

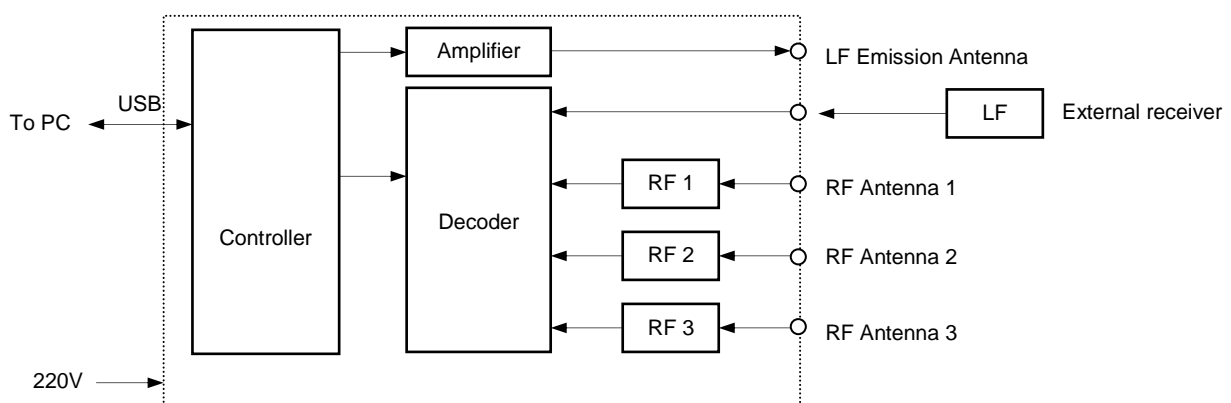


Hardware description

The ANumLFRF tool allows to send LF Data or LF CW and, in the same time, to decode up to 4 different channels. Three channels are internal and the 4th is external.

The 3 internal channels are RF receivers (ex : 315MHz, 433.92MHz, 434.42MHz).

The external channel is usually an active LF receiver (125kHz), but another receiver can be connected (RF, LF, IR, ..).



Software description

A specific software (ANumLFRF.exe) allows to control this bench with a useful and simple GUI. RF frames descriptions must be defined. During Run phase, the software find the nearest appropriate description and display all decoded fields.

Characteristics

LF part

Power	30W
Frequency	119kHz , 121.9kHz , 125kHz , 128.2kHz , 131.6kHz
Baudrate	1960 bds Manchester to 10kbds Manchester (512µs to 100µs per Manchester bit)
Coding	Standard or Inverted
Data Modes	Manual, Script, Broadcast, Individual

RF part

Frequency	Basis : 315MHz, 433.92MHz, 434.42MHz (ASK and FSK)
Sensibility	-100dBm
Baudrate	1kbds Manchester to 20kbds Manchester
Tolerance	+/- 20% on baudrate
Connectors	SMA

LF external active antenna

Frequency	125kHz
Temperature	max 110°C
Baudrate	1kbds Manchester to 5kbds Manchester

Frame decoding

Protocols	16 different per channel (baudrate and content) Manchester, Biphase-S, PWM
Frame length	512 bits max
Fields	- automatic display for each frame field - physical value conversion
Checksum	Checksum calculation (Add, Xor, Not)
ID	ID filtering

Software

Display	Full datas list, sorted ID lists, graphical view
Files	Full datas file, sorted ID files (all files are in XML format)
Update	Automatic update for correction or new version
Requirements	minimum configuration : Windows XP SP1, 512 MB Ram, 1GHz frequency

Plugins

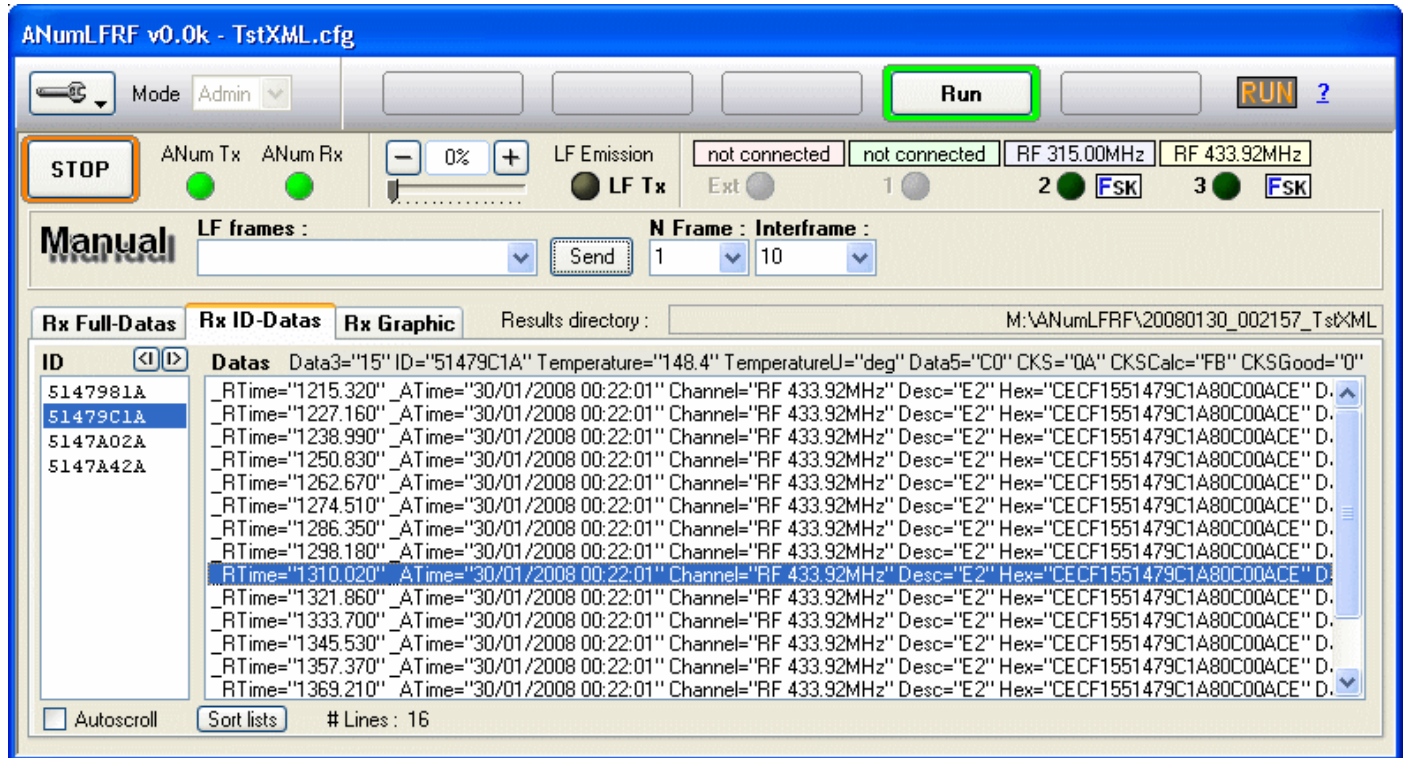
Specific plugins can be added, for specific treatment.

Druck	Pressure measurement via GPIB
EMC	Interface with EMC bench



Rear panel

Screen shots



ANumLFRF v0.0k - TstXML.cfg

Mode Admin

Run

STOP

ANum Tx ANum Rx

LF Emission not connected not connected RF 315.00MHz RF 433.92MHz

LF Tx Ext 1 2 3 FSK FSK

Manual

LF frames : N Frame : Interframe :





Send 1 10

Rx Full-Datas Rx ID-Datas Rx Graphic Results directory : M:\ANumLFRF\20080130_002157_TstXML

ID	Datas
5147981A	Data3="15" ID="51479C1A" Temperature="148.4" TemperatureU="deg" Data5="C0" CKS="0A" CKSCalc="FB" CKSGood="0"
51479C1A	_RTime="1215.320" _ATime="30/01/2008 00:22:01" Channel="RF 433.92MHz" Desc="E2" Hex="CECF1551479C1A80C0QACE" D.
5147A02A	_RTime="1227.160" _ATime="30/01/2008 00:22:01" Channel="RF 433.92MHz" Desc="E2" Hex="CECF1551479C1A80C0QACE" D.
5147A42A	_RTime="1238.990" _ATime="30/01/2008 00:22:01" Channel="RF 433.92MHz" Desc="E2" Hex="CECF1551479C1A80C0QACE" D.
	_RTime="1250.830" _ATime="30/01/2008 00:22:01" Channel="RF 433.92MHz" Desc="E2" Hex="CECF1551479C1A80C0QACE" D.
	_RTime="1262.670" _ATime="30/01/2008 00:22:01" Channel="RF 433.92MHz" Desc="E2" Hex="CECF1551479C1A80C0QACE" D.
	_RTime="1274.510" _ATime="30/01/2008 00:22:01" Channel="RF 433.92MHz" Desc="E2" Hex="CECF1551479C1A80C0QACE" D.
	_RTime="1286.350" _ATime="30/01/2008 00:22:01" Channel="RF 433.92MHz" Desc="E2" Hex="CECF1551479C1A80C0QACE" D.
	_RTime="1298.180" _ATime="30/01/2008 00:22:01" Channel="RF 433.92MHz" Desc="E2" Hex="CECF1551479C1A80C0QACE" D.
	_RTime="1310.020" _ATime="30/01/2008 00:22:01" Channel="RF 433.92MHz" Desc="E2" Hex="CECF1551479C1A80C0QACE" D.
	_RTime="1321.860" _ATime="30/01/2008 00:22:01" Channel="RF 433.92MHz" Desc="E2" Hex="CECF1551479C1A80C0QACE" D.
	_RTime="1333.700" _ATime="30/01/2008 00:22:01" Channel="RF 433.92MHz" Desc="E2" Hex="CECF1551479C1A80C0QACE" D.
	_RTime="1345.530" _ATime="30/01/2008 00:22:01" Channel="RF 433.92MHz" Desc="E2" Hex="CECF1551479C1A80C0QACE" D.
	_RTime="1357.370" _ATime="30/01/2008 00:22:01" Channel="RF 433.92MHz" Desc="E2" Hex="CECF1551479C1A80C0QACE" D.
	_RTime="1369.210" _ATime="30/01/2008 00:22:01" Channel="RF 433.92MHz" Desc="E2" Hex="CECF1551479C1A80C0QACE" D.

Autoscroll Sort lists # Lines : 16

Comment : Text
Name : Text
Preamble : Binary, Hexa or both
Baudrate : bauds Manchester
Coding : Standard Inverted

Standard	Inverted
0 	0 
1 	1 

Fields :

Name	Size	Offset	Resolution	Unite	Display
Data1	8	0	1		N
Data2	8	0	1		N
Data3	8	0	1		N
ID	32	0	1		N
Temperature	8	-5.2	1.2	deg	Y
Data5					
CKS					

Field description

Name	Size	Offset	Resolution	Unite	Display
Temperature	8	-5.2	1.2	deg	Y

"ID" must be used for the identifier
 "CKS" must be used for the checksum
 Display = Y or N

CKS Calculation
Mask : Ex : FF FF FF 00 FF
Method : ADD XOR **NOT :**