

Subject : Satellite spectrum analysis on 786X – 786XHD

NASE786X-03-03



SEFRAM 7861-7862-7861HD-7862HD field strength meters enable seeing the spectrum of the received (terrestrial or satellite) TV signal. This application note provides an explanation for the different options of the TV meter for the satellite spectrum analysis.

Select a satellite place and press the " Spectrum " key :

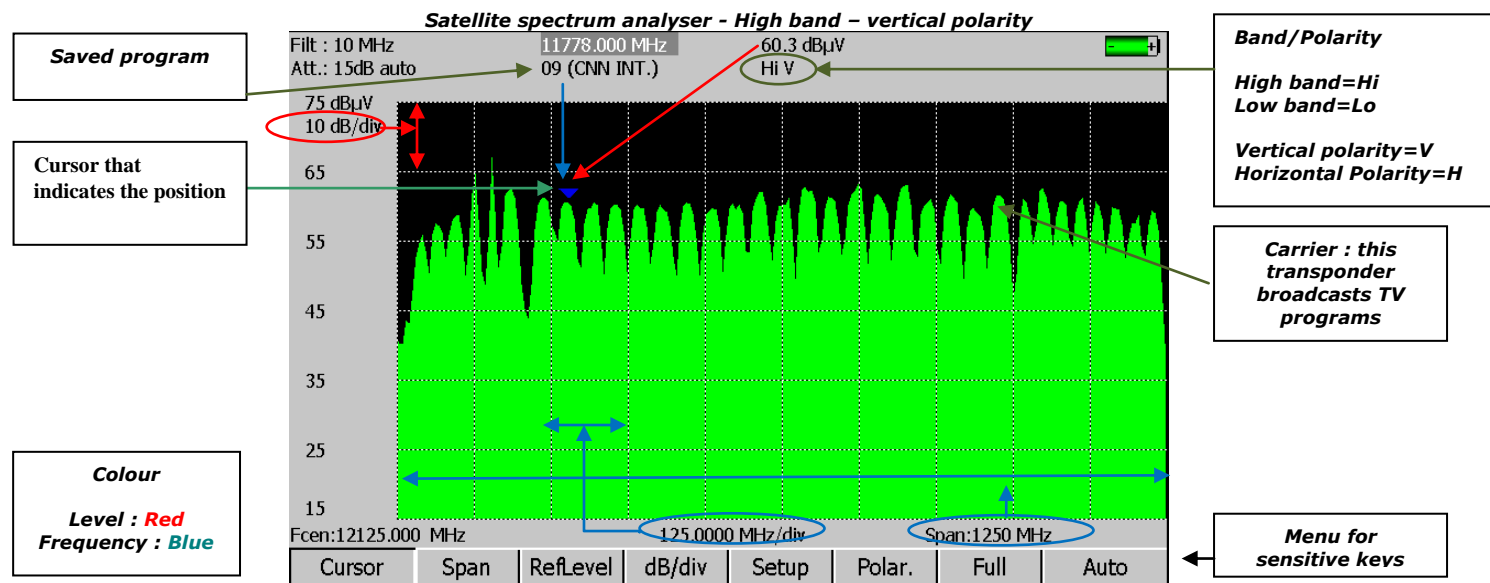


To work on a spectrum, the satellite dish has to be pointed at the satellite and the field strength meter parameters have to be defined correctly (consult the application note : Using the TV meter for a satellite installation).

On the spectrum, the abscissa axis represents the frequencies and the ordinate axis the reception levels (in dBμV). The spectrum that appears is different according to the band and polarity you use.

Band	Low : 10 650MHz - 11 700MHz	High : 11 700MHz - 12 750MHz
Polarity	Horizontal	Vertical

Thus, it is possible to display four different spectrums for a single satellite signal.



Menu for sensitive keys :

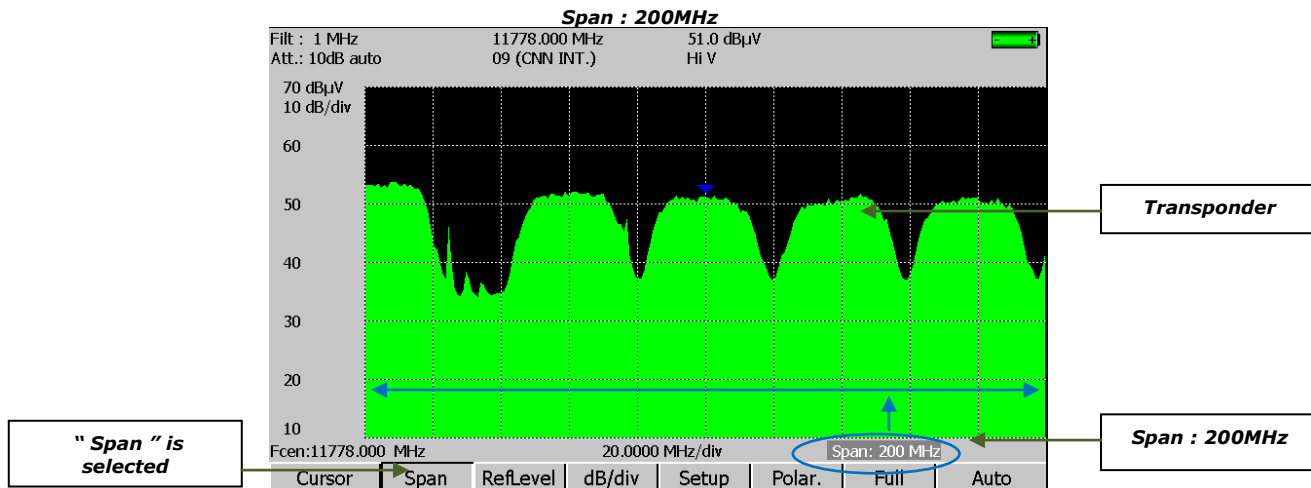


To modify a setting, press the corresponding sensitive key, then scroll through the different values with the sensitive wheel or with the direction keys.

When a setting is selected in the menu, the value that will be modified is highlight on the screen

- Cursor : turn the sensitive wheel to move the blue cursor on the spectrum.

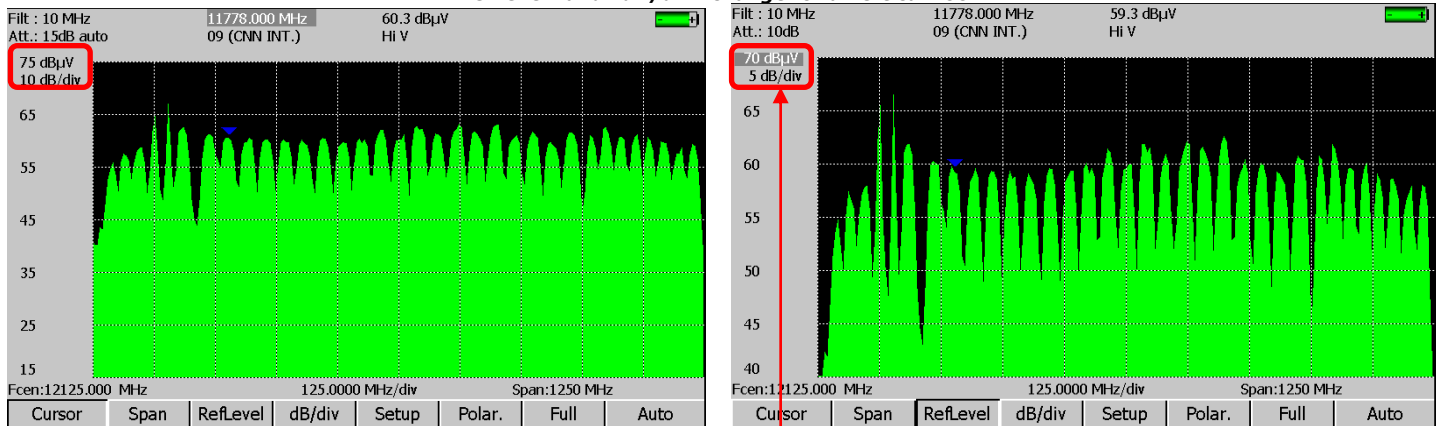
- Span : it is the frequency band displayed on the screen. It allows, for example, zooming horizontally on a precise carrier. Minimum value : 10MHz / maximum value : 1250MHz.



- **RefLevel** : allows adjusting the maximum value of the level axis (equivalent to a vertical zoom).

- **dB/div** : changes the value of a division (a square) on the level axis. Two values are possible : 10dB/div or 5dB/div (equivalent to a vertical zoom).

"RefLevel" and "dB/div" change for a vertical zoom



" RefLevel " and
" dB/div " change for
a vertical zoom

- **Setup** : if setups are saved in the currently selected place, this button allows moving the cursor on the carrier that corresponds to the program (the program band and polarity are automatically recalled).

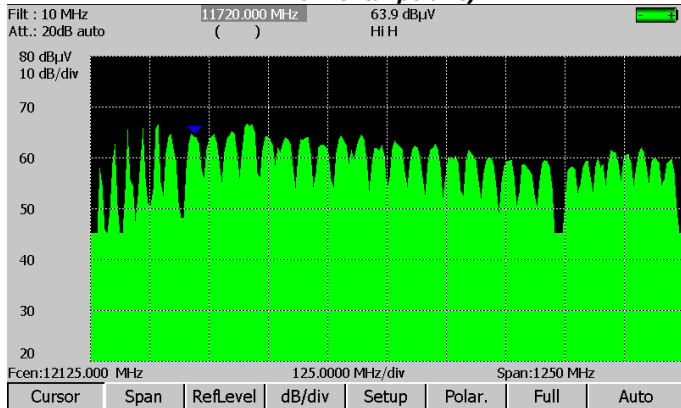
Program change

10832.000 MHz
07 (BIBEL.TV) 58.5 dBµV
Lo H

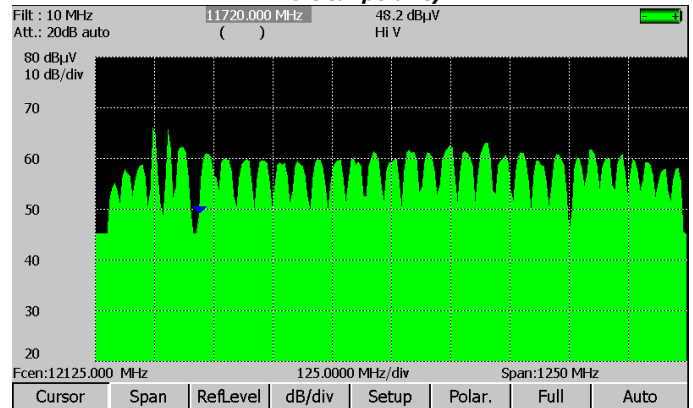
11778.000 MHz
09 (CNN INT.) 58.9 dBµV
Hi V

- **Polar.** : allows changing the polarity (vertical, horizontal, right or left). The spectrum is different according to the polarity you choose.

Horizontal polarity



Vertical polarity



- **Full** : adjusts "Span" to its maximum value – 1250MHz, in order to see the spectrum as wide as possible.

- **Auto** : activates/deactivates the automatic adjustment of the level scale. The indication "Auto" is displayed in the top left-hand corner of the screen if this mode is activated. The "Auto" mode selection cancels the changes made with "RefLevel"; any "RefLevel" modification deactivates the "Auto" mode.

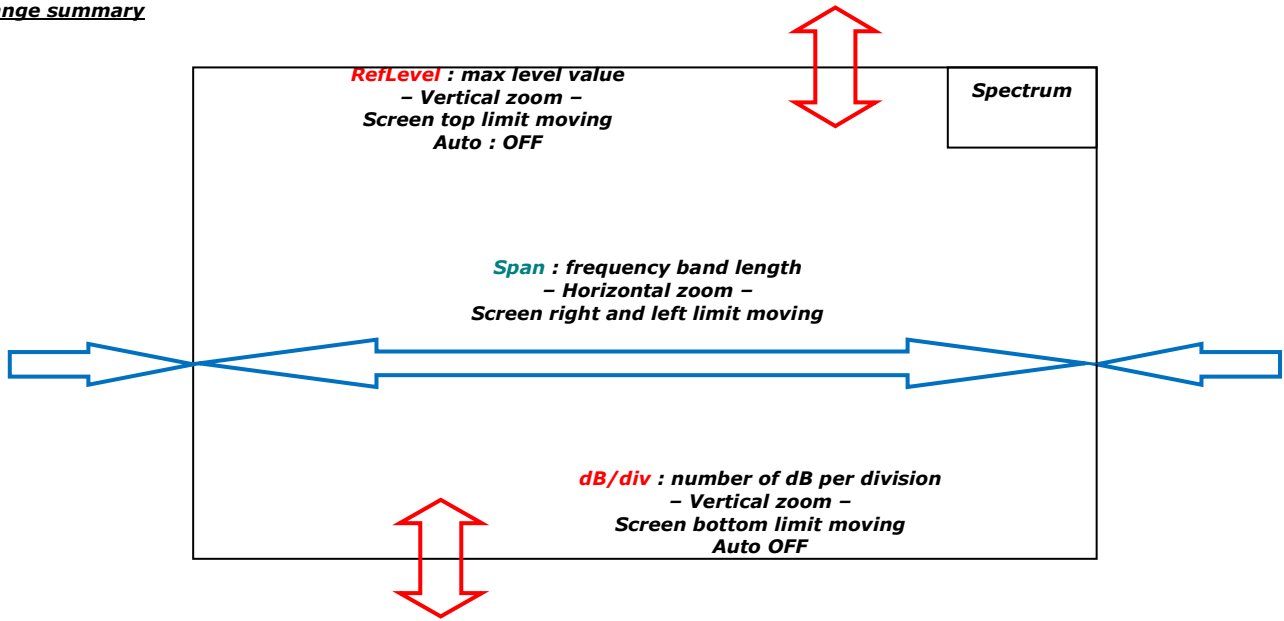
Filt : 1 MHz
Att.: 5dB auto

Indicates that the "Auto"
mode is activated



Note : the blue cursor position in frequency is saved at the menu change.


Scale change summary



Check sat mode

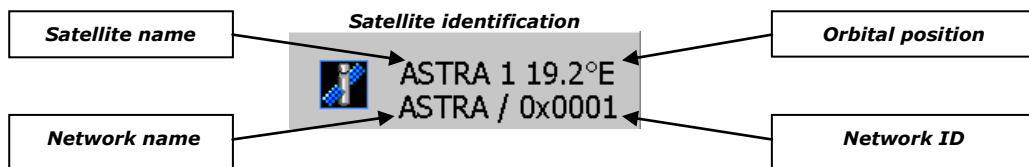
Press for the second time the "Spectrum" key to open the check sat mode. To have more informations about this function, see the application note : Using the TV meter for a satellite installation.

Satellite identification

Press the "Autoset key" :  to start a MPEG2 NIT table search on the currently selected transponder. The satellite automatic recognition is made in several steps:

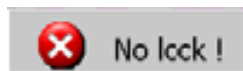
- digital transponder search around the cursor position ;
- digital decoder locking ; different symbol rate tests in DVB-S, DDS and DVB-S2;
- MPEG NIT table reception waiting ;
- display : satellite name, orbital position, Network name and Network ID.

These instructions can take a few minutes. Once this process finished, the following window appears in the middle of the spectrum:

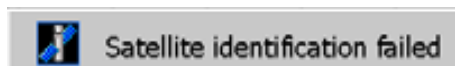


Some broadcasters don't give information (or badly) to the MPEG2 NIT table. The informations displayed at the acquisition end can be erroneous. The following error messages can also appear.

- Impossibility locking on the transponder :



- Satellite identification failed : no NIT or wrong information, unlocking,...



Product link : http://www.sefram.com/wwwFR/F_quick_search.asp?st=7861