

VLF Meter: IDR-200

Buttons:

Layout:

Normal :		
Range	Up	Log
Left	Enter	Right
Maximum	Down	Shift
Shifted:		
Offset	Reserved	Reserved
Frequency	Reserved	Channel
Alarm	Reserved	Reserved

Functions:

Up / Down / Left / Right:

Menu navigation and changing options

Enter:

Selects menu options

Shift:

Switch to select secondary button functions

'S' will be displayed in the lower right corner of the screen

Range Selection:

Press Range

Press Up or Down to select a range (200 mG, 2000 mG, or Auto)

Press Enter to switch to the selected range

Press Left to exit without changing the range

'R' will be displayed in the lower right corner of the screen while the meter is in the autoranging mode

Channel Selection (Shift -> Right):

Press Shift -> Right to switch to the next channel (order: x, y, z, m)

Current channel is displayed on the screen

Frequency Display (Shift -> Left):

Press Shift -> Left to switch to the frequency display mode

Press Up, Down, Left, Right, or Enter to exit frequency display mode

Maximum:

Press Maximum to change to the maximum reading mode

Press Up, Down, Left, Right, or Enter to exit maximum mode

'M' will be displayed in the lower right corner of the screen while the meter is in the maximum mode

Offset (Shift -> Range):

Press Shift -> Range to change to offset correction mode

Press Up, Down, Left, Right, or Enter to exit offset correction mode

Alarm (Shift -> Maximum):

Press Shift -> Maximum to enter the alarm threshold mode

Set the alarm threshold:

Use the Left and Right buttons to select a digit or the units and use the Up and Down buttons to change the value.

Press Enter to set the alarm threshold and activate the alarm

'A' will be displayed in the lower right corner of the screen while the alarm is activated

Press Up, Down, Left, Right, or Enter to deactivate the alarm

VLFMeterOperation.txt

Log:

Press Log to enter the data logging menu:

- Logging Status
- Log Style Full / Single
- Logging Interval submenu
- Enter to Start / Stop Logging
- Clear Log
- List Log
- View Log

Use the Up and Down buttons to navigate through the menu

Press Enter to select an option, toggle an option, or enter a submenu

Press the Left button to exit the menu or submenus

Start / Stop Logging:

Future state is always displayed (present state is opposite of display)

Press enter to switch to the new state

Examples:

Meter is not logging data

- Press Log
- Enter to Start Logging (is displayed)
- Press Enter to start logging data
- Press Left to exit to the main display

Meter is logging data

- Press Log
- Enter to Stop Logging (is displayed)
- Press Enter to stop logging data
- Press Left to exit to the main display

'L' will be displayed in the lower right corner of the screen while the meter is logging data

Logging Interval submenu:

Press Log to enter the data logging menu

Press Up to navigate to the Logging Interval submenu

Press Enter to enter the logging interval submenu

Set the logging interval:

- Use the Left and Right buttons to select a digit or the units
- and use the Up and Down buttons to change the value.

- Press Enter to set the logging interval

Press Left to exit to the main display

Log Style Full / Single:

Note: Switching between the single and full mode requires erasing all previously logged data.

Single Style = x, y, z, or m data (no frequency data)

Full Style = selected channel (x, y, or z) with frequency data or x, y, z, and m if m is the selected channel.

Press Log to enter the data logging menu

Press Up twice to navigate to the Logging Style option

Present state is always displayed

Press Enter to switch to the new state

Press Down to confirm the data log will be erased

Examples:

Meter is using the single log style:

- Press Log
- Press Up twice

VLFMeterOperation.txt

Log Style Single (is displayed)
Press Enter to switch to the full log style
Press Down to erase the log data and start using the full style
Pressing Enter, Left, Right, or Up will save the log and stay in the single log style.
Press Left to exit to the main display or Up and Down to navigate to the other log menu items

Meter is using the full log style:
Press Log
Press Up twice
Log Style Full (is displayed)
Press Enter to switch to the single log style
Press Down to erase the log data and start using the single style
Pressing Enter, Left, Right, or Up will save the log and stay in the full log style.
Press Left to exit to the main display or Up and Down to navigate to the other log menu items

Logging Status:
Press Log
Press Up three times
Press Enter to display the logging status:
R: x / y
I: t s

x = number of data readings that have been logged
y = total number of memory locations available for present logging style
t = logging interval in seconds

Press Up, Down, Left, Right, or Enter to return to the log menu

View Log (manual log viewing):
Press Log
Press Down three times
Press Enter to view individual log entries
Use the Up and Down buttons to move forward or backward one log entry
Use the Right and Left buttons to move forward or backward ten log entries
Press Enter to return to the log menu

List Log (automated log viewing):
Press Log
Press Down two times
Press Enter to automatically list each log entry sequentially
Press Up, Down, Left, Right, or Enter to return to the log menu

Clear Log:
Press Log
Press Down
Press Enter to erase all the logged data

RS232 Configuration:
Start -> Programs -> Accessories -> Communications -> HyperTerminal

Connection Description:
Name: VLF Meter
Click OK

Connect To:
Connect using: COM1 = Serial Port A
COM2 = Serial Port B
Click OK

VLFMeterOperation.txt

COMx Properties:

Bits per second: 9600
Data bits: 8
Parity: None
Stop bits: 1
Flow control: Xon / Xoff
Click OK

RS232 Command Set:

Notes:

<bksp> = the backspace key in the upper right corner of a standard US keyboard
<enter> = the enter key

All the RS232 commands are listed in double quotes, which should not be included when typing the commands in HyperTerminal. All commands must be followed by pressing <enter>.

Only <bksp> can be used for editing the commands while using the RS232 interface. The arrow keys cannot be used and may lock up the interface. When <bksp> is pressed, the cursor will move back one space, but the previous character will not be deleted. Just type over the existing character to make corrections.

The RS232 interface defaults to the "display on" mode, which continuously displays the meter readings. Once the RS232 connection is made with HyperTerminal, the user must type "display off<enter>" to turn off the continuous display. The meter will continue to display readings as the user types, and continues until <enter> is pressed.

"range"

Same as pressing the Range button on the meter

"range up"

Select the next range (order: Auto, 200 mG, 2000 mG)

"range dn"

Select the previous range

"range ?"

Display the present range setting:

Automatic -> 200.0 mG
Automatic -> 2000 mG
Manual -> 200.0 mG
Manual -> 2000 mG

"offset"

Same as pressing the Offset button on the meter

"offset on"

Enable the offset correction mode

"offset off"

Exit the offset correction mode

"offset ?"

VLFMeterOperation.txt

Display the present state of the offset correction mode:
offset mode on
offset mode off

"log"
Same as pressing the Log button on the meter

"log on"
Enable data logging

"log off"
Disable data logging

"log ?"
Display present data logging state:
logging mode on
logging mode off

"log sty si"
Switch to the single logging style

"log sty fu"
Switch to the full logging style

"log sty ?"
Display the present logging style:
logging style single
logging style full

"log status"
Displays the present log status:

Style: s

Reading: x of y

Interval: t s

s = Single or Full

x = number of data readings that have been logged

y = number of memory locations available for present logging style

t = logging interval in seconds

"log list"
Automatically lists all the logged data

"log clear"
Erases the logged data

"log view# "x"
Shows data entry x

"log intvl "t"
Set the log interval to t seconds

"rs232"
Reserved

"freq"
Same as pressing the Frequency button on the meter

"freq on"
Enable the frequency display mode

"freq off"

Disable the frequency display mode

"freq ?"

Display the present state of the frequency display:
frequency mode on
frequency mode off

"channel "

Same as pressing the Channel button on the meter

"channel x"

Switch to the x channel

"channel y"

Switch to the y channel

"channel z"

Switch to the z channel

"channel m"

Switch to the m channel

"channel ?"

Display the presently selected channel:
channel selected = x
channel selected = y
channel selected = z
channel selected = m

"max"

Same as pressing the Maximum button on the meter

"max on"

Enable maximum mode

"max off"

Disable maximum mode

"max reset"

Reset maximum reading and stay in maximum mode

"max ?"

Display present state of maximum mode:
maximum mode on
maximum mode off
max x = <value>
max y = <value>
max z = <value>
max m = <value>

"alarm"

Same as pressing the Alarm button on the meter

"alarm on"

Enable the alarm

"alarm off"

Disable the alarm

"alarm ?"

Display present state of the alarm mode:
alarm mode on
alarm mode off

VLFMeterOperation.txt

"alarm set "
Set the alarm threshold in mG.

"alarm thrs"
Display the present alarm thresholds:
alarm threshold = <value> mG

"up"
Same as pressing the Up button on the meter

"down"
Same as pressing the Down button on the meter

"left"
Same as pressing the Left button on the meter

"right"
Same as pressing the Right button on the meter

"enter"
Same as pressing the Enter button on the meter

"shift"
Same as pressing the Shift button on the meter

"display on"
Enable continuous display of meter readings and exit command mode.

"display of"
Disable continuous display of meter readings and enter command mode.

"meas f"
Display the preset frequency measurement:
f = <value> Hz

"meas x"
Display the preset x field measurement:
x = <value> mG
x = <value> G
OVER RANGE

"meas y"
Display the preset y field measurement:
y = <value> mG
y = <value> G
OVER RANGE

"meas z"
Display the preset z field measurement:
z = <value> mG
z = <value> G
OVER RANGE

"meas m"
Display the preset m field measurement:
m = <value> mG
m = <value> G
OVER RANGE

Capturing Data with HyperTerminal :

VLFMeterOperation.txt

With HyperTerminal running as described in the "RS232 Configuration" section:

Transfer -> Capture Text...
File: VLFMeterLog.txt
Click Start

At the RS232 command prompt in the HyperTerminal window type:
log list

Transfer -> Capture Text -> Stop

Edit VLFMeterLog.txt with a text editor (WordPad, etc.) to view the data or write a script to convert the data for post processing with MATLAB or Excel.