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Date: 2/12/2017

### Anritsu (6754, JP)

Exchange: Tokyo Stock Exchange 1 Sector: Test & Measurement Equipment

Market Cap: JPY116.8 billion

P/B: 1.6x (3/16 act)

Recommendation: Outperform Share Price: JPY846 (2/10/2017)

Target Price: JPY1,210 P/E: 116.2x (3/17 CE) Div. Yield: 1.8% (3/17 CE)

#### Highlight

Titlis upgraded Anritsu to "Outperform" from "Hold" at this time on positive business outlook. Test & Measurement industry is likely to recover finally as its outstanding orders show a sign of improvement led by 5G network investment toward 2020. Moreover, demand in IoT and automotive sector will accelerate to grow. The share price has been left undervalued on peer comparison, but recent acquisition of Ixia by Keysight Technologies should support the revaluation. In addition to its solid mid-term outlook and lower valuation compared with global peer, Anritsu share price will move higher.

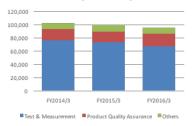
## (JPY million) 8,508 67,728

Sales by Segment for FY03/2016

■Test & Measurement ■Product Quality Assurance ■Others



Sales FY03/2014 - FY03/2016



#### **Business Description**

Anritsu was founded 1895 and has led Japan's communication industry as a manufacturer of test & measurement equipment and expanded its business in worldwide. Its business is divided by 3 segments of Test & Measurement (T&M), Product Quality Assurance (PQR) and Others. Sales by segment for FY03/2016 is shown on the Table on left. T&M accounts for 70.9%, PQR does for 19.8% and Others accounts for 9.3% of the total sales.

#### T&M

T&M provides equipment to 3 categories of customers such as smartphone makers and chip-set makers for mobile market, carrier operators for network infrastructure and electronics device makers for electronics market. Due to slower CapEx of smartphone makers, sales have decreased as shown the Table on left, but seem to hit the bottom in 2Q.

#### POR

PQR provides foods, drug and cosmetics makers its equipment for inspecting contamination, weight measurement and packages. Anritsu projects to enhance the business worldwide from steadily moderate growth, as the demand of inspection is expanding in both of Japan and worldwide.

#### **Others**

Others consists of 2 business such as information & communication business and devices business. Information & communication business provides monitoring and control system to mainly government for public infrastructure in river and water through Anritsu Networks. Devices business provides optical/ultra-high-speed devices for optical communications networks and telecommunications equipment to electric device makers and telecommunication equipment manufacturers through Anritsu Devices.

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## **Industry Overview and Competitive Positioning Industry Overview**

T&M

T&M sale to smartphone makers is likely to continue slow for the time being. Meanwhile, T&M market is expected to widen to automotive, IoT and 5G related areas. IoT/5G business will commence in 2H of 2017. As a result of the arrival of IoT/5G, many new services can be expected to start, including 4K and 8K image transmission, home energy management systems (HEMS), and automated driving. To realize this services, key technology includes high speed of transmission (100 times the speed of current LTE), multiple log-ons (a large number of users to log on and use the Internet at the same time) and without breaking up (data response time will be 1/1,000 a second). To meet these conditions, T&M will play a vital role for helping the network system advance further. In addition to IoT/5G connectivity, demand will expand to cloud computing and AI. In fact, latest projects include such new areas. For instance, development of automated driving as well as in operator-driven IoT such as Category M and NB-IoT is becoming in full swing from this year. Also, major operators in Japan and overseas are announcing plans for verification tests for 5G commercialization and Investment in 5G is beginning to materialize soon. Meanwhile, wireline market maintains solid demand of measurement instruments for development and manufacture of optical modules, led by increasing demand by data center that is raising investment for high speeds and high capacity.

#### **POR**

Due to the increasing demand for security and safety, the market of inspection equipment is expected to grow at slightly higher pace of 5% per year. Since enforcement of Product Liability Law in 1994, maintaining high standards of quality assurance has been required for food and pharmaceutical products. Furthermore, as a result of a number of incidents of contamination in products, consumers are more likely to be aware of food safety has grown and quality assurance has become a big issue for the manufactures. In North America, demand for inspections to detect contaminants in meat products is increasing. Moreover, requirement by US Food and Drug Administration (FDA) would be supportive, as the regulatory requires that food products and pharmaceuticals sold in the United States be labeled properly and that safety and proper efficacy be assured. In China and Southeast Asia, along with develops next generation technology of communication industry and R&D cost is likely to go ahead of revenue. Anritsu Device Co. Ltd focuses on developing semiconductor laser that is used for high-speed optical communication. Semiconductor laser market in Japan is estimated to grow from JPY158 billion in 2015 to JPY288 billion in 2019 according to Fuji-Keizai Group.

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### **Competitive Positioning T&M**

Buyers (Low-Middle risk):

For both of Mobile and Network market, collaboration with customers is a key. Co-working with device makers in development of chips and carrier operators in next generation network project is a strength. Anritsu expands R&D activities in US, Asia, Europe and Japan that helps to enhance co-development in proximity to customers. Such a customizing products and services reduce buyers risk.

# T&M | New Entry | | Low | | Suppliers | Competition | | Low | Mddle | | Substitution | | Low | | Low

#### Suppliers (Low risk):

Anritsu as one of the top T&M equipment manufacturers has close and long-term relationship with suppliers. T&M equipment is value added products ha are assembled by parts and components. Many of components are alternatively procured from suppliers globally.

Competition (Low-Middle risk): Due to its high technology and limited number of players would reduce competition risk in industry. However, if restrained investment by smartphone makers and deliberate attitude of network investment by career operators are maintained, competition in industry would be intense. In addition, as Keysight goes up to hard ware T&M market more aggressively led by recently decided consolidation of Ixia, whereas Anritsu comes down to software solution. As a result, competition is likely to become intense.

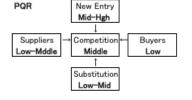
<u>New Entry</u> (Low risk): Due to its high technology and co-working with customers, threat of new entry would be limited. As many of products are customized, a new entrant requires time for customization and co-development to meet customer need.

<u>Substitution</u> (Low risk): Due to its nature of products, T&M equipment is an essential equipment before chip and network system are used in practice. Substitution risk would be minimal.

#### **PQR**

Buyers (Low risk):

The market is expanding as customer base and the number of inspection process are increasing, although a number of manufacturers provides inspection equipment. Deli and 'bento' lunch box vendors to convenience stores are aggressively raising inspection equipment due to the increase of contamination risk. In fact, Anritsu increased sale of X-ray analyzer to the vendors in Japan and developed meat processors in North America.



#### Suppliers (Low risk):

Inspection equipment is not a commodity product and is less dependent on material prices and many of components are alternatively procured from suppliers globally. Anritsu has long-term relationship with suppliers on T&M equipment. This is advantage for producing inspection equipment, too.

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<u>Competition</u> (Middle risk): Due to the number of players, the competition is relatively higher than other criteria. While the demand of inspection equipment is increasing and the market is likely to grow at solid pace for the time being, the competition would be stable at this moment. Once the market was soft, the competition risk would increase.

<u>New Entry</u> (Middle-High risk): Not only test & measurement equipment makers but other manufacturers enter into the market from sensor makers, machinery makers, LED makers and etc. New entry risk is middle to high.

<u>Substitution</u> (Low-Mid risk): Inspection process is in various ways. Recently, X-ray analyzer is getting popular replaced from image sensor. Equipment makers have to develop new technology continuously for meeting customer demand, as inspection process, need and regulation are continuously changing.

#### **Investment Summary**

#### **Business Outlook**

In short-term view, OP is expected to move higher than its revised guidance for FY03/2017. The earnings were very likely to hit the bottom in 2Q, as the outstanding order gained from JPY12.8 billion in 2Q from JPY14.9 billion in 3Q end. In fact, an increasing number of projects in IoT field such as Category M and NB-IoT as well as commercialization of 5G are finally beginning to materialize. Demand for T&M equipment in 5G investment is expected to rise in 2Q FY2017 onward.

#### **Competitive Positioning and Risks**

T&M and PQR are different positioning, although both business is in prospective markets going forward. T&M has a limited number of players, higher entry barrier and lower substitution risk. In contrast, PQR has a number of competitors with relatively lower entry barrier and higher substitution risk. PQR market is expected to remain stable growth, whereas T&M market is expected to expand from 2017 after sluggish investment by both of smartphone makers and carrier operators for a few years.

#### **Valuation**

Having analyzing peer comparison before, Anritsu's valuation is left significantly lower. It would be reasonable if its valuation expands a little more, as Ixia was recently acquired at much higher valuation. In case of acquisition, applying multiple of EV/EBITDA of Ixia to Anritsu, the share price would rise to JPY1,011 for FY03/2017 (E). Assuming the valuation expands to a global competitor KeySight Technologies in Price/EBIT of 14x, Price/EBITDA of 11x and Price/FCF of 18x, Anritsu goes up to PY1,210 for FY03/2017 (E).

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#### **Financial Stability**

Anritsu has maintained positive free cash flow, operating cash flow and working capital even while it has receded its profitability since FY03/2012. Due to positive outlook of T&M business from FY03/2018, financial position is very likely to get strong.

#### **Business Outlook**

#### 3Q FY03/2017

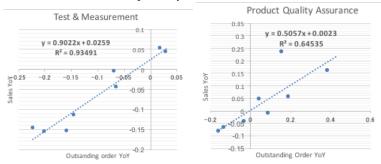
Total sale slid 13.8% YoY to JPY62,264 million and OP, EBT and NP fell 67.8% YoY to JPY1,669 million, 76.2% YoY to JPY1,214 million and 82.1% YoY to JPY million and JPY850 million for the 9-month period, as mobile market of T&M business continued slowing, while PQA business and network of T&M were solid.

#### Full Year FY03/2017 Outlook by company

Anritsu kept its previous outlook and dividend on hold for full year FY03/2017. Sale is expected to slid 8.4% YoY to JPY87,500 million, OP, EBT and NP are expected to fell 62.7.3% YoY to JPY2,200 million, 74.2% YoY to JPY1,400 million and 73.4% YoY to JPY1,000 million respectively. Dividend will be paid JPY7.50 a share annually.

#### 4Q sales forecast based on Order outstanding

Anritsu provides its order intake and order outstanding in every quarter period. Orders are 2-3 months ahead of sale completed in normal. In this nature of business, outstanding order a quarter period ahead is highly correlated with sale for the ongoing quarter for particularly T&M (see the Table below). Based on this assumption, 4Q sale for 3-month period are expected rise 10.3% YoY to JPY16,583 million for T&M and 5.3% YoY to JPY5,503 million for PQR. As a result, 4Q total sale for 3-month period is expected to rise 7.8% YoY to JPY25,164 million. JP25 billion sale will be for the first time since 2Q FY03/2016.



#### Titlis forecast for FY03/2017

Sales are expected to slightly miss company guidance to JPY87,426 million, but OP, EBT and NP are expected to move much higher than company forecast to JPY3,562 million, JPY3,108 million and JPY2,051 million respectively.

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#### **Mid-Term Projection**

In mid-term projection, T&M is expected to accelerate from 10% to 20% increase in sale buoyed by increasing demand of IoT/5G connectivity toward FY03/2020 and profit margin is expected to improve sharply alongside sale expansion. PQR is expected to increase its sale in line with market growth at 5% and improves profitability at stead rate after temporarily prior

investment in FY03/2017. Others segment is likely to remain stable.

	CIICIIII									
JPY million	Test & Measu		Product Quality		Othe		-	tment	Total	
FY2014/3	Sales	OP	Sales	OP	Sales	OP	Sales	OP	Sales	OP
1Q (act)	17,755	2,698	2,992	-27	1,617	-55		-149	22,364	2,467
2Q (act)	18,755	3,370	5,174	658	1,756	79		-248	25,685	3,859
3Q (act)	17,480	2,458	3,718	172	1,857	233		-301	23,055	2,562
4Q (act)	21,971	4,482	5,034	405	3,739	684		-337	30,744	5,234
Full Year (act)	75,961	13,008	16,918	1,208	8,969	941	0	-,	101,848	14,122
JPY million	Test & Measu		Product Quality		Othe			tment	Total	
FY2015/3	Sales	OP	Sales	OP	Sales	OP	Sales	OP	Sales	OP
1Q (act)	17,557	1,955	2,839	-365	1,775	25		-193	22,171	1,422
2Q (act)	19,102	2,717	4,819	497	1,911	190		-201	25,832	3,203
3Q (act)	17,994	1,811	3,551	22	2,292	1,014		-194	23,837	2,653
4Q (act)	18,788	2,459	4,987	669	3,219	732		-259	26,994	3,601
Full Year (act)	73,441	8,942	16,196	823	9,197	1,961	0	-847	98,834	10,879
JPY million	Test & Measu	ırement	Product Quality	Assurance	Othe	rs	Adjus	tment	Total	
FY2016/3	Sales	OP	Sales	OP	Sales	OP	Sales	OP	Sales	OP
1Q (act)	18,070	1,824	3,683	-3	1,893	-54		-235	23,646	1,532
2Q (act)	17,794	1,326	5,595	579	1,982	33		-233	25,371	1,705
3Q (act)	16,834	1,607	4,387	292	1,955	93		-54	23,176	1,938
4Q (act)	15,030	(52)	5,226	327	3,078	502		-55	23,334	722
Full Year (act)	67,728	4,705	18,891	1,195	8,908	574	0	-577	95,527	5,897
Full Year (CE)	67,500	4,800	19,000	1,200	9,000	-			95,500	6,000
FY2017/3	Sales	OP	Sales	OP	Sales	OP	Sales	OP	Sales	OP
1Q	14,632	733	4,106	133	1,544	-109		-29	20,282	728
2Q	13,836	-263	5,129	385	1,945	64		-44	20,910	142
3Q	14,177	278	4,624	113	2,266	456		-48	21,067	799
4Q (E)	16,583	1,204	5,503	126	3,078	619		-55	25,164	1,895
Full Year (E)	59,228	1,952	19,362	757	8,833	1,030	0	-176	87,423	3,564
Full Year (CE)	58,500	500	20,000	1,400	9,000	300			87,500	2,200
FY2018/3 (E)	Sales	OP	Sales	OP	Sales	OP	Sales	OP	Sales	OP
1Q	16,144	1,464	4,324	140	1,574	-111		-29	22,042	1,464
2Q	15,266	1,138	5,401	405	1,983	65		-44	22,650	1,564
3Q	15,642	1,493	4,869	243	2,311	465		-48	22,822	2,154
4Q	18,596	1,877	5,794	290	3,139	632		-55	27,529	2,743
Full Year (E)	65,647	5,972	20,388	1,079	9,007	1,051	0	-176	95,042	7,925
Full Year (CE)									0	0
FY2019/3 (E)	Sales	OP	Sales	OP	Sales	OP	Sales	OP	Sales	OP
1Q	18,103	1,810	4,553	147	1,605	-113		-29	24,261	1,815
2Q	17,119	1,712	5,687	427	2,022	67		-44	24,828	2,161
3Q	17,540	2,105	5,127	359	2,356	474		-48	25,024	2,890
4Q	21,356	2,563	6,102	549	3,200	644		-55	30,658	3,701
Full Year (E)	74,119	8,190	21,468	1,482	9,184	1,071	0	-176	104,771	10,568
Full Year (CE)			- 1		- 1				0	
FY2020/3 (E)	Sales	OP	Sales	OP	Sales	OP	Sales	OP	Sales	OP
1Q	20,791	2,495	4,794	240	1,637	-116		-29	27,222	2,590
2Q	20,432	2,452	5,988	449	2,062	68		-44	28,482	2,925
3Q	20,935	2,512	5,399	486 578	2,402	483		-48 -55	28,737	3,434
4Q	25,490	3,059	6,425		3,263	657			35,178	4,239
Full Year (act) Full Year (CE)	87,648	10,518	22,606	1,753	9,365	1,092	0	-1/6	119,618 0	13,187
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(Source) Anritsu, titlis

#### Valuation

There would be much room of upside potential for the share price on peer comparison. Applying EV/EBITDA and other multiples such as Price/EBIT and EBITDA based on recently acquired Ixia, Anritsu share price would rise to JPY1,011 for FY03/2017 (E). Sum-Of-the-Parts valuation estimates to be JP1,210 for FY03/2017 (E) based on multiples of Keysight Technologies in Price/EBIT, Price/EBITDA and Price/FCF.

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#### **Peer Comparison**

Examining peer comparison, Anritsu remains lower valuation. Titlis has used peer comparison in valuation of Anritsu on global competitors such as Keysight Technologies, Inc. (KEYS). Referring latest USD 1.6 billion acquisition of Ixia (XXIA) by Keysight, there would be much more room for revaluation in Anritsu. The share price of Ixia is traded at 18.57x of EV/EBITDA, 3.25x of Price/Sales, 13.27x of Price/EBIT, 19.74x of Price/EBITDA, and 24.41x of Price/FCF as shown Table below. In case of immediate acquisition, applying for instance EV/EBITDA of 18x to Anritsu, the share price would rise to JPY1,011 for F03/2017 (E).

	Keysight (KEYS)	Ixia (XXIA)	Anritsu (6754, JP)
Share Price (2017/2/9)	USD 36.99	USD 19.50	USD 6.80
Market Cap	USD 6.34 billion	USD 1.61 billion	USD 0. 923 billion
EV	USD 6.70 billion	USD 1.51 billion	USD 0.80 billion
EBITDA	UDS 572 million	USD 82 million	USD 64 million
EV/Revenue	2.3	3.06	1.05
EV/EBITDA	11.71	18.57	12.41
Sales	USD 2.92 billion	USD 495 million	USD 759 million
EBIT	USD 438 million	USD 24 million	USD 28 million
EBIT Margin	15.01%	4.86%	3.64%
EBITDA Margin	19.59%	16.47%	8.44%
Price/Sales	2.17	3.25	1.22
Price/Book	4.16	2.96	1.31
Price/EBIT	14.47	13.27	32.96
Price/EBITDA	11.08	19.74	14.42
Price/FCF	18.14	24.41	44.83

(Source) Yahoo Finance, titlis

#### **EV/EBITDA**

EV/EBITDA for FY03/2017(E) is estimated to be 11.8x. Based on positive outlook of mid-term projection in EBITDA for Anritsu, EV/EBDA is expected to decline from 11.8x for FY03/2017 to 5.5x for FY03/2020 (see the Table below).

	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17 (E)	Mar-18 (E)	Mar-19 (E)	Mar-20 (E)
Avg. Mkt. Cap	JPY 107,848	JPY 165,006	JPY 186,666	JPY 138,338	JPY 102,325	JPY 93,707	JPY 93,707	JPY 93,707	JPY 93,707
EV	JPY 107,463	JPY 152,417	JPY 164,674	JPY 119,779	JPY 96,842	JPY 88,340	JPY 90,805	JPY 92,512	JPY 94,226
EV/EBITDA	5.85	7.86	9.54	8.70	9.82	11.84	7.68	6.39	5.51

#### Sum-of-the Parts Valuation

Sum-of-the-Parts (SOTP) value is business value of each business segment that is normalized EBIT, EBITDA and FCF from FY03/2012 to FY03/2017(E) by multiples based on Keysight Technologies for T&M segment, added to net cash and long-term investment securities and land. SOTP value for FY03/2017(E) is estimated to be JPY1,210 a share that is 30% discount of closing price of February 10th 2017 (see the Table on left).

#### Financial Analysis

As shown key financial ratios in table below and financial statements summary in Appendix, Anritsu's profitability has been deteriorating, but financial position is not much weak. Working capital, free cash flow and free

#### Sum of the parts NAV (FY2017/3 (E): Test & Measurement 998 1x EBITDA 99 24x FCF Product Quality Assura Others 77 15x FCF Adjustment (25) 5x EBITDA Cash 270 1x Book Land 11 0.75x Book Investment 10 0.75x Book Debt (231) 1x Book Minority (0) 1x Book JPY 1,210 Total SOTP NAV 69.9%

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cash flow is maintained positive. CapEx rose in FY03/2016 for building head office and laboratory due to BCP, but FCF will be upbeat alongside recovering T&M business and sable CapEx after F03/2018.

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Key Financial Ratios:	Mar-12	2 Mar-1	3 Mar-14	Mar-1	5 Mar-1	6 Mar-17 (I	E) Mar-18 (E	) Mar-19 (E	) Mar-20 (E
ROE	17.039	25.039	13.359	10.379	4.93%	2.75%	4.87%	6.79%	8.79%
Gross Margin	47.249	53.869	5 53.969	53.319	5 51.269	46.929	51.539	46.74%	40.949
EBITDA Margin	19.629	20.499	16.959	13.939	10.339	8.53%	12.449	13.81%	14.299
EBIT Margin	14.959	16.699	13.879	11.019	6.17%	4.07%	8.34%	10.09%	11.029
Return on Assets	7.16%	12.119	7.32%	6.299	3.02%	1.70%	2.93%	4.02%	5.14%
Return on Fixed Assets	51.649	80.679	47.129	31.599	14.619	7.97%	13.849	19.45%	25.879
Revenue / Assets	84.139	82.279	80.119	79.149	76.659	72.349	78.029	84.15%	92.379
Depreciation / Capex	182.709	80.449	65.799	57.549	5 51.859	72.249	72.249	72.24%	72.249
Depn / Sales	4.67%	3.80%	3.08%	2.929	4.15%	4.46%	4.10%	3.72%	3.26%
Capex / Sales	2.56%	4.739	4.68%	5.079	8.01%	6.18%	5.68%	5.15%	4.51%
Depn / Net FA	28.319	20.859	15.899	11.599	15.429	15.159	15.159	15.15%	15.159
Asset / Equity	2.38	1.78	1.70	1.63	1.64	1.65	1.67	1.67	1.68

#### **Investment Risks**

Recovering T&M business led by increasing demand of 5G network would minimize risk in slower smartphone market. Conversely solid demand in network business is likely to intensifying competition with rivals like Keysight.

#### Continuing slower smartphone market (Likely, Middle Risk)

Soft growth in smartphone market is likely to continue for the time being and full recovery is less likely soon. However, demand of IoT/5G connectivity is finally beginning and this would support the business.

#### Slower CapEx by carrier operators (Less likely, Middle Risk)

It took some time for carriers to raise CapEx for the next generation network. One of the reasons was 5G Specification by Verizon has not become standardized, but Non-Standalone New Radio is very likely to lead R&D for the next generation mobile network from 1H 2017.

#### Intensifying competition in T&M (Very likely, Low-Middle Risk)

Anritsu is trying to expand to software solution from providing T&M equipment. Meantime Keysight Technologies is penetrating into hardware market from software. Acquisition of Ixia would accelerate this strategy.

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FY2014/3	Sales	COGS	GP	SGA	OP	EBT	Tax	Minority	NP	EPS	P/E
1Q (act)	22,365	-10,508	11,857	-9,391	2,466	2,681	-1,060	-7	1,614	11.26	
2Q (act)	25,687	-11,479	14,208	-10,349	3,859	3,884	-1,210	-6	2,668	18.61	
3Q (act)	23,055	-10,467	12,588	-10,026	2,562	2,725	-955	-8	1,778	12.40	
4Q (act)	30,745	-14,445	16,300	-11,066	5,234	4,947	-1,696	8	3,244	22.63	
Full Year (act)	101,852	-46,899	54,953	-40,832	14,121	14,237	-4,921	-13	9,304	64.90	
FY2015/3	Sales	COGS	GP	SGA	OP	EBT	Tax	Minority	NP	EPS	P/E
1Q (act)	22,172	-10,336	11,836	-10,414	1,422	1,350	-534	-7	808	5.64	
2Q (act)	25,833	-12,428		-10,202	3,203	3,661	-985	-5	2,670	18.63	
3Q (act)	23,839	-11,117	-	-10,067	2,655	2,992	-916	0	2,074	14.79	
4Q (act)	26,995	-12,267	-	-11,126	3,602	3,587	-1,281	-4	2,304	16.76	
Full Year (act)	98,839	-46,148	52,691	-41,809	10,882	11,590	-3,716	-16	7,856	55.82	
FY2016/3	Sales	cogs	GP	SGA	OP	EBT	Tax	Minority	NP	EPS	P/E
1Q (act)	23,647	-10,971		-11,146	1,530	1,673	-525	-4	1,143	8.32	
2Q (act)	25,372	-12,279		-11,387	1,706	1,538	-324	0	1,214	8.84	
3Q (act)	23,177	-11,007	12,170	-9,787	1,939	1,900	-341	-4	1,555	11.32	
4Q (E)	23,334	-12,300	11,034	-9,617	721	322	-477	2	-153	-1.11	
Full Year (E)	95,530	-46,557	48,973	-41,938	5,896	5,433	-1,667	-6	3,760	27.37	30.91
Full Year (CE)	95,500	10,551	10,515	42,550	6,000	5,300	2,007		3,500	25.48	33.20
FY2017/3 (E)	Sales	COGS	GP	SGA	OP	EBT	Tax	Minority	NP	EPS	P/E
1Q (E)	20,283	-10,069	10,214	-9,487	727	7	18	-19	6	8.32	
2Q (E)	20,911	-11,467	9,444	-9,303	141	48	-152	1	-103	8.84	
3Q (E)	21,068	-10,744	10,324	-8,683	799	1,158	-368	3	795	5.79	
4Q (E)	25,164	-14,130		-11,047	1,895	1,895	-541	2	1,355	9.87	
Full Year (E)	87,426	-46,410		-38,520	3,562	3,108	-1,043	-13	2,051	32.82	25.78
Full Year (CE)	87,500		-		2,200	1,400			1,000	7.28	116.21
FY2018/3 (E)	Sales	COGS	GP	SGA	OP	EBT	Tax	Minority	NP	EPS	P/E
1Q (E)	22,042	-9,366	12,676	-11,212	1,464	932	-266	-7	658	8.32	
2Q (E)	22,650	-9,557	13,093	-11,529	1,564	995	-284	-8	703	8.84	
3Q (E)	22,822	-10,652	12,170	-10,019	2,154	1370	-392	-11	968	7.05	
4Q (E)	27,529	-16,495	11,034	-12,129	2,743	1746	-499	-14	1,233	8.98	
Full Year (E)	95,042	-46,069	48,973	-44,889	7,925	5043	-1,441	-39	3,563	33.19	25.49
Full Year (CE)	0				0		·				#DIV/0!
FY2019/3 (E)	Sales	COGS	GP	SGA	OP	EBT	Tax	Minority	NP	EPS	P/E
1Q (E)	24,261	-11,585	12,676	-10,861	1,815	1155	-525	-9	621	8.32	
2Q (E)	24,828	-11,735	13,093	-10,932	2,161	1375	-324	-11	1,041	8.84	
3Q (E)	25,024	-12,854	12,170	-11,025	2,890	1839	-341	-14	1,484	10.80	
4Q (E)	30,658	-19,624	11,034	-14,480	3,701	2355	-477	-18	1,860	13.54	
Full Year (E)	104,771	-55,798	48,973	-47,298	10,568	6,725	-1,667	-52	5,006	41.50	20.38
Full Year (CE)	0				0						#DIV/0!
FY2020/3 (E)	Sales	COGS	GP	SGA	OP	EBT	Tax	Minority	NP	EPS	P/E
1Q (E)	27,222	-14,546	12,676	-10,086	2,590	1648	-525	-13	1,110	8.32	
2Q (E)	28,482	-15,389	13,093	-10,168	2,925	1861	-324	-14	1,523	8.84	
3Q (E)	28,737	-16,567	-	-13,572	3,434	2185	-341	-17	1,827	13.30	
4Q (E)	35,178	-24,144	11,034	-15,881	4,239	2697	-477	-21	2,199	16.01	
Full Year (E)	119,618	-70,645	48,973	-49,707	13,187	8,392	-1,667	-65	6,660	46.48	18.20
Full Year (CE)	0	,,,,,,	,	,,,,,,	0	,	,,		,,,,,,		#DIV/0!
(Source) Apritou tit											

(Source) Anritsu, titlis

Cash Flow Analysis (JPY r	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17 (E)	Mar-18 (E)	Mar-19 (E)	Mar-20 (E)
Net Income	7,973	13,935	9,305	7,859	3,760	2,051	3,563	5,006	6,660
Dep.	4,372	3,602	3,138	2,884	3,969	3,900	3,900	3,900	3,900
Amortization	0	0	0	0	0	0	0	0	0
Other non-cash charges	8,448	-4,426	2,629	-2,629	-2,060	0	0	0	0
Changes in WC	-4,650	-1,340	-1,280	-532	4,526	2,628	-2,470	-3,155	-4,815
Op. Cash Flow	16,143	11,771	13,792	7,582	10,195	8,580	4,993	5,751	5,745
Per share	JPY 125.88	JPY 83.36	JPY 96.24	JPY 53.77	JPY 74.23	JPY 62.49	JPY 36.37	JPY 41.88	JPY 41.84
Capex	-2,393	-4,478	-4,770	-5,012	-7,655	-5,399	-5,399	-5,399	-5,399
Free Cash Flow	13,750	7,293	9,022	2,570	2,540	3,181	-406	352	346
Per share	JPY 107.22	JPY 51.65	JPY 62.95	JPY 18.22	JPY 18.49	JPY 23.17	(JPY 2.95)	JPY 2.56	JPY 2.52
Beginning Cash	27,993	39,596	37,690	43,215	34,916	37,391	37,275	34,810	33,102
Net cash used	11,603	-1,906	5,525	-8,299	2,475	-116	-2,465	-1,708	-1,713
Ending cash	39,596	37,690	43,215	34,916	37,391	37,275	34,810	33,102	31,389

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## Titlis Group corporate governance, investment research & solutions

5	2012/3	2013/3	2014/3	2015/3	2016/3	2017/3 (E)	2018/3 (E)	2019/3 (E)	2020/3 (E)
Consolidated Balance Sheets			,_			,_,_,	,_ ,_ ,_,	,_,	,_ ,_ ,_,
Assets									
Current Assets									
Cash and Cash Equivalents	39,596	37,690	43,215	34,916	37,391	37,275	34,810	33,102	31,389
Short-Term Investments	10	22	1,098	1,276	-	-	-	-	-
Notes and Accounts Receivable, Trade	23,471	23,883	25,687	24,811	19,738	18,064	19,637	21,647	24,715
Allowance for Doubtful	23,472	23,003	23,007	14,011	13,730	10,004	13,037	22,047	24,713
Receivables	_	-	-	-	-	-	-	-	-
Inventories	14,770	16,159	17,053	19,191	18,376	16,817	18,282	20,154	23,010
Deferred Income Taxes	-	-	-	-	-	-	-	-	-
Other Current Assets	1,097	2,192	2,957	3,932	5,036	4,609	5,010	5,523	6,306
Total Current Assets	78,944	79,946	90,010	84,126	80,541	76,765	77,740	80,426	85,419
Property, Plant and									
Equipment									
Land	2,497	2,329	2,164	1,997	1,997	1,997	1,997	1,997	1,997
Builidings	15,441	17,274	19,747	24,880	25,741	31,140	36,539	41,938	47,337
Machinery and Equipment	-	-	-	-	-	-	-	-	-
Construction in Progress	-	-	-	-	-	-	-	-	-
Total	17,938	19,603	21,911	26,877	27,738	33,137	38,536	43,935	49,334
Accumulated Depreciation Net Property, Plant and	-	-	-	-	-	-	-	1	2
Equipment	17,938	19,603	21,911	26,877	27,738	33,137	38,536	43,936	49,336
				,	,.55	,	22,330	,555	,556
Software & Other intangible									
asssts	-	-	-	-	-	-	-	-	-
Goodwill	1,466	1,340	2,023	2,558	3,209	3,209	3,209	3,209	3,209
	1,466	1,340	2,023	2,558	3,209	3,209	3,209	3,209	3,209
Other Assets									
Other Assets Investments in and Advances									
to Associates	173	238	249	87	_	_	_	_	_
Investment Securities	1,386	1,785	2,209	2,183	1,830	1,830	1,830	1,830	1,830
Software & Others	-	-	-	-	-	-	-	-	-
Deferred Income Taxes	10,972	11,754	10,264	8,651	8,545	8,545	8,545	8,545	8,545
Other	408	423	483	411	2,761	2,761	2,761	2,761	2,761
Total Other Assets	12,939	14,200	13,205	11,332	13,136	13,136	13,136	13,136	13,136
Total	111,287	115,089	127 140	124,893	124,624	126,247	132,621	140,707	151,100
Total	111,207	115,069	127,149	124,095	124,024	120,247	132,021	140,707	151,100
Liabilities and Stockholders'									
Equity									
Current Liabilities									
Bank Loans	20,820	2,472	6,898	6,585	7,133	7,133	7,133	7,133	7,133
Notes and Accounts Payable,	0.270	0.100	0.451		7.100		7,097	7.022	8,932
Accrued Expenses	9,279 715	8,189 551	8,451 248	11,536 82	7,133	6,528	7,097	7,823	8,932
Income Taxes	1,794	1,997	3,835	1,785	1,230	1,126	1,224	1,349	1,540
Other Current Liabilities	11,501	12,751	14,364	14,528	6,054	5,540	6,023	6,640	7,581
Current Portion of Long-Term									
Debt	-	-	-	-	-	-	-	-	-
Total Current Liabilities	44,109	25,960	33,796	34,516	21,550	20,327	21,476	22,945	25,185
Long-Term Debt	9,293	16,945	11,960	9,479	20,434	20,434	20,434	20,434	20,434
Deferred Income Taxes Termination and Retirement	119	686	323	362	302	302	302	302	302
Benefits	9,098	5,708	3,453	1,543	4,290	4,290	4,290	4,290	4,290
Other Long-Term Liabilities	1,849	1,256	2,721	2,327	2,185	2,185	2,185	2,185	2,185
	30,113	19,417	18,858	16,064	27,567	27,567	27,567	27,567	27,567
Total Liabilities	64,468	50,555	52,253	48,227	48,761	47,538	48,687	50,156	52,396
Stockholders' Equity	47.405	10.055	10.000	10.000	10.050		***		
Common Stock Additional Paid-in Capital	17,105	19,052	19,052	19,052	19,052	19,052	19,052	19,052	19,052
Additional Paid-in Capital Legal Reserve	26,332 4,881	28,110 15,946	28,191 23,521	28,217 24,565	28,220 23,193	28,220 21,949	28,220 23,453	28,220 26,399	28,220 31,000
Retained Earnings	-,361	23,340		,303	-	-1,343	-		52,000
Treasury Stock	(852)	(867)	(868)	(869)	(1,040)	(1,040)	(1,040)	(1,040)	(1,040)
Total Stockholders' Equity	47,466	62,241	69,896	70,965	69,425	68,181	69,685	72,631	77,232
Accumulated other									
Comprehensive Income	(647)	2,295	4,990	7,675	6,385	#REF!	14,197	17,869	21,421
Warrant	0	0	0	0	0	0	0	0	0
Minority Interests in Subsidiaries		(2)	10	26	51	51	51	51	51
Judisiulai les		(2)	10	26	51	51	21	31	31
Total Stockholders' Equity	46,819	64,534	74,896	78,666	75,861	#REF!	83,933	90,552	98,704
Total	111,287	115,089	127,149	126,893	124,622	126,247	132,621	140,707	151,100

#### **Titlis Group Inc.**

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