



# OVEN CONTROLLED QUARTZ OSCILLATORS

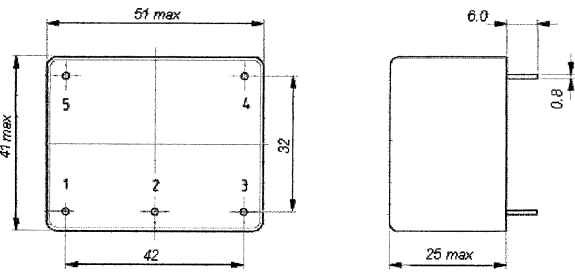
STABILITY	to	1 x 10 <sup>-12</sup> sec
PHASE NOISE	to	-165 dBc/Hz @ 10kHz
WARM TIME	from	15 seconds
POWER	from	150mW
SIZE	from	27x36x12 CO8

	Astra A&B A3 2001	Dubhe A3 3005	EOS A3 2008	Altair A3 2007	Cosmo A3 2000	Large Quantity
Frequency MHz	10	100	10	10	10	Low Cost
Resonator Cut	SC	BT	SC	SC	SC	Custom Spec
Aging per day	1E-10	5E-09	5E-10	1E-10	E-10	STS
per month	1E-08	5E-08	5E-08	1E-08	E-08	
per year	5E-08	1E-07	1E-07	3E-08	E-08	1' 3E-12
Phase Noise -dBc/Hz						10' 3E-12
1Hz	100	60	90	110	100	100' 1E-11
10Hz	130	90	130	135	125	1000' 8E-11
100Hz	150	120	145	150	150	
1kHz	155	150	155	160	155	
10kHz	158	155	160	165	157	
Thermal Stability	+/- 5E-08	+/- 1E-08	+/- 1E-08	+/- 3E-08	+/- 3E-08	
Over range (°C)	-60...+70	-60...+70	-60...+70	-60...+70	-60...+70	
STS (1 second)	5E-12	5E-11	5E-11	1E-12	2E-12	
Output	500mV	300mV	500mV	500mV	~500mV	
50Ω						
Warm Time (<1E-7)	<3min @25°C	<3min @25°C	15s @25°C	<3min @25°C	<30s @25°C	
Supply Voltage	12V	12V	12V	12V	12V	
(+/-10%)						
Continous Power	<250mW	<250mW	<300mW	<250mW		
(T=25°C)			150mW option			
Size (LxWxH)mm	50x40x23 B 53x33x24 A	54x34x25	36x27x12.5	33x33x16	50x40x23	

### BASE DIAGRAMS & PIN CONNECTIONS

#### ASTRA 'B' & COSMO

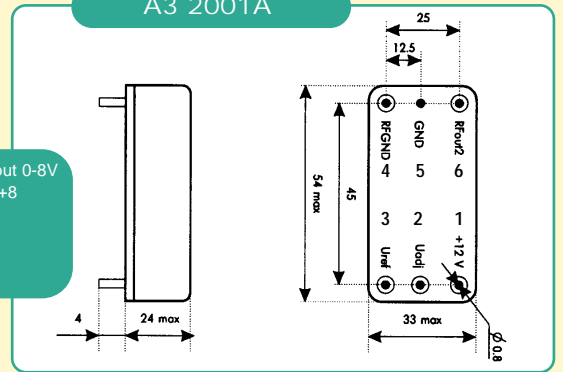
##### A3 2001B & A3 2000



1. Ground RF return
2. Electrical tuning input 0-8V
3. Reference voltage +8
4. Vcc +12V
5. RF output

#### ASTRA 'A'

##### A3 2001A



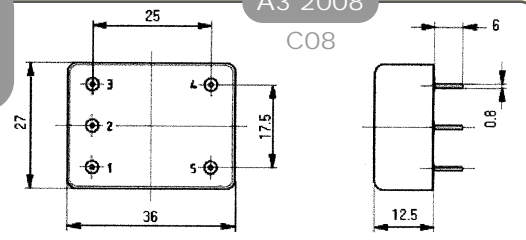
1. Electrical tuning input 0-8V
2. Reference voltage +8
3. Vcc +12V
4. RF GND
5. Ground
6. RF Output

#### EOS

##### A3 2008

##### C08

1. Electrical tuning input 0-8V
2. Reference voltage +8
3. Vcc +12V
4. RF output
5. Ground RF return

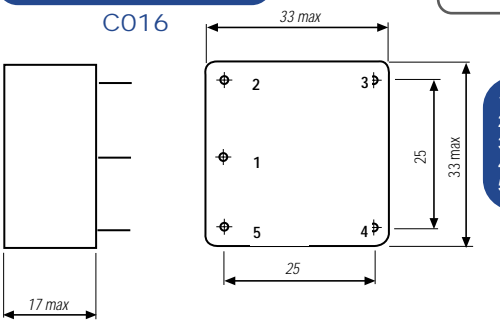


1. Ground
2. Electrical tuning input 0-8V
3. Reference voltage +8A
4. Supply voltage
- X - RF Output (SMA - F)

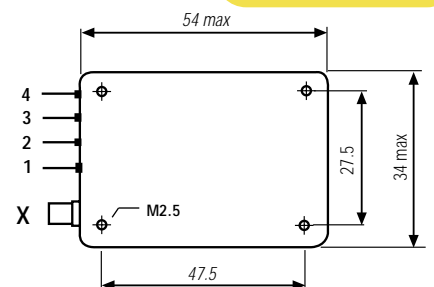
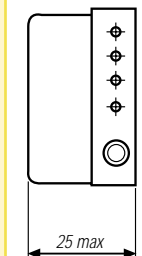
#### ALTAIR

##### A3 2007

##### C016

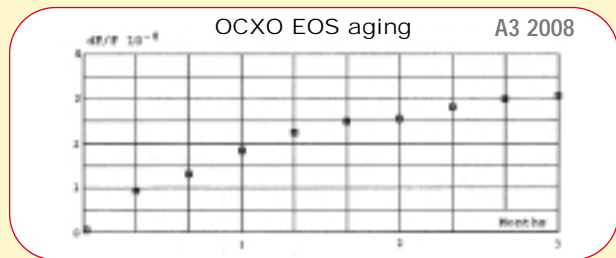
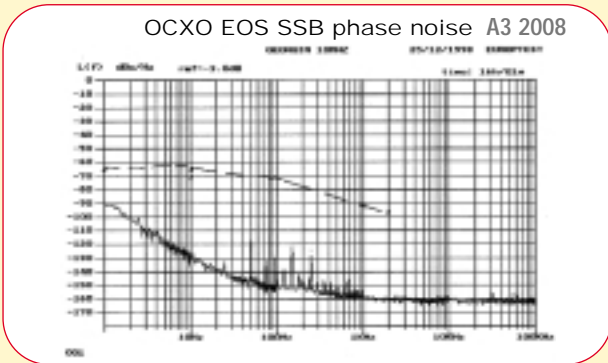
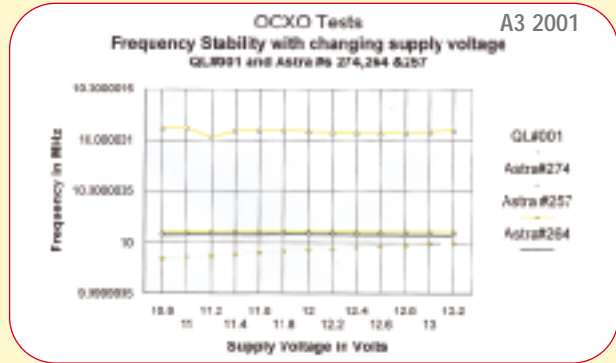
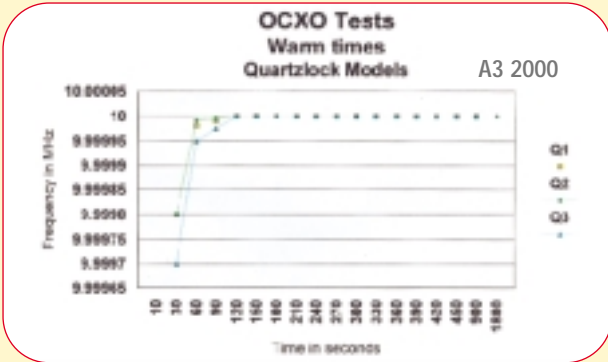
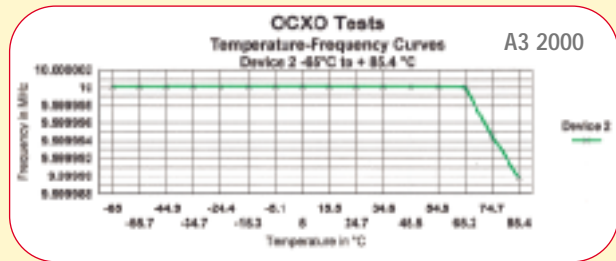
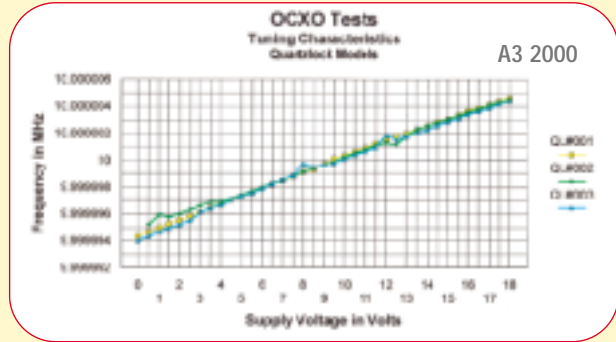
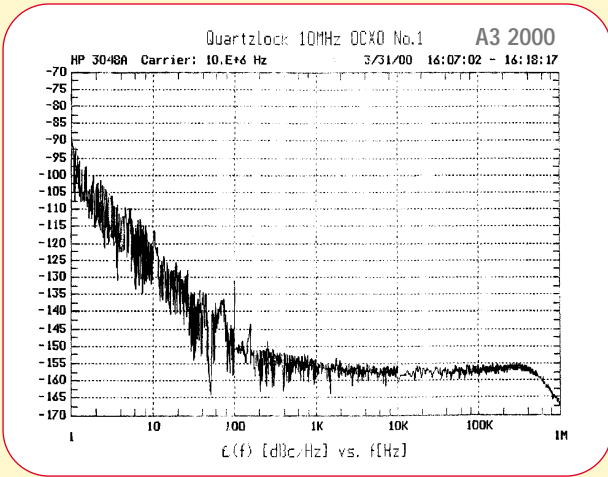
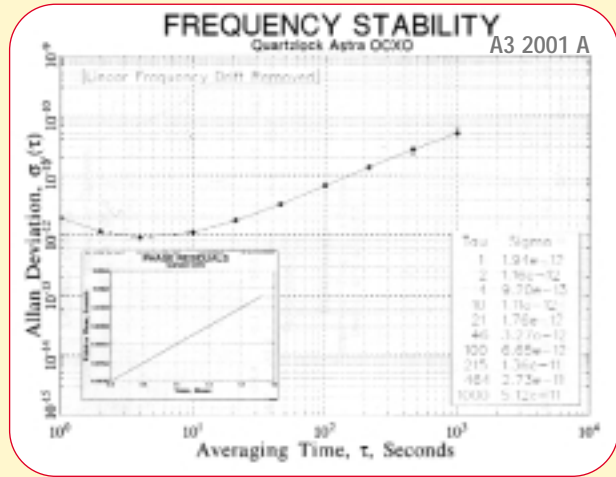
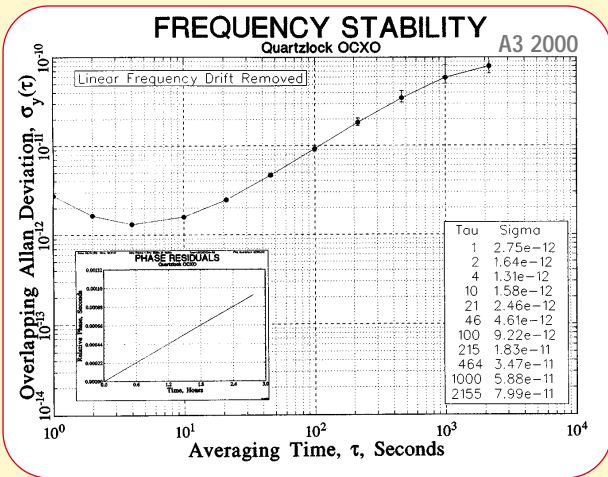


1. Ground
2. RF Output
3. Supply voltage
4. Reference voltage +8A
5. Electrical tuning input 0-8 V



#### A3 3005

#### DUBHE



	LPRO/FRS	LCRO		LPRO/FRS	LCRO
Output Frequency, MHz	10	10	Phase Noise L(f) - dBc/Hz		
Amplitude (into 50 ohm)	+8+2dBm	+8+2dBm	10Hz	100	-
Voltage	0.5-1.0Vrms	0.5-1.0Vrms	100Hz	130	110
Adjustment:			1kHz	140	130
Mechanical/Electrical Range	2E-9(min)	2E-9(min)	10kHz	145	-
Control Voltage	0 - 5V	0.5 V	-dBc, Harmonics:	40	40
Factory Setting	+5E-11	+5E-11	Spurious	80	65
Frequency Stability:			Power Supply Input Voltage	22 - 30	22 - 30
Allan Var. 1s	3E-11	1E-10	Power at Warm Up (6 min)	45W	42W
10s	1E-11	3.16E-11	Power at steady state at +25°C	10W	8W
100s	3E-12	1E-10	Temperature		
Aging: 1 month	4E-11	5E-11	Operating (Ambient)	-10°C+55°C	-5°C+55°C
1 Year	5E-10	5E-10	Base Plate, not more than	+65°C	+65°C
Warm up time to 1E-9	5 min	15 min	Storage	-40°C+85°C	-40°C+85°C
Retrace			Freq Offset over Temp range	3E-10	3E-10
after 24 hours off & hours on, same temperature	2E-11	5E-11	Magnetic Field sensitivity	2E-11/Guass	3E-11/Guass
			Atmospheric Pressure	1E-13/mbar	

Defence specification vibration, shock, topple and thermal stress.



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Traceable  
 Standard

**NPL** Referenced

**dti** Smart  
 Awards