



# Daily Technical Alert Overview

- Founded in 2011, Signal is an **independent analytics firm** dedicated to providing institutional equity investors with actionable insights based on Signal's suite of proven proprietary alpha models.
- Signal has become Wall Street's go to source for **Timing, Crowding/Unwind, and Macro Regime (Risk-On/Off) analysis**, helping institutional equity investors better understand positioning and regime trends at the market, sector, industry and security level.
- Signal's Technical Alert offers fully customizable, proven alpha generating technical signals on 5,000 names before the market opens each morning.

# Why You Should Consider Signal's Daily Technical Alert



Signal identifies opportunities and drives consistent and scalable alpha through a *quant-focused technical model* refined over ten years of testing.

More specifically, Signal's Daily Technical Alert helps clients in the following ways:

- **Proven Alpha Generator** – with over 2-years of live (published) history, the model has returned \_\_\_\_\_ with a x.xx IR.\*
- **Improve Timing** – With a 5 to 10-day optimal holding period, our technical signals are ideal for trade timing.
- **Objective and Quantifiable** - Signal's approach is based on a rigorous statistical analysis and is therefore objective and quantifiable.
- **Coverage and Customization** – Alerts provide signals before the market opens each morning for only the names you care about from our universe of xxxx US and xxxx international securities.
- **Uncorrelated and Linear** – Our unique model is uncorrelated to typical momentum and reversion models and is highly linear.
- **Transparency** – Upon request, we offer a complete history of our backtest, out-of-sample, and live signals.

# What Clients Receive

Signal offers *fully customizable reports* that include Signal's Technical Signal, Stretch Factor, and Combo Timing score delivered before the market opens each morning.

Coverage includes ~3500 US listed securities, ~2000 international securities, and ~700 ETFs. Coverage can be expanded to include any listed security with a minimum 2-year trading history.

## INTERNATIONAL EUROPEAN 600

07/20/21						
INDUSTRY	NAME	SYM	COMBO TIMING	SHORT TERM TECHNICAL SIGNAL PATTERN	SCORE	STRETCH FACTOR
Communication Services	ILIAD SA	ILD FP	100	OS	100	-1.47
Communication Services	TELECOM ITALIA S	TIT IM	80	Bias Up   OS	95	0.35
Communication Services	WPP PLC	WPP LN	65	OS   OS	80	-0.18
Communication Services	VODAFONE GROUP	VOD LN	55	OS	85	-0.48
Communication Services	PUBLICIS GROUPE	PUB FP	55	OS   OS	70	0.60
Communication Services	VIVENDI	VIV FP	55	Bias Up   OS	70	-0.22
Communication Services	TELEFONICA	TEF SM	50	Bias Up	60	-0.38
Communication Services	INFORMA PLC	INF LN	45	Bias Up	55	-0.21
Communication Services	BT GROUP PLC	BTA LN	30	Bias Up   OS	35	0.65
Communication Services	BOLLORE	BOL FP	30	Dip Over   OS	35	0.70
Communication Services	CD PROJEKT SA	CDR PW	(25)	Bias Down	(40)	-3.31
Communication Services	TELE2 AB-B SHS	TEL2B SS	(40)	Bias Down   OB	(30)	1.52
Communication Services	ELISA OYJ	ELISA FH	(45)	OB   OB	(20)	2.04
Communication Services	ADEVINTA ASA	ADE NO	(70)	OB   OB	(75)	1.67

## The Model Behind the Report



# Overview: Signal Short Term Timing Model

## TECHNICAL MODEL

- Based on a rigorous statistical analysis of both proprietary and non-proprietary technical indicators
- Optimized for consistency to avoid curve fitting performance optimization. Consistent alpha generating results in both US Top 2000 Backtest, Out-of-Sample, Live and also Out-of-Sample universes including Small Cap and International Stocks.

## STRETCH MODEL

- Combination of Statistical Regression Analyses to determine when stocks deviate too much from their closest correlated macro variable and industry and sector index's
- Measured in standard deviations stretch from its non-linear regression line

**LARGE-CAP (top 2000 US listed equities)**

TECH SCORE	6 MONTH LIVE DEC 9, 2020 to PRESENT		3 YEAR OUT-OF-SAMPLE 2018 to 2020		15 YEAR BACKTEST 2003 to 2017	
	# Occ	Annual	# Occ	Annual	# Occ	Annual
85 to 100	744	54.52	14,469	32.66	62,289	43.53
65 to 84	2,612	31.69	30,043	20.29	144,585	18.85
45 to 64	8,662	16.26	62,931	9.65	337,061	8.66
25 to 44	28,669	4.80	155,123	3.38	882,273	3.89
05 to 24	59,469	5.62	313,078	0.49	1,741,429	1.57
0	40,394	(10.80)	150,754	(1.06)	807,847	1.05
-05 to -24	54,496	(0.94)	349,350	(1.87)	1,736,638	(1.14)
-25 to -44	29,836	(0.60)	221,857	(2.09)	997,230	(4.93)
-45 to -64	11,940	(13.30)	104,116	(4.65)	442,117	(9.25)
-65 to -84	3,932	(13.71)	38,801	(8.19)	158,080	(15.81)
-85 to -100	1,187	(15.29)	14,281	(25.50)	53,210	(25.83)

**LARGE-CAP (top 2000 US listed equities)**

Short Term Stretch Score	2018 to April 2021 Out of Sample		2013 to 2017 Backtest 5 Year Per		2008 to 2012 Backtest 5 Year Per		2003 to 2007 Backtest 5 Year Per	
	% Occur	Ann Ret	% Occur	Ann Ret	% Occur	Ann Ret	% Occur	Ann Ret
82 to 100	1.0%	27.19	0.8%	13.13	0.7%	14.19	0.7%	8.67
63 to 81	0.6%	8.37	0.5%	4.63	0.5%	21.55	0.5%	16.35
47 to 62	1.1%	6.85	1.1%	1.66	1.0%	8.96	1.1%	12.12
27 to 46	4.9%	5.79	5.1%	2.12	4.8%	4.15	5.3%	6.71
3 to 26	30.9%	4.78	31.3%	2.05	31.3%	3.36	32.4%	3.03
2 to -1	19.4%	(3.59)	18.3%	(3.14)	19.7%	0.39	17.9%	(1.76)
-2 to -7	13.2%	2.52	13.2%	0.89	13.1%	0.59	12.9%	(0.23)
-8 to -13	9.6%	(1.15)	10.1%	0.18	9.6%	(2.41)	9.8%	(1.25)
-14 to -18	5.6%	(5.93)	6.0%	(0.51)	5.7%	(4.66)	5.8%	(3.26)
-19 to -27	6.1%	(5.47)	6.5%	(1.98)	6.2%	(6.91)	6.4%	(4.96)
-28 to -46	4.8%	(10.27)	5.1%	(2.72)	5.1%	(9.35)	5.2%	(8.05)
-47 to -65	1.4%	(14.30)	1.2%	(5.74)	1.3%	(11.30)	1.2%	(10.63)
-66 to -90	0.7%	(23.05)	0.5%	(10.94)	0.6%	(18.89)	0.5%	(11.63)
-91 to -100	0.7%	(25.73)	0.3%	(10.72)	0.4%	(8.89)	0.3%	(5.90)

Coverage includes daily technicals on ~3500 US, 2000+ Intl, ETF, Commodities and is fully customizable.

# Small-Cap and International Technical Performance



Further validation of the Technical model are evident in the Small-Cap and International universes whose histories are entirely out-of-sample.

**SMALL-CAP (100% out-of-sample)**

TECH SCORE	6 MONTH LIVE DEC 9, 2020 to PRESENT		3 YEAR OUT-OF-SAMPLE 2018 to 2020		15 YEAR OUT-OF-SAMPLE 2003 to 2017	
	# Occ	Annual	# Occ	Annual	# Occ	Annual
85 to 100	625	79.53	11,255	50.62	47,450	42.51
65 to 84	1,817	50.99	24,288	24.66	111,793	20.88
45 to 64	5,252	21.19	44,110	12.11	234,499	10.28
25 to 44	17,643	13.19	102,318	7.32	593,981	3.75
05 to 24	37,345	17.58	211,551	2.71	1,192,376	1.13
0	40,452	(30.07)	121,041	(1.60)	585,866	(0.04)
-05 to -24	39,115	5.51	271,025	(1.87)	1,359,612	(1.80)
-25 to -44	23,083	(2.79)	174,427	(3.89)	801,578	(4.09)
-45 to -64	9,806	(15.62)	83,492	(6.60)	363,479	(5.96)
-65 to -84	3,261	(39.74)	32,027	(15.82)	135,285	(10.61)
-85 to -100	1,069	(71.05)	12,556	(35.10)	49,691	(22.02)

**INTERNATIONAL EQUITIES (100% out-of-sample)**

TECH SCORE	RECENT OUT-OF-SAMPLE 2018 to PRESENT		HISTORICAL OUT-OF-SAMPLE 2003 to 2017	
	# Occ	Annual	# Occ	Annual
85 to 100	14,423	31.04	43,202	57.07
65 to 84	31,645	16.78	104,866	27.61
45 to 64	67,429	7.06	242,737	14.36
25 to 44	169,915	2.57	651,387	3.81
05 to 24	350,805	(0.37)	1,306,910	(0.00)
0	178,604	2.95	599,763	0.34
-05 to -24	403,938	(0.90)	1,378,195	(1.29)
-25 to -44	253,670	(1.89)	799,850	(4.42)
-45 to -64	118,803	(6.12)	360,673	(8.12)
-65 to -84	44,451	(9.13)	133,071	(14.54)
-85 to -100	16,132	(18.99)	46,412	(29.22)

\*Returns are based on holding each signal for exactly 5 days and annualizing the returns. Returns do not include transaction costs or slippage.

# User Guide





# SIGNAL USER GUIDE - TECHNICALS



## GENERAL NOTES:

- Unlike traditional technical analysis, **Signal's approach is based on a rigorous statistical analysis** of both proprietary and non-proprietary technical indicators, and therefore **objective and quantifiable**.
- Backtested over a 18-year history. **To avoid curve-fitting, the 18-year history was divided into 3 x 5-year periods with a 3-year out-of-sample.**
- The final signal is combination of 2 separate models. The **Primary Signal is a proprietary complex trend indicator**, and the **Secondary Signal is a complex oscillator** similar to an RSI or Stochastic, which identifies an overbought or oversold condition.
- Numeric score is based on a scale of +/- 100; The **highest absolute signals are our strongest**.
- The Pattern Description generally describes the Primary Signal; however, an overbought or oversold condition identified by our Secondary Signal (oscillator) is displayed after "|" with an "OB" or "OS".

### PRIMARY SIGNAL – based on complex trend indicator

Very OB Extremely overbought in the short and intermediate-term

IT OB Intermediate-term (4-6 week) overbought

ST OB Short-term (5 day) overbought

Uptrend Existing uptrend with more to go

Bias Up Choppy with a bias to the upside

Pullback Expect a multi-week pullback

ST Pullback Expect a multi-day pullback

Dip OverPullback over

ComplexVery complex statistical pattern

Conflict Conflicted indicators – numerical signal displays the net of the conflict

No Signal No meaningful signal

Bounce Over Bounce over

ST Bounce Expect a multi-day bounce

Bounce Expect a multi-week bounce

Bias Down Choppy with a downward bias

Dntrend Existing downtrend with more to go

ST OS Short-term (5 day) oversold

IT OS Intermediate-term (4-6 week) oversold

Very OS Extremely oversold in both the short and intermediate term

### SECONDARY SIGNAL – based on complex oscillator

OB Overbought

OS Oversold