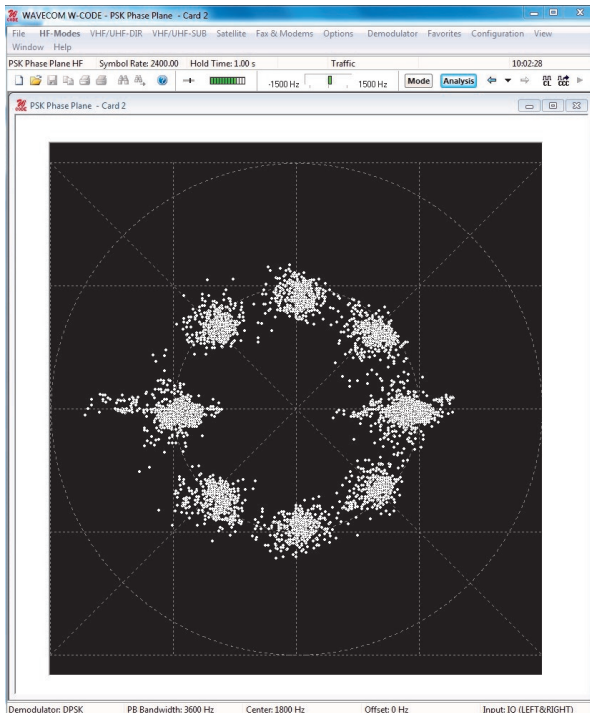


Phase Plane Estimation

Application Note

Phase plane presentation of a STANAG-4285 I/Q recording



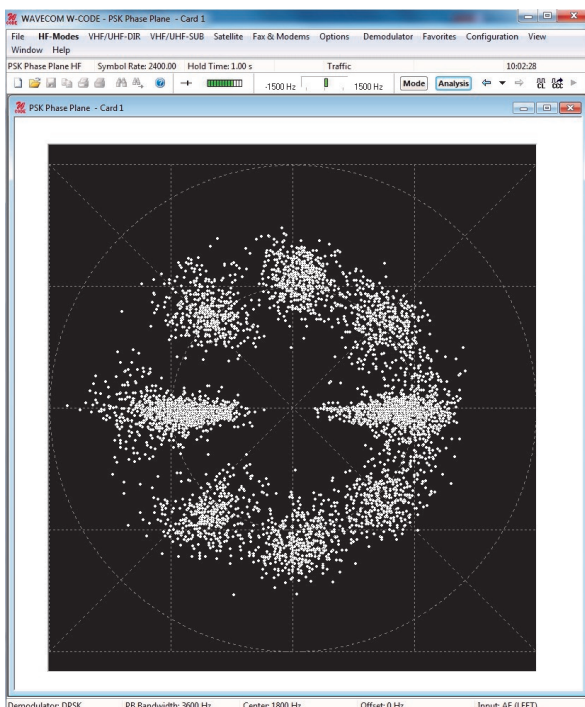
The screenshot to the left shows the high quality of an I/Q recording of a STANAG-4285 signal using W-CODE and a G39DDC SDR. The quality is as good as the conditions in the HF band allow. The signal arrives at the demodulator and the decoder with optimum quality.

I/Q demodulation enables the direct recording and decoding of all types of signals - including VHF/UHF directly modulated modes and satellite modes if a modern SDR is employed.

A digital I/O signal faithfully reflects the quality of the signal source. Using an I/Q input makes the adjustments and the problems of sound card input superfluous.

Using a W74PC, W-PCIe or W-PCI IF input will produce results similar to the ones achievable with I/Q signals.

Phase plane presentation of a STANAG-4285 AF recording



The screenshot to the left shows an AF recording of a STANAG-4285 signal using W-CODE and a PC sound card. The loss of quality due to the action of the sound card is clearly to be seen and will significantly degrade any subsequent decoding.

Applications that use a sound card as a signal interface will suffer a significant loss of quality. In addition, a sound card cannot exploit signals in the VHF, UHF and SHF ranges or if the mixer is set to 12 kHz, only to a limited degree.

All commonly available sound cards also exhibit large sample rate deviations of a magnitude of up to 2% of their nominal rate. Albeit a number of applications enable fine speed corrections, this technique negatively impacts signal quality.

Phase Plane Estimation

Application Note

Since more than thirty years Wavecom Elektronik AG has developed, manufactured and distributed high quality devices and software for the decoding and retrieval of information from wireless data communication in all frequency bands. The nature

of the data communication may be arbitrary, but commonly contains text, images and voice. The company is internationally established within this industry and maintains a longstanding, world-wide network of distributors and business partners.

Product Information

Products	http://www.wavecom.ch/product-summary.php
Datasheets	http://www.wavecom.ch/brochures.php
Specifications	http://www.wavecom.ch/product-specifications.php
Documentation	http://www.wavecom.ch/manuals.php
Online help	http://www.wavecom.ch/content/ext/DecoderOnlineHelp/default.htm
Software warranty	One year free releases and bug fixes, update by DVD
Hardware warranty	Two years hardware warranty
Prices	http://www.wavecom.ch/contact-us.php

System Requirements

	<i>Minimum</i>	<i>Recommended</i>
CPU	Core i5 or Core i7 2.8 GHz	Core i7-6700 3.4 GHz
Memory	4 - 8 GB RAM	16 - 32 GB RAM
OS	Windows 7	Windows 10 32-bit or 64-bit

Distributors and Regional Contacts

You will find a list of distributors and regional contacts at <http://www.wavecom.ch/distributors.php>