

Kaltman Creations LLC

SPECTRAN USA Addendum

Contained in this addendum are clarifications to the SPECTRAN HF Series Users Guide and information on specific USA modifications.

Please note that your SPECTRAN HF has been preprogrammed (dependant on models) with the following USA Hot Key frequency sweeps. These sweeps replace the listed Hot Keys on page 8 of the Users Guide. Also note that if “factor” (Factory) is used in the Setup mode, all programming will return to the original factory defaults and the Hot Keys will have to be reprogrammed.

Numeric Block (Hot Keys)

1 = VHF	168MHz – 215MHz
2 = UHF 1	450MHz – 699MHz
3 = UHF 2	700MHz – 865MHz
4 = Wi-Fi	2390GHz – 2450GHz (Wireless LAN)
5 = TEL	900 MHz - 930 MHz (Cordless Telephone)
6 = BLUE	2450 (Bluetooth)
7 = STL	944MHz - 952MHz (Studio Transmitter Link)
8 = AVIS	2900GHz - 3260GHz (Automotive Vehicle ID System)
9 = ASTLIS	48MHz - 82MHz (Assisted Listening)
0 = DECT	1885MHz – 1885MHz

Installing the SPECTRAN Driver Software

DO NOT MANUALLY INSTALL THE DRIVER SOFTWARE... Copy the SPECTRAN Driver and LCS Software from the included CD to your desktop. Plug in a USB cable between the SPECTRAN and your PC and **then** turn on the SPECTRAN.

Windows should recognize that new hardware has been found and will begin to walk you through the “Found New Hardware Wizard”. When the prompt / screen comes up which asks whether to Install from a CD or from a specific location, select the “Specific Location”. Use the Browse button on the next screen to navigate to the Kaltman Creations SPECTRAN Driver Folder and click “Next”. On the next screen select “Search for the Best Drivers in these Locations”, and check the box for “Include this Location in this Search”. Click “Next”. A warning message may appear stating that the software has not passed a Windows Logo test, Select “Continue Anyway”. The actual Driver install will now take place.

Installing the LCS Software

Once the Driver is installed, the Kaltman Creations SPECTRAN LCS software is ready to go. Simply click on the SPECTRAN Icon (LCS_1257E.exe) to launch the program.

Application Note

The SPECTRAN LCS PC software, which is included with your SPECTRAN unit, provides an enhanced visual display and enhanced data capture capabilities. It is also required for most programming functions and firmware updates.

Data Capture / Logging

The SPECTRAN has capabilities to capture, store, and retrieve data. The main capture functions are:

- 1). Use the SPECTRAN Data Logging function within the SPECTRAN (memory dependant) and then download the data to your PC via the LCS software. (The Spectran, as a standalone handheld device, is limited to Peak Marker capture only)
- 2). Record & view real-time data on your PC as it is captured directly from the SPECTRAN, (no memory limitations). (The Spectran, connected to a PC, allows for detailed data capture including date and time stamps)
- 3). “Screen Print” your PC sweeps displays.
- 4). Run the SPECTRAN with the MAX HOLD function activated for viewing of all frequency “hits” (data will be lost on setting changes or power off)

Data Logger Applications Notes:

For specific details on the setup of the Data Logger, please refer to page 27 of the SPECTRAN Users Guide. Below are some minor notes, clarifications of terms, and examples for the setup of the Data Logger within the SPECTRAN HF unit:

- ◆ Logged data is non-volatile and stays in the SPECTRAN memory location 1000 until overwritten.
- ◆ Logged values will reflect user determined settings such as Peak and Hold
- ◆ Changing the settings during a Logging session can distort the results
- ◆ 64K of memory is standard. For extensive data capture, more memory may be required. Please contact Kaltman Creations for upgrade details.

“Count” is the total number of times the sweep data is captured

“Time” is the interval, in seconds, between data captures

“Field” is where the data is stored and Should Always Be at Location 1000.

(“Count” “Time” and “Field” only apply to data stored directly into the analyzer and not for PC logging)

Example 1:

Count: 60 (this will log 60 separate sweeps)

Time: 60 (this will allow 60 seconds to pass before another sweep capture is logged)

In other words, there will be 60 separate sweeps each spaced 60 seconds a part (once every minute) and therefore will log for an hour.

Example 2:

Count: 1000

Time: 60

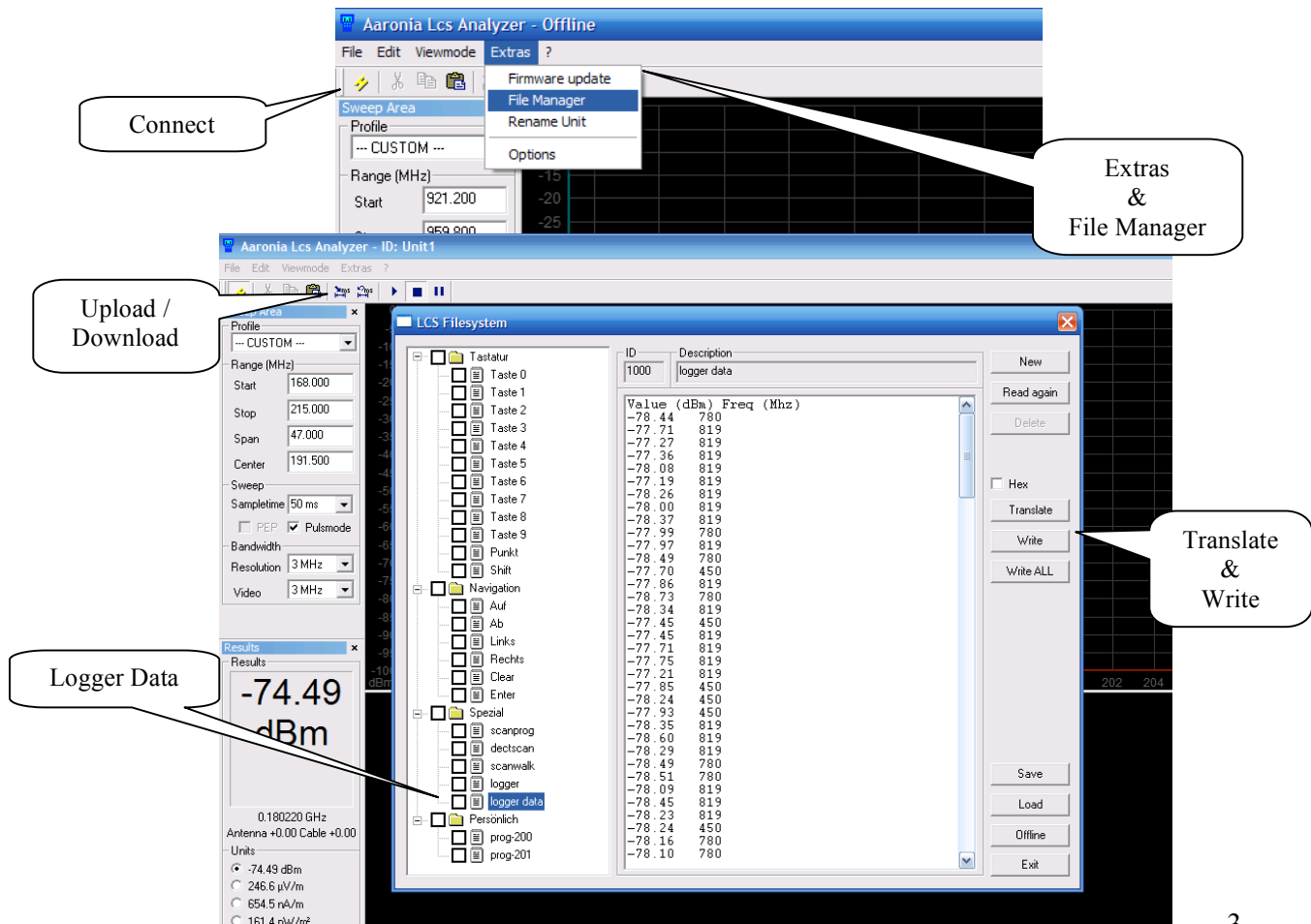
This will log 1000 separate sweeps. Each sweep is spaced 60 seconds a part and will therefore log for 16.66 hours.

Transfer of Logged Data

(Only for data stored directly into the analyzer, not for PC Logging)

How to transfer the data from your SPECTRAN HF unit to your PC for file conversion:
(The SPECTRAN Driver software and SPECTRAN LCS software must be installed. See Driver and Software Installation)

- 1). Connect the SPECTRAN to your PC via a USB cable.
- 2). Initiate / launch the SPECTRAN LCS software.
- 3). Use the CONNECT button (upper left-hand corner of the PC screen, located just under the word "File"). This establishes communication between the SPECTRAN HF unit and the LCS software.
- 4). Under the "Extras" pull-down menu, open File Manager. The File Manager screen will open up.
- 5). In the File Manager screen scroll down to the Logger Data file.
- 6). Double click on the file titled "Logger Data" and the data will open up as a table. At this point you can simply copy and paste the data into spreadsheet application such as Excel for data manipulation, charting, etc.



Record Data

You can view and capture real-time data on your PC as it is read directly from the SPECTRAN HF unit. (The SPECTRAN Driver software and SPECTRAN LCS software must be installed. See Driver and Software Installation)

Connect the SPECTRAN to you PC via a USB cable.

Run the LCS software.

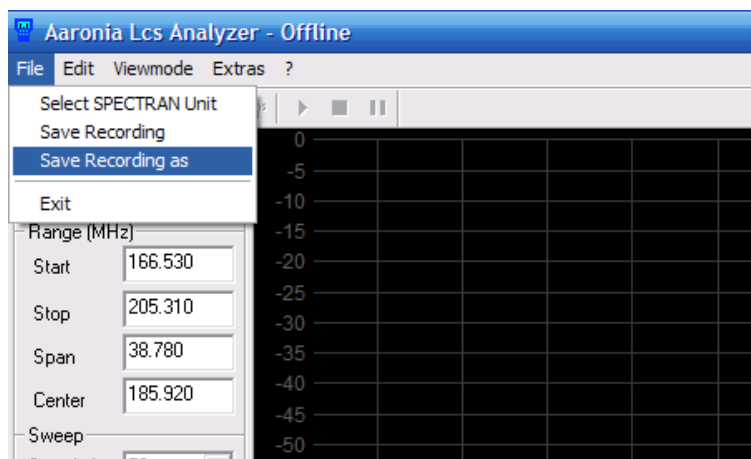
Use the Connect button (upper left-hand corner of the PC screen, located just under the word “File”). This establishes communication between the SPECTRAN HF unit and the LCS software.

Set up any parameters, i.e. frequency range, bandwidth, levels, etc. This can be performed directly on the SPECTRAN handheld or within the SPECTRAN LCS software. If you make changes to the parameters after you have started a sweeping display, you may have to use the Upload and Download buttons (located between the Clip Board and Play button) for one device to recognize the changes to the other. Re-clicking on the Connect button will also force the devices to update to the changes.

Use the Play button ► to start the sweep display.

Once the sweep display is initiated, the data is automatically being recorded within the PC. The recorded data includes: Date, Time, Peak Markers, all of the Frequencies in the selected range (with data points determined by the RBW) and their associated dbm values.

To save the data use the “Save Recording” functions within the “File” pull-down menu. Every time you select “Save Recording” all of the data up to that point in time (since the start of the session), is saved.



When you wish to stop recording, use “Save Recording” or “Save Recording As” and save the file to your desktop or a folder of your choice.

Recording / Logging Playback

While it is not possible to actually playback the captured data like a movie, there is a very powerful feature that allows you to load the data back into the PC LCS software for detailed spectral review. Simply use the “Load Recording” item under the File pull-down and load in a previously saved file. You will note that the data now appears in the waterfall section of the display. Check the box called “Trace History” located at the bottom of the Sweep control panel. Now, whenever and wherever you place your cursor within the time-domain of the waterfall display will produce a spectral image of the traces up in the sweep area above. As you move the cursor forwards and backwards in time (up and down through the waterfall display), you will get a detailed re-account of the traces.

Additionally, by clicking on an area within the waterfall screen, the traces at that point in time will appear and remain visible as a fixed trace on the screen. This is ideal for trace to trace comparisons. Clicking again will update the fixed on-screen trace. Clicking on the Trace History check box will clear the fixed traces.

To return to normal analyzer use (non-playback of logged data), please be sure to uncheck the Trace History box.

Uploading the Raw Data to Excel

When using spreadsheet software such as Excel or Lotus 123, locate their Import Data prompt. In Excel, the Import External Data function is located under the “Data” pull-down.

In Excel, import the data as:

All Files
Delimited
Semicolon

Once imported, manipulate and chart the data as needed.

Screen Print

You can use your computer’s Screen Print function for a very quick snapshot of your data. On most PC Qwerty keyboards, the Insert key (Ins) doubles as a Print Screen (PrtSc). Press your Function Key (FN) and PrtSc at the same time and the current screen is saved to your clipboard for pasting into Word, Excel, etc.

Helpful hint: Once pasted in Word you can resize it as needed, or if you want to be able to reposition it anywhere on the page, simply double click on the pasted screenshot image, a box (Format Picture) will open up, click on “Layout” and then “Advanced” and then select “Through”. This will allow the image to float anywhere on the Word page.

Hot Keys (Renaming & Reassigning via LCS Software)

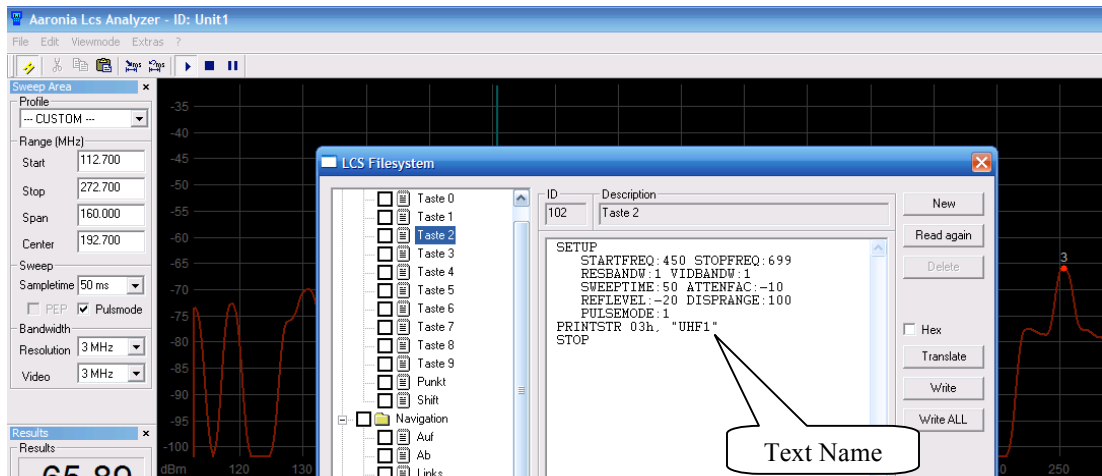
(The SPECTRAN Driver software and SPECTRAN LCS software must be installed. See Driver and Software Installation)

Connect the SPECTRAN to you PC via a USB cable.

Run the SPECTRAN LCS software.

Turn on the SPECTRAN unit.

Under the “Extras” menu, open the File Manager pull down. When the screen opens, click on the “Connect” box (lower right-hand corner of LCS “Filesystem” screen) and you should see the following:



Click through each “Taste” (Hot Key Assignments) to view their individual parameters and presets.

The USA pre-assigned IDs are as follows:

Numeric Block (Hot Keys)

1 = VHF	168MHz – 215MHz
2 = UHF 1	450MHz – 699MHz
3 = UHF 2	700MHz – 865MHz
4 = Wi-Fi	2390GHz – 2450GHz (Wireless LAN)
5 = TEL	900 MHz - 930 MHz (Cordless Telephone)
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Enter any value changes you wish to make. You can also change the “Printstr 03h” text which will change the Hot Keys custom text as it appears on the SPECTRAN HF unit LCD display. The maximum number of characters in the LCD display is 6.

Once you have completed the entries, click “Translate” and then click “Write”. The word “OK” should appear in the description box. As you move on from one Hot Key assignment to the next you may need to click on “Read Again” to update your changes.

Hot Keys (Renaming & Reassigning direct entry in SPECTRAN HF)

For detailed instructions, please refer to page 28 of the SPECTRAN Users Guide.

Hot Key programming can be performed directly on the SPECTRAN (no PC connection) but unlike using the SPECTRAN LCS PC software, there are no means of direct text entry and the custom naming of Hot Keys. When setting-up the programming of the Hot Keys in this fashion, the assigned Center Frequency value will automatically appear in place of a text name on the SPECTRAN display.

Set-up and enter all values and parameters which you ultimately plan on saving as a Hot Key. Go to “SetUp” in the SPECTRAN HF unit’s menu, select “Store” and assign a memory location number: 101 – 109 for Hot Keys and 110 up for additional storage locations. The number of additional storage locations may be limited by the amount of available memory (64K standard). Memory upgrades are available when required. For more information on memory upgrades, please contact Kaltman Creations LLC.

Zoom and Cursor feature in the SPECTRAN LCS software

While viewing a LCS PC sweep or a static display, you can Zoom in & out as desired. To Zoom in simply click and drag across the desired frequency range. To Zoom out, simply right-click above the area you wish to expand. Also, if you right-click on the left side of the screen, you Zoom out down the frequency scale. Right-click on the right side of the screen and you Zoom out in the higher end of the scale. You can right-click (Zoom out) all the way back to a full spectrum span (full range of the SPECTRAN HF unit) if you wish. You can also simply single-click (instead of click and drag) on a frequency and you will instantly Zoom in on that frequency to its maximum amount.

Cursor & Zoom feature in the SPECTRAN HF unit

Rotating the Jog Dial on the SPECTRAN HF unit (just enough to activate it), will immediately place a cursor bar in the center of the display. By using the Jog Dial you can position the cursor bar anywhere on the display, which will in-turn give you a readout of the frequency and associated level at that location.

When clicking on the Jog Dial, the SPECTRAN HF Zooms in at 50% increments (narrowing the frequency span each time). You can repeatably Zoom in all the way to a single frequency point, but there is no Zoom out function within the SPECTRAN HF unit (there is a Zoom out feature in the LCS software). To return to the original sweep frequency span, simply reload the Hot Key or re-enter the High and Low frequency values.

Recent Updates (which Do Not appear in the manual)

Contrast control of the display - Hitting the “Enter” key when “Display” is highlighted in the menu will allow you to adjust the LCD contrast via the jog dial on the side of the unit. When the desired contrast is achieved, hit “Enter” again to accept.

Peak Marker Count display - You can select the number of Peak Markers to be displayed (0, 1, 2, or 3). Hit the “Enter” key when “MrkCnt” is highlighted in the menu. Then enter the number of Peak Markers you wish to be visible on the LCD display and then hit “Enter” again to accept.

In the PC LCS software, open the “Spectrogram” control panel (located in the “View pull-down menu). Note towards the bottom of the Spectrogram control panel a location where you can enter up to 10 Peak Markers and an associated threshold level setting.

Marker Points – The PC LCS software has a very power feature called Market Points. It allows you to visually keep track of frequency regions or specific signals in the sweep display by placing vertical bars within the display. Each Marker Point bar will list its position by frequency and level in dbm and also list the frequency span between Marker Points. To activate the Marker Points, open the “Spectrogram” control panel (located in the “View pull-down menu). Note at the bottom of the Spectrogram control panel a check box titled “Manual”. Checking this box now allows you to click at the very top of the sweep display to place a Marker Point. You can click on an existing Marker Point to remove it and you can use the CLEAR button located to the right of the display to clear all.

Other Helpful Hints

Remember to hit “Enter” - When entering values into the LCS software (such as Start and Stop frequencies, Resolution, etc.) always conclude the entry by hitting the “Enter” key. This will insure that the values changes are accepted.

Quick Freq Span view - When using the Spectran HF unit and you wish to review the frequency span you are using, simply hit the Menu button one time and the Peak Markers will now indicate the Start, Center and Stop frequency values. Hit the Menu button again and the unit will return to the spectrum sweep mode.

Ghost signals - If you experience what appears to be phantom, ghost signals or aliasing, try setting the analyzer RBW to 300KHz.

Questions, suggestions and comment are always appreciated.
For Technical Support Call Kaltman Creations 678-714-2000 (EST)