User Manual ESVP / ESH3 RCS (Remote Control Software) V1.1

### **USER MANUAL V1.1**

# ESVP / ESH3 RCS (Remote Control Software)

🔜 ESVP 20 - 130	ESVP 20 - 1300 Mhz RCS (Remote Control Software) by Jos Delissen							
File Settings I	nfo							
ID Message 18 Ready		REF		Auto Run Type Repeat				
RX - Freque	ncy	SQU.	RX Measurement 0.010 (s)	XXL TXT ALL CLR U				
Scan Threshold —	Frequency	Scan From - To	Input Level	Frequency				
40 dB(μV)	89.5000 Mhz	87.5000 108.0000	▼ RF Input - Power -48.3 dBm	✓ Freq. 1 Hz				
+	+		▼ RF Input - Level (dB) 58.8 dBµV	✓ Offset 1 Hz 🗢 -0.044 Khz				
5 -	0.1000 -	Time 2.000 (s)	✓ RF Input - Level 902.0 μV					
Preset Threshold	Preset RF Freq. Step	Preset - All	Modulation Level					
○ 10.0 DB	O 0.0125 Mhz	M1 M2 M3 M+	▼ FM : Mod - 46.8 Khz	✓ AM : Mod - 25.5 %				
O 0.0 DB	0.1000 Mhz	M4 M5 M6 M- M7 M8 M9 M10	FM : Mod (PK+ PK) / 2 44.1 Khz	✓ AM : Mod (PK + PK) / 2 18.4 %				
O -10.0 DB	0 1.0000 Mhz		✓ FM : Mod + 44.5 Khz	✓ AM : Mod + 10.1 %				
Settings	M-FIL AFC	CAL-L CAL-S	Attenuation AMPL	Antenna Coding				
Demod	IF - Bandwidth	Function	Mode	Antenna Coding				
F3 : FM-Narrow	0 1 Mhz	O Two Port	Manual 0 dB 0 dB	Read Socket 47 - Disable				
	<ul> <li>120 Knz</li> <li>12 Khz</li> </ul>	Gan Off	+ +	Read Socket 47 - uV /m     Read Socket 47 - uV /m				
A31: 1SB	0 75 Khz	O den_on						
A3 : AM-Nar.	Mode -	Or and the Dense		Use Manually Entered k-Factors				
A3 : AM-Wide	<ul> <li>Average</li> </ul>	O 20 dB	A- Low Noise					
🔿 A1 : 1Khz	🔘 Peak	○ 40 dB	O A- Low Dist.					
◯ A0 : Zero Beat	CISPK	● 60 dB						
Off	O MIL							
Logging	Max. 200	Logged 28	Total Processed 28					
31/12/2012 0	9:29:27 1 1	89.5000 MOD AI	4 POS 10.1 %					
31/12/2012 0	9:29:27 1 1	89.5000 MOD_AI						
31/12/2012 0	9:29:27 1 1	89.5000 MOD_FI	4.5 kHz	≡				
31/12/2012 0	9:29:26 1 1	89.5000 MOD_FI	1_MEG 46.8 kHz					
31/12/2012 0	9:29:25 1 1	89.5000 FREQ_0 89.5000 FREQ_1	HF_THZ -0.044 KHZ Hz 89.500063 MHz					
31/12/2012 0 31/12/2012 0	9:29:24 1 1 9:29:24 1 1	89.5000 RF_Lev 89.5000 RF_Lev	_VA 902.0 μV _dB 58.8 dBμV					
31/12/2012 0 31/12/2012 0	9:29:24 1 1 9:29:16 1 1	89.5000 RF_Pow 89.5000 MOD FI	-48.3 dBm 1 POS 47.4 kHz					
01/10/0010 0	0.70.15 1 1	00 E000 MOD E1	A MEAN 24.2 1/14	▲				

## A simple tool for complex Rohde & Schwarz Test Receivers

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### 2. Introduction

The ESVP/ESH3 Remote Control Software (RCS) is designed to easily control the ESVP (20..1300 Mhz) and ESH3 (0.009 .. 29.9999Mhz) high end test receivers from Rohde & Schwarz.

Using software to control these receivers enables

- Usage of these receivers in computer controlled test systems
- Easy graphical user interface instead of "key driven" complex measuring special functions
- Enhanced frequency scanning possibilities. Exit/Hold and Time driven.
- Display measured data in Excel or download tot .txt file.
- Easy setup and running of multiple measurements within a frequency range.

Another advantage is that there is no need for additional programming (e.g. Matlab etc). It is a ready to use program.

Its functionality is split in two parts. With its standard functionality you are able to check if the software is suitable to operate on your computer / OS / GPIB installation. If it works fine you may consider making a registration request to get access to the enhanced functionality.

Standard functionality

- Operating the main receiver settings, such as

- \* RF Frequency, IF Bandwidth and demodulation mode
- \* Level Modes (AV, PEAK, CISPR and MIL)
- \* Threshold, Attenuation level, Operating range and Function mode

Enhanced functionality (subject to registration )

- Making use of the available measurements like
  - \* Measurement of voltage (in dBm, dB $\mu$ V or  $\mu$ V)
  - \* Frequency and frequency-offset measurements
  - \* Modulation depth and frequency deviation
  - \* Field strength, current and spectral density
- Making use of the scanning functionality, including the ability to preset 10 device settings & scanning ranges

### 3. How to get it & Installation

The ESVP/ESH3 RCS is a Click Once application. Simply stated, a ClickOnce application is any Windows Forms or console application published using the Microsoft ClickOnce technology. ClickOnce applications can be deployed to a computer from a Web location, a network share, or even from a file location such as a CD.

ClickOnce-deployed applications are considered 'low impact', in that they are installed per-user, not per-machine .The application is added to the user's Start menu and to the Add/Remove Programs group in the Control Panel. Unlike other deployment technologies, nothing is added to the Program Files folder and no administrative rights are required for installation.

The ESVP/ESH3 RCS can be downloaded or launched from the site:

#### http://www.30dbm.com

The application requires needs .NET Framework. If the proper version is not available on the target system, it will automatically ask to download it during installation.

For using the enhanced functionality of ESVP/ESH3 RCS you need to be a registered user. A license key can be requested from:

http://www.30dbm.com/Request.aspx

Please make sure to enter the correct equipment used

## 4. License agreement & Set up

The ESVP/ESH3 RCS is license protected. To enter a license key

🔜 ESVP 20 - 1300 Mhz 🛛 Test Recei					
File Settings	Info				
ID Message	License				
BX - Freque	About				

To enter the license key, select the corresponding module and push on "EDIT".

nio				
jodu	ct Key			
8368	8558450210			
instalk	ed Licenses			
	DESCRIPTION	LICENSEE EMAIL ADDRESS	LICENSE KEY	STATUS
۶.	ESVP	jos.delissen@30dbm.com	F2258C208C780	NOT OK

Now the license key can easily be added to your licenses setup, and it will immediately be reflected in the license overview.

			ESVP : 1	Setup License			
SVP : Enter License Ke	V		Enduct 83688	t Key 558450210			
			installe	d Licenses			
Product Key	83688558450210			DESCRIPTION	jos.delissen#30dbm.com	F28E8027833	OK
Product	ESVP						
Licensee Email Address	jos.delissen@30dbm.com						
License Key	F2BEBD27B32	9			_		

# 5. Using the ESVP/ESH3 RCS

### 5.1. Screen overview

ESVP 20 - 1	300 Mhz RCS (Remote	Control Software) by J	os Delissen		
File Settings	Info				
ID Message 18 Ready	A	REF		OP II >>	uto Run Type B Repeat
KX - Frequ	ency	SQU.	KX Measurement	0.010 (s)	
Scan Threshold	Frequency	Scan From - To	Input Level		Frequency
40 dB(μV	) 89.5000 Mhz	87.5000 108.0000	RF Input - Power	-48.3 dBm	Freq. 1 Hz 🗢 89.500063 Mhz
<u>+</u>		Exit << >>     Hold	RF Input - Level (dB)	58.8 dBµV	✓ Offset 1Hz 🗢 -0.044 Khz
<u>5</u> .	0.1000 -	Time 2.000 (s)		302.0 µV	( D )
Preset Threshold	Preset RF Freq. Step	Preset - All	Modulation Level		
O 10.0 DB	0.0125 Mhz	M2 M3 M+	FM : Mod -	46.8 Khz	✓ AM : Mod - 25.5 %
0 0.0 DB	0 0.1000 Mhz	M8 M9 M10	FM : Mod (PR+PR) / 2	44.1 Knz	✓ AM : Mod (PK + PK) / 2 18.4 %
Settings		CALL CALS	Attenuation		Antenna Codina
C Demod	IF - Bandwidth	Function	Mode		Antenna Coding
O F3 : FM-Narro	w 🔾 1 Mhz	O Two Port	O Manual RF	IF III	<ul> <li>Read Socket 47 - Disable</li> </ul>
• F3 : FM-Wide	120 Khz	O Rem. Freq.	d	B 0 dB	○ Read Socket 47 - uV /m
🔿 A3J : USB	🔘 12 Khz	Gen_Off		<u> </u>	Read Socket 47 - uA /m
🔿 A3J : LSB	○ 7.5 Khz		10		O Use HUF-Z1 / HL023A1
O A3 : AM-Nar.	Mode	Operating Range			O Use Manually Entered k-
A3 : AM-Wide	<ul> <li>Average</li> </ul>	🔘 20 dB	A- Low Noise	$\frown$	<u> </u>
O A1 : 1Khz	O Peak	○ 40 dB	A- Low Dist.	(E)	
O A0 : Zero Bea	t O CISPK			$\smile$	
0 Off	O MIL				
Logging	Max. 200	Logged 28	Total Processed 28	}	Show Device Settings TXT CLR OFF
Logging 31/12/2012 31/12/2012	Max. 200 09:29:27 1 1 09:29:27 1 1	Logged 28 89.5000 MOD_A 89.5000 MOD_A	Total Processed         28           M_POS         10.1 %           M_MEAN         18.4 %	3	Show Device Settings TXT CLR OFF
Logging 31/12/2012 31/12/2012 31/12/2012 31/12/2012	Max.         200           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1	Logged 28 89.5000 MOD_A 89.5000 MOD_A 89.5000 MOD_A 89.5000 MOD_F	Total Processed         28           M_POS         10.1 %           M_MEAN         18.4 %           M_NEG         25.5 %           M_POS         44.5 kHz	3	Show Device Settings TXT CLR OFF
Logging 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012	Max.         200           09.29.27         1         1           09.29.27         1         1           09.29.27         1         1           09.29.27         1         1           09.29.26         1         1           09.29.26         1         1	Logged 28 83.5000 MOD_A 83.5000 MOD_A 83.5000 MOD_F 83.5000 MOD_F 83.5000 MOD_F 83.5000 MOD_F 83.5000 MOD_F	Total Processed         28           M_POS         10.1         %           M_MAAN         18.4         %           M_NEG         25.5         %           M_POS         44.5         kHz           M_MEAN         44.1         kHz           M_MEAN         44.1         kHz	3	G
Logging 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012	Max.         200           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1	Logged         28           83,5000         MOD_A           83,5000         MOD_A           83,5000         MOD_A           83,5000         MOD_F           83,5000         FREG_1           85,5000         FREG_2	Total Processed         28           M_POS         10.1         %           M_MEAN         18.4         %           M_NEG         25.5         %           M_POS         44.5         kHz           M_MEAN         44.1         kHz           M_NEG         46.8         kHz           OFE_1Hz         -0.044         kHz	3	G
Logging 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012	Max.         200           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:25         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:24         1         1	Logged 28 89,5000 MOD_A 89,5000 MOD_A 89,5000 MOD_F 89,5000 MOD_F 89,5000 MOD_F 89,5000 MOD_F 89,5000 FREQ_0 89,5000 FREQ_0 80,5000 FREQ_0 89,5000 FREQ_0 80,5000 F	Total Processed         28           M_POS         10.1         %           M_MEAN         18.4         %           M_NEG         25.5         %           M_POS         44.5         kHz           M_MEAN         44.1         kHz           M_NEG         46.8         kHz           OFE_1Hz         0.044         kHz           VP0         550063         N           '_VP0         55.0007         N	3 ; IHz	G Show Device Settings TXT CLR OFF
Logging 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012	Max.         200           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:25         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1	Logged 28 89,5000 MOD_A 83,5000 MOD_A 83,5000 MOD_F 83,5000 MOD_F 83,5000 MOD_F 83,5000 MOD_F 83,5000 MOD_F 83,5000 FREQ_1 83,5000 FREQ_2 83,5000 RF_Lev 83,5000 RF_Lev 83,5000 RF_Lev	Total Processed         28           M_POS         10.1         %           M_MEAN         18.4         %           M_NEG         25.5         %           M_POS         44.5         kHz           M_MEAN         44.5         kHz           M_NEG         46.8         kHz           OFF_1Hz         -0.044         kHz           V_VA         902.0         µV           _28         58.8         dBµV           _48.3         dBmV         -48.3	3 i IHz	G Show Device Settings DAT CLR OFF
Logging 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012	Max.         200           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:16         1         1	Logged         28           83,5000         MOD_A           83,5000         MOD_A           83,5000         MOD_F           83,5000         MOD_F           83,5000         MOD_F           83,5000         MOD_F           83,5000         MOD_F           83,5000         FREQ_           83,5000         FREQ_           83,5000         FREQ_           83,5000         RF_Lev           83,5000         RF_For           83,5000         RF_Pow           83,5000         MOD_F           83,5000         RF_Dom           83,5000         RF_Lev           83,5000         RF_Dom           83,5000         RF_Dom           83,5000         RF_Dom           83,5000         RF_Dom           83,5000         RF_Dom           83,5000         ROD_DOM	Total Processed         28           M_POS         10.1         %           M_MEAN         18.4         %           M_NEG         25.5         %           M_POS         44.5         kHz           M_MEAN         44.5         kHz           M_NEG         46.8         kHz           OFE_1Hz         -0.044         kHz           _VA         902.0         µV           _c6B         58.8         dBµV           W         -48.3         dBm           M_POS         47.4         kHz           M_POS         47.4         kHz	3 i IHz	Show Device Settings DT CLR OFF
Logging 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012 31/12/2012	Max.         200           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1	Logged         28           85 5000         MOD_A           85 5000         MOD_A           85 5000         MOD_A           83 5000         MOD_A           83 5000         MOD_A           83 5000         MOD_A           83 5000         MOD_B           83 5000         MOD_F           83 5000         FREQ_1           83 5000         FREQ_2           83 5000         RF_Lew           83 5000         RF_Lew           83 5000         RF_Do           83 5000         MOD_F           83 5000         MOD_F           83 5000         MOD_F	Total Processed         28           M_POS         10.1 %           M_MEAN         18.4 %           M_NEG         25.5 %           M_POS         44.5 kHz           M_MEAN         44.1 kHz           M_MEAN         46.8 kHz           DFF_1Hz         89.50063           VA         902.0 µV           _cB         58.8 dBµV           v         -48.3 dBm           M_POS         34.2 kHz	3 i IHz	G Show Device Settings TxT CLR OFF
Logging 31/12/2012 31/12/20	Max.         200           09:29:27         1           09:29:27         1           09:29:27         1           09:29:27         1           09:29:27         1           09:29:27         1           09:29:27         1           09:29:26         1           09:29:26         1           09:29:26         1           09:29:24         1           09:29:24         1           09:29:24         1           09:29:26         1           09:29:24         1           09:29:26         1	Logged 28 83,5000 MOD_A 83,5000 MOD_A 83,5000 MOD_F 83,5000 MOD_F 83,5000 MOD_F 83,5000 FREQ_( 83,5000 FREQ_( 83,5000 RF_Lew 83,5000 RF_LW 83,5000 RF_LW 84,500 RF_LW 84,500 RF_LW 84,500 RF_LW 84,500 RF_LW 84,500 RF_LW 84,500 RF_LW 84,500 RF_LW 84,500 RF_LW 84,500 RF_LW 84,500 RF_LW 84,500 RF_LW 84,500 RF_LW 84,	Total Processed         28           ML POS         10.1 %         18.4 %           M_MEAN         18.4 %           M_NEG         25.5 %           M_POS         44.5 %           M_MEAN         44.1 %           M_NEG         46.8 %           M_VA         902.0 µV           _26B         58.8 dBµV           w         -48.3 dBm           M_POS         3.4 %           M_MEAN         3.4 %	IHz	G (GPIB) and setup
Logging 31/12/2012 31/12/20	Max.         200           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:24         1         1           09:29:24         1         1           09:29:26         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:26         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1	Logged 28 89,5000 MOD_A 89,5000 MOD_A 89,5000 MOD_F 89,5000 MOD_F 89,5000 MOD_F 89,5000 FREQ_ 89,5000 FREQ_ 89,5000 RF_Ew 89,5000 RF_Ew 80,5000 RF	Total Processed         28           ML POS         10.1         18.4         %           M_MEAN         18.4         %         %         M_NOS         44.5         %           M_NEG         25.5         % <td< td=""><td>B IHz D start tool (</td><td>Show Device Settings TXT CLR OFF</td></td<>	B IHz D start tool (	Show Device Settings TXT CLR OFF
Logging 31/12/2012 31/12/20	Max.         200           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:26         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:26         1         1           09:29:24         1         1           09:29:26         1         1           09:29:26         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1	Logged 28 89,5000 MOD_A 89,5000 MOD_A 89,5000 MOD_F 89,5000 MOD_F 89,5000 FREQ_ 89,5000 FREQ_ 89,5000 RF_Lev 89,5000 RF_Lev 80,5000 R	Total Processed         28           ML-POS         10.1         18.4         %           ML-NEG         25.5         %         18.4         %           ML-POS         44.5         kHz         %	B IHz D start tool (	G GOIB) and setup
Logging 31/12/2012 31/12/201	Max.         200           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1	Logged 28 89,5000 MOD_A 89,5000 MOD_A 89,5000 MOD_A 89,5000 MOD_F 89,5000 MOD_F 89,5000 FREQ_ 89,5000 FFLCA 89,5000 RF_Lev 89,5000 RF_Lev 80,500	Total Processed         28           ML POS         10.1         %           ML MEAN         18.4         %           ML POS         44.5         kHz           M_POS         44.5         kHz           M_NEAN         44.1         kHz           M_NEG         46.8         kHz           M_NEG         46.8         kHz           M_NEG         58.8         dBuV           _dB         58.8         dBuV           _w         44.3         dBm           M_POS         47.4         kHz           M_M_POS         47.4         kHz           M_MEAN         94.2         LLS	o start tool ( urements ru	G Show Device Settings TXT CLR OFF
Logging 31/12/2012 31/12/201	Max.         200           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:26         1         1           09:29:26         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1	Logged         28           89,5000         MOD_A           89,5000         MOD_A           89,5000         MOD_A           89,5000         MOD_A           89,5000         MOD_F           89,5000         MOD_F           89,5000         MOD_F           89,5000         RF_EQ_           89,5000         RF_EV           89,5000	Total Processed         28           ML POS         10.1         %           ML MEAN         18.4         %           ML POS         44.5         %Hz           ML POS         44.5         %Hz           ML POS         44.5         %Hz           ML POS         44.1         %Hz           ML POS         44.1         %Hz           ML POS         44.3         %Hz           ML POS         58.8         dBuV           _26B         58.8         dBuV           _48.3         8Bm         MLPOS           ML POS         47.4         %Hz	o start tool ( urements ri anning (wit	G Show Device Settings TXT CLR OFF G (GPIB) and setup uns. h 10 memory functions
Logging 31/12/2012 31/12/201	Max.         200           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:26         1         1           09:29:26         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1	Logged         28           8355000         MOD_A           8355000         MOD_A           8355000         MOD_A           8355000         MOD_A           8355000         MOD_F           8355000         MOD_F           8355000         FREQ_B           8355000         FREQ_B           8355000         RF_Leve           8355000         RF_F_reve           8355000         RF_Leve           8355000         RF_F_reve           8355000         RF_Leve           835000         RF_Leve <td>Total Processed         28           ML POS         10.1         %           ML MEAN         18.4         %           ML POS         44.5         %Hz           ML POS         44.5         %Hz           ML POS         44.5         %Hz           ML POS         44.1         %Hz           ML POS         44.1         %Hz           ML POS         44.3         %Hz           ML POS         58.8         dBuV           _26B         58.8         dBuV           _48.3         8Bm         MLPOS           ML POS         47.4         %Hz           ML POS         47.4         %Hz</td> <td>o start tool ( urements ru anning (wit</td> <td>G Show Device Settings TXT CLR OFF G (GPIB) and setup uns. h 10 memory functions</td>	Total Processed         28           ML POS         10.1         %           ML MEAN         18.4         %           ML POS         44.5         %Hz           ML POS         44.5         %Hz           ML POS         44.5         %Hz           ML POS         44.1         %Hz           ML POS         44.1         %Hz           ML POS         44.3         %Hz           ML POS         58.8         dBuV           _26B         58.8         dBuV           _48.3         8Bm         MLPOS           ML POS         47.4         %Hz	o start tool ( urements ru anning (wit	G Show Device Settings TXT CLR OFF G (GPIB) and setup uns. h 10 memory functions
Logging 31/12/2012 31/12/201	Max.         200           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:26         1         1           09:29:26         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1      09:29:24         1         1	Logged 28 85,5000 MOD_A 85,5000 MOD_F 85,5000 MOD_F 85,5000 MOD_F 85,5000 FREQ 85,5000 FREQ 8	Total Processed         28           M_POS         10.1 %         18.4 %           M_NEG         25.5 %         10.1 %           M_POS         44.5 kHz         10.4 %           M_NEG         25.5 %         10.1 %           M_POS         44.5 kHz         10.4 %           M_MEAN         45.8 kHz         00.044 kHz           1Hz         89.500063         N           _26B         58.8 dBn/V         -48.3 dBm           M_POS         47.4 kHz         10.044 kHz           main functions to         0000 gress of meas         0000 gress of meas           cy setup and so         10.2 kHz         10.2 kHz           measurements         10.2 kHz         10.2 kHz	o start tool ( urements ru anning (wit D)	G Show Device Settings DXT CLR OFF
Logging 31/12/2012 31/12/202	Max.         200           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:16         1         1           09:29:16         1         1           09:29:16         1         1           09:29:16         1         1           09:29:16         1         1           09:29:16         1         1           09:29:16         1         1           09:29:16         1         1           09:29:16         1         1           09:29:16         1         1	Logged 28 855000 MOD_A 855000 MOD_A 855000 MOD_F 855000 MOD_F 855000 FREQ_ 855000 FREQ_ 855000 RF_Lev 855000 RF_Lev 8	Total Processed         28           M. POS         10.1         18.4         10.4           M. MEAN         18.4         10.1         18.4         10.1           M. MEAN         25.5         10.1         18.4         10.1           M. POS         44.5         kHz         10.1	o start tool ( urements re canning (wit C)	G Show Device Settings TXT CLR OFF
Logging 31/12/2012 31/12/20	Max.         200           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:16         1         1           09:29:16         1         1           09:29:16         1         1           09:29:16         1         1           09:29:16         1         1           09:29:16         1         1           09:29:16         1         1           09:29:16         1         1           09:29:16         1         1           09:29:16         1         1           09:29:16         1         1	Logged 28 B 55000 MOD_A B 55000 MOD_A B 55000 MOD_F B 55000 MOD_F B 55000 FREQ B 55000 FREQ B 55000 RF_Lev B 55000 RF_	Total Processed         28           M. POS         10.1         18.4         10.4           M. MEAN         10.1         18.4         10.4           M. MEG         25.5         10.1         10.4         10.4           M. POS         44.5         kHz         10.1         10.4         10.4           M. POS         44.5         kHz         10.1         10.4	o start tool ( urements re canning (wit C) enuation.	G Show Device Settings TXT CLR OFF
Logging 31/12/2012 31/12/20	Max.         200           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:26         1         1           09:29:24         1         1           09:29:24         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1	Logged 28 B 55000 MOD_A B 55000 MOD_A B 55000 MOD_F B 55000 MOD_F B 55000 FFREQ B 55000 FFREQ B 55000 RF_Lev B 55000 R	Total Processed     28       M_POS     10.1     %       M_NEG     25.5     %       M_POS     44.5     kHz       M_NEG     46.8     kHz       M_NOS     44.1     kHz       M_NEG     46.8     kHz       M_NOS     44.1     kHz       M_NOS     44.3     kHz       M_NOS     44.4     kHz       M_NOS     44.3     GBm       M_NOS     47.4     kHz       M_NOS     6.6     meas       Cysecup and soci     secup (see I       measurements     modulation, attee       modulation, attee     measuremeas	a b start tool ( urements ru canning (wit D) enuation. urement like	G G G G G G G G G G G G G G G G G G G
Logging 31/12/2012 31/12/20	Max.         200           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:26         1         1           09:29:24         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1	Logged 28 B 55000 MOD_A B 55000 MOD_F B 55000 MOD_F B 55000 FREQ_ B 55000 FREQ_ B 55000 RF_Leve B 550	Total Processed     28       M_POS     10.1     %       M_NEG     25.5     %       M_POS     44.5     kHz       M_NEG     46.8     kHz       M_NOS     44.1     kHz       M_NEG     46.8     kHz       M_NOS     44.1     kHz       M_NOS     44.3     kHz       M_NOS     44.3     kHz       M_NOS     47.4     kHz       M_NOS     6.6     meas       Cysetup and soc     see     measurements       modulation, attee     modulation, attee       ng other measu     measuremeasu	a b start tool ( urements ru canning (wit C) enuation. urement like	G Show Device Settings TXT CLR OFF
Logging 31/12/2012 31/12/20	Max.         200           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:27         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:26         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1           09:29:24         1         1      09:29:24         1         1	Logged 28 B 55000 MOD_A B 55000 MOD_A B 55000 MOD_F B 55000 MOD_F B 55000 FREQ B 55000 FFEQ B	Total Processed     28       ML_POS     10.1     18.4     10.1       M_MEAN     25.5     10.1     18.4     10.1       M_POS     14.5     18.4     10.1     10.4     10.1       M_POS     44.5     14.1     18.4     10.1       M_POS     44.5     14.1     14.1     14.1       M_NEG     46.8     14.1     14.1       M_NOS     44.3     46.8     14.1       M_NOS     44.3     46.8     14.1       M_NOS     44.3     46.8     14.1       M_NOS     44.3     14.1     14.1       M_NOS     44.1 <td>n b start tool ( urements ru canning (wit D) enuation. urement like I read value</td> <td>G G G G G G G G G G G G G G G G G G G</td>	n b start tool ( urements ru canning (wit D) enuation. urement like I read value	G G G G G G G G G G G G G G G G G G G

### 5.2. General menu section

File Settings Inf	o
18 Message Ready	
REF	Overview of all special functions with possibility to sent them to device
PRINT	Print the screen to a printer
GPIB	Start / Stop the communication to the device. Only when is button is activated it is possible to use this software with your measuring equipment. When pushed the device is cleared and set to its initial state.
SET	Go to Setup screen of automatic measurements and select the frequency range to be used
STOP	Stops directly any ongoing measurement and internal processes. Any measurements done are stored and can still be used for Excel of download.
	Hold function (For usage in automatic or single measurement run) : temporarily interrupts the measurement run(button becomes green). Click it again to proceed measuring (button becomes red again)
>> >>	Starts the automatic measurement run . Button becomes green (>>>) when the automatic measurement run is active. When the measurement is completed the button >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>

### 5.3. Progress information bar

Auto Run 2 / 21 MOD Auto Run 2 / 21	FM_MEAN 2/5 Here the progress of the automatic run is a full measurement cycle for a speci This means the several measurements following measurements can be done to	is can be displayed. An automatic run fic frequency range (or time range). s can be executed in one run. E.g. the for a specific frequency (range)
	RX Measurement 0.010 (s)	XXL TXT ALL CLR 😈 🔿
	Input Level	Frequency
	RF Input - Power -76.2 dBm	✓ Freq. 10 Hz 145.62490 Mhz
	▼ RF Input - Level (dB) 30.9 dBµV	✓ Offset 10 Hz
	▼ RF Input - Level 35.48 µV	
	Modulation Level	
	✓ FM : Mod - 0.98 Khz	AM : Mod - 1.5 %
	FM : Mod (PK+ PK) / 2 0.84 Khz	AM : Mod (PK + PK) / 2 15 %
	✓ FM : Mod + 0.68 Khz	AM : Mod + 1.0 %
Type MOD_FM_MEAN Repeat 2 / 5	Note : to start an automatic run for a ra least one measurement should be sele Information about current measuremer Mod(PK+PK)/2) It is possible to repeat a full measurem number to adjust the value (default = 1 especially useful when there is a need same setup	ange of frequencies, push At ected. At (in this case FM modulation hent cycle. Just click on the blue (, max 999 repeat cycles). This is for multiple measurements within the

#### **RX - Frequency** SQU. Scan Threshold Scan From - To Frequency 40 dB(μV) 88.5000 Mhz 87.5000 108.0000 Exit << >> + + Hold 5 1.0000 --🔘 Time 2.000 (s) Preset Threshold Preset RF Freq. Step Preset - All 10.0 DB 0 0.0125 Mhz M1 M2 M3 M+ M4 M5 M6 M-0 0.0 DB 0.1000 Mhz $\bigcirc$ M10 M7 M8 M9 -10.0 DB ۲ 1.0000 Mhz Scan Threshold 40 dB(μV) for scanning purposes (can Setup of threshold value 40 dB(μV) + be adjusted by clicking on blue value). Use the and buttons + 5 5 to add or subtracts a predefined step value (which can be clicked upon to change its value) Preset Threshold 10.0 DB Preset values for the threshold can be adjusted also (click on blue value) 0.0 DB $\cap$ -10.0 DB Frequency 88.5000 Mhz Setup of frequency value (can be adjusted by 88.5000 Mhz + clicking on blue value). Use the and buttons to add or + 1.0000 subtracts a predefined step value (which can be clicked 1.0000 upon to change its value) Preset RF Freq. Step 0 0.0125 Mhz Preset values for the frequency step can be adjusted also (click on blue 0 0.1000 Mhz value) ۲ 1.0000 Mhz Scan From - To To start the scanning, first make a choice between three scanning modes : 87.5000 108.0000 Exit << >> O Hold 1. EXIT = When the threshold is exceeded the scanning Time 2.000 (s) stops immediately Enjoy Remote Measurements www.30Dbm.com © 2013 Jos Delissen

#### 5.4. Cockpit for frequency setup



DY Monsuramont	
	Frequency
RF Input - Power	-76.2 dBm eq. 10 Hz 2 145 62490 Mbz
RF Input - Level (dB)	30.9 dB
RF Input - Level	35.48 μ
Madulatian Laval	
FM : Mod (PK+ PK) / 2	0.50 KHZ Mod PK + PK) / 2 1.5 %
FM : Mod +	0.68 Kbz AM: Mod + 10 %
0.010 (s)	Click on blue text to change the device measuring time (0.005 100 s)
XL	If a measurement has been made, it's values can be sent directly to Excel
	(IVIICROSOFT EXCEL IS needed for this). This button triggers the manual download into Excel of the last measurement (run) done.
TXT	If a measurement has been made, it's values can be sent directly to a .txt file.
	I his button triggers the download to a file of your choice. It is only possible to download the last measurement (run) done
ALL	Select all possible measurements (click it again and deactivate all
	measurements)
CIR	Clear all measured values
	Trigger a full measurement run. When ready it, restarts automatically to
	nerform the same measurement run, taking any new device setup into
	account
	Can be stopped be clicking again on Construction, or push on the Construction.
	Note : New device setting are only activated when a measurement cycle has
	been completed.
	Trigger a single full measurement run. After is ready it stops automatically
	and displays all values read in the run.
100 Hz 💠	For the trequency and offset several resolution can be selected (only for
1 Hz 👶	ESVP)

### 5.5. Measurement selection area

5.6.	Adjust dev	vice settings	, including	attenuation
------	------------	---------------	-------------	-------------

Settings	M-FIL AFC	CAL-L CAL-S	Attenuation	AMPL
Demod	F - Bandwidth	Function	Mode	
O F3 : FM-Narrow	🔘 1 Mhz	O Two Port	Manual	
• F3 : FM-Wide	120 Khz	O Rem. Freq.		
🔿 A3J : USB	🔘 12 Khz	⊙ Gen_Off		
🔿 A3J : LSB	◯ 7.5 Khz			
O A3 : AM-Nar.	Mode	Operating Range		
🔘 A3 : AM-Wide	<ul> <li>Average</li> </ul>	○ 20 dB	A- Low Noise	
🔘 A1 : 1Khz	O Peak	○ 40 dB	🔘 A- Low Dist.	
O A0 : Zero Beat	○ CISPK			
Off	O MIL			

Select the appropriate device setting. Only when the measurements have been finished the new device settings will be sent to the device to prevent disturbing the ongoing measurements. In case of ongoing measurements this moment it is when a cycle has been completed and it restarts.



### 5.7. Other measurements

Attenna Coding  Antenna Coding  Read Socket 47 - Disable  Read Socket 47 - uV /m  Read Socket 47 - uA /m  Use HUF-Z1 / HL023A1  Use Manually Entered k-Fact  Normal  Input Level  RF Input - Power  RF Input - Level (dB)  RF Input - Level	tors -46.6 dBm 60.1 dBμV 1035 μV	<text><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></text>
Field Strength         Input Level         ✓ RF Input - Power         ✓ RF Input - Level (dB)         ✓ RF Input - Level	64.6 dBm 64.6 dBμV/m 1718 μV/m	Input Level         ✓ RF Input - Power       -27.2         ✓ RF Input - Level (dB)       28.1         ✓ RF Input - Level       26.60         µA/m

### 5.8. Logging Section

Logging	Max.	20	0	Logged 28	Total Proc	essed	2	28	Show Device Settings TXT CLR OFF
31/12/2012	09:29:27	1	1	89.5000	MOD_AM_POS	10.1	%		^
31/12/2012	09:29:27	1	1	89.5000	MOD_AM_MEAN		18.4	%	
31/12/2012	09:29:27	1	1	89.5000	MOD_AM_NEG	25.5	%		
31/12/2012	09:29:27	1	1	89.5000	MOD_FM_POS	44.5	kHz		
31/12/2012	09:29:26	1	1	89.5000	MOD_FM_MEAN	44.1	kHz		
31/12/2012	09:29:26	1	1	89.5000	MOD_FM_NEG	46.8	kHz		
31/12/2012	09:29:26	1	1	89.5000	FREQ_OFF_1Hz	-0.044	kHz		
31/12/2012	09:29:25	1	1	89.5000	FREQ_1Hz	89.50006	3	MHz	
31/12/2012	09:29:24	1	1	89.5000	RF Lev VA	902.0	μV		
31/12/2012	09:29:24	1	1	89.5000	RF_Lev_dB	58.8	dBµV		
31/12/2012	09:29:24	1	1	89.5000	RF Pow	-48.3	dBm		
31/12/2012	09:29:16	1	1	89.5000	MOD_FM_POS	47.4	kHz		×

The logging function enables logging of all measurements. This could be measurements part of an automated measurement run, single or continuous measurement or even during scanning (indicated with "Scan")

Please note that logging may (dramatically) impact the scanning performance!

Show Device Settings	Will show the device settings in the log. E.g.						
	50.9         kHz         DEM_F3_W         IF_BW_120Khz         Lev_Average         ModFilter_On         AFC_Off         Pre_Amp_Off         0.010           2.9         kHz         DEM_F3_W         IF_BW_120Khz         Lev_Average         ModFilter_On         AFC_Off         Pre_Amp_Off         0.010           89.9031         MHz         DEM_F3_W         IF_BW_120Khz         Lev_Average         ModFilter_On         AFC_Off         Pre_Amp_Off         0.010						
TXT	This button triggers the download of the whole logging to a file of your choice (.txt format)						
CLR	Clears the whole logging.						
OFF	Activates or deactivates the logging						
Max. 200	Set the maximum number of logged measurements						

#### 5.9. Setup Automatic Measurements

The frequency range for an automatic run is determined by the data entered in the scanning section and device setup. The settings can be stored in a memory function.

- Frequency	Scan From - To			
87.5000 Mhz	87.5000 108.0000			
+	🔿 Exit < >>			
0.1000 -	● Hold ● Time 2.000 (s)			

To (re)view all memory setting, or to adjust the measurement from a frequency based approach to

a time based approach, select the button. Any range selected here is copied directly into the scanning section to facilitate proper measurement setup.

Select "Time Steps"

	Duration	Step Size	
<ul> <li>Time Steps (s)</li> </ul>	3600		60

to constantly measure a fixed frequency over a fixed time period, with fixed time steps (e.g. 1 measurement run each minute over a period of 1 hour)

setup Automatic Mea	surement										X	1	
Automatic Run Options													
Max Steps 555													
harmon and the	From	To	Step Size		. J	Demodulation	BandWidth	Level Type	Threah	Oper Range	Attenuation		
O RF Band -1 (Mhz)	21.0000	21.4500	0.0010	Сору	UnDo	DEM_F3_N	IF_BW_1204	Lev_Average	4	Og_Range_60dB	RF+Q_(F+Q		
O R/F Band -2 (Mhz)	24.8900	24.9900	0.0010	Серу	UhDo	DEM_F1_N	IF_BW_12K92	Lev_Average	-5	Co_Range_80d8	RF+0, IF+0		
O RF Band -3 (Mhu)	28 0000	29.7000	0.0010	Сору	UnDo	DEM_F1_N	1F, BW, 12012	Lev_Average	3	Co_Range_6068	RF=0, IF=0		
O RF Band -4 (Mhz)	87.5000	108.0000	1.0000	Сору	UnDo	DEM_F3_W	IF_BW_1200±	Lev_Average	40	Co_Range_60dB	R(F=0.)(F=0		
O RF Band -5 (Mhz)	85.5000	87,5000	0.0100	Copy	UhDo	DEM_F3_N	IF_RW_120+2	Lev_Average	-5	Op_Range_60dB	RF+0, IF+0		
RF Band -6 (Mhz)	87,5000	108.0000	0 1000	Copy	UhDo	DEM_F3_W	IF_BW_1200-z	Lev, Average	43	Op_Range_60d8	RF-0.1F-0		
O RF Band -7 (Mhz)	132 0000	135 0000	0.1000	Сору	UnDo	DEM_A3_N	IF_BW_12040a	Lev_Average	3	Op_Range_90dB	RF+0.1F+0		
O RIF Band -8 (Mhz)	144.0000	146.0000	0.0125	Сору	UnDo	DEM_F1_N	IF_EW_12KH2	Lev_Average	+10	Op_Range_60dB	RF+0,1F=0		
O RF Band -9 (Mhz)	430.0000	440.0000	0.0125	Copy	UnDo	DEM_F3_N	IF_EW_12012	Lev_Average	-10	Co_Range_60d8	RF=0,IF=0		
O RF Band -10 (Mhz)	1240.0000	1300 0000	0.100	Copy	UnDo	DEM_F2_N	IF_BW_1260#	Lev_Average	4	Op_Range_60dB	RF=0.(F=0		
O Time Steps (s)	Duration 3600	Step Size										Frequency	Scan From - To
General Options													
Only read valid mean	surement Values (	ro C. H. U. o	(%) ○ ○	Do not sh Show levi Show levi	owlevel i el at man el at man	t manual freq ual freq, chang ual freq, chang	change e (dBm) e (dBµV)					87.5000 Mhz	87.5000 108.0000 Exit << >> Hold
											OK	0.1000	Time 2.000 (s)

E.g. In example below the range of RF Band 7 is copied into the scanning section,

Max Steps 999	Can be used to restrict the maximum number of runs (e.g. when step size is taken too small)
From         To         Step Size           21.0000         21.4500         0.0010	Any blue value can be adjusted by clicking on it.
RF Band -6 (Mhz)	A Frequency range can be selected.
Сору	When using the copy function the settings of the selected frequency band are copied into the band of the copy button. E.g. when band 6
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	is selected, you can copy the settings from band 6 into 7 by clicking on copy button in band 7. This button becomes green to indicate that it has been used.					
	RF Band -6 (Mhz)     Mhz	87.5000	108.0000	0.1000 Copy UnDo		
	O RF Band -7 (Mhz)	87.5000	108.0000	0.1000 Copy UnDo		
UnDo	Image: The undo function region         Image: The undo function         Image: The undo fun	esets the last 87.5000 132.0000	t copy (which 108.0000 135.0000	was green) 0.1000 Copy UnDo 0.1000 Copy UnDo		
Only read valid measurement	When measurement measurement autom	s are not val natically.	lid they can b	e excluded from the		
Do not show level at manual freq. change	When manually adjusting the frequency (e.g. by up and down					
<ul> <li>Show level at manual freq. change (dBm)</li> <li>Show level at manual freq. change (dBµV)</li> </ul>	automatically display	ine device c /s the measu	ured level in c	BBm or dBuV (default).		

### 5.10. Entering new values

All the **<u>blue</u>** values can be edited. For example it is possible to change the step size and to save it into your own configuration file

Frequency 21.0000 Mhz + 0.0010 - Freset RF Freq-Step	<u>Click</u> with your cursor on the (blue) text
0.0060 Mhz	
0 0.1000 Mhz	
Freq. Step Size 1 (Mhz)     Cancel       Old     0.0060     Cancel       New     0.009     OK	Enter the new value. Click on Ok. A check on maximum and minimum values is performed. If all ok the value will be updated in the screen
21.0000 Mhz + 0.0010 •	
0.0090 Mhz 0.0125 Mhz 0.0100 Mhz	
ESH3 : Information	On error a message like here could occur.
OK	

# 6. GPIB Setup

Channel SetUp	
Board Prim. GPIB Address Sec. GPIB Address Time Out EOT EOS	Normal       At Scan         0       SRQ Max Retries       5         18       SRQ Wait Time (ms)       100         0       Message Delay (ms)       5         12       RX Max Char Count       20         1       13       Display all messages
Board0Prim. GPIB Address18Sec. GPIB Address0Time Out12EOT1EOS13	Adjust the cannel setting of your GPIB device. The address is according to device default specifications (primary address ESVP = 18, ESH3 = 17). See your NI GPIB card for further information
SRQ Max Retries 5 1	Enter the number of Service Request (SRQ) line checks to be made before proceeding with next measurement.
SRQ Wait Time (ms) 100 100	Enter here the time out (in sec.) between two SRQ calls. When chosen too small there is a risk of missing the final SRQ trigger. Whe taken too long, it dramatically can influence performance (especially during scanning)
Message Delay (ms) 5	Any activity on the GPIB channel will be displayed in the message ba This can go very fast. For testing purposes it is possible to delay the messages (say to 500 ms $-$ 1000 ms) so that they can be easily rea However, this will of course delay the measurements at hand.
RX Max Char Count 20	Max. Limit of received characters in one string (depending on device To be used as a safety check (do not adjust)
Display all messages	If selected, more information will be given in message bar (e.g.

Channel Actions OPEN CLOSE	CLEAR RESET
Manual GPIP Managan	
	TX TX + RX
	CANCEL OK
OPEN	Open GPIB communication with device. Device is reset to initial state, will reset the device.
CLOSE	Close GPIB communication with device
CLEAR	Clear device, channel remains open
RESET	Not really a GPIB action, but resets all measurements being executed. Needed to reset software when it is in unexpected or uncontrollable state.
TX TX + RX	Used to manually sent a command to the device (TX no need to wait for answer, or TX when a measurements needs to be made). E.g. TX+RX is used here to measure the level.
	Manual CRIP Managan
	SF00,01,SF11,X1 TX TX + RX
	The received value is displayed in the relevant section of the main screen.

### 7. Downloading Measurement & Logging Data

#### 7.1. Download (last) measurement to Excel

Setup Excel / Data Download	×
Excel options - Automatic Run Automatically create Excel File	List Format
Excel options - Single Run Automatically create Excel File	✓ List Format
Excel options - Manual Download	List Format
Excel Chart Type (for non list type )	
<ul> <li>Scatter Smooth</li> </ul>	
🔿 Area	
Column separator for TXT download	
⊙ "." () ":" () "Tab" () Ott	ner ->
Data directory	
C:\Data\ESVP\Data	
Change	
	OK Cancel

Excel can be started automatically in two cases

A) After a single run (initiated by GO or CONT, when ending it) . In case of a continuous run (currently) only the last full cycle can be downloaded(not recommended)

B) After a fully automatic measurement (recommended, unless you do not have Excel)

There are two formats available 1. List Format (one

- measurement per line)
- Table (set of measurements per run)

In case of a table, automatically a chart will be created (two options available)

Excel can also be started manually by clicking on (

File	Settings Info						
	Load New Configuration						
	Save Configuration As						
	Load Default Configuration						
	Save Configuration as default						
	Save (Last) Measurement run to Excel						
	Save (Last) Measurement run to .txt file						
	Save Logging to .txt file						
	Restore to factory defaults						

Only the last measurement run is downloaded into Excel. This can be a single measurement or a fully automated measurement run. Only the last measurement of a continuous measurement Can be used.

Each automatic or manual generated Excel file is saved with a fixed file name. A warning is issued when the file name already exists. Then it is possible to change the name.

#### List Format :

1	ESVP Setup	Value				I			
2	Threshold(dBuV)	40							
3	Bandwidth	IF_BW_120Khz							
4	Demodulation Mode	DEM_F3_W							
5	Attenuation Mode	Att_Auto_LN							
6	Oper. Range	Op_Range_20dB							
7	Level	Lev_Average							
8	Measuring Time	0.01							
9	DATE <	TIME 👻	RUNID 👻	RPTID 🔻	RX_FREQ (Mhz)	r	Measurement 👻	Value 👻	UoM 👻
10	11/1/2009	21-17-54	4	4	07	e l	DE Dow	100.2	dBm
		21.17.34	I	I	07.	P.	RI_FOW	-109.5	ubiii
11	11/1/2009	21:17:55	1	1	87.	р 5	RF_Lev_dB	-109.3	dBµV
11 12	11/1/2009 11/1/2009	21:17:55 21:17:55	1	1	87. 87. 87.	о 5 6	RF_Lev_dB RF_Pow	-109.3 -2.3 -108.8	dBµV dBm
11 12 13	11/1/2009 11/1/2009 11/1/2009	21:17:55 21:17:55 21:17:55 21:17:55	1 2 2	1 1 1	87. 87. 87. 87.	5 6 6	RF_Lev_dB RF_Pow RF_Lev_dB	-109.3 -2.3 -108.8 -1.4	dBµV dBm dBµV
11 12 13 14	11/1/2009 11/1/2009 11/1/2009 11/1/2009	21:17:55 21:17:55 21:17:55 21:17:55 21:17:55	1 2 2 3	1 1 1 1	87 87 87 87 87	5 6 6 7	RF_Lev_dB RF_Pow RF_Lev_dB RF_Lev_dB RF_Pow	-109.3 -2.3 -108.8 -1.4 -110.2	dBm dBµV dBm dBµV dBm
11 12 13 14 15	11/1/2009 11/1/2009 11/1/2009 11/1/2009 11/1/2009 11/1/2009	21:17:55 21:17:55 21:17:55 21:17:55 21:17:55 21:17:55	1 2 2 3 3	1 1 1 1 1	87 87 87 87 87 87 87	5 6 7 7	RF_Lev_dB RF_Lev_dB RF_Lev_dB RF_Lev_dB RF_Pow RF_Lev_dB	-105.3 -2.3 -108.8 -1.4 -110.2 -3.3	dBm dBµV dBm dBµV dBm dBµV
11 12 13 14 15 16	11/1/2009 11/1/2009 11/1/2009 11/1/2009 11/1/2009 11/1/2009 11/1/2009	21:17:54 21:17:55 21:17:55 21:17:55 21:17:55 21:17:55 21:17:55 21:17:55	1 2 2 3 3 4	1 1 1 1 1 1 1 1	87 87 87 87 87 87 87 87	5 6 7 7 8	RF_Lev_dB RF_Pow RF_Lev_dB RF_Pow RF_Lev_dB RF_Pow RF_Lev_dB	-103.3 -2.3 -108.8 -1.4 -110.2 -3.3 -109.3	dBm dBµV dBm dBµV dBm dBµV dBm
11 12 13 14 15 16 17	11/1/2009 11/1/2009 11/1/2009 11/1/2009 11/1/2009 11/1/2009 11/1/2009	21:17:55 21:17:55 21:17:55 21:17:55 21:17:55 21:17:55 21:17:55 21:17:55 21:17:55	1 2 2 3 3 4 4	1 1 1 1 1 1 1 1 1	87 87 87 87 87 87 87 87 87	5 6 6 7 7 8 8	RF_Lev_dB RF_Lev_dB RF_Lev_dB RF_Pow RF_Lev_dB RF_Pow RF_Lev_dB	-103.3 -2.3 -108.8 -1.4 -110.2 -3.3 -109.3 -2.2	dBm dBµV dBm dBµV dBm dBµV dBm dBµV

#### Table Format :

	Α	В	С	D	E	F	G
1	ESVP Setup	Value					
2	Threshold(dBuV)	40					
3	Bandwidth	IF_BW_120Khz					
4	Demodulation Mode	DEM_F3_W					
5	Attenuation Mode	Att_Auto_LN					
6	Oper. Range	Op_Range_20dB					
7	Level	Lev_Average					
8	Measuring Time	0.01					
9	DATE 🗸	TIME 👻	RUNID 👻	RPTID 👻	RX_FREQ (Mhz)	RF_Pow(dBm) 👻	RF_Lev_dB(dBµV) 👻
10	11/1/2009	21:17:54	1	1	87.	-109.3	-2.3
11	11/1/2009	21:17:55	2	1	87.	-108.8	-1.4
12	11/1/2009	21:17:55	3	1	87.	-110.2	-3.3
13	11/1/2009	21:17:55	4	1	87.	-109.3	-2.2
14	11/1/2009	21:17:55	5	1	87.	-109.2	-2.2
15	11/1/2009	21:17:56	6	1	8	-106.2	1.7
16	11/1/2009	21:17:56	7	1	88.	-109.9	-2.8
17	11/1/2009	21:17:56	8	1	88.	-106.4	0.9
18	11/1/2009	21:17:56	9	1	88.	-106.6	-1.8
19	11/1/2009	21:17:57	10	1	88.	-100.1	6.6
20	44/4/2000	04.47.57	**		00	407.4	

Only the Table format can be used for automatic graphics creation.

E.g.



### 7.2. Download (last) measurement to .txt file



Or the measurement section (Section D)

The file will be column separated, with column headers. The column separator can be manually selected from the Excel setup screen (in this case "Tab")

ESVP Measurem	ents 20091	101 - Kla						- O X
Destand Dewerken C	omask, tieek	d Heb						
ESVP Setup Threshold(dBuV) Bandwidth Demodulation Mod Attenuation Mod	Value 40 IF_BW_1 de le	20Khz DEM_F3 Att_Au	_W to_LN					-
Level Lev_Ave	rage	e_2000						
Measuring Time	0.010							
DATE TIME	RUNID	RPTID	RX_FREQ	(Mhz)	Measurement Value	UoM		
11/1/2009	21:17:5	4	1	1	87.5000 RF_POW -109.3	dBm		
11/1/2009	21:17:5	S	1	1	87.5000 RF_Lev_dB	-2.3	dBuV	
11/1/2009	21:17:5	5	2	1	87.6000 RF_Pow -108.8	dBm		
11/1/2009	21:17:5	S	2	1	87.6000 RF_Lev_dB	-1.4	dBµV	
11/1/2009	21:17:5	5	3	1	87.7000 RF_Pow -110.2	dBm		
11/1/2009	21:17:5	5	3	1	87.7000 RF_Lev_dB	-3.3	dBuv	
11/1/2009	21:17:5	5	4	1	87.8000 RF_Pow -109.3	dBm		
11/1/2009	21:17:5	5	4	1	87.8000 RF_Lev_dB	-2.2	dBuv	
11/1/2009	21:17:5	5	5	1	87.9000 RF_Pow -109.2	dBm		
11/1/2009	21:17:5	5	5	1	87.9000 RF_Lev_dB	-2.2	dBuv	
11/1/2009	21:17:5	6	6	1	88.0000 RF_Pow -106.2	dBm	1000	
11/1/2009	21:17:5	6	6	1	88,0000 RF_Lev_dB	1.7	dBuV	
11/1/2009	21:17:5	6	7	1	88,1000 RF_Pow -109,9	dBm	Dere av	
		-						

It is possible to adjust the column separator, with your own desired character. This is done in the Excel setup menu (see previous Excel section)

⊙ "."	○ ":" ○ "Tab" (	Other ->	1
🗊 ESVP Meas	urements 20091101 - I	Kladblok	
Bestand Bewer	ken Opmaak Beeld Help		
ESVP SetUp, Threshold(C Bandwidth, 1 Demodulation Oper. Rangg Level, Lev_/ Measuring 1 DATE, TIME, F 11/1/2009, 11/1/2009, 11/1/2009, 11/1/2009, 11/1/2009, 11/1/2009, 11/1/2009, 11/1/2009,	Value jsuv),40 FF_BW_120Khz jn Mode,DEM_F3_W 1 Mode,AtT_Auto_LN 2,0p_Range_20dB Vverage Time,0.010 RUNID,RPTID,RX_FRE: 11:17:55,1,1,87.50 21:17:55,2,1,87.60 21:17:55,2,1,87.60 21:17:55,3,1,87.70 21:17:55,3,1,87.70 21:17:55,5,1,87.90 21:17:55,5,5,5,5,5,5,5,5,5,5,5,5,5,5,5,5,5,5	Q (Mhz),Me 00,RF_Pow, 00,RF_Pow, 00,RF_Pow, 00,RF_Pow, 00,RF_Pow, 00,RF_Pow, 00,RF_Pow, 00,RF_Pow, 00,RF_Pow,	asurement, Value, UoM -109.3, dBm dB,-2.3, dBμV -108.8, dBm dB,-1.4, dBμV -110.2, dBm dB,-3.3, dBμV -109.3, dBm dB,-2.2, dBμV dB,-2.2, dBμV

### 7.3. Download of logging section



Or the logging section (Section G)

Will save the logging to a user selectable .txt file. The column separator is <u>not used</u> here. The logging will be saved in the same format as displayed in the screen.

Jugging	Show Device Settings							
6/11/2009 6/11/2009 6/11/2009 6/11/2009 6/11/2009 6/11/2009 6/11/2009	08:15:52 08:15:52 08:15:52 08:15:52 08:15:52 08:15:52 08:15:52 08:15:51 08:15:51 08:15:51		89.9000 89.9000 89.9000 89.9000 89.9000 89.9000 89.9000	MOD_FM_MEAN FREQ_OFF_100Hz FREQ_100Hz RF_Lev_dB RF_Pow MOD_FM_MEAN FDEQ_OFF_100Hz	50.9 2.9 89.9031 28.3 -78.6 52.8 2.8	kHz kHz MHz dBµV dBm kHz kHz	DEM_F3_ DEM_F3_ DEM_F3_ DEM_F3_ DEM_F3_ DEM_F3_ DEM_F3_ DEM_F3_	W IF_BW W IF_BW W IF_BW W IF_BW W IF_BW W IF_BW W IF_BW
Vill be sh	own in the .txt fil	e as						
ESVP Log 20	0091116 085455 - Kladblo	k						
<u>B</u> estand Be <u>w</u> erke	en <u>O</u> pmaak Beel <u>d H</u> elp							
6/11/2009 6/11/2009 6/11/2009 6/11/2009 6/11/2009 6/11/2009 6/11/2009 6/11/2009 6/11/2009 6/11/2009 6/11/2009 6/11/2009 6/11/2009 6/11/2009 6/11/2009	08:15:52 08:15:52 08:15:52 08:15:52 08:15:51 08:15:51 08:15:51 08:15:50 08:14:11 08:14:11 08:14:11 08:14:10 08:02:11	11111100001111	111111100001111	89,9000 89,9000 89,9000 89,9000 89,9000 89,9000 89,9000 89,9000 89,9000 89,9000 89,9000 89,9000 89,9000 89,5000 89,5000 89,5000 89,5000 89,5000	NOD_FM_MEAN           FREQ_OFF_100Hz           FREQ_OFF_100Hz           RF_Lev_dB           RF_POW           MOD_FM_MEAN           FREQ_OFF_100Hz           FRE_Q_OFF_100Hz           RF_POW           Scan           Scan	50.9 2.9 89.9031 -78.6 52.8 2.8 89.9019 28.3 -78.7 28.5 28.4 38.7 52.8 4.2 89.4844	kHz kHz dBµV dBm kHz kHz dBµV dBµV dBµV dBµV dBµV kHz kHz kHz	DEM_F3_W DEM_F3_W DEM_F3_W DEM_F3_W DEM_F3_W DEM_F3_W DEM_F3_W DEM_F3_W DEM_F3_W DEM_F3_W

# 8. Saving and using configuration files

File         Settings         Info           Load New Configuration         Save Configuration As           Load Default Configuration         Save Configuration as default           Save Configuration as default         Save (Last) Measurement run to Excel           Save (Last) Measurement run to .txt file         Save Logging to .txt file           Restore to factory defaults         Restore to factory defaults	All the configuration settings can be saved and opened again. Saving will be done in a user selectable directory.
Load New Configuration	Opens a configuration file, previously saved.
Save Configuration As	Saves the configuration file, but file will not be used as default. Used to save and manage several configuration files
Load Default Configuration	Opens the default configuration file ( = file used at startup)
Save Configuration as default	Saves the configuration file as default file. The file specified here will also used during startup of the tool.
Restore to factory defaults	Restores to factory defaults.

## 9. Appendix – Quick Start Guide

1. First of all make sure the GPIB connection to device is activated. Push on

GPIB. If everything is ok it becomes green. check the connection to the device, its GPIB address setting or the mandatory NI GPIB card drivers.

### 9.1. To make a single (set of) measurements

1. Select one or more measurements

RX Measurement 0.010 (s)	XXL TXT ALL CLR 🗾 🖘
Input Level Imput - Power dBm Imput - Level (dB) dBµV Imput - Level (dB) µV Imput - Level µV	Frequency ✓ Freq. 10 Hz ♦ Mhz ✓ Offset 10 Hz ♦ Khz

2. Press "On" (will become green)

<b>RX Measurement</b>	t 0.010 (s)	XXL TXT ALL CLR	⇒
Input Level		Frequency	
RF Input - Power	dBm	✓ Freq. 10 Hz <ul><li>I</li></ul>	Mhz
RF Input - Level (dB)	dBμV	✓ Offset 10 Hz 📚	Khz
RF Input - Level	μV		

3. All measurements will take place. As soon as a measurement is completed its value will be shown.

<b>RX Measurement</b>	0.010 (s)	XXL TXT ALL CLR CONT	GO
Input Level		Frequency	
RF Input - Power	-53.2 dBm	🗌 Freq. 100 Hz 📚	Mhz
RF Input - Level (dB)	53.9 dBµV	Offset 100 Hz 🗢	Khz
RF Input - Level	μV		

Note:

To continuously repeat the same measurements click on . Any device changes (frequency, demodulation mode etc) will be effective as soon as a cycle of all selected measurements has finished. This is done to prevent disturbance of any ongoing measurements.

<b>RX Measurement</b>	0.010 (s)	XXL TXT ALL CLR 😈 🔿
Input Level		Frequency
RF Input - Power	-48.9 dBm	Freq. 10 Hz 🗢 Mhz
RF Input - Level (dB)	58.0 dBµV	Offset 10 Hz
RF Input - Level	μν	

Please note that the last measurement done will be marked with a green back color.

### 9.2. To make automated run of measurements

1.	Select the requested	d measurement.		
	<b>RX Measurement</b>	0.010 (s)	XXL TXT ALL CLR 😈 🔿	
	Input Level		Frequency	
ſ	RF Input - Power	dBm	Freq. 10 Hz 🗢 Mhz	
	RF Input - Level (dB)	dBμV	✓ Offset 10 Hz 📚 Khz	
	RF Input - Level	μV		

2. Make the required selection of frequency range (or Time Range). This can be done manually or using a predefined frequency range (or even a time range). For predefined ranges select the **SET** Button

File Settings Info		
ID         Message           18         Ready	REF PRINT GPIB	SET ST P II > Auto Run Type Repeat 0 / 1

3. Make the required selection of frequency range (or Time Range). E.g.

	From	To	Step Size			Demodulation	BandWidth	Level Type	Thresh.	Oper, Range	Attenuation
RF Band -1 (Mhz)	21.0000	21.4500	0.0010	Сору	UnDo	DEM_F3_N	IF_BW_12Khz	Lev_Average	40	Op_Range_60dB	Att_Auto_LN
RF Band -2 (Mhz)	24.8900	24.9900	0.0010	Сору	UnDo	DEM_F3_N	IF_BW_12Khz	Lev_Average	40	Op_Range_60dB	Att_Auto_LN
RF Band -3 (Mhz)	28.0000	29.7000	0.0010	Сору	UnDo	DEM_F3_N	IF_BW_12Khz	Lev_Average	40	Op_Range_60dB	Att_Auto_LN
RF Band -4 (Mhz)	50.0000	52.0000	0.0125	Сору	UnDo	DEM_F3_N	IF_BW_12Khz	Lev_Average	40	Op_Range_60dB	Att_Auto_LN
RF Band -5 (Mhz)	85.5000	87.5000	0.0100	Сору	UnDo	DEM_F3_N	IF_BW_12Khz	Lev_Average	40	Op_Range_60dB	Att_Auto_LN
RF Band (Mhz)	87.5000	108.0000	0.1000	Сору	UnDo	DEM_F3_W	IF_BW_120Khz	Lev_Average	40	Op_Range_60dB	Att_Auto_LN
RF Band (Mhz)	132.0000	135.0000	0.1000	Сору	UnDo	DEM_A3_N	IF_BW_120Khz	Lev_Average	5	Op_Range_60dB	Att_Auto_LN
RF Band -8 (Mhz)	144.0000	146.0000	0.0125	Сору	UnDo	DEM_F3_N	IF_BW_12Khz	Lev_Average	-10	Op_Range_60dB	Att_Auto_LN
RF Band -9 (Mhz)	430.0000	431.0000	0.0125	Сору	UnDo	DEM_F3_N	IF_BW_12Khz	Lev_Average	-5	Op_Range_60dB	Att_Auto_LN
RF Band -10 (Mhz)	1240.0000	1300.0000	0.100	Сору	UnDo	DEM_F3_N	IF_BW_120Khz	Lev_Average	40	Op_Range_60dB	Att_Auto_LN
) Time Steps (s) General Options	Duration 3600 urement Values (	Step Size 5	<b>X)</b> O	Do not sh	iow level ;	at manual freq.	change				
orny road rand mode				~ .	-1 -1	ual frag. obang	e (dBm)				
			0	~ 1	-1 -1	und from obone	e (dBm)				

4. Close the screen and press Button

10 Message 18 Ready	) »	uto Run Type Type	Repeat 0 / 1

5. Now the whole measurements starts (the current measurement run is displayed in the screen as well as the total number of measurement runs planned)

PRINT GPIB SET	STOP II >>	Auto Run 3 / 206 RF_Lev_dB Repeat 1 / 1				
<b>RX Measurement</b>	0.010 (s)					
Input Level		Frequency				
RF Input - Power	-107.1 dBm	Freq. 10 Hz 🗢 Mhz				
RF Input - Level (dB)	4.6 dBµV	Offset 10 Hz 🗢 Khz				
RF Input - Level	μV					
M. LL P. L. L						

The measurement can be temporarily stopped and restarted by the
 and button. With the "STOP" button it will stop immediately.

7. Depending on the Excel settings, Excel will start automatically to display all the measure values in one sheet, including a graphical representation.

ESVP(11/1/2009), Threshold=40dBuV, IF\_BW\_120Khz, DEM\_F3\_W, Att\_Auto\_LN (RF=0, IF=0), Op\_Range\_20dB, Lev\_Average, Measur\_Time=0.010sec.



#### Using the scanning function 9.3.

1 Enter or select a frequency range. Also select a proper frequency step size

RX - Frequency							
Scan Threshold —	Scan From - To						
40 dB(μV)	87.5000 Mbz	87.5000 108.0000					
+	+	💿 Exit 🛛 <					
5 •	0.1000 -	O Hold Time 2.000 (s)					
Preset Threshold	Preset RF Freq. Step	Preset - All					
O 10.0 DB	O 0.0125 Mhz	M1 M2 M3 M+					
O 0.0 DB	O 0.1000 Mhz	M4 M5 M6 M-					
○ -10.0 DB	O 1.0000 Mhz	M7 M8 M9 M10					

2 Select a proper Threshold value (in dBuV). However depending on the antenna coding this might also be dBuV/m or even dBuA/m).

RX - Frequency Sou.							
Scan Threshold	Frequency	Scan From - To					
40 dB(μV)	87.5000 Mhz	87.5000 108.0000					
+	+	💿 Exit 🛛 <					
5.	0.1000 -	<ul> <li>◯ Hold</li> <li>◯ Time 2.000 (s)</li> </ul>					
Preset Threshold	Preset RF Freq. Step	Preset - All					
O 10.0 DB	O 0.0125 Mhz	M1 M2 M3 M+					
O 0.0 DB	O 0.1000 Mhz	M4 M5 M6 M-					
🔿 -10.0 DB	O 1.0000 Mhz	M7 M8 M9 M10					

3

Only for ESVP : The squelch function can be activated (no audio or measurements visible when below Threshold)



### **RX - Frequency**

4. To start the scanning, first make a choice between three scanning modes



EXIT = When the threshold is exceeded the scanning stops

HOLD = When the threshold is exceeded the scanning keep checking the channel and will proceed scanning if the measure value drops below the threshold

TIME = When the threshold is exceeded a maximum time period is will be waited before the scanning continues, independent on the measured level.

- 5. To start the scanning, click on one of the direction buttons:
- 6. During scanning the measured value is displayed in the screen for information purposes (except when the squelch mode is selected (ESVP) and the value is below the threshold)

RF Input - Level	48.0	dBµV
------------------	------	------

#### 9.4. How to enter values in a box and save them?

All the **blue** values can be edited. For example it is possible to change the step size and to save it into your own configuration file

1. <u>Click with your cursor on the (blue) text</u>



2.

Enter the new value.

Freq. Step Size 1 (Mhz)	X
0.0600	Cancel
0.09	ОК

3.

Click on Ok. A check on maximum and minimum values is performed. If all ok the value will be updated in the screen



On error a message like below could occur.

E	SH3 : Information
	The minimum value is 0.0001
	ОК

4. To save your configuration. You can use the save buttons (e.g. save as your default configuration).

File	Settings Info						
Load New Configuration							
	Save Configuration As						
	Load Default Configuration						
Save Configuration as default							

When using the first time you need to select an directory/filename. E.g.

🖶 ESH3 0.009 -						
File Settings I	nfo					
ID Message 18 Ready		-				Auto Run Typ
RX - Frequency Opslaan						2 🛛
Scan Threshold	Frequency	Opslaan in:	ESH3		🖌 G 🕫 🖻	
5 DBm	20.9960					
+		3	esh3config			
5 -	0.0060	Onlangs				
Preset Threshold	Preset RF Freq.	geopenu				
.90 DBm	0.6123					
○ -100 DBm	0.0125	Bureaublad				
○ -110 DBm	0.2000					
Settings						
Demod	IF - Bandwidth	Mijn documenten				
O F3 : FM-Narrow	O 10 Khz	-				
O A3J : USB	0 2.4 Khz					
A3J : LSB	0.0.2 Khz	Deze computer				
○ A3 : AM-INAR.	U.L. IVIZ		Pastan den som	10.0		
O AD : Zero Beat	Average	5	Destanushaam:	esh.3contig		Upslaan
O Off	O Peak	Mijn netwerklocaties	Opsiaan als type:	bit files (*.bit)		Annuleren
	O CISPK	L				. di

The file name and directory will be remembered.