AXTAL ADVANCED XTAL PRODUCTS

Specification	AXCS9000	Rev.: 2	Date: 2018-11-27

Oscillator type: Optically-pumped Cesium Atomic Clock

Features:

- **Ultra-High Stability Primary Reference Clock (PRC)**
- **Standard for Time Synchronisation, Calibration and Test Labs**
- **Full monitoring and control features with modern user interface**
- **Long service life – Continuous operating time >8 years**
- **Compatible with popular Cesium Clocks**
- **Applications: 4G/5G networks, DTV, DAB, CMDA and Tetra, IPTV etc.**
- **Equivalent to ELECSPN TA1000**

Ordering Code

Model	Revision	Frequency [MHz]
AXCS9000	Rev.2	10.000

Parameter	min.	typ.	max.	Unit	Condition
Nominal output frequency RF1		5.000		MHz	
Nominal output frequency RF2		10.000		MHz	
Frequency stability					
Frequency accuracy			$1 \cdot 10^{-12}$		
Short- and long-term stability			$1.2 \cdot 10^{-11}$ $8.5 \cdot 10^{-12}$ $2.7 \cdot 10^{-12}$ $8.5 \cdot 10^{-13}$ $2.7 \cdot 10^{-13}$ $8.5 \cdot 10^{-14}$ $5.0 \cdot 10^{-14}$		@ τ = 1 sec @ τ = 10 sec @ τ = 100 sec @ τ = 1,000 sec @ τ = 10,000 sec @ τ = 100,000 sec @ Floor
Frequency reproducibility			$5 \cdot 10^{-13}$		
Manual synchronisation					
Synchronisation range		$\pm 1 \cdot 10^{-9}$			
Resolution		$1 \cdot 10^{-15}$			
External synchronisation input		1PPS TTL			
1 PPS output					
Rising time			10	ns	
Jitter			1	ns	
Accuracy			20	ns	
RF output RF1 & RF2					
Number of output ports		2			
Signal waveform		Sine wave			
Load R_L		50		Ω	±5%
Output level	+7	+10	+13	dBm	
Harmonics			-40	dBc	
Spurious			-80	dBc	
Phase noise @ 10 MHz			-100 -130 -145 -150 -154	dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz	@ 1 Hz @ 10 Hz @ 100 Hz @ 1 kHz @ 10 kHz
Warm-up time			40 120	Min Min	@ +25°C @ -10°C
DC Supply voltage V_S	22		75	V	
AC Supply voltage V_S		220		V	
AC Supply input frequency		50		Hz	
Power consumption (steady state)			110	W	
Power consumption (warm-up)			190	W	
Operating temperature range	-10		+40	°C	
Storage temperature range	-20		+50	°C	
Enclosure (see drawing) (WxDxH)		456x553x177		mm	19” rack 4 HU
Environmental conditions		Consult factory			
Weight			40	kg	
MTBF		100,000		hrs	
Service life	8			years	

Please consult factory for detailed information, operating manual or special technical requirements

Revision History

Rev.	Drawing	Date [dd.mm.yyyy]	Remarks	Author	Checked
1	D0	30.10.2018	First issue	HH	ME
2	D0	27.11.2018	Phase noise values updated	HH	HH