FastSource 1200

FAST SWITCHING SYNTHESIZER SPECIFICATIONS

FEATURES

- <100 MICROSECOND SWITCHING
- LOW PHASE NOISE -130 dBc/Hz
- 1 HZ RESOLUTION
- LOW SPURIOUS
- BCD/GPIB PROGRAMMING AVAILABLE

DESCRIPTION

The Aeroflex ***FastSource 1200*** RF source represents a milestone in Synthesizer development and reflects years of design experience in Fast Switching Synthesis. Designed specifically to meet the needs of todays Telecommunications industry, this high speed source offers a cost effective solution without sacrificing performance. The source covers a frequency range of 4.5 MHz to 6.0 GHz with a switching speed of 100 Microseconds. Spurious levels are greater than -65 dBc and Phase noise at 1.0 GHz is greater than -130 dBc/Hz at 10 KHz offset.

Table 1: *FastSource 1200* Frequency Synthesizer Specifications

FREQUENCY RANGE:	4.5 MHz to 6010 MHz											
STEP SIZE:	1 Hz - 4.5 MHzto 1999 MHz											
	2 Hz - 2000 to 3999 MHz											
	4 Hz - 4000 to 6010 MHz											
POWER OUTPUT:	+7 dBm											
FLATNESS:	±1.5 dB											
OUTPUT ISOLATION	25 dB minimum between ports. <5 microseconds switching time between ports.											
VSWR:	1.8:1											
EXTERNAL REFERENCE:	10 MHz, 3 dBm ±4 db, 50 Ohms											
FREQUENCY STABILITY:	Same as Reference Oscillator											
REFERENCE OUTPUT:	10 MHz, +3 dBm ±2 db, 50 Ohms											
PHASE NOISE OF EXTERNAL REFERENCE:	-130 dBc/Hz	100 Hz offset										
	-140 dBc/Hz	1KHz offset										
	-143 dBc/Hz	10 KHz offset										
	-145 dBc/Hz	50 KHz offset										
SWITCHING TIME:	<100 μseconds to within 1.0 radian of final phase											
OUTPUT PHASE NOISE:												
OFFSET	<250 MHz		.25 to <.5GHz		0.5 to <1.0 GHz		1.0 to <2.0GHz		2.0 to <4.0 GHz		4.0 to <6.0 GHz	
	Typ.	Guar.	Typ.	Guar.	Typ.	Guar.	Typ.	Guar.	Typ.	Guar.	Typ.	Guar.
10 KHZ	-125	-122	-135	-132	-131	-127	-125	-122	-119	-116	-113	-110
20 KHZ	-127	-124	-137	-133	-133	-129	-127	-124	-121	-118	-115	-112
100 KHZ	-128	-125	-138	-134	-134	-130	-128	-123	-122	-118	-116	-113
NOISE FLOOR (10 MHZ OFFSET):	-140 dBc/Hz	4.5 to 180 MHz										
	-145 dBc/Hz	180 to 1000 MHz										
	-147 dBc/Hz	1000 to 2000 MHz										
	-138 dBc/Hz	2000 to 4000 MHz										
	-134 dBc/Hz	4000 to 6010 MHz										
HARMONICS:	-25 dBc maximum	4.5 to 6010 MHz										

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SUBHARMONICS:	-60 dBc, Typical -50 dBc Max except for components at FC noted below @ FC=4.0 to 4.25, 5F/2 may be -45 dBc. @ Offsets ≤ ± 2.8 MHz from the carrier, spurs will be as follows: FC < 180 MHz: -60 dBc. 180 MHz<FC<1.0 GHz: -66 dBc. 1.0 GHz<FC<2.0 GHz: -60 dBc. 2.0 GHz<FC<4.0 GHz: -54 dBc. 4.0 GHz<FC<6.01 GHz: -48 dBc. For 1.0 GHz<FC <2GHz, fixed spurs at the following frequencies may be -60 dBc: 1175, 1225, 1275, 1325, 1375, 1425, 1475, 1525, 1575 & 1625 MHz	
SPURIOUS	-65 dBc maximum	4.5 to 2000 MHz
	-60 dBc maximum	2000 to 4000 MHz
	-55 dBc maximum	4000 to 6010 MHz
	For FC less than 180 MHz a spur may exist between 1609 MHz and 1960 MHz at -35 dBc: A fixed 800 MHz spur may exist at -60 dBc all carrier frequencies	
RESIDUAL FM:	<7 Hz	4.5 to 2000 MHz
	<16 Hz	2000 to 4000 MHz
	<32 Hz	4000 MHz to 6010 MHz
FREQUENCY CONTROL:	Parallel BCD positive or negative true with strobe. Strobe normally low, trigger on trailing edge GPIB (IEEE-488)	
OUTPUT FAULT	TTL level logic, “1” normal operation	
REMOTE ON/OFF (RF):	O MHz = Off On/Off ratio: < 25 dBc	
LOGIC CONNECTOR:	50 Pin receptacle, AMP 554216-3	
INITIALIZATION:	Unit will initialize with RF Off	
RANDOM VIBRATION	10 Hz to 300 Hz @ 1.2G RMS	
POWER:	Autoranging: 50-60 HZ , 100 to 130, 180 to 250 VAC	
DIMENSIONS:	19.0" W X 3.5" H X 22.28" D (Chassis Width 16.72”)	
TEMPERATURE RANGE:	$+10^{o}$ to $+45^{o}$C	

Note- Specifications subject to change without notice

PROGRAMMING INPUT

(BCD CONNECTOR)

SIGNAL	PIN	PIN	SIGNAL:
Logic Ground	50	25	NC
400 MHz	49	24	Strobe
NC	48	23	NC
NC	47	22	NC
NC	46	21	Chassis Ground
Fault	45	20	8 MHz
200 MHz	44	19	4 MHz
100 MHz	43	18	2 MHz
1 Hz	42	17	1 MHz
80 MHz	41	16	20 MHz
40 MHz	40	15	10 MHz
MUX	39	14	2 GHz
800 MHz	38	13	1 GHz
8 Hz	37	12	2 Hz
4 Hz	36	11	4 GHz
80 Hz	35	10	20 Hz
40 Hz	34	9	10 Hz
800 Hz	33	8	200 Hz
400 Hz	32	7	100 Hz
8 kHz	31	6	2 kHz
4 kHz	30	5	1 kHz
80 kHz	29	4	20 kHz
40 kHz	28	3	10 kHz
800 kHz	27	2	200 kHz
400 kHz	26	1	100 kHz
Note: Mating Connector is 3M P/N 3564-1001 (50 Pin Ribbon. Bail mount, Plug)			