AR-ONE C

FREQ. & PHASE COHERENT

Professional communications receiver

10 kHz – 3.3 GHz

Frequency stability 0.1 ppm

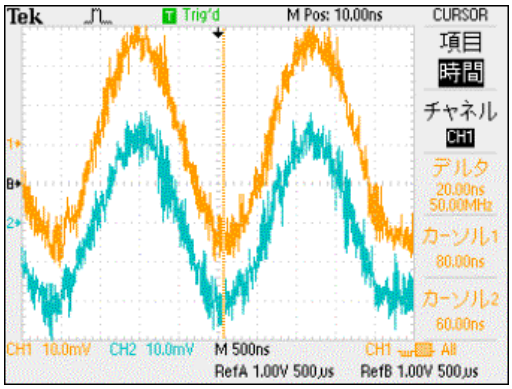
Phase matching at max. 5% shift

High intercept

- For multi-receiver configurations (such as for direction finding purposes), frequency matching as well as PHASE MATCHING between receivers are critical.
- Whereas the AR-ONE already offers an ultra-stable reference frequency oscillator of 0.1ppm, the new AR-ONE C provides LOCAL OSCILLATOR SEPARATION, for best possible PHASE MATCHING between receiving units.

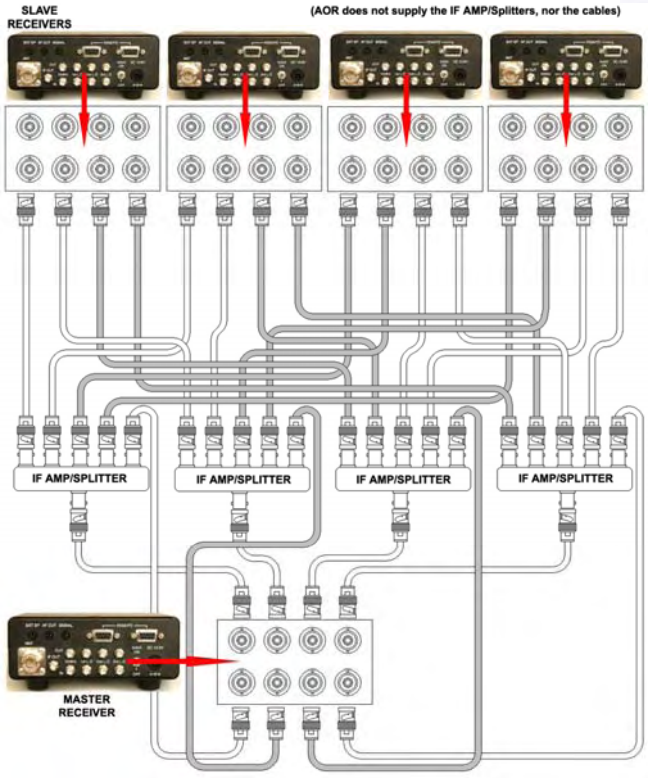
In addition of 10MHz frequency standard input/output connectors (for coherent), there are also 1st, 2nd, 3rd local oscillator input/outputs, for phase matching with a maximum 5% shift. The daisy chained receivers become therefore perfect clones in frequency and phase.
The number of receivers which can therefore be interconnected, is only limited by the type of (non supplied) IF amplifiers and splitters used.

SMA connectors for INPUT	SMA connectors for OUTPUT
10MHz standard oscillator 1st & 2nd local oscillators: 254.5MHz or 744.5MHz 3rd local oscillator: 10.245MHz	IF (10.7MHz or 455kHz) 10MHz standard oscillator 1st & 2nd local oscillators: 254.5MHz or 744.5MHz 3rd local oscillator: 10.245MHz



This plot shows 2 interconnected AR-ONE C receivers having an identical phase for their respective IF OUT signals at 455kHz

Example of typical 1 master + 4 slave receivers configuration for DIRECTION FINDING setup.



AR-ONE C SPECIFICATIONS

(Identical to the regular version of AR-ONE)

Configuration	Triple conversion superheterodyne
Frequency coverage	10 KHz - 3.3 GHz
Reception modes	AM, NFM, WFM, USB, LSB, CW, DATA

Selectivity	B/W	-6dB	-60dB
	0.5KHz	0.5KHz >	< 2KHz
	3KHz	3KHz >	< 6KHz
	9KHz	9KHz >	< 30KHz
	15KHz	15KHz >	< 40KHz
	30KHz	30KHz >	< 70KHz
	110KHz	110KHz >	< 450KHz
	220KHz	220KHz >	< 600KHz
	300KHz	300KHz >	< 900KHz
Spurious Sensitivity	60dB >		
Adjacent Selectivity	55dB >		
Dynamic Range	90dB >		
Unwanted Spurious emission	< -57dBm		
IP3	+2dBm > (-1dBm > above 2.5GHz)		
Frequency stability	+/- 0.1ppm (-10 ~ 50C)		

Sensitivity	(AM mode -10dB S/N, NFM mode -12dB SINAD, CW/SSB mode -10dB S/N)	
	10 ~ 40 KHz:	CW 22.3 uV
	40 ~ 100 KHz:	AM -4.5uV, CW -1.5uV
	100 KHz ~ 40 MHz:	AM 2.5uV, 2 ~ 40 MHz: AM -1.5uV, SSB/CW - 0.7uV, NFM -0.89uV
	40 MHz ~ 1 GHz:	AM -0.89uV, SSB/CW - 0.4uV, NFM -0.5uV, WFM -1.5uV
	1 GHz ~ 2.5 GHz:	AM -0.7uV, SSB/CW - 0.32uV, NFM -0.4uV, WFM -1.5uV
	2.5 GHz ~ 3.3 GHz:	AM -0.9uV, SSB/CW - 0.35uV, NFM -0.5uV, WFM -1.5uV
IF frequencies	1st IF : 754 MHz /265 MHz	
	2nd IF : 10.7 MHz	
	3rd IF : 455 KHz	
Tuning steps	1 Hz to 1 MHz (1 Hz incremental)	

Distortion	20dB > (< 10%)
Audio output	1.5W (8 Ohm) @ 10% distortion
Power requirements	13.5V DC, < 2amp. (@ 1W audio output)
Antenna impedance	50 Ohm N-TYPE
IF output	10.7MHz or 455KHz @ -20dBm
External frequency standard input:	10MHz (0dBm +/-3dB)
Control interface	RS-232C up to 38400bps
Operating temperature	-10 to 50 degrees Celcius
Dimensions	157(W) x 58(H) x 270(D) mm excluding projections
Weight	Approx. 2.2Kg
Nominal filter bandwidths	0.5kHz, 3kHz, 6kHz, 9kHz, 15kHz, 30kHz, 110kHz & 220kHz, 300 kHz.
Memory channels	1000 (10 banks)
Scan/Search Rate	25 steps per second.

All specifications are subject to change without prior notice.