This application note gives a brief overview of RFME signal source series.

The RFME signal source supports various advanced features and provides an industry leading performance. It comes in a cost effective Hex shaped module. It is used for testing and tuning a wide variety of passive and active components, receivers, test systems, in technologies such as Wi-Fi, WiMAX, GPS, audio, video broadcasting, satellite communications, radar, antenna manufacturing, etc.

The RFME signal source series supports a frequency range from 51 MHz to 20 GHz. This allows the user to conduct tests either at a single frequency or do scans of the frequency range supported by the particular model, using the scan mode. In scan mode, the user can select the time for one complete single scan also known as the sweep time. The signal source is equipped with four different sweep times. They are 1S, 2S, 5S and 10S. Both of these modes can be selected from the front panel. The RFME signal source is designed to meet today's most demanding specifications, needed from the R & D benches to the production lines.
To get an idea about signal sources take a glance on its description as follows.

What are signal sources?
A signal source is an electronic device that generates electronic signals with conventional properties of frequency, amplitude and wave shape. The generated electronic signals are used in designing, testing, troubleshooting and repairing various electronic devices. They can be said or described in simple as an oscillator with calibrated frequency and amplitude. It is a free-standing self-contained instrument used for electronic measurements.

The RFME Signal Source series are CW signal sources, to elaborate more about CW signal.
An electromagnetic wave with constant amplitude and frequency is known as CW (continuous wave) signal, typically a sine wave. These CW signals can be used as a carrier wave in radio transmissions.

Below the RFME Signal Source series table is given, which demonstrates various applications as well as various models and its frequency ranges.

RFTx Signal Source

Variable and Fixed Signal Sources						
	Frequency (MHz)		BW (MHz)	Variable Source	Fixed Source	Description, Uses/Applications
Sr. #.	Start	Stop				
1	**51**	63	12	RFTxV516-636	RFTxF5705	Radio/Television broadcast (54 to 88 MHz : VHF Band 1), as an IF for ISM band products, HF Applications
2	**100**	129	29	RFTxV107-127	RFTxF1146	FM (88 to 108 MHz), line-of-sight ground-to-aircraft and aircraft-to-aircraft communications (122.75 MHz), general aviation helicopters (123.025 MHz), emergency services, Amateur radio frequencies (146.520 MHz for U.S. & Canada, 145.5 MHz for EU, 145 MHz for Philippines, Indonesia & Thailand)
3	**194**	255	61	RFTxV197-257	RFTxF2245	Land mobile (VHF: 150 – 174 MHz) and maritime mobile communications 157.075 MHz, amateur radio, weather radio, 243 MHz for military use known as Military Air Distress (MAD)

4	**330**	446	116	RFTxV337-447	RFTxF3886	Television broadcasts, land mobile communications (421 – 470 MHz), land mobile radio systems in military (Department of Defence uses 380 – 399.9 MHz), FRS and GMRS radios (462 and 467 MHz), Radio Astronomy (322 – 328.6 MHz and 406.1 – 410 MHz), Medical device Radio communication service (MedRadio) is allocated in the 401 to 406 MHz band, 406 – 406.1 MHz satellite based search and rescue (SAR) distress alert detection and information distribution system, Amateur radio
5	494	655	161	RFTxV497-657	RFTxF5746	Television broadcasts, Wireless Medical Telemetry Service (WMTS) 608 – 614 MHz, 4G LTE for US is 600MHz for T-Mobile
6	**781**	920	139	RFTxV787-927	RFTxF8506	European ISM Band products (866 – 868 MHz) , 868 MHz which is a Sub-GHz communication band for Internet Of Things (IOT) Applications
7	**802**	966	164	RFTxV807-967	RFTxF8846	ISM Band applications and products (902 – 928 MHz), in two way communications systems used for security purposes and emergency responses, 978 MHz ADSB(Automatic Dependant surveillance broadcast), Cellular (869-894 MHz), GSM (2G) 900MHz : Airtel, Idea, Vodafone, Aircel, BSNL, WCDMA (3G) 900MHz: Airtel, Idea, Vodafone, 915 MHz which is a Sub-GHz communication band for Internet Of Things (IOT)Applications, Amateur
8	**881**	1020	139	RFTxV887-108	RFTxF9506	
9	**1010**	1280	270	RFTxV108-128	RFTxF1147	GPS Receivers (1176.45 MHz and 1227.60 MHz), L band radars, mobile & satellite communication, satellite navigation (like GPS, GLONASS etc.)
10	**2020**	2160	140	RFTxV208-218	RFTxF2097	Mobile communications including IMT-2000/UMTS (2110 – 2200 MHz), satellite radio communications (2.32 to 2.36 GHz) XM radio, mobile communications, Bluetooth, Wi-Fi, Zigbee, wireless LAN, WCDMA (3G) 2100MHz: Airtel, Idea & Vodafone, WiMAX is 2300 MHz for BSNL, 4G LTE 2300MHz for Airtel, Idea, Vodafone & Jio, 2500MHz for BSNL, Idea and Vodafone, Telemetry Tracking and command (TT & C) subsystem for small satellite applications (1.6 to 2.2 GHz)
11	**2050**	2250	200	RFTxV208-228	RFTxF2157	
12	**1930**	2310	380	RFTxV198-238	RFTxF2127	
13	**2130**	2600	470	RFTxV218-268	RFTxF2367	
14	**2230**	2540	310	RFTxV248-258	RFTxF2387	Microwave oven (2.45 GHz), Microwave devices/communications, Bluetooth, Wi-Fi, Zigbee, wireless LAN
15	**2410**	2870	460	RFTxV248-288	RFTxF2647	Radio astronomy, Microwave devices/communication systems
16	**2680**	3210	530	RFTxV268-328	RFTxF2947	Microwave devices/communications, , weather/ship radar systems (3 GHz)
17	**2960**	3610	650	RFTxV298-368	RFTxF3287	Radio astronomy, Microwave devices/communications, VSAT and microwave radio, test equipment, military
18	**3270**	3720	450	RFTxV328-378	RFTxF3497	Microwave devices/communications, VSAT and microwave radio, test equipment and industrial controls, military
19	**3510**	4090	580	RFTxV358-408	RFTxF3807	Wireless LAN, Microwave devices/communications, 3.7 to 4.2 GHz band for C band satellite downlinks (space to earth),
20	**3840**	4640	800	RFTxV388-468	RFTxF4247	
21	**4270**	5220	950	RFTxV428-528	RFTxF4747	Low noise MMIC VCO w/Buffer Amplifier for: 802.11a, HiperLAN WLAN ,VSAT, UNII & Microwave Radio

22	**4740**	5750	1010	RFTxV478-578	RFTxF5247	Wi-Fi devices and Radio LAN, C band applications like HiperLAN WLAN , VSAT Radios, UNII & Point-to-Point Radios
23	**5220**	6490	1270	RFTxV528-648	RFTxF5857	5.9 GHz - DSRC (Dedicated short range communications), 5.925 to 6.425 GHz for C band satellite uplinks (earth to space), 5 G frequency band which includes LTE range, VSAT & Microwave Radio, CATV & Broadcast Relays, Telemetry Tracking and command (TT & C) subsystem for small satellite applications (5.9 to 6.5 GHz)
24	**5790**	7060	1270	RFTxV578-708	RFTxF6427	
25	**6250**	7650	1400	RFTxV628-768	RFTxF6957	VSAT radio, Point to Point/Multipoint Radio, Test Equipment & Industrial Controls, Military End-Use
26	**6600**	8330	1730	RFTxV668-838	RFTxF7467	Point to point communication, radio systems, radar, commercial products, Military End-Use
27	**7120**	9020	1900	RFTxV718-908	RFTxF8077	8.175 to 8.215 GHz for the meteorological satellites for monitoring weather conditions, Military End-Use
28	**6000**	12000	6000	RFTxV608-129	RFTxF9007	X band covers 8 to 12 GHz which is used for civil, military and government radar applications including weather monitoring, air traffic control, maritime vessel traffic control, tracking and vehicle speed detection for law enforcement. X band is also used for satellite and terrestrial
29	**10000**	20000	10000	RFTxV109-209	RFTxF15008	It is military microwave J band (NATO) used for crises management planning, training, electronic warfare activities and in various military operations. It include Ku band from 12 to 18 GHz which is mostly used for satellite TV and for VSAT systems on ships. Fixed satellite services (FSS) from 11.7 to 12.7 GHz. Direct broadcast satellite (DBS) from 12.2 to 12.7 GHz.

Learn more at: www.rfme.in

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