United States
Equities

UBS ATS

UBS Binary Protocol (UBP) Specification

October 2019

Table of Contents

1 UBS ATS Operations and UBS Form ATS-N

This specification is intended to be a technical supplement to the UBS Form ATS-N filing, available at https://www.sec.gov/divisions/marketreg/form-ats-n-filings.htm.

For a detailed description of the UBS ATS and its operations please refer to the UBS Form ATS-N.

2 Subscriber UBP Messages

The UBS ATS supports a binary, fixed position format ('UBP').

Fields marked as reserved or ignored must be filled with spaces if it is an alpha field or with 0 if it is an integer field.

See descriptions of each order type in the FIX message section.

2.1 UBP Midpoint Pegged Order

Field Name	Offset	Length	Value	Description / Comment
Type	0	1	"o"	UBS ATS Enter Order Message type
Order Token	1	14	Alpha	Unique order ID for an account during the day
Buy/Sell Indicator	15	1	Alpha	B(Buy), S(Sell), T(Sell Short), E(Sell Short Exempt)
Shares	16	4	Integer	Total number of shares
Stock	20	6	Alpha	Stock symbol (Comstock format)
Price	26	4	Integer	Absolute price constraint of the order, 4 implied decimals ($46.28 = 462800). Use the value 2147483647 for no price constraint.
Time in Force	30	4	Integer	0(IOC), 99998(Market Hours)
Firm	34	4	Alpha	MPID
Reserved	38	1	Alpha	Reserved for future use
Capacity	39	1	Alpha	A(Agency), P(Principal)
Reserved	40	1	Alpha	Ignored
Minimum Quantity	41	4	Integer	Minimum quantity for each execution on the order
Cross Type	45	1	Alpha	Ignored
PegLimitConstraintMode	46	1	Alpha	1: FillToLimit: Fill to the limit price, meaning it could be away from the midpoint (default) 2: FillToMidpoint: Executions that add liquidity will execute at the midpoint only. Executions removing liquidity may execute at a price better than the midpoint if the limit price of the order is equal to or more aggressive than the midpoint (ie. a buy order with a limit price at or above the midpoint or a sell order with a limit price at or below the midpoint).
Reserved	47	1	Alpha	Reserved for future use
MinQuantityLeavesMode	48	1	Alpha	If position 41 (MinQty) is populated,, this field specifies how the order is handled when the leaves quantity of an order becomes smaller than the MinQty. Possible values are: 1 - No MinQty in affect when leaves < MinQty (default) 2 - MinQty becomes the leaves quantity when leaves < MinQty 3 - Remainder of order is cancelled if leaves < MinQty. An unsolicited cancel ack ("OUT") message is sent to the originator of the order and the order is removed from the book.
Reserved	49	5	Alpha	Reserved for internal use

Cross Style	54	1	Alpha	1(All), 3(Agency), 4(No Self), 5(Agency and No Self) S – Do not execute against Source Category 5 orders T – Do not execute against Source Category 5 or UBS Principal Orders U - Do not execute against Source Category 5 or UBS Principal or own orders V - Do not execute against Source Category 5 or own orders
Peg Type	55	1	Alpha	M(Midpoint)
Reserved	56	1	Alpha	Reserved for future use
Reserved	57	4	Integer	Reserved for future use
ConditionalInviteGrade	61	1	Integer	Minimum Conditional Score required for a Conditional Indication to get invites from this order. 0: Do not generate any invitations to Conditional Indications (default if not sent) 1: invite all 2: invite if score is medium, high or UBS algo 3: invite if score is high or UBS algo 4: invite if score is UBS algo
Reserved	62	4	Integer	Reserved for future use
RoundLotOnly	66	1	Alpha	Y (Yes) – indicates round lot fills only, N (No)

2.2 UBP Primary Pegged Order

Field Name	Offset	Length	Value	Description / Comment
Type	0	1	"o"	UBS ATS Enter Order Message type
Order Token	1	14	Alpha	Unique order ID for an account during the day
Buy/Sell Indicator	15	1	Alpha	B(Buy), S(Sell), T(Sell Short), E(Sell Short Exempt)
Shares	16	4	Integer	Total number of shares
Stock	20	6	Alpha	Stock symbol (Comstock format)
Price	26	4	Integer	Absolute price constraint of the order, 4 implied decimals ($46.28 = 462800). Use the value 2147483647 for no price constraint.
Time in Force	30	4	Integer	0(IOC), 99998(Market Hours)
Firm	34	4	Alpha	MPID
Reserved	38	1	Alpha	Reserved for future use
Capacity	39	1	Alpha	A(Agency), P(Principal)
Reserved	40	1	Alpha	Ignored
Minimum Quantity	41	4	Integer	Minimum quantity for each execution on the order
Cross Type	45	1	Alpha	Ignored
Reserved	46	1	Alpha	Reserved for future use
Reserved	47	1	Alpha	Reserved for future use
MinQuantityLeavesMode	48	1	Alpha	If position 41 (MinQty) is populated,, this field specifies how the order is handled when the leaves quantity of an order becomes smaller than the MinQty. Possible values are: 1 - No MinQty in affect when leaves < MinQty (default) 2 - MinQty becomes the leaves quantity when leaves < MinQty

				3 - Remainder of order is cancelled if leaves < MinQty. An unsolicited cancel ack (“OUT”) message is sent to the originator of the order and the order is removed from the book.
Reserved	49	5	Alpha	Reserved for internal use
Cross Style	54	1	Alpha	1(All), 3(Agency), 4(No Self), 5(Agency and No Self) S – Do not execute against Source Category 5 orders T – Do not execute against Source Category 5 or UBS Principal Orders U - Do not execute against Source Category 5 or UBS Principal or own orders V - Do not execute against Source Category 5 or own orders
Peg Type	55	1	Alpha	R(Primary)
Reserved	56	1	Alpha	Reserved for future use
Reserved	57	4	Integer	Reserved for future use
ConditionalInviteGrade	61	1	Integer	Minimum Conditional Score required for a Conditional Indication to get invites from this order. 0: Do not generate any invitations to Conditional Indications (default if not sent) 1: invite all 2: invite if score is medium, high or UBS algo 3: invite if score is high or UBS algo 4: invite if score is UBS algo
Reserved	62	4	Integer	Reserved for future use
RoundLotOnly	66	1	Alpha	Y (Yes) – indicates round lot fills only, N (No)

2.3 UBP Limit Order

Field Name	Offset	Length	Value	Description / Comment
Type	0	1	"o"	UBS ATS Enter Order Message type
Order Token	1	14	Alpha	Unique order ID for an account during the day
Buy/Sell Indicator	15	1	Alpha	B(Buy), S(Sell), T(Sell Short), E(Sell Short Exempt)
Shares	16	4	Integer	Total number of shares
Stock	20	6	Alpha	Stock symbol (Comstock format)
Price	26	4	Integer	Limit price of the order, 4 implied decimals. Use the value 2147483647 for no price constraint.
Time in Force	30	4	Integer	0(IOC), 99998(Market Hours)
Firm	34	4	Alpha	MPID
Reserved	38	1	Alpha	Reserved for future use
Capacity	39	1	Alpha	A(Agency), P(Principal)
Reserved	40	1	Alpha	Ignored
Minimum Quantity	41	4	Integer	Minimum quantity for each execution on the order
Cross Type	45	1	Alpha	Ignored
Reserved	46	1	Alpha	Ignored for Limit Order
Reserved	47	1	Alpha	Reserved for future use
MinQuantityLeavesMode	48	1	Alpha	If position 41 (MinQty) is populated,, this field specifies how the order is handled when the leaves quantity of an order becomes smaller than the MinQty. Possible values are:

				1 - No MinQty in affect when leaves < MinQty (default) 2 - MinQty becomes the leaves quantity when leaves < MinQty 3 - Remainder of order is cancelled if leaves < MinQty. An unsolicited cancel ack (“OUT”) message is sent to the originator of the order and the order is removed from the book.
Reserved	49	5	Alpha	Reserved for internal use
Cross Style	54	1	Alpha	1(All), 3(Agency), 4(No Self), 5(Agency and No Self) S – Do not execute against Source Category 5 orders T – Do not execute against Source Category 5 or UBS Principal Orders U - Do not execute against Source Category 5 or UBS Principal or own orders V - Do not execute against Source Category 5 or own orders
Peg Type	55	1	Alpha	N(No Peg)
Reserved	56	1	Alpha	Reserved for future use
Reserved	57	4	Integer	Reserved for future use
ConditionalInviteGrade	61	1	Integer	Minimum Conditional Score required for a Conditional Indication to get invites from this order. 0: Do not generate any invitations to Conditional Indications (default if not sent) 1: invite all 2: invite if score is medium, high or UBS algo 3: invite if score is high or UBS algo 4: invite if score is UBS algo
Reserved	62	4	Integer	Reserved for future use
RoundLotOnly	66	1	Alpha	Y (Yes) – indicates round lot fills only, N (No)

2.4 UBP Order Replace Message

Field Name	Offset	Length	Value	Description / Comment
Type	0	1	"u"	UBS ATS Replace Order Message type
Existing Order Token	1	14	Alpha	Current unique order ID for an account during the day
Replacement Order Token	15	14	Alpha	New unique order ID for an account during the day
Shares	29	4	Integer	Total number of shares
Price	33	4	Integer	Price of the order, 4 implied decimals ($46.28 = 462800). Use the value 2147483647 for a Market Order.
Time in Force	37	4	Integer	0(IOC), 99998(Market Hours)
Reserved	41	1	Alpha	Reserved for future use
Reserved	42	1	Alpha	Ignored
Minimum Quantity	43	4	Integer	Minimum quantity
Cross Style	47	1	Alpha	Must be identical to value in original new order
Peg Type	48	1	Alpha	M(Midpoint), N(No Peg), R(Primary)
Reserved	49	1	Alpha	Reserved for future use
Reserved	50	4	Integer	Reserved for future use
Reserved	54	1	Alpha	Reserved for future use
Reserved	55	4	Integer	Reserved for future use
RoundLotOnly	59	1	Alpha	Y (Yes) – indicates round lot fills only, N (No)

UBS

2.5 UBP Order Accepted Message

Field Name	Offset	Length	Value	Description / Comment
Type	0	1	"a"	UBS ATS Accepted Message type
Timestamp	1	8	Integer	Timestamp of nanoseconds past midnight in New York
Order Token	9	14	Alpha	Unique order ID for an account during the day
Buy/Sell Indicator	23	1	Alpha	B(Buy), S(Sell), T(Sell Short), E(Sell Short Exempt)
Shares	24	4	Integer	Total number of shares
Stock	28	6	Alpha	Stock symbol
Price	34	4	Integer	Price of the order, 4 implied decimals ($46.28 = 462800). 2147483647(Market Order)
Time in Force	38	4	Integer	0(IOC), 99998(Market Hours)
Firm	42	4	Alpha	MPID
Reserved	46	1	Alpha	Reserved for future use
Order Reference Number	47	8	Integer	The day-unique reference number assigned by the ATS
Capacity	55	1	Alpha	A(Agency), P(Principal)
Reserved	56	1	Alpha	Ignored
Minimum Quantity	57	4	Integer	Minimum quantity
Cross Type	61	1	Alpha	Reserved for future use
Order State	62	1	Alpha	L(Order Live), D(Order Dead)
Reserved	63	8	Alpha	Reserved for future use
Cross Style	71	1	Alpha	1(All), 3(Agency), 4(No Self), 5(Agency and No Self)
Peg Type	72	1	Alpha	M(Midpoint), N(No Peg), R(Primary)
Reserved	73	1	Alpha	Reserved for future use
Reserved	74	4	Integer	Reserved for future use
ConditionalInviteGrade	78	1	Integer	Value sent on new order message will be echoed back. If no value is sent but a value is defaulted then the defaulted value will be sent back in this field.
Reserved	79	4	Integer	Reserved for future use
RoundLotOnly	83	1	Alpha	Y (Yes) – indicates round lot fills only, N (No)

2.6 UBP Order Replaced Message

Field Name	Offset	Length	Value	Description / Comment
Type	0	1	"u"	UBS ATS Replaced Message type
Timestamp	1	8	Integer	Timestamp of nanoseconds past midnight in New York
Replacement Order Token	9	14	Alpha	Unique order ID for an account during the day
Buy/Sell Indicator	23	1	Alpha	B(Buy), S(Sell), T(Sell Short), E(Sell Short Exempt)
Shares	24	4	Integer	Total number of shares
Stock	28	6	Alpha	Stock symbol
Price	34	4	Integer	Price of the order, 4 implied decimals. 2147483647(Market Order)
Time in Force	38	4	Integer	0(IOC), 99998(Market Hours)
Firm	42	4	Alpha	MPID
Reserved	46	1	Alpha	Reserved for future use

Order Reference Number	47	8	Integer	The day-unique reference number assigned by the ATS
Capacity	55	1	Alpha	A(Agency), P(Principal)
Reserved	56	1	Alpha	Reserved for future use
Minimum Quantity	57	4	Integer	Minimum quantity
Cross Type	61	1	Alpha	Reserved for future use
Order State	62	1	Alpha	L(Order Live), D(Order Dead)
Previous Order Token	63	14	Alpha	The Order Token of the order that was replaced.
Reserved	77	8	Alpha	Reserved for future use
Cross Style	85	1	Alpha	Must be identical to value in original new order
Peg Type	86	1	Alpha	M(Midpoint), N(No Peg), R(Primary)
Reserved	87	1	Alpha	Reserved for future use
Reserved	88	4	Integer	Reserved for future use
Reserved	92	1	Alpha	Reserved for future use
Reserved	93	4	Integer	Reserved for future use
RoundLotOnly	97	1	Alpha	Y (Yes) – indicates round lot fills only, N (No)

2.7 UBP Execution Message

Field Name	Offset	Length	Value	Description / Comment
Type	0	1	"E"	UBS ATS Execution Message type
Timestamp	1	8	Integer	Timestamp of nanoseconds past midnight in New York
Order Token	9	14	Alpha	The Order Token as was originally transmitted in an Enter Order Message
Executed Shares	23	4	Integer	Incremental number of shares executed
Execution Price	27	4	Integer	Execution Price. 4 implied Decimals.
Liquidity Flag	31	1	Alpha	See Liquidity Flag values table
MatchId	32	8	long	Unique identifier of the execution

2.7.1 Execution Liquidity Flags

Code	Meaning	Description / Comment
A	Added	Execution on a resident order posted on the UBS ATS book
R	Removed	Execution on an order that was not posted on the UBS ATS book.
Y	Added vs Conditional	Execution on a resident order posted on the UBS ATS book where at least one side was a Conditional.
Z	Remove vs Conditional	Execution on an order that was not posted on the UBS ATS book where at least one side was a Conditional.

2.8 UBP Order Cancel Message

Field Name	Offset	Length	Value	Description / Comment
Type	0	1	"X"	UBS ATS Cancel Order Message type
Order Token	1	14	Alpha	The Order Token as was originally transmitted in an Enter Order Message
Shares	15	4	Integer	Must be 0 (UBS ATS does not support quantity reduce with this message type, and does not hold priority in queue for any replace message. Use Replace message to modify order quantity.

2.9 UBP Order Canceled Message

Field Name	Offset	Length	Value	Description / Comment
Type	0	1	"C"	UBS ATS Cancelled Order Message type
Timestamp	1	8	Integer	Timestamp of nanoseconds past midnight in New York
Order Token	9	14	Alpha	The Order Token as was originally transmitted in an Enter Order Message
Cancelled Shares	23	4	Integer	The number of shares that were remaining on the order when the cancel was accepted.
Reason	27	1	Alpha	Cancelled Reason Code

2.10 UBP Order Cancel Reject Message

Field Name	Offset	Length	Value	Description / Comment
Type	0	1	"I"	UBS ATS Cancel Order Reject Message type
Timestamp	1	8	Integer	Timestamp of nanoseconds past midnight in New York
Order Token	9	14	Alpha	The Order Token as was originally transmitted in an Enter Order Message

2.11 UBP Order Reject Message

Field Name	Offset	Length	Value	Description / Comment
Type	0	1	"J"	UBS ATS Rejected Order Message type
Timestamp	1	8	Integer	Timestamp of nanoseconds past midnight in New York
Order Token	9	14	Alpha	The Order Token as was originally transmitted in an Enter Order Message
Reason	23	1	Alpha	See Reject Reason Code Table

2.12 UBP Execution Broken Trade Message

Field Name	Offset	Length	Value	Description / Comment
Type	0	1	"B"	UBS ATS Broken Trade Message type
Timestamp	1	8	Integer	Timestamp of nanoseconds past midnight in New York
Order Token	9	14	Alpha	The Order Token as was originally transmitted in an Enter Order Message
Match Number	23	8	Integer	Match Number as transmitted in the Executed Order Message being broken.
Reason	31	1	Alpha	Reason the trade was broken. Will always be "S" (Supervisory)

3 Reason Codes

3.1 Order Cancelled Reason Codes

Code	Meaning	Comment
U	User Requested Cancel	Cancelled Message is in response to a Cancel Message.
I	IOC	Cancel on the unexecuted portion of an order with an IOC TimeInForce.
T	Timeout	Order has expired.
S	Supervisory	Order was cancelled by UBS operations.
D	Regulatory Restriction	Order was cancelled due to a regulatory restriction.

K	Other	All other cancels.

3.2 Order Reject Reason Codes

Code	Meaning	Comment
H	Halted	Short Sale Penalty box rejects
Z	SharesLimit	Share Quantity is > 999999
S	InvalidStock	Invalid or Unknown instrument
L	ClearingTypeNotAuthorised	Invalid or not authorized MPID
X	InvalidPrice	Price is invalid (< 0 or sub-penny)
N	InvalidMinimumQuantity	MinQty is invalid
R	Market Access	Market Access Reject
K	Other	All other rejects, including Instrument not yet open, and Instrument is on the UBS ATS Disabled Symbol List.

4 Regulatory Reporting

When a match occurs, the UBS ATS will report the trade to a recognized trade reporting facility (TRF) operated by a self-regulatory organization using the UBSA MPID. The UBS ATS has the ability to report trades to the NYSE TRF and the NASDAQ TRF. Both are used as primary and backup for each other and both are actively used on a regular basis.

For OATS and OTS reporting orders sent to UBS ATS, please use the following information, for linkage:

Item	Related To	Value
Clearing Number	DTCC	642
Executing Broker	TRF	UBSA
Sent to Firm MPID	OATS	UBSA
Destination Code	OATS	M
Recipient's Market Participant Symbol	OTS	8-22651
Recipient Type	OTS	M
Last Market (UBS ATS)	FIX	65
MIC Code	FIX	UBSA

5 Clearing

The UBS ATS is operated by UBS Securities LLC as the Broker-Dealer Operator. UBS Securities LLC ("UBS") is a broker and dealer registered with the Securities and Exchange Committee (SEC). The Broker-Dealer Operator is a self-clearing broker-dealer and a member of the National Securities Clearing Corporation ("NSCC") and the Depository Trust Company ("DTC").

For more information regarding clearing please see "Clearance and Settlement" section of the UBS Form ATS-N.

UBS ATS – Contact Information
1285 Avenue of the Americas
New York, NY 10019
Tel. +1-203-719-3775
ats@ubs.com
www.ubs.com/ats

UBS