

Panasonic INDUSTRY Multi-layer Circuit Board Materials

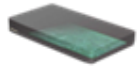
Line-up of Circuit Board Materials

ICT* infrastructure equipment (wired)

*ICT... Information and Communication Technology



- Server
- Switch
- Base station



- Router etc.

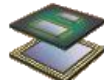
IC substrate



- FC-xGA



- CSP



- FC-CSP etc.

Home appliance



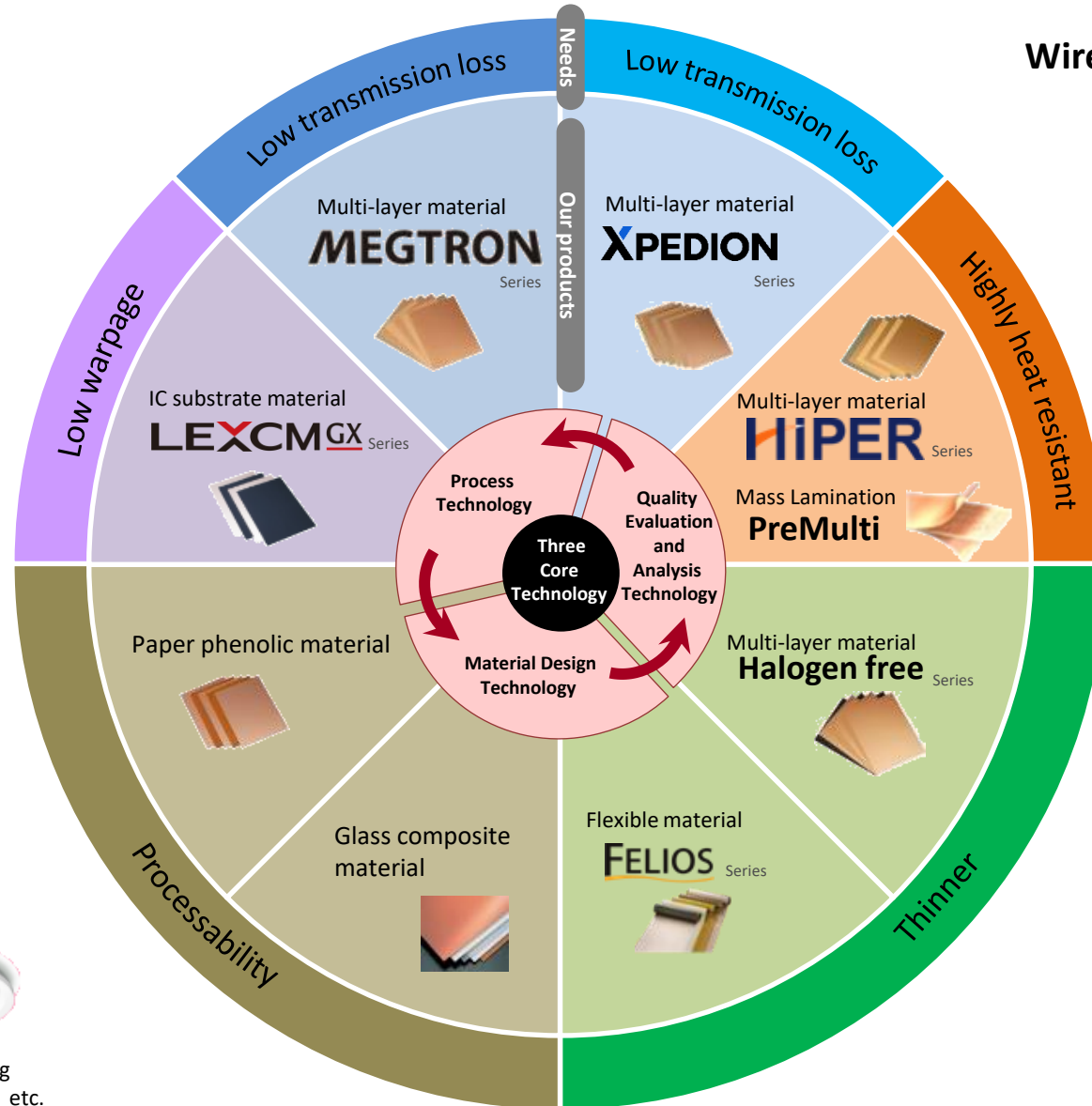
- TV



- Laundry machine



- LED lighting etc.



Wireless communication



- Millimeter wave radar



- Small cell etc.

Automotive



- Automotive parts



- EV
- HEV
- PHV etc.

Mobile device



- Smartphone

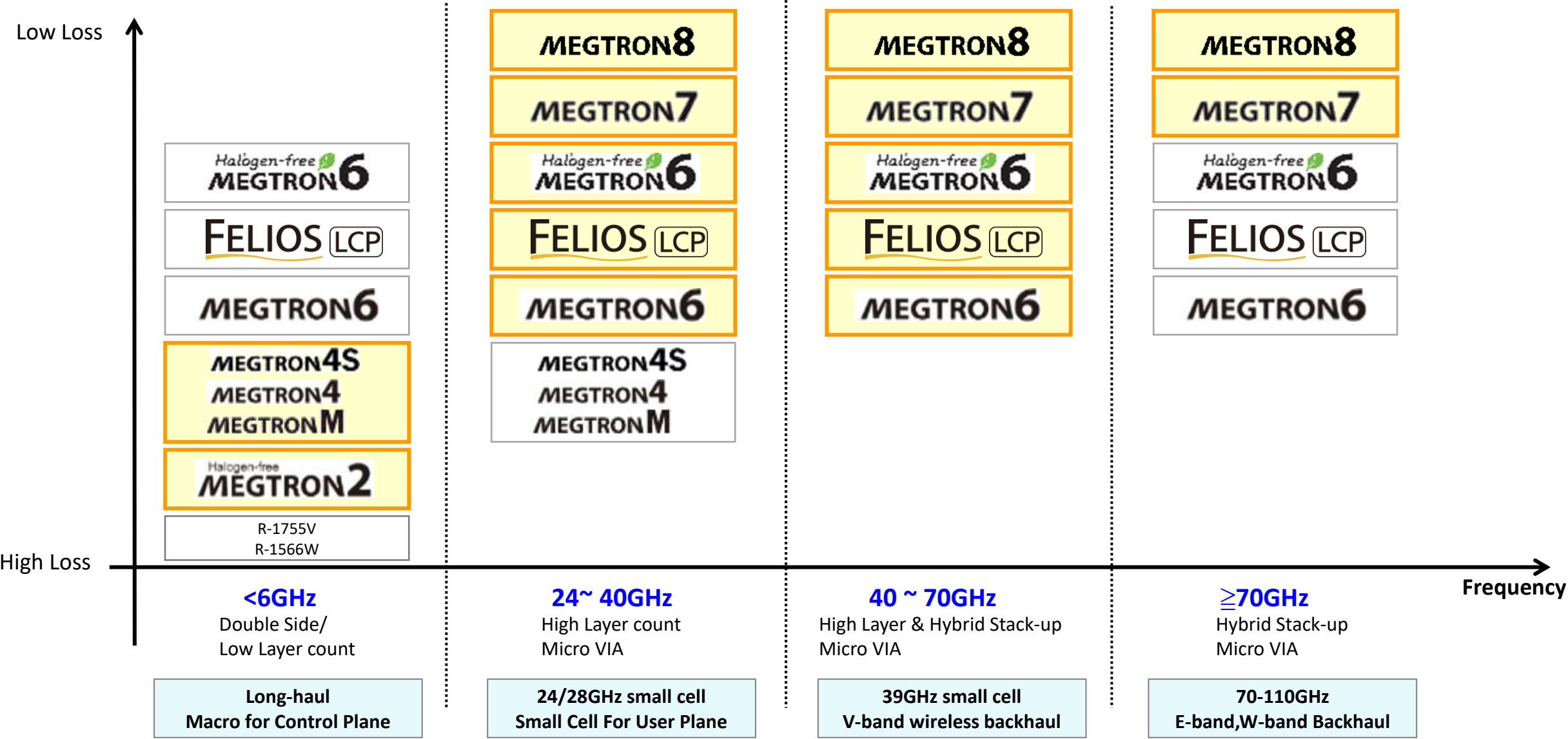


- Tablet PC



- Laptop etc.

Panasonic Proposal Materials depend on Frequency



The above data are Panasonic measurement values and not guaranteed values.

Typical
Frequency

~24 GHz

60 GHz

77-79 GHz

Typical
Applications



Base
Station



Car Radar
(SRR)



Base
Station



Car
Sensor



Smart
Home



Car Radar
(MRR)



Car Radar
(LRR)

Typical
Competitor

Rxxx50B

Rxxx35

Rxxx30

Rxxx03

Panasonic
Proposal

R-5575
(RTF type)

R-5575
(H-VLP2 type)

R-5575
(H-VLP3 type)

R-5515
(H-VLP2 type)

Status

M.P.

M.P.

Under Development

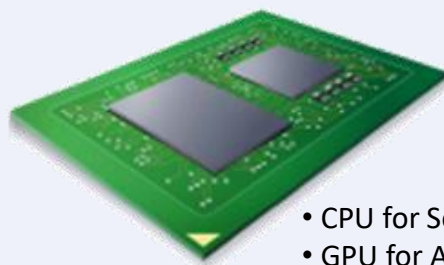
M.P.

IC substrate material Line-up

LEXCMGX series

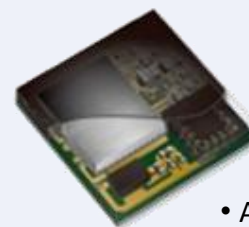
Package Application

FC-xGA



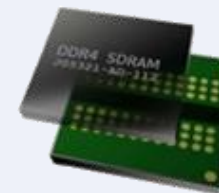
- CPU for Server/Desktop/Laptop
- GPU for AI/ADAS/Gaming
- FPGA

Module



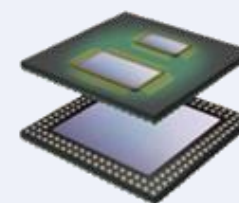
- AiP
- PAM
- FEM

CSP



- DRAM
- NAND/PMIC
- Mini LED

FC-CSP



- APU
- RF-IC

Product

Ultra Low CTE / High Reliability

R-1515V / R-1515K

- Low warpage
- Stress release

R-G535S / R-G535E

- Low warpage
- High modulus

Low CTE / High Heat Resistance

R-1515W

- Low warpage
- High modulus

R-1515A

- Low warpage
- High Heat resistance

Low Dk / Low Df

R-G545L / R-G545E

- Excellent Low Dk/Df performance in wide frequency
- Low warpage

Low CTE / Ultra Thin Material

R-G515S / R-G515E

- Low warpage
- Fine laminate-ability
- Ultra thin Prepreg line-up

R-1515E

- Low warpage
- High modulus

PCB material solution for Automotive

Infotainment

- Navigation system
- IVI
- Display audio
- Telematique
- Car audio

Our Product number

R-1566(W)
R-1755E
R-1766

Body control

- Air conditioner
- Meter
- Headlamp
- TPMS
- Power window

Our Product number

R-1755E
R-1766
R-1566S
R-2400

Power train

- Port engine
- Direct-injection engine
- Diesel engine
- Idling stop system
- Transmission

Our Product number

R-1566(W)
R-1566S
R-1515A
R-1755D
R-1755E

Underbody

- ABS/ESC
- EPS(Electronic Power Steering)
- Electronic parking brake
- Electronically suspension

Our Product number

R-1566(W)
R-1566S
R-1755M
R-1755E



Sensor

- Yaw rate sensor
- Steering sensor
- Power window smart motor
- RADAR sensor
- Camera module

Our Product number

MEGTRON
FELIOS LCP
XPEDION 1
R-1566(W)
R-1566S

Safety

- Air-bag
- ADAS
- Parking assist
- Sonar system

Our Product number

R-1566(W)
R-1755M
R-1755E
R-1566S
R-A555(W)

HEV/EV

- HV/EV system
- Inverter module
- DC-DC converter
- Battery management
- Battery charge

Our Product number

R-1755D
R-1566(W)
R-1566S
R-2400
R-2460

PCB material solution for ADAS Sensing

Automotive Camera

- Digital side mirror
- Surround view
- Traffic sign recognition
- Lane departure warning

Our Product number

R-1566(W)
R-1566S

Autonomous Driving Server

- Central driver assistance controller

Our Product number

R-A555(W)

Ultrasonic / Ultra-short-range RADAR

- Calculation of distances to obstacles and park assist

Our Product number

R-1766(GH)

LIDAR

(Laser Intensity Direction And Ranging)

- Emergency braking
- Pedestrian detection
- Collision avoidance

Our Product number

R-1566(W)

Long-range RADAR (77GHz)

- Adaptive cruise control

Our Product number

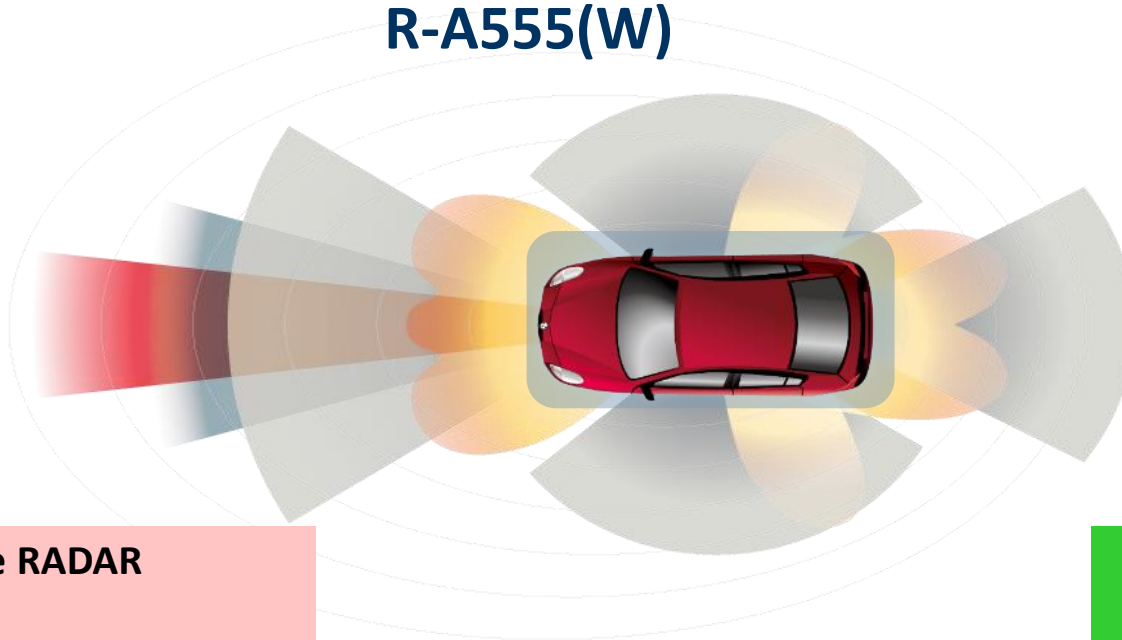
R-5515, R-5410

Short / Medium-range RADAR (24GHz)

- Cross traffic alert

Our Product number

R-5575



Material for Major application

Product		HF	Major application							
			Wireless Antenna 	ICT infra. 	Measurement equipment, IC tester	Aerospace 	Automotive component 	IC package 	Smartphone 	Industry 
XPEDION 1	R-5515	✓	●			●	●			
XPEDION T1	R-5575	✓	●	●		●	●			
MEGTRON 8	R-5795(U,N)	-		●	●	●	●			
MEGTRON 7	R-5785(GN,GE,N)	-		●	●	●	●			
Halogen-free MEGTRON 6	R-5375(N,E)	✓		●	●	●	●			
MEGTRON 6	R-5775 (N,GN,GE,G,K)	-		●	●	●	●			
MEGTRON 4 MEGTRON 4S MEGTRON M	R-5725 R-5725S R-5735	-		●	●		●			
Halogen-free MEGTRON 2	R-1577	✓		●	●		●			●
LEXCM GX series		✓						●		
HiPER series		-					●			●
Halogen-free	R-A555(W) R-A585	✓					●		●	
	R-1566(W/WN)	✓					●		●	●
FELIOS series		✓	●	●	●	●	●		●	●



Partnering to go beyond.

Electronic Materials
Panasonic Corporation

This data is the measured values, and it isn't the guaranteed values.