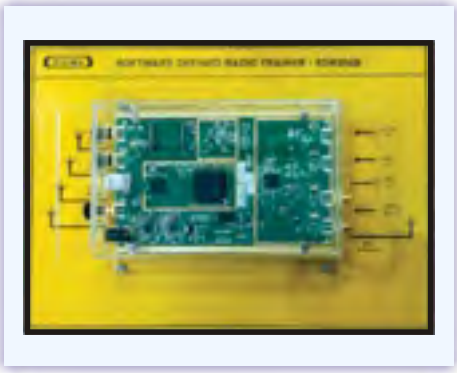
SOFTWARE DEFINED RADIO
(Standard Model - Dual Channels)
MODEL - SDR210B



Overview

This trainer covers 70 MHz – 6 GHz frequency with integrated RFIC technology, a Spartan6 FPGA, and USB 3.0 connectivity. This new platform enables experimentation with wide range of applications including FM and TV broadcast, cellular, WiFi, ISM, and more.

It features one receive and one transmit channel in a bus-powered, board-only with a new Analog Devices RFIC to deliver a cost-effective experimentation platform and a high bandwidth USB 3.0 bus with up to 56 MHz of instantaneous bandwidth on select USB 3.0 chipsets (with backward compatibly to USB 2.0).

The users can develop their GNU Radio applications with discrete RF boards with higher sensitivity, dynamic range, and IP3 performance using the common USRP Hardware Driver (UHD) framework.

Application Development is supported by the USRP Hardware Driver™ (UHD) software. UHD is an open-source, cross-platform driver that can run on Windows, Linux, and MacOS. It provides a common API, which is used by several software frameworks, such as GNU Radio. With this software support, users can collaborate with a vibrant community of enthusiasts, students, and professionals.

FEATURES

1. 2 TX, 2 RX, Half or Full Duplex RF channels
2. Coverage from 70 MHz – 6 GHz RF
3. GNU Radio, C, and Python Compatible
4. USB 3.0 High speed interface (Compatible with USB 2.0)
5. Flexible rate 12 bit ADC/DAC
6. Xilinx Spartan 6 XC6SLX150 FPGA
7. Up to 56 MHz of real-time bandwidth
8. External Power Supply

Sigma Trainers and Kits
E-113, Jai Ambe Nagar,
Near Udgam School,
Thaltej,
AHMEDABAD - 380054.
INDIA.

Phone(O): +91-79-26852427/ 26850829
Phone(F): +91-79-26767512/ 26767648
Fax : +91-79-26840290/ 26840290
Mobile : +91-9824001168
Email : sales@sigmatrainers.com
: sigmatrainers@sify.com
Web : www.sigmatrainers.com

Dealer:-

SPECIFICATIONS

1.	Interface	USB 3.0
2.	FPGA	Xilinx - Spartan 6 6XC6SLX150 - FPGA
3.	Coverage Frequency	70 MHz to 6 GHz
4.	ADC	ADC 12 Bit 61.44 MS/s
5.	DAC	DAC 14 Bit 61.44 MS/s
6.	Channels	Two Channels 2-TX, 2-RX
7.	Duplex	Half / Full
8.	Real Time Bandwidth	56 MHz - Single Channel 32 MHz - Dual Channel
9.	Power O/P	15 dBm
10.	Receiver Noise Figure	8 dB
11.	Streaming	100 MS/s USB 3.0 Streaming
12.	MIMO	Fully Coherent 2X2 MIMO Expandable to 4X4
13.	Frequency Accuracy	0.01 ppm with GPSDO Reference
14.	Connectors	USB, SMA
15.	Supply Voltages	6V DC, 2A
16.	Power Supply	External Power supply
17.	Driver	UHD
18.	Operating Systems	Linux, Windows
19.	Applications	FM, TV Broadcast, GNU Radio, Cellular, Wifi, ISM Prototype your own GSM base station with OpenBTS
20.	Accessories :-	1. Trainer, 2. Antennas - 2 Nos. 2.4 GHz 3. Loopback Cable 4. Bootable USB GNU Radio Drive 5. Practical Manual 6. Application Sw CD 7. SDR Presentation PPT Slides **8. SDR Books - 50 Nos in PDF format** **9. Communications Block Book by Prof. D R Luhar**

EXPERIMENTS

1. To understand Basic theory of Software Defined Radio
2. To understand Block Diagram of Software Defined Radio
3. To install Operating System in Computers Linux
4. To understand Hardware of Software Defined Radio
5. To understand and Install Software for SDR
6. To install UHD Driver Software
7. To install Programming Languages C++ and Python
8. To understand and Install Applications Programs
   GNU Radio and Matlab Simulink
9. To How to Start
10. To generate Sine wave signal
11. To generate Noise signal
12. To add Signal and Noise
13. To observe SNR clipping
14. To generate Variable
15. To generate Dial Tone
16. To generate Mono Tone
17. To generate Multi Tone
18. To generate AM Modulation signal
19. To generate AM DSB Modulation signal
20. To generate AM SSB Modulation signal
21. To generate Stereo FM Receiver
22. To receive FM signal
23. To receive FM signal
24. To receive Wide band FM signal
25. To generate synchronized PAM signal
26. To generate PAM timed signal
27. To generate Gaussian FSK signal
28. To generate Gaussian FSK PLL signal
29. To generate Single Channel BPSK signal
30. To generate Dual Channel BPSK signal
31. To generate DPSK Signal
32. To generate MPSK
33. To generate Single Channel QPSK Signal
34. To generate Double Channel QPSK Signal
35. To generate GMSK Signal
36. To generate QAM signal
37. To generate Measure Bit Error Rate
38. To represent Digital Bits
39. To generate PLL PSK signal
40. To generate Multiplath MPSK signal
41. To receive Radar Beacon signal
42. To receive AZmap signal
43. To implement FFT Filter
44. To implement Synth Filter
45. To make XMLRPC Server
46. To make XM:RPC Client
47. To generate CVSD Sweep signal
48. To display UHD FFT signal
49. To decode 802,11a wireless signal
50. To generate RA5 signal

51. To received Mode-S Signals
52. To transmit DPSK signal using UHD
53. To receive DPSK signal using UHD
54. To receive IQ signals
55. To observer Transmitted Carrier signal on CRO
56. To generate OFDM signal
57. To observer characteristics of OFDM signals
58. To transmit OFDM signal using USRP
59. To receive OFDM signa l using USRP
60. To understand HDSDR
61. To observer other grc and py files in GNU Radio