

## Station Data Upload — Data and Schema Description v. 1.4

In either file format, values must appear in the order shown. In text files, repeat all applicable data on every line. For example, if a station has three antennas, repeat the station information on each line to indicate that the three antennas belong to the same station.

The latest XML schema and sample XML or text files can be found on Spectrum Direct (<http://sd.ic.gc.ca>).

The tables at the end of the document list valid codes in applicable fields.

Text File Position	XML Element Name	Description	Content/Allowed Values	Units	Notes
N/A	station_data	Root element	XML element sequence		This element represents the top level of your file, and contains all other elements.
N/A	account	ALS Account	XML element sequence		A sequence of XML elements (listed below) that identify your account in the Assignment and Licensing System (ALS) and the contact person, as well as all stations currently in operation for this account.
1	company_code	Company Code (Account Number)	Valid company code in the range 092900000 to 092999999		Your company code is the last nine digits of your account number, assigned by Industry Canada. Each set of stations belongs to one unique company code. Contact Industry Canada for additional company codes if you need to group your data by region or office.
2	reference_number	Upload Reference Number	1 to 20 characters		A reference number or name that would help you identify this set of data.

Text File Position	XML Element Name	Description	Content/Allowed Values	Units	Notes
3	contact_name	Contact Name	1 to 70 characters		The name of the person who has authorized submission of the data and/or who can be contacted if there are any questions.
4	telephone	Telephone Number	10-digit number (no delimiters)		Telephone number of the contact person.
5	extension	Telephone Extension Number	1- to 5-digit number (optional)		Telephone extension number, if any, of the contact person.
6	email_address	E-mail Address	5 to 128 characters in the format "X@X.X"		E-mail address of the contact person. We will automatically send an e-mail message to this address that indicates the processing status of your submission and whether there are any errors.
7	no_system_changes	No Changes Indicator	In text, include "Y" (yes) at this position to indicate no changes, otherwise leave blank  In XML, include empty XML element (required if no station data uploaded)		You must provide data periodically. If there are no changes to the entire system in a given period, you may upload this element in place of station data to confirm that there are no changes. If you are uploading station data, do not include this element.

Text File Position	XML Element Name	Description	Content/Allowed Values	Units	Notes
N/A	station	Station	XML element sequence		A sequence of XML elements (listed below) that provide the location and technical characteristics of a single installation. Your file may contain an unlimited number of stations. Every file containing station data should have data on each active station being administered by the given company code.
8	location	Station Location	1 to 35 characters		A description of the station location. When possible, provide a unique description that by itself accurately identifies the location (e.g., city, province, and address). The <i>Canada Gazette</i> or provincial government official gazetteer can be used to confirm the proper name of the location. If space permits, you can include your own custom site identifier.
9	province_code	Province/Territory Code	Valid 2-character code		A code that represents the province or territory where the station is physically located. The province code helps us provide information on regional use of spectrum. Use the two-character standard postal abbreviation for the province, listed in the attached table on page 10.

Text File Position	XML Element Name	Description	Content/Allowed Values	Units	Notes
10	nad27_83	NAD-27 or NAD-83 Code	Valid 2-character code		Indicates the geographic coordinate system being used. The system for plotting latitude and longitude is based on a system called a datum. We accept coordinates in either the North American Datum of 1927 (NAD-27) or the North American Datum of 1983 (NAD-83) format. All topographic maps and global positioning system (GPS) units indicate the NAD system used. Coordinates in NAD-83 format are converted to NAD-27, Industry Canada's native format (see page 11).
11	latitude	Latitude	6-digit number in the range 400000 to 900000 and in degrees-minutes-seconds format	Degrees, minutes, seconds	Latitude (north) of the station, in degrees, minutes, and seconds, without a delimiter. Must be in either NAD-27 or NAD-83 format.
12	longitude	Longitude	6- or 7-digit number in the range 460000 to 1450000 and in degrees-minutes-seconds format	Degrees, minutes, seconds	Longitude (west) of the station, in degrees, minutes, and seconds, without a delimiter. Must be in either NAD-27 or NAD-83 format.
13	site_elevation	Site Elevation	Number in the range 0 to 6500	Metres	Elevation of the site's ground level above mean sea level.

Text File Position	XML Element Name	Description	Content/Allowed Values	Units	Notes
14	structure_height	Structure Height	Number in the range 1 to 600	Metres	Total height above ground level of the structure on which the antenna elements are mounted. For equipment mounted on or within a building, the height of the building. (Note that the minimum value is one metre because it is assumed that all antennas have an associated structure.)
N/A	antenna	Antenna	XML element sequence		A sequence of XML elements (listed below) that provide the complete technical characteristics of each antenna at the station. You may have a single record for an omnidirectional antenna, or multiple records for sectorial antennas. Please note that the Tx antenna and the associated Rx antenna are only one record in our database. Rx antennas used for diversity do not have to be submitted.
15	tx_frequency	Transmission (Tx) Band, Lower Frequency	Number in the range: 869.0000 to 894.0000; 1850.0000 to 1910.0000; 1930.0000 to 1990.0000	MHz	Lower frequency of the transmission frequency band of the antenna. For the cellular band, you must indicate the transmission band 869-894. For PCS, the frequency range of the authorized blocks must be indicated.
16	upper_tx_frequency	Transmission (Tx) Band, Upper Frequency	Number in the range 869.0000 to 894.0000; 1850.0000 to 1910.0000; 1930.0000 to 1990.0000	MHz	Upper frequency of the transmission frequency band of the antenna.

Text File Position	XML Element Name	Description	Content/Allowed Values	Units	Notes
17	rx_frequency	Reception (Rx) Band, Lower Frequency	Number in the range 824.0000 to 849.0000; 1850.0000 to 1910.0000; 1930.0000 to 1990.0000	MHz	Lower frequency of the reception frequency band of the antenna.
18	upper_rx_frequency	Reception (Rx) Band, Upper Frequency	Number in the range 824.0000 to 849.0000; 1850.0000 to 1910.0000; 1930.0000 to 1990.0000	MHz	Upper frequency of the reception frequency band of the antenna.
19	bandwidth	Bandwidth	Number in the range 0.10 to 5000.00	KHz	Necessary bandwidth of the emission (Tx), Use a decimal point and omit the letter (must be expressed in KHz).
20	class_emission	Class of Emission	Valid class of emission code (from 3 to 5 characters)		International Telecommunication Union (ITU) designation for the class of emission. The code defines the type of modulation, signal(s) modulating the main carrier, information transmitted, signal details, and use of multiplexing. It is expressed as a 3- to 5-character code using standard symbols (see page 12). Provide the one emission that is most representative of the radio installed at this location (the emission with the largest bandwidth).

Text File Position	XML Element Name	Description	Content/Allowed Values	Units	Notes
21	tx_power_w	Transmitter Output Power	Number in the range 0.0010 to 2000.0000	Watts	Power fed to the transmission line. Our system will combine this value with antenna gain and line loss to calculate the effective radiated power (ERP). Note that the TX power and the losses are for a single channel and not for the cumulative of all transmit channels via the same antenna nor the total for all antennas.
22	tx_ant_manufacturer	Tx Antenna Manufacturer Code	Valid 2-character code		Two-character code that identifies the antenna manufacturer. Accepted codes are listed in the attached table on page 13. The code "ZZ" may be used for a manufacturer not in our list of codes.
23	rx_ant_manufacturer	Rx Antenna Manufacturer Code	Valid 2-character code		Two-character code that identifies the antenna manufacturer. Accepted codes are listed in the attached table on page 13. The code "ZZ" may be used for a manufacturer not in our list of codes.
24	tx_ant_model_no	Tx Antenna Model Number	1 to 10 characters		Antenna model number as specified by the manufacturer, truncated or abbreviated to fit.
25	rx_ant_model_no	Rx Antenna Model Number	1 to 10 characters		Antenna model number as specified by the manufacturer, truncated or abbreviated to fit.
26	tx_ant_height	Tx Antenna Height	Number in the range -100 to 600	Metres	Height of the antenna equipment above ground level. A negative number may be used to indicate a zone enhancer installed below ground level.

Text File Position	XML Element Name	Description	Content/Allowed Values	Units	Notes
27	rx_ant_height	Rx Antenna Height	Number in the range -100 to 600	Metres	Height of the antenna equipment above ground level. A negative number may be used to indicate a zone enhancer installed below ground level.
28	tx_ant_azimuth	Tx Antenna Azimuth	Number in the range 0.0 to 360.0	Degrees	Azimuth (in degrees from true north) of the antenna's direction of maximum radiation. Use 0.0 degrees for an omnidirectional antenna, or 360.0 degrees to indicate a directional antenna pointing true north.
29	rx_ant_azimuth	Rx Antenna Azimuth	Number in the range 0.0 to 360.0	Degrees	Azimuth (in degrees from true north) of the antenna's direction of maximum radiation. Use 0.0 degrees for an omnidirectional antenna, or 360.0 degrees to indicate a directional antenna pointing to true north.
30	tx_ant_gain	Tx Antenna Gain	Number in the range 0.0 to 30.0	dBi	Gain of the antenna expressed relative to a half wave dipole (dBd). For a directional antenna, enter the gain in the direction of maximum radiation. This value is used to calculate the effective radiated power (ERP).
31	rx_ant_gain	Rx Antenna Gain	Number in the range 0.0 to 30.0	dBi	Gain of the antenna expressed relative to an isotropic radiator (dBi). For a directional antenna, enter the gain in the direction of maximum radiation. This value is used to calculate the effective radiated power (ERP).



Text File Position	XML Element Name	Description	Content/Allowed Values	Units	Notes
32	tx_ant_pattern	Tx Antenna Pattern Code	Valid 4-character code		Code indicating the antenna radiation pattern used. A special code is used to identify a zone enhancer: apparatus used to improve the quality of a signal in shadowed locations. Valid codes are listed in the attached table on page 18.
33	rx_ant_pattern	Rx Antenna Pattern Code	Valid 4-character code		Code indicating the antenna radiation pattern used. A special code is used to identify a zone enhancer: apparatus used to improve the quality of a signal in shadowed locations. Valid codes are listed in the attached table on page 18.
34	tx_line_loss	Tx Line Loss	Number in the range 0.0 to 30.0	dB	Total line losses, including cable and connector losses. This value is used to calculate the effective radiated power (ERP).
35	rx_line_loss	Rx Line Loss	Number in the range 0.0 to 30.0	dB	Total line losses, including cable and connector losses. This value is used to calculate the effective radiated power (ERP).

## Canadian Province and Territory Codes

CODE	ENGLISH NAME	FRENCH NAME
AB	Alberta	Alberta
BC	British Columbia	Colombie-Britannique
MB	Manitoba	Manitoba
NB	New Brunswick	Nouveau-Brunswick
NL	Newfoundland and Labrador	Terre-Neuve-et-Labrador
NT	Northwest Territories	Territoires du Nord-Ouest
NS	Nova Scotia	Nouvelle-Écosse
NU	Nunavut	Nunavut
ON	Ontario	Ontario
PE	Prince Edward Island	Île-du-Prince-Édouard
QC	Québec	Québec
SK	Saskatchewan	Saskatchewan
YT	Yukon	Yukon

## NAD-27/NAD-83 Codes

CODE	DESCRIPTION
27	North American Datum 1927 (NAD-27)
83	North American Datum 1983 (NAD-83)

## Valid Class of Emission Codes

The following table shows the characters allowed at each position of a valid class of emission code. Please refer to the *International Telecommunication Union (ITU) Radiocommunication Standards* for an explanation of the class of emission codes.

CHARACTER POSITION				
1	2	3	4	5
A	0	A	A	C
H	1	B	B	F
R	2	C	C	T
J	3	D	D	W
B	7	E	E	X
C	8	F	F	N
F	9	W	G	
G	X	X	H	
D		N	J	
P			K	
K			L	
L			M	
M			N	
Q			W	
V			X	
W			-	
X				
N				

## Antenna Manufacturer Codes

This list will change from time to time as new manufacturers are added and companies either amalgamate or change name. Please refer to Spectrum Direct (<http://sd.ic.gc.ca/>) for the most recent list. Use the code “ZZ” for a manufacturer that is not listed below, and contact the Department to have that manufacturer added to a future version of the list.

CODE	MANUFACTURER NAME
F4	A.F.C.
87	A.W.A. New Zealand Ltd.
24	AGS
77	Advanced Electronic Applications Inc.
B6	Advanced Techom
C3	Ainslie
C5	Alcatel
C8	Allgon Telecom Ltd.
D9	Amphenol Antel Inc.
03	Andrew Corporation
66	Anitron Electronics Ltd.
A5	Antenex Inc.
51	Antenna Incorporated
05	Antenna Specialists Co.
64	Archer

18	Avanti
40	Aviation Electric
E5	BEXT Inc.
E7	Bell
A6	Bluewave Antenna Systems Ltd.
25	Bogen
92	Bogner
B4	Breezecom
54	Brown Boveri
55	Bud Electric
F5	C Wave
F7	COTC
E1	CSS Antenna Inc.
B7	California Microwave
56	Canadian General Electric

CODE	MANUFACTURER NAME
62	Cansat
42	Cartier
D4	Ceragon Networks Ltd.
F6	Channel Master
74	Child Company
H5	Communication Components Inc.
14	Communications Products
86	Communications Specialists Inc.
90	Comp Prod Communications Ltd.
C4	Conifer
17	Cushcraft
95	Davicom
01	Decibel Products Inc.
A3	Denke Lab
70	Dielectric
B3	Digital Microwave Corporation
F1	Dominion Bridge
D3	DragonWave Inc.

61	Dreger Ward
94	Dynatech
67	EDO Corporation
D5	EMR Corporation
A7	EMS Wireless
B8	Ericsson
96	Exicom
F8	FMI
12	Fanon
15	Farinon
76	Force Communications
79	GEC Telecommunications Ltd.
30	Gabriel
20	Gam Electronics
E8	General Electric
E3	Glassmaster
A2	HM Electronics
E2	HUBER+SUHNER Ltd.

CODE	MANUFACTURER NAME
39	Hackbush Sales
53	Harris
06	Hy-Gain Electronics Corp.
F9	ITU
84	Icon Inc.
IC	Industry Canada
36	International Systems Ltd.
52	Jana Electronics Ltd.
60	Johnson
34	Kaar
75	Kathrein
85	King Radio Corp.
58	Kreco
47	Labarge Inc.
G1	Lance
16	Larsen
37	Lenkurt
09	Lindsay

G6	M/A Com
91	MAXRAD
68	MORAD Electronics Corporation
G3	MRC
22	MTAD
G2	Mar-Len
41	Marconi
08	Mark Products
A1	Marti YC
38	McCarter Radio TV Ltd.
E6	Microflect
44	Microwave Associates Inc.
B2	Microwave Data Systems
D8	Microwave Networks Inc.
D6	Microwave Radio Communications
93	Midland
G7	Miliflect
E4	Moseley Associates Inc.

CODE	MANUFACTURER NAME
07	Mosley Electronics Inc.
13	Motorola
B9	NEC
69	NORAD
G4	NSI
57	Nanatron Electronics
71	Narco Avionics
21	New Tronics (Hustler)
99	New commercial equipment used by DND
73	Nihondempa Kogyo Co. Ltd.
A8	Nortel
88	Novatel Communications Ltd.
50	Pace Electronics Ltd.
C7	Panasonic
43	Pavia
D1	Peninsula Engineering
04	Phelps Dodge Communication Co.

26	Philips
D7	Procom
10	Prodelin
27	Pye
G8	R Eng Lab
19	R.C.A.
49	R.J. Communications Prod. Inc.
C6	RFS (Cablewave/Celwave)
C1	Racon
46	Radio Shack
D2	Radio Waves Inc.
E9	Radiowave
72	Raytheon
C9	Ritron
31	Rogers Majestic
H4	Rohr
81	Rothenbuhler Engineering Co.
A9	SR Telecom



CODE	MANUFACTURER NAME
F2	STC
11	Scala Radio Corporation
23	Shakespeare
02	Sinclair Radio Laboratories Ltd.
B1	Southwest Microwave
29	Spilsbury and Tindal Ltd.
33	Standard Communications Corp.
78	Subscriber Radio
A4	Swedcom
F3	TECOM Industries Inc.
32	Taco (Teco)
82	Talkie Tooter (B.C. log grappling)
59	Tele Nova
G9	Telesat
83	Telewave Communications of Canada Ltd.

80	Terra Communications
H1	Terracom
63	Taylor
97	Til-Tek Ltd.
65	Time and Frequency Technology
35	Triton
48	TxRx Systems Inc.
H2	Western Electric
B5	Western Multiplex Corporation
28	Western Radio
H3	Western Union
C2	Windata
ZZ	Other Manufacturer (not listed)

### Antenna Pattern Codes

CODE	DESCRIPTION
8000	Omnidirectional
8001	Zone Enhancer
8200	Unidirectional