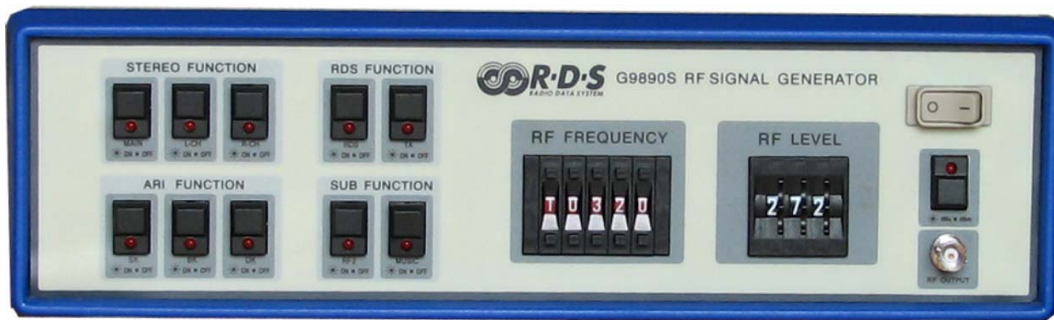# MYEAR

RF RDS(EUR)/RBDS(USA)

SIGNAL GENERATOR G9890S

INSTRUCTION
MANUAL

MYEAR   ELECTRONICS   CORPORATION

PRECATIONS FOR USE

Line Voltage Selection

    The RDS9890 is provided with a line voltage selection to enable operation at 110 and 220 VAC,+/-10%,50/60Hz.When the AC line voltage is changed ,refer to SECTION 4.2 (rear panel) and change the VOLATAGE SELECTOR to match the AC line voltage to be used.

!   **It is important that correctly selecting AC VOLTAGE**

Table of Contents

SECTION ONE

OUTLINE

1.1   General Description

The RDS 9890 can transmit RF carry frequencies with modulated RDS(EUR) or RBDS(USA) signal ,the output level can be set from 0dBμ to 100dBμ through BCD digit switch with 1dB step on the front panel . the frequency range is from 70Mhz to 110MHz ,step frequency is 10KHz,controled by PLL circuit .frequency can be set through BCD digit switch on front panel.

User can use one of frequencies .

It can communicate through RS-232 port with PC .

1.2   Features

● **Two carry frequencies can be selected .**
● **Totall 25 AF frequency can be set .**
● **Output impedance ------50 ohm, unbalanced**
● **VSWR-----1.2 or lower**
● **Each of frequencies can be shut off or turn on**
● **RF output level can be set with 1dB step .**
● **Low power consumption**
● **External TA switch**
● **RS-232 interface (windows operating system)**
● **External RDS and audio 1KHz MPX signal output .**

1.3   Accessories

A. **Output connecter---------------------------5**
B. **Power cable -----------------------------------1**
C. **RS-232 cable-----------------------------------1**
D. **FUSE (500mA)---------------------------------2**
E. **CD(Operating Software)--------------------1**
F. **Instruction manual---------------------------1**

SECTION TWO

SPECIFICATIONS

A: RF   SECTION

	Frequency range	RF level range
Frequency 1	70---110 MHz (step 10KHZ)	0-100 dBμ ---- (1 dBμ step)
Frequency 2	70---110 MHz (step 10KHZ)	0-100 dBμ ---- (1 dBμ step)

B: RDS/RBDS   SECTION

Services directly supported
PI
PS
PTY
TP
AF
TA
DI
M/S
PIN
PTYN
ECC
RT
TDC
IH
CT
ODA

SECTION THREE

OPERATION

3.1   Software operating (COM Port Communication and Write or Read Parameter setting)

3.1.1   Connected RDS /RBDS generator RS-232 port with PC COM port through COM cable .

3.1.2   Open the RDS Operating Software: selecting below ico (Fig .3.1) and open it

3.1.3   Selecting COM Port Speed   (see Fig.3.2 and Fig.3.3)

3.1.4   Setting Program   (see Fig.3.4)

3.1.5   Setting Dynamic PS   (see Fig.3.5)

3.1.6   Setting Radio-text   (see Fig.3.6)

3.1.6   Setting Alternative Frequency   (see Fig.3.7)

3.1.7   Setting PTY Coding   (see Fig.3.8)

3.1.8   Selecting "Store all" Button: Store all setting

3.1.9   Selecting "Receive all" Button: Receive all setting and same time display some of them on the window (Default PS ,Dynamic PS1,Radio-text)

Figure   section

(Fig.3.1)
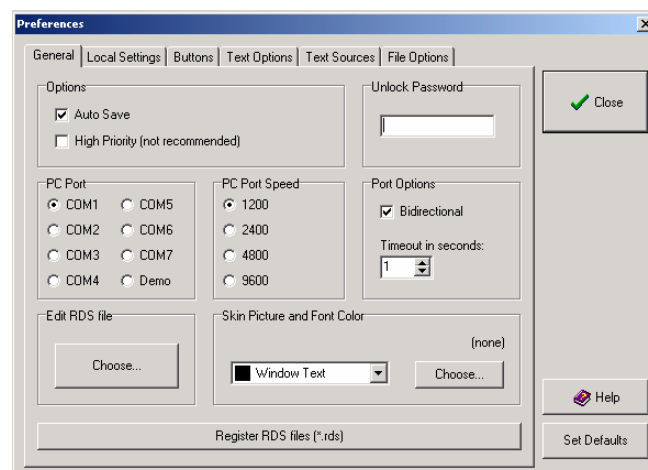
(Fig.3.2)

(Fig.3.3)

(Fig.3.4)

(Fig.3.5)

(Fig.3.6)

(Fig.3.7)
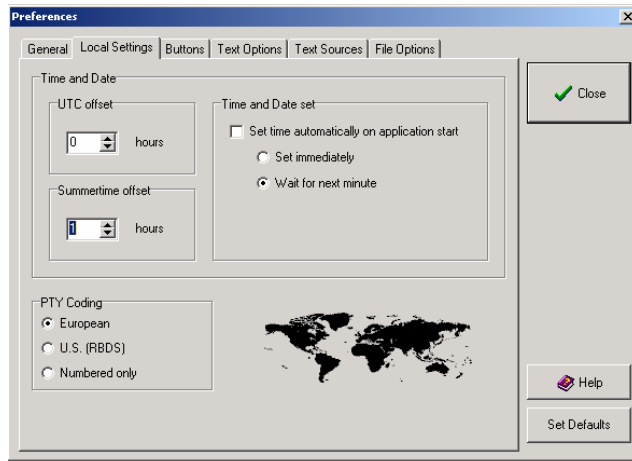
(Fig.3.8)

3.2   Quick Guide (How to use RDS function)

(1) PS-Program service name

This is the label of the program service consisting of not more than eight alphanumeric characters, which is displayed by RDS receivers in order to inform the listener what program service is being broadcast by the station to which the receiver is tuned.
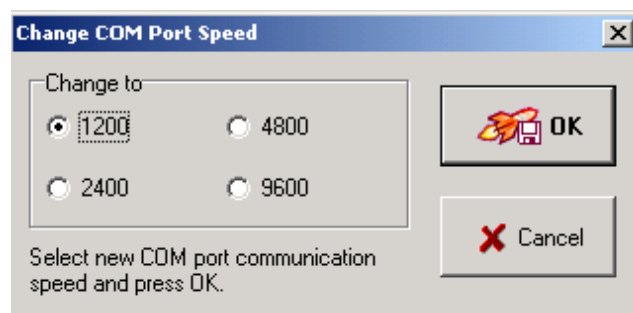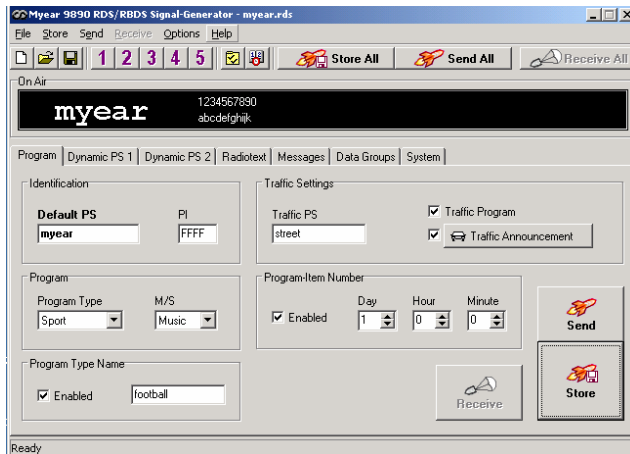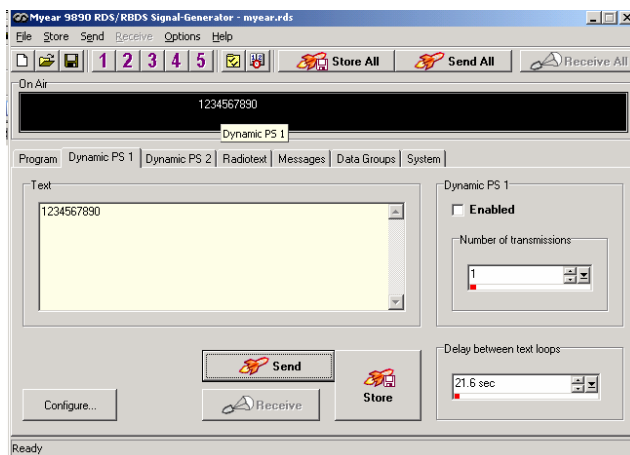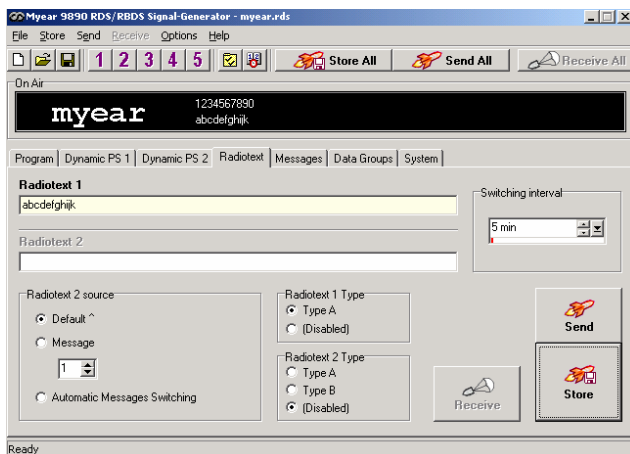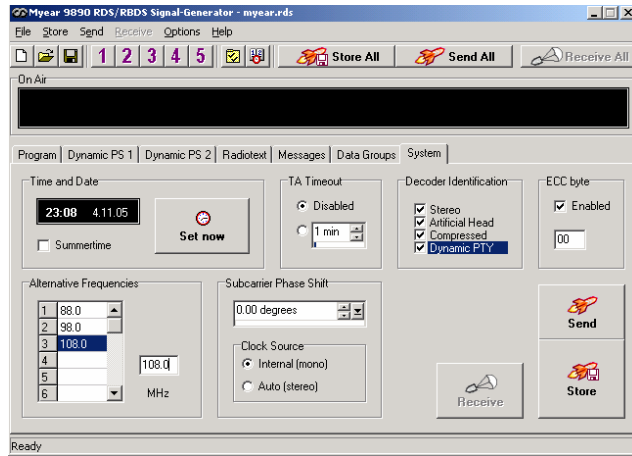
(2)RT-radio-text

This refers to text transmissions, primarily addressed to consumer home receivers, which would be equipped with suitable display facilities.

(3)AF-Alternative frequencies list

The list of alternative frequencies gives information on the various transmitter broadcasting the same program in the same or adjacent reception areas. This facility is useful in the case of car and portable radios.
When the PI code indicates local coverage-area ,i.e. only one frequency is used, AF list may contain this frequency.

(4)PI-Program identification

This information consists of a code enabling the receiver to distinguish between countries, areas in which the same program is transmitted, and the identification of the program itself. The code is not intended for direct display and is assigned to each individual radio program, to enable it to be distinguished from all other programs. One important application of this information would be to enable the receiver to search automatically for an alternative frequency in case of bad reception of the program to which the receiver is tuned; the criteria for the change-over to the new frequency would be the presence of a better signal having the same PI code.
The PI code consists of four characters. The first two characters have special meaning ,second two are used to clearly identify different stations.
The first character identifies country. The second character identifies program type in terms of area coverage:
0-Local (Local program transmitted via a single transmitter only during the whole transmitting time.)
1-International(The   same   program   is   also   transmitted   in   other countries.)
2-National(The same program is transmitted throughout the country.)
3-Supra-regional(The same program is transmitted throughout a large part of the country.)
4 to F-Regional (The program is available only in one location or region over one or more frequencies, and there exists no definition of its

(5)ECC-Extended Country Code

It helps the receiver to recognize the country in cooperation with the PI code. The first most significant bits of the PI code the RDS country code. The four bit coding structure only permits definition of 15 different codes,1 to F(hex).Since there are much more countries to be identified, some countries have to share the dame code which does not permit unique identification. The ECC byte determines the country unambigouesly.

Symbols used for PI and ECC codes for the countries in European Broadcasting Area:

ECC	PI														
	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
EO	DE	DZ	DA	IL	IT	BE	RU	PS	AL	AT	HU	MT	DE		E.G.
E1	GR	CY	SM	CH	JO	FI	LU	BG	DK	GI	IQ	GB	LY	RO	FR
E2	MA	CZ	PL	VA	SK	SY	TN		LI	IS	MC	LT	YU	ES	NO
E3	IE	TR	MK				NL	LV	LB		HR			SE	BY
E4	MD	EE				UA		PT	SI						BA

(6)PTY-Program type

This is an identification number to be transmitted with each program item and which is intended to specify the current Program type within 31possibilities. This code could be used for search tuning. The code will, moreover, enable suitable receivers and recorders to be pre-set to respond only to program items of the desired type. The last number, i. E.31,is reserved for an alarm identification which is intended to switch on the audio signal when a receiver is operated in a waiting reception mode.

(7)TA-Traffic announcement identification

This is an on/off switching signal to indicate when a traffic announcement is on air. The signal could be used in receivers to:
a)switch automatically from any audio mode to the traffic announcement ;
b)switch on the traffic announcement automatically when the receiver is in a waiting reception mode and the audio is muted;
c)switch from a program to another one carrying a traffic announcement.
After the end of the traffic announcement the initial operating mode will be restored.

(8)TP-Traffic program identification

This is a flag to indicate that the tuned program carries traffic announcements. The TP flag must only be set on programs which dynamically switch on the TA identification during traffic Recommend to turn this flag on even you don't transmit any traffic announcements.

(9)DI-Decoder identification

Indicates which possible operating mode is appropriate for use with the broadcast audio.

(10)M/S-Music/speech switch

This is a two-state signal to provide information on whether music or speech is being broadcast. The signal would permit receiver to be equipped with two separate volume controls, one for music and one for speech, so that the listener could adjust the balance between them to suit his individual listening habits.

(11)CT-Clock-Time and Date

Time and date codes should use Coordinated Universal Time and Modified Julian Day. The listener, however, will not use this information directly and the conversion to local time and date will be made in the receiver's circuitry. CT is used as time stamp by various RDS applications and thus it must be accurate.

(12)EON-Enhanced Other Networks information

This feature can be used to update the information stored in a receiver about program services other than the one received. Alternative frequencies, the PS name, Traffic Program and Traffic Announcement identification as well as Program Type and program Item Number information can be transmitted for each other service. The relation to the corresponding program is established by means of the relevant Program Identification.

(13)IH-In House Applications

This refers to data to be decoded only by the operator. Some examples noted are identification of transmission origin, remote switching of networks and paging of staff. The applications of coding may be decided by each operator itself.

(14)PIN-Program Applications

The code should enable receivers and recorders designed to make use of this feature to respond to the particular program item(s) that the user has pre-selected . Use is made of the scheduled program time, to which is added the day of the month. The transmitted Program Item Number code will be the scheduled broadcast start time and day of month as published by the broadcaster.

(15)PTYN-Program Type Name

The PTYN feature is used to further describe current PTY.PTYN permits the display of a more specific PTY description that the broadcaster can freely

decide(e.q. PTY=4:Sport and PTYN :Football).The PTYN is not intended to change the default eight characters of PTY which will be used during search or wait modes, but only to show in detail the program type once tuned to a program, If the broadcaster is satisfied with a default PTY name ,it is not necessary to use additional data capacity for PTYN.

(16)TDC-Transparent Date Channels

The transparent data channels consist of 32 channels which may be used to send any type of data.

(17)How to set AF and PI if my station has only one frequency？

This is the most frequent case. Fill your FM frequency to AF and make sure the second digit in PI is 0(zero).

3.3　Basic Commands

AFCH	Alternative Frequency Channels	H (01-CC)

List of alternative frequency channels in hexadecimal representation in range of 01-cc (87.6-107.9 MHz).Up to 25 items allowed .

AFCH=01,3B	Sets the alterative frequencies to 87.6to 93.4 MHz
AFCH	Shows current AF list
*AFCH	Stores the AF list into EEPROM
AFCH=00	Not allowed (87.65 MHz)
AFCH=CD	Not allowed (108.0 MHz)

DI	Decoder Identification	(0-1)

Identification of the decoder to bi used by the receiver.

DI=1	Standard stereo transmission
DI=2	Standard mono transmission

DPS1	Dynamic PS 1

Up to 255 characters long text message to be displayed on receiver instead of Static PS name .Primarily used for song titles streaming etc.

DPS1=hello World	Set the DPS1
DPS1=	Clear the DPT1

DPS2	Dynamic PS 2

Up to 255 characters long text message to be displayed on receiver instead of Static PS name .Alternatively used in conjunction with Message Commands .

DPS2=hello World	Set the DPS2
DPS2=	Clear the DPT2

DPSMOD   Dynamic PS 1   Mode   (0-3)
Display mode for the DPS1 text .
0-Scrolling by 8 characters
1-Scrolling by 1 character
2-Word alignment scrolling
3-Scrolling by 1 character ,text separated by spaces at begin and end
DPS1MOD=3

DPS2MOD   Dynamic PS 2   Mode   (0-3)
Display mode for the DPS2 text .
0-Scrolling by 8 characters
1-Scrolling by 1 character
2-Word alignment scrolling
3-Scrolling by 1 character ,text separated by spaces at begin and end
DPS2MOD=3

DPS1REP   Dynamic PS 1   Number of Repeating   (0-255)
Specifies number or repeating for the DPS1 text message .Has effect only if
DPS2 is set.
DPS1REP=1

DPS2REP   Dynamic PS 2   Number of Repeating   (0-255)
Specifies number or repeating for the DPS1 text message .Has effect only if
DPS2   is   set   or   if   KPS2MSG   value   is   AUTO.

DPS2REP=1

LABPER   Label Period   (0-255)
Label Period used in DPS Mode 0 and 2.Imcreasing the value by 1 increases
The period by approx. 0.54 seconds .
LABPER=4   Each label is displayed for about 2 seconds.

MS Music/Speech   (0,1)
Music/Speech switch.
MS=0   Speech program
MS=1   Music program

PI   Program Identification   H(0000-FFFF)
Identification code of the radio station. Always contains fours hexadecimal digits.
PI=2.0FE   OK
PI=0XXX   Not allowed (0 as first digit)

PS   Program Service

Static name of radio that is displayed on receiver.Max.8 characters long.

PS=OCEAN FM

PTY   Program Type Number   (0-31)

An identification number to be transmitted with each program item, intended to specify the current Program Type within 32 possibilities .

Program type codes (Europe):

0-(none)	16-Weather
1-News	17-Finance
2-Affairs	18-Children
3-Info	19-Social Affairs
4-Sport	20-Religion
5-Education	21-Phone
6-Drama	22-Travel
7-Cultures	23-LEIsure
8-Science	24-Jazz Music
9-Varied Speech	25-Cuntry Music
10-Pop Music	26-National Music
11-Rock Music	27-Oldies Music
12-Easy Music	28-Folk Music
13-Light Classics Music	29-Documentary
14-Serious Classics	30-Alarm Test
15-Other Music	31- Alarm

PTY=10   Sets the Pop Music Program Type

PTYN   Program Type Name

Allows further description of the current Program Type, for example, when Using the PTY code 4:SPORT, a PTYN of "Football" may be indicated to give More detail about that program.

PTYN=Football

PTYNEN   PTYN Enable   (0,1)

Enables(1)or disables(0)the PTYN service.

PTYNEN=1   Enables the PTYN service

RT1   Radio-text 1

Up to 64 characters long text message to be displayed on receiver in Radio-text Format. Primarily used for song titles streaming etc. Car radios usually don't Support this service, Dynamic PS cam be used instead.

RT1=Hello World

RT1EN   **RT 1 Enable**   **(0,1)**

Enables(1)or disables (0)the Radio-text 1.

RT1EN=1   Enables the RT 1 .

RT2   **Radio-text 2**

Up to 64 characters long text message to be displayed on receiver in Radio-text Format. Alternatively used in conjunction with Messages Commands. Car Radios usually don't support this service, Dynamic PS can be used instead.

RT2=Hello World

RT1EN   **RT 2 Enable**   **(0,1)**

Enables(1)or disables (0)the Radio-text 2.

RT2EN=1   Enables the RT 2 .

RT2TYPE   **Radio-text 2 Type**   **(A,B)**

A –RT2 type is the same as RT1.Each switching between RT1 and RT2 will Cause the previous message to be overwritten on most receivers.
B –RT2 type different from RT1. Receivers usually leave both RT1 and RT2 texts displayed.

RT2TYPE =B   Sets type B for the RT2

RTPER   **Radio-text Switching Period**   **(0-255)**

Specifies the time in minutes between two switching of the Radio-text.-The Switching can occur between RT1 and RT2 or between messages specified for RT2.

RTPER=10   Sets the period to 10 min.
RTPER=0   Sets the period to 0.5 min.

RSTDPS   **Reset Dynamic PS**   **(0,1)**

1-All new Dynamic PS texts will immediately start from begin
0-Only changing of current Dynamic PS text (DPS1/DPS2)transmitted will Cause its start from begin

RSTDPS=0

SCRLSPD   **Scrolling PS Speed**   **(0,1)**

Sets high (1)or low (0)speed of scrolling PS transmission. Although setting High speed gives the result looking better, remember that on some receivers or Under bad reception conditions the text may be unreadable. The reason is Absolutely outside the RDS encoder and comes out from the fact that scrolling PS has never been included in RDS standard.

SCRLSPD -1

SPSPER   **Static PS Period**   **(0-255)**

Specifies the time between two repeats of the Dynamic PS text. Static PS

(PS/TPS)is displayed during this time. Increasing the value by 1 increases the Period by approx. 2.7 seconds.

If value 255 is set, the Dynamic PS will bi displayed only once if changed. RSTDPS parameter must be set to 1 in this case.

SPSPER=4   Sets the period duration to about 11seconds.

TA   **Traffic Announcement**   **(0,1)**

Indicates instantaneous presence(1)of traffic information during broadcasting. When this value is set to 1 by external TA switch, the value specified by TA command has no effect.

When this value is et to 1 by TA command, the value set by external TA switch has no effect.

TA =1

TATMOUT   **TA Timeout**   **(0-255)**

1-255-Specifies a maximum duration in minutes during which the TA
        parameter cam remain at one(1). Then the TA flag is set back to zero
        (0).External TA switch is edge activated.

0-Disables the TA timeout feature. External TA switch is level controlled.

TATMOUT=1

TP   **Traffic Program**   **(0-255)**

This is a flab to indicate that the tuned program carries traffic announcements. The TP lab must only be set on programs that dynamically switch on the TA Identification during traffic announcements. The signal shall be taken into Account during automatic search tuning.

TP=1

TPS   **Traffic PS**

Static test displayed on receiver during traffic announcements. Max. 8 Characters long.

TPS =TRAFFIC

TPS =   Disables the Traffic PS

INIT   **Initialization**

Sets most parameters and services in selected program to its default values.

INIT

ALL   **Store All**

Stores all settings into EEPROM memory.

*ALL

HELP   **Help**

Shows all commands available.

HELP

Messages Commands

MSG xx   Message

Specifies the message text. Since there is a place for 99 messages in memory, the number xx must be in range 01-99.

MSG01=Hello World

MSGxxD   Message Destination   (0-3)

Specifies the destination of the message used for automatic message switching. The number xx MUST BE IN RANGE 01-99.

0-Message not used for automatic switching

1-DPS2

2-RT2

3-DPS2-and RT2

MSG 01 D=1

MSGLIST   List of Messages

Shows all messages present in the memory and its destination.

MSGLIST

DPS2MSG   Dynamic PS2 Message Number   (0-99,AUTO)

0-Default DPS2 text specified by DPS2 number or last DPS2MSG Command is selected.

1-99-This message is selected .

AUTO-Messages are selected automatically in ascending order. Only messages chosen by the MSGxxD command are selected.

DPS2MSG=AUTO

RT2MSG   Radio-text 2 Message Number (0-99,AUTO)

0-Default RT2 text specified by RT2 number or last RT2MSG Command is selected.

1-99-One of the message is selected for the RT2.

AUTO-Messages are selected automatically in ascending order. Only messages chosen by the MSGxxD command are selected.

RT2MSG=1

System Commands

COMSPD   COM   Port Speed   (0-3)

Specifies the COM port speed. If changed, any valid command must be sent to

the RDS encoder on the new speed otherwise the speed will be set back to its previous value by the communication channel that can result in connection lost.

0-1200 kbps

1-2400 kbps (default)

2-4800 kbps

3-9600 kbps

COMSPD=1

CT   **Clock Time and Date**   **(0,1)**

Enables (1)or disables (0)time and date transmission in CT format.

CT=1

DATE   **Date**

Specifies the actual date in DD.MM.YY format.

The date value stored in memory is used on next power up.

DATE=30.11.05   **30th of November 2005**

DATE   **Not implemented ,use MJD instead.**

ECHO   **Terminal Echo**   **(0,1)**

Determines if the RDS encoder sends an echo(1)of each character or not (0), that it receives via COM port.

ECHO=1

EXTSYNC   **External Pilot Synchronisation**   **(0,1)**

1-Automatic external synchronisation if pilot tone present(default)

0-Forced internal clock source (for mono transmission only)

EXTSYNC=1

LTO   **Local Time Offset**   **±(0-24)**

Specifies the offset between the local time and the universal time (UTC).

Expressed in multiples of half-hours.

LTO=+2

MJD   **Modified Julian Day**   **H(000000,FFFFFF)**

Day, Month Year coded as Modified Julian Day.

To find ,M and Y from MJD:

$$Y'=int [(MJD-15\ 078,2)/365,25]$$

$$M'=\{[MJD-14\ 956,1-int(Y'\times365,25)]/30,6001\}$$

$$D=MJD-14\ 956,1-int(Y'\times365,25)-int(M'\times30,6001)$$

If M'=14or M'=15,then K=1;else K=0

$$Y=Y'+K$$

$$M=M'-1-K\times12$$

To find MJD from D,M and Y:

If =1or M=2,then L=1;else L=0

MJD=14 956+D+int[(Y-L×365,25)]+int[(M+1+L×12)×30,6001]

Y',M'K,L-intermediate variables.

MJD=00D1C8   30th of November 2005

PHASE   RDS Signal Phase   (0-18)

Fixes the relative phase shift between the pilot tone and the RDS signal.

Changing the value by one results in 9.5 degrees phase shift change.

The value serves only as a scale, it may not provide real phase shift value.

PHASE=8

PILOT   Pilot Tone Present

Indicates if pilot tone is present(1)or not(0).

PILOT

RDSGEN   RDS Generator   (0,1)

Disables (0)or enables (1)the RDS sub-carrier generator.

RDSGEN=0

RESET   Restet

Provokes a hardware reset of the RDS encoder and is equivalent to an "off-no"

cycle of the RDS encoder.

RESET

STATUS   RDS Encoder Status

Shows the most important operating values of the RDS encoder.

STATUS

TIME   Time

Specifies the actual local time in HH:MM format.

The time value stored in memory is used on next power up.

TIME=16:40

Advanced Commands

ECC   Extened Country Code   (00-FF)

Uniquely determines the country in conjunction with the first digit of PI.

ECC=E2

ECCEN   ECC Enable   (0,1)

Enables (1)or disables(0)the ECC feature.

ECCEN=1

G   Group   H(000000000000-FFFFFFFFFFFF)

Order the RDS encoder to send directly RDS groups whose contents are free.
The Group content is in BBBBCCCCDDDD format where BBBB, CCCC and
DDDD represent the contents of the block B, block C and block D in
hexadecimal expression. The RDS encoder calculates the CRC automatically.
The block A has not been specified as it is always the PI code programmed
with the PI command.
The PTY and TP services set by the G command are ignored and are
substituted according to the internal configuration of these services fo the RDS
encoder.
Using this command, the RDS transmission can then be partially or fully
Controlled by an external application. For full RDS stream control,9600 kbps
com. speed should be used. Nest Group can follow after previous command
success   characters.

G=380215D1A531   Group 3B containing 02   15D1   A531

PIN   Program Item Number

The code in DD,HH,MM format should enable receivers and recorders
Designed to make use of this feature to respond to the particular program
item(s) that the user has pre-selected. Use is made of the scheduled program
time, to which is added the day of the month in order to avoid ambiguity.

PIN=12,16,40

PINEN   PIN Enable   (0,1)

Enables(1) or disables(0)the PIN service.

PINEN=1

PROGRAM   Program   (0-2)

Specifies the program bank. RDS services in selected program are
transmitted by the RDS encoder and can be modified and stored into EEPROM
memory. If Program is set to zero(0), most of store operations is not allowed.
1-Program 1 is selected(default)
2-Program 2 is selected
0-External program switch selects the program

PROGRAM=1

SHORTRT   Short Radio-text   (0,1)

If enabled(1),all new inserted Radio-texts shorter than 6. characters will be
Followed by Carriage Return and the remaining spaces will be cut. Default
value is 0.

SHORTRT=1

UDG1   **User Defined Groups 1**

Specifies up to 8 groups in BBBBCCCCDDDD format, with are repeatedly transmitted by the RDS encoder. BBBB, CCCC and DDDD represent the contents of the block B, block C and block D in hexadecimal expression.

UDG1=38215D1A531,38058DB3B61E	**Sets two UDG1 groups**
UDG1=	**Clears the UDG1 groups**

UDG2   **User Defined Groups 2**

Specifies up to 8 groups in BBBBCCCCDDDD format, with are repeatedly transmitted by the RDS encoder. BBBB, CCCC and   DDDD represent the contents of the block B, block C and block D in hexadecimal expression.

UDG1=38215D1A531,38058DB3B61E	**Sets two UDG2 groups**
UDG1=	**Clears the UDG2 groups**

SECTION   FOUR

PANEL   DESCRIPTIONS
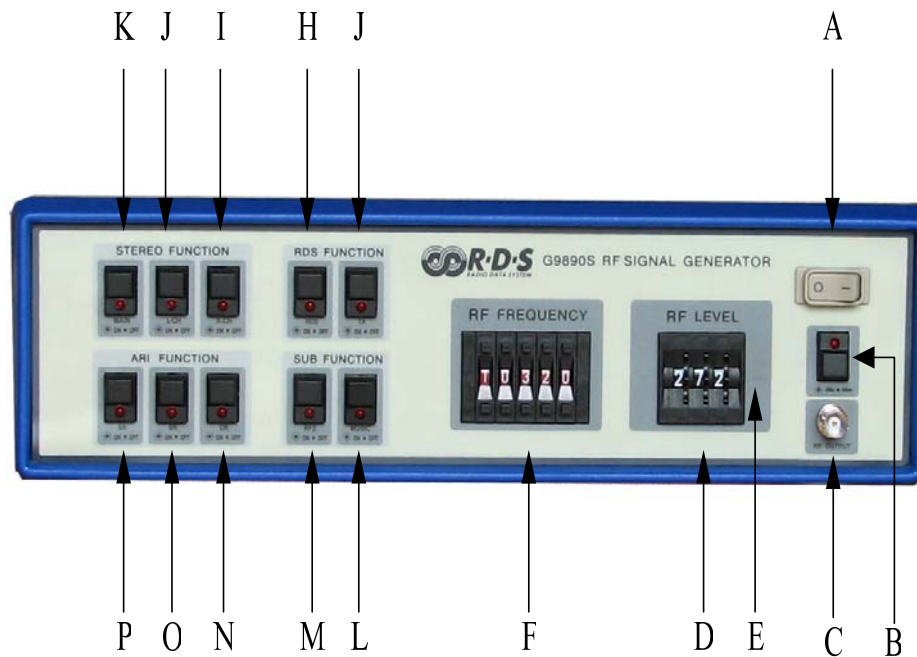
Front view   (Fig .4.1)

4.1 Front Panel   (See Fig.4.1)

A: AC VOLTAGE SWITCH with PILOT LAMP: For turning on or turning off the AC power . the lamp indicates when the AC power is on .

B: RF OUTPUT LEVEL UNIT EXSHANG SWITCH : For exchang RF output level unit between dBμ and dBm---option)

C: RF OUTPUT LEVEL CONNECTER (BNC) : 50Ω

D: RF OUTPUT LEVEL CONTROL BCD SWITCH : For adjusting RF output level , It can be set with 1dB step . The level adjustment range is 0dBμ ---126 dBμ

E: RF LEVEL UNIT INDICATER(dBμ and dBm--option)

F: RF FREQUENCY SETTING SWITCH (BCD MODE) : For setting RF

frequency , it's range is from 70MHz to 110MHz , step frequency (Δf) is 10KHz , controlled with PLL circuit.

G: RDS TA SWITCH :for open rds TA or close rds TA

H: RDS SIGNAL CONTROLL SWITCH : for open or close RDS signal output, when it be turned off ,only audio output (1KHz sine wave)

I;J;K: AUDIO OUTPUT SWITCH : for open or close AUDIO signal output(1KHz sine-wave)

P: SK SIGNAL SWITCH : for turn on or tun off SK signal .

O: BK SIGNAL SWITCH: for tun on or turn off BK signal.

N: CK SIGNAL SWITCH:for turn on or turn off CK signal.

M: RF1 AND RF2 SELECT SWITCH : for selecting RF1 output or RF2 output ,when RF2 be selected ,it frequency can be set from 70MHz to 110MHz through BCD switch with 10KHz step . when RF1 be selected ,it output frequency is only one frequency point ---88MHz(but it can be set within 70MHz to 110MHz in factory), this function be used RDS AF TEST .

L: SAME "M" : when push it it can chang RF1and RF2 , function same "M".

4.2   Rear Panel (Refer to Fig.4.2)
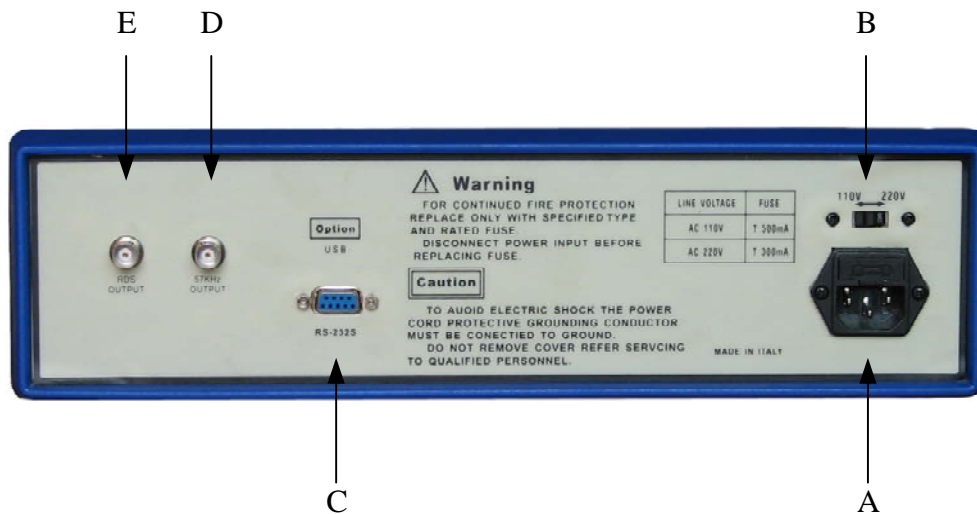
(Rear View   (Fig .4.2)

A: AC POWER SOCKET with FUSE: For AC power supply , the fuse type printed beside it .refer to the printed table.

 B: AC VOLATAGE   SELECTOR :With two positions for selecting the AC voltage input .one is 110v another is 220v .

C: RS-232 terminals: For communicating with PC COM terminal , to be used , write date from PC into RDS/RBDS signal generator or read date from RDS/RBDS signal generator into PC.

D: 57KHz CLOCK terminals: It is a 57KHz (TTL) to be used synchronization .usually not used .

E: RDS / RBDS terminals : For RDS or RBDS signal output ,the signal level is approximately 1.5Vpp . to be used ,when required, connected it with EXT modulation terminal of RF standard signal generator through a shield cable.