

REED
ELECTRONICS
RESEARCH

THE YEARBOOK OF WORLD ELECTRONICS DATA

Components
Computers
Consumer
Control and Instrumentation
Medical and Industrial
Office Equipment
Radio Communications
Telecommunications

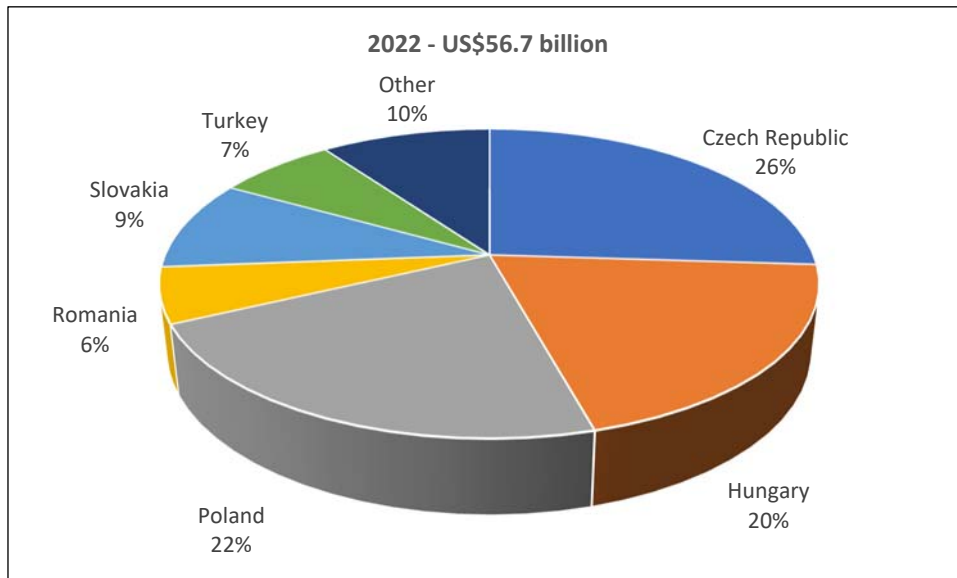
Volume Three

EAST EUROPE & WORLD SUMMARY

2023

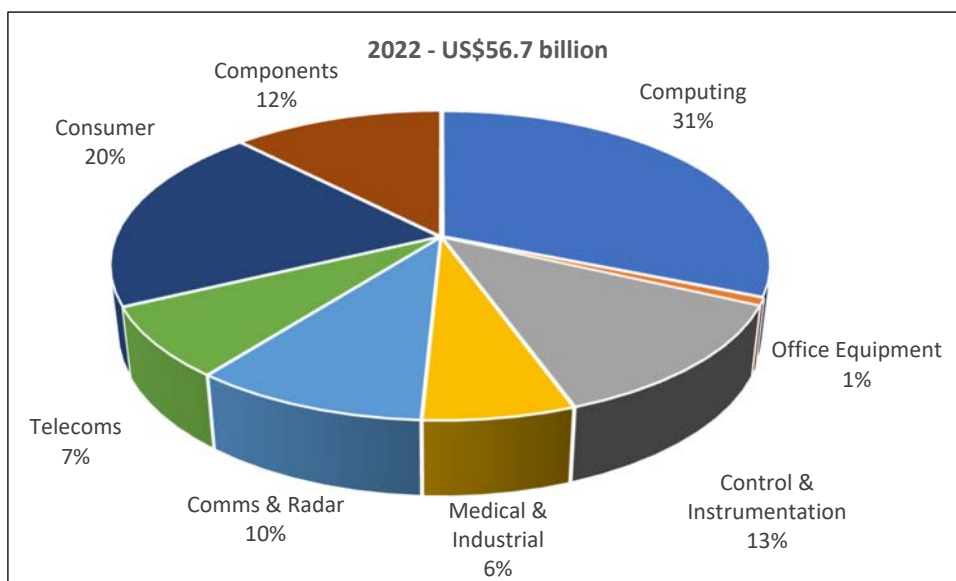
Yearbook of World Electronics Data Volume 3 2023 – World Summary and Overview of Electronics Production & Markets in CEE

CEE's electronics industry is focused on a small number of major global OEMs and electronic manufacturing services providers with the focus on the 3C segments. In total, the 3C segments amounted to US\$38.6 billion in 2022, 68.2% of electronics output. 3C production is centered on five countries with Poland, Slovakia and Turkey major centres for TV production. Production in the Czech Republic is focused on computing while Hungary is produces a combination of computing and consumer electronics related equipment.



CEE Electronics Production by Country 2022

The focus on 3C has been a key factor in the growth of electronics industry across CEE. However, with volume manufacturing in the hands of a relatively few companies the region continues to be vulnerable to the individual strategies of the company. Companies will need to balance the advantages of producing in close proximity to the European market against the advantages offered through lower costs by utilising manufacturing facilities in China and increasingly other Asian countries.



CEE Electronics Production by Product 2022

Industrial and high-end communications equipment production within the region will continue to take an increasing share of production, although in overall percentage terms it will remain low because of the dominant position held by the 3C segment. Although this will be led by foreign investment as companies look to move production from higher cost West European locations or in the case of non-European companies look to establish a low-cost manufacturing base to serve the European market, it is also an area where indigenous companies will compete.

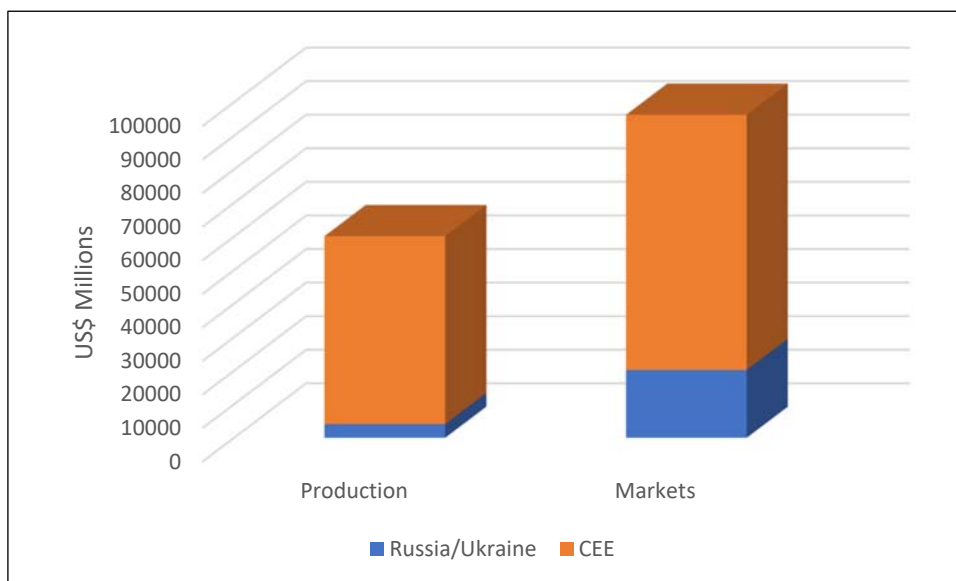
The region is already a production base for the majority of the leading European Electronic Manufacturing Services (EMS) providers with the proportion of production undertaken in the region forecast to increase over the period to 2026. Although the major players with large volume production plants will continue to dominate in value terms companies over the period there will be significant investment by medium-sized companies looking for a lower-cost European production base.

Within CEE, components account for only 12.3% of electronics output in 2022. There are a number of indigenous companies although they tend to be small and focused on passive components. Foreign companies who have established operations in the country including Infineon Technologies and onsemi, both companies expanding their existing semiconductor facilities in 2022.

Although not covered within the current Yearbook series automotive electronics has and will continue to play an important role in the development of the region's electronics industry. All the major suppliers of automotive components and systems have established manufacturing operations in CEE to serve both European and global vehicle manufacturers.

In addition to establishing manufacturing operations in the region, companies from Western Europe and wider a field are also setting up R&D facilities, a trend which is expected to increase over the coming years.

Russia's invasion of Ukraine and subsequent war resulted in a sharp contraction in electronics production and markets in both countries in 2022 with the downward trend continuing into 2023. In 2022, in US dollars electronics output in Russia declined by 10.8% while the market fell by 15.8%. With increased sanctions and major western manufacturers exiting the country Russia has looked to China and other Asian countries to supply key components and equipment a trend which is set to continue in the period to 2026. With Russia focusing resources on the production of military equipment it is expected that growth in other industries will be impacted. In 2023, electronics output is forecast to contract by a further 9.9% while the market is expected to decline by 3.6%. In US dollars, the electronics market in the Ukraine declined by an estimated 30.8% in 2022 and is forecast to fall by a further 16.8% in 2023. The fall in production was less severe with output falling by 16.7% in 2022 and a further 9.9% in 2023.



East European Electronics Production & Market by Region 2022

Prior to the war Russia and Ukraine accounted for 8.1% of electronics production in the region and 25.9% of the market with this falling to 6.8% for output and 21.1% for markets in 2022. At the end of 2023 electronics production in Russia and Ukraine is forecast at US\$4.1 billion down 20.3% from US\$5.2 billion in 2021. In the same period the electronics market in the two countries has declined 23.1% to US\$19.1 billion (2021: US\$24.9 billion).

Yearbook of World Electronics Data - Volume 3 East Europe & World Summary

Published since 1991 the Volume 3 of the Yearbook of World Electronics Data provides:

- Unique world summary covering the 53 countries in the Yearbook of World Electronics Data series
- A single source solution allowing you to track the electronics industry in 13 countries in CEE
- 13 major product groups.
- Market and production forecasts.
- CD-option allows you to manipulate the data quickly and easily: produce your own subsets or summaries of the data, create your own forecasts or cut and paste the data into your own in-house reports and presentations.

Who will benefit ?

The Yearbook is essential research providing key data for all areas of the electronics industry including:

- Distributors and manufacturers of electronic components and materials.
- Suppliers of electronic production equipment.
- OEMs.
- EMS Providers.
- Government, including investment organizations.
- Financial and industry analysts.
- Academic institutes & universities tracking developments in the electronics industry.

The Yearbook of World Electronics Data – tracking developments in the global electronics industry

With a history now extending over 50 years, the first edition of the Volume 1 of the Yearbook of World Electronics Data was first published in 1973, the Yearbook series has been extended to cover 53 countries globally to provide an invaluable and unique insight into the global trends, regional variations and the underlying state of the global electronics market for all stages of the supply chain - OEM, contract manufacturing and design, components and materials suppliers to financial /industry analysts and government and academia.

Although encompassing a range of published and bespoke products the core of RER's research programme is one of the most comprehensive statistical databases covering the global electronics industry, with the resulting analysis being published through three concise and clear demographic volumes, as a series of individual country reports, through customised solutions to meet specific client requirements and a series of Excel databases providing the combination of both historical and forecasted data.

53 country coverage, 13 major product groups

... comparable **country by country** and **product by product**.

Methodology

The Yearbooks highlight market trends and opportunities and offer corroborative evidence for individual research. Each new edition is fully revised and updated. Trade statistics are analyzed in detail, with over 500 separate categories being employed. Production statistics are collected from Government and Manufacturer's Association sources where these are available. Extensive use is also made of research reports, company reports, news items and work by other consultants to supplement and cross check the official and semi-official sources.

Markets are forecast in real terms through to 2026, with production forecast to 2023, using constant exchange rates and excluding inflation. These are based on our extensive knowledge of the historical performance of each product, the general economic outlook and the major growth influencing factors.

2023 Series

Volume 1 2023 West Europe

Synopsis: Economic Overview; Electronics Market Overview; Imports 2020-2021; Exports 2020-2021; Production Data 2020-2023; Market Data 2020-2026

16 country coverage

Austria; Belgium; Denmark; Finland; France; Germany; Greece; Ireland; Italy; Netherlands; Norway; Portugal; Spain; Sweden; Switzerland; UK

Publication Data: July 2023

Volume 2 2023 America, Japan, Asia Pacific

Synopsis: Economic Overview; Electronics Market Overview; Imports 2020-2021; Exports 2020-2021; Production Data 2020-2023; Market Data 2020-2026

19 country coverage

Australia; Brazil; Canada; China, Hong Kong; India; Indonesia; Israel; Japan; Malaysia; Mexico, Philippines; Singapore; South Africa; South Korea; Taiwan Thailand; Vietnam, USA

Publication Data: October 2023

Volume 3 2023 East Europe & World Summary

Synopsis: Economic Overview; Electronics Market Overview; Imports 2020-2021; Exports 2020-2021; Production Data 2020-2023; Market Data 2020-2026

53 Country World Summary covering production data 2020-2023 and market data for 2020-2026

13 country coverage

Bulgaria; Croatia; Czech Republic; Estonia; Hungary; Lithuania; Poland; Romania; Russia; Slovakia; Slovenia; Turkey, Ukraine

Publication Data: November 2023

For each country production and market data is supplied for the following product groups:

- Computers
- Consumer – Video; Audio; Personal
- Control & Instrumentation
- Medical & Industrial
- Office Equipment
- Radio Communications
- Telecommunications
- Components – Passive Components; Semiconductors; Other Components

Related Products & Services

European Electronics Production 2000-2026

As part of its program of research covering developments in the European electronics industry RER has released a new statistical database providing a medium-term outlook for electronics production in Europe. Covering the period 2000-2026 the research allows you to track developments both geographically and by major product group.

The database is provided as an Excel spreadsheet providing production data for 13 product groups and 29 countries split by Western Europe and Central and Eastern Europe.

Global Electronics Production & Markets

Launched in 2012, Global Electronics Production & Markets provides top line analysis on the global electronics industry for the period 1995 to 2026 for markets and 1995-2023 for production. Through two Excel databases you can quickly analyze the structure of the global industry and how it has changed both geographically, through RER's unique coverage of 53 countries, and by thirteen major product groups. The new database will be available in November 2023.

Country Reports

Drawing on data from its core statistical database RER provides a quick, reliable and cost-effective assessment of the electronics industry for an individual country. For a full listing please visit www.rer.co.uk

Custom Research

Building on the flexibility of the two databases and the Yearbook series we can quickly search data by product or country/region to provide solutions tailored to your specific needs or budgets. Ideal for input into internal presentations/ documents the data is supplied via email.

European Electronic Markets Forecast

Market data is only one part of the equation when analyzing the European electronics industry. Updated monthly, *European Electronic Markets Forecast* (EEMF) enables you to track with minimum time and cost, the key issues and opportunities impacting the European electronics industry. From originally researched articles to the latest company developments and market analysis EEMF is your virtual "Research Analyst" utilizing over 40 years of industry and market research experience to provide you both in hardcopy and electronic formats not only reliable but objective analysis and news on the European and global electronics industry.

Summary of Contents

Market Analysis: Up-to-the-minute analysis of the key sectors of the European and Global electronics industry

Industry News: The latest industry and company news split by:

- Finance
- Mergers & Acquisitions
- Automotive
- Electronic Manufacturing Services/PCB
- Production
- Semiconductors
- Renewable Energy/CleanTech

Asia Pacific Electronics: A monthly summary of key company developments within the region.

Industry Outlook – Monthly overview of developments in the broader European manufacturing sector focusing on the latest Purchasing Managers' Index (PMI) data. In addition, the section provides regular updates on the European and global economy and developments in the supply chain.

For additional information on the above publications or Reed Electronics Research's complete range of research products please contact or visit www.rer.co.uk

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SUMMARY OF WORLD PRODUCTION 2022

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Country	\$M Computing	\$M Office Equip	\$M Control & Instr	\$M Medical & Industrial	\$M Radio Comms & Radar*	\$M Telecommunications	\$M Consumer	\$M Compo-nents	\$M TOTAL
Australia	604	4	965	240	1111	708	23	420	4076
Austria	174	4	1279	984	402	347	4	2325	5520
Belgium	479	0	908	889	512	168	5	955	3917
Brazil	8506	227	1416	332	5100	900	1755	2008	20244
Bulgaria	285	47	320	148	120	65	13	387	1385
Canada	536	5	3154	992	3538	181	7	758	9172
China	312000	3720	19600	13200	179000	54300	40070	251869	873759
Croatia	31	5	100	59	42	32	0	198	467
Czech	9010	10	1250	293	1350	385	473	1962	14733
Denmark	207	0	1324	873	342	79	64	536	3425
Egypt	22	1	8	13	56	20	731	39	890
Estonia	64	1	320	92	300	405	0	147	1329
Finland	36	0	1063	512	373	337	0	441	2761
France	821	53	3683	1975	10589	1359	120	7831	26431
Germany	2242	73	23773	9061	2911	1463	929	18172	58623
Greece	196	6	68	20	178	77	2	73	620
Hong Kong	117	9	46	123	107	89	239	381	1113
Hungary	3000	280	2200	324	670	740	2420	1534	11168
India	3791	61	2449	740	18969	1781	4076	1853	33722
Indonesia	1900	40	290	512	2350	1250	2948	4040	13330
Ireland	1195	6	847	2451	295	133	11	7715	12652
Israel	1300	9	3850	1800	1400	1630	20	5124	15133
Italy	563	19	4057	1836	2557	995	24	5837	15887
Japan	13749	532	10243	7156	8266	1589	1894	54616	98046
Lithuania	11	8	180	160	280	155	1	138	933
Malaysia	11477	66	6364	1080	1216	1773	2697	53976	78648
Mexico	37450	212	2800	1950	2580	2900	13737	5267	66896
Netherlands	800	0	3059	3272	429	265	29	1351	9206
N Zealand	166	2	181	69	183	92	2	162	856
Norway	97	0	604	190	370	85	0	108	1454
Philippines	4500	149	800	163	810	260	225	10454	17361
Poland	2530	30	915	1590	1485	1400	3841	805	12596
Portugal	144	0	189	86	374	121	743	527	2185
Puerto Rico	451	2	139	230	88	71	7	327	1314
Romania	640	12	1200	230	400	550	26	223	3281
Russia	874	35	464	352	356	232	1103	581	3997
Saudi Arabia	180	1	191	151	100	98	3	86	810
Singapore	8873	101	6123	1183	3406	480	175	78182	98523
Slovakia	580	7	244	219	215	210	2933	935	5343
Slovenia	130	3	275	79	200	90	370	355	1502
South Africa	317	2	122	76	195	209	164	106	1191
South Korea	10550	131	2450	2700	14320	1151	1107	120174	152583
Spain	286	6	495	536	851	547	13	1087	3821
Sweden	59	0	1628	201	1737	1083	64	626	5400
Switzerland	411	4	5292	2475	434	356	3278	2081	14332
Taiwan	18322	10	671	4054	6913	1644	472	109586	141672
Thailand	12821	81	755	342	798	2564	1513	10620	29494
Turkey	1420	6	110	345	450	130	1186	271	3918
UK	1630	72	5814	3363	5775	319	231	2957	20159
Ukraine	90	2	65	139	95	80	5	87	563
USA	27012	860	47945	33730	86030	7905	704	73481	277667
Venezuela	56	3	11	21	84	21	8	21	226
Vietnam	14750	220	659	875	38285	9713	4002	9367	77871
TOTAL	517457	7138	172959	104487	408997	103538	94466	853160	2262203

Notes: 2022 is a forecast at current exchange rates. West Europe figures are taken from Volume 1 of the 2023 edition of the Yearbook. US, Japan & Asia Pacific figures are taken from Volume 2 of the 2023 edition of the Yearbook. * includes mobile phones

SUMMARY OF WORLD MARKETS 2022

Table 2.4.3

Country	\$M Computing	\$M Office Equip	\$M Control & Instr	\$M Medical & Industrial	\$M Radio Comms & Radar*	\$M Telecomm- unications	\$M Consumer	\$M Compo- nents	\$M TOTAL
Australia	8227	216	2669	1319	5097	1598	1878	3278	24282
Austria	1739	25	1037	927	679	393	599	2199	7598
Belgium	3074	40	791	704	1296	511	425	1848	8688
Brazil	12177	154	4434	1204	5975	1514	2180	13283	40921
Bulgaria	544	13	176	151	502	225	230	1156	2997
Canada	10961	263	3651	2298	5051	2907	2367	4742	32238
China	126690	857	37636	13792	41550	15779	13730	334985	585019
Croatia	394	12	133	119	368	155	149	433	1763
Czech	2761	35	1442	495	1294	302	578	6152	13059
Denmark	1619	41	504	264	422	323	241	1238	4652
Egypt	629	15	265	135	679	314	131	735	2903
Estonia	271	3	140	106	123	52	65	520	1280
Finland	1424	27	647	353	362	120	245	1219	4398
France	9563	267	3097	2220	6932	2254	2700	7505	34538
Germany	18015	332	10364	4143	5082	2532	4761	22840	68068
Greece	749	35	287	171	480	279	356	1109	3466
Hong Kong	3633	33	321	225	991	313	604	1244	7364
Hungary	2042	34	447	435	700	292	379	5886	10215
India	10132	167	6359	1632	16382	2427	4848	23968	65914
Indonesia	3850	143	1582	836	6475	1661	1321	5072	20940
Ireland	2301	17	782	337	531	224	217	2713	7121
Israel	3387	41	1006	1119	1765	295	467	3291	11371
Italy	5899	255	3897	1953	4387	1756	1951	6845	26942
Japan	29202	738	4449	4821	24433	7224	5848	55688	132403
Lithuania	247	10	171	106	250	101	118	635	1638
Malaysia	2851	45	1761	437	1835	344	591	24891	32754
Mexico	11181	117	3710	1265	5822	767	1924	39139	63925
Netherlands	6652	133	2012	1154	1572	952	894	3093	16459
N Zealand	1372	47	364	232	861	338	288	434	3935
Norway	1182	34	478	328	534	197	379	593	3724
Philippines	2040	28	1366	287	1247	554	379	4953	10854
Poland	4023	119	1613	541	2641	1282	991	6779	17989
Portugal	1208	18	305	394	739	367	413	1644	5088
Puerto Rico	594	17	204	174	589	175	204	680	2638
Romania	1353	27	770	471	1743	717	318	3716	9115
Russia	4261	65	1699	1422	4461	1226	1195	2868	17197
Saudi Arabia	2543	44	1500	609	3321	527	718	786	10048
Singapore	10726	125	3266	441	3067	625	941	14698	33889
Slovakia	1044	12	583	309	686	256	256	2331	5477
Slovenia	381	7	178	112	396	174	116	592	1956
South Africa	2678	126	634	263	1905	845	275	882	7608
South Korea	6597	94	7164	2697	5893	1838	1768	31181	57232
Spain	3938	159	1479	1219	3889	1765	1522	6131	20102
Sweden	2013	34	1122	287	1461	484	484	2124	8010
Switzerland	5131	180	1989	761	2145	607	1149	2605	14568
Taiwan	5621	45	6145	1026	2813	574	616	21327	38168
Thailand	4899	66	2791	744	4082	953	1208	12339	27081
Turkey	2158	78	1791	1386	1719	488	301	2556	10477
UK	11406	386	3654	2019	8232	1778	3377	6474	37326
Ukraine	805	14	219	275	695	250	128	692	3078
USA	133081	1018	43212	34905	140271	26141	24333	119723	522684
Venezuela	133	11	99	89	237	81	96	80	826
Vietnam	2366	69	3219	650	4281	943	1098	50968	63594
TOTAL	491767	6891	179614	94360	338943	88795	92349	872863	2165583

Notes: 2022 data are forecasts at current exchange rates. West Europe figures are taken from Volume 1 of the 2023 edition of the Yearbook. US, Japan & Asia Pacific figures are taken from Volume 2 of the 2023 edition of the Yearbook. * includes mobile phones.

SUMMARY OF EAST EUROPE PRODUCTION 2022

Table 3.4.3

Country	\$M	\$M	\$M	\$M	\$M	\$M	\$M	\$M	\$M
	EDP	Office Equip	Control & Instr	Medical & Industrial	Radio Comms & Radar*	Telecommunications	Consumer	Compo-nents	TOTAL
Bulgaria	285	47	320	148	120	65	13	387	1385
Croatia	31	5	100	59	42	32	-	198	467
Czech	9010	10	1250	293	1350	385	473	1962	14733
Estonia	64	1	320	92	300	405	-	147	1329
Hungary	3000	280	2200	324	670	740	2420	1534	11168
Lithuania	11	8	180	160	280	155	1	138	933
Poland	2530	30	915	1590	1485	1400	3841	805	12596
Romania	640	12	1200	230	400	550	26	223	3281
Russia	874	35	464	352	356	232	1103	581	3997
Slovakia	580	7	244	219	215	210	2933	935	5343
Slovenia	130	3	275	79	200	90	370	355	1502
Turkey	1420	6	110	345	450	130	1186	271	3918
Ukraine	90	2	65	139	95	80	5	87	563
TOTAL	18665	446	7643	4030	5963	4474	12371	7623	61215

SUMMARY OF EAST EUROPE MARKETS 2022

Table 3.5.3

Country	\$M	\$M	\$M	\$M	\$M	\$M	\$M	\$M	\$M
	EDP	Office Equip	Control & Instr	Medical & Industrial	Radio Comms & Radar*	Telecommunications	Consumer	Compo-nents	TOTAL
Bulgaria	544	13	176	151	502	225	230	1156	2997
Croatia	394	12	133	119	368	155	149	433	1763
Czech	2761	35	1442	495	1294	302	578	6152	13059
Estonia	271	3	140	106	123	52	65	520	1280
Hungary	2042	34	447	435	700	292	379	5886	10215
Lithuania	247	10	171	106	250	101	118	635	1638
Poland	4023	119	1613	541	2641	1282	991	6779	17989
Romania	1353	27	770	471	1743	717	318	3716	9115
Russia	4261	65	1699	1422	4461	1226	1195	2868	17197
Slovakia	1044	12	583	309	686	256	256	2331	5477
Slovenia	381	7	178	112	396	174	116	592	1956
Turkey	2158	78	1791	1386	1719	488	301	2556	10477
Ukraine	805	14	219	275	695	250	128	692	3078
TOTAL	20284	429	9362	5928	15578	5520	4824	34316	96241

SAMPLE DATA

Over the following pages we provide sample data from the **current** edition of the report. This includes summary data for both production and markets, and sample data from several countries.

4.3 Czech Republic

4.3.1 Economic Overview

GDP

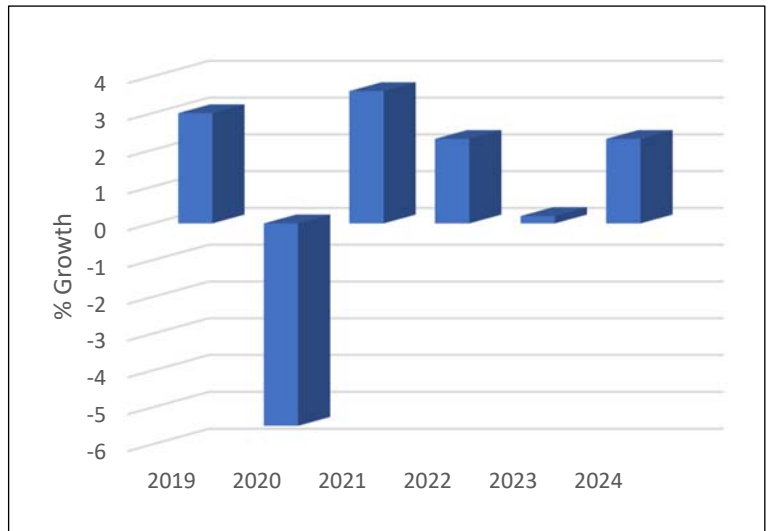
Economic activity has remained subdued over the first three quarters of 2023 mainly on the back of weak foreign demand amid low domestic consumption. Annual GDP growth is forecast to slow to 0.2% in 2023, and to recover to 2.3% in 2024, reaching pre-pandemic output levels at the end of 2023. In line with developments in real income, household consumption is projected to become the main driver of real GDP growth in 2024 together with foreign demand.

Inflation

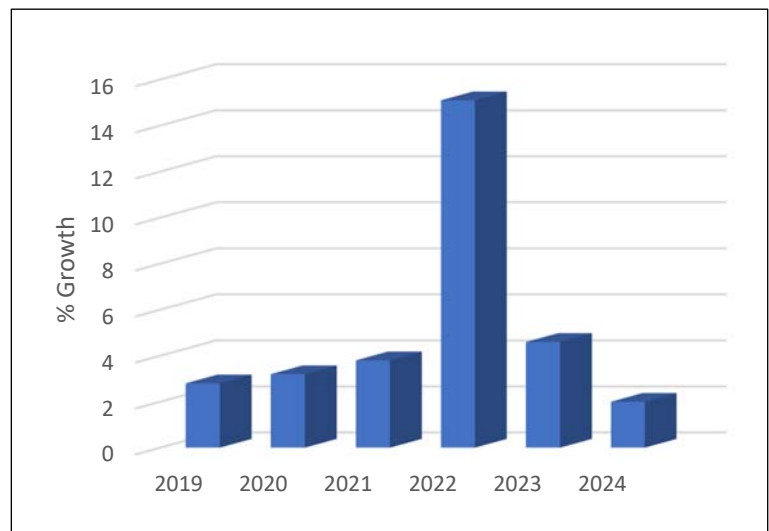
Consumer prices after increasing by 15.1% in 2022 are set to ease to 4.6% in 2023 and then further to 2.0% in 2024. The inflation rate is set to decrease, driven mainly by base effects, accompanied by lower commodity prices, recent currency appreciation and weak consumer demand.

Employment

Labour demand remained resilient to the economic slowdown in recent quarters and the unemployment rate declined to 2.2% in 2022. It is forecast to remain low in 2023, around 2.8%, and to decline to 2.6% in 2024. Shortages of skilled workers are set to persist. Despite the tight labour market, real wages are still projected to decline in 2023, as nominal wage growth lags behind inflation. Real wages are expected to increase by 3.2% in 2024 amidst recovering economic activity.



GDP 2019-2024



Consumer Prices 2019-2024

Czech Republic Leading Economic Indicators

% Increase	Actual			Forecast		
	2019	2020	2021	2022	2023	2024
Real GDP Growth	3.0	-5.5	3.6	2.3	0.2	2.3
Consumer Prices	2.8	3.2	3.8	15.1	4.6	2.0

Source: IMF October 2023, EU Economic Forecast 2023

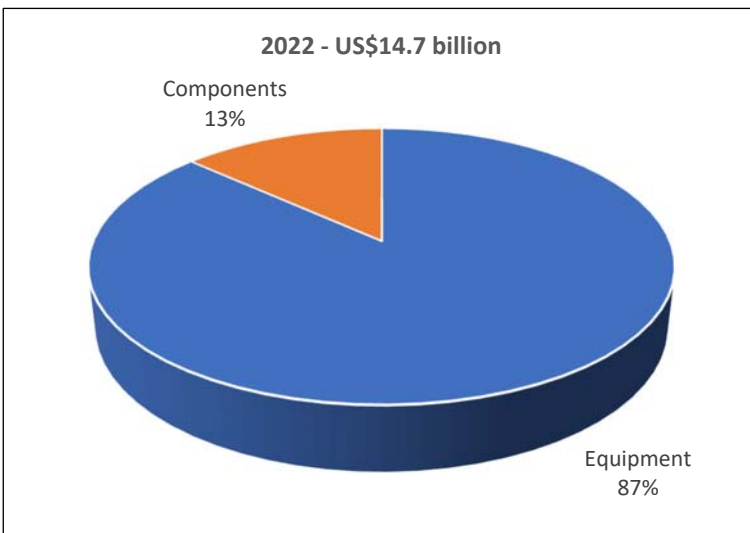
4.3.2 Electronics Industry Overview

Overview

Summary of Czech Electronics Production 2018-2023

US\$ Millions	2018	2019	2020	2021	2022	2023
		7710	8259	9259		
			1495		1772	
Consumer			644			
	1857					1905
	12469	13017	13113	14849	14733	13850

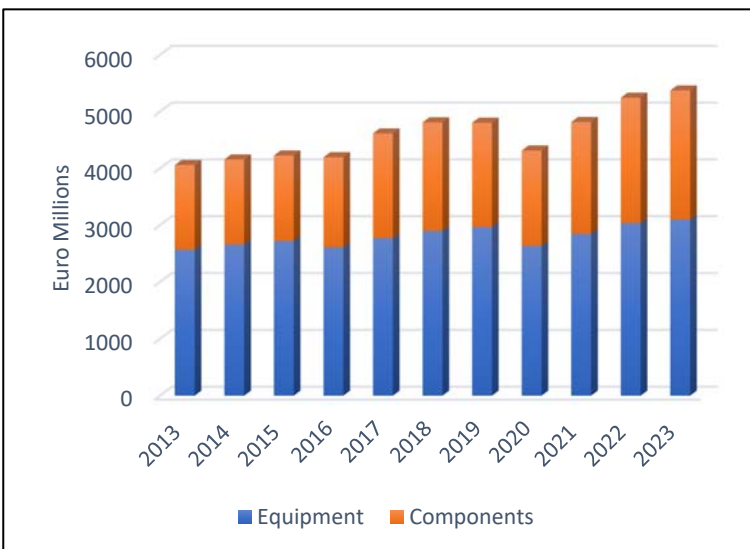
Notes: Computing includes office equipment; Industrial combines control and instrumentation and medical and industrial; and communications combines fixed and wireless communications (inc. defence). Due to computer rounding the summary figures above may differ slightly from the figures presented in the main tables.



Czech Electronics Production 2022

Output declined by 0.8% in US dollars while in local currency increased by 7.0% in 2022. Electronics equipment output, which accounted for 86.7% of electronics production, increased by 7.5% (down 0.4% in US dollars) while electronic component production increased by 4.1% (-3.5% in US dollars).

In local currency the Czech electronics industry has now posted year on year growth since 2016 but is forecast to decline by 6.0% in 2023 due to lower output in the dominant computer segment.



Czech Electronics Production 2013-2023

Electronics Equipment

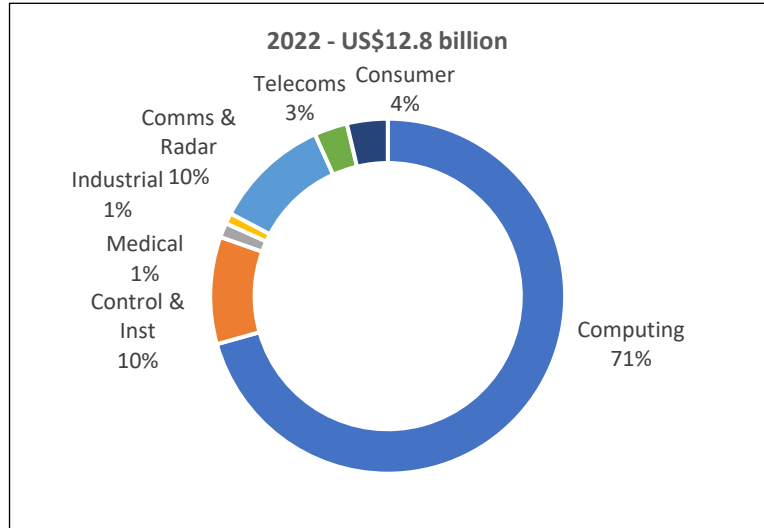
The computer segment accounted for 70.6% of electronics equipment output in 2022 up from 17% in 2000. Growth has been driven by a small number of major multinationals the most important Foxconn, Europe's and the world's largest electronic manufacturing service (EMS) provider and fellow Taiwanese companies Inventec, Pegatron and Wistron.

The production of computers and related equipment posted growth in local currency of 5.0% in 2022, down from 5.3% in 2021 and 8.1% in 2020 but is forecast to decline by 10.0% in 2023.

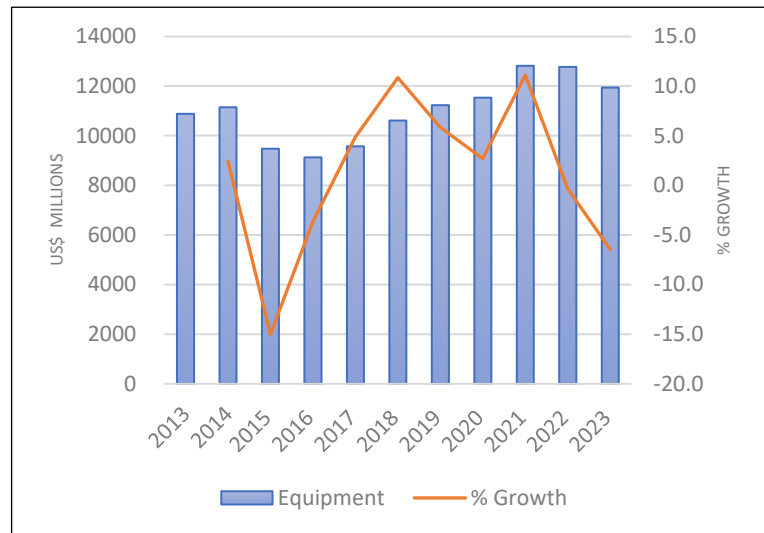
Communications equipment accounted for 13.6% of total electronics equipment output in 2022, with wireless and radar (inc. defence) accounting for 77.8% of the total.

In local currency, both the consumer video and audio segments reported double-digit declines output in 2022, with the video segment down 11.9% while the output of audio equipment declined by 20.6%. Further declines are forecast for 2023 with consumer video down 10.0% and audio 8.0%.

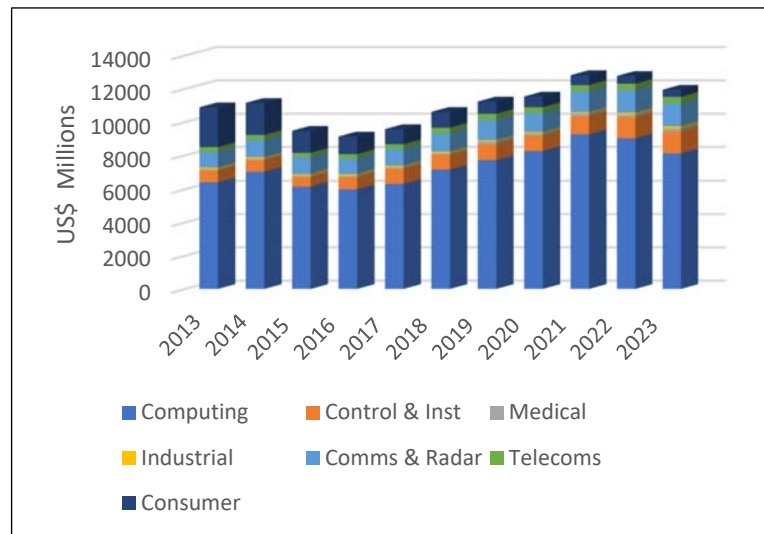
In contrast, the production of industrial related equipment following the pandemic led decline of 4.4% in 2020 posted growth in local currency of 10.3% and 24.6% in 2021 and 2022, respectively. In 2022, all three segments posted robust growth with the main category control and instrumentation increasing by 22.5%, medical 20.8% and industrial 58.6%. Growth is forecast to ease to 5.2% in 2023 in-line with the slowdown in the global economy. Overall, the industrial segment accounted for 12.1% of electronic equipment output in 2022 up from 7.9% in 2015.



Czech Electronics Equipment Production by Sector 2022



Czech Electronics Equipment Production 2013-2023



Czech Electronics Equipment Production by Sector 2013-2023

Components

There are a number of indigenous and foreign manufacturers of electronic components in the Czech Republic. In 2022, components accounted to 13.3% of electronics output.

AVX Czech Republic, a subsidiary of the US company AVX, started production of tantalum capacitors in Lanškroun in 1993 and today has around 1.1 million sq ft of manufacturing space in the country at three sites. Fellow US group Vishay Intertechnology has also moved production of capacitors and resistors to the Czech Republic and operates multiple plants in the country.

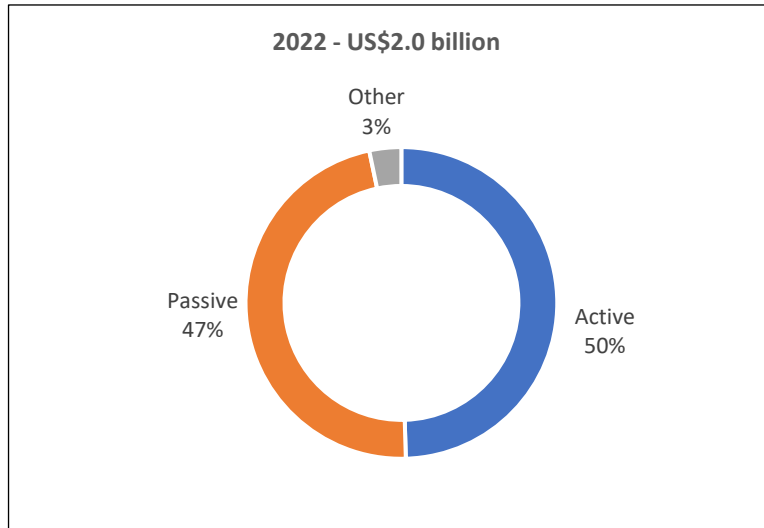
US-based onsemi has a production facility in Rožnov and also operates a design centre in Brno. In September 2022, the company announced it had invested an additional US\$150 million at the site and plans to spend a further US\$300 million through 2023.

Outlook

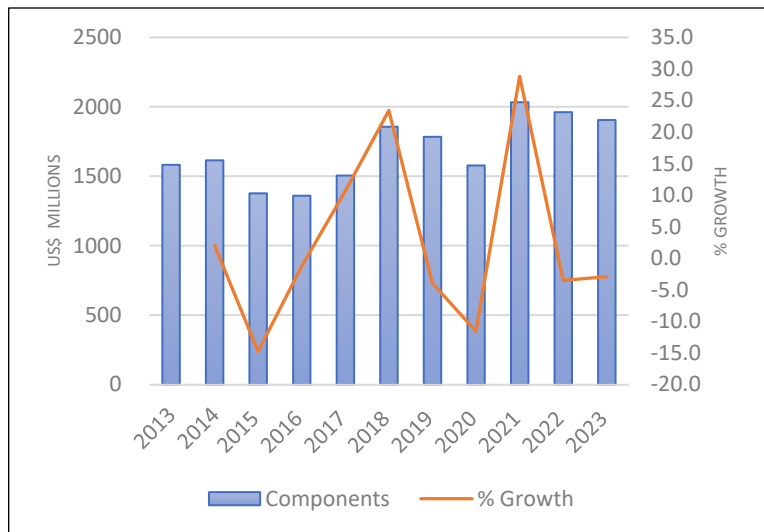
With the decline in consumer video and audio production the Czech electronics industry is heavily orientated towards the computer, communications and industrial segments a trend which will continue over the period to 2026. Production, however will be strongly influenced by the developments in the global market and which will result in potentially major fluctuations in output.

The country is expected to benefit from inward investment by companies in the industrial sector as they look to move production from higher cost West European locations

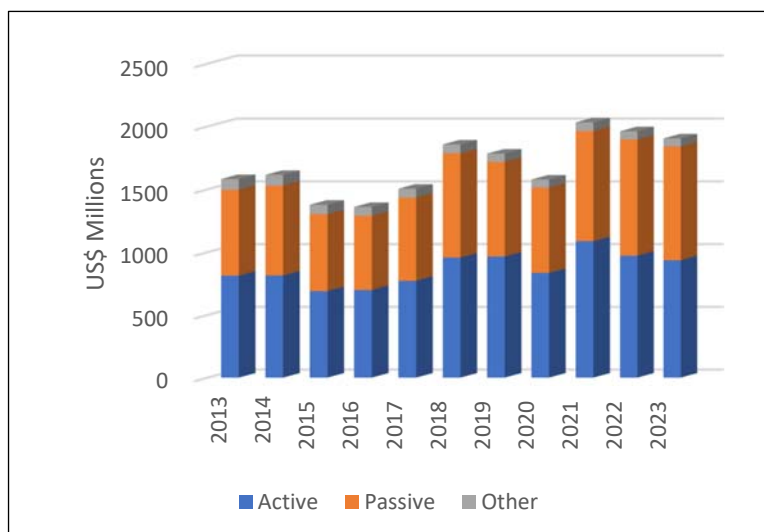
With a small number of companies holding a significant share of electronics output individual company decisions could have a marked impact on the industry. The fall-out from the US China trade dispute could see some volume production being transferred to the country as manufactures look to produce in the region of consumption.



Czech Electronics Component Production 2022



Czech Electronics Component Production 2013-2023



Czech Electronics Component Production by Sector 2013-2023

4.7.3 POLAND PRODUCTION

COMPUTING		2020	2021	2022	2023
Computers & Peripherals	ZtM	8775	9650	10258	9587
	\$M	2250	2500	2300	2150
Accessories & Parts	ZtM	1209	1042	1026	906
	\$M	310	270	230	203
Computing Total	ZtM	9984	10692	11284	10494
	\$M	2560	2770	2530	2353

OFFICE EQUIPMENT		2020	2021	2022	2023
Office Equipment Total	ZtM	109	116	134	128
	\$M	28	30	30	29

CONTROL & INSTRUMENTATION		2020	2021	2022	2023
Control & Instrumentation Total	ZtM	2945	3281	4081	4285
	\$M	755	850	915	961

MEDICAL & INDUSTRIAL		2020	2021	2022	2023
X-Ray & Medical Equipment Total	ZtM	3510	5172	6378	6499
	\$M	900	1340	1430	1457
Industrial Equipment Total	ZtM	429	463	714	785
	\$M	110	120	160	176
Medical & Industrial Total	ZtM	3939	5636	7091	7284
	\$M	1010	1460	1590	1633

COMMUNICATIONS & RADAR		2020	2021	2022	2023
Radar & Navigational Aids	ZtM	1404	2393	2721	3527
	\$M	360	620	610	791
Radio Communications & Public Broadcast	ZtM	2340	2799	3903	5414
	\$M	600	725	875	1214
Communications & Radar Total	ZtM	3744	5192	6623	8941
	\$M	960	1345	1485	2005

TELECOMMUNICATIONS		2020	2021	2022	2023
Telecommunications Total	ZtM	3939	4246	6244	6369
	\$M	1010	1100	1400	1428

POLAND PRODUCTION (Cont)

CONSUMER		2020	2021	2022	2023
Video Equipment					
Colour Television	ZtM	15600	16984	16502	15677
	\$M	4000	4400	3700	3515
Digital Cameras	ZtM	4	4	4	4
	\$M	1	1	1	1
Video Equipment Total	ZtM	15604	16988	16506	15681
	\$M	4001	4401	3701	3516
Audio Equipment Total	ZtM	351	386	401	385
	\$M	90	100	90	86
Personal Consumer Equip Total	ZtM	187	216	223	225
	\$M	48	56	50	50
Consumer Total	ZtM	16142	17590	17131	16291
	\$M	4139	4557	3841	3653

COMPONENTS		2020	2021	2022	2023
Active Components					
Valves & Tubes	ZtM	8	8	13	13
	\$M	2	2	3	3
Discrete Semiconductors	ZtM	195	232	803	1204
	\$M	50	60	180	270
Integrated Circuits	ZtM	936	1004	1137	1173
	\$M	240	260	255	263
Active Components Total	ZtM	1139	1243	1953	2391
	\$M	292	322	438	536
Passive Components					
Capacitors	ZtM	101	124	134	139
	\$M	26	32	30	31
Resistors	ZtM	39	62	62	62
	\$M	10	16	14	14
Connectors, Switches, Relays & Inductors	ZtM	351	425	535	546
	\$M	90	110	120	122
Printed Circuit Boards	ZtM	332	367	437	454
	\$M	85	95	98	102
Passive Components Total	ZtM	823	977	1169	1200
	\$M	211	253	262	269

POLAND PRODUCTION

COMPONENTS (Cont)		2020	2021	2022	2023
Other Components					
Other Components Total	ZtM	429	471	468	471
	\$M	110	122	105	106
Components Total	ZtM	2391	2690	3590	4061
	\$M	613	697	805	911
		2020	2021	2022	2023
TOTAL PRODUCTION	ZtM	43193	49443	56178	57854
	\$M	11075	12809	12596	12972

*Notes: 2020 and 2021 are current figures at current exchange rates. 2022 is an estimate and 2023 a forecast at 2022 constant values and exchange rates (i.e. inflation is not included). Base year 2022
Estimates and forecast are made in US\$ with local values shown for guidance only.*

4.8.4 ROMANIA MARKETS

COMPUTING		2020	2021	2022	2023	2024	2025	2026
Computing Total	LeuB	4482	5462	6346	6123	6246	6383	6530
	\$M	1057	1313	1353	1306	1332	1361	1392
OFFICE EQUIPMENT		2020	2021	2022	2023	2024	2025	2026
Office Equipment Total	LeuB	148	116	127	122	118	118	116
	\$M	35	28	27	26	25	25	25
CONTROL & INSTRUMENTATION		2020	2021	2022	2023	2024	2025	2026
Control & Instrumentation Total	LeuB	2688	2920	3611	3745	3891	4093	4306
	\$M	634	702	770	798	830	873	918
MEDICAL & INDUSTRIAL		2020	2021	2022	2023	2024	2025	2026
X-Ray & Medical Equipment Total	LeuB	1064	1211	1426	1383	1423	1480	1550
	\$M	251	291	304	295	303	316	330
Industrial Equipment Total	LeuB	568	616	783	814	846	883	923
	\$M	134	148	167	174	180	188	197
Medical & Industrial Total	LeuB	1632	1826	2209	2197	2269	2363	2473
	\$M	385	439	471	468	484	504	527
COMMUNICATIONS & RADAR		2020	2021	2022	2023	2024	2025	2026
Communications & Radar Total	LeuB	6173	6398	8175	8543	8893	9284	9730
	\$M	1456	1538	1743	1821	1896	1980	2075
TELECOMMUNICATIONS		2020	2021	2022	2023	2024	2025	2026
Telecommunications Total	LeuB	2722	2812	3363	3497	3644	3808	3987
	\$M	642	676	717	746	777	812	850
CONSUMER		2020	2021	2022	2023	2024	2025	2026
Video Equipment								
Colour Television	LeuB	988	1040	1027	985	999	1022	1004
	\$M	233	250	219	210	213	218	214
DVD Players & Recorders	LeuB	30	29	28	28	23	23	19
	\$M	7	7	6	6	5	5	4
Digital Cameras	LeuB	136	137	131	127	117	108	103
	\$M	32	33	28	27	25	23	22
Total Video Equipment	LeuB	1153	1206	1187	1140	1140	1154	1126
	\$M	272	290	253	243	243	246	240

ROMANIA MARKETS (cont)

CONSUMER (Cont)		2020	2021	2022	2023	2024	2025	2026
Audio Equipment Total	LeuB	165	150	141	135	131	125	120
	\$M	39	36	30	29	28	27	26
Personal Consumer Equip Total	LeuB	131	150	164	166	169	172	176
	\$M	31	36	35	35	36	37	38
Total Consumer Market	LeuB	1450	1506	1491	1441	1439	1451	1422
	\$M	342	362	318	307	307	309	303

COMPONENTS		2020	2021	2022	2023	2024	2025	2026
Active Components Total	LeuB	6983	8724	15369	16906	18428	19902	21295
	\$M	1647	2097	3277	3605	3929	4243	4540
Passive Components Total	LeuB	946	1152	1449	1493	1555	1642	1741
	\$M	223	277	309	318	332	350	371
Other Components Total	LeuB	538	587	610	620	632	646	659
	\$M	127	141	130	132	135	138	141
Components Total	LeuB	8467	10462	17428	19019	20615	22190	23695
	\$M	1997	2515	3716	4055	4396	4731	5052

TOTAL MARKET		2020	2021	2022	2023	2024	2025	2026
TOTAL MARKET	LeuB	27764	31504	42749	44686	47115	49691	52259
	\$M	6548	7573	9115	9528	10046	10595	11143

Notes: 2020 and 2021 are current figures at current exchange rates
2022 is an estimate and 2023 to 2026 are forecasts at 2022 constant values & exchange rates (i.e. Inflation is not included)
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