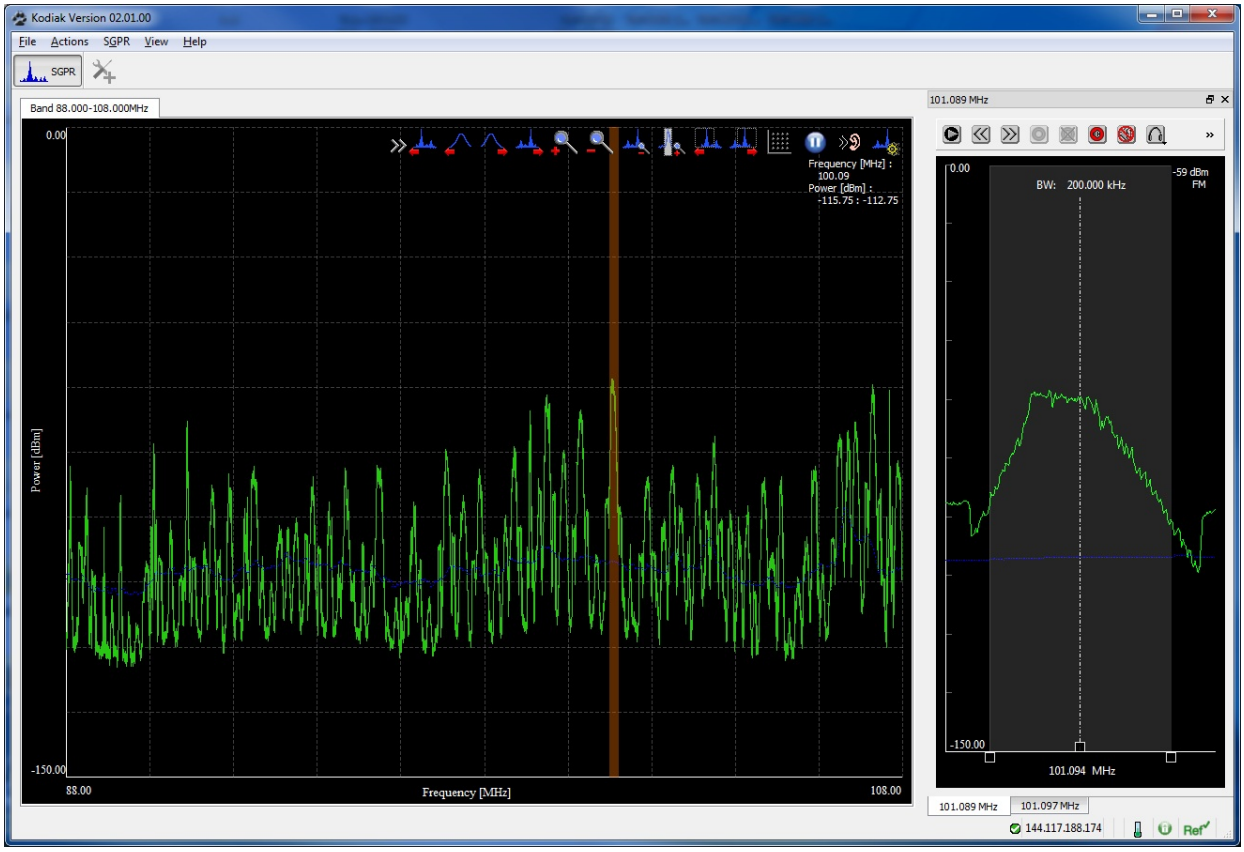
Digital Receiver Technology, Inc.

Approved for Public Release

DRT4000B SGPR



DESCRIPTION

DRT4000B SGPR – Search, Collection and DF Application

The DRT4000B/SGPR (Super General Purpose Receiver) application is an advanced search, collection and DF (Direction Finding) capability for the DRT4000B series receivers. SGPR integrates a high-performance wideband spectral search engine, multiple drop / analysis receivers and precision DF into an easy-to-use collection and analysis tool.

The heart of SGPR is the **Wideband Spectral Search** engine which rapidly scans one or more frequency bands automatically searching for active signals of interest (SOIs) and providing a visual depiction of the RF environment through the **RF Pan Display**. A user-defined noise riding threshold (NRT) is used to identify candidate SOIs which are characterized and further qualified against user-defined targeting criteria. Targetable attributes include frequency, bandwidth, power level and spectral occupancy.

Once an SOI is identified, several user-defined actions can occur including: real-time monitoring through the **Signal Inspector,** recording the audio with the integrated **Audio Recorder**, collecting a timestamped pre-detection **I/Q Snapshot**, and locating the SOI with a compatible **DF Antenna**. These actions can be initiated automatically as predefined in the SOI target entry or manually as desired by the operator.

Overall, the SGPR application provides a robust set of tools for detection, collection and analysis of a variety of conventional and modern signals.

Features

- High-Performance 3 GHz / Sec Wideband Spectral Search (8GHz / Sec planned)
- Noise Riding Threshold
- Flexible Signal-Of-Interest Targeting
- Up to 12 Analysis / Drop Receivers
- AM, FM, CW, USB, LSB Demodulators
- Flexible IF Bandwidth from 3 kHz – 200 kHz
- Precision Direction Finding
- Live, Streaming and Recorded Audio
- Sampled IF with Precision Timestamp
- Intuitive Wizard-Based User Interface
- Windows and Android User Interfaces

Specifications

Supported Devices — DRT4411B , DRT4411B-R, DRT4413B, DRT4413B-R

Wideband Search Engine

Noise Riding Threshold:	5 – 40 dB
Speed:	3 GHz / Sec @ 32 Averages (higher rates planned)
RBW:	1.6 kHz
Multi-Band Support:	Up to 16 Bands

Drop Receivers

Number:	Up to 12
Demodulation Modes:	AM, FM, CW, LSB, USB
IF BW:	8.3, 10, 12.5, 15, 20, 50, 100, 200 kHz
Adjacent Channel Rejection:	50 dB
FM Sensitivity:	-115 dBm (15 kHz, 12 dB SINAD)
AM Sensitivity:	-112 dBm (10 kHz, 10 dB SINAD)
RSSI Accuracy:	+/- 1 dB
BFO:	+/- 4 kHz
Squelch:	0 – 40 dB Noise Riding; -125 to -30 dBm Absolute

Signal Inspectors

Number:	Up to12
Navigation Modes:	SNR, RSSI, Detection Time, Target Priority, Frequency
Receiver Control:	Frequency, IF BW, Demodulation Mode, Audio, DF, I/Q

Targeting

Number of targets:	Up to 1000
Targeting Criteria:	Frequency, Bandwidth
Priority Levels:	10

Direction Finding (Optional)

Supported DF Heads:	DF240C, DF260C, DF520C
Simultaneous DF Targets:	Up to 6

Sampled IF

Format:	16 bit predetected I/Q
Timestamp Resolution:	10 nS
Timestamp Precision (Measured):	+/- 55 nS (Internal GPS), +/- 3nS (Bypass)
Sample Duration:	250 ms (min)

Optional Enhancements (consult factory) — HPCP / DTMF / CTCSS, Audio Inversion, Geolocation

12409 Milestone Center Drive, Germantown, MD 20876-7114
Phone: 855-401-4185 ~ Fax: 301-916-5787 ~ www.drti.com ~ international@drti.com

Rev. 1.4-INT, September 2013