

XARPS

eXtensible Amateur Radio Payload Specification

Hudson Valley Digital Network

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v0.2

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XARPS

XARPS stands for eXtensible **A**mateur **R**adio **P**ayload **S**pecification. Referencing the **Open Systems Interconnection model (OSI model)**, XARPS is an application layer protocol with link-level awareness for use by RF systems providing application level connectivity to other networked systems. ASCII (UTF-8) is used throughout the specification

Payload Fields

Source	Destination	Options	Data Type	Data
9 bytes (string)	9 bytes (string)	1 byte (hex)	1 byte (hex)	235 bytes (string)

Source and Destination

Each contain callsign/handle with SSID. Field size supports IARU decision for 7 character callsigns. Example source and destination data include W1FCC50, PURPLE53.

BEACON99 is a reserved word in the destination field for broadcast messages.

Options

Value	Option	Description
0x00 - 0x05	Reserved	
0x06	ACK Response	Response to ACK Request
0x07	ACK Request	Used when positive verification is required that a payload was received

Data Type

Value	Type	Description
0x00	Reserved	Reserved
0x01	Battery	Battery voltage update
0x02	Time	Current time payload
0x03	Position Update	GPS position update
0x04	Weather Update	Weather station data
0x05	Text Message	Text message between stations
0x06	Broadcast	Broadcast Message to all stations
0x07	Last Seen Stations	Digest of recent stations
0x08	Binary Data	Binary Data Transport
0x08 - 0x0F	Reserved	Reserved
0x46	Gopher	Gopher
0x50	HTTP	HTTP
0x71	Ident	Ident

Value	Type	Description
0x77	NNTP	NNTP
0x7B	NTP	NTP
0xC2	IRC	IRC

0x00 Reserved

Not used

0x01 Battery

This payload type provides battery voltage in ASCII numeric format, which may contain a floating point.

0x02 Time

This payload contains the time in epoch UTC

0x03 Position Update

This message is used to provide position updates, such as GPS locations of any station and is formatted as follows:

[time in UTC],[latitude],[longitude],[altitude],[speed],[direction],[station type]

Station types include:

Value	Type
0	handheld
1	pedestrian
2	car
3	truck
4	van
5	emergency vehicle
6	ambulance
7	fire truck
8	command vehicle
9	officer
10	aircraft
11	boat
12	quadcopter UAV
13	fixed wing UAV
14	balloon
15	float
16	landmark
17	road closed

Value	Type
18	accident
19	hazard
20	Perimeter Marker
21-255	reserved for future use

0x04 Weather Update

Weather updates are still in the definition process, but should utilize METAR format

0x05 Text Message

Free text field for text message between stations.

0x06 Broadcast Message

Broadcast and beacon messages. While BEACON99 is a reserved for any broadcast, it is recommended to BEACON and another SSID if you wish to send specific broadcast types like club bulletins, etc.

0x07 Last Seen Stations

Contains a comma delimited list of recently heard stations.

0x08 Binary Data

Binary Data transport

0x0F Reserved

Not used