



8800SX Software Release Notes

Version 2.4.8

8/04/2022

Fixes

1. Fixed an issue that would result in a black screen if a specific set of options that involved either P25 or TETRA were installed, and the receiver tile was edited.
2. Fixed an issue in Positive Train Control (PTC) where the baud rates in the Demod tile were incorrect. The baud rates were corrected to 8000 / 16000.

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Version 2.4.7

5/24/2022

Improvements

1. For AM power measurements changed the selection label from Peak to Peak Envelope Power (PEP).

Fixes

1. Resolved an issue where occasionally the RF generator would show on, but no signal would be generated.



Version 2.4.6

3/15/2022

New Features

1. Added peak envelope power measurement mode to the power meter.

Improvements

1. Added PN9 Voice Sync and PN9 Data Sync generator patterns to the DMR test system to support Kenwood 3300/3200 Series BER testing.
2. Added RCI command to control the AF Generator on the modulation tile.

`:upconverter:afgenmod:enable <Arg0>`

<Arg0>

- 1 Turns the AF Generator off on the AF Gen Tile, turns the RF Generator on, and turns Mod Gen AF Generator on.
- 2 Turns the AF Generator off.

3. Added RCI commands to set AF Generator level in dBm units.

`:upconverter:afgenmod:units <Arg0>`

<Arg0>

- 1 Sets AF Generator level units to Volts.
- 2 Sets AF Generator level units to dBm.

`:fgen:level:dbm <Arg0>,<Arg1>`

<Arg0>

- 1 Selects AF Generator 1
- 2 Selects AF Generator 2

<Arg1>

Specifies AF Generator level dBm value.

Fixes

1. P25 demod no longer displayed in Advanced Digital when only DMR option is installed.



Version 2.4.4

2/25/2021

New Features

1. The 8800 Series now supports the VIAMI Instrument Programming Tool (VIP Tool™), which allows users to easily create custom test scripts and other applications. The option number for the VIP Tool is Option 847. Visit <https://viavisolutions.com/viptool> to learn more.

Improvements

1. The TETRA BS test system is now compatible with Airbus base stations.
2. Generator and Receiver level offset range has been increased to accommodate the use of 60 dB attenuators.
3. Network socket reliability has been improved, eliminating the need for the 8800 to be rebooted if the Ethernet connection is interrupted.
4. Added support for faster data acquisition with future NEON® Signal Mapper updates.

Fixes

1. The Frequency List Index no longer reverts to 0 when RF Generator Level is changed.
2. In the Wide Analyzer, Auto is now selectable in the AGC menu. Previously Auto was unavailable without disabling and enabling the Analyzer.
3. Fixed an issue with Generator Level being higher than indicated if 0.1 dB Step was enabled immediately after the RF Generator was enabled.



Version 2.4.1

6/10/2020

Fixes

1. Added a fix to prevent the RF generator from turning off when generating a DMR signal while changing frequencies.



Version 2.4.0

04/08/2020

Improvements

1. New remote commands to support Store / Recall have been implemented.

`:setup:settings:save "filename"`

Save the current settings as "filename". If the file exists, it will overwrite the existing file.

`:setup:settings:recall "filename"`

Load the settings stored in "filename". If the file does not exist, the settings are not changed.

2. Implemented new commands to support Oscilloscope high resolution traces with up to 1000 points.

`:scope:trace:highres:length?`

Get the number of points in a high-resolution trace. 0.5 ms / div horizontal scale will have 768 points. All greater horizontal scales will have 1000 points.

`:scope:trace:highres:points?`

Get a comma-separated list of Oscilloscope trace points.

`:scope:scale:horiz <Arg0>`

Set the Oscilloscope input horizontal scale.

Numeric / Return:

Arg0

4: 0.5 ms / Div

5: 1 ms / Div

6: 2 ms / Div

7: 4 ms / Div

8: 6 ms / Div

9: 10 ms / Div

10: 20 ms / Div

11: 50 ms / Div

12: 0.1 sec / Div



3. Implemented new commands for top of scale and vertical scale for Channel Analyzer and Wide Analyzer, and deprecated the command for trace length.

```
:analyzer:vert_scale <Arg0>  
:analyzer:vert_scale?
```

Set the Spectrum Analyzer vertical resolution.

Numeric / Return:	<u>Arg0</u>
	0: 2 dB
	1: 5 dB
	2: 10 dB
	3: 15 dB
	4: 20 dB

```
:analyzer:trace:length?
```

Get the Spectrum Analyzer graph width in points. This function always returns the value 1 (256).

```
:analyzer:trace:length <n>
```

Set the Spectrum Analyzer graph width in points. This command is deprecated. Do not use.

Fixes

1. There is an issue with newer revision of Bird power meters not connecting via USB that has been resolved.
2. Resolved issues with zero and normalize commands, as well as adding status commands.

```
:rfpow:zero
```

Start the process to zeroize the power meter. To determine status, call the `isactive` command.

```
:rfpow:zero:isactive?
```

Get the current state of the zero operation command. It will count down from 5 to 0. When 0 is returned, the zero operation is complete.

Numeric / Return	5-1: Running
	0: Stopped

```
:normalize:run:state <Arg0>
```

Start the process to normalize the unit. The command takes about 20 seconds. To determine status, call the status command. Stop must be commanded before starting again.

Numeric / Return	<u>Arg0</u>
	1: Start normalize
	0: Stop normalize



:normalize:run:status?

Get the current state of the normalize command. It will count up from 1 to 5, then return 0. If normalize has never been run yet, it will return -1.

Numeric / Return 5-1: Running
 0: Stopped
 -1: Initial status after unit is turned on

3. Fixed an issue with the Oscilloscope state command working.

:scope:state <Arg0>

:scope:state?

This command sets / returns the Oscilloscope input state.

Numeric / Return: Arg0
 0: Freeze trace
 1: Live trace



Version 2.3.4

07/31/2019

New Features

1. It's now possible to save setups from Tracking Generator and Wide Analyzer screens; previously navigating to the Store / Recall menu would close these.

Improvements

1. The default tracking generator input has been changed from the T/R Port and the Antenna Port.
2. For P25 measurements, the RF Error Meter range has been increased from 1 kHz to 4 kHz.
3. Modulation generator stays after the reboot.
4. New remote commands for Tone Decode have been implemented. These are listed below for Tone Remote (toneremote), Tone Sequential (tonesequential), and Two Tone Sequential (twotoneseq):

```
:signaling:toneremote:decode:idle
:signaling:toneremote:decode:idle?
:signaling:toneremote:decode:lastmessage?
:signaling:toneremote:decode:message?
:signaling:toneremote:decode:source
:signaling:toneremote:decode:source?
:signaling:toneremote:decode:state
:signaling:toneremote:decode:state?
:signaling:tonesequential:decode:idle
:signaling:tonesequential:decode:idle?
:signaling:tonesequential:decode:lastmessage?
:signaling:tonesequential:decode:message?
:signaling:tonesequential:decode:source
:signaling:tonesequential:decode:source?
:signaling:tonesequential:decode:state
:signaling:tonesequential:decode:state?
:signaling:twotoneseq:decode:idle
:signaling:twotoneseq:decode:idle?
:signaling:twotoneseq:decode:lastmessage?
:signaling:twotoneseq:decode:message?
:signaling:twotoneseq:decode:source
:signaling:twotoneseq:decode:source?
:signaling:twotoneseq:decode:state
:signaling:twotoneseq:decode:state?
```

The values for the <idle/lastmessage/message/state> commands mimic the :signaling:dtmf:decode:<idle/lastmessage/message/state> commands in the signaling section beginning on page 2-133 of the 8800 Series RCI Manual: <https://www.viavisolutions.com/en-us/literature/8800-series-rci-manual-manual-user-guide-en.pdf>



The `<source>` commands follow the pattern:

```
:signaling:<toneremote/tonesequential/twotoneseq>:source <Arg0>  
:signaling:<toneremote/tonesequential/twotoneseq>:source?
```

This command sets/returns the Tone Decode source.

Numeric/Return:

	Arg0
1.	EXT_AUD_IN_2_EXT_AUD_OUT
2.	DEMOD_2_EXT_AUD_OUT

Fixes

1. Fixed a problem with the RF Generator getting disabled with DMR Sync Mode is selected.
2. Receiver offset value is now correctly applied in Channel Analyzer; previously the opposite offset value was applied.



Version 2.3.1

07/31/2018

New Features

1. A new field for temperature has been added to Option 13 Bird Thru-Line Power meter.

Improvements

1. The marker frequency entries are not altered by changing the center frequency or span controls.
2. The color coding for Modulation Fidelity and FSK Error is now retained.

Note: See [8800SX Auto-Test Update Release Notes](#) document for latest changes and versions for Auto-Test Applications.



Version 2.3.0

04/27/2018

New Features

1. The 8800 Series now includes the TETRA BS Test Option. This enables the 8800SX to test TETRA Base Stations and includes both receiver and transmitter test capabilities. The option number for the TETRA BS is Option 88XXOPT162.

Improvements

1. Changed operation in the generator and receiver to use the Freq Flex correction value when setting then frequency through RCI.
2. Resolved an issue with the generator level being incorrect if the generator was turned off then back on at levels between -111 and -119 dBm.

Note: See [8800SX Auto-Test Update Release Notes](#) document for latest changes and versions for Auto-Test Applications.



Version 2.2.1

11/02/2017

Improvements

1. Improved the resolution of the Distribution Plot in all systems.
2. Improved marker operation. Marker Frequency entries are no longer changed or updated by the system.
3. Resolved an issue with the RF Generator Level not being updated for Phase II HCPM modulation if the generator had been cycled on / off several times.
4. Resolved an issue with the RF Generator Level field not being updated for PTC modulation if the generator had been cycled on / off several times.
5. Improved Store Recall system where some fields like scope routing would not always recall.
6. Resolved an issue with generating a P25 O.153 pattern when the instrument is first turned on.
7. Improved the accuracy of FM Deviation measurements in the Advanced Digital System.
8. Tracking generator no longer requires a re-calibration after recalling a stored sweep as long as the stored parameters match the current settings.
9. Some changes have been made to the Polish language translation.
10. Resolved an issue where the AM Modulation meter Limits were always checked against Pk-Pk readings even when RMS detector was selected.
11. Added Option 108 – Hytera DMR Series Auto-Test / Alignment.
12. Added Option 107 – Kenwood NX-5x00 / TK 5x30 Auto-Test / Alignment.
13. Added Option 111 – Harris P25 Series Auto-Test / Alignment
14. Added Option 117 – Harris XL-200P Series Auto-Test / Alignment.

Current list of application versions:

Last Update 11/01/2017	8800	8800	8800
Description	Part #	Option #	Version
Kenwood NXDN series Autotest / Alignment	138525	101	1.0.9
Kenwood 5x20 series Autotest / Alignment	138526	102	1.0.9
Motorola APX™ series Autotest / Alignment	138527	103	1.4.1
Motorola MOTOTRBO™ Radio Series Autotest	138528	104	1.8.0
Motorola ASTRO®25 series Autotest / Alignment Software	139315	105	1.1.4
Kenwood NX-5x00 / TK 5x30 Autotest / Alignment Software	141378	107	1.0.0
Hytera DMR Series Autotest / Alignment Software	139314	108	1.2.0
Harris P25 Series Autotest / Alignment Software	139317	111	1.0.0
EF Johnson Viking Series Autotest and Alignment	139320	115	1.0.2
Harris XL-200P Series Autotest and Alignment	141180	117	1.0.0
Motorola APX™ 8000 series Autotest / Alignment	140868	128	1.4.1
Motorola APX™ "B" model series Autotest / Alignment	140900	129	1.4.1



Version 2.2.0

02/07/2017

Improvements

1. Improved DTF plots to remove false reflections and minor correction to level due to cable loss.
2. The Frequency List entry screen no longer resets information when you change list types or output level units.
3. Resolved an issue with recalling the RF Generator level from a stored setup if the level was below -99 dBm.
4. The RSSI, Modulation and Audio Level meters have been added a dBr unit to allow relative measurements to be made. The unit selection is available on all meter tiles for the respective meter.
5. Resolved an issue with the generator level being incorrect if the generator was turned off then back on at levels between -111 and -119 dBm.
6. The default value for the Generator Offset on the Receiver tile has been changed from 10 MHz to 0 MHz.
7. The Tracking Generator now supports a new “Points” entry to allow faster sweeps when tuning filters. The selections are now 100, 200 or 400 points. A selection of 100 points would result in the fastest sweep. The previous default was 200 points.
8. File names with spaces can now be copied to USB memory sticks.
9. Sample Setups files have been updated.
10. Added support to the Record and Playback of DMR signals using the Allow Interrupt feature.

Applications Updates:

Automated testing scripts are now be released separately and are available in the software update area for the 8800SX.



Version 2.1.2

07/27/2016

Improvements

1. Resolved an issue where the RX Frequency on the Receiver Tile could sometimes be placed into a Locked state not allowing it to be changed.
2. Improved the Signal Power calibration “Normalize” function in the Advanced Digital System.
3. Modified the AGC operation if switching from DMR mode to Analog mode. The AGC will now return to AUTO mode when switching between DMR and Analog modes.
4. Resolved an issue on the RF Generator Modulator Tile that controls the AF Generator Output.

Applications Updates:

Option 101 – Kenwood NXDN™ and P25 radios have been updated to Version 1.0.4

1. Modified alignment of NX 4K Wide filter
2. Modified Balance Alignment for model xx20

Option 103 – APX Auto-Test and Alignment has been updated to Version 1.1.3

1. Added support for the APX 8000 model
2. Modified the PA Bias alignment for models APX 1500, 2500, and 4500 mobile radios
3. Resolved Abort issue with APX 4000 model radios
4. Added model H99KG – SRX 2200 UHF1
5. Added model H99UC – SRX 2200 VHF
6. Added support for 900 MHz band radios
7. Modified specifications for UHF radios
8. Added TX Attenuator Limit Alignment
9. Added configuration for Power Specifications

Option 104 – MOTOTRBO Auto-Test and Alignment has been updated to Version 1.3.4

1. Modified tests for ATEX models
2. Improved Deviation Balance alignment
3. Improved Digital TX Test measurements
4. Resolved issues with RX BER tests

Option 105 – XTS® ASTRO 25 Auto-Test and Alignment has been updated to Version 1.0.7

1. Improved the Deviation Balance Alignment
2. Resolved issues with the XTS 2500 model frequency list



Version 2.1.0

01/22/2016

New Features

1. The 8800S now includes DMR Repeater test capability. This operation includes the ability to test DMR Repeaters standalone without the need to use a portable or OEM software to key the repeater. The 8800S will send the wakeup burst to key the repeater. Repeater Transmit tests can then be performed as well as Receiver tests. The Repeater Test can be ordered as Option 88XXOPT06.
2. The marker table has been added to the Tracking Generator display so marker information is always visible.
3. The Receiver Tile now has a generator offset entry and Lock function to lock the generate frequency to the receive frequency.
4. Option 88XXOPT21 has been created for a continuously variable Notch frequency between 1 kHz and 5 kHz for the SINAD and Distortion meter.
5. Option 88XXOPT22 has been created for a new SNR (Signal to Noise Ratio) meter available on the meters tile.
6. Option 88XXOPT101 has been added for automatic test and alignment for Kenwood NXDN Series radios.
7. Option 88XXOPT102 has been added for automatic test and alignment for Kenwood 5x20 Series radios.
8. Option 88XXOPT312 has been added to support the Italian language.
9. The P25 Decode Tile has been added in the Advanced Digital System.
10. The DTF Distance field now supports user entry lengths up to 2000 feet.

Improvements

1. The 8800S now supports more models of the R&S NRT-Z thru line power sensors.
2. The “Hold Atten” button on the generator tile has been renamed “0.1 dB Steps” to better describe what action will take place when enabled.
3. Resolved some issues with Self Test that produced false failures.
4. Changed the Preset “Clear Display” to be based on Factory default settings instead of DMR configuration.
5. XTS / XTL™ Automated test and alignment has been updated from Version 1.0.0 to Version 1.0.1.
6. MOTOTRBO Automated test and alignment has been updated from Version 1.0.1 to Version 1.1.0.
7. APX Automated test and alignment has been updated from Version 1.0.2 to Version 1.0.3.
8. More features have been added to the Auto-Test system including the ability to copy files to USB without using the File Utility system.



Version 2.0.0

09/17/2015

New Features

1. The 8800S now includes P25 Phase 2 operation. This operation includes the ability to test P25 Phase 2 mobiles, portables, and base stations. The 8800S can generate and receive both H-CPM and H-DQPSK modulations and includes the ability to synchronously transmit the uplink H-CPM modulation to a base station. This is critical when testing the receiver of a Phase 2 base station.
2. New to this release of the 8800S is a Digital Decode window. Within this window, the user can view the results of decoding the key parameters associated with each of the digital protocols supported by the 8800S.
3. The Modulation window for P25 modulation type now includes additional encode parameters. This enables the user to have greater control of the P25 control parameters that are transmitted by the 8800S. Included in this window for P25 are the Talk Group ID (TGID), Unit ID, Emergency, and Priority fields. Also included is a Reset button, which automatically sets the parameters back to the standard pattern.
4. The Modulation window for NXDN modulation types also includes additional encode parameters. For NXDN, the Modulation window now additionally includes Talk Group ID (TGID) and Unit ID.
5. The Configuration screen for Freq List has a new selection called list type. Different list types are available for Analog, PL DCS, P25, DMR, NXDN, and dPMR. Within the different list types, the Freq List controls essential parameters associated with the list type.
6. The 8800S has expanded the Pass / Fail operation so that the meter reading turns green if the measurement is within the user defined pass range.
7. The 8800S now includes the Italian language translation.
8. The 8800S now includes the ability to interface with the NRT-Z Power sensor.
9. The tone sequential window now decodes pauses, of any length, displaying a dash (-) as the indication.
10. The selection for audio level units in the AF Gen now includes dBr.
11. The directory structure for frequency list has been improved to allow the user to access sub-directories from the Freq Select window.
12. In order to improve the utilization of resources within the 8800S, active plots that are hidden behind other windows are no longer updated. This helps improve the speed of the operation when the user has many windows open at the same time.



Version 1.3.0

06/03/2015

New Features

1. Added dBuV as a selectable unit for RF Generator Levels.
2. Added an Audio Function Generator to the Generator Modulation tile where both can be enabled.
3. Added the ability to add a fixed tone to the Two Tone Sequential tile.
4. Tone decode is now supported for User1 and User2 defined codes.
5. Added additional audio filtering to the Audio Input port. These filters now match the filter set that is available on the receiver Demod tile.

Improvements

1. Improved the RF Generator settling time when the RF Generator is enabled at a low level.
2. Improved RF Output level accuracy below -110 dBm.
3. The stability of the SINAD meter has been improved.
4. Fixed Peak Hold feature for DTF sweeps.
5. Fixed issue with averaging on the Channel Analyzer. Changing the Span with averaging enabled, would cause spikes.
6. APX Automated test and alignment option has many new improvements and features.
7. MOTOTRBO Automated test and alignment option has many new improvements and features.
8. In-Line Power meter now stores and recalls the Duty Cycle setting on power cycles.
9. Corrected CCDF Forward Power readings for the In-Line Power sensor option.
10. Receiver cable offset entry is now saved and recalled with power cycles.
11. Resolved issue with DMM not updating after being disabled and enabled again.
12. Sample setups are now Read Only.
13. Tracking Generator Scale has been corrected when changing from dB to VSWR.
14. Options list is now sorted by UID Name.



Version 1.2.1

03/23/2015

This release resolves a potential issue where the instrument intermittently does not boot up correctly.



Version 1.2.0

02/27/2015

New Features

1. A major new addition in this release is a full screen Wide Band Analyzer which has the capability of looking at spans of up to 50 MHz. This new wide Band Analyzer has span selections of 10 kHz to 50 MHz, selectable in a 1, 2, 5 selection. This new feature can be selected from the “Analyzers” selection of the top menu and is called the “Wide Analyzer”.
2. The preset configuration of the 8800 has been enhanced to include the setup of several important parameters. Previously the presets would save the windows selected, the window size and location, and the mod / demod type. The presets now also save the audio config routing, receiver IF BW, and AFBW. The pre-defined presets have been updated to take advantage of the new items that are saved as part of the presets.
3. The number of presets included in the 8800 has increased from 3 to 10. The first 3 presets are pre-defined and cannot be changed by the user but the remaining 7 presets are available for the user to define.
4. A new ICON has been added that will freeze the display. This is a useful feature that will hold the display readings prior to taking a snapshot. Since it freezes the display, we made it look like a snowflake.
5. The number of markers for the Wide Analyzer, Channel Analyzer, and Scope has increased from two to six. Values for Markers 1 and 2 are shown on the display when enabled allowing view without having the markers tab open.
6. Tone Sequential decode has been added as an additional feature to the Tone Decode tile.

Improvements

1. There are several improvements in the speed of operation. Overall, the display response has improved significantly especially when expanding and minimizing tiles like the Scope or Channel Analyzer. The Channel Analyzer now has a refresh rate of about four sweeps per second improving the update rate by more than 150%.
2. The DTMF and Two Tone Decode tiles have been resized and now include the “Fast Stack” button to allow for better display utilization.
3. The operation of the Tracking Generator in the 8800 has been improved in this release. The change to the Span control in the Tracking Generator allows the user the enter any value for Span instead of selecting from a drop down list of Spans. This also gives the user greater flexibility in setting up the Start and Stop frequencies. Also improved is the operation of Tracking Generator when the vertical units are VSWR. The VSWR points which are plotted now have greater resolution, making the plots look smoother.
4. The Tracking Generator “Port” label has been changed to “Input Port”.



5. The digits after the decimal points have been changed for RF Power to 1 for dBm and to 2 for Watts.
6. The unnecessary directories in the File Manager Screen are no longer shown.
7. The Channel Analyzer and Scope displays now have much larger grids for better viewing of the displayed signal to maximize use of the large color display.
8. The Audio Config tile now allows the Audio In port to be routed to the speaker. This allows listening to an incoming audio signal which is very useful when testing receiver sensitivity.
9. The Sample Store / Recall directories are now protected. Files can no longer be stored or deleted in these setup directories. This protects the user from accidentally changing or deleting any of the sample setups. In addition, there are new sample setups included with this release. These sample setups include Pass / Fail criteria, which will cause the meters to turn Red / Blue when the Pass / Fail limits are exceeded.
10. Fixed issue with the PTC BER measurement.
11. Fixed issue with record and playback to allow the Gen and Rec frequencies to be different. This is to support radios with duplex offset on transmit and receive.
12. Fixed issue with editing the generate level when units are microvolts.
13. Fixed a graphical issue with the distribution plot that aligns the plots with the dashed lines.



Version 1.1.2

11/07/2014

New Features

1. The 8800 can now be used with an external USB mouse and keypad.
2. The tone sequential modulation tile now also includes a tone generator to enable the user to generate a CTCSS tone while generating tone sequential.
3. The DMR Demod window BER Pattern now includes a selection for “FRAMESYNC”, which enables the measurement on a live signal.
4. The RF Power meter now includes a selection of Average, Minimum, and Maximum that can be selected from the maximized RF Power meter window.

Improvements

1. The suspend operation now does not turn off the display until it has entered suspend mode.
2. The software update process no longer requires the user to perform a touch-screen calibration.
3. The process of storing and recalling files was changed to reduce the number of key presses required to perform the operation.
4. The F1 key is now used during a VNC viewer session to access to the bottom system menu button.
5. The default file name used when storing a snapshot has been changed from “Newfile” to a name created from the date and time.
6. The Channel Analyzer has been changed to have eight horizontal graticules.
7. The number of digits displayed for SINAD was changed from four to two digits past the decimal point.
8. The number of digits displayed for Distortion was changed from four to two digits past the decimal point.
9. Changed the number of digits past the decimal point for the Receiver Offset field to one.
10. Fixed issue with the FM Modulation meter to improve the accuracy when the signal included an RF Frequency error.
11. Fixed issue with the limits for the symbol clock error.
12. Fixed issue with the DTMF Hi and Low tone levels.
13. Fixed issue with expanded windows not always being on top.
14. Fixed editing issue with the dPMR Call ID and Unit ID fields.
15. Fixed issue with not being able to perform a “Normalize” while in the PTC System.
16. Fixed issue with limits not being stored for the RF Error Meter.
17. Fixed issue with limits not being stored for the RSSI Meter.
18. Fixed issue with limits not being stored for the RF Power Meter.
19. Fixed issue with the Audio Level meter now showing all of the digits for the measurement when the units were “dBuV”.



20. Fixed issue with the DMM meter not showing all of the digits for the measurement when value is over 1 amp and the units are mA.
21. Fix issue in the German language sizing of meter.
22. Remove "None" from selection for Demod in the PTC System.
23. We now blank the PTC Constellation when not receiving signal.