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RA3CO/RV3BA Team,

To: WRTC-2006 Technical Committee,  
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## Technical Station Description

### 1 . C o n t a c t i n f o r m a t i o n

1.1. Team leader, Dimitri Kryukov, RA3CO, *admin@ra3co.com*

1.2. Team-mate, Max Pustovit, RV3BA, *rv3ba@mail.ru*

1.3. Team technical adviser, Eugene Kuleshov, RK3AD, *rk3ad@mail.ru*

1.4. Team technical adviser, Dmitri Bagno, RW3FO, *rw3fo@mail.ru*

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### 2 . A n s w e r s t o b a s i c q u e s t i o n s

2.1. Block Diagram (Radios, PCs, Auxiliary Equipment, etc.): see Chapter 3 & 4.

2.2. Logging Software to be used: "N1MM Logger" or N6TR "TR-Log".

2.3. Referee Interface: see chapter 5.

2.4. 110V AC requirements: NOT required. All equipment use 220V AC mains.

### 3 . B l o c k D i a g r a m

Proposed block diagram (see fig. 1) includes the following main parts:

- two computers (A and B) with peripherals (mouse, external keyboard, power supplies);
- operator interfaces (headphones, paddles, foot switches, control panels for selecting antennas, turning on Power Amplifier bypass etc.);
- two transceivers (Radio A and Radio B);
- custom-made LF Block (Low Frequency Block) which performs audio, CW and data switching and overall control;

- custom-made RF Block (Radio Frequency Block) which includes automatic 3x2x1 channel transmit/receive antenna switch, PA bypass switch, receiving antenna splitter, 3x2 receiving antenna selector, and a set of receiving bandpass filters;
  - transceiver, LF Block and RF Block power supplies, 220V AC / 12V and 24V DC;
  - external controllable attenuator (can be embedded into RF Block);
  - external controllable transmitting signal clean-up bandpass filters (can be embedded into RF Block or not used at all);
  - ACOM 1010 power amplifier given on loan by WRTC2006 Organizers.
- Both audio outputs for Judge' head phones and Sound Recorder are provided.

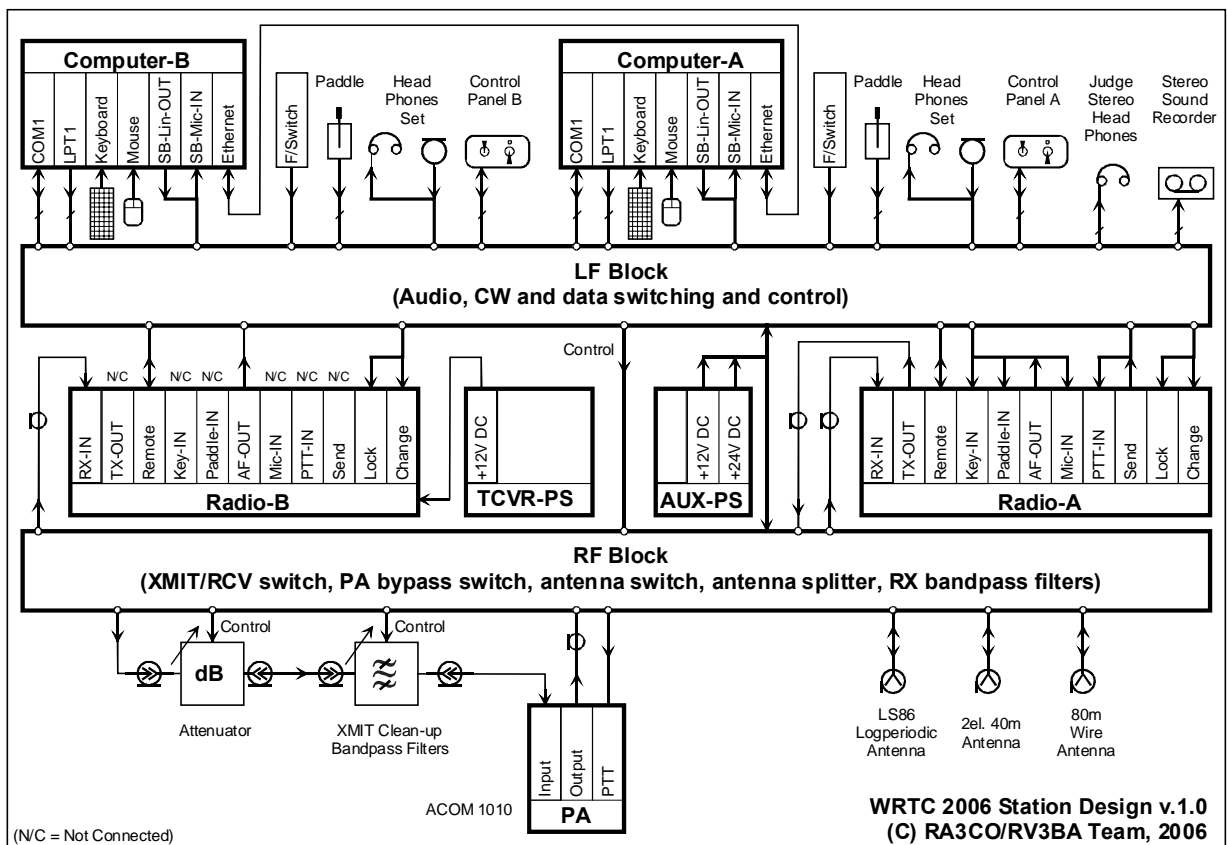


Fig. 1 – Proposed Block Diagram.

## 4 . L i s t o f e q u i p m e n t

### 4 . 1 . L i s t o f p r i m a r y e q u i p m e n t

<b>№</b>	<b>Designation</b>	<b>Type, Description</b>
1	Radio A	Transceiver ICOM IC-7800
2	Radio B	Transceiver ICOM IC-756PROII
3	Computer A	Notebook with external keyboard, mouse and power supply
4	Computer B	Notebook with external keyboard, mouse and power supply
5	RF Block	Homemade equipment, see Chapter 3
6	LF Block	Homemade equipment, see Chapter 3
7	TCVR PS	220V AC / 12V DC, Transceiver Power Supply for Radio B
8	AUX PS	220V AC / 12V + 24V DC, Auxilary power supply for RF Block and LF Block
9	Paddle A	Telegraph paddle
10	Paddle B	Telegraph paddle
11	Head Phones Set A	Operator A head phones set
12	Head Phones Set B	Operator B head phones set
13	F/Switch A	Operator A foot switch
14	F/Switch B	Operator B foot switch
15	Control panel A	Operator A Control panel
16	Control panel B	Operator B Control panel
17	Cabling	A set of low frequency, radio frequency and control cables for the interconnection of listed devices
19	Mains extension	A set of 220V AC Power cables and outlets to supply listed devices
20	Attenuator	Controllable homemade attenuator
21	XMIT BPF	A set of controllable exciter clean-up bandpass filters

## 4 . 2 . L i s t o f s p a r e a n d a u x i l a r y e q u i p m e n t

Spare equipment is destined for replacement of primary equipment which is shown in the block diagram (see Chapter 3). Auxiliary equipment is not shown on the block diagram but may be used by the team during the Contest period.

<b>№</b>	<b>Replaces what</b>	<b>Type, Description</b>
1	Radio A or B	Transceiver ICOM IC-756PROII
2	TCVR PS	200V AC / 12V DC, Transceiver Power Supply for Radio B
3	Computer A or B	Notebook with external keyboard, mouse and power supply. Every part may be replaced.
4	HPhones A or B	Operator headphones set
5	FSwitch A or B	Operator foot switch
6	Cabling	Different cables
7	Parts	Various parts and modules for RF block and LF block repairment
8	auxiliary equipment	Sound Recorder (notebook or dedicated sound recorder)
9	auxiliary equipment	SWR/Power meter
10	auxiliary equipment	ICOM CI-V-compatible TTL level converters
11	auxiliary equipment	RigExpert computer-to-transceiver interfaces
12	auxiliary equipment	Judge Stereo Headphones

## 5 . R e f e r e e I n t e r f a c e a n d S o u n d R e c o r d i n g I n t e r f a c e

Our team provides a stereo headphones to the referee. The right ear piece is connected to operator A monophonic headphones, so referee can hear the same as operator A hear. The left ear piece is connected directly to operator B monophonic headphones, so referee can hear the same as operator B hear. The team provides 1/4" female socket in case of referee prefer to use his own headphones.

Our team provides 3.5mm plug for referee stereo Sound Recorder (right channel = operator A, left channel = operator B) or mono (a mix of operator A & operator B). Team plans to perform sound recording by its own equipment even in case of referee have no luck to be equipped with sound recorder.