

Digital Communications Plan for the Hardrock Hundred Run San Juan Mountains CO

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2008 Event

The 2008 run will be started in the clockwise direction this year. The goal for 2008 digital communications will be to cover the first 3 stations, Kamm Traverse, Chapman Gulch, Telluride, then Ouray, with a packet radio terminal. Multi-frequency paths may be used this year to provide redundant coverage to Ouray and other stations new to packet coverage.

1. Protocol Standard

The packet protocol is AX.25 Level 2 Version 2.

2. Node Standard

The nodes used will be Kantronics nodes using Version 8 or later. The KA-Node feature of Kantronics will support the basic node relaying of traffic to Silverton headquarters.

3. Node Sites

With the wide area covered by this event, and the effects of terrain and multi-path on radio signals carrying data, the sites needed to accomplish a packet network will be many, and could change year to year based on goals and performance.

A list of tested sites and features follows:

Hazelton The site has AC power, so the node can be powered by AC supply with battery backup. The node will be KPC3+ with a mailbox. The mailbox should be 5K bytes minimum. The radio will be on 145.050 MHz at 10 watts output. The antenna needs to be installed at 50 foot distance from main tower.

Digi= WB0ITG-4 Node= HAZL Mailbox= HAZL-1

Red Mountain The site has AC power, so the node can be powered by AC supply with battery backup. The node will be KPC3+ with a VHF radio, or a KPC9612 with a VHF and UHF radio. The mailbox should be 5K bytes minimum.

VHF Freq. 145.050 MHz UHF Freq.

Port1 Digi= WB0ITG-8 Node= RED Mailbox= RED-1

Port2 Digi=

Imogene The Imogene site is the peak above the pass, and will be battery powered. All equipment must be hiked to peak, and placed in weather tight box. Imogene should have a mailbox of 5K bytes. Transmit power will be low to save battery power. 145.050 Digi= N0NHJ-8 Node= IMOGEN Mailbox= IMOGEN-1

3. Node Sites continued

Dexter Cr. This relay site will be close to Ouray Park, to provide a UHF path between Ouray Aid Station and Red Mountain. The site will have AC power, also battery will be provided. VHF 145.050 UHF 440.950

Port1 VHF = KC0QXX-4 Node= Gateway= DEXT

Port2 UHF= KC0QXX-5

Ophir Pass The Ophir Pass site is to serve Chapman Gulch aid station. The node should be placed with some separation distance from the extended receiver, which is usually placed on south side of road at summit. The node should be in a weather-tight box, with battery power. Transmit power will be low to save battery power. 145.050

Digi= NONHJ-10 Node= OPHIR Mailbox= OPHIR-1

Eureka The Eureka node will be placed to serve Grouse Gulch, and could be the Ophir node equipment after Chapman closes. This site has AC power, so can be powered by AC supply with battery backup. The mailbox should be 5K bytes minimum. 145.050

Digi= NONHJ-9 Node= EUREKA Mailbox= EUREKA-1

4. Station Sites

Silverton The Hardrock headquarters is set up in the high school gymnasium, with the gym office used as the communications center. Space is limited in the office, so the digital system terminal will be set up in a tent or trailer in the alley, with network connection from the LAN router. If not possible, set up in the gym office. AC power will be by extension cord from the gym. The radio used for packet operation should be synthesized so it can change frequencies as needed. The antenna should be installed away from foot path and at least 10 feet above ground level. If station is in gym a 70 foot cable is needed.

The PC for packet terminal should be laptop, with a good battery in case power is lost. The printer used will be the network printer.

The Silverton station will be manned from Friday 0800 to Saturday 1800. The M.A.R.C. crew will provide radio, antenna, cable, and PC with network connection. The trailer setup is to be determined.

Kamm Traverse / This station will have a digital packet station to cover the runner surge. The goal will be to send in 80% of the runners by packet to Silverton. HQS ops will acknowledge by voice for the next aid station. Because this station location has changed from last year, and has limited parking space, careful planning with aid station captain to accomplish communication goals and leave before station closes. The path will be from Kamm to Hazelton Node, to Silverton. Station MYCALL= NONHJ-7

Chapman / This station will have a digital packet station to cover the runner surge. The goal will be to send in 80% of the runners by packet to Silverton. HQS ops will acknowledge by voice for the next aid station. Access is thru a locked gate, and limited parking space. The path will be from Chapman to Ophir Node, to Hazelton Node, to Silverton. Station MYCALL= NY0Q

4. 2008 Plan

Telluride / This station will have a digital packet station to supplement the designated voice operator. The goal will be to send in 90% of the runners by packet to Silverton. HQS ops will acknowledge by voice for the next aid station, Kroger Canteen and Governor's. This will be premier year for packet at Telluride, interference problems with voice radio is unknown. Digital station setup in Telluride Town Park will need to be coordinated with the aid station captain. The path will be from Telluride to Imogene Node, to Hazelton, to Silverton. Station MYCALL= KI0KY

Ouray / This station will use the digital packet terminal as primary means of runner data reporting. Because this station uses VHF voice to nearby aid stations a lot, measures to avoid interference may be running packet on UHF or separating antennas may be employed. The radio for packet should be synthesized, dual-band radio. HQS ops will need to acknowledge by voice for the following stations, Engineer and Grouse Gulch. The path will be from Ouray to Dexter Digi, to Red Mountain Node, to Hazelton, to Silverton. Station Operator= KC0GKZ
Station MYCALL= OURAY MYPBBS= OURAY-1 (or MYMAIL)
OURAY < > DEXT < > RED < > HAZL < > WB0ITG-2

No other aid stations are planned to be covered at this time.