Analysis

Seasonality Analysis

Product	Seasonal Strength	Q1 Index	Q2 Index	Q3 Index	Q4 Index
SWITCH Enterprise High 1	0.9338	1348.05	-3713.64	-4124.83	6490.42
SWITCH Enterprise Ultra High 1	0.7199	-916.33	-479.33	-393.95	1789.61
SWITCH Enterprise Ultra High 2	0.7833	-1004.97	23.53	-91.53	1072.97
SWITCH Enterprise Low	0.2075	4472.83	-1583.80	234.27	-3123.30
TRANSCEIVER MODULE Mid	0.5130	-1646.80	6925.18	-7583.90	1646.80
POWER SUPPLY High	0.6482	-3826.36	-5093.80	-8175.36	17095.52
TRANSCEIVER MODULE High	0.5970	-995.06	-855.81	4171.94	-2321.06
ACCESS POINT Mid	0.4967	-6191.05	-139.86	-384.11	6715.02
POWER SUPPLY Mid	0.6992	870.59	-7196.78	-10666.59	16992.78
SERVER	0.5870	-160.11	-328.67	-1204.48	1693.27
PROCESSOR	Insufficient data (need 8 points, have 7)	-	-	-	-
SWITCH Data Center High	0.4571	-53.00	295.81	-160.94	-81.88
TRANSCEIVER MODULE Mid (duplicate)	0.5130	-1646.80	6925.18	-7583.90	1646.80
ROUTER Enterprise Mid 1	0.6924	-389.80	-1936.55	-185.30	2511.64
MEMORY	0.7561	-7654.23	-7540.23	-2360.92	17555.39
ROUTER Enterprise Mid 2	0.2978	-152.03	-237.28	-79.84	469.16
SWITCH Data Center Mid 1	0.2085	-241.88	164.31	128.63	-51.06
ROUTER Enterprise Low	0.4690	-629.19	3167.50	-3423.06	884.75
SWITCH Data Center Mid 2	0.3004	250.31	-317.69	141.00	-73.63
SWITCH Enterprise High 2	1.0000	-21.03	15.84	-20.78	25.97

Key Seasonal Patterns

Strong Seasonality (Strength > 0.7)

- **SWITCH Enterprise High 2**: Perfect seasonality (1.0000)
- **SWITCH Enterprise High 1**: Very strong seasonality (0.9338)
- **SWITCH Enterprise Ultra High 2**: Strong seasonality (0.7833)
- **MEMORY**: Strong seasonality (0.7561)
- **SWITCH Enterprise Ultra High 1**: Strong seasonality (0.7199)

- **POWER SUPPLY Mid**: Strong seasonality (0.6992)

Q4 Dominant Products

- **MEMORY**: Strongest Q4 index (17555.39)
- **POWER SUPPLY High**: Strong Q4 index (17095.52)
- **POWER SUPPLY Mid**: Strong Q4 index (16992.78)

Q1 Dominant Products

- **SWITCH Enterprise Low**: Strong Q1 index (4472.83)

Q2 Dominant Products

- **TRANSCEIVER MODULE Mid**: Strong Q2 index (6925.18)
- **ROUTER Enterprise Low**: Moderate Q2 index (3167.50)

Q3 Dominant Products

- **TRANSCEIVER MODULE High**: Strong Q3 index (4171.94)

Outlier Detection (Threshold: 2.5 Z-score)

Product	Quarter	Demand	Z-score
TRANSCEIVER MODULE Mid	FY22 Q2	208,760.0	2.90
SWITCH Data Center Mid 1	FY22 Q3	6,513.0	2.76
SWITCH Data Center Mid 2	FY22 Q2	6,629.0	2.82

Products with No Detected Outliers

- SWITCH Enterprise High 1
- SWITCH Enterprise Ultra High 1
- SWITCH Enterprise Ultra High 2
- SWITCH Enterprise Low
- POWER SUPPLY High
- TRANSCEIVER MODULE High
- ACCESS POINT Mid
- POWER SUPPLY Mid
- SERVER
- PROCESSOR
- SWITCH Data Center High

- ROUTER Enterprise Mid 1
- MEMORY
- ROUTER Enterprise Mid 2
- ROUTER Enterprise Low
- SWITCH Enterprise High 2

Autocorrelation Analysis

Product	Significant Autocorrelation Lags
SWITCH Enterprise High 1	[1]
SWITCH Enterprise Ultra High 1	[1]
SWITCH Enterprise Ultra High 2	[1]
SWITCH Enterprise Low	None
TRANSCEIVER MODULE Mid	None
POWER SUPPLY High	[1]
TRANSCEIVER MODULE High	None
ACCESS POINT Mid	[1]
POWER SUPPLY Mid	[1]
SERVER	[1]
PROCESSOR	None
SWITCH Data Center High	None
TRANSCEIVER MODULE Mid (duplicate)	None
ROUTER Enterprise Mid 1	None
MEMORY	None
ROUTER Enterprise Mid 2	[1]
SWITCH Data Center Mid 1	None
ROUTER Enterprise Low	None
SWITCH Data Center Mid 2	None
SWITCH Enterprise High 2	None

Seasonality Heatmap

Products ranked by seasonal intensity (high to low):

Product	Peak	Low	Ratio
TRANSCEIVER MODULE High	Q1	Q4	2.76

Product	Peak	Low	Ratio
SERVER	Q4	Q3	2.64
ROUTER Enterprise Mid 1	Q4	Q2	2.00
SWITCH Enterprise Ultra High 1	Q4	Q2	1.96
TRANSCEIVER MODULE Mid	Q3	Q2	1.93
SWITCH Enterprise High 2	Q4	Q2	1.85
PROCESSOR	Q2	Q3	1.83
SWITCH Enterprise Low	Q1	Q4	1.79
TRANSCEIVER MODULE Mid (duplicate)	Q2	Q1	1.79
SWITCH Data Center Mid 1	Q3	Q1	1.74
ROUTER Enterprise Mid 2	Q4	Q2	1.54
ROUTER Enterprise Low	Q2	Q3	1.52
SWITCH Enterprise Ultra High 2	Q2	Q1	1.47
SWITCH Data Center Mid 2	Q2	Q1	1.40
MEMORY	Q4	Q1	1.35
SWITCH Enterprise High 1	Q4	Q1	1.26
ACCESS POINT Mid	Q3	Q1	1.25
POWER SUPPLY High	Q4	Q1	1.25
POWER SUPPLY Mid	Q4	Q1	1.21
SWITCH Data Center High	Q2	Q3	1.21

Long-Term Cycle Analysis

Annual Cycles (365-366 days)

Products with clear annual cycles (peak-to-peak or trough-to-trough):

- SWITCH Enterprise High 1: 366 days (~4.1 quarters) both peak-to-peak and trough-to-trough
- SWITCH Enterprise Ultra High 1: 366 days (~4.1 quarters) peak-to-peak
- SWITCH Enterprise Ultra High 2: 366 days (~4.1 quarters) peak-to-peak
- POWER SUPPLY High: 366 days (~4.1 quarters) peak-to-peak
- TRANSCEIVER MODULE High: 366 days (~4.1 quarters) both peak-to-peak and trough-to-trough
- ACCESS POINT Mid: 366 days (~4.1 quarters) peak-to-peak
- POWER SUPPLY Mid: 366 days (~4.1 quarters) peak-to-peak
- SWITCH Data Center High: 366 days (~4.1 quarters) trough-to-trough
- ROUTER Enterprise Mid 1: 366 days (~4.1 quarters) trough-to-trough
- MEMORY: 365 days (~4.1 quarters) peak-to-peak

- ROUTER Enterprise Mid 2: 366 days (~4.1 quarters) peak-to-peak
- SWITCH Data Center Mid 2: 366 days (~4.1 quarters) peak-to-peak

Semi-Annual Cycles (~180-184 days)

Products with clear semi-annual cycles (peak-to-peak or trough-to-trough):

- SWITCH Enterprise Ultra High 2: 184 days (~2.0 quarters) trough-to-trough
- SWITCH Enterprise Low: 183 days (~2.0 quarters) peak-to-peak
- TRANSCEIVER MODULE High: 181 days (~2.0 quarters) peak-to-peak and 183 days (~2.0 quarters) trough-to-trough
- SERVER: 183 days (~2.0 quarters) peak-to-peak and 182 days (~2.0 quarters) trough-to-trough
- SWITCH Data Center High: 184 days (~2.0 quarters) peak-to-peak and 183 days (~2.0 quarters) peak-to-peak
- ROUTER Enterprise Mid 2: Multiple cycles around 182-184 days (~2.0 quarters)
- SWITCH Data Center Mid 1: 183 days (~2.0 quarters) peak-to-peak
- ROUTER Enterprise Low: 182 days (~2.0 quarters) peak-to-peak and 181 days (~2.0 quarters) trough-to-trough
- SWITCH Enterprise High 2: Multiple cycles around 182-183 days (~2.0 quarters)

Three-Quarter Cycles (~270-275 days)

Products with clear three-quarter cycles (peak-to-peak or trough-to-trough):

- SWITCH Enterprise Low: Multiple cycles around 273-275 days (~3.0-3.1 quarters)
- POWER SUPPLY High: 275 days (~3.1 quarters) trough-to-trough
- TRANSCEIVER MODULE High: 274 days (~3.0 quarters) trough-to-trough
- POWER SUPPLY Mid: 275 days (~3.1 quarters) trough-to-trough
- SWITCH Data Center High: 273 days (~3.0 quarters) trough-to-trough
- ROUTER Enterprise Mid 1: 274 days (~3.0 quarters) peak-to-peak
- SWITCH Data Center Mid 1: 275 days (~3.1 quarters) trough-to-trough
- ROUTER Enterprise Low: 275 days (~3.1 quarters) both peak-to-peak and trough-to-trough
- SWITCH Data Center Mid 2: 275 days (~3.1 quarters) trough-to-trough

Extended Cycles (>366 days)

Products with cycles longer than a year:

- POWER SUPPLY Mid: 457 days (~5.1 quarters) peak-to-peak
- SWITCH Data Center High: 456 days (~5.1 quarters) peak-to-peak
- ROUTER Enterprise Mid 1: 457 days (~5.1 quarters) peak-to-peak
- SWITCH Data Center Mid 1: 457 days (~5.1 quarters) peak-to-peak

Products with No Clear Cycles

- TRANSCEIVER MODULE Mid

- PROCESSOR (insufficient data)