

RCP02 V08 Release Notes

These notes cover changes made to the RCP02 code since release V07 of 21 January 1998. If you are upgrading from an earlier release, please read those notes also.

Bug Repairs

1. The rejection of invalid records from the Honeywell INU has been made more robust. The exact record length is now being checked, as well as the overall CRC check on the data. Previously, it was fairly likely that a completely garbled input record might be passed along as a valid set of measurements.

New Features

1. The "Monitor Status" command now shows the three IRIS mode bits.
2. The Seapath MRU (Motion Reference Unit) is now supported by the RCP02 for moving platform stabilization. The interface to the MRU is an asynchronous RS422 serial line; the nominal data rates are 100 packets per second at 57600-baud.
3. The "invalid" and "reduced" status bits from the Seapath MRU are now used to qualify whether the RCP02 performs coordinate transformations on the pedestal azimuth and elevation. Coordinate rotations will only be performed if none of the MRU's roll, pitch, or heading angles are invalid. If any angle is invalid, then the RCP02 reverts to pedestal angles directly.
4. The "Airflow" and "Waveguide Pressure" bit sense are no longer inverted in the SIO output data stream. The polarity of the bits in the SIO data packets now matches the polarity shown by the "monitor status" command.
5. The device management within the RCP02 has been improved, so that you may now choose the slot for the IP module that supports a custom feature. So far, this includes all add-on features that use a serial line via an IP-SERIAL card, i.e., the INU/MRU, serial TAG output, and the Kavouras 'TAC' interface.
6. The "spoofing" of status input bits is now done only if the hardware input line is not used, and the status bit is actually derived from that line. This is different from before in that the hardware inputs may be remapped to support certain optional features. The status lines that are spoofed are unchanged from before: Pulse Width 0/1, Servo Power, T/R Power, and Radiate.
7. The RCP02 now supports blanking of the radar trigger according to the direction that the antenna is pointing. Up to six solid sectors may be defined, within which an output signal will be asserted to suppress the trigger. Each sector can use either pedestal coordinates or earth coordinates as the basis for comparison. On a moving ship, for instance, blanked sectors may include portions of the ship (pedestal relative), or features on the land (earth relative).

8. The RCP02 can now produce a continuous serial output stream in RCV01 format. This can be useful whenever AZ and EL angles need to be sent at high speed to a remote location (further than the parallel TTL output lines could safely travel). New setup questions are in "Site Custom".
9. The Kavouras serial 'TAC' interface is now supported. Control and status are relayed serially between the RCP02 and the Transmitter/ Receiver. New setup questions are in "Site Custom".
10. The RCP02 can now generate BITE packets and merge them into the serial stream for the host computer. An internal BITE packet has been defined to convey conditions that are generated locally within the RCP02. This includes bits for all of the types of shutdowns that can occur, extended INU status, and copies of the regular radar/antenna status bits. There are approximately 25 spare bits in the 13-Byte packet at this time.
11. The RCP02's algorithm for automatically incrementing the year when the Honeywell INU is supplying the time has been improved. It now requires the reception of 1000 consistent INU records before the year will be changed. This removes the possibility of spurious changes being made in response to an erroneous INU packet.

Setup Changes

1. A new setup section "Site Custom" has been added, in which configuration questions appear for custom modifications, and customer-specific features of the RCP02.
2. The polarities of all input status lines are now treated uniformly. Previously the "Standby", "Mag Current", "Airflow", and "Waveguide Pressure" inputs were inverted. Please change the active hi/lo definition of these input lines if you are using them.
3. The setup questions for the three IRIS mode status inputs and control outputs are now individual for each bit in question. This makes these three inputs and three outputs more general for remapping to other functions.
4. The "RADIATE On/Off pulse duration" setup parameter has been moved within the nonvolatile RAM. If you use this feature, please retype your old value.
5. New setup questions have been added to supply the ID field of the internal BITE packets that can be generated by the RCP02, and to decide whether those packets are transmitted at all.
6. New setup questions have been added to the INU section. The type of navigation unit may now be selected as either the Honeywell-INU or the Seapath-MRU, and the baud rate of the serial interface may now be selected. The card slot of the IP-SERIAL module that performs the I/O can also be chosen.