBµV/m)	Ratio between level of wanted and unwanted signal (selectivity)	Limit
for lower adjacent channels	f_o +25 kHz		dB	⩾53 dB
	f_o −25 kHz		dB	
for upper adjacent channels	f_o +25 kHz		dB	
	f_o − 25 kHz		dB	

Spurious response rejection

Wanted frequency of receiver f_o = MHz (Channel No.)			
Level of unwanted signal over maximum usable sensitivity dBµV/m			
Call triggered by carrier (unwanted signal) modulated by the calling code of the receiver Frequency >30 MHz to 4 GHz	Level (dBµV/m)	Ratio (dB) between level of wanted signal and level of unwanted signal	Limit
			⩾63 dB

Intermodulation attenuation

Wanted frequency of receiver f_0 = MHz			
Wanted level = −55 dBμV/m			
Reduction of SND/N to 35 dB by the frequency of the unwanted signal $f_1 - f_2$	the level of the unwanted signal E1 = E2	Ratio between level of wanted and unwanted signal	Limit
$f_1 = f_0 - 25$ kHz $f_2 = f_0 - 50$ kHz	dBμV/m	dB	⩾53 dB
$f_1 = f_0 - 25$ kHz $f_2 = f_0 - 50$ kHz	dBμV/m	dB	
$f_1 = f_0 + 50$ kHz $f_2 = f_0 + 100$ kHz	dBμV/m	dB	
$f_1 = f_0 - 50$ kHz $f_2 = f_0 - 100$ kHz	dBμV/m	dB	

Spurious emissions from the receiver

Wanted frequency of receiver f_0 = MHz							
Frequency of unwanted signal (MHz)	Frequencies up to 1 GHz				Frequencies 1 to 4 GHz		
Power (nW)							
Limit	⩽2 nW				⩽20 nW		

HANDSET TRANSMITTER

Frequency error

Nominal frequency (MHz)/ Channel No.		/	/	/
T_n = C	V_{min}			
	V_n			
T_{min}	V_{min}			
	V_n			
T_{max}	V_{min}			
	V_n			
Max. freq. error (Hz)				
Limit		$\leq \pm 2.5$ kHz		

Carrier power

Nominal power (stated by manufacturer)		mW		
Channel No.				
T_n = C	V_n			
Nominal power error (dB)				
Admissible error			± 1.5 dB	
T_n = C	V_{min}			
T_{min}	V_{min}			
	V_n			
T_{max}	V_{min}			
	V_n			
Max. power error measured in normal conditions (dB)				
Admissible error		± 2.0 dB		
Limit for all power values		≤ 10 mW		

Adjacent channel power

Carrier frequency: MHz

Method of measurement:

☐ power measuring receiver ☐ spectrum analyser

	Frequency of adjacent channel	
	$f_c - 25$ kHz	$f_c + 25$ kHz
Power measured	nW	nW
Limit	⩽ 50 nW	⩽ 50 nW

Sensitivity of the modulator, including microphone

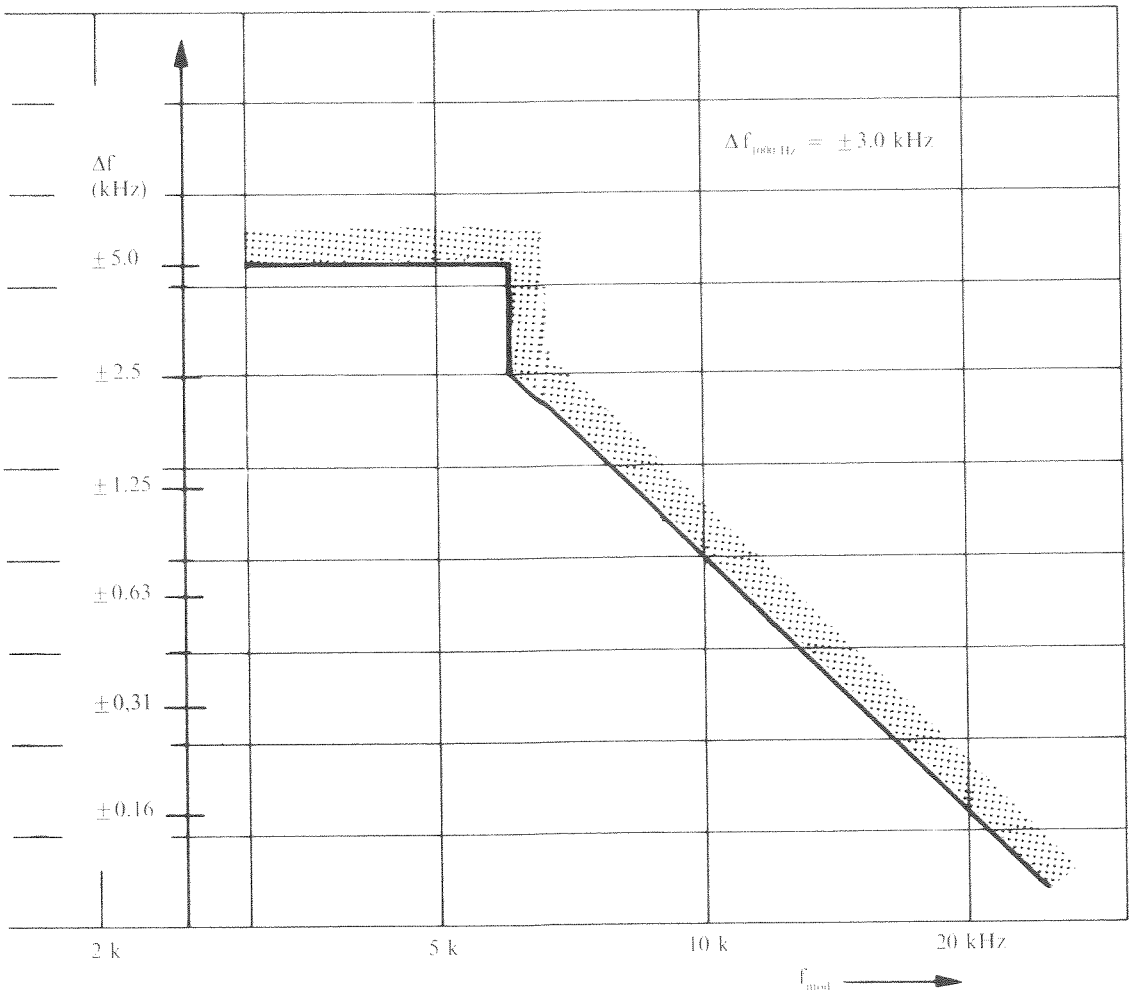
	Sound pressure $L_p = 94$ dB$_{ref\ 2 \times 10^{-5}\ Pa}$	
Deviation measured	+	kHz
	−	kHz
Limits	±3.0 kHz	±4.5 kHz

Maximum frequency deviation

$V_{mod\ max} = V_{mod\ normal} + 20$ dB; $f_{mod} \leqslant 3000$ Hz

	Modulation frequency			
	1000 Hz		Hz	
Maximum deviation	+	kHz	+	kHz
	−	kHz	−	kHz
Limit	±5.0 kHz			

Transmitter deviation in response to modulation frequencies greater than 3 kHz



Spurious emissions

Carrier frequency MHz (Channel No.)

Transmitter not modulated, antenna in the operating position

	Frequencies up to 960 MHz			Frequency band 960 MHz-4 GHz		
Spurious emissions (MHz)						
Power (nW)						
Limits	≤4 nW			≤250 nW		

Transmitter not modulated, antenna perpendicular to the operating position

	Frequencies up to 960 MHz			Frequency band 960 MHz-4 GHz		
Spurious emissions (MHz)						
Power (nW)						
Limits	≤ 4 nW			≤ 250 nW		

Transmitter modulated by normal coded test signal

	Frequencies up to 960 MHz			Frequency band 960 MHz-4 GHz		
Spurious emissions (MHz)						
Power (nW)						
Limits	≤ 4 nW			≤ 250 nW		

Transmitter modulation with f_{mod} = 1000 Hz and Δf = ± 3.0 kHz

	Frequencies up to 960 MHz			Frequency band 960 MHz-4 GHz		
Spurious emissions (MHz)						
Power (nW)						
Limits	≤ 4 nW			≤ 250 nW		

Transmitter in "standby" position

	Frequencies up to 960 MHz			Frequency band 960 MHz-4 GHz		
Spurious emissions (MHz)						
Power (nW)						
Limits	≤ 4 nW			≤ 250 nW		

HANDSET RECEIVER

General

Normal test modulation: f_{mod} = 1 kHz, Δf = ±3.0 kHz

Audio-frequency measurement by SND/N through the filter described in CCITT Recommendation P.53A
(S = signal; N = noise; D = distortion)

Maximum usable sensitivity

(minimum field strength for an SND/N ratio of 35 dB)

Channel No.				
Receiver frequency (MHz)				
T_n = °C	V_n			
Limit		⩽45 dBμV/m		
T_n = °C	V_{min}			
T_{min}	V_{min}			
	V_n			
T_{max}	V_{min}			
	V_n			
Limit		⩽51 dBμV/m		
Minimum AF power measured in all conditions				
Limit		50% of nominal AF power = mW		

(The nominal AF power must be stated by the manufacturer)

Secondary sensitivity
(minimum field strength for an SND/N ratio of 45 dB)

Channel No.			
Receive frequency (MHz)			
T_c = C V_n			
Limit	≤ 55 dBμV/m		

Signal sensitivity
(recognition of coded signal)

	No. of calls sent	No. of calls received
Field strength of signal 25 dBμV/m		
Percentage	%	
Limit	≥ 80 %	

Co-channel rejection

	Wanted signal		Unwanted signal	
	Frequency	Level	Frequency	Level
	MHz	+ 55 dBμV/m	MHz	dBμV/m
Difference in level between unwanted and wanted signal	— dB			
Limit	≥ — 20 dB			

Adjacent channel selectivity

Wanted level = +55 dBμV/m

Wanted frequency of receiver f_o (MHz)	Reduction of SND/N to 35 dB by the unwanted frequency (adjacent frequency)	Reduction of SND/N to 35 dB by the level of the unwanted signal (dBμV/m)	Ratio between level of wanted and unwanted signal (selectivity)	Limit
for lower adjacent channels	f_o +25 kHz		dB	⩾53 dB
	f_o −25 kHz		dB	
for upper adjacent channels	f_o +25 kHz		dB	
	f_o −25 kHz		dB	

Spurious response rejection

Wanted frequency of receiver f_o = MHz (Channel No.)			
Level of unwanted signal over maximum usable sensitivity dBμV/m			
Call triggered by carrier (unwanted signal) modulated by the calling code of the receiver Frequency >30 MHz to 4 GHz	Level (dBμV/m)	Ratio (dB) between level of wanted signal and level of unwanted signal	Limit
			⩾63 dB

Intermodulation attenuation

Wanted frequency of receiver f_o = MHz			
Wanted level = +55 dBμV m			
Reduction of SND N to 35 dB by the frequency of the unwanted signal $f_1 - f_2$	the level of the unwanted signal E1 = E2	Ratio between level of wanted and unwanted signal	Limit
$f_1 = f_o$ + 25 kHz $f_2 = f_o$ + 50 kHz	dBμV m	dB	⩾53 dB
$f_1 = f_o$ − 25 kHz $f_2 = f_o$ − 50 kHz	dBμV m	dB	
$f_1 = f_o$ + 50 kHz $f_2 = f_o$ + 100 kHz	dBμV m	dB	
$f_1 = f_o$ − 50 kHz $f_2 = f_o$ − 100 kHz	dBμV m	dB	

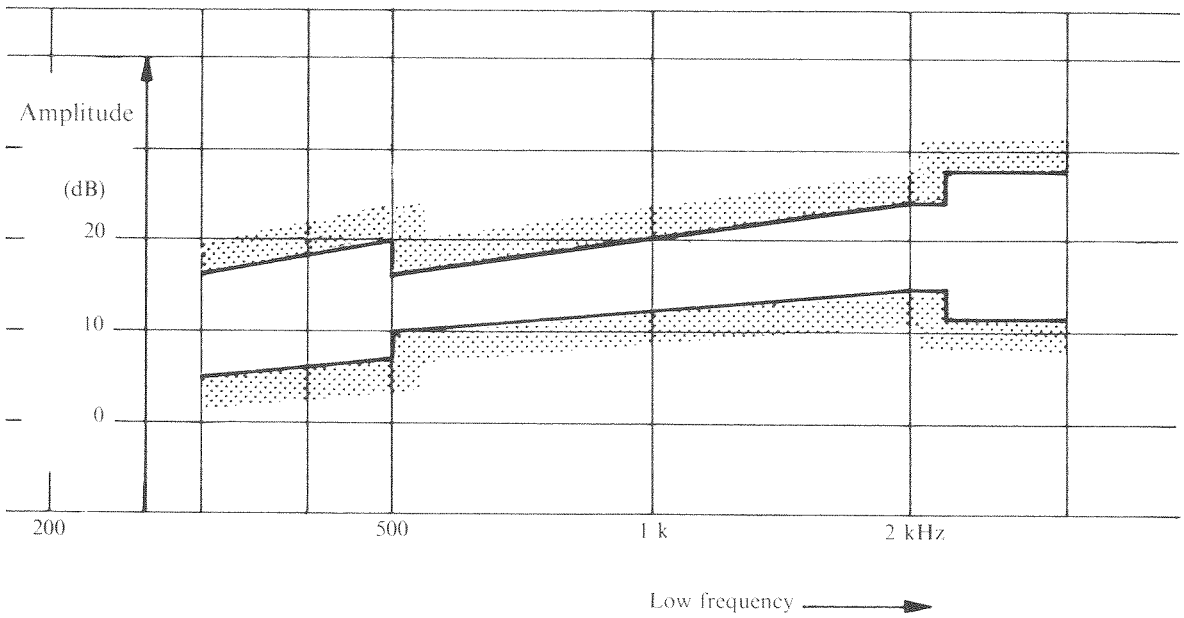
Spurious emissions from the receiver

Wanted frequency of receiver f_o = MHz							
Frequency of unwanted signal (MHz)	Frequencies up to 1 GHz				Frequencies 1 to 4 GHz		
Power (nW)							
Limit	⩽2 nW				⩽20 nW		

AF. Audio-frequency response and distortion ration

The transmitter and receiver are operated simultaneously at distances of 3, 5, 10 or 30 m. The transmitters are modulated with a deviation of ± 3.0 kHz.

Field of tolerance in the direction base unit → handset



Field of tolerance in the direction handset → base unit